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REMEDIAL INVESTIGATION AND FEASIBILITY STUDY REPORT

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 SARGENT BOULEVARD
ABERDEEN, WASHINGTON
VCP Identification No. SW1161

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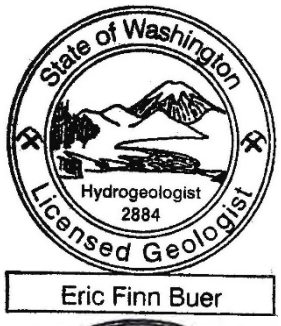

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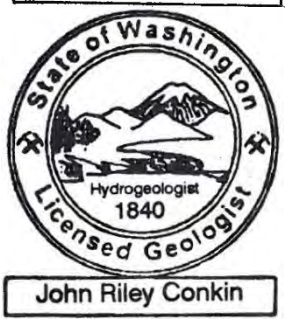

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EXECUTIVE SUMMARY

Farallon Consulting, L.L.C. (Farallon) has prepared this revised Remedial Investigation/Feasibility Study Report on behalf of Lakeside Industries, Inc. (Lakeside Industries) to provide the results of the Remedial Investigation (RI) and Feasibility Study (FS) pertaining to the Lakeside Industries property at 2400 Sargent Boulevard in Aberdeen, Washington (herein referred to as the Site). The Site was enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program in April 2011 and assigned Voluntary Cleanup Program Identification No. SW1161 by Ecology. Based on the results of the completed RI and FS, Farallon requests that Ecology issue an opinion that the preferred cleanup action alternative, Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls, be selected as the final cleanup action alternative.

The Site, as defined under the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) and its implementing regulations in Chapter 173-340 of the Washington Administrative Code (WAC 173-340), comprises the area where hazardous substances have come to be located at concentrations exceeding applicable cleanup levels. The initial phase of the RI was conducted by Farallon in January 2009. Additional phases of the RI were conducted in 2011, 2013, and 2017 to further delineate identified contamination and to gather data needed to develop, evaluate, and recommend a final cleanup action alternative for the Site. During the RI, total petroleum hydrocarbons as gasoline-, diesel-, and oil-range organics; benzene; ethylbenzene; naphthalene compounds; carcinogenic polycyclic aromatic hydrocarbons; and the metals arsenic, cadmium, lead, and mercury were detected at concentrations exceeding preliminary cleanup levels, defined herein as MTCA Method A levels, in soil and/or groundwater at the Site. These compounds have been retained as constituents of concern for the Site. Based on the results of the RI, soil and shallow groundwater have been retained as media of concern at the Site.

The RI identified confirmed source areas in shallow soil and localized areas of shallow groundwater at the Site. The vast majority of source areas of petroleum products identified at the Site are associated with the historical bulk fuel facility operations by Chevron USA Inc. (Chevron) during the period from 1922 through 1985 during which the Site was operated as a bulk fuel facility. The presence of petroleum products in soil was noted at the Site during a subsurface investigation conducted in May and June 1984 by GeoEngineers Incorporated (GeoEngineers) on behalf of Chevron, the results of which were documented in the *Report of Hydrogeologic Services, Existing Bulk Storage Facility, Aberdeen, Washington* dated July 9, 1984, prepared by GeoEngineers (1984) (1984 Hydrogeologic Report). The subsurface investigation was conducted prior to the enactment of MTCA and any of its cleanup regulations. The 1984 Hydrogeologic Report concluded that the results of the investigation indicated that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron prior to Lakeside Industries acquisition of the Site in 1985. According to Lakeside Industries, a review of historical aerial photographs, and the 1984 Hydrogeologic Report, the Site was largely unpaved, with the exception of the foundation concrete pads for the bulk fuel aboveground storage tanks and several building structures, during Chevron's operation of the Site from 1922 through 1985.

Lakeside Industries subsequently capped the entire Site with asphalt pavement upon purchase of the Site in 1985 and has operated the Site as a hot-batch asphalt plant from 1985 to the present.

Results of the Site characterization activities completed through 2013 and the evaluation and selection of the preferred cleanup action for the Site were presented initially in the *Remedial Investigation and Feasibility Study Report, Lakeside Industries Aberdeen Site* dated June 2015 prepared by Farallon (2015) (2015 RI/FS Report) that was submitted to Ecology. Following review of the 2015 RI/FS Report, Ecology requested that Lakeside Industries collect additional soil analytical data to further assess subsurface conditions along the southern property boundary proximate to and north of the existing retaining wall and riprap embankment. The purpose of the additional soil sampling was to confirm and bound the lateral and vertical extent of soil contamination exceeding MTCA cleanup levels at the Site. Ecology also requested that Lakeside Industries further evaluate the hydraulic implications of installing an environmental sheet pile wall along the southern property boundary that was identified by Ecology as an element of the preferred cleanup alternative under consideration for the Site. Specifically, Ecology requested further evaluation of the sheet pile wall to ensure that it would provide the required permanence and protectiveness to prevent/minimize releases to surface water and/or sediment of contaminated media in excess of cleanup levels based on potential current and/or future exposure pathways.

Farallon performed hydraulic characterization of the Site, including rising and falling head tests to test shallow aquifer conductivity and a tidal study to evaluate the hydraulic connection between the south-adjacent Chehalis River and shallow groundwater on the Site. Hydraulic and tidal study data indicate that changes in Chehalis River stage have no impact on shallow groundwater flow direction or gradient, and that the conductivity of the shallow aquifer is very low yield. Furthermore, the studies confirm that the groundwater to surface water pathway is not complete at the Site; therefore, surface water is not a medium of concern.

Following completion of the additional characterization requested by Ecology in 2015, Farallon performed an FS based on the results of the RI to develop and evaluate a selection of potential cleanup action alternatives under the criteria established under MTCA (WAC 173-340-350). Four cleanup action alternatives were evaluated, including a no action alternative; two alternatives with institutional controls, containment and/or limited source removal; and a complete soil source removal alternative. The preferred cleanup action alternative selected in the FS was Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls.

Cleanup Alternative 3 includes limited source removal to the maximum extent practicable at confirmed source areas where groundwater exceeds preliminary cleanup levels and the application of institutional controls and engineering controls, including installation of an approximately 700-foot sealed sheet pile wall to contain contaminated soil that will remain in-place and prevent potential migration and exposure to contaminated media while monitored natural attenuation takes place. Specifically, installation of the 700-foot sheet pile wall provides an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels that to the maximum extent practicable will remain in-place proximate to the southern Site

boundary adjacent to the Chehalis River. Based on the results of the RI, migration of contaminated soil to surface water and/or sediment in the Chehalis River along the southern Site boundary has not occurred because of the concrete retaining wall and underlying native silt. However, the current concrete retaining wall on the southern Site boundary is limited to the western half of the southern Site boundary and does not currently provide full coverage of the confirmed source areas exceeding MTCA cleanup levels on the eastern portion of the Site. Potential future exposure scenarios requiring evaluation for the FS, such as mobilization and migration of contaminated soil or groundwater remaining in-place along the southern Site boundary to surface water and/or sediment in the Chehalis River, were considered and incorporated into the preferred cleanup alternative in the FS, as directed by Ecology. The future potential exposure scenarios considered in the FS, which potentially could cause mobilization and migration of contaminated media remaining in-place to surface water and/or sediment along the southern Site boundary, included flooding and mass erosion during a 100-year storm event or liquefaction and mobilization of shallow contaminated soil during an earthquake.

Cleanup Alternative 3 satisfies MTCA threshold criteria as specified in WAC 173-340-360(2)(a); meets additional requirements specified in WAC 173-340-360(2)(b); meets expectations for cleanup action alternatives as specified in WAC 173-340-370 for facilities adjacent to surface water requiring active measures be taken to remediate, contain, and prevent/minimize releases to surface water of contaminated media in excess of cleanup levels to the maximum extent practicable; and provides the greatest degree of permanence and protectiveness and the highest MTCA Composite Benefit Score that is technically practicable. A disproportionate cost analysis was performed to compare Cleanup Alternative 3 to Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels. The disproportionate cost analysis demonstrated that the additional cost associated with Cleanup Alternative 4, more than seven times the cost of Cleanup Alternative 3, resulted in negligible additional environmental benefit since the MTCA Composite Benefit scores for both cleanup action alternatives are essentially equivalent. Based on the results of the disproportionate costs analysis, Cleanup Alternative 3 was selected as the preferred cleanup action alternative because it provides the highest degree of permanence considering current and future Site conditions to the maximum extent practicable.

Farallon, on behalf Lakeside Industries, requests that Ecology issue an opinion that the preferred cleanup action alternative, Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, be selected as the final cleanup action and that implementation of the final cleanup action likely will result in a No Further Action determination for the Site. Following receipt of Ecology's opinion, the final cleanup action will be implemented in accordance with the provisions identified in this FS. The selected cleanup action alternative for the Site will be documented in a Cleanup Action Plan that will be prepared in accordance with WAC 173-340-380. Following Ecology approval of the final Cleanup Action Plan, the limited source removal excavations and sheet pile wall construction are expected to take approximately 1 month to complete. Documentation of the final cleanup action will be submitted to Ecology in a final Cleanup Action Report.

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APPENDICES

ACRONYMS AND ABBREVIATIONS

ARARs	applicable or relevant and appropriate requirements
ASTs	aboveground storage tanks
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAP	Cleanup Action Plan
Chevron	Chevron USA Inc.
COCs	constituents of concern
COPCs	constituents of potential concern
DCA	Disproportionate Cost Analysis
DRO	total petroleum hydrocarbons as diesel-range organics
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
Farallon	Farallon Consulting, L.L.C.
FS	Feasibility Study
GRO	total petroleum hydrocarbons as gasoline-range organics
µg/l	micrograms per liter
mg/kg	milligrams per kilogram
EMMP	Environmental Media Management Plan
MNA	Monitored natural attenuation
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
NOAA	National Oceanic and Atmospheric Administration
ORO	total petroleum hydrocarbons as oil-range organics
PAHs	polycyclic aromatic hydrocarbons
PLPs	potentially liable persons
PQL	practical quantitation limit
RI	Remedial Investigation
RI/FS Report	Remedial Investigation/Feasibility Study Report
SAP	Sampling and Analysis Plan

Site	Lakeside Industries Property, 2400 Sargent Boulevard, Aberdeen, Washington
TEE	Terrestrial Ecological Evaluation
USTs	underground storage tanks
VCP	Voluntary Cleanup Program
VOCs	volatile organic compounds
WAC	Washington Administrative Code
2015 RI/FS Report	*Remedial Investigation and Feasibility Study Report, Lakeside Industries Aberdeen Site* dated June 2015 prepared by Farallon Consulting, L.L.C.

1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this revised Remedial Investigation/Feasibility Study Report (RI/FS Report) on behalf of Lakeside Industries, Inc. (Lakeside Industries) to provide the results of the Remedial Investigation (RI) and Feasibility Study (FS) completed for the Lakeside Industries property at 2400 Sargent Boulevard in Aberdeen, Washington (herein referred to as the Site) (Figure 1). The initial phase of the RI conducted by Farallon in January 2009 identified a release of petroleum-based products to soil and groundwater from sources at the Site. Additional phases of the RI were conducted in 2011, 2013, and 2017 to further delineate identified contamination and to gather data needed to develop, evaluate, and recommend a final cleanup action alternative for the Site. The Site was enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Plan (VCP) in April 2011 and assigned VCP Identification No. SW1161 by Ecology.

Concentrations of petroleum products detected in RI soil and groundwater samples exceeded the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) cleanup levels, as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340). The vast majority of source areas of petroleum products identified at the Site are associated with the historical bulk fuel facility operations by Chevron USA Inc. (Chevron). The presence of petroleum products in soil was noted at the Site during a subsurface investigation conducted in May and June 1984 by GeoEngineers Incorporated (GeoEngineers) on behalf of Chevron, the results of which were documented in the *Report of Hydrogeologic Services, Existing Bulk Storage Facility, Aberdeen, Washington* dated July 9, 1984, prepared by GeoEngineers (1984) (1984 Hydrogeologic Report) (Appendix A). The subsurface investigation was conducted prior to the enactment of MTCA and any of its cleanup regulations. During the advancement of test pits, GeoEngineers noted olfactory and sometimes visual evidence of petroleum hydrocarbon contamination in soil samples collected from 10 of the 16 test pit locations. Based on these data, GeoEngineers concluded that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron. Lakeside Industries purchased the Site in 1985 and has operated the Site as a hot-batch asphalt plant from 1985 to the present.

Results of the initial phase of the RI were provided in the Technical Memorandum regarding Remedial Investigation–Initial Phase Summary, Lakeside Industries Facility, Aberdeen, Washington dated March 26, 2009, prepared by Farallon (2009). Results of the Site characterization activities completed through 2013 and the evaluation and selection of the preferred cleanup action for the Site initially were presented in the *Remedial Investigation and Feasibility Study Report, Lakeside Industries Aberdeen Site* (2015 RI/FS Report) dated June 2015 prepared by Farallon (2015) that was submitted to Ecology.

Following review of the 2015 RI/FS Report, Ecology requested that Lakeside Industries collect additional soil analytical data to further assess subsurface conditions along the southern property boundary proximate to and north of the existing retaining wall and riprap embankment. The purpose of the additional soil sampling was to confirm and bound the lateral and vertical extent of soil contamination exceeding MTCA cleanup levels at the Site. Ecology also requested that

Lakeside Industries further evaluate the hydraulic implications of installing an environmental sheet pile wall along the southern property boundary that was identified as an element of the preferred cleanup alternative under consideration for the Site. Specifically, Ecology requested further evaluation of the sheet pile wall to ensure that it would provide the required permanence and protectiveness to prevent/minimize releases to surface water and/or sediment of contaminated media in excess of cleanup levels based on potential current and/or future exposure pathways.

The RI has been performed as an independent remedial action in accordance with MTCA, as established in WAC 173-340-515. Subsequent phases of the RI/FS were conducted in accordance with WAC 173-340-350 under the Ecology VCP.

1.1 RI/FS OBJECTIVES AND PURPOSE

The primary objectives of the RI included identifying the constituents of potential concern (COPCs) and media of concern at the Site; identifying the potential source(s) of the release(s) of COPCs; identifying the nature and extent of the COPCs in the identified media of concern; and developing and refining the conceptual site model. The overall objective of the RI was to collect and evaluate sufficient information to support the development of feasible cleanup alternatives for the Site in accordance with WAC 173-340-360 through 173-340-390. The RI completed by Farallon and summarized in this report provides sufficient data to evaluate potentially feasible remediation technologies and select a final remedial action in accordance with MTCA requirements in the FS.

The RI involved the following work elements:

- Sampling and analysis of soil and groundwater to identify the COPCs and media of concern;
- Conducting subsurface investigations to evaluate potential source(s) of the release(s) of COPCs;
- Characterizing the nature and extent of COPCs in the identified media of concern;
- Conducting a Terrestrial Ecological Evaluation (TEE) to evaluate the potential for COPCs to adversely affect terrestrial ecological receptors;
- Identifying applicable or relevant and appropriate requirements (ARARs) for the Site to enable identification of appropriate cleanup standards for potential cleanup actions; and
- Complying with the requirements of WAC 173-340-350.

The purpose of the FS is to develop and evaluate cleanup action alternatives to facilitate selection of a permanent cleanup action in accordance with WAC 173-340-350(8). The FS was conducted to screen available remediation technologies and identify a set of technically feasible and practicable cleanup action alternatives for evaluation in accordance with the requirements for cleanup actions established in WAC 173-340-360(2) and expectations for cleanup action alternatives as specified in WAC 173-340-370 for facilities adjacent to surface water requiring active measures be taken to remediate, contain, and prevent/minimize releases to surface water of

contaminated media in excess of cleanup levels to the maximum extent practicable that provides the greatest degree of permanence and protectiveness and the highest MTCA Composite Benefit Score that is technically practicable. The selected cleanup action alternative approved by Ecology for the Site will be documented in a Cleanup Action Plan (CAP) that will be prepared in accordance with WAC 173-340-380.

1.2 RI/FS REPORT ORGANIZATION

The RI/FS Report has been prepared to meet the general requirements of WAC 173-340-350(7) and (8), and has been organized into the following sections:

- **Section 2—Site Description and Background.** This section provides a description of the Site and summarizes the Site history, adjacent property use, geology, hydrogeology, and previous environmental investigation conducted at the Site by others.
- **Section 3—Remedial Investigation Scope of Work.** This section provides a description of the RI field program completed at the Site by Farallon between 2009 and 2017. This section also includes a discussion of the TEE requirement under MTCA.
- **Section 4—Remedial Investigation Results.** This section provides the results of the RI performed at the Site. Included is a discussion of RI findings related to the Site physical features, geology, and hydrogeology; a description and evaluation of the confirmed and suspected source areas; and a Site-specific TEE.
- **Section 5—Conceptual Site Model.** This section provides a summary of the conceptual site model derived from the results of the RI performed at the Site. Included is a discussion of the confirmed and suspected source areas, the constituents of concern (COCs), affected media, fate and transport characteristics of the releases of hazardous substances, and the preliminary exposure assessment.
- **Section 6—Technical Elements.** This section identifies the cleanup action objectives and ARARs for the Site, and includes a description of the COCs, media of concern, and cleanup standards, including cleanup levels for potential exposure pathways and points of compliance.
- **Section 7—Feasibility Study.** This section provides a summary of the scope of work and results of the FS. This section also summarizes the screening and overview of the evaluation of potential remediation technologies, selection of the preferred cleanup action alternative for implementation at the Site, and the rationale for its recommendation.
- **Section 9—Bibliography.** This section lists the documents used in preparing this report.
- **Section 10—Limitations.** This section provides the standard limitations for the RI/FS as performed by Farallon**.**

2.0 SITE DESCRIPTION AND BACKGROUND

The Lakeside Industries facility is located at 2400 Sargent Boulevard in Aberdeen, Washington (Figure 1). The Site is bounded by the Chehalis River and Elliott Slough on the southern, western, and eastern sides, respectively, and by a frontage road and State Route 12 to the north. The Site is approximately 3.5 miles upstream of the Chehalis River confluence with Grays Harbor, which is an estuarine bay of the Pacific Ocean on the west coast of Washington (Figure 2).

2.1 SITE DESCRIPTION AND OPERATIONAL HISTORY

The Site is located in Section 10, Township 17, Range 9, in Grays Harbor County, Washington and is 8.6 acres in area (Figure 1). The Site has been owned by Lakeside Industries since 1985 and has been operated as a hot-mix asphalt batch plant since that time. Prior to Lakeside Industries' ownership, the Site was owned and operated by Chevron as a bulk fuel facility between 1922 and 1985. Locations of significant historical Site features prior to the Site being acquired by Lakeside Industries are depicted on Figure 2.

Historical bulk fuel facility operations by Chevron included off-loading of fuel from barges, and storage and distribution of various petroleum products. Features identified as part of the operational history of the Site by Chevron include at least 19 aboveground storage tanks (ASTs) with an estimated total storage capacity exceeding four million gallons, aboveground and underground product piping, fuel loading racks, wash racks, a barrel steamer area, a boiler room, and garage buildings (Figure 2). A summary of the former Chevron ASTs is provided in Table 1, including tank locations, approximate tank capacities, and petroleum products stored such as gasoline, diesel fuel, kerosene, light fuel oil, heating oil, and distillates. Two underground storage tanks (USTs) containing heating oil and waste oil, respectively, were also present at the facility during the period of Chevron operations. The waste oil UST was removed in 1988. The unused heating oil UST is proximate to the northeastern corner of the current office building (Figure 2).

The presence of petroleum products in soil was noted at the Site during a subsurface investigation conducted in May and June 1984 by GeoEngineers on behalf of Chevron. The subsurface investigation was conducted at the Site prior to the enactment of MTCA and any of its cleanup regulations. The results of the subsurface investigation were documented in the 1984 Hydrogeologic Report prepared by GeoEngineers (Appendix A). During the advancement of test pits, GeoEngineers noted olfactory and sometimes visual evidence of petroleum hydrocarbon contamination in soil samples collected from 10 of the 16 test pit locations. Based on these data, GeoEngineers concluded that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron (Figure 2). Additional details pertaining to Chevron operations, including the locations of former site features such as ASTs, aboveground and underground product piping, fuel loading racks, wash racks, a barrel steamer area, a boiler room, and garage buildings, are provided on a series of historical drawings included in Appendix A that were used in the compilation of historical features shown on Figure 2 and in Table 1.

According to Lakeside Industries, a review of historical aerial photographs, and the 1984 Hydrogeologic Report, the Site was largely unpaved, with the exception of the foundation concrete pads for the bulk fuel ASTs and several building structures, during Chevron's operation of the Site from 1922 through 1985. Lakeside Industries subsequently capped the entire Site with asphalt pavement upon purchase of the Site in 1985 and has operated the Site as a hot-batch asphalt plant from 1985 to the present.

Lakeside Industries' current operations at the Site include operation of a hot-mix asphalt batch plant, maintenance garage, and office facility (Figure 2). A list of the ASTs, USTs, and associated petroleum products currently stored and used by Lakeside Industries at the Site is provided in Table 1 and is summarized below:

- A series of ASTs in the central part of the Site, identified as the Asphalt Tank Farm, that are mainly used to store asphalt cement for the hot-mix asphalt batch plant. The Asphalt Tank Farm area is paved and includes a concrete secondary spill containment berm.
- A series of ASTs on the western side of the Site, identified as the Diesel Tank Farm, mainly used to store diesel fuel for vehicle refueling, and to a lesser extent, used oil and antifreeze. The Diesel Tank Farm area is underlain by a concrete slab and includes a concrete secondary spill containment berm.
- A series of ASTs inside the shop building, identified as the Mechanics Shop, used to store small volumes of engine oil, hydraulic oil, heat transfer oil, and used oil.

A minor spill of diesel fuel occurred on the western side of the Site on October 3, 1989 as a result of overfilling an AST within the Diesel Tank Farm containment area (Figure 2). The spill report filed for the incident stated that a quantity of diesel fuel ranging from 50 to 100 gallons was released to the ground surface and affected surface soil in a localized area on and adjacent to the property. According to Ecology records, the cleanup of the diesel fuel and excavation of affected shallow surface soil were completed on the same day that the spill occurred, including backfilling the excavated area with clean fill.

2.2 ADJACENT PROPERTY USE

The Site is a triangular-shaped property bounded on the east by Elliott Slough and on the south and west by the Chehalis River. Figure 2 depicts surrounding facilities, buildings, and streets. A Weyerhaeuser lumber mill is located to the south, across the Chehalis River. The Grays Harbor County Courthouse and the Bayview Redi Mix cement plant are across Elliott Slough to the east. BNSF Railway Company tracks and State Route 12 are north-adjacent. Farther north, across State Route 12, is undeveloped forested land owned by the Washington State Department of Transportation and various private owners.

2.3 GEOLOGY AND HYDROGEOLOGY

According to geologic mapping conducted by the Washington Division of Geology and Earth Resources, the Site is underlain by Quaternary alluvium and undifferentiated glacial outwash

deposits (Washington State Department of Natural Resources 1987). The alluvium consists of sand, silt, and gravel deposited in streambeds and fans. The undifferentiated outwash deposits consist of recessional and pro-glacial stratified sand and gravel, locally containing silt and clay. The Chehalis River is 115 miles long and drains an area of 2,660 square miles, of which approximately 85 percent is forest land and approximately 10 percent is agricultural land (Green, et al. 2009). The Chehalis River is tidally influenced in the Site vicinity.

The general subsurface stratigraphy encountered in the RI borings consisted of a fill layer comprising sand with varying amounts of silt and gravel to depths ranging from 6 to 10 feet below ground surface (bgs) underlain by native silt. The silt extends to the maximum depth drilled of approximately 20 feet bgs.

A shallow unconfined groundwater-bearing zone was encountered at depths ranging from 3 to 10 feet bgs within the fill layer in the RI borings. Shallow groundwater beneath the Site flows primarily to the south, toward the Chehalis River. However, a concrete retaining wall, present along the western half of the Site's southern shoreline and the underlying native silt layer, acts as a barrier to shallow groundwater flow in the central part of the Site. The tidal study conducted during the RI confirmed that tidal changes in the Chehalis River have no influence on shallow groundwater levels and flow beneath the Site, likely due to the presence of the concrete retaining wall and the native silt interval underlying the entire Site (see Section 4.2, Geology and Hydrogeology).

2.4 PREVIOUS INVESTIGATION – GEOENGINEERS 1984

A subsurface investigation was conducted at the Site in 1984 prior to the enactment of MTCA and any of its cleanup regulations, and was reported in the 1984 Hydrogeologic Report prepared for Chevron by GeoEngineers (1984). According to the 1984 Hydrogeologic Report, the purpose of the subsurface investigation was to determine the nature and extent of potential subsurface contamination at the Site in anticipation of the potential sale of the Site by Chevron. A copy of the 1984 Hydrogeologic Report is included in Appendix A.

The subsurface investigation included the advancement and sampling of 16 test pits across the Site using a backhoe, and the installation and sampling of monitoring wells at each of the test pit locations (Figure 2). The general stratigraphy encountered in the test pits was a fill unit ranging in thickness from 1.5 to 7 feet underlain by native clayey silt, organic silt, and peat. A shallow perched groundwater-bearing zone was encountered at depths of 1 to 3 feet bgs in the fill unit. Groundwater contours developed using water level measurements from the Site monitoring wells for June 1, 1984 indicated a southerly flow direction toward the Chehalis River. GeoEngineers also noted little or no variation in water levels during repetitive groundwater level measurements in two monitoring wells on the south-central portion of the Site during large tidal changes in the adjacent Chehalis River. Based these data, GeoEngineers concluded that the shallow perched groundwater-bearing zone was not in direct hydraulic connection with the Chehalis River.

During the advancement of test pits, GeoEngineers noted olfactory and sometimes visual evidence of petroleum hydrocarbon contamination in soil samples collected from 10 of the 16 test pit

locations. Specifically, petroleum-contaminated soil was observed in soil samples collected from test pits 1, 3, 5, 6, 7, 8, 9, 11, 13, and 18 (Figure 2).

Four soil samples were selected from several of the test pit locations for laboratory analysis for one or more of the following analytes: pentachlorophenol; polycyclic aromatic hydrocarbons (PAHs); halogenated hydrocarbons reported as the sum of the halogens bromide, chloride, fluoride, and iodide; and total metals arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, and silver.

Concentrations of halogenated hydrocarbons ranging from 15 milligrams per kilogram (mg/kg) to 57 mg/kg were detected in three soil samples. Pentachlorophenol was detected at a concentration of 0.022 mg/kg in one soil sample. PAHs were detected in all four soil samples tested.

Two soil samples were analyzed for total metals. Maximum concentrations of detected metals included: arsenic at 7.3 mg/kg; lead at 40 mg/kg; barium at 70 mg/kg, chromium at 32 mg/kg, copper at 59 mg/kg, and mercury at 0.07 mg/kg. Extractable Partition Toxicity testing also was performed on the two soil samples for metals. Lead was the only metal detected, at a concentration of 200 micrograms per liter (ug/l).

The monitoring wells were sampled for the presence of floating petroleum product or light non-aqueous phase liquid (LNAPL). LNAPL was not observed during sampling in any of the monitoring wells. No groundwater samples were collected for laboratory analysis.

The 1984 Hydrogeologic Report concluded the following:

- The presence of petroleum hydrocarbon–contaminated soil in several of the test pits indicated that petroleum hydrocarbons have leaked into the ground during past operations of the facilities by Chevron;
- The shallow groundwater at the Site probably is contaminated by low concentrations of dissolved hydrocarbons, but it was highly unlikely that it was a threat to local groundwater supplies since it was unlikely that any water wells are located down-gradient from the tank yard; and
- The test results for the soil samples indicated no specific toxicity hazards as defined by Ecology at the time of investigation; however, the potential presence and migration of hydrocarbon vapors may present a hazard at the Site.

3.0 REMEDIAL INVESTIGATION SCOPE OF WORK

The RI was conducted by Farallon at the Site in accordance with the provisions of WAC 173-340-350(7) to evaluate whether releases of COPCs associated with historical and current operations have impacted soil or groundwater quality at the Site. The RI was conducted in several phases, with Site hydrogeological and soil and groundwater chemical analytical data from the early phases being used to refine the scope of later phases of the RI. This section presents a brief summary of the RI field activities.

3.1 INITIAL REMEDIAL INVESTIGATION PHASE – JANUARY 2009

The initial phase of the RI was conducted by Farallon in January 2009 to evaluate environmental conditions and potential contaminant source areas associated with historical property use as a petroleum bulk fuel facility by Chevron and/or current operations. Borings B1 through B16 were advanced and sampled using a direct-push drill rig as part of the initial field investigation. Each boring was advanced to a maximum depth of 12 feet bgs, with the exception of boring B3, which was advanced to a maximum depth of 20 feet bgs. The boring locations are shown on Figure 2. Boring logs are provided in Appendix B.

At least one soil sample collected from the vadose zone and a reconnaissance groundwater sample collected from each boring were submitted for laboratory analysis by one or more of the analytical methods identified below:

- Total petroleum hydrocarbons as gasoline-range organics (GRO) by Northwest Method NWTPH-Gx;
- benzene, toluene, ethylbenzene, and xylenes (BTEX) by U.S. Environmental Protection Agency (EPA) Method 8021B or EPA Method 8260B;
- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Total petroleum hydrocarbons as diesel-range and as oil-range organics (DRO and ORO, respectively) by Northwest Method NWTPH-Dx;
- Resource Conservation and Recovery Act metals by EPA Methods 6010B/7471A; and
- PAHs by EPA Method 8270D/SIM.

Three soil samples with detectable concentrations of GRO and/or BTEX were submitted for laboratory analysis for Resource Conservation and Recovery Act metals. Four soil samples with detectable concentrations of DRO and/or ORO were submitted for laboratory analysis for PAHs. Four soil samples and four reconnaissance groundwater samples collected from borings completed in the vicinity of former or current chemical and product storage areas, vehicle maintenance areas, and/or the vehicle wash rack were submitted for laboratory analysis for VOCs.

3.2 REMEDIAL INVESTIGATION – APRIL TO DECEMBER 2011

The following sections describe the RI activities conducted at the Site in 2011.

3.2.1 Borings and Reconnaissance Soil and Groundwater Sampling

Borings B17 through B35 (19 borings) were drilled at the Site in April 2011 using a direct-push drill rig to collect reconnaissance groundwater and soil samples (Figure 2). The purpose of the borings was to further evaluate potential source areas identified during the 2009 initial phase of the RI, and to establish locations for the installation of groundwater monitoring wells. Reconnaissance soil and groundwater samples collected from the 19 borings were used to assess the lateral and vertical extent of COPCs at potential source areas at the Site and to select monitoring well locations to characterize and monitor groundwater quality in and around identified source areas, and to bound the cross- and down-gradient extent of the source areas.

Borings B36 through B44 (nine borings) were drilled in July 2011 using a direct-push drill rig to collect additional soil and reconnaissance groundwater samples (Figure 2). The purpose of the additional borings was to evaluate areas along historical Chevron aboveground product piping corridors and former Chevron operational areas, and to obtain subsurface hydrogeological and chemical data from the northern, up-gradient portion of the Site.

3.2.2 Monitoring Well Installation, Development, and Surveying

Monitoring wells MW-1 through MW-17 were drilled, installed, and developed in July 2011 using a direct-push drill rig. The monitoring well locations were selected based on soil and reconnaissance groundwater sampling analytical results from the earlier phases of investigation at the Site, and to provide representative characterization of shallow groundwater across the majority of the Site. The monitoring well locations are shown on Figures 2 and 3. Boring logs and well construction details for the monitoring wells are presented in Appendix B.

3.2.3 Groundwater Monitoring and Sampling

The monitoring wells were used to evaluate shallow groundwater flow direction, potential Chehalis River and Elliot Slough tidal influence and interaction with groundwater, and potential water quality impacts by Site COPCs. Table 2 provides the groundwater elevation data collected during monitoring events at the Site.

Groundwater monitoring wells MW-1 through MW-17 were sampled in August 2011 to provide analytical data representative of the shallow groundwater-bearing zone at the Site. Groundwater samples from the monitoring wells were analyzed for the Site COPCs identified in Section 3.1, Initial Remedial Investigation Phase – January 2009.

3.2.4 Tidal Study

A tidal study was conducted at the Site on December 7 and 8, 2011. Groundwater elevations were recorded in monitoring wells MW-6, MW-7, MW-8, MW-9, and MW-10 using pressure transducers and electronic data loggers during a full tidal cycle over an approximately 25-hour period. Surface water elevations were obtained for the Chehalis River from nearby National Oceanic and Atmospheric Administration Aberdeen Tidal Station No. 9441187 for the same time period to compare to the Site groundwater elevation data.

3.3 TEST PIT INVESTIGATION AND GROUNDWATER SAMPLING – MARCH 2012

Test pits TP1 and TP2 were excavated with a backhoe on March 21, 2012 to evaluate the construction, depth, and foundation embedment characteristics of the concrete retaining wall present along the western half of the southern Site boundary. Test pit logs are provided in Appendix B.

Seventeen groundwater monitoring wells were gauged and sampled in March 2012 to provide additional hydrogeological and analytical data representative of the shallow groundwater-bearing zone at the Site. Groundwater samples from the monitoring wells were analyzed for Site COPCs by the analytical methods identified in Section 3.1, Initial Remedial Investigation Phase – January 2009.

3.4 ADDITIONAL WELL INSTALLATION AND GEOPROBE INVESTIGATION – APRIL TO AUGUST 2013

Two phases of remedial investigation boring and monitoring well installation were conducted at the Site in 2013. Boring B45 was advanced in the southeastern portion of the Site in April 2013 using a direct-push drill rig to collect soil samples (Figure 2). The purpose of boring B45 was to evaluate potential impacts to soil in the southeastern portion of the Site, east of the eastern terminus of the concrete retaining wall. Based on analytical results from boring B45 soil samples, borings B46 through B54 were drilled and sampled in August 2013 to further evaluate impacts to soil in the southeastern portion of the Site where petroleum hydrocarbon contamination was identified.

Monitoring well MW-18 was installed proximate to prior boring B45 in April 2013 using a direct-push drill rig. The purpose of monitoring well MW-18 was to evaluate potential impacts to groundwater associated with concentrations of DRO, ORO, and benzene detected in soil samples collected from boring B45. Monitoring wells MW-19 through MW-21 were installed in August 2013 to delineate the lateral extent of petroleum hydrocarbons that were identified in the shallow groundwater sample collected from monitoring well MW-18.

3.5 HYDRAULIC EVALUATION – AUGUST 2016

A topographic survey of the Site was conducted in August 2016 by Berglund, Schmidt & Associates, Inc. of Hoquiam, Washington, a Washington State-licensed surveying firm. The survey information was used to document the bathymetry of the intertidal zone in the adjoining Chehalis River immediately south of the existing retaining wall and riprap barrier along the southern side of the Site to further refine the conceptual Site model and Site-specific hydrogeology.

Falling and rising head aquifer tests (slug tests) were performed at monitoring wells MW-6 through MW-10, MW-12, and MW-18 to evaluate the hydraulic conductivity of the shallow groundwater-bearing zone at the Site. The purpose of the slug testing was to: 1) evaluate the hydraulic properties of aquifer materials in the Site subsurface; 2) further assess the potential influence on hydraulic conditions associated with installing an environmental sheet pile wall along the southern boundary

of the Site; and 3) evaluate whether other factors should be considered in the design of the environmental sheet pile wall.

Slug testing is a method of estimating hydraulic properties of aquifer materials in the vicinity of the well being tested by measuring the water-level recovery in the well after a near instantaneous change in hydraulic head (i.e., injecting or withdrawing a mass [slug] beneath the groundwater surface). Hydraulic conductivity proximate to the tested monitoring wells was assessed by measuring water level versus time data after the slug had been added or removed. Slug testing was performed at the Site in general accordance with ASTM International (ASTM) Standard D4043-96e1, *Standard Guide for Selection of Aquifer Test Method in Determining of Hydraulic Properties by Well Techniques*, and ASTM Standard D4044-96 (2002), *Standard Test Method (Field Procedure) for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers*.

The slug tests were performed using a 1.5-inch-diameter by 3-foot-long weighted polyvinyl chloride slug. The slug tests were set up by collecting an initial depth to water measurement and suspending a pre-programed data logger in the test well at a depth of approximately 1 foot above the bottom of well using a stainless-steel cable. The falling head test was conducted first in each well by quickly dropping the slug, suspended from a polyethylene rope, to a depth below the water level in the well. Once the falling head test was completed as demonstrated by a stabilized water level in the monitoring well, the rising head test was initiated by quickly removing the slug.

The data were processed to estimate hydraulic conductivity values using AQTESOLV Version 4.50 software using the Bouwer and Rice solution for unconfined aquifer conditions. The hydraulic conductivity values from the rising and falling head tests for each well were averaged to estimate an average value for the well. The hydraulic conductivity data are summarized in Table C-1 in Appendix C. Plots of water level displacement versus time, and pertinent test input and output data also are provided in Appendix C. Because the falling head test data from monitoring wells MW-8, MW-12, and MW-18 were inconclusive, only the rising head data were used for estimating hydraulic conductivity in the vicinity of these wells.

3.6 SUPPLEMENTAL SUBSURFACE INVESTIGATION – MAY 2017

The following sections provide a summary of the RI activities completed at the Site in 2017, including supplemental subsurface Site characterization and a groundwater monitoring event.

3.6.1 Borings and Reconnaissance Soil Sampling

Borings B55 through B61 were drilled at the Site in May 2017 using direct-push drilling methods to collect subsurface soil samples. The purpose of the borings was to further refine and bound the vertical extent of soil contamination exceeding MTCA cleanup levels in the areas proximate to the concrete retaining wall along the southern Site boundary adjacent to the Chehalis River.

The seven borings were drilled to a total depth of 20 feet bgs. The boring locations are shown on Figure 2. Boring logs are provided in Appendix B. At least two soil samples were collected from each boring location, including at least one collected from the native silt material underlying the

Site. The soil samples were submitted for laboratory analysis for GRO, BTEX, DRO, and ORO by the methods identified in Section 3.1, Initial Remedial Investigation Phase – January 2009. Select soil samples collected from the base of borings or from areas that exhibited field indications of petroleum hydrocarbon contamination also were submitted for laboratory analysis for carcinogenic PAHs by EPA Method 8270D/SIM.

3.6.2 Groundwater Monitoring Event

Groundwater monitoring wells MW-1 through MW-21 were gauged and sampled in May 2017 to provide additional groundwater flow and quality data to further characterize the shallow groundwater-bearing zone at the Site. Groundwater samples were submitted for laboratory analysis for GRO, BTEX, DRO, and ORO by the methods identified in Section 3.1, Initial Remedial Investigation Phase – January 2009.

4.0 REMEDIAL INVESTIGATION RESULTS

The following sections describe the physical features at the Site, the geologic and hydrogeologic conditions encountered during completion of the RI, and the findings of the soil and groundwater characterization activities.

4.1 PHYSICAL SITE FEATURES

Historical drawings and diagrams depicting historical Site features associated with the 1922 to 1985 Chevron petroleum bulk fuel facility operations were reviewed and evaluated as part of the RI for the Site. The historical Site features associated with the former Chevron petroleum bulk fuel facility are depicted on Figure 2. Historical and active ASTs and USTs associated with the Site are listed in Table 1. The vast majority of sources of soil and groundwater contamination identified at the Site are the result of suspected releases associated with the historical operation of the former bulk fuel facility for over 60 years by Chevron. The presence of petroleum products in soil was noted at the Site during a subsurface investigation conducted in May and June 1984 by GeoEngineers on behalf of Chevron. According to the 1984 Hydrogeologic Report, GeoEngineers noted olfactory and sometimes visual evidence of petroleum hydrocarbon contamination in soil samples collected from 10 of the 16 test pit locations. Based on these data, GeoEngineers concluded that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron (Figure 2).

A concrete retaining wall is present along the western half of the southern Site boundary, adjacent to the Chehalis River. The location of the retaining wall is shown on Figure 2. Test pits TP1 and TP2 were excavated adjacent to the retaining wall in March 2012. The purpose of the test pit excavations was to evaluate the depth and nature of construction of the concrete retaining wall, its footing, and its relationship to the subsurface stratigraphy. The base of the retaining wall footing was encountered at approximately 4 feet bgs in test pits TP1 and TP2. The underlying native silt was encountered at approximately 3.5 feet bgs in both test pits TP1 and TP2, representing a retaining wall footing embedment of approximately 0.5 foot into the native silt. Groundwater was observed seeping into the test pit excavations at a depth of 5.7 feet bgs. Based on stabilized groundwater depths in nearby monitoring wells MW-6 and MW-9, saturated subsurface soils are likely to occur at approximately 2 to 3 feet bgs. Test pit observations established that the retaining wall footing is embedded into the native silt, and below the depth of saturated soils. These data indicate that the retaining wall and underlying native silt act as a physical barrier to the lateral migration of COPCs in shallow soil and groundwater toward the surface water in the adjacent Chehalis River.

4.2 GEOLOGY AND HYDROGEOLOGY

This section discusses the results of the RI regarding the Site geology, hydrogeology, and tidal influence on Site groundwater.

4.2.1 Geology

Subsurface stratigraphy at the Site includes a shallow fill layer of sand with varying amounts of silt and gravel encountered from the ground surface to depths ranging from approximately 3.5 to 10 feet bgs. The fill layer is underlain primarily by silt, and to a lesser extent silty sand, with minor peat interbeds in localized areas to the total depth explored of 20 feet bgs at boring B3. Figure 3 provides a geological cross section that depicts the stratigraphic relationships of the identified subsurface materials.

4.2.2 Hydrogeology

An unconfined shallow groundwater-bearing zone is present within the fill layer at depths ranging from 1 to 9 feet bgs at the Site. Groundwater elevations for the shallow groundwater-bearing zone were contoured using the May 2017 groundwater-level measurement data collected by Farallon (Table 2). The groundwater elevation contour map developed using the May 2017 water level data is provided on Figure 4. Based on the groundwater elevation data, groundwater within the shallow groundwater-bearing zone is interpreted to flow predominantly from the upland areas toward the Chehalis River to the south. The hydraulic gradient is interpreted to be between approximately 0.025 to 0.035 foot/foot at the Site. A localized area in the east-central part of the Site, represented by monitoring wells MW-3, MW-4, and MW-5, is interpreted to have a more-shallow hydraulic gradient, between approximately 0.0011 to 0.0039 foot/foot to the south. Slug testing performed in August 2016 estimated a geometric mean hydraulic conductivity for the Site of 5.89×10^{-5} centimeters per second in the shallow water bearing zone.

Field observations during drilling and installation of monitoring wells MW-18 through MW-21 indicated that the monitoring wells constructed in this area yielded only nominal volumes of groundwater before being purged dry and required extended periods of time to recharge. The estimated rate of recharge was less than 0.01 gallons per minute based on field measurements, which is consistent with the relatively low transmissivity of the silt and silty sand encountered in the groundwater-bearing zone. Groundwater elevations in monitoring wells MW-18 through MW-21 were observed to remain consistent during construction and development regardless of tidal stage in the adjacent Chehalis River. No groundwater seeps were observed in the intertidal areas proximate to the well installation area.

4.2.3 Tidal Study

Surface water elevations recorded for the Chehalis River at the National Oceanic and Atmospheric Administration Aberdeen Tidal Station No. 9441187 during the 25-hour period of the 2011 tidal study fluctuated by a maximum of approximately 10 feet. The largest changes in groundwater elevation recorded during the tidal study ranged from approximately 0.15 foot in monitoring well MW-9 to approximately 0.23 foot in monitoring well MW-10. The groundwater elevation recorded in monitoring well MW-6 displayed approximately 0.06 foot fluctuation. Water level data recorded in monitoring wells MW-7 and MW-8 indicated no response. Based on the tidal study, there appears to be no connection between the shallow groundwater-bearing zone at the Site and the surface water of the Chehalis River. Hydrographs depicting monitoring well groundwater

elevations and the Chehalis River surface water elevation recorded for the tidal study are provided in Appendix D.

4.3 HYDRAULIC EVALUATION RESULTS

The hydraulic conductivity values derived from the slug testing described in Section 3.5, Hydraulic Evaluation – August 2016, were used to estimate potential groundwater flow rates adjacent to an environmental sheet pile wall to be installed along approximately 700 feet of the southern Site boundary. The geometric mean of the hydraulic conductivity values for all the test wells was 5.89 x 10^{-5} centimeters per second for the shallow water-bearing zone at the Site. Groundwater seepage velocity was estimated for the Site using the Site-wide hydraulic conductivity value, September 26, 2013 hydraulic gradient, and an assumed effective porosity of 0.25 for silty sands to be approximately 8.5 feet per year.

The average estimated hydraulic conductivity values for the four wells tested along the proposed sheet pile wall alignment (MW-6, MW-9, MW-12, and MW-18) ranged from 7.75 x 10^{-6} to 7.13 x 10^{-5} centimeters per second (0.16 to 1.5 gallons per day per square foot). The geometric mean of the average hydraulic conductivity for these four wells is 2.90 x 10^{-5} centimeters per second (0.62 gallon per day per square foot).

Using the minimum average estimated hydraulic conductivity value of 0.16 gallon per day per square foot, an assumed saturated aquifer thickness along the river bank of 6 feet, and an assumed horizontal hydraulic gradient of 0.035 foot/foot based on September 2013 water level measurements (see Section 4.2, Geology and Hydrogeology), the estimated minimum groundwater flow rate at the proposed sheet pile wall is 22 gallons per day, or 0.015 gallon per minute. This estimate is consistent with previous observations of well recharge proximate to the proposed sheet pile wall.

Using the maximum average estimated hydraulic conductivity value of 1.5 gallons per day per square foot, an assumed saturated aquifer thickness along the river bank of 8.5 feet, and an assumed horizontal hydraulic gradient of 0.035 foot/foot, the estimated maximum groundwater flow rate at the proposed sheet pile wall is 300 gallons per day, or 0.21 gallon per minute.

Using the geometric mean of the average estimated hydraulic conductivity value of 0.62 gallon per day per square foot, an assumed saturated aquifer thickness along the river bank of 7.25 feet (the average of the 6-foot and 8.5-foot values assumed above), and an assumed horizontal hydraulic gradient of 0.035 foot/foot, the estimated mean groundwater flow rate at the proposed sheet pile wall is 100 gallons per day, or 0.07 gallon per minute.

The minimum and maximum groundwater flow rates were used in the design of the proposed environmental sheet pile wall and hydraulic control system discussed in Section 7.2, Cleanup Action Alternatives.

4.4 SOIL AND GROUNDWATER ANALYTICAL RESULTS

Based on the historical uses of the Site, it was anticipated that COPCs would consist of petroleum fuels and related constituents and additives, and that these releases of COPCs were likely to have affected shallow soil and groundwater at the Site. These constituents were subsequently confirmed in Site soil and groundwater samples, and the RI has sufficiently delineated their occurrence at the Site to support selection of a feasible and final cleanup alternative consistent with all MTCA requirements. The past operational features and activities likely responsible for the presence of the COPCs identified at the Site are described in Section 5.5, Summary of Conceptual Site Model.

Soil sample analytical results for GRO and benzene are shown on Figure 5. Soil sample analytical results for total DRO and ORO are shown on Figure 6. Groundwater analytical results for GRO and benzene are shown on Figure 7. Groundwater analytical results for DRO and ORO are shown on Figure 8. The soil sample analytical results for petroleum hydrocarbons, PAHs, and metals are provided in Tables 3, 4, and 5, respectively. Table 6 presents petroleum hydrocarbon analytical results for the reconnaissance groundwater samples collected from the borings at the Site. Analytical results for the groundwater samples collected from monitoring wells at the Site are provided in Tables 7, 8, and 9 for petroleum hydrocarbons, PAHs, and metals, respectively. Laboratory analytical reports are provided in Appendix E.

The confirmed source areas identified at the Site with concentrations of COPCs exceeding MTCA cleanup levels are limited to shallow soil within the fill horizon with the exception of four localized areas of groundwater contamination. A description of the confirmed source areas in soil and groundwater defined by the specific COPCs detected is provided below.

4.4.1 Gasoline/Benzene Source Areas

Three localized source areas with GRO and/or benzene in soil at concentrations exceeding MTCA Method A cleanup levels were identified in the east-central and southeastern portions of the Site. Groundwater samples collected from monitoring wells on the western portion of the Site and areas outside the identified GRO/benzene source areas at the Site were reported either non-detect at the laboratory PQLs or less than the MTCA Method A cleanup levels for GRO and benzene (Figure 7; Table 7).

4.4.1.1 Central Gasoline and Benzene Source Area

The approximate areal extent of GRO and/or benzene in soil at concentrations exceeding MTCA Method A cleanup levels in the central portion of the Site is bounded by borings B18, B19, and B22 to the north; borings B11, B17, and B14 to the east; borings B1, B2, and B41 to the west; and borings MW-4 and MW-9 to the south (Figure 5). The highest concentrations of GRO and benzene were detected in a soil sample collected from 4 feet bgs in boring B3, which was advanced proximate to the western side of former Chevron gasoline Tank No. 16 (Figure 5). Metals, including lead, arsenic, cadmium, and mercury, also were detected at concentrations exceeding the MTCA Method A cleanup levels in the soil sample collected from 2 feet bgs in boring B3 (Table 5). The concentration of 1,500 mg/kg lead in soil at boring B3 is indicative of a potential historical release of leaded

gasoline. According to the 1984 Hydrogeologic Report, petroleum-contaminated soil was observed at test pits 4, through 9, and 11, which were advanced proximate to the former Chevron Tank Nos. 14 and 16 (Figure 5).

GRO and benzene were detected at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring well MW-1 in the northeastern portion of the east-central GRO/benzene source area. Benzene was detected at a concentration of 11 micrograms per liter (µg/l) in the groundwater sample collected from monitoring well MW-6 on May 3, 2017 in the east-central GRO/benzene source area. These data are consistent with the petroleum-contaminated soil observed at test pits 1 and 9 advanced during the 1984 subsurface investigation (Figures 5 and 7). All other groundwater samples collected from the central source area monitoring wells, including MW-4, MW-5, MW-6, MW-7, and MW-9, were reported non-detect at the laboratory PQL (Figure 7).

4.4.1.2 Southeast Gasoline and Benzene Source Area

Another localized source area with GRO and benzene in soil at concentrations exceeding MTCA Method A cleanup levels was identified in the southeastern portion of the Site. The area containing GRO and benzene in soil in this area is bounded by borings B46 through B49 to the north, borings B51 and B12 to the east, boring B54 to the west, and boring B52 and the Chehalis River to the south (Figure 5). Historical features in this portion of the Site include three former gasoline ASTs north and northeast of the source area and multiple conveyance and product distribution lines operated by Chevron (Figure 2). These data are consistent with the petroleum-contaminated soil observed at test pit 3 advanced during the 1984 subsurface investigation in this source area (Figure 5).

Groundwater samples collected from monitoring wells MW-18 and MW-20 in the southeast GRO/benzene source area exceeded the MTCA Method A cleanup level for groundwater of 5 µg/l (Figure 7).

4.4.1.3 Boring B57 Source Area

GRO and benzene were detected at concentrations of 350 and 0.076 mg/kg, respectively, in the soil sample collected from boring B57 at a depth of 9 feet bgs. GRO and benzene were reported non-detect at the laboratory PQL in the soil sample collected from boring B57 at depths of 14 and 19 feet bgs. GRO and benzene were reported non-detect at the laboratory PQL in the groundwater samples collected from monitoring well MW-11, west-adjacent to boring B57. The source area comprises a small, isolated volume of shallow soil contamination between 9 and 14 feet bgs proximate to Chevron Tank No. 12, which formerly stored gasoline (Figure 5). The shallow contamination identified at this source area is bounded by boring B58 to the east, boring B6 to the northeast, and boring B5 to the northwest (Figure 5).

4.4.2 Diesel and Oil Source Areas

Three source areas with total DRO and ORO at concentrations exceeding the MTCA Method A cleanup level have been identified at the Site, including a large area in the central portion of the

Site; a slightly smaller area in the western portion of the Site; and a localized area in the southeastern portion of the Site (Figure 6). DRO and ORO were reported non-detect at the laboratory PQL in groundwater samples collected from monitoring wells outside the diesel and oil source areas and on the up-gradient portion of the Site (Figure 6).

4.4.2.1 Central Diesel and Oil Source Area

The DRO and ORO source area in the central portion of the Site generally is bounded by borings B34, B22, and B44 to the north; borings B19, B10, MW-1, and B13 to the east; borings B2, B4, B7, and B5 to the west; and the retaining wall to the south. Approximately half of the central DRO and ORO source area is comingled with the east-central GRO/benzene source area. These data are consistent with the petroleum-contaminated soil observed at test pits 4 through 9 and 11 during the 1984 subsurface investigation (Figure 6).

The highest concentrations of DRO/ORO were detected in a soil sample collected from 4 feet bgs in boring B9 advanced proximate to the former Chevron fuel loading rack area and heating oil tanks in the northeastern portion of the source area (Figure 6). During the May 2017 groundwater monitoring event, combined dissolved phase concentrations of DRO and ORO were detected at concentrations ranging from 580 to 770 µg/l in groundwater samples collected from monitoring wells MW-6, MW-7, and MW-11, slightly exceeding the MTCA Method A cleanup level of 500 µg/l (Figure 8; Table 7).

4.4.2.2 West Diesel and Oil Source Area

A smaller DRO/ORO source area is present proximate to former Chevron Tank Nos. 8 and 9[1] on the western side of the Site, which were used to store fuel oil (Table 1, Figure 6). The highest concentrations of DRO/ORO were detected in a soil sample collected from 3.5 feet bgs in boring MW-13 advanced proximate to the western side of former Tank No. 8, which was used to store approximately 1.4 million gallons of fuel oil (Figure 6; Table 1). These data are consistent with the petroleum-contaminated soil observed at test pit 13 advanced during the 1984 subsurface investigation on the eastern side of former Chevron fuel oil Tank No. 8 (Figure 6).

DRO and ORO were detected at concentrations exceeding the MTCA Method A cleanup level in groundwater samples collected in 2011 and 2012 from monitoring well MW-17 on the western end of the Site and in monitoring well MW-12 on the southwestern portion of the Site in 2017, both of which are proximate to former Chevron Tank No. 8, which was used to store fuel oil (Figure 8). The combined concentration of dissolved DRO and ORO detected in the groundwater sample collected from monitoring well MW-15 on May 5, 2017 exceeded the MTCA Method A cleanup level; previous samples collected from monitoring well MW-15 in August 2011 and April 2012 were reported non-detect at the laboratory PQL.

[1] Table 1 presents tanks used on the Site. Tanks used by Standard Oil/Chevron 1922 through 1985 are identified by Tank Numbers (Tank Nos.) 8 through 26. Tanks used by Lakeside Industries 1985 to present are identified by area (e.g. Asphalt Tank Farm), and Tank Nos. 1 and 2.

Groundwater samples collected from the remaining monitoring wells in the west Site source area were reported either non-detect at the laboratory PQL or less than the MTCA Method A cleanup level for DRO and ORO.

4.4.2.3 Southeast Diesel and Oil Source Area

A third source area containing DRO and ORO at concentrations exceeding MTCA Method A soil and groundwater cleanup levels was identified in the southeastern portion of the Site, which is commingled with the GRO source in this area. The presence of DRO and ORO in this source area is bounded by borings B46 through B48 to the north; borings B50 and B51 to the east; borings B45 and B54 to the west, and boring B52 and the Chehalis River to the southeast and south, respectively (Figure 6).

DRO and ORO were detected in groundwater at concentrations exceeding MTCA Method A cleanup levels in monitoring wells MW-18 through MW-20. This area is down-gradient of former Chevron AST No. 18, which was used to store approximately 900,000 gallons of light fuel oil and was proximate to numerous former product conveyance pipes used by Chevron (Figure 2). These data are consistent with the petroleum-contaminated soil observed at test pit 3 advanced during the 1984 subsurface investigation (Figure 8).

4.4.3 Polycyclic Aromatic Hydrocarbons

Selected soil and groundwater samples collected at the Site were tested for the presence of PAHs. Tables 4 and 8 provide summaries of the PAH analytical results for soil and groundwater samples, respectively. PAHs are commonly found as constituent compounds within petroleum hydrocarbon fuels, and the PAHs that were reported in Site soil and groundwater samples were consistent with that interpretation.

In general, PAHs were reported at low concentrations less than MTCA cleanup levels in the soil samples analyzed. 2-methylnapthalene and 1-methylnapthalene were reported at concentrations of 230 and 120 mg/kg, respectively, in the soil sample collected from boring B9 at a depth of 4 feet bgs (Table 4). These naphthalene-related compounds exceed the MTCA Method A soil cleanup level for naphthalene of 5 mg/kg. The soil sample collected from boring B9 containing methylnaphthalenes also had relatively high DRO and ORO concentrations, consistent with the PAHs being part of a fuel hydrocarbon mixture.

Ecology recommends evaluating environmental concentrations of carcinogenic PAHs using a total toxic equivalent concentration that is using calculated using the toxicity equivalency factor methodology developed by EPA (Ecology 2015). The toxic equivalent concentration reported for soil samples collected from borings B1, B8, B9, and B14 exceeded the MTCA Method A soil cleanup level. DRO and ORO also were detected at concentrations that exceeded MTCA cleanup levels in soil samples collected from borings B1, B8, B9, and B14. Carcinogenic PAHs were reported non-detect at the laboratory PQL in soil samples collected from depths of 14 to 19 feet bgs in the samples collected from borings B55 through B61 in 2017.

Groundwater samples from monitoring wells MW-4, MW-5, MW-6, MW-7, MW-9, and MW-12 were analyzed for PAHs. PAHs were not detected at concentrations exceeding MTCA Method A cleanup levels.

Based on the consistent association of PAHs with elevated concentrations of DRO and ORO in soil, DRO and ORO are considered indicator contaminants for the presence of PAHs that will be used to guide environmental decision-making at the Site.

4.4.4 Metals

Two soil samples collected from the Site contained metals at reported concentrations exceeding their respective MTCA Method A cleanup levels (Table 5). The soil sample collected at 4 feet bgs from boring B3 in the central source area contained arsenic, cadmium, lead, and mercury at concentrations exceeding MTCA cleanup levels. Lead was detected at a concentration of 1,500 mg/kg in the soil sample collected from boring B3 at a depth of 4 feet bgs. The soil sample from boring B3 at a depth of 4 feet bgs also contained the highest reported concentration of GRO and benzene at the Site, in addition to the metals (Table 3). The association of the high reported lead concentration, GRO, and benzene in soil at the boring B3 location demonstrates that the lead is likely associated with a release of leaded gasoline from former Chevron gasoline Tank No. 16 (Figure 5).

Arsenic was detected at a concentration of 46 mg/kg in a soil sample collected from boring MW-9 at a depth of 3 feet bgs, which exceeds both the MTCA Method A cleanup level and the natural background concentration for arsenic in soil. Detected concentrations of cadmium, chromium, and lead in the soil sample collected from boring MW-9 at a depth of 3 feet bgs were consistent with Washington State natural background concentrations for metals in soil. Because this soil sample did not have any compounds other than metals reported at concentrations suggesting Site-related contamination at this location and the concentrations of metals other than arsenic are within the expected naturally occurring range, the arsenic present also is likely naturally occurring.

Groundwater samples from monitoring wells MW-4, MW-5, MW-6, and MW-9 were analyzed for metals. With the exception of barium, all other metals were reported non-detect at the laboratory PQL (Table 9). Barium was detected at a maximum concentration of 140 µg/l, which is less than the National Primary Drinking Water Standard Maximum Contaminant Level of 2,000 µg/l.

4.5 TERRESTRIAL ECOLOGICAL RISK EVALUATION

A TEE is required by WAC 173-340-7490 at any site where there has been a release of a hazardous substance to soil. The regulation requires that one of the following actions be taken:

- Documenting a TEE exclusion using the criteria presented in WAC 173-340-7491;
- Conducting a simplified TEE in accordance with WAC 173-340-7492; or
- Conducting a site-specific TEE in accordance with WAC 173-340-7493.

The Site is excluded from a TEE because the preferred cleanup alternative meets the requirements of WAC 173-340-7491(1)(b). Specifically, all residual contaminated soil will be covered by physical barriers (such as buildings or pavement) that prevent exposure to plants and wildlife, and institutional controls will be used to manage said contamination. No further consideration of terrestrial ecological impacts is required under MTCA. VCP TEE forms documenting the exclusion are provided in Appendix F.

5.0 CONCEPTUAL SITE MODEL

This section provides a summary of the conceptual site model derived from the results of the RI conducted at the Site. Included in this section is a discussion of the COCs, confirmed and suspected source areas, affected media, contaminant fate and transport characteristics of the released hazardous substances, and a preliminary exposure assessment. The conceptual site model is used as a basis for developing technically feasible cleanup alternatives and selecting a preferred cleanup action in accordance with applicable MTCA regulations.

5.1 CONSTITUENTS OF CONCERN

The Site has been operated as a hot-mix asphalt batch plant since 1985 by Lakeside Industries but was owned and operated by Chevron USA, Inc. as a bulk fuel facility between 1922 and 1985. Historical bulk fuel facility operations by Chevron between 1922 and 1985 likely included off-loading of fuel from barges, and storage and distribution of various petroleum products. Features identified as part of the operational history of the Site include numerous ASTs with an estimated total storage capacity exceeding four million gallons, aboveground product piping, fuel loading racks, a barrel steamer, wash racks, and storage sheds (Figure 2). Lakeside Industries capped the entire Site with asphalt in 1985. The COPCs included in the RI as defined in the Work Plan were based on the historical uses of the property.

The COCs that will be considered in the development of cleanup action alternatives for the Site are those COPCs confirmed to be present at concentrations that exceed the preliminary screening levels identified in the RI. Preliminary screening levels for the RI are the MTCA Method A and B cleanup levels for soil and groundwater. The COCs identified for the Site are provided in Section 6.2, Constituents of Concern, and the corresponding preliminary cleanup levels are provided in Section 6.5, Cleanup Standards. Soil and groundwater have been confirmed as the only affected media at the Site.

5.2 CONFIRMED AND SUSPECTED SOURCES OF COCS

The concentrations of GRO, DRO, ORO, and associated petroleum compounds detected in soil and groundwater are attributed to releases associated with the long-term operation of the bulk fuel storage and distribution facility by Chevron at the property. The 1984 Hydrogeologic Report concluded that the results of the investigation indicated that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron prior to Lakeside Industries acquisition of the Site in 1985. The identified distribution of COCs at the Site indicates that the sources are likely the result of multiple releases during Chevron's prior operations of the bulk fueling facility.

A minor spill of diesel fuel during Lakeside's operations occurred on October 3, 1989 as a result of overfilling of an AST within the containment area on the western side of the Site. The spill report filed for the incident indicated that a quantity of diesel fuel ranging from 50 to 100 gallons was released to the ground surface and affected surface soil in a localized area on and adjacent to the property. According to Ecology records, the cleanup of the diesel fuel and excavation of

affected shallow surface soil were completed on the same day, including backfilling the excavated area with clean fill.

Confirmed sources of COCs released to the environment at the Site that were identified during the RI include:

- Confirmed GRO/benzene source area in the central portion of the Site comprises a broad area of shallow soil contamination caused by surface releases from former Chevron ASTs and associated product conveyance piping, including but not limited to former Chevron Tank Nos. 14 and 16 used to store gasoline with a combined total storage capacity of over 1,000,000 gallons, former Chevron Tank Nos. 24 through 26 in the northeastern portion of the Site, the former garage, the former fuel loading rack, and/or wash racks operated by Chevron (Figure 5; Table 1). These data are consistent with the petroleum-contaminated soil observed at test pits 4 through 9, and 11, which were advanced during the 1984 subsurface investigation proximate to the former Chevron Tanks No. 14 and No. 16 (Figure 5).
- Confirmed GRO/benzene source area in the southeastern portion of the Site comprises a localized area of soil and groundwater contamination approximately centered on monitoring well MW-18 that is attributable to releases associated with the north-adjacent former Chevron product conveyance piping and/or prior operation of the two eastern-most former gasoline storage tanks east of Tank No. 18 (Figures 2, 5, and 7). These data are consistent with the petroleum-contaminated soil observed at test pit 3, which was advanced during the 1984 subsurface investigation proximate to the former Chevron product conveyance piping in this source area (Figures 2 and 5).
- Confirmed GRO/benzene source in the south-central portion of the Site proximate to boring B57 comprises an isolated volume of shallow soil contamination at approximately 9 feet bgs proximate to the former Chevron Tank No. 12, which was used to store gasoline.
- Confirmed DRO/ORO source area in the central portion of the Site comprises a broad area of shallow soil contamination attributable to surface releases from multiple ASTs and associated product conveyance piping formerly used by Chevron to store diesel, light fuel oil, and distillates; the former barrel wash area; the former fuel loading rack; former garage buildings; and/or wash racks shown on Figure 6. These data are consistent with the petroleum-contaminated soil observed at test pits 4 through 9, and 11, which were advanced during the 1984 subsurface investigation proximate to this source area (Figure 6).
- Confirmed DRO/ORO source area in the western portion of the Site comprises an area of shallow soil contamination attributable to surface releases from the operation by Chevron of the former boiler room and/or operation of former ASTs and associated product conveyance piping, including Tank Nos. 8 and 9 used to store fuel oil with capacities of 1,430,000 and 36,000 gallons, respectively (Figure 6; Table 1). These data are consistent with the petroleum-contaminated soil observed at test pit 13 advanced during the 1984 subsurface investigation on the eastern side of former Chevron fuel oil Tank No. 8 (Figure 6).
- Confirmed DRO/ORO source area in the southeastern portion of the Site comprises an area of shallow soil and groundwater contamination proximate to monitoring well MW-18

(Figures 6 and 8). Contamination in this area is attributable to surface releases from the operation of the former product conveyance piping by Chevron in the southeastern portion of the Site and/or prior operation of Tank No. 18 that was used to store light fuel oil. These data are consistent with the petroleum-contaminated soil observed at test pit 3, which was advanced during the 1984 subsurface investigation proximate to the former Chevron product conveyance piping in this source area (Figures 2 and 5).

5.3 CONTAMINANT FATE AND TRANSPORT

The following potential routes of migration of the COCs are considered for development of the cleanup action alternatives in the FS:

- Leaching from soil to groundwater;
- Lateral and vertical transport in groundwater;
- Discharge from groundwater to surface water and/or sediment;
- Migration from soil to surface water and/or sediment; and
- Volatilization from soil vapor, soil, and groundwater to ambient air.

The releases of COCs to soil have migrated through the vadose zone by a combination of gravity and infiltration of precipitation. With the exception of one low-level detection of benzene, COCs detected at concentrations exceeding screening levels are limited to depths ranging from 2 to 9 feet bgs within the fill layer at the Site. The impact to the shallow groundwater-bearing zone is limited and groundwater screening level exceedances were detected only in monitoring wells MW-1 in the east-central portion of the Site; monitoring wells MW-6 and MW-7 in the central portion of the Site; monitoring wells MW-11, MW-12, and MW-17 adjacent to the AST containment area and proximate to former Chevron Tank No. 8 in the western portion of the Site; and monitoring wells MW-18 through MW-20 in the southeastern portion of the Site. Based on the results of the RI, migration of contaminated soil to surface water and/or sediment in the Chehalis River along the southern Site boundary has not occurred. Potential future upset conditions such as a 100-year storm event or liquefaction and mobilization during an earthquake causing mass erosion of the river bank and subsequent mobilization and migration of contaminated soil along the southern Site boundary to surface water and/or sediment have been evaluated and incorporated into the FS to address this potential route of migration at the Site.

During the 2017 groundwater monitoring and sampling event, combined concentrations of DRO and ORO slightly exceeding the MTCA Method A cleanup level were detected for the first time in monitoring well MW-15 in the western portion of the Site. The groundwater flow direction of the shallow groundwater-bearing zone is generally to the south toward the Chehalis River. The western half of the southern Site boundary is bounded by a concrete retaining wall that extends to 4 feet bgs and is keyed into the underlying native silt, which is present to a depth of at least 20 feet bgs, the maximum depth explored during the RI (Figure 3). Supplemental Site characterization sampling in 2017 demonstrated that COCs are not present at concentrations exceeding MTCA Method A cleanup levels in the native silt underlying the Site.

Based on the findings of the 2011 tidal study, the retaining wall present on the western half of the Southern Site boundary and native silt underlying the entire Site act to prevent or substantively limit hydraulic communication between the shallow groundwater-bearing zone on the Site and the tidally influenced Chehalis River. Monitoring wells MW-15 and MW-17 are located outside and west of the concrete retaining wall, and monitoring wells MW-18 through MW-20 are east of the retaining wall. No sheen or other evidence of seepage of COCs attributable to the Site into the Chehalis River has been observed during evaluation of this potential route of migration during multiple monitoring events. Further, the 2011 tidal study confirmed Site groundwater flow, gradient, and elevation are not influenced by Chehalis River water levels. Currently, the entire site is paved with asphalt and/or concrete building slabs, which provide a physical barrier to potential soil vapors volatilizing to ambient and/or indoor air.

5.4 EXPOSURE ASSESSMENT

The following sections present the evaluation and conclusions pertaining to the potential human health and ecological risk at the Site. This section identifies current and potential future exposure scenarios that will assist in the selection of appropriate final cleanup levels and a final cleanup action alternative.

5.4.1 Soil Pathway

The exposure pathways for shallow soil include direct contact and atmospheric transport via the soil to vapor pathway. The direct contact pathway includes direct contact (dermal contact and/or ingestion) with soil beneath the Site. The depth of contamination is less than 15 feet bgs, with the majority of contamination being present in the depth interval from 2 to 9 feet bgs within the fill layer at the Site. The entire site is currently paved with asphalt. As a result, direct contact with soil would require excavation activities to encounter levels of the COCs that could pose a human health risk. Since the entire Site is capped with asphalt, there currently are no direct exposure routes to terrestrial ecological receptors. However, the potential for future development of a soil exposure pathway through potential erosion and migration of contaminated soil to surface water and/or sediment in the adjacent Chehalis River proximate to the southern Site boundary could pose a human health and/or ecological risk. The future potential exposure scenarios considered in the FS, which potentially could cause mobilization and migration of contaminated media remaining in-place to surface water and/or sediment along the southern Site boundary, included flooding and mass erosion during a 100-year storm event or liquefaction and mobilization of shallow contaminated soil during an earthquake. The potential for future development of a soil to surface water and/or sediment exposure pathway at the Site was evaluated and is addressed in the preferred cleanup alternative through source removal excavation and containment by the installation of a sheet pile wall along the southern Site boundary.

5.4.2 Groundwater Pathway

Potential exposure pathways for groundwater include the direct contact pathway, which comprises both dermal contact and ingestion pathways, and transfer of groundwater contamination to surface water and/or sediment. Direct contact with groundwater would require excavation through the existing asphalt cover to encounter levels of COCs that could pose a human health risk. As

discussed above, there is no evidence that discharge of contaminated groundwater attributed to the sources identified on the Site to the Chehalis River is occurring. However, the potential for future development of groundwater to surface pathways through migration of contaminated groundwater and/or saturated soil proximate to the southern Site boundary could pose a human health and/or ecological risk.

There are no groundwater supply wells at or in the vicinity of the Site that are used for potable water supply. The 2016 Site hydraulic evaluation and observations made during monitoring well installation and development indicate subsurface hydraulic conductivity within the shallow groundwater-bearing zone is low and potential groundwater yield is less than 0.5 gallon per minute. Since there is no practical use of groundwater in the Site vicinity, an exposure pathway via groundwater ingestion is unlikely to present a potential risk to human health. The results of the hydraulic and tidal studies, including low hydraulic conductivity in the shallow aquifer, negligible groundwater influence as a result in changes to Chehalis River stage, and the absence of river-bank seeps, confirm that the groundwater to surface water pathway currently is not complete at the Site. The future potential exposure scenarios considered in the FS, which potentially could cause mobilization and migration of contaminated media remaining in-place to surface water and/or sediment along the southern Site boundary, included flooding and mass erosion during a 100-year storm event or liquefaction and mobilization of shallow contaminated soil during an earthquake. The potential for future development of a groundwater to surface water exposure pathway at the Site was evaluated and is addressed in the preferred cleanup alternative through containment by the installation of the proposed sheet pile wall along the southern Site boundary.

5.4.3 Soil Vapor Pathway

The concentrations of GRO and BTEX in shallow soil and groundwater at the Site are relatively low and limited in extent. Short-term exposure to vapors could result if future construction workers encounter contaminated soil and/or groundwater. Ecology guidance for evaluating soil vapor intrusion into structures (Ecology 2009) presents screening levels for groundwater and soil vapor that could result in vapor intrusion exposure risks. The presence of benzene concentrations in groundwater exceeding 24 µg/l beneath a building structure has the potential to result in adverse risk via vapor intrusion to indoor air. The benzene concentrations detected in groundwater ranged from 10 to 65 µg/l. However, there are no structures in which vapors could accumulate near the current localized areas of GRO and BTEX contamination. GRO and BTEX vapors entering the atmosphere would be rapidly diluted by ambient air, volatilized, and photodegraded to levels that are not anticipated to present an exposure risk to human health or the environment. Further, the proposed source removal excavations of the localized areas of GRO and BTEX contaminated soil exceeding MTCA Method A cleanup levels and the anticipated monitored natural attenuation of residual concentrations of GRO and BTEX will eliminate the potential vapor intrusion exposure pathway at the Site.

5.5 SUMMARY OF CONCEPTUAL SITE MODEL

Based on the results of the RI field program, historical information confirming releases of petroleum hydrocarbons to subsurface soil and shallow groundwater across the Site as a result of

Chevron's operation of the bulk fuel facility prior to Lakeside Industries' ownership, Lakeside Industries' operations and history of a minor spill, and Farallon's previous experience at similar project sites, the vast majority of source areas identified at the Site are consistent with multiple releases associated with the long-term operation of the former bulk fuel storage and distribution facility at the Site by Chevron. Chevron's operations at the Site included the storage and distribution of petroleum products in excess of 4,000,000 gallons for a period of over 60 years (Table 1). In comparison, Lakeside Industries' operations at the Site since 1985 have included relatively limited use of petroleum products (less than 80,000 gallons stored on the Site at any given time), of which the majority is specifically related to the hot-mix asphalt batch plant operations (Table 1). The petroleum products used by Lakeside Industries are stored and managed in discrete areas of the Site such as the Asphalt Tank Farm and Diesel Tank Farm, both of which include secondary containment to prevent releases to the subsurface. In addition, the entire Site was paved by Lakeside Industries in 1985 prior to commencing operations to prevent the infiltration of potential surface releases of petroleum products and/or stormwater runoff to the subsurface beneath the Site. Further, the 1984 Hydrogeologic Report concluded that the results of the investigation indicated that petroleum hydrocarbons had leaked into the ground during past operations of the facilities at the Site by Chevron (Figure 2; Appendix A).

Based on the available data, Farallon's opinion is that the vast majority of contamination present at the Site, including the source areas identified in Section 4.4, Soil and Groundwater Analytical Results, with concentrations of COCs exceeding MTCA Method A cleanup levels in both soil and the shallow perched groundwater-bearing zone, is the result of surface releases to the largely unpaved ground surface from ASTs, aboveground product piping, fuel loading racks, wash racks, the barrel steamer area, the boiler room, and/or the garage buildings during Chevron operations. Based on a review of available records the only spill identified during Lakeside Industries' period of operations was a minor spill of diesel fuel that occurred on October 3, 1989 as a result of overfilling an AST within the Diesel Tank Farm containment area on the western side of the Site, which according to Ecology records was cleaned up on the same day of the release.

Potential routes of migration of the COCs that may also have contributed to the observed distribution of contamination include leaching from soil to groundwater, and lateral and vertical transport in the shallow groundwater-bearing zone. The vertical retaining wall present along approximately half of the southern Site boundary and the presence of the native silt underlying the entire Site provide physical barriers mitigating the potential migration and discharge of contaminated soil and/or groundwater to surface water or sediments in the adjacent Chehalis River (Figure 3). Further, the lack of groundwater contamination exceeding cleanup levels within the identified source areas, with the exception of localized areas proximate to monitoring wells MW-1, MW-12 and MW-17, MW-6 and MW-7, and MW-18/MW-21, is consistent with an older, attenuating groundwater dissolved-phase plume (Figures 7 and 8; Table 7).

The confirmed GRO/benzene source area in the central portion of the Site comprises a broad area of shallow soil contamination caused by surface releases from former ASTs and associated product conveyance piping operated by Chevron, including but not limited to Tank Nos. 14 and 16 used to store gasoline with a combined total storage capacity of over 1,000,000 gallons, the former garage, the former fuel loading rack, and/or wash racks (Figure 5; Table 1).

The confirmed GRO/benzene source area in the southeastern portion of the Site comprises a localized area of soil and groundwater contamination approximately centered on monitoring well MW-18 that is attributable to releases associated with the north-adjacent former product conveyance piping and/or prior operation of the two eastern-most former gasoline storage tanks east of Tank No. 18 (Figures 2, 5, and 7). The confirmed GRO/benzene source area centered on boring B57 in the south-central portion of the Site comprises a small, isolated volume of shallow soil contamination between 9 and 14 feet bgs proximate to Chevron Tank No. 12, which formerly stored gasoline (Figures 2, 5, and 7).

The 1984 Hydrogeologic Report and the results of the RI confirm that release(s) of GRO/benzene occurred from the historical bulk fuel facilities operated by Chevron, including multiple ASTs used to store gasoline and the associated product conveyance piping in the northeastern and southeastern portions of the Site. Additional potential sources of the GRO/benzene releases in the northeast source area include the garage building, the fuel loading rack, and/or wash racks operated by Chevron that were located in the east-central portion of the Site (Figure 2).

The confirmed DRO/ORO source area in the central portion of the Site comprises a broad area of shallow soil contamination attributable to surface releases from multiple ASTs and associated product conveyance piping formerly used to store diesel, light fuel oil, and distillates; the former barrel wash area; the former fuel loading rack; former garage buildings; and/or wash racks operated by Chevron (Figure 6).

The confirmed DRO/ORO source area in the western portion of the Site comprises an area of shallow soil contamination attributable to surface releases from the operation of the former boiler room and/or operation of former ASTs and associated product conveyance piping operated by Chevron, including Tank Nos. 8 and 9 used to store fuel oil with capacities of 1,430,000 and 36,000 gallons, respectively (Figure 6; Table 1).

The confirmed DRO/ORO source area in the southeastern portion of the Site comprises an area of shallow soil and groundwater contamination proximate to the location of monitoring well MW-18 (Figures 6 and 8). Contamination in this area is attributable to surface releases from the operation of the former product conveyance piping in the southeastern portion of the Site and/or prior operation of Tank No. 18 that was used to store light fuel oil.

6.0 TECHNICAL ELEMENTS

This section provides a summary and discussion of the ARARs, COCs, affected media, and cleanup standards including cleanup levels and points of compliance. The conceptual site model and RI technical elements are used as a basis for developing technically feasible cleanup alternatives and selecting a preferred cleanup action in accordance with applicable MTCA regulations.

6.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

The primary ARARs related to the RI/FS for the Site include:

- MTCA, Chapter 70.105D of the Revised Code of Washington, and WAC 173-340;
- *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology 2016);
- Draft *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (Ecology 2010);
- Washington State Solid Waste Management Laws and Regulations, Chapter 70.95 of the Revised Code of Washington, WAC 173-351, and WAC 173-304;
- MTCA Cleanup Levels and Risk Calculations II Update;
- The Washington State Dangerous Waste Regulation, WAC 173-303;
- Water Quality Standards for Groundwater of the State of Washington (WAC 173-200);
- Water Quality Standards for Surface Waters of the State of Washington (WAC 173-201A); and
- Protection of Upper Aquifer Zones (WAC 173-154).

These primary ARARs are anticipated to be the most applicable to the RI/FS because they provide the framework for the remedial action, including applicable and relevant regulatory guidelines, cleanup standards, waste disposal criteria, references for additional ARARs, and standards for documentation of the remedial action.

Other applicable ARARs for the Site include:

- The Occupational Safety and Health Act, Part 1910 of Title 29 of the Code of Federal Regulations;
- Safety Standards for Construction Work, WAC 296-155; and
- Accreditation of Environmental Laboratories, WAC 173-50.

6.2 CONSTITUENTS OF CONCERN

The COCs are defined as the chemicals that were reported at concentrations exceeding applicable MTCA cleanup levels. Provided below are the COCs identified by medium of concern.

6.2.1 Soil

The COCs reported in RI soil samples at concentrations exceeding MTCA Method A cleanup levels include GRO, DRO, ORO, benzene, ethylbenzene, naphthalene compounds (identified as 1-methylnapthalene and 2-methylnapthalene), carcinogenic PAHs (quantified as a total toxic equivalent concentration), arsenic, cadmium, lead, and mercury. Therefore, these compounds have been retained as COCs for the Site.

6.2.2 Groundwater

The COCs reported in RI groundwater samples at concentrations exceeding MTCA Method A cleanup levels include GRO, DRO, ORO, and benzene. Therefore, these compounds have been retained as COCs for the Site.

6.3 CONFIRMED SOURCE AREAS

Based on review of the 1984 Hydrogeologic Report, historical chemical use and storage practices at the Site, and on evaluation of soil and groundwater analytical data, the confirmed source areas for the COCs have been identified as follows:

- Petroleum hydrocarbons and associated compounds (GRO, DRO, ORO, benzene, ethylbenzene, and PAHs) identified in soil and groundwater samples are suspected to have originated at former ASTs, USTs, and product pipelines associated with historical operation of the Site by Chevron as a bulk fuel facility.
- Lead identified in the soil sample collected from boring B3 at a depth of 4 feet bgs is likely associated with a release of leaded gasoline during Chevron's operations. Arsenic, cadmium, and mercury concentrations in the same soil sample also are suspected to be associated with a release of leaded gasoline. Arsenic, cadmium, chromium, and lead detected in the soil sample collected from boring MW-9 at a depth of 3 feet bgs likely are naturally occurring based on the concentrations reported.
- Specific and discrete leaks, spills, and/or equipment issues and incidents that resulted in the releases of petroleum hydrocarbons, related compounds, and potentially metals are unknown.

The COCs and affected media were investigated during the RI. The current distribution of Site COCs in soil and groundwater is consistent with the conceptual Site model described above. The areas with the highest COC concentrations are the source areas that have been delineated in the central portion of the Site, the western portion of the Site, and the southeastern portion of the Site.

Based on the RI data for the Site, the nature and extent of COCs have been sufficiently characterized to support an FS for the selection and design of a permanent and final cleanup action alternative protective of human health and the environment in full compliance with MTCA requirements.

6.4 AFFECTED MEDIA

Soil and groundwater have been confirmed as affected media of concern at the Site. GRO, DRO, ORO, benzene, ethylbenzene, naphthalene compounds, carcinogenic PAHs, arsenic, cadmium, lead, and mercury were reported at concentrations that exceeded the MTCA Method A cleanup levels in Site soil samples. GRO, DRO, ORO, and benzene have been identified at concentrations exceeding MTCA Method A cleanup levels in groundwater samples collected from monitoring wells at the Site.

Indoor air was assessed as a potential medium of concern because of the GRO and benzene detected in Site soil and groundwater samples. However, because of the relatively limited extent of benzene-affected soil, the lack of detected benzene concentrations and one low-level detection of GRO in groundwater within 100 feet of the occupied structure on the Site, the few current Site buildings, and the primarily outdoor nature of work conducted at the Site associated with the operation of an asphalt batch plant, indoor air has not been retained as a medium of concern at the Site.

Laboratory analytical results for groundwater samples collected from Site monitoring wells were used to delineate the extent of COCs in groundwater. Completion of the tidal study and field observations and monitoring conducted in the southeastern portion of the Site have shown that there is no hydraulic communication between the shallow water-bearing zone and the adjacent Chehalis River. Groundwater monitoring and sampling indicate that COCs at concentrations exceeding MTCA cleanup levels have not migrated off the Site, and that surface water of the Chehalis River is not a medium of concern for the Site.

6.5 CLEANUP STANDARDS

As defined in WAC 173-340-700, cleanup standards include establishing cleanup levels and the points of compliance at which the cleanup levels are to be attained. The cleanup standards for the Site have been established in accordance with WAC 173-340-700 through 173-340-760 to be protective of human health and the environment.

6.5.1 Cleanup Levels

The cleanup levels are the concentrations of COCs that are to be met for each medium of concern at the points of compliance defined for the Site. The preliminary cleanup levels for COCs in soil and groundwater are presented below.

6.5.1.1 Soil

The preliminary cleanup levels for soil at the Site are the MTCA Method A cleanup levels. The preliminary cleanup levels for the COCs in soil are:

- 30 mg/kg for GRO when benzene is present;
- 2,000 mg/kg for DRO and ORO combined;
- 0.03 mg/kg for benzene;
- 6 mg/kg for ethylbenzene;

- 5 mg/kg for naphthalene and related compounds;
- 0.1 mg/kg for total toxic equivalent PAHs;
- 20 mg/kg for arsenic;
- 2 mg/kg for cadmium;
- 250 mg/kg for lead; and
- 2 mg/kg for mercury.

6.5.1.2 Groundwater

The preliminary cleanup levels for groundwater at the Site are the MTCA Method A cleanup levels for groundwater. The preliminary cleanup levels for COCs in groundwater are as follows:

- 800 µg/l for GRO when benzene is present;
- 500 µg/l for DRO and ORO combined; and
- 5 µg/l for benzene.

6.5.2 Points of Compliance

The points of compliance are the locations at which preliminary cleanup levels for the COCs in each medium of concern must be attained to meet the requirements of MTCA and support issuance of a No Further Action determination from Ecology for the Site. The points of compliance for the Site were established in accordance with WAC 173-340-740(6) for soil, and WAC 173-340-720(8) for groundwater.

6.5.2.1 Soil

The point of compliance for soil for the Site was established in accordance with WAC 173-340-740(6) to be protective of the direct contact, groundwater, and vapor intrusion exposure pathways. Use of the standard point of compliance for soil throughout the Site is not possible because of the localized areas of petroleum contamination that will remain in soil following completion of the source removal excavations proposed under the preferred cleanup alternative selected in the FS.

The disproportionate cost analysis completed in the FS supports and confirms the use of a conditional point of compliance at the Site because the entire Site is covered with a physical barrier of pavement, concrete, and/or clean overburden preventing direct contact and effectively eliminating the soil vapor to indoor air exposure pathway. In addition, all remaining contamination anticipated in soil will be contained within the 8.6 acre-property comprising the Site. The conditional point of compliance for soil would be managed through the recordation of an Environmental Covenant on relevant portions of the Site. The disproportionate cost analysis is presented in Section 7.3.3, Disproportionate Cost Analysis.

6.5.2.2 Groundwater

The standard point of compliance for groundwater is defined as the uppermost level of the saturated zone extending vertically to the lowest depth that potentially could be impacted by the COCs throughout the Site. This groundwater interval consists of the shallow groundwater-bearing zone at the Site. As described in the preferred cleanup alternative selected in the FS, it is anticipated that the proposed source removal excavations and monitored natural attenuation will result in the attainment of MTCA cleanup levels for the shallow groundwater-bearing zone at the standard point of compliance in a reasonable restoration time frame.

7.0 FEASIBILITY STUDY

The purpose of the FS is to develop and evaluate cleanup action alternatives to facilitate selection of a preferred cleanup action at the Site in accordance with WAC 173-340-350(8). The FS is intended to provide sufficient information to select a preferred cleanup action under the Ecology VCP. The selected final cleanup action will be documented in a CAP to be prepared to guide the cleanup action at the Site.

The FS includes screening of potentially feasible remedial technologies and development of a range of Site-wide cleanup alternatives ranging from no additional cleanup action through a permanent Site-wide cleanup that achieves the cleanup standards identified in Section 6, Technical Elements, in the shortest possible restoration time frame without reliance on institutional or engineered controls. The cleanup alternatives are evaluated with respect to threshold and other requirements for cleanup actions set forth in MTCA.

This FS evaluates four cleanup alternatives according to criteria provided in MTCA (WAC 173-340-360[2], Minimum Requirements for Cleanup Actions). In accordance with WAC 173-340-350(8)(c)(ii), the FS includes one permanent cleanup action alternative, as defined in WAC 173-340-200, to serve as a baseline against which other alternatives are evaluated for the purpose of assessing whether the cleanup action selected is permanent to the maximum extent practicable.

The FS identifies a preferred cleanup alternative for the Site in conformance with WAC 173-340-360 through WAC 173-340-390. The preferred cleanup alternative is considered to present the highest degree of permanence and protectiveness considering current and potential future conditions to the maximum extent practicable according to the provisions of WAC 173-340-360(3)(e), Disproportionate Cost Analysis (DCA). The DCA uses a semi-quantitative procedure per WAC 173-340-360(3)(e)(ii), and guidance outlined in Ecology (2009) to compare the cost of implementation with the environmental benefit to be achieved and to identify which permanent cleanup alternative is more practicable under MTCA.

7.1 EVALUATION OF FEASIBLE REMEDIATION TECHNOLOGIES

Farallon performed a preliminary screening of potential remediation technologies typically applied to sites contaminated with the same, or comparable, COCs in order to eliminate technologies that did not meet the minimum requirements of implementability, effectiveness, and cost and to identify those technologies that would be most favorable for application considering current and potential future conditions at the Site.

Response actions, cleanup technologies, and process options considered potentially effective and implementable in the context of Site physical and chemical conditions are presented in Table 10. The technologies were evaluated primarily with respect to implementability and effectiveness. The technologies were also evaluated with respect to cost relative to other process options considered for the affected environmental media (e.g., soil and groundwater). Relative cost is based on published sources and professional judgment, and is used to further distinguish technologies with similar implementability and effectiveness. If a technology is equally implementable and effective,

the lower relative cost technology is preferred. Technology process options were evaluated and then screened using a scoring methodology from 0 (least favorable) to 3 (most favorable). Technology evaluation scores were summed, enabling a general ranking of technologies for application at the Site.

Treatment technologies considered included in-situ and ex-situ physical, chemical, and biological techniques. Containment technologies considered include physical barriers such as constructed covers or caps, and vertical barriers such as a sheet pile barrier, the existing wall, or a slurry wall. Source removal by excavation, soil disposal at an approved landfill, institutional controls, and engineered controls were also considered.

Conditions at the Site that influence the evaluation of implementability and effectiveness include:

- Active Site operation as a hot-mix asphalt batch plant;
- Shallow groundwater conditions;
- Proximity to the Chehalis River at the southern Site boundary;
- Massive concrete foundations at the locations of the former ASTs;
- Presence of subsurface utilities;
- Fine-grained lithology of low hydraulic transmissivity limiting potential effectiveness of injection and extraction in-situ treatment technologies; and
- Multiple source areas with commingled COCs adjacent to existing Site structures.

7.1.1 Retained Technologies

Table 10 provides results of the implementability, effectiveness, and cost evaluation for a wide range of cleanup technologies, and identifies those most favorable for Site conditions to be retained for inclusion in Site-wide cleanup alternatives in Section 7.2, Cleanup Action Alternatives. Cleanup alternatives were then evaluated according to MTCA threshold and other requirements defined in WAC 173-340-360(2) and 173-340-370 in Section 7.3.2, Evaluation Results. The highest ranked technologies to be incorporated into Site-wide cleanup alternatives are summarized below.

7.1.1.1 Institutional and Engineered Controls

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or that could result in adverse exposure to hazardous substances at the Site and are implemented in accordance with WAC 173-340-440. While institutional controls are non-engineered measures, engineered controls refer to components of containment and/or other systems that are designed and constructed to prevent, or limit the movement of, or the exposure to, hazardous substances.

Institutional and engineered controls could include: an environmental covenant prohibiting the domestic use of shallow groundwater at the Site; provisions for long-term compliance monitoring of groundwater to demonstrate that natural attenuation is occurring;

implementation and ongoing maintenance of physical barriers to mitigate direct contact with hazardous constituents; and an environmental media management plan to govern the handling of impacted media during future maintenance or development projects. Specifically, to meet the expectations described in WAC 173-340-370, installation of the proposed environmental sheet pile wall provides an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels to the maximum extent practicable that will remain in-place proximate to the southern Site boundary adjacent to the Chehalis River. Institutional and engineered controls can be effective protective measures preventing exposure to impacted soil and groundwater and are considered to be readily implementable at the Site at a lower cost than active cleanup technologies.

7.1.1.2 Monitored Natural Attenuation

Natural attenuation relies on natural processes to attenuate concentrations of hazardous constituents in soil and/or groundwater. While natural attenuation occurs at most contaminated sites, there are optimal subsurface conditions that must exist to effectively and completely remediate a site within a reasonable restoration time frame.

Monitored natural attenuation (MNA) is the process of monitoring these conditions to ensure that natural attenuation continues to occur until remediation is complete. MNA is considered an effective means of reducing risk to human health and the environment at some sites and especially when risk of exposure is low and when a longer restoration time frame is acceptable. MNA is considered a potentially applicable component for cleanup of soil and groundwater at the Site.

7.1.1.3 Soil Technologies

Excavation and Landfill Disposal

Excavation of impacted soil and disposal at an appropriately engineered and permitted facility is an effective approach to reducing risk to human health and the environment. Excavation and landfill disposal employs standard construction practices and readily-available construction and earthmoving equipment. Subtitle D-permitted landfills are designed to securely manage non-hazardous soil over the long term. Excavation may require shoring to protect existing structures or alternatively demolishing existing structures and rebuilding them upon completion of cleanup.

Dewatering is required when excavating below groundwater. Excavation wastewater may require treatment prior to discharge or disposal off of the Site sufficient to satisfy discharge permit requirements (see below). Excavations would be backfilled with suitable imported material placed according to geotechnical specifications required for resurfacing according to future site use plans. Excavation and landfill disposal of soil from the selected source areas is considered to be a quick, effective, and implementable technology at the Site.

Physical Barriers and Constructed Covers

Physical barriers such as pavement covers or caps over contaminated areas are considered effective for limiting exposure to impacted soil and for reducing rainwater infiltration that could mobilize soil contamination from soil to groundwater. Capping systems consist of impervious surfaces such as floor slabs or exterior paved surfaces suitable for vehicle traffic and a range of other uses. Capping systems typically require periodic inspections, maintenance, and implementation of protective measures when breached for subsurface maintenance or construction activities. Physical barriers and constructed cover are considered implementable and effective technologies for application at the Site.

7.1.1.4 Groundwater Technologies

Physical Barriers and Constructed Covers

Surface caps to minimize infiltration into contaminated soil are considered effective at reducing the volume and movement of contaminated groundwater. Capping systems for reducing infiltration may include impervious surfaces such as floor slabs, exterior paving, and/or other surface improvements that reduce infiltration and physical disturbance of the subsurface. Capping systems typically require periodic inspections, maintenance, and implementation of protective measures when breached for subsurface maintenance or construction activities. Physical barriers and constructed cover are considered implementable and effective technologies for application at the Site.

Source Containment

Vertical subsurface barriers, such as a sheet pile barrier system or retaining wall system between the operational area of the Site and the Chehalis River, are considered to be effective at limiting migration of contaminated groundwater and/or soil. The existing concrete retaining wall, which is keyed into the underlying silt at the Site, currently is acting as a barrier between shallow groundwater and the Chehalis River along the western half of the southern Site boundary (Figure 3). However, the eastern half of the southern Site boundary, including the confirmed source area in the southeastern portion of the Site proximate to monitoring well MW-18 attributed to releases from former Chevron operations, currently does not have a vertical barrier system such as the concrete retaining wall to prevent potential migration of contaminated media to surface water (Figures 5 through 8). Future potential exposure scenarios, which potentially could cause mobilization and migration of contaminated media remaining in-place to surface water and/or sediment along the southern Site boundary, include flooding and mass erosion during a 100-year storm event or liquefaction and mobilization of shallow contaminated soil during an earthquake.

A sheet pile barrier wall can be readily installed along the entire length of the affected portion of the Site with concentrations of COCs exceeding cleanup levels in soil and/or shallow groundwater without disturbing the existing retaining wall, and would provide a more permanent measure of protection since sheet piles can be driven deeper into the underlying silt and can be extended along the entire length of the shoreline past the existing

retaining wall with minimal other disturbance to the Site. Installation of the sheet pile wall meets the expectations specified in WAC 173-34-370 requiring an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels that will remain in-place proximate to the southern Site boundary adjacent to the Chehalis River to the maximum extent practicable.

Disposal to Sanitary Sewer

Contaminated groundwater removed from the subsurface or excavations that meets local discharge requirements may be discharged to the sanitary sewer. Discharge to the sanitary sewer is an implementable and effective technology for managing limited quantities of contaminated groundwater at the Site.

7.1.2 Rejected Technologies

Table 10 also identifies cleanup technologies that have been eliminated from further consideration for application at the Site because they are not amenable, or are less suited to Site-specific conditions, than other technologies and/or performed less well in the FS when evaluated with regard to implementability, effectiveness, and/or cost considerations.

7.1.2.1 In-Situ Technologies

In-situ technologies rely on injection and distribution of materials in the subsurface or changing subsurface conditions through application of heat, air, or other reagents to remediate COCs. These technologies include bioventing, enhanced bioremediation, chemical oxidation, soil flushing, soil vapor extraction, and thermal remediation (Table 10). Farallon's analysis indicates that the fine-grained lithology and low transmissivity of the subsurface soil at the Site will make implementation of in-situ treatments more difficult and more costly than other remedial technologies.

In-situ technologies utilizing injections or thermal treatments will require dense treatment point arrays, potentially multiple rounds of treatment, and may damage underground utilities. Furthermore in-situ technologies are also most effective remediating lighter fraction petroleum COCs such as GRO and BTEX, and are less effective at remediating heavier fraction petroleum COCs such as DRO, ORO, and cPAHs.

Because most GRO exceedances are comingled with heavier fraction petroleum hydrocarbons that also exceed MTCA cleanup levels, soil or groundwater treated in-situ for GRO and BTEX would likely require additional cleanup actions to address residual heavy fraction petroleum hydrocarbon contamination. This approach of partial treatment for GRO and BTEX followed by separate cleanup actions to address DRO and ORO would perform much less favorably in terms of technical feasibility, practicability, and cost effectiveness than selecting a technology that comprehensively treats all petroleum hydrocarbons present. Therefore, in-situ treatments for soil and groundwater were not carried forward in the FS.

7.1.2.2 Ex-Situ Technologies

Ex-situ technologies remove contaminated media for treatment. Ex-situ technologies include biopiles or bioreaction, slurry phase biological remediation, incineration, thermal desorption, air stripping, advanced oxidation processes, and disposal at licensed facilities. Farallon's analysis eliminated several ex-situ technologies including biological, physical, and chemical treatments that were determined to be difficult to implement at the Site, less effective at achieving cleanup levels within a reasonable timeframe, and/or less cost effective than other available technologies. Specific ex-situ technologies that were not carried forward in the FS are identified in Table 10.

7.1.2.3 Soil Improvement Containment Systems

Construction of a slurry wall to contain groundwater on the Site was not carried forward in the FS (Table 10). Installation of a slurry wall may compromise the existing concrete retaining wall along the western half of the southern Site boundary that is already acting as a barrier between contaminated Site groundwater and/or soil and the Chehalis River (Figure 4). A completed slurry wall is not expected to perform as well as a sheet pile wall to contain groundwater, while requiring significantly more ground disturbance to install, which could create potential preferential pathways for migration of contaminated Site groundwater and/or soil to surface water or sediment in the Chehalis River.

7.2 CLEANUP ACTION ALTERNATIVES

The most favorable cleanup technologies derived from the technology screening were used to develop a suite of Site-wide cleanup action alternatives (herein referred to as Cleanup Alternatives) for cleanup of the affected media of concern at the Site. Based on Site-specific conditions, the most practicable cleanup approach for the Site will include a limited source removal action, containment, institutional and engineered controls, and long-term monitoring to confirm that natural attenuation of residual COCs is occurring in soil and groundwater. Institutional and engineered controls will be required where COCs remain in media at concentrations exceeding applicable preliminary cleanup levels following completion of active remediation.

A total of four cleanup alternatives were developed for the Site:

- Cleanup Alternative 1: No Action;
- Cleanup Alternative 2: Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation;
- Cleanup Alternative 3: Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls; and
- Cleanup Alternative 4: Complete Excavation of Soil Exceeding Preliminary Cleanup Levels.

A description of the components of each cleanup alternative follows. Summary cost estimates developed for the four cleanup alternatives are provided in Table 11 with more detail provided in Table 12.

7.2.1 Cleanup Alternative 1—No Action

The No Action alternative assumes that no additional remedial action will occur at the Site. No additional monitoring will occur, and no protective institutional or engineered controls will be implemented. While existing paved surfaces, buildings, and the retaining wall functioning as containment measures would remain in-place for the foreseeable future, there will be no restrictions to their removal, maintenance, modification, or replacement. COCs would remain in soil and groundwater at concentrations exceeding preliminary cleanup levels until attenuated naturally over the long term, but no monitoring would be conducted to evaluate and document the attenuation process.

Cleanup Alternative 1 is retained for evaluation in the FS as adverse risk to terrestrial ecological receptors has not been identified with current Site conditions and the potential for adverse risk from direct contact exposure to COCs by human receptors is considered to be low under current Site conditions.

7.2.1.1 Implementation

Residual concentrations of COCs would be contained beneath the existing pavement surfaces and buildings for the foreseeable future and contamination migration from soil to groundwater and via groundwater transport would be limited by the existing impervious surfaces by the existing retaining wall keyed into the underlying native silt and, to a lesser extent, by the subsurface stratigraphy in the area east of the retaining wall. However, since the retaining wall is not laterally contiguous on the eastern portion of the Site where COCs are present in soil and shallow groundwater at concentrations exceeding the MTCA cleanup levels, future human health and/or ecological exposure could occur along the southern, down-gradient Site boundary under upset conditions. For example, potential flooding and/or bank erosion caused by a 100-year storm event or earthquake could cause migration of contaminated soil and/or groundwater remaining in-place to surface water or sediment in the adjacent river. Groundwater at the Site currently is not used, and future use of shallow groundwater is not anticipated at the Site. While the Site will be operated for the foreseeable future as a hot-mix asphalt batch plant, it is possible that the Site could be redeveloped by the current property owner, or another future property owner, for other uses according to zoning, shoreline, and other local, state, and federal rules and regulations. Future human health and/or ecological exposure could occur during future excavation activities and/or during redevelopment.

7.2.1.2 Time Frame and Estimated Cost

There is no time frame associated with Cleanup Alternative 1. The cost for implementing Cleanup Alternative 1 is $0.

7.2.2 Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation

Cleanup Alternative 2 assumes environmental protection from exposure to COCs remaining above preliminary cleanup levels, until attenuated naturally, would be realized by use of institutional and engineered controls and containment measures. Containment would be realized with the existing

impervious surfaces, the existing retaining wall keyed into the underlying native silt, and by the subsurface stratigraphy in the area east of the retaining wall.

A sheet pile barrier with sealed seams would be installed along the upland face of the existing retaining wall to a depth of up to 25 feet and would extend about 300 feet beyond the eastern end of the existing retaining wall to encompass the entire portion of the southern Site boundary where COCs remain at concentrations exceeding preliminary cleanup levels adjacent to the Chehalis River. The full length of the proposed sheet pile wall would be approximately 700 feet. The sheet pile barrier system would include installation of a drainage system along the northern (up-gradient) face of the barrier at the interface of the fill layer and the underlying silt to reduce hydrostatic pressure build-up behind the sheet pile barrier. The sheet pile barrier system would address current exposure pathways and future potential exposure scenarios, including flooding and mass erosion during a 100-year storm event or liquefaction and mobilization of shallow contaminated soil during an earthquake.

Groundwater discharge from the drainage system would be treated above ground using granular activated carbon prior to discharge to the municipal sanitary sewer system at the Site. COCs would remain in soil and groundwater at concentrations exceeding preliminary cleanup levels until attenuated naturally over the long term. A groundwater monitoring program would be implemented to evaluate the efficacy of natural attenuation and to document trends of COC concentrations and geochemical parameters affecting attenuation.

7.2.2.1 Implementation

Institutional and engineered controls would be implemented per WAC 173-340-440 and would include an environmental covenant recorded on the property deed. The environmental covenant would include the following:

- A Compliance Monitoring Plan and an associated SAP for performance, protection, and confirmational monitoring per WAC 173-340-410.
- A groundwater restriction placed on use of shallow groundwater for domestic use.
- Stipulated requirements for inspections and maintenance of the existing cover and retaining wall systems at an 18-month frequency for 5 years.
- An approximately 700-foot-long sheet pile wall installed and driven into the underlying silt to a total depth of approximately 25 feet bgs to provide permanent containment to the maximum extent practicable of contaminated soil and/or hydraulic control of groundwater exceeding MTCA cleanup levels along the southern boundary of the Site adjacent to the Chehalis River. Installation of the sheet pile wall meets the expectations specified in WAC 173-34-370 requiring an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels to the maximum extent practicable that will remain in-place proximate to the southern Site boundary adjacent to the Chehalis River. For purposes of this FS, the total installed area of sheet pile shoring is approximately 2,000 square feet.

- Stipulated monitoring and maintenance requirements for testing up to 15 groundwater monitoring wells for indicator COCs and natural attenuation geochemical parameters at an 18-month frequency for 5 years and for evaluation of natural attenuation. The environmental covenant will reference and require the implementation of a Groundwater Monitoring Plan, including a Sampling and Analysis Plan (SAP) developed per WAC 173-340-810.
- Implementation of an Environmental Media Management Plan (EMMP) to govern the handling of potentially contaminated environmental media during future redevelopment or utility work, as necessary, and including general worker protective measures. The EMMP will include a SAP developed per WAC 173-340-810.

7.2.2.2 Time Frame and Estimated Cost

The sheet pile barrier and drainage modification elements of Cleanup Alternative 2 will be constructed over the course of 1 to 2 months. Other elements of Cleanup Alternative 2 will be implemented over the course of 5 years. The environmental covenant to be attached to the property deed would be developed over the course of up to 6 months and institutional and engineered controls will be implemented until COC preliminary cleanup levels have been demonstrated to have been achieved. For the purposes of this FS, monitoring and maintenance activities are assumed to be completed in Year 5.

The estimated cost to complete Cleanup Alternative 2 is summarized below from Table 12:

Capital Cost:	$1,135,000
Ongoing Periodic and Future Costs:	$194,800
Total:	$1,330,000
	(Estimated range: $931,000 to $2,000,000)

7.2.3 Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls

Cleanup Alternative 3 assumes environmental protection from exposure to COCs remaining at concentrations exceeding preliminary cleanup levels would be realized by removal of soil in the three primary areas where residual concentrations of COCs in soil and groundwater are confirmed at concentrations that exceed preliminary cleanup levels and can be readily accessed to perform simple source removal excavations. Cleanup Alternative 3 also includes use of institutional and engineered controls, containment measures, and monitored natural attenuation as described above for Cleanup Alternative 2.

7.2.3.1 Implementation

Institutional and engineered controls would be implemented per WAC 173-340-440, and would include an environmental covenant recorded on the property deed. Institutional and engineering controls would be consistent with those implemented under Cleanup Alternative 2, including installation of the sheet pile barrier and associated drainage control system. It is assumed that the environmental covenant would include the elements described under Cleanup Alternative 2.

Assumptions for source area excavation include the following:

- A Compliance Monitoring Plan and an associated SAP will be prepared for performance, protection, and confirmational monitoring per WAC 173-340-410.
- Prior to excavation, surface paving in localized areas will require removal to the extent practicable. For purposes of the FS, it is assumed that this will entail removal of about 5,400 square feet of asphalt.
- Soil will be excavated to depths up to approximately 12 feet bgs to remove soil with concentrations of COCs exceeding MTCA cleanup levels in the three defined excavation areas shown on Figure 9:
    - West Area—The West Area is proximate to boring B40 and monitoring well MW-17 where DRO and ORO were detected in soil and groundwater samples at concentrations exceeding preliminary cleanup levels;
    - Central Area—The East-Central Area is proximate to monitoring well MW-1 where benzene was detected in a soil sample and benzene and GRO were detected in groundwater samples at concentrations exceeding preliminary cleanup levels; and
    - Southeast Area—The Southeast Area is proximate to borings B45, B50, B53, and B61 and monitoring wells MW-18 through MW-21 where GRO, DRO, ORO, and benzene were detected in soil and groundwater samples at concentrations exceeding preliminary cleanup levels.
- Temporary dewatering will be required where excavation occurs below groundwater. Depth to groundwater varies seasonally between the ground surface and 10 feet bgs.
- An approximately 700-foot-long sheet pile wall will be installed and driven into the underlying silt to a total depth of approximately 25 feet bgs to provide permanent containment to the maximum extent practicable of contaminated soil and/or hydraulic control of groundwater exceeding MTCA cleanup levels along the southern boundary of the Site adjacent to the Chehalis River. Installation of the sheet pile wall meets the expectations specified in WAC 173-340-370 requiring an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels to the maximum extent practicable that will remain in-place proximate to the southern Site boundary adjacent to the Chehalis River. For purposes of this FS, the total installed area of sheet pile shoring is approximately 2,000 square feet.
- Excavated soil containing COCs at concentrations exceeding preliminary cleanup levels will require off-Site disposal at a Subtitle D landfill and/or an approved facility authorized to dispose of petroleum-contaminated soil. For purposes of this FS, it is assumed that approximately 3,100 tons of soil will be trucked off-Site for disposal at the Republic Services facility in Klickitat County, Washington.

- Extracted groundwater collected during excavation dewatering will require disposal. For purposes of this FS, it is assumed that approximately 70,000 gallons of wastewater will be pretreated prior to discharge to the City of Aberdeen sanitary sewer system.
- Excavations will be backfilled and surfaces restored to provide a physical barrier over areas containing residual levels of COCs and enabling the Site to continue to be used as a hot-mix asphalt batch plant. For purposes of this FS, it is assumed that 3,100 tons of backfill material will be imported, placed, and compacted and approximately 17,600 square feet of area will require paving.

7.2.3.2 Time Frame and Estimated Cost

The source removal excavation elements of Cleanup Alternative 3 will be implemented over the course of up to about 1 month. The environmental covenant to be recorded would be developed over the course of up to 6 months, and long-term institutional and engineered controls will be implemented until COC preliminary cleanup levels have been demonstrated to have been achieved at the defined points of compliance. For the purposes of this FS, monitoring, inspections, and maintenance activities are assumed to be completed in Year 5.

The estimated cost to complete Cleanup Alternative 3 is summarized below from Table 12:

Capital Cost:	$2,110,000
Ongoing Periodic and Future Costs:	$204,800
Total:	$2,310,000
	(Estimated range: $1,620,000 to $3,470,000)

7.2.4 Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels

Cleanup Alternative 4 assumes environmental protection from exposure to COCs remaining at concentrations exceeding preliminary cleanup levels would be accomplished by removal of all soil at the Site with concentrations of COCs exceeding preliminary cleanup levels. While Cleanup Alternative 4 includes compliance monitoring, it does not require implementation of institutional or engineered controls, protective containment measures, or a long-term environmental media monitoring program. In accordance with WAC 173-340-350(8)(c)(ii), Cleanup Alternative 4 is a permanent cleanup action alternative, as defined in WAC 173-340-200, and serves as a baseline against which other alternatives can be evaluated for the purpose of determining whether a preferred cleanup action is permanent to the maximum extent practicable.

7.2.4.1 Implementation

It is assumed that Cleanup Alternative 4 would include the following elements:

- A Compliance Monitoring Plan and an associated SAP will be prepared for performance, protection, and confirmational monitoring per WAC 173-340-410.

- The hot-mix asphalt batch plant facility will be moved temporarily to an alternate location until cleanup work is completed.
- Excavation will occur in areas where there are current facility structures. For the purposes of this FS, it is assumed that the 8,300-square-foot, half two-story, half one-story office and shop building will be demolished and then replaced after cleanup is completed. It is assumed that approximately 800 lineal feet, or about 90 percent, of the existing retaining wall will be demolished during excavation activities and replaced prior to backfilling. Other structures will either be demolished or temporarily moved prior to initiation of cleanup and then replaced upon completion of cleanup.
- Prior to excavation, surface paving and former tank foundations will require removal. For purposes of the FS, it is assumed that this will entail removal of 76,500 square feet of asphalt and 2,520 tons of concrete, including concrete from the existing retaining wall.
- Soil will be excavated to depths up to 12 feet bgs where concentrations of COCs exceed preliminary cleanup levels and will occur over a large area of the Site where releases associated with over 60 years of historical operation of the former bulk fuel facility occurred. Excavation will occur in those areas of the Site depicted on Figures 5 and 6 where concentrations of COCs exceed preliminary cleanup levels plus additional areas as needed for excavation side sloping.
- Dewatering will be required where excavation occurs below groundwater. Depth to groundwater varies seasonally between the ground surface and 10 feet bgs.
- Excavated soil containing concentrations of COCs exceeding preliminary cleanup levels will require off-Site disposal at a Subtitle D landfill and/or an approved facility authorized to manage petroleum-contaminated soil. For purposes of this FS, it is assumed that approximately 47,100 tons of soil will be trucked off the Site and disposed at the Republic Services facility in Klickitat County, Washington.
- Extracted groundwater collected during excavation dewatering will require disposal. For purposes of this FS, it is assumed that approximately 150,000 gallons of wastewater will be pretreated prior to discharge to the City of Aberdeen sanitary sewer system.
- Excavations will be backfilled and surfaces restored to enable the Site to return to use as a hot-mix asphalt batch plant. For purposes of this FS, it is assumed that 47,100 tons of backfill material will be imported, placed, and compacted and approximately 230,000 square feet of area will require paving.
- It is assumed that the hot-mix asphalt batch plant facility will be moved back to the Site and that the office and shop building, demolished to enable excavation, will be replaced. Temporarily moved structures will be re-installed.

7.2.4.2 Time Frame and Estimated Cost

Cleanup Alternative 4 will be implemented over the course of up to about 12 months. The estimated cost to complete Cleanup Alternative 4 is summarized below from Table 12:

Capital Cost:	$16,300,000
Ongoing Periodic and Future Costs:	$130,000
Total:	$16,400,000
	(Estimated range: $11,500,000 to $24,600,000)

7.3 CLEANUP ACTION ALTERNATIVES EVALUATION

This section presents the evaluation of Cleanup Alternatives 1 through 4 summarized above. The evaluation was performed with respect to the requirements set forth in MTCA under WAC 173-340-350 through 173-340-370. The cleanup alternatives evaluation considered results of the RI and Site-specific conditions including the nature and extent of COCs and the exposure assessment presented in Section 5, Conceptual Site Model. The evaluation of cleanup alternatives also considered current facility structures and operations. This section presents a summary of the evaluation process per MTCA, the results of the evaluation, and the results of a DCA completed for the Site.

7.3.1 Evaluation Process

The FS considered the requirements under WAC 173-340-350 and the criteria defined in WAC 173-340-360 for screening of potentially feasible cleanup alternatives for the Site. A cleanup alternative must satisfy the following threshold criteria as specified in WAC 173-340-360(2)(a):

- Protect human health and the environment;
- Comply with cleanup standards;
- Comply with applicable state and federal laws; and
- Provide for compliance monitoring.

In addition to meeting the threshold criteria, cleanup actions under MTCA must also meet the following additional requirements specified in WAC 173-340-360(2)(b):

- Provide for a reasonable restoration time frame based on the factors provided in WAC 173-340-360(4)(b);
- Use permanent solutions to the maximum extent practicable based on the criteria defined in WAC 173-340-360(3)(f); and
- Consider public concerns raised during public comment on the CAP (WAC 173-340-600).

The factors used to evaluate the reasonableness of the restoration time frame per WAC 173-340-360(4)(b) include:

- Potential risks posed by the Site to human health and the environment;

- Practicability of achieving a shorter restoration time frame;
- Current use of the Site, surrounding areas, and associated resources that are or may be affected by releases from the Site;
- Availability of alternative water supplies;
- Likely effectiveness and reliability of institutional controls;
- Ability to control and monitor migration of hazardous substances from the Site;
- Toxicity of the hazardous substances at the Site; and
- Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the Site or under similar Site conditions.

The criteria used to evaluate the degree of permanence to the maximum extent practicable per WAC 173-340-360(3)(f) include:

- Protectiveness: Overall protectiveness of human health and the environment, including the degree to which existing risks are reduced; the time required to reduce risk at the facility and attain cleanup standards, and risks at the Site resulting from implementing the alternative; and improvement of overall environmental quality.
- Permanence: The degree to which the alternative permanently reduces the toxicity, mobility, or volume of hazardous substances, including the adequacy 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 the waste treatment process, and the characteristics and quantity of treatment residuals generated.
- Effectiveness over the long term: Long-term effectiveness includes the degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time that hazardous substances are expected to remain on the Site at concentrations that exceed preliminary cleanup levels, and the magnitude of residual risk with the alternative in place. The following types of cleanup action components may be used as a guide, in descending order, when assessing the relative degree of long-term effectiveness: reuse or recycling; destruction or detoxification; immobilization or solidification; disposal on- or off-Site in an engineered, lined, and monitored facility; isolation or containment with attendant engineered controls on the Site; and institutional controls and monitoring.
- Management of short-term risks: The risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. This criterion includes risks to workers and customers at businesses adjoining the Site resulting from implementation of the cleanup alternative.
- Technical and administrative implementability: Ability to be implemented, including consideration of whether the alternative is technically feasible, administrative and regulatory requirements, permitting, scheduling, size, complexity, monitoring

requirements, access for construction operations and monitoring, and integration with the business operations at the Site and adjoining business operations.

- Consideration of public concerns: Whether the community has concerns regarding the alternative and, if so, the extent to which the alternative addresses those concerns. This process includes concerns from individuals, community groups, local governments, federal and state agencies, or any other organization that may have an interest in or knowledge of the Site.
- Cost: The cost to implement the alternative, including the cost of construction and anticipated long-term costs. Long-term costs include operation and maintenance, monitoring, and reporting costs.

The expectations specified in WAC 173-340-370 for facilities adjacent to a surface water body requiring an active measure to permanently contain and prevent/minimize potential future releases to surface water via contaminated groundwater discharges and/or migration of contaminated soil exceeding cleanup levels were used to evaluate the cleanup alternatives anticipating contaminated media remaining in-place proximate to the southern Site boundary adjacent to the Chehalis River.

7.3.2 Evaluation Results

The results of the evaluation for each alternative are summarized in Table 11 and described below.

7.3.2.1 Threshold Criteria

Protect Human Health and the Environment

According to the exposure assessment presented in Section 5, Conceptual Site Model, the two types of exposure risk associated with the presence of COCs at the Site are terrestrial ecological risk and human health risk. Because the Site qualifies for a TEE exclusion based on WAC 173-340-7491, mitigating the potential human health risk associated with exposure to COCs in soil and groundwater at the Site will be the primary objective of any cleanup action implemented.

Cleanup Alternatives 2 through 4 satisfy the MTCA criterion for protection of human health and the environment. Under Cleanup Alternative 1, No Action, subsurface contamination would continue to attenuate naturally over time and existing containment structures would provide a level of protection but there are no provisions for either institutional or engineered controls to ensure maintenance of the containment elements, to further limit exposure to COCs in the event of a future potential upset condition, or to monitor natural attenuation.

Cleanup Alternative 2 (Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation) provides additional protection by use of containment measures and institutional and engineered controls ensuring that future monitoring and maintenance activities are conducted to limit exposure to COCs in soil and groundwater. Cleanup Alternative 3 (Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls) and Cleanup Alternative 4 (Complete Excavation of Soil Exceeding Preliminary Cleanup Levels) include the institutional and engineered

controls identified for Cleanup Alternative 2 and provide additional protection by source area excavation.

Comply with Cleanup Standards

Active remedial measures in Cleanup Alternatives 3 and 4 are designed to ultimately achieve cleanup standards within a reasonable restoration time frame by excavation and dewatering of source areas (Cleanup Alternative 3) or by excavation and dewatering of all areas with COCs exceeding preliminary cleanup levels (Cleanup Alternative 4). Compliance with cleanup standards would occur via natural attenuation processes under Alternative 3 but over a longer period of time. Natural attenuation processes under Cleanup Alternatives 1 and 2 would require a much longer period of time to achieve cleanup standards.

Comply with State and Federal Laws

Along with the preliminary cleanup levels selected per MTCA, numerous laws and associated regulations influence how any particular remedial action is implemented. Applicable chemical-specific, location-specific, and action-specific state and federal laws are listed in Section 6, Technical Elements. Permitting by agencies, substantive standards promulgated by state and local agencies, best management practices, workplace safety, and off-Site waste disposal practices are a few of the aspects that must be formally addressed in the design and implementation phases of a cleanup action to ensure compliance with applicable laws. While Cleanup Alternative 1 does not comply with MTCA, the other cleanup alternatives possess features that can be designed and implemented in compliance with state and federal laws including MTCA.

Provide for Compliance Monitoring

Compliance monitoring per WAC 173-340-410 refers to the collection, analysis, and reporting of environmental data to determine the short- and long-term effectiveness of a cleanup action and whether protection is being achieved in accordance with cleanup objectives. A Compliance Monitoring Plan will be developed in conjunction with the CAP, which will include standard field techniques and laboratory analytical methods in a SAP. Cleanup Alternatives 2 through 4 include comprehensive compliance monitoring programs to fulfill this requirement.

7.3.2.2 Other Requirements

Provide for a Reasonable Restoration Time Frame

Restoration time frame is the time needed to meet cleanup standards (i.e., to meet all preliminary cleanup levels in all media at all points of compliance). MTCA places a preference on those alternatives that can be implemented in a shorter period of time while equivalent in other respects. Under MTCA, eight factors are used to determine whether a cleanup action provides for a reasonable restoration time frame (Section 7.3.1, Evaluation Process). Cleanup Alternative 2 (Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation), Cleanup Alternative 3 (Source Area Excavation,

Containment, Monitored Natural Attenuation, Institutional and Engineered Controls), and Cleanup Alternative 4 (Complete Excavation of Soil Exceeding Preliminary Cleanup Levels), offer a reasonable restoration time frame under MTCA.

The restoration time frame for Alternatives 1 and 2 are the longest and would rely on attaining cleanup standards for affected media through natural attenuation. Cleanup Alternatives 3 and 4 use soil excavation to remove source material. Cleanup Alternative 4 would remove all material with COC concentrations exceeding preliminary cleanup levels. For purposes of this FS, the restoration time frame for groundwater with Cleanup Alternatives 3 and 4 is assumed to be within 5 years of completing remedial action construction. The restoration time frame for soil with Cleanup Alternative 3 after removal of source areas is estimated to be several to many years, as COCs are naturally attenuated; however, the removal of source material is expected to significantly reduce the period required to achieve cleanup standards compared to Alternatives 1 and 2. Further, the contaminated soil remaining in-place would be managed through the recording of an Environmental Covenant on relevant portions of the Site. The restoration time frame for soil with Cleanup Alternative 4 is the duration of remedial action construction as all soil with COCs at concentrations exceeding preliminary cleanup levels will be removed; this period has been estimated in the FS to be approximately 12 months.

Longer multi-year restoration time frames associated with soil in Cleanup Alternatives 2 and 3 and with groundwater in Cleanup Alternatives 2 through 4 are considered reasonable based on the following:

- Potential risks posed by the Site to human health and the environment will be low after implementing cleanup actions. An environmental covenant to be implemented with Cleanup Alternatives 2 and 3 requires protective measures that would effectively and reliably limit exposure to residual contamination.
- Practicable active remedial measures that could achieve a shorter restoration time frame than Cleanup Alternative 2 are limited, and are included in Cleanup Alternative 3.
- Resources associated with the Site are not known to be affected by releases at the Site under current conditions.
- Shallow groundwater is not used at the Site and municipal water is provided to this area of the city. Contamination from the Site is sufficiently bounded and has not migrated off the property.
- Institutional controls included in Cleanup Alternatives 2 and 3 are effective and reliable for mitigating potential adverse exposure to COCs exceeding preliminary cleanup levels. Cleanup Alternative 4 is sufficiently protective that institutional controls are not required.
- Cleanup Alternatives 2 and 3 provide for adequate control and monitoring of potential migration of COCs from the Site. As media containing COCs exceeding preliminary cleanup levels will be removed with Cleanup Alternative 4, additional controls and monitoring are not required.

- Measures are employed in Cleanup Alternatives 2 and 3 to prevent adverse toxic exposure to residual weathered petroleum products.
- Weathered petroleum products, under favorable conditions, are amenable to degradation with natural processes.

7.3.2.3 Use Permanent Solutions to the Maximum Extent Practicable

MTCA specifies that when a cleanup action is selected, preference be given to actions that are permanent to the maximum extent practicable. Multiple approaches to cleanup are possible for the Site. Under MTCA, seven factors are used to determine whether a cleanup action provides for a reasonable restoration time frame (Section 7.3.1, Evaluation Process). Active treatment approaches such as those in Alternative 3 (Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls) and Cleanup Alternative 4 (Complete Excavation of Soil Exceeding Preliminary Cleanup Levels) offer the greatest degree of permanence by actively reducing the mass of contaminants at the source areas to achieve cleanup standards in a reasonable restoration time frame.

Per WAC 173-340-360(3)(f), the following criteria were considered for evaluation of permanence to the maximum extent practicable. Table 11 summarizes the results of the evaluation, which uses a scoring methodology for each of the seven components of this criterion on a scale of 1 to 10, with 10 being most favorable and 1 being least favorable. A mathematically derived MTCA Composite Benefit Score is presented in Table 11 as described in the table notes for use in the DCA. The derived scores and the DCA are further described in Section 7.3.3, Disproportionate Cost Analysis.

Protectiveness

Cleanup Alternative 1—No Action, will not provide additional protection beyond that provided by the existing containment systems comprised of pavement, the retaining wall, and the native underlying silt and does not include a protective covenant or environmental monitoring. Cleanup standards will be achieved over the course of many years by natural attenuation processes.

Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, would not accelerate the achievement of cleanup standards but provides for monitoring of natural attenuation processes and additional environmental and public health protection via an environmental restrictive covenant. The existing containment systems would be retained and supplemented with a sheet pile barrier to provide permanent protection from future mobilization and migration to the adjacent surface water body to the maximum extent practicable.

Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, provides the same protective measures and monitoring of COC concentrations in shallow groundwater as Cleanup Alternative 2 but adds excavation of source areas, which will reduce groundwater exposure risk and restoration time frame for groundwater to approximately 5 years. In addition, all remaining

contamination anticipated in soil exceeding MTCA cleanup levels will be contained at the southern Site boundary by the sheet pile barrier wall and within the 8.6-acre property comprising the Site. The conditional point of compliance for soil would be managed through the recordation of an Environmental Covenant on relevant portions of the Site.

Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels, is the most protective cleanup alternative and will achieve cleanup standards over the short term and provides for confirmational groundwater monitoring.

Permanence

Cleanup Alternative 1—No Action and Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, would limit mobility of COCs with the existing pavement and retaining wall containment systems supplemented with a sheet pile barrier (Cleanup Alternative 2) until concentrations are permanently reduced by natural attenuation processes.

Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, permanently reduces the volume of hazardous substances with source excavation in areas where groundwater concentrations exceed cleanup levels. Cleanup Alternative 3 relies on containment systems to reduce mobility of residual COCs until naturally attenuated. Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels, permanently reduces volume of hazardous substances with mass excavation when all areas where COCs exceed preliminary cleanup levels are removed and is considered to provide the highest degree of permanence.

Effectiveness Over the Long Term

Cleanup Alternative 1—No Action and Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, provide effectiveness over the long term with use of the existing pavement cover, retaining wall, and underlying silt to contain COCs on the Site until naturally attenuated.

Cleanup Alternative 2 provides for supplemental engineered and institutional controls and compliance monitoring. Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, effectively reduces Site risks by source excavation and disposal at a permitted facility and use of containment systems supplemented by engineered and institutional controls and compliance monitoring. Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels, effectively reduces Site risk with mass excavation in all areas where COCs exceed preliminary cleanup levels and is considered to provide the highest degree of long-term effectiveness.

Management of Short-Term Risks

Cleanup Alternative 1—No Action and Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, presents low short-term risk during implementation and primarily during construction of the sheet pile

barrier under Cleanup Alternative 2. Excavation and off-Site disposal elements of Cleanup Alterative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, and Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels are considered to present more short-term risks related to construction and off-Site transport of hazardous materials although these elements of the cleanup actions can be effectively managed.

Technical and Administrative Implementability

Cleanup Alternative 1—No Action is readily implementable. Implementation of Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, would include activities such as establishing and recording an environmental restrictive covenant, and implementing periodic inspection, maintenance, and monitoring tasks. Implementation of Cleanup Alternatives 1 and 2 has no or negligible impacts on Site business operations although some impact may occur during construction of the sheet pile barrier element of Cleanup Alternative 2.

Implementation of Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, would not involve technically complex field activities or administrative complications, although there will be modest impacts to Site business operations during the period of source removal and backfilling as well as construction of the sheet pile barrier.

Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels, would require extensive administrative and logistical coordination to complete, as well as significant prolonged disruption to operations at the Site, including halting and relocating the hot-mix asphalt batch plant operations, demolishing and rebuilding multiple existing structures, removing large reinforced concrete foundations for former ASTs, expanding excavation of source areas, extending periods of hauling and increased truck traffic on local roads, and managing relatively large quantities of wastewater during the excavation period. Cleanup Alternative 4 is, therefore, considered the least implementable cleanup alternative.

Consideration of Public Concerns

Concentrations of COCs exceeding preliminary cleanup levels are limited to discrete areas on the Site, which is an active hot-mix asphalt batch plant operation with controlled access. There currently is no complete pathway for exposure via direct contact for the public, and implementation of construction activities would include measures to prevent public exposure to hazardous materials. Cleanup alternatives would address potential public concerns with regard to residual levels of COCs at the Site and with regard to excavation and transport of petroleum-contaminated soil to an off-Site disposal facility.

Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, will result in a modest increase in hauling traffic on public roadways for a limited period of time. Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels, will result in extensive and

prolonged hauling traffic on public roadways over the course of the excavation work, which is estimated to require approximately 12 months to complete, as well as during hot-mix asphalt batch plant relocation.

Cost

Estimated costs for implementation of the four cleanup alternatives are summarized in Table 12, Summary of Cleanup Alternative Cost Estimates. The estimated cost for implementing Alternative 1—No Action is $0. The estimated cost for implementing Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation ($1,330,000, ranging between $931,000 to $2,000,000) is substantially lower than the estimated costs for implementation of active remedial measures.

The estimated cost for implementing Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls ($2,310,000, ranging between $1,620,000 and $3,470,000) includes excavation and shoring to protect existing structures, and treatment and disposal of wastewater collected during excavation de-watering. The estimated cost for implementing Cleanup Alternative 4—Mass Excavation ($16,400,000, ranging between $11,500,000 and $24,600,000) includes a large volume excavation including temporarily relocating the hot-mix asphalt batch plant facility, demolition and rebuilding of the existing structures, removal of the former AST foundations and demolition and replacement of approximately 90 percent of the retaining wall. Approximately 47,100 tons of soil would be disposed of off-Site and replaced with imported material before restoring the Site for continued operation as a hot-mix asphalt batch plant.

7.3.3 Disproportionate Cost Analysis

The purpose of the DCA is to facilitate selection of the cleanup alternative that provides the highest degree of permanence to the maximum extent practicable. The following cleanup alternatives were considered for the DCA:

- Cleanup Alternative 1—No Action;
- Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation;
- Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls; and
- Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels.

The DCA for the Site was conducted according to the methodology provided by Ecology (2009) and per WAC 173-340-360(3)(e). The cleanup alternative evaluation presented in Table 11 is provided in a format suggested by Ecology (2009). Table 11 presents a quantitative assessment of the MTCA criteria for permanence to the maximum extent practicable (WAC 173-340-360[3][f]).

A numeric score ranging from 0 to 10 was assigned for each of the criteria based on best professional judgment. The higher the score, the more favorable the evaluation criterion is under MTCA. The criteria scores were weighted according to Ecology (2009) suggestions and as indicated in Table 11.

A MTCA Composite Benefit Score was calculated for each alternative by summing the mathematical product of the criterion score times the weighting factor, which provided the quantitative measure of environmental benefit that would be realized with implementation of a cleanup alternative. For example, if the weighting factors for the six criteria are Protectiveness at 30 percent, Permanence at 20 percent, Long-Term Effectiveness at 20 percent, Short-Term Effectiveness at 10 percent, Implementability at 10 percent, and Public Concerns at 10 percent, if scores for each of these criteria were 7.5, 7, 6, 3, 7, and 6, respectively, the MTCA Composite Benefit Score is calculated as: (7.5)*(0.3) + (7)*(0.2) + (6)*(0.2) + (3)*(0.1) + (7)*(0.1) + (6)*(0.1) = 6.45. A score of 6.45 represents moderate environmental benefit on a scale of 0 to 10, with 10 having the highest environmental benefit.

Table 11 summarizes the basis for the scoring and the estimated costs for the four cleanup alternatives. Chart 1 graphically presents the results of the DCA. The red bars on Chart 1 indicate the environmental benefit offered by each cleanup alternative as measured by the MTCA Composite Benefit Score using the left vertical axis of the graph. The blue bars reflect the estimated cost for each alternative using the right vertical axis of the graph. The incremental benefit of implementing an alternative can be discerned relative to the incremental cost of implementation.

Implementing Cleanup Alternative 1 results in a MTCA Composite Benefit Score of 5.5. By spending about $1,330,000 to implement Cleanup Alternative 2, the MTCA Composite Benefit Score will rise to 6.2, an increase of about 13 percent (i.e., about $102,300 per percent increase in benefit estimated by the MTCA Composite Benefit Score).

Implementing Cleanup Alternative 3 entails an investment of approximately $2,310,000 resulting in a MTCA Composite Benefit Score of 7.8, an increase of about 42 percent over Cleanup Alternative 1 (No Action) and about a 26 percent increase over Cleanup Alternative 2 (i.e., about $55,000 and $38,000 per percent increase in benefit estimated by the MTCA Composite Benefit Score, respectively).

Implementing Cleanup Alternative 4 will cost about seven times the estimated cost for Cleanup Alternative 3 for an approximately equivalent MTCA Composite Benefit Score (i.e., about $16,00,000 for a negligible change in MTCA Composite Benefit Score). The negligible increase in environmental benefits provided by Cleanup Alternative 4 compared to Cleanup Alternative 3, as demonstrated by the respective MTCA Composite Benefit Scores of each cleanup alternative, is clearly substantial and disproportionate to the benefits and costs incurred, estimated to be more than $14,000,000.

Implementing Cleanup Alternative 3 offers the greatest environmental benefit estimated by the MTCA Composite Benefit Score for the unit costs incurred of the cleanup alternatives evaluated. Cleanup Alternative 3 offers the highest degree of permanence to the maximum extent practicable

of the four cleanup alternatives evaluated. Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls, is therefore selected as the preferred cleanup alternative for application at this Site.

7.4 PREFERRED CLEANUP ACTION ALTERNATIVE

Cleanup Alternative 3—Source Excavation, Containment, Monitored Natural Attenuation, and Institutional and Engineered Controls, is the preferred cleanup action alternative. The rationale for selecting Cleanup Alternative 3 as the preferred cleanup action alternative is based on the results of the evaluation presented in Section 7.3, Cleanup Action Alternatives Evaluation. The Cleanup Action Alternatives Evaluation was conducted per the requirements set forth in MTCA under WAC 173-340-350 through 173-340–370, and based on Farallon's best professional judgment for implementing cleanup technologies at the Site. The results of the FS cleanup alternative evaluation are presented in Table 11. Figure 9 depicts the primary elements that would be implemented as part of Cleanup Alternative 3 on a Site map.

The preferred cleanup action alternative, Cleanup Alternative 3, satisfies MTCA threshold criteria as specified in WAC 173-340-360(2)(a) and meets additional requirements specified in WAC 173-340-360(2)(b) and expectations specified in WAC 173-340-370 for a facility adjacent to a surface water body defined in Section 7.3.1, Evaluation Process. Of the four alternatives evaluated, Cleanup Alternative 3 is considered to offer the highest degree of protectiveness and permanence to the maximum extent practicable, as it received the highest MTCA Composite Benefit Score (i.e., environmental benefit under MTCA) for permanence to the maximum extent practicable per WAC 173-340-360(3)(f) and Ecology (2009): 7.8 on a scale of 0 to 10, with 10 representing the highest degree of permanence under MTCA. The basis for the MTCA Composite Benefit Score derived for Cleanup Alternative 3 is summarized below:

- Protectiveness is considered favorable, with a score of 8 out of 10 reflecting a high degree of protectiveness with source excavation and the containment system components. Engineered controls provide for periodic inspection and maintenance of the containment systems. Institutional control in the form of an environmental covenant limits future exposure and a groundwater monitoring program will enable evaluation of natural attenuation processes over time.
- Permanence is considered favorable, with a score of 8 out of 10 resulting from the source area excavations and disposal at a permitted off-Site disposal facility and reliance on permanent and reliable containment systems to limit future mobility instead of permanent destruction on the Site.
- Long-Term Effectiveness is considered favorable, with a score of 7 out of 10 based on reliance on containment and natural attenuation processes and the associated environmental covenant and periodic inspections and repairs of the containment systems outside of source excavation areas.
- Short-Term Risk Management is considered favorable, with a score of 7 out of 10 with low risk and impact to facility operations associated with the source area excavations.

- Implementability is considered favorable, with a score of 8 out of 10 since limited source excavation, paving, and institutional and engineered controls are readily implementable and will occur in areas with low impact to facility operations.
- Public Concerns are considered favorable, with a score of 9 out of 10 as a result of anticipated public perception of minimal impacts during excavation work.

Cleanup Alternative 3 meets the requirements set forth in WAC 173-340-370, Expectations for Cleanup Action Alternatives, specifically for a facility adjacent to a surface water body. Cleanup Alternative 3 minimizes reliance on long-term management and control of residual contamination with source excavation. Use of containment systems limit mobility and future exposure to residual levels of COCs in the shallow soil mitigates future risks where removal is impracticable. Institutional controls in the form of an environmental covenant, including restrictions on use of Site groundwater, maintenance of engineered controls, a compliance groundwater monitoring program, and requirements for protective measures during future subsurface activities at the Site, will provide additional protection.

Cleanup Alternative 3 relies on natural attenuation processes in areas where COCs at concentrations exceeding preliminary cleanup levels will remain in soil after limited source area excavation. Cleanup measures to be implemented for groundwater where active cleanup measures are considered impracticable are consistent with WAC 173-340-370(7) because: 1) source control is achieved by source excavation; 2) safeguards will be implemented to reduce the risk of exposure to residual levels of COCs at the Site; and 3) compliance groundwater monitoring will be performed to enable the evaluation of efficacy of natural attenuation and estimation of the time frame for COC concentrations to attain preliminary cleanup levels.

Cleanup Alternative 1—No Action presents no cost and relies on existing containment measures. Cleanup Alternative 1, however, is not considered to satisfy the threshold requirements for cleanup under MTCA. Cleanup Alternative 2—Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation, and Cleanup Alternative 4—Complete Excavation of Soil Exceeding Preliminary Cleanup Levels also meet MTCA requirements. Cleanup Alternative 2 has a lower MTCA Composite Benefit Score than Cleanup Alternative 3. The MTCA Composite Benefit Score for Cleanup Alternative 4 is equivalent to Cleanup Alternative 3. Cleanup Alternative 2, while approximately 60 percent the cost of Cleanup Alternative 3, is not considered permanent to the maximum extent practicable. Cleanup Alternative 4 is so disruptive to Site operations that it is considered technically impracticable and offers only marginal additional environmental benefit while costing approximately seven times as much as Cleanup Alternative 3. The added environmental benefits associated with Cleanup Alternative 4 are clearly disproportionate to the potential costs incurred, as demonstrated by Section 7.3, Disproportionate Cost Analysis, and added public concerns associated with the extensive relocations and hauling requirements of complete excavation.

7.5 IMPLEMENTATION

Technical elements, including preliminary cleanup levels and points of compliance for the remedial action at the Site, are described in Section 6, Technical Elements. Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls, practicably achieves preliminary cleanup levels protective of human health direct contact exposure to COCs at the standard point of compliance in a reasonable restoration time frame. Implementation of Cleanup Alternative 3 includes the following primary elements:

- Preparation and submittal of a draft Compliance Monitoring Plan and an associated SAP for performance, protection, and confirmational monitoring per WAC 173-340-410.
- Containment using the existing pavement, buildings, and retaining wall keyed into native silt material. Installation of an approximately 700-foot-long permanent sheet pile wall, including along approximately 660 feet of the southern Site boundary, supplemented with engineered controls to protect against future migration of contaminated media to the adjacent surface water and/or sediment, including periodic inspections and repairs;
- Limited source area excavation and off-Site disposal of contaminated soil at a permitted landfill;
- Monitored natural attenuation of groundwater through Year 5; and
- Institutional controls consisting of an environmental covenant restricting future groundwater use, stipulating physical barrier cover system inspections and maintenance requirements, and referring to and requiring implementation of a Compliance Groundwater Monitoring Plan and an EMMP to govern the handling of potentially contaminated environmental media during future construction work requiring excavation in areas of residual contamination.

Implementation of Cleanup Alternative 3 is described in Section 7.2.3, Cleanup Alternative 3—Source Area Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls. Details of implementation of the selected cleanup alternative will be developed further in a CAP per WAC 173-340-380.

The estimated cost to complete Cleanup Alternative 3 is summarized below from Table 12 and is estimated to be $2,310,000 and within a range of $1,620,000 to $3,470,000.

7.6 COMPLIANCE MONITORING

During excavation, compliance monitoring will be conducted in accordance with a Compliance Monitoring Plan as specified in WAC 173-340-410 and will include protection, performance, and confirmational soil sampling. The post-remediation, Groundwater Monitoring Plan will include up to 15 groundwater monitoring wells sampled at 18-month intervals through Year 5 following the source area excavations (Figure 9).

7.7 INADVERTENT DISCOVERIES

Excavation areas identified under the preferred cleanup action alternative are primarily located on portions of the Site where fill previously was placed. Therefore, the potential for an inadvertent discovery of cultural resources and/or human skeletal remains is very low. Farallon has prepared an Ecology Inadvertent Discovery Plan (Appendix G) that will be provided to field staff and contractors and followed in the event of an inadvertent discovery during construction.

7.8 RESTORATION TIME FRAME

As indicated in Section 7.3.2, Evaluation Results, and in Table 11, Summary of Cleanup Alternative Evaluation, preliminary groundwater cleanup standards are expected to be attained within approximately 5 years of source area excavations. Achievement of soil cleanup standards outside of the source area excavations will occur over multiple years as natural attenuation processes occur. All remaining contamination anticipated in soil will be contained within the 8.6-acre property comprising the Site. The conditional point of compliance for soil would be managed through the recordation of an Environmental Covenant on relevant portions of the Site. The restoration time frame is considered to be reasonable under MTCA, as additional protective controls, inspections, and monitoring will be employed, off-Site effects of COCs have not been identified, and cleanup levels will be attained for shallow groundwater in a reasonable restoration time frame.

As indicated in Section 7.2.3.2, Time Frame and Estimated Cost, the active excavation elements of Cleanup Alternative 3 will be implemented over the period of approximately 1 month. The environmental covenant to be attached to the property deed would be developed over the course of up to 6 months, and long-term institutional and engineered controls will be implemented until COC preliminary cleanup levels have been demonstrated to have been achieved. For the purposes of this FS, monitoring, inspections, and maintenance activities are assumed to be completed in Year 5.

7.9 CONTINGENCY ACTIONS

The decision process for evaluating whether modifications to the selected cleanup approach are warranted, and the monitoring requirements that will be implemented to document effectiveness, will be provided in the CAP and the associated Compliance Monitoring Plan. The primary contingency action trigger will be non-compliance with applicable groundwater cleanup levels in groundwater samples collected from the groundwater monitoring well network by the end of Year 5, as set forth the in the CAP.

8.0 BIBLIOGRAPHY

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9.0 LIMITATIONS

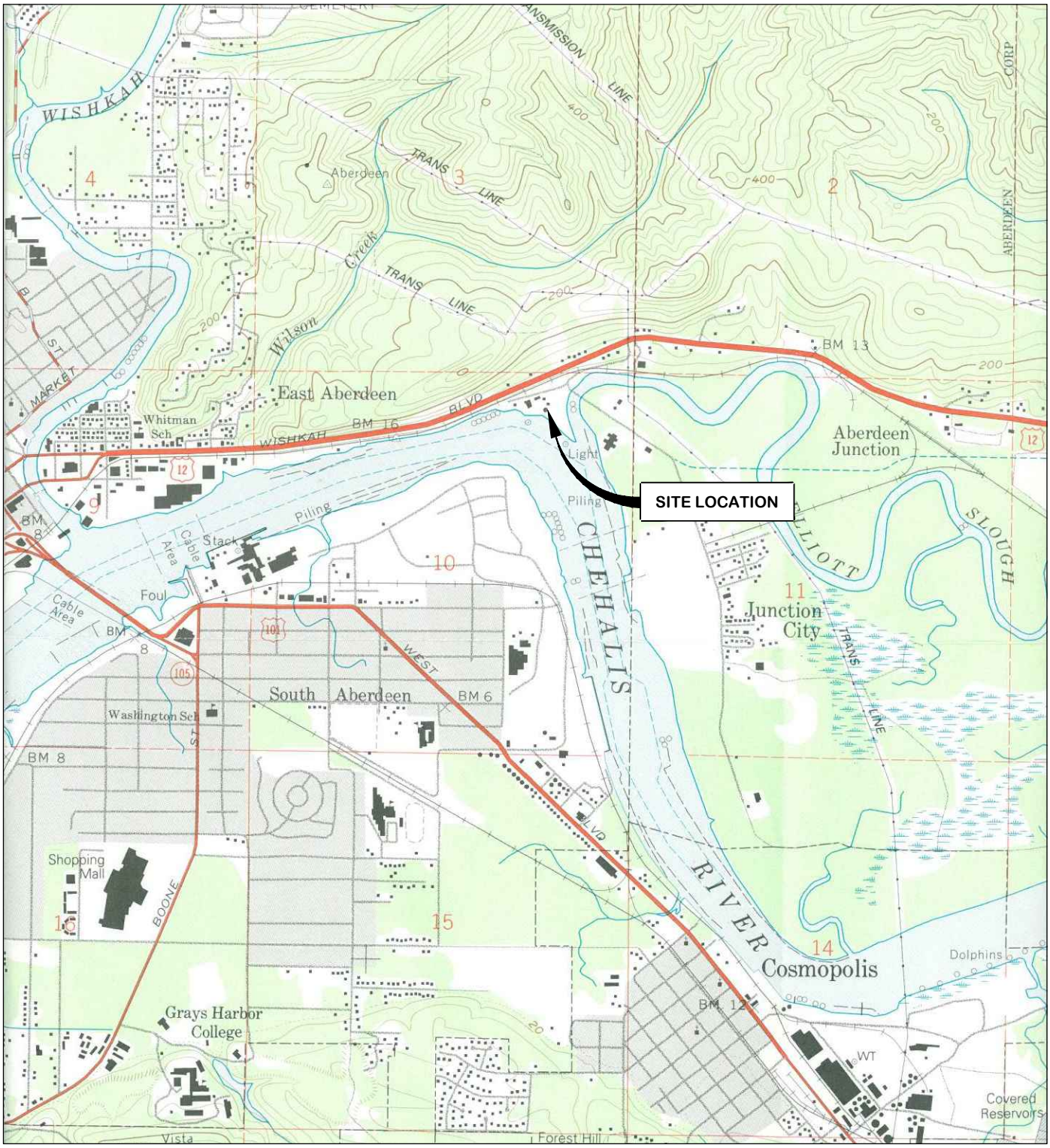
The conclusions and recommendations contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location and are subject to the following inherent limitations.

Certain information used by Farallon in this report/assessment has been obtained, reviewed, and evaluated from various sources believed to be reliable, including the local health districts, fire departments, Ecology, and Lakeside Industries. Although Farallon's conclusions, opinions, and recommendations are based in part on such information, Farallon's services did not include the verification of its accuracy or authenticity. Should such information prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.

FIGURES

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006



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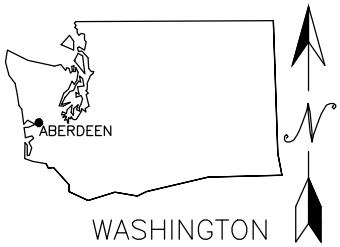

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Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend

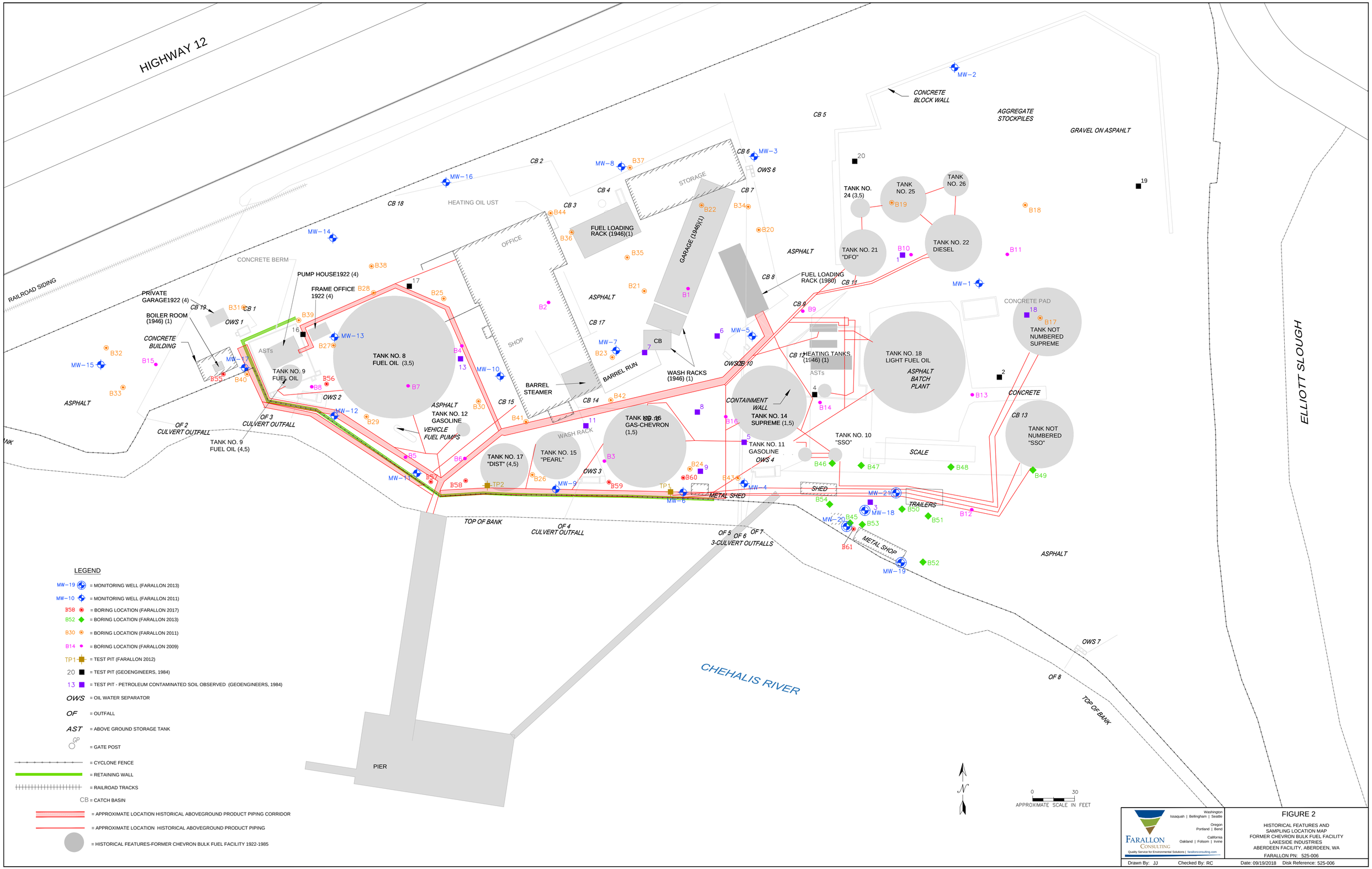
California
Oakland | Sacramento | Irvine

FIGURE 1

SITE LOCATION MAP
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: DEW | Checked By: RC | Date: 4/3/2015 | Disk Reference: 525006



LEGEND

- MW-19 = MONITORING WELL (FARALLON 2013)
- MW-10 = MONITORING WELL (FARALLON 2011)
- B58 = BORING LOCATION (FARALLON 2017)
- B52 = BORING LOCATION (FARALLON 2013)
- B30 = BORING LOCATION (FARALLON 2011)
- B14 = BORING LOCATION (FARALLON 2009)
- TP1 = TEST PIT (FARALLON 2012)
- 20 = TEST PIT (GEOENGINEERS, 1984)
- 13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
- OWS = OIL WATER SEPARATOR
- OF = OUTFALL
- AST = ABOVE GROUND STORAGE TANK
- GP = GATE POST
- = CYCLONE FENCE
- = RETAINING WALL
- = RAILROAD TRACKS
- CB = CATCH BASIN
- = APPROXIMATE LOCATION HISTORICAL ABOVEGROUND PRODUCT PIPING CORRIDOR
- = APPROXIMATE LOCATION HISTORICAL ABOVEGROUND PRODUCT PIPING
- = HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985

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FIGURE 2

HISTORICAL FEATURES AND SAMPLING LOCATION MAP
FORMER CHEVRON BULK FUEL FACILITY
LAKESIDE INDUSTRIES
ABERDEEN FACILITY, ABERDEEN, WA

FARALLON PN: 525-006

Drawn By: JJ | Checked By: RC | Date: 09/19/2018 | Disk Reference: 525-006

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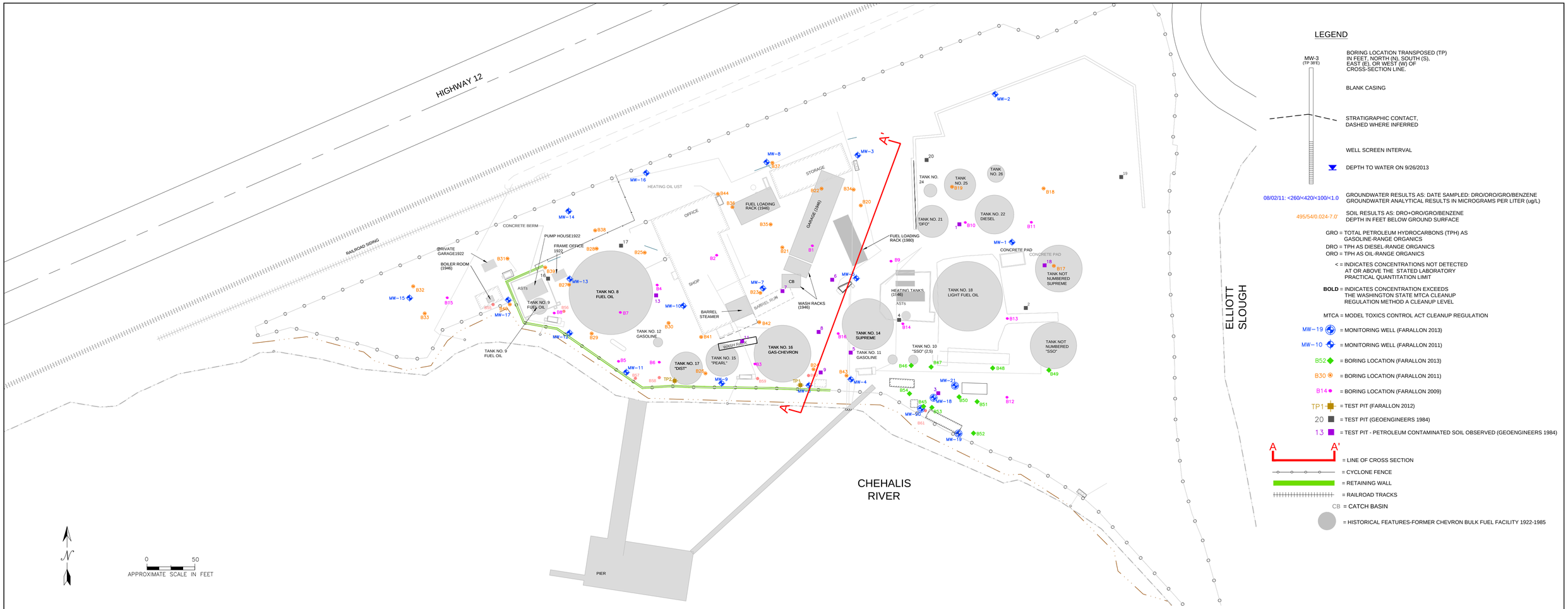

LEGEND

MW-3 (TP 38'E) — BORING LOCATION TRANSPOSED (TP) IN FEET, NORTH (N), SOUTH (S), EAST (E), OR WEST (W) OF CROSS-SECTION LINE.

BLANK CASING

STRATIGRAPHIC CONTACT, DASHED WHERE INFERRED

WELL SCREEN INTERVAL

DEPTH TO WATER ON 9/26/2013

08/02/11: <260/<420/<100/<1.0 — GROUNDWATER RESULTS AS: DATE SAMPLED: DRO/ORO/GRO/BENZENE GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (ug/L)

495/54/0.024-7.0' — SOIL RESULTS AS: DRO+ORO/GRO/BENZENE DEPTH IN FEET BELOW GROUND SURFACE

GRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS GASOLINE-RANGE ORGANICS
DRO = TPH AS DIESEL-RANGE ORGANICS
ORO = TPH AS OIL-RANGE ORGANICS

< = = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

BOLD = INDICATES CONCENTRATION EXCEEDS THE WASHINGTON STATE MTCA CLEANUP REGULATION METHOD A CLEANUP LEVEL

MTCA = MODEL TOXICS CONTROL ACT CLEANUP REGULATION

MW-19 = MONITORING WELL (FARALLON 2013)
MW-10 = MONITORING WELL (FARALLON 2011)
B52 = BORING LOCATION (FARALLON 2013)
B30 = BORING LOCATION (FARALLON 2011)
B14 = BORING LOCATION (FARALLON 2009)
TP1 = TEST PIT (FARALLON 2012)
20 = TEST PIT (GEOENGINEERS 1984)
13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS 1984)
A A' = LINE OF CROSS SECTION
= CYCLONE FENCE
= RETAINING WALL
= RAILROAD TRACKS
CB = CATCH BASIN
= HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985

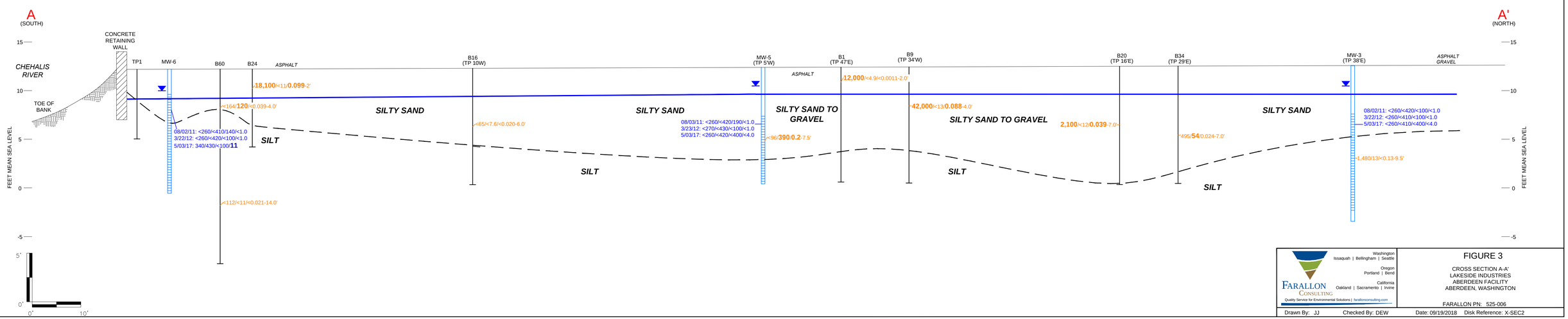

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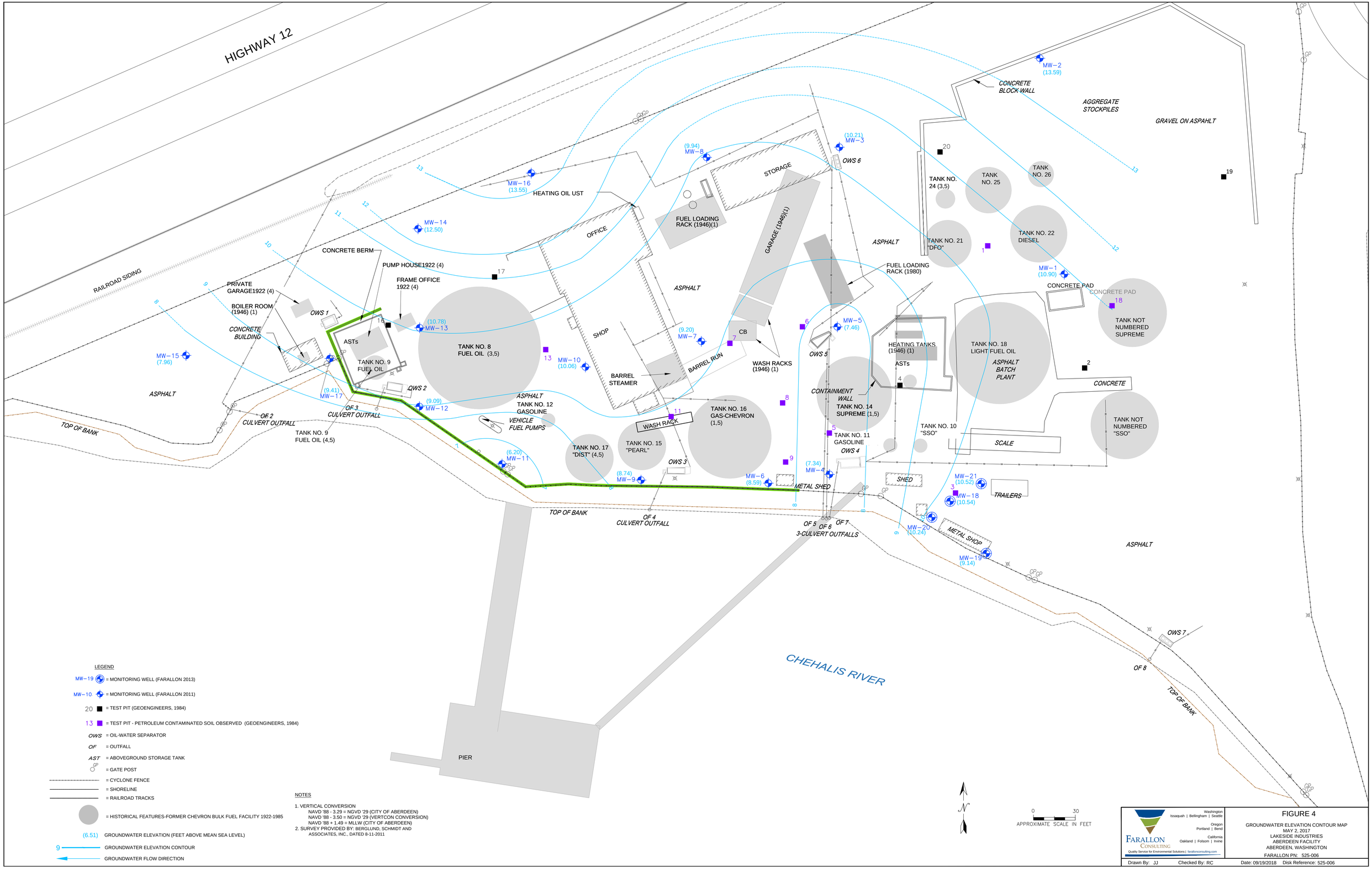
FIGURE 3

CROSS SECTION A-A'
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ | Checked By: DEW | Date: 09/19/2018 | Disk Reference: X-SEC2



LEGEND

- MW-19 = MONITORING WELL (FARALLON 2013)
- MW-10 = MONITORING WELL (FARALLON 2011)
- 20 = TEST PIT (GEOENGINEERS, 1984)
- 13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
- OWS = OIL-WATER SEPARATOR
- OF = OUTFALL
- AST = ABOVEGROUND STORAGE TANK
- GP = GATE POST
- = CYCLONE FENCE
- = SHORELINE
- = RAILROAD TRACKS
- = HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985
- (6.51) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- 9 GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTES

1. VERTICAL CONVERSION
   NAVD '88 - 3.29 = NGVD '29 (CITY OF ABERDEEN)
   NAVD '88 - 3.50 = NGVD '29 (VERTCON CONVERSION)
   NAVD '88 + 1.49 = MLLW (CITY OF ABERDEEN)
2. SURVEY PROVIDED BY: BERGLUND, SCHMIDT AND ASSOCIATES, INC., DATED 8-11-2011

N

0 30
APPROXIMATE SCALE IN FEET

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FIGURE 4

GROUNDWATER ELEVATION CONTOUR MAP
MAY 2, 2017
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON
FARALLON PN: 525-006

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HIGHWAY 12

RAILROAD SIDING

ELLIOTT SLOUGH

CHEHALIS RIVER

PIER

MW-1 [20/**0.099**-7.5']
MW-2 [23/<0.020-8.5']
MW-3 [13/<0.13-9.5']
MW-4 [<14/<0.28-5.0']
MW-5 [**390/0.2**-7.5']
MW-6 [**46**/<0.046-3.0'] [<12/<0.024-14.0']
MW-7 [<10/**0.079**-3.0']
MW-8
MW-9 [<5.9/<0.020-3.0']
MW-10
MW-11
MW-12 [<6.4/<0.020-3.0']
MW-13 [<11/<0.022-3.5']
MW-14
MW-15 [35/<0.0012-6.0']
MW-16
MW-17
MW-18 [**1,000**/<1.2-6.0']
MW-19
MW-20
MW-21 [**130**/<0.020-6.1'] [<5.9/<0.020-10.8']

B1 [<4.9 /<0.0011-2.0']
B2 [<10 /<0.00091-5.0']
B3 [<11 /0.0017-2.0'] [**5,000/1.9**-4.0']
B4 [<9.4 /<0.00088-4.0']
B5 [<5.6 /<0.020-5.0']
B6 [<5.7 /<0.020-5.0']
B7 [<16/<0.031-4.0']
B8 [<5.9/0.025-2.0']
B9 [<13/**0.088**-4.0']
B10 [**1,000**/<1.2-6.0']
B11 [<5.5/<0.020-5.0']
B12 [<6.9/<0.020-2.0']
B13 [<6.7/<0.020-6.0']
B14 [<5.6/<0.020-6.0']
B15 [35/<0.0012-6.0']
B16 [<7.6/<0.020-6.0']
B17 [<6.0/<0.020-6.0']
B18 [<6.5/<0.020-6.0']
B19 [<5.0/<0.020-6.0']
B20 [<12/**0.039**-6.0']
B21
B22
B23 [<9.3/**0.079**-2.0']
B24 [28/**0.064**-4.5']
B25
B26
B27 [<25/<0.051-8.0'] [<45/<0.090-14.0']
B28
B29
B30
B31
B32
B33
B34 [**54/0.024**-7.0']
B35
B36
B37
B38
B39
B40
B41 [<10/0.023-3.5']
B42 [**1,200/0.29**-3.5']
B43
B44
B45
B46 [<4.7/<0.020-3.9']
B47
B48 [<4.5/<0.020-7.1']
B49 [<5.2/<0.020-3.3']
B50
B51 [<4.4/<0.020-8.0'] [<14/<0.028-13.6']
B52 [<4.8/<0.020-6.5'] [<11/<0.022-12.8']
B53 [**1,700/0.97**-5.0'] [<11/<0.023-13.5']
B54 [<4.3/<0.020-7.8'] [<15/<0.029-13.2']
B55 [<28/<0.056-8.0'] [<28/<0.056-14.0']
B56
B57 [**350/0.076**-9.0'] [<66/<0.13-14.0'] [<19/<0.039-19.0']
B58 [<6.1/<0.020-2.5'] [<39/<0.078-14.0']
B60 [**120**/<0.039-4.0'] [<11/<0.021-14.0']
B61 [**30/0.041**-8.0'] [<9.7/<0.020-14.0']

TANK NO. 8 FUEL OIL (3,5)
TANK NO. 9 FUEL OIL (4,5)
TANK NO. 10 "SSO"
TANK NO. 11 GASOLINE
TANK NO. 12 GASOLINE
TANK NO. 14 SUPREME (1,5)
TANK NO. 15 "PEARL"
TANK NO. 16 GAS-CHEVRON (1,5)
TANK NO. 17 "DIST" (4,5)
TANK NO. 18 LIGHT FUEL OIL
TANK NO. 21 "DFO"
TANK NO. 22 DIESEL
TANK NO. 24 (3,5)
TANK NO. 25
TANK NO. 26
TANK NOT NUMBERED SUPREME
TANK NOT NUMBERED "SSO"

ASTs
HEATING TANKS (1946) (1)
HEATING OIL UST
FUEL LOADING RACK (1946)(1)
FUEL LOADING RACK (1980)
WASH RACKS (1946) (1)
WASH RACK
VEHICLE FUEL PUMPS
BARREL STEAMER
BOILER ROOM (1946) (1)
PRIVATE GARAGE1922 (4)
PUMP HOUSE1922 (4)
FRAME OFFICE 1922 (4)
CONCRETE BERM
CONCRETE BUILDING
OFFICE
SHOP
STORAGE
GARAGE (1946)(1)
METAL SHED
SHED
CB
CONTAINMENT WALL
CONCRETE BLOCK WALL
AGGREGATE STOCKPILES
GRAVEL ON ASPAHLT
ASPHALT
ASPHALT BATCH PLANT
CONCRETE
CONCRETE PAD
ASPHALT SHOP
SCALE
OWS 1
OWS 2
OWS 3
OWS 4
OWS 5
OWS 6
OWS 7
OF 2 CULVERT OUTFALL
OF 3 CULVERT OUTFALL
OF 4 CULVERT OUTFALL
OF 5
OF 6 3-CULVERT OUTFALLS
OF 7
OF 8
TOP OF BANK
GP

LEGEND

MW-19 = MONITORING WELL (FARALLON 2013)
MW-10 = MONITORING WELL (FARALLON 2011)
B58 = BORING LOCATION (FARALLON 2017)
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B14 = BORING LOCATION (FARALLON 2009)
20 = TEST PIT (GEOENGINEERS, 1984)
13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
OWS = OIL-WATER SEPARATOR
OF = OUTFALL
AST = ABOVEGROUND STORAGE TANK
= GATE POST
= CYCLONE FENCE
= RETAINING WALL
= SHORELINE
= RAILROAD TRACKS
= HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985
= APPROXIMATE AREA EXCEEDING MTCA CLEANUP LEVEL FOR GRO/BENZENE IN SOIL

[**390/0.2**-7.5'] = CONCENTRATION OF TOTAL PETROLEUM HYDROCARBONS AS GASOLINE-RANGE ORGANICS / CONCENTRATION OF BENZENE-SAMPLE DEPTH IN FEET BELOW GROUND SURFACE

ALL SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

< = DENOTES ANALYTE NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN

BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL

N

0 30
APPROXIMATE SCALE IN FEET

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FIGURE 5

SITE PLAN SHOWING GRO/BENZENE ANALYTICAL RESULTS FOR SOIL
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ | Checked By: RC | Date: 09/19/2018 | Disk Reference: 525-006

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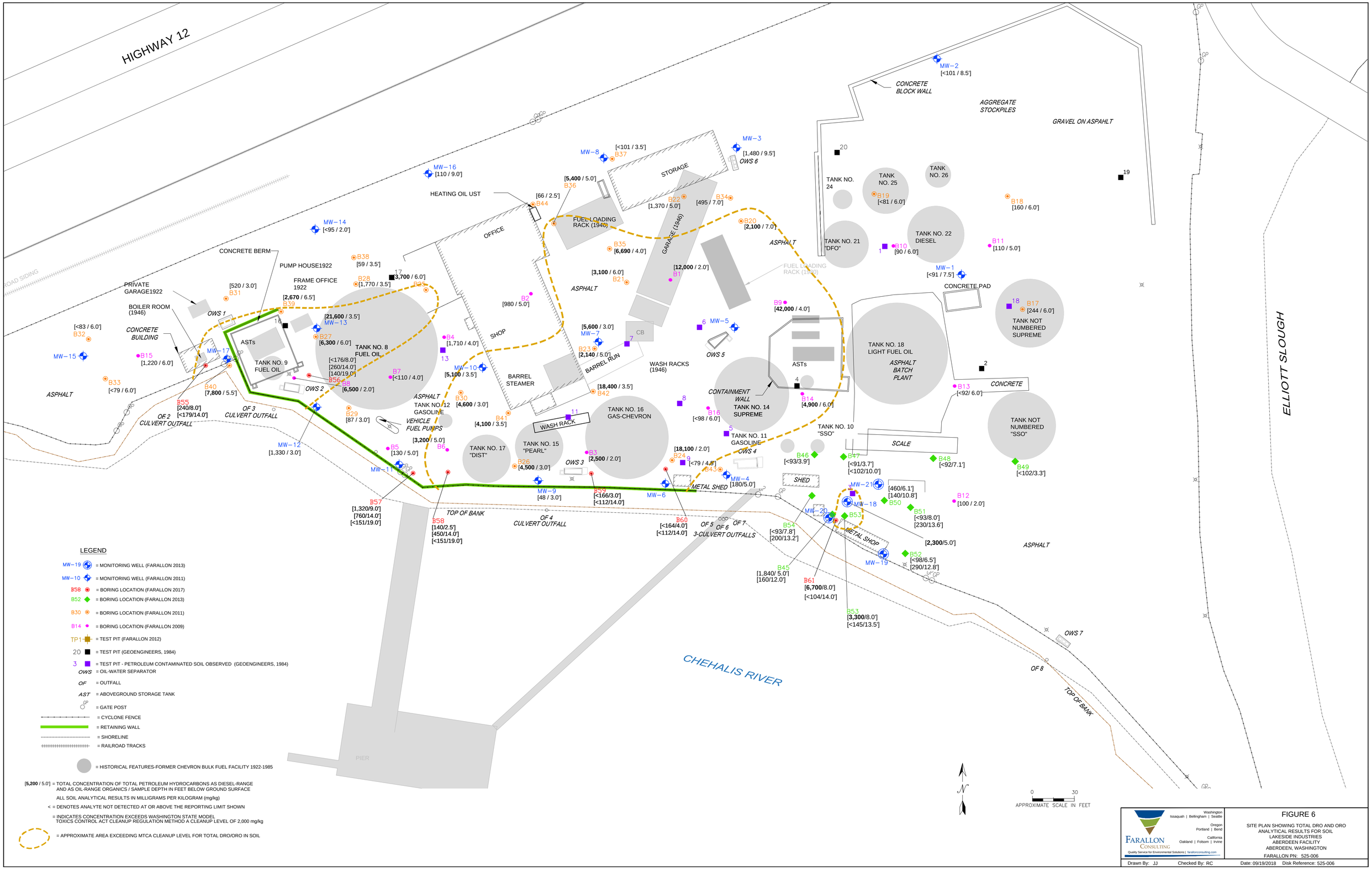

LEGEND

- MW-19 = MONITORING WELL (FARALLON 2013)
- MW-10 = MONITORING WELL (FARALLON 2011)
- B58 = BORING LOCATION (FARALLON 2017)
- B52 = BORING LOCATION (FARALLON 2013)
- B30 = BORING LOCATION (FARALLON 2011)
- B14 = BORING LOCATION (FARALLON 2009)
- TP1 = TEST PIT (FARALLON 2012)
- 20 = TEST PIT (GEOENGINEERS, 1984)
- 3 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
- OWS = OIL-WATER SEPARATOR
- OF = OUTFALL
- AST = ABOVEGROUND STORAGE TANK
- GP = GATE POST
- = CYCLONE FENCE
- = RETAINING WALL
- = SHORELINE
- = RAILROAD TRACKS
- = HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985

[5,200 / 5.0'] = TOTAL CONCENTRATION OF TOTAL PETROLEUM HYDROCARBONS AS DIESEL-RANGE AND AS OIL-RANGE ORGANICS / SAMPLE DEPTH IN FEET BELOW GROUND SURFACE

ALL SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM (mg/kg)

< = DENOTES ANALYTE NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN

= INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL OF 2,000 mg/kg

= APPROXIMATE AREA EXCEEDING MTCA CLEANUP LEVEL FOR TOTAL DRO/ORO IN SOIL

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FIGURE 6

SITE PLAN SHOWING TOTAL DRO AND ORO ANALYTICAL RESULTS FOR SOIL
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ | Checked By: RC | Date: 09/19/2018 | Disk Reference: 525-006

HIGHWAY 12

ELLIOTT SLOUGH

CHEHALIS RIVER

DATE	GRO	B
08/03/11	130	<1.0
03/22/12	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/02/11	--	---
03/22/12	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/02/11	--	---
03/22/12	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/03/11	<100	<1.0
03/23/12	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/03/11	<100	<1.0
03/23/12	<100	<1.0
05/03/17	<400	<4.0

DATE	GRO	B
08/03/11	240	<1.0
03/23/12	170	<1.0
05/03/17	160	<1.0

DATE	GRO	B
08/02/11	<100	<1.0
03/22/12	<100	<1.0
05/02/17	<400	<4.0

DATE	GRO	B
08/03/11	190	<1.0
03/23/12	<100	<1.0
05/03/17	<400	<4.0

DATE	GRO	B
08/02/11	<100	<1.0
03/22/12	<100	<1.0
05/02/17	<100	<1.0

DATE	GRO	B
08/02/11	**1,400**	**16**
03/22/12	**1,600**	**16**
05/03/17	**1,300**	**10**

DATE	GRO	B
08/03/11	<100	<1.0
03/23/12	<100	<1.0
05/03/17	<400	<4.0

DATE	GRO	B
08/03/11	<100	<1.0
03/23/12	<100	<1.0
05/03/17	<400	<4.0

DATE	GRO	B
08/03/11	100	<1.0
03/23/12	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/02/11	140	<1.0
03/22/12	<100	<1.0
05/03/17	<100	**11**

DATE	GRO	B
08/02/11	<100	<1.0
03/22/12	<100	<1.0
05/03/17	<400	<4.0

DATE	GRO	B
08/28/13	460	**65**
05/03/17	500	**56**

DATE	GRO	B
08/28/13	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
08/28/13	<100	<1.0
05/03/17	<100	<1.0

DATE	GRO	B
04/11/13	**2,300**	**39**
05/03/17	**1,500**	**31**

LEGEND

MW-19 = MONITORING WELL (FARALLON 2013)

MW-10 = MONITORING WELL (FARALLON 2011)

20 = TEST PIT (GEOENGINEERS, 1984)

13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)

OWS = OIL-WATER SEPARATOR

OF = OUTFALL

AST = ABOVEGROUND STORAGE TANK

GP = GATE POST

=CYCLONE FENCE

= SHORELINE

= RAILROAD TRACKS

= HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985

6 = GROUNDWATER ELEVATION CONTOUR MAY 2, 2017 (FEET ABOVE MEAN SEA LEVEL)

ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (µg/l)

< = DENOTES ANALYTE NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN

GRO = CONCENTRATION OF TOTAL PETROLEUM HYDROCARBONS AS GASOLINE-RANGE ORGANICS (GRO)

B = BENZENE

BOLD = INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL

0 30

APPROXIMATE SCALE IN FEET

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FIGURE 7

SITE PLAN SHOWING GRO AND BENZENE ANALYTICAL RESULTS IN GROUNDWATER
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ Checked By: RC Date: 09/19/2018 Disk Reference: 525-006

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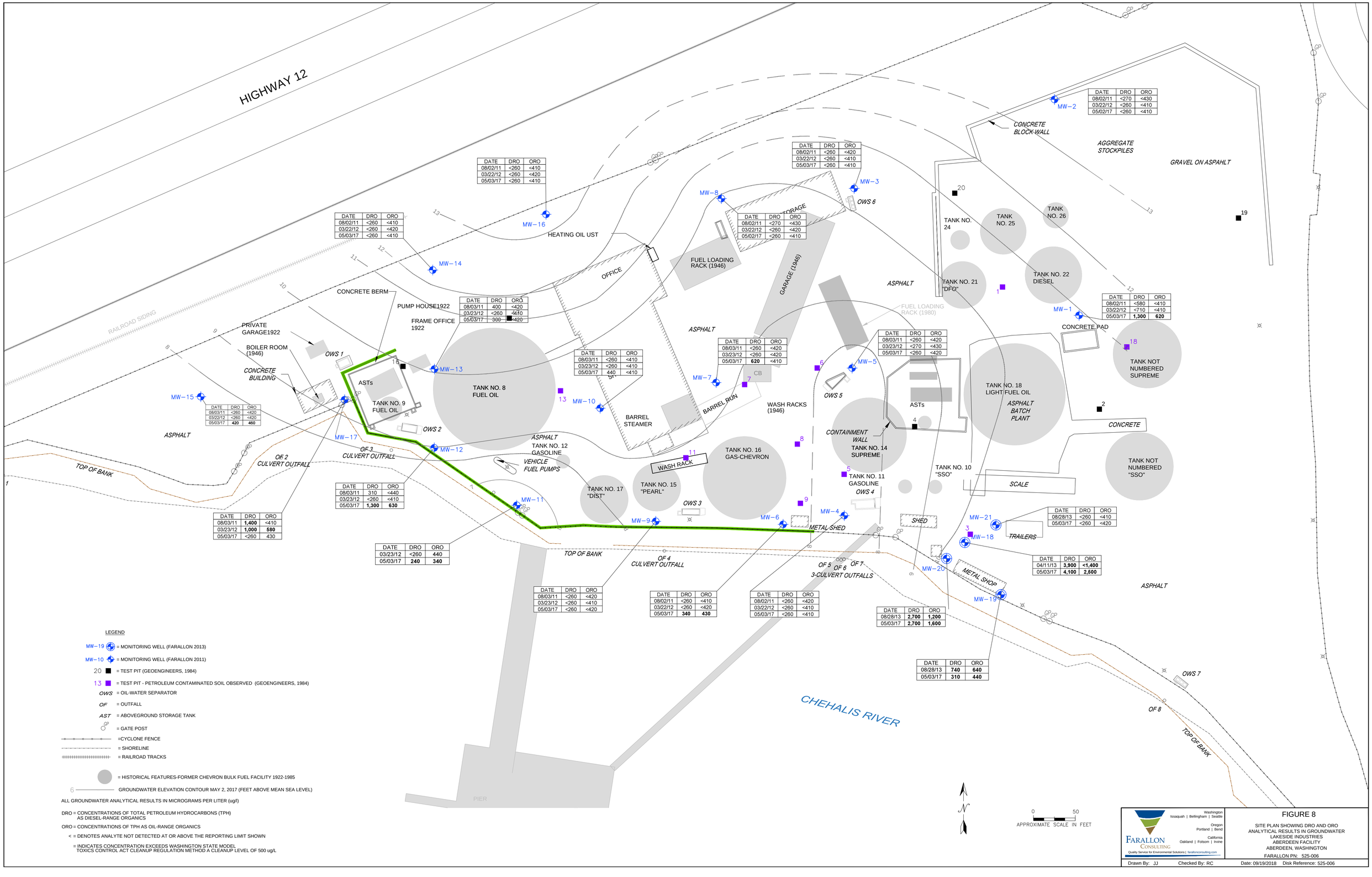

DATE	DRO	ORO
08/02/11	<260	<410
03/22/12	<260	<420
05/03/17	<260	<410

DATE	DRO	ORO
08/02/11	<260	<410
03/22/12	<260	<420
05/03/17	<260	<410

DATE	DRO	ORO
08/03/11	400	<420
03/23/12	<260	410
05/03/17	300	<420

DATE	DRO	ORO
08/03/11	<260	<420
03/23/12	<260	<420
05/03/17	<260	<420

DATE	DRO	ORO
08/03/11	<260	<410
03/23/12	<260	<410
05/03/17	440	<410

DATE	DRO	ORO
08/02/11	<260	<420
03/22/12	<260	<420
05/03/17	**620**	<410

DATE	DRO	ORO
08/03/11	<260	<420
03/22/12	<260	<420
05/03/17	**420**	**460**

DATE	DRO	ORO
08/02/11	**1,400**	<410
03/23/12	**1,000**	**580**
05/03/17	<260	430

DATE	DRO	ORO
08/03/11	310	<440
03/23/12	<260	<410
05/03/17	**1,300**	**630**

DATE	DRO	ORO
03/23/12	<260	440
05/03/17	**240**	**340**

DATE	DRO	ORO
08/03/11	<260	<420
03/23/12	<260	<410
05/03/17	<260	<420

DATE	DRO	ORO
08/02/11	<260	<410
03/22/12	<260	<420
05/03/17	**340**	**430**

DATE	DRO	ORO
08/02/11	<260	<420
03/22/12	<260	<410
05/03/17	<260	<410

DATE	DRO	ORO
08/02/11	<270	<430
03/22/12	<260	<420
05/02/17	<260	<410

DATE	DRO	ORO
08/03/11	<260	<420
03/23/12	<270	<430
05/03/17	<260	<420

DATE	DRO	ORO
08/02/11	<270	<430
03/22/12	<260	<410
05/02/17	<260	<410

DATE	DRO	ORO
08/02/11	<580	<410
03/22/12	<710	<410
05/03/17	**1,300**	**620**

DATE	DRO	ORO
08/28/13	<260	<410
05/03/17	<260	<420

DATE	DRO	ORO
04/11/13	**3,900**	**<1,400**
05/03/17	**4,100**	**2,600**

DATE	DRO	ORO
08/28/13	**2,700**	**1,200**
05/03/17	**2,700**	**1,600**

DATE	DRO	ORO
08/28/13	**740**	**640**
05/03/17	**310**	**440**

LEGEND

- MW-19 = MONITORING WELL (FARALLON 2013)
- MW-10 = MONITORING WELL (FARALLON 2011)
- 20 = TEST PIT (GEOENGINEERS, 1984)
- 13 = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
- OWS = OIL-WATER SEPARATOR
- OF = OUTFALL
- AST = ABOVEGROUND STORAGE TANK
- GP = GATE POST
- =CYCLONE FENCE
- = SHORELINE
- = RAILROAD TRACKS
- = HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985
- 6 = GROUNDWATER ELEVATION CONTOUR MAY 2, 2017 (FEET ABOVE MEAN SEA LEVEL)

ALL GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER (ug/l)

DRO = CONCENTRATIONS OF TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS

ORO = CONCENTRATIONS OF TPH AS OIL-RANGE ORGANICS

< = DENOTES ANALYTE NOT DETECTED AT OR ABOVE THE REPORTING LIMIT SHOWN

= INDICATES CONCENTRATION EXCEEDS WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL OF 500 ug/L

0 50
APPROXIMATE SCALE IN FEET

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FIGURE 8

SITE PLAN SHOWING DRO AND ORO
ANALYTICAL RESULTS IN GROUNDWATER
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ | Checked By: RC | Date: 09/19/2018 | Disk Reference: 525-006

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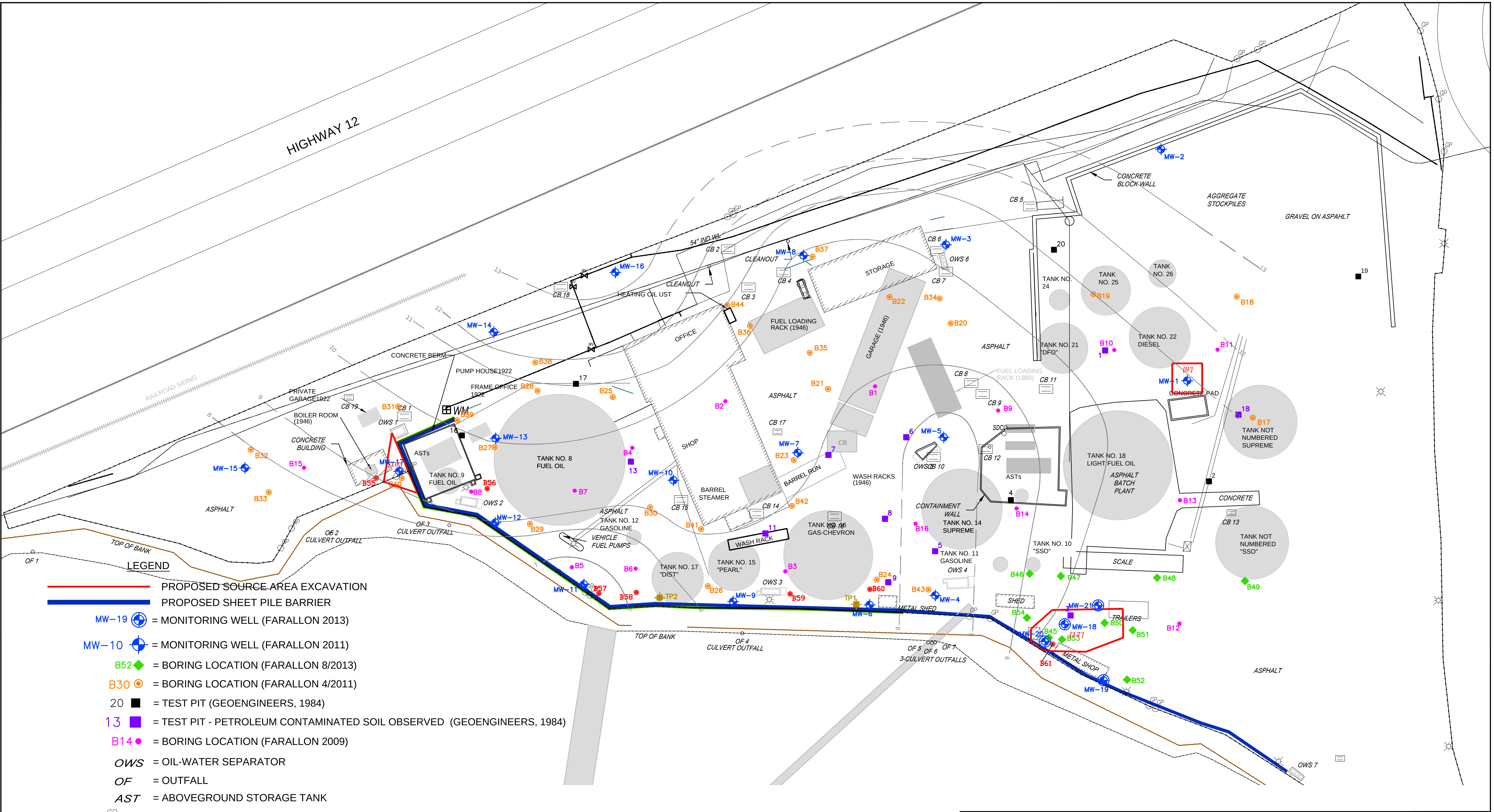

LEGEND

PROPOSED SOURCE AREA EXCAVATION
PROPOSED SHEET PILE BARRIER
MW-19 = MONITORING WELL (FARALLON 2013)
MW-10 = MONITORING WELL (FARALLON 2011)
B52 = BORING LOCATION (FARALLON 8/2013)
B30 = BORING LOCATION (FARALLON 4/2011)
20 ■ = TEST PIT (GEOENGINEERS, 1984)
13 ■ = TEST PIT - PETROLEUM CONTAMINATED SOIL OBSERVED (GEOENGINEERS, 1984)
B14 ● = BORING LOCATION (FARALLON 2009)
OWS = OIL-WATER SEPARATOR
OF = OUTFALL
AST = ABOVEGROUND STORAGE TANK
GP ○ = GATE POST
= CYCLONE FENCE
= RETAINING WALL
= RAILROAD TRACKS
CB = CATCH BASIN
● = HISTORICAL FEATURES-FORMER CHEVRON BULK FUEL FACILITY 1922-1985

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FIGURE 9

SITE PLAN SHOWING PRIMARY ELEMENTS OF
CLEANUP ALTERNATIVE 3
LAKESIDE INDUSTRIES
ABERDEEN FACILITY
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

Drawn By: JJ | Checked By: RC | Date: 09/19/2018 | Disk Reference: 525-006

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TABLES

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

Table 1
Summary of Petroleum Storage Tanks
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Tank Identification	Type (AST/UST)	Approximate Volume (Gallons)	Product	Location	In Use	Date Closed	Closure Method
Tank No. 8	AST	1,430,000	Fuel Oil	West	No	Early 1980s	Removed
Tank No. 9	AST	36,000	Fuel Oil	West (current diesel tank farm)	No	Early 1980s	Removed
Tank No. 10	AST	19,500	"SSO"	South Central	No	Early 1980s	Removed
Tank No. 11	AST	19,500	Gasoline	South Central	No	Early 1980s	Removed
Tank No. 12	AST	20,000	Gasoline	Southwest	No	Early 1980s	Removed
Tank No. 14	AST	567,000	Supreme	South Central	No	Early 1980s	Removed
Tank No. 15	AST	185,000	Kerosene ("Pearl")	Southwest	No	Early 1980s	Removed
Tank No. 16	AST	500,000	Gasoline	South Central	No	Early 1980s	Removed
Tank No. 17	AST	160,000	"DIST"	Southwest	No	Early 1980s	Removed
Tank No. 18	AST	905,058	Light Fuel Oil	East	No	Early 1980s	Removed
Tank No. 21	AST	186,480	"DFO"	Northeast	No	Early 1980s	Removed
Tank No. 22	AST	186,480	Diesel	Northeast	No	Early 1980s	Removed
Tank No. 24	AST	19,500	Unknown	Northeast	No	Early 1980s	Removed
Tank No. 25	AST	190,000	Unknown	Northeast	No	Early 1980s	Removed
Tank No. 26	AST	36,000	Unknown	Northeast	No	Early 1980s	Removed
Unknown	AST	20,000	Supreme	East (east of Tank No. 18)	No	Early 1980s	Removed
Unknown	AST	20,000	"SSO"	Southeast (SE of Tank No. 18)	No	Early 1980s	Removed
Unknown	Unknown	5,500	Heating Oil	East Central (NW of Tank No. 18)	No	Early 1980s	Removed
Unknown	Unknown	5,500	Heating Oil	East Central (NW of Tank No. 18)	No	Early 1980s	Removed
TOTALS	**19**	**4,511,518**	**Standard Oil Company/Chevron 1922-1985**				
Asphalt Tank Farm	AST	12,000	Asphalt Cement	East	Yes	-	N/A
	AST	10,000	Asphalt Cement		Yes	-	N/A
	AST	10,000	Asphalt Cement		Yes	-	N/A
	AST	10,000	Emulsified Asphalt		No	2018	Removed
	AST	8,000	Emulsified Asphalt		Yes	-	N/A
	AST	2,500	Anti-Strip		No	Unknown	Removed
	AST	275	Diesel Fuel		Yes	-	N/A
	OE	250	Heat Transfer Oil		Yes	--	--
	OE	55	Heat Transfer Oil		Yes	--	--
Diesel Tank Farm	AST	15,000	Diesel Fuel	West	No	2018	Removed
	AST	12,000	Diesel Fuel		No	2018	Removed
	AST	5,000	Diesel Fuel		Yes	-	N/A
	AST	4,000	Gasoline		No	Unknown	Unknown
	AST	1,000	Used Oil		Yes	-	N/A
	AST	140	Anti-freeze		No	2017	Removed
	AST	140	Anti-freeze		No	2017	Removed
Mechanics Shop	AST	250	Used Oil	Central	Yes	-	N/A
	AST	250	Engine Oil		No	2017	Removed
	AST	250	Hydraulic Oil		No	2017	Removed
	AST	250	Heat Transfer Oil		No	2017	Removed
Tank 1	UST	<500	Heating Oil	North Central (Adjacent Office Building)	No	Unknown	Removal Pending
Tank 2	UST	<500	Waste Oil	Unknown	No	1988	Removed
TOTALS	**20**	**91,360**	**Lakeside Industries 1985 to Present**				

NOTES:

Operational equipment containers are associated with in-use equipment on the Site and are not used for product storage.

AST = aboveground storage tank
N/A = Not Applicable
OE = operational equipment container
UST = underground storage tank

Table 2
Groundwater Elevations
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Monitoring Well Number	Water Level Measurement (Date)	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Elevation of Groundwater (feet)[1]
MW-1	8/2/2011	13.23	3.50	9.73
	12/7/2011		3.24	9.99
	12/8/2011		3.27	9.96
	3/22/2012		2.75	10.48
	4/11/2013		2.74	10.49
	9/26/2013		3.90	9.33
	12/1/2016		NM	NM
	5/2/2017		2.33	10.90
MW-2	8/2/2011	20.62	9.97	10.65
	12/7/2011		8.22	12.40
	12/8/2011		8.30	12.32
	3/22/2012		8.09	12.53
	4/11/2013		7.47	13.15
	9/26/2013		8.45	12.17
	12/1/2016		6.71	13.91
	5/2/2017		7.03	13.59
MW-3	8/2/2011	11.08	0.97	10.11
	12/7/2011		2.56	8.52
	12/8/2011		1.36	9.72
	3/22/2012		1.79	9.29
	4/11/2013		2.14	8.94
	9/26/2013		2.69	8.39
	12/1/2016		2.45	8.63
	5/2/2017		0.87	10.21
MW-4	8/2/2011	11.50	4.12	7.38
	12/7/2011		4.20	7.30
	12/8/2011		3.46	8.04
	3/22/2012		4.20	7.30
	4/11/2013		4.19	7.31
	9/26/2013		4.03	7.47
	12/1/2016		2.61	8.89
	5/2/2017		4.16	7.34
MW-5	8/2/2011	10.87	2.83	8.04
	12/7/2011		2.33	8.54
	12/8/2011		2.76	8.11
	3/22/2012		3.13	7.74
	4/11/2013		3.45	7.42
	9/26/2013		1.97	8.90
	12/1/2016		3.95	6.92
	5/2/2017		3.41	7.46
MW-6	8/2/2011	10.64	2.59	8.05
	12/7/2011		2.64	8.00
	12/8/2011		2.70	7.94
	3/22/2012		2.19	8.45
	4/11/2013		2.18	8.46
	9/26/2013		2.24	8.40
	12/1/2016		1.90	8.74
	5/2/2017		2.05	8.59

Table 2
Groundwater Elevations
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Monitoring Well Number	Water Level Measurement (Date)	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Elevation of Groundwater (feet)[1]
MW-7	8/2/2011	11.03	2.01	9.02
	12/7/2011		1.83	9.20
	12/8/2011		1.88	9.15
	3/22/2012		1.63	9.40
	4/11/2013		1.64	9.39
	9/26/2013		1.80	9.23
	12/1/2016		1.54	9.49
	5/2/2017		1.83	9.20
MW-8	8/2/2011	12.06	2.10	9.96
	12/7/2011		2.20	9.86
	12/8/2011		2.31	9.75
	3/22/2012		1.95	10.11
	4/11/2013		1.92	10.14
	9/26/2013		2.06	10.00
	12/1/2016		2.10	9.96
	5/2/2017		2.12	9.94
MW-9	8/2/2011	10.68	5.49	5.19
	12/7/2011		2.65	8.03
	12/8/2011		2.66	8.02
	3/22/2012		2.05	8.63
	4/11/2013		1.73	8.95
	9/26/2013		1.49	9.19
	12/1/2016		1.66	9.02
	5/2/2017		1.94	8.74
MW-10	8/2/2011	11.06	2.30	8.76
	12/7/2011		1.39	9.67
	12/8/2011		1.34	9.72
	3/22/2012		1.13	9.93
	4/11/2013		1.15	9.91
	9/26/2013		2.19	8.87
	12/1/2016		0.90	10.16
	5/2/2017		1.00	10.06
MW-11	8/2/2011	12.41	7.21	5.20
	12/7/2011		7.27	5.14
	12/8/2011		4.57	7.84
	3/22/2012		6.54	5.87
	4/11/2013		6.71	5.70
	9/26/2013		6.76	5.65
	12/1/2016		3.64	8.77
	5/2/2017		6.21	6.20
MW-12	8/2/2011	11.60	5.51	6.09
	12/7/2011		2.94	8.66
	12/8/2011		2.93	8.67
	3/22/2012		2.60	9.00
	4/11/2013		2.50	9.10
	9/26/2013		2.70	8.90
	12/1/2016		2.43	9.17
	5/2/2017		2.51	9.09

Table 2
Groundwater Elevations
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Monitoring Well Number	Water Level Measurement (Date)	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Elevation of Groundwater (feet)[1]
MW-13	8/2/2011	12.83	2.81	10.02
	12/7/2011		2.25	10.58
	12/8/2011		2.30	10.53
	3/22/2012		1.80	11.03
	4/11/2013		1.74	11.09
	9/26/2013		2.42	10.41
	12/1/2016		1.53	11.30
	5/2/2017		2.05	10.78
MW-14	8/2/2011	12.50	1.10	11.40
	12/7/2011		0.69	11.81
	12/8/2011		0.69	11.81
	3/22/2012		0.00[3]	12.50
	4/11/2013		0.00[3]	12.50
	9/26/2013		0.16	12.34
	12/1/2016		0.00[3]	12.50
	5/2/2017		0.00[3]	12.50
MW-15	8/2/2011	14.41	7.35	7.06
	12/7/2011		6.95	7.46
	12/8/2011		7.00	7.41
	3/22/2012		6.33	8.08
	4/11/2013		6.55	7.86
	9/26/2013		7.08	7.33
	12/1/2016		6.23	8.18
	5/2/2017		6.45	7.96
MW-16	8/2/2011	13.55	1.10	12.45
	12/7/2011		0.49	13.06
	12/8/2011		0.51	13.04
	3/22/2012		0.00[3]	13.55
	4/11/2013		0.00[3]	13.55
	9/26/2013		0.11	13.44
	12/1/2016		0.00[3]	13.55
	5/2/2017		0.00[3]	13.55
MW-17	8/2/2011	12.67	3.79	8.88
	12/7/2011		3.45	9.22
	12/8/2011		3.45	9.22
	3/22/2012		3.21	9.46
	4/11/2013		3.35	9.32
	9/26/2013		3.63	9.04
	12/1/2016		3.03	9.64
	5/2/2017		3.26	9.41
MW-18	4/11/2013	14.65	4.40	10.25
	9/26/2013		5.48	9.17
	12/1/2016		3.82	10.83
	5/2/2017		4.11	10.54
MW-19	9/26/2013	13.92	4.73	9.19
	12/1/2016		NM	NM
	5/2/2017		4.78	9.14

Table 2
Groundwater Elevations
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Monitoring Well Number	Water Level Measurement (Date)	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Elevation of Groundwater (feet)[1]
MW-20	9/26/2013	14.32	4.89	9.43
	12/1/2016		3.92	10.40
	5/2/2017		4.08	10.24
MW-21	9/26/2013	13.47	4.36	9.11
	12/1/2016		2.54	10.93
	5/2/2017		2.95	10.52

NOTES:

[1]Site surveys by Berglund, Schmidt, and Associates on August 11, 2011, May 1, 2013, and October 1, 2013. Elevations in feet above mean sea level based on NAVD88 datum.

NM = not measured due to access issue

[2]In feet below top of PVC well casing.

[3]Artesian conditions were observed at the time of measurement.

Table 3
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)						
				DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethylbenzene[4]	Total Xylenes[4]
January 2009 Initial Remedial Investigation										
B1-2	B1	1/13/2009	2.0	<1,200	**12,000**	<4.9	<0.0011	<0.0053	<0.0011	<0.0021
B2-5	B2	1/13/2009	5.0	450	530	<10	<0.00091	<0.0045	<0.00091	<0.0018
B3-2	B3	1/13/2009	2.0	**1,300**	**1,200**	<11	0.0017	<0.0052	0.0048	0.0032
B3-4	B3	1/13/2009	4.0	--	--	**5,000**[5]	**1.9**	0.69	**8**	6.6
B4-4	B4	1/13/2009	4.0	510	1,200	<9.4	<0.00088	<0.0044	<0.00088	<0.0018
B5-5	B5	1/14/2009	5.0	<28	130	<5.6	<0.020	<0.056	<0.056	<0.056
B6-5	B6	1/14/2009	5.0	**2,000**	**1,200**	<5.7	<0.020	<0.057	<0.057	<0.057
B7-4	B7	1/14/2009	4.0	<57	<110	<16	<0.031	<0.16	<0.16	<0.16
B8-2	B8	1/14/2009	2.0	**2,100**	**4,400**	<5.9	0.025	<0.059	<0.059	<0.059
B9-4	B9	1/14/2009	4.0	**19,000**	**23,000**	<13	**0.088**	<0.13	0.34	0.87
B10-6	B10	1/14/2009	6.0	<30	90	**1,000**[5]	<1.2	<1.2	<1.2	1.4
B11-5	B11	1/14/2009	5.0	<27	110	<5.5	<0.020	<0.055	<0.055	<0.055
B12-2	B12	1/15/2009	2.0	<31	100	<6.9	<0.020	<0.069	<0.069	<0.069
B13-6	B13	1/15/2009	6.0	<31	<61	<6.7	<0.020	<0.067	<0.067	<0.067
B14-6	B14	1/15/2009	6.0	**1,100**	**3,800**	<5.6	<0.020	<0.056	<0.056	<0.056
B15-6	B15	1/15/2009	6.0	220	1,000	35[6]	<0.0012	<0.0058	<0.0012	<0.0023
B16-6	B16	1/15/2009	6.0	<33	<65	<7.6	<0.020	<0.076	<0.076	<0.076
MTCA Method A Cleanup Levels[7]				**2,000**		**30**	**0.03**	**7**	**6**	**9**

Table 3
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)						
				DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethylbenzene[4]	Total Xylenes[4]
April 2011 Remedial Investigation										
B17-6.0	B17	4/19/2011	6.0	64	180	<6.0	<0.020	<0.060	<0.060	<0.060
B18-6.0	B18	4/19/2011	6.0	<29	160	<6.5	<0.020	<0.065	<0.065	<0.065
B19-6.0	B19	4/19/2011	6.0	<27	<54	<5.0	<0.020	<0.050	<0.050	<0.050
B20-7.0	B20	4/19/2011	7.0	**2,100**	<62	<12	**0.039**	<0.12	0.90	1.1[8]
B21-6.0	B21	4/20/2011	6.0	**3,100**	**<300**[8]	--	--	--	--	--
B22-5.0	B22	4/20/2011	5.0	170[10]	1,200	--	--	--	--	--
B23-3.0	B23	4/20/2011	3.0	**1,500**	**640**	<9.3	**0.079**	<0.093	0.82	1.9[8]
B24-2.0	B24	4/20/2011	2.0	**11,000**	**7,100**	<11	**0.099**	0.15	0.25	1.02
B25-6.0	B25	4/20/2011	6.0	**2,400**	**1,300**	--	--	--	--	--
B26-3.0	B26	4/20/2011	3.0	**3,400**	**1,100**	<9.1	<0.020	<0.091	<0.091	<0.46[8]
B27-6.0	B27	4/20/2011	6.0	**3,100**	**3,200**	--	--	--	--	--
B28-3.5	B28	4/21/2011	3.5	770	1,000	--	--	--	--	--
B29-3.0	B29	4/21/2011	3.0	<27	87	--	--	--	--	--
B30-3.0	B30	4/21/2011	3.0	**3,500**	**1,100**[9]	--	--	--	--	--
B31-3.0	B31	4/21/2011	3.0	160[10]	360	--	--	--	--	--
B32-6.0	B32	4/21/2011	6.0	<28	<55	--	--	--	--	--
B33-6.0	B33	4/21/2011	6.0	<26	<53	--	--	--	--	--
B34-7.0	B34	4/19/2011	7.0	430	65[9]	**54**	0.024	<0.11	0.18	0.28
B35-4.0	B35	4/21/2011	4.0	**5,800**	**890**[9]	--	--	--	--	--
MTCA Method A Cleanup Levels[7]				**2,000**		**30**	**0.03**	**7**	**6**	**9**

Table 3
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)						
				DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethylbenzene[4]	Total Xylenes[4]
July/August 2011 Supplemental Remedial Investigation										
B36-5.0	B36	7/27/2011	5.0	**3,300**	**2,100**	--	--	--	--	--
B37-3.5	B37	7/27/2011	3.5	<34	<67	--	--	--	--	--
B38-3.5	B38	7/27/2011	3.5	<26	59	--	--	--	--	--
B39-6.5	B39	7/27/2011	6.5	**2,400**	**270**	--	--	--	--	--
B40-5.5	B40	7/27/2011	5.5	**4,000**	**3,800**	--	--	--	--	--
B41-3.5	B41	7/26/2011	3.5	**3,000**	**1,100**	<10	0.023	<0.10	0.11	0.55
B42-3.5	B42	7/27/2011	3.5	**9,300**	**9,100**	**1,200**	**0.29**	<0.26	1.3	2.2
B43-4.5	B43	7/27/2011	4.5	<26	<53	28	**0.064**	<0.053	<0.053	0.077
B44-2.5	B44	8/1/2011	2.5	<28	66	--	--	--	--	--
MW1-7.5	MW-1	7/27/2011	7.5	<30	<61	20	**0.099**	<0.081	<0.081	<0.162
MW2-8.5	MW-2	7/27/2011	8.5	<34	<67	23	<0.020	<0.086	<0.086	<0.172
MW3-9.5	MW-3	7/27/2011	9.5	380	1,100	13	<0.13	<0.13	<0.13	<0.26
MW4-5.0	MW-4	7/28/2011	5.0	<51	180	<14	<0.28	<0.14	<0.14	<0.28
MW5-7.5	MW-5	7/27/2011	7.5	<48	<96	**390**	**0.2**	<0.16	0.45	<0.41
MW7-3.0	MW-7	7/27/2011	3.0	**3,400**	**2,200**	<10	**0.079**	0.28	0.84	2.1
MW9-3.0	MW-9	7/26/2011	3.0	48	<56	<5.9	<0.020	<0.059	<0.059	<0.118
MW10-3.5	MW-10	8/1/2011	3.5	**4,100**	**1,000**	--	--	--	--	--
MW12-3.0	MW-12	8/1/2011	3.0	450	880	<6.4	<0.020	<0.064	<0.064	<0.128
MW13-3.5	MW-13	8/1/2011	3.5	**8,600**	**13,000**	<11	<0.022	<0.11	<0.11	<0.22
MW14-2.0	MW-14	8/1/2011	2.0	<32	<63	--	--	--	--	--
MW16D-9.0	MW-16	8/1/2011	9.0	<31	110	--	--	--	--	--
MTCA Method A Cleanup Levels [7]				**2,000**		**30**	**0.03**	**7**	**6**	**9**

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Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)						
				DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethylbenzene[4]	Total Xylenes[4]
April 2013 Additional Well Installation										
B-45-5.0	B45	4/5/2013	5.0	540	1,300	<5.5	<0.020	<0.055	<0.055	<0.110
B-45-12.0	B45	4/5/2013	12.0	<58	160	<17	**0.1**	<0.17	<0.17	<0.34
MW-18-5.0	MW-18	4/5/2013	5.0	**1,700**	**600**	**180**	**0.081**	<0.12	0.54	0.26
August 2013 Geoprobe										
B46-080613-3.9	B46	8/6/2013	3.9	<31	<62	<4.7	<0.020	<0.047	<0.047	<0.094
B47-080613-3.7	B47	8/6/2013	3.7	<30	<61	<4.3	<0.020	<0.043	<0.043	<0.086
B47-080613-10.0	B47	8/6/2013	10.0	<34	<68	<6.6	<0.020	<0.066	<0.066	<0.132
B48-080613-7.1	B48	8/6/2013	7.1	<31	<61	<4.5	<0.020	<0.045	<0.045	<0.090
B49-080613-3.3	B49	8/6/2013	3.3	<34	<68	<5.2	<0.020	<0.052	<0.052	<0.104
B50-080613-6.1	B50	8/6/2013	6.1	460	<64	**130**	<0.020	<0.093	0.43	0.28
B50-080613-10.8	B50	8/6/2013	10.8	<35	140	<5.9	<0.020	<0.059	<0.059	<0.118
B51-080613-8.0	B51	8/6/2013	8.0	<31	<62	<4.4	<0.020	<0.044	<0.044	<0.088
B51-080613-13.6	B51	8/6/2013	13.6	<55	230	<14	<0.028	<0.14	<0.14	<0.28
B52-080613-6.5	B52	8/6/2013	6.5	<33	<65	<4.8	<0.020	<0.048	<0.048	<0.096
B52-080613-12.8	B52	8/6/2013	12.8	50	240	<11	<0.022	<0.11	<0.11	<0.22
B53-080613-5.0	B53	8/6/2013	5.0	**3,300**	**<220**	**1,700**	**0.97**	<0.37	**13**	3.4
B53-080613-13.5	B53	8/6/2013	13.5	<48	<97	<11	<0.023	<0.11	<0.11	<0.22
B54-080613-7.8	B54	8/6/2013	7.8	<31	<62	<4.3	<0.020	<0.043	<0.043	<0.086
B54-080613-13.2	B54	8/6/2013	13.2	<58	200	<15	<0.029	<0.15	<0.15	<0.30
MTCA Method A Cleanup Levels [7]				**2,000**		**30**	**0.03**	**7**	**6**	**9**

Table 3
Summary of Soil Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)						
				DRO[2]	ORO[2]	GRO[3]	Benzene[4]	Toluene[4]	Ethylbenzene[4]	Total Xylenes[4]
May 2017 Geoprobe										
B55-8.0	B55	5/2/2017	8.0	90	150	<28	<0.056	<0.28	<0.28	<0.56
B55-14.0	B55	5/2/2017	14.0	<59	<120	<28	<0.056	<0.28	<0.28	<0.56
B56-8.0	B56	5/2/2017	8.0	<56	<120	<25	<0.051	<0.25	<0.25	<0.50
B56-14.0	B56	5/2/2017	14.0	<130	260	<45	<0.090	<0.45	<0.45	<0.90
B56-19.0	B56	5/2/2017	19.0	<49	140	--	--	--	--	--
B57-9.0	B57	5/2/2017	9.0	1,000 M	320	**350**	**0.076**	<0.21	0.35	2.3
B57-14.0	B57	5/2/2017	14.0	140	620	<66	<0.13	<0.66	<0.66	<1.32
B57-19.0	B57	5/2/2017	19.0	<51	<100	<19	<0.039	<0.19	<0.19	<0.38
B58-2.5	B58	5/2/2017	2.5	<26	140	<6.1	<0.020	<0.061	<0.061	<0.122
B58-14.0	B58	5/2/2017	14.0	<80	450	<39	<0.078	<0.39	<0.39	<0.78
B58-19.0	B58	5/2/2017	19.0	<51	<100	--	--	--	--	--
B59-3.0	B59	5/2/2017	3.0	<56	<110	**46**	<0.046	<0.23	<0.23	0.27
B59-14.0	B59	5/2/2017	14.0	<37	<75	<12	<0.024	<0.12	<0.12	<0.24
B60-4.0	B60	5/2/2017	4.0	<54	<110	**120**	<0.039	<0.20	0.29	0.54
B60-14.0	B60	5/2/2017	14.0	<37	<75	<11	<0.021	<0.11	<0.11	<0.22
B61-8.0	B61	5/2/2017	8.0	**2,600**	**4,100**	30	**0.041**	<0.078	<0.078	<0.156
B61-14.0	B61	5/2/2017	14.0	<35	<69	<9.7	<0.020	<0.097	<0.097	<0.194
MTCA Method A Cleanup Levels [7]				**2,000**		**30**	**0.03**	**7**	**6**	**9**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

-- denotes sample not analyzed

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

M = hydrocarbons in the gasoline-range are impacting the diesel-range result

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

[1]Depth in feet below ground surface (bgs).

[2]Analyzed by Northwest Method NWTPH-Dx.

[3]Analyzed by Northwest Method NWTPH-Gx.

[4]Analyzed by U.S. Environmental Protection Agency Method 8021B or 8260B.

[5]The laboratory analytical report indicates that hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

[6]The laboratory analytical report indicates that the sample chromatogram is not similar to a typical gasoline.

[7]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[8]The practical quantitation limit is elevated due to interferences in the sample.

[9]Hydrocarbons in diesel range are impacting oil-range results.

[10]Hydrocarbons in lube oil range are impacting diesel-range results.

Table 4
Summary of Soil Analytical Results - Polycyclic Aromatic Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)[2]																	
				Non-Carcinogenic Polycyclic Aromatic Hydrocarbons										Carcinogenic Polycyclic Aromatic Hydrocarbons							
				Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	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	Dibenz(a,h)anthracene	Total Toxic Equivalent Concentration[5]
January 2009 Initial Remedial Investigation																					
B1-2	B1	1/13/2009	2.0	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	<0.0036	0.0061	<0.036	<0.036	0.11	0.13	0.046	0.54	0.23	<0.036	0.099	<0.036	<0.036	**0.149**
B8-2	B8	1/14/2009	2.0	0.15	1.3	0.89	0.039	0.11	0.11	0.25	0.024	0.068	0.11	0.099	0.016	0.13	0.091	<0.014	0.086	<0.014	<0.014	**0.109**
B9-4	B9	1/14/2009	4.0	0.97	**230**	**120**	0.081	3.1	6.2	8.5	0.68	0.21	1.3	<0.079	0.37	1.3	0.3	<0.079	0.2	<0.079	<0.079	**0.292**
B14-6	B14	1/15/2009	6.0	<0.015	<0.015	<0.015	<0.015	<0.015	0.026	0.048	0.055	0.2	1.8	0.2	0.16	0.95	0.28	0.019	0.37	0.066	0.062	**0.452**
April 2011 Remedial Investigation																					
B20-7.0	B20	4/19/2011	7.0	0.17	0.69	1.4	0.038	0.23	0.58	0.29	0.036	0.0097	0.0082	<0.0079	<0.040	<0.040	<0.0079	<0.0079	<0.0079	<0.0079	<0.0079	0.020
July/August 2011 Supplemental Remedial Investigation																					
MW-7-3.0	MW7	7/27/2011	3.0	<0.035	0.48	1.9	0.09	0.11	0.38	0.37	0.088	0.059	0.17	0.039	0.07	0.12	0.037	<0.035	0.073	0.035	<0.035	0.096
MW-9-3.0	MW9	7/26/2011	3.0	<0.037	<0.037	<0.037	0.049	<0.037	<0.037	<0.037	<0.037	0.043	0.044	0.058	0.065	0.039	0.052	0.051	0.069	0.062	0.058	0.098
MW-12-3.0	MW12	7/28/2011	3.0	0.083	0.09	<0.036	0.045	<0.036	<0.036	0.081	<0.036	0.075	0.069	0.059	0.05	0.044	0.051	0.042	0.063	0.052	<0.036	0.084
May 2017 Geoprobe																					
B55-14.0	B55	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016	0.012
B56-14.0	B56	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	0.018
B57-14.0	B57	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	0.026
B57-19.0	B57	5/2/2017	19.0	--	--	--	--	--	--	--	--	--	--	--	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	0.010
B58-14.0	B58	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	0.016
B59-14.0	B59	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.0099	0.022	0.019	<0.0099	<0.0099	<0.0099	<0.0099	0.011
B59-19.0*	B59	5/2/2017	19.0	--	--	--	--	--	--	--	--	--	--	--	<0.012 UJ	<0.012 UJ	<0.012 UJ	<0.012 UJ	<0.012 UJ	<0.012 UJ	<0.012 UJ	0.009
B60-14.0	B60	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.0075
B61-14.0	B61	5/2/2017	14.0	--	--	--	--	--	--	--	--	--	--	--	<0.0093	<0.0093	<0.0093	<0.0093	<0.0093	<0.0093	<0.0093	0.0070
MTCA Cleanup Levels				**5[3]**			**NE**	**4,800[4]**	**3,200[4]**	**NE**	**24,000[4]**	**3,200[4]**	**2,400[4]**	**NE**	**Cleanup Level for Mixture**							**0.1[3]**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or above the reporting limit listed.

* = analyzed one day out of holding time

NE = cleanup level not established

UJ = the analyte was analyzed for but was not detected; the reporting limit is an estimate

[1]Depth in feet below ground surface (bgs).

[2]Analyzed by U.S. Environmental Protection Agency Method 8270D/SIM.

[3]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[4]Washington State Cleanup Levels and Risk Calculations under MTCA, Version 3.1 Standard Method B Formula Values for Soil (Unrestricted Land Use) - Direct Contact (Ingestion Only) and Leaching Pathway, https://fortress.wa.gov/ecy/clarc/Reporting/ChemicalQuery.aspx

[5]Total Toxic Equivalent Concentration for mixtures of carcinogenic polycyclic aromatic hydrocarbons, calculated in accordance with MTCA Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

Table 5
Summary of Soil Analytical Results - Metals
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Depth (feet bgs)[1]	Analytical Results (milligrams per kilogram)[2]							
				Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
January 2009 Initial Remedial Investigation											
B3-4	B3	1/13/2009	4	**26**	43	**7**	30	**1,500**	**4.3**	<11	<0.56
B9-4	B9	1/14/2009	4	14	44	<0.60	36	11	<0.30	<12	<0.60
B10-6	B10	1/14/2009	6	<12	44	<0.60	41	6.7	<0.30	<12	<0.60
April 2011 Remedial Investigation											
B23-3.0	B23	4/20/2011	3	<11	--	<0.54	24	35	<0.27	--	--
B24-2.0	B24	4/20/2011	2	<11	--	1	19	59	1.2	--	--
B26-3.0	B26	4/20/2011	3	<11	--	<0.56	18	110	<0.28	--	--
July/August 2011 Supplemental Remedial Investigation											
MW9-3.0	MW-9	7/27/2011	3	**46**	35	2	27	8.7	<0.28	<11	<0.56
April 2013 Additional Well Installation											
B-45-5.0	B45	4/5/2013	5.0	--	--	--	--	<6.1	--	--	--
B-45-12.0	B45	4/5/2013	12.0	--	--	--	--	<12	--	--	--
MW-18-5.0	MW-18	4/5/2013	5.0	--	--	--	--	14	--	--	--
August 2013 Additional Well Installation											
B50-080613-6.1	B50	8/6/2013	6.1	--	--	--	--	<6.2	--	--	--
B54-080613-5.0	B53	8/6/2013	5	--	--	--	--	9	--	--	--
Natural Background Soil Metals Concentrations[3]				**7**	**NE**	**1**	**42**	**36**	**0.07**	**NE**	**NE**
MTCA Cleanup Levels				**20[4]**	**16,000[5]**	**2[4]**	**2,000[4]**	**250[4]**	**2[4]**	**400[5]**	**400[5]**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

-- denotes sample not analyzed

NE = background concentration not established

[1]Depth in feet below ground surface (bgs).

[2]Analyzed by U.S. Environmental Protection Agency Methods 6010B/7471A.

[3]Washington State Department of Ecology Natural Background Soil Metals Concentrations in Washington State, Publication #94-115, Statewide.

[4]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[5]Washington State Cleanup Levels and Risk Calculations under MTCA, Version 3.1 Standard Method B Formula Values for Soil (Unrestricted Land Use) - Direct Contact (Ingestion Only) and Leaching Pathway, https://fortress.wa.gov/ecy/clarc/Reporting/ChemicalQuery.aspx

Table 6
Summary of Reconnaissance Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
January 2009 Initial Remedial Investigation									
B1-011309-8	B1	1/13/2009	**9,500**	**2,600**	<500	<0.20	<1.0	0.29	2.3
B2-011309-10	B2	1/13/2009	**920**	**820**	<500	<0.20	<1.0	<0.20	<0.40
B3-011309-6	B3	1/13/2009	**6,300**	**1,100**	**6,800**	**400**	90	280	366
B4-011309-8	B4	1/13/2009	**1,800**	<400	<500	<0.20	<1.0	<0.20	<0.40
B5-011409-8	B5	1/14/2009	**8,400**	**5,900**	<400	<4.0	<4.0	<4.0	<4.0
B6-011409-9	B6	1/14/2009	**2,900**	**520**	<400	<4.0	<4.0	<4.0	<4.0
B7-011409-9	B7	1/14/2009	<260	<410	<400	<4.0	<4.0	<4.0	<4.0
B8-011409-8	B8	1/14/2009	**9,300**	**5,200**	**1,800**[10]	<4.0	<4.0	<4.0	<4.0
B9-011409-8	B9	1/14/2009	**5,900**	**5,300**	<400	**5**	<4.0	<4.0	<4.0
B10-011409-8	B10	1/14/2009	**2,500**	**1,300**	**1,000**	**18**	4.1	8.3	8.8
B11-011409-10	B11	1/14/2009	**290**	**610**	<400	<4.0	<4.0	<4.0	<4.0
B12-011509-10	B12	1/15/2009	<250	<400	<400	<4.0	<4.0	<4.0	<4.0
B13-011509-9	B13	1/15/2009	<260	<410	<400	<4.0	<4.0	<4.0	<4.0
B14-011509-9	B14	1/15/2009	<250	<410	<400	<4.0	<4.0	<4.0	<4.0
B15-011509-9	B15	1/15/2009	**460**	**740**	<500	<0.20	<1.0	<0.20	<0.40
B16-011509-10	B16	1/15/2009	<270	<430	<400	<4.0	<4.0	<4.0	<4.0
MTCA Method A Cleanup Levels[4]			**500**		**800**[5]	**5**	**1,000**	**700**	**1,000**

Table 6
Summary of Reconnaissance Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
April 2011 Remedial Investigation									
B17-041911-GW	B17	4/19/2011	<260	<420	<100	<1.0	<1.0	<1.0	<1.0
B18-041911-GW	B18	4/19/2011	<270	<440	<100	<1.0	<1.0	<1.0	<1.0
B19-041911-GW	B19	4/19/2011	**250**	**1,200**	<100	<1.0	<1.0	<1.0	<1.0
B20-041911-GW	B20	4/19/2011	**810**[7]	<420	240	<1.0	<1.0	<1.0	<1.0
B21-042011-GW	B21	4/20/2011	**8,800**	<1,200	--	--	--	--	--
B22-042011-GW	B22	4/20/2011	<280	<440	--	--	--	--	--
B23-042011-GW	B23	4/20/2011	**30,000**[7]	**15,000**	560	<4.0	<4.0	<4.0	<4.0
B24-042011-GW	B24	4/20/2011	**40,000**[7]	**17,000**	**4,500**	<4.0	<4.0	8.8	13
B25-042011-GW	B25	4/20/2011	**1,700**[8]	**470**	--	--	--	--	--
B26-042011-GW	B26	4/20/2011	**19,000**[7]	<2,000[6]	**1,200**	<4.0	<4.0	<4.0	6.0
B27-042011-GW	B27	4/20/2011	**12,000**	**9,900**	--	--	--	--	--
B28-042111-GW	B28	4/21/2011	**9,100**	**1,700**	--	--	--	--	--
B29-042111-GW	B29	4/21/2011	**2,000**	**700**[9]	--	--	--	--	--
B30-042111-GW	B30	4/21/2011	**4,900**[8]	**610**	--	--	--	--	--
B31-042111-GW	B31	4/21/2011	290	<260	--	--	--	--	--
B32-042111-GW	B32	4/21/2011	<290	<460	--	--	--	--	--
B33-042111-GW	B33	4/21/2011	<280	<450	--	--	--	--	--
B34-041911-GW	B34	4/19/2011	**510**[7]	<420	510	<1.0	<1.0	<1.0	<1.0
B35-042111-GW	B35	4/21/2011	**39,000**	**<4,200**[6]	--	--	--	--	--
MTCA Method A Cleanup Levels[4]			**500**		**800**[5]	**5**	**1,000**	**700**	**1,000**

Table 6
Summary of Reconnaissance Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Sample Identification	Boring Number	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
July/August 2011 Supplemental Remedial Investigation									
B36-072511-GW	B36	7/25/2011	**7,300**	**1,200**	--	--	--	--	--
B37-072511-GW	B37	7/25/2011	<270	<430	--	--	--	--	--
B38-072522-GW	B38	7/25/2011	**330**	**620**	--	--	--	--	--
B39-072511-GW	B39	7/25/2011	**9,300**	**1,100**	--	--	--	--	--
B40-072511-GW	B40	7/25/2011	**9,600**	**3,600**	--	--	--	--	--
B41-072611-GW	B41	7/26/2011	**2,000**	**1,400**	<400	<4.0	<4.0	<4.0	<8.0
B42-072511-GW	B42	7/25/2011	**6,800**	**6,800**	660	<4.0	<4.0	<4.0	<8.0
B43-072511-GW	B43	7/25/2011	**2,900**	**680**	**1,100**	**5.60**	<4.0	<4.0	<8.0
B44-072911-GW	B44	7/29/2011	**13,000**	**4,300**	--	--	--	--	--
MTCA Method A Cleanup Levels[4]			**500**		**800[5]**	**5**	**1,000**	**700**	**1,000**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

-- denotes sample not analyzed

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

GRO = TPH as gasoline-range organics

ORO = TPH as oil-range organics

[1]Analyzed by Northwest Method NWTPH-Dx.

[2]Analyzed by Northwest Method NWTPH-Gx.

[3]Analyzed by U.S. Environmental Protection Agency Method 8021B.

[4]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[5]Cleanup level for GRO is with the presence of benzene.

[6]The practical quantitation limit is elevated due to interferences in the sample.

[7]Hydrocarbons in the gasoline range are impacting the diesel-range result.

[8]Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.

[9]Hydrocarbons in the diesel range are impacting the oil-range result.

[10]The laboratory analytical report indicates that hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

Table 7
Summary of Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Boring/ Monitoring Well	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]
MW-1	MW-1-080211	08/02/11	<580	<410	**1,400**	**16**	<1.0	17	17.2
	MW-1-032212	03/22/12	<710	<410	**1,600**	**16**	1.3	19	13.8
	MW-1-050317	05/03/17	**1,300**	**620**	**1,300** J F	**10** J	<4.0 UJ	<4.0 UJ	<8.0 UJ
MW-2	MW-2-080211	08/02/11	<270	<430	<100	<1.0	<1.0	<1.0	<2.0
	MW-2-032212	03/22/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-2-050217*	05/02/17	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
MW-3	MW-3-080211	08/02/11	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-3-032212	03/22/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-3-050317	05/03/17	<260	<410	<400	<4.0	<4.0	<4.0	<8.0
MW-4	MW-4-080211	08/02/11	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-4-032212	03/22/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-4-050317	05/03/17	<260	<410	<400	<4.0	<4.0	<4.0	<8.0
MW-5	MW-5-080311	08/03/11	<260	<420	190	<1.0	<1.0	<1.0	<2.0
	MW-5-032312	03/23/12	<270	<430	<100	<1.0	<1.0	<1.0	<2.0
	MW-5-050317	05/03/17	<260	<420	<400	<4.0	<4.0	<4.0	<8.0
MW-6	MW-6-080211	08/02/11	<260	<410	140	<1.0	<1.0	<1.0	<2.0
	MW-6-032212	03/22/12	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-6-050317	05/03/17	**340**	**430**	<100	**11**	<1.0	<1.0	<2.0
MW-7	MW-7-080311	08/03/11	<260	<420	240	<1.0	<1.0	<1.0	<2.0
	MW-7-032312	03/23/12	<260	<420	170	<1.0	<1.0	<1.0	<2.0
	MW-7-050317	05/03/17	**620**	<410	160 F	<1.0	<1.0	<1.0	<2.0
	DUP2-050317	05/03/17	---	---	160	<1.0	<1.0	<1.0	<2.0
MW-8	MW-8-080211	08/02/11	<270	<430	--	--	--	--	--
	MW-8-032212	03/22/12	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-8-050217*	05/02/17	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
MW-9	MW-9-080311	08/03/11	<260	<420	100	<1.0	<1.0	<1.0	<2.0
	MW-9-032312	03/23/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-9-050317	05/03/17	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
MW-10	MW-10-080311	08/03/11	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-10-032312	03/23/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-10-050317	05/03/17	440	<410	<400 UJ	<4.0 UJ	<4.0 UJ	<4.0 UJ	<8.0 UJ
MTCA Cleanup Levels for Groundwater[4]			**500**		**800**	**5**	**1,000**	**700**	**1,000**

Table 7
Summary of Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Boring/ Monitoring Well	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]
MW-11	MW-11-080211-LNAPL	08/03/11	--	--	--	--	--	--	--
	MW-11-032312	03/23/12	<260	440	<100	<1.0	<1.0	<1.0	<2.0
	MW-11-050317	05/03/17	**240**	**340**	<400	<4.0	<4.0	<4.0	<8.0
	DUP3-050317	05/03/17	---	---	480	<1.0	<1.0	<1.0	<2.0
MW-12	MW-12-080311	08/03/11	310	<440	<100	<1.0	<1.0	<1.0	<2.0
	MW-12-032312	03/23/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-12-050317	05/03/17	**1,300**	**630**	<400	<4.0	<4.0	<4.0	<8.0
MW-13	MW-13-080311	08/03/11	400	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-13-032312	03/23/12	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-13-050317	05/03/17	300	<420	<100	<1.0	<1.0	<1.0	<2.0
MW-14	MW-14-080211	08/02/11	<260	<410	--	--	--	--	--
	MW-14-032212	03/22/12	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-14-050317	05/03/17	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
MW-15	MW-15-080311	08/03/11	<260	<420	130	<1.0	<1.0	<1.0	<2.0
	MW-15-032212	03/22/12	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-15-050317	05/03/17	**420**	**460**	<100	<1.0	<1.0	<1.0	<2.0
MW-16	MW-16-080211	08/02/11	<260	<410	--	--	--	--	--
	MW-16-032212	03/22/12	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
	MW-16-050317	05/03/17	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
MW-17	MW-17-080311	08/03/11	**1,400**	<410	--	--	--	--	--
	MW-17-032312	03/23/12	**1,000**	**580**	<100	<1.0	<1.0	<1.0	<2.0
	MW-17-050317	05/03/17	<260	430	<100	<1.0	<1.0	<1.0	<2.0
	DUP1-050317	05/03/17	---	---	<400	<4.0	<4.0	<4.0	<8.0
MW-18	MW-18-041113	04/11/13	**3,900**	**<1,400**	**2,300**	**39**	4.7	34	5.9
	MW-18-050317	05/03/17	**4,100**	**2,500**	**1,500** F	**31**	4.3	4.6	<8.0
MW-19	MW-19-082813	08/28/13	**740**	**640**	<100	<1.0	<1.0	<1.0	9.3
	MW-19-050317	05/03/17	**310**	**440**	<100	<1.0	<1.0	<1.0	13
MTCA Cleanup Levels for Groundwater[4]			**500**		**800**	**5**	**1,000**	**700**	**1,000**

Table 7
Summary of Groundwater Analytical Results - Total Petroleum Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Boring/ Monitoring Well	Sample Identification	Sample Date	Analytical Results (micrograms per liter)						
			DRO[1]	ORO[1]	GRO[2]	Benzene[3]	Toluene[3]	Ethyl-benzene[3]	Xylenes[3]
MW-20	MW-20-082813	08/28/13	**2,700**	**1,200**	460	**65**	1.3	<1.0	2.7
	MW-20-050317	05/03/17	**2,700**	**1,600**	500 F	**56**	<1.0	<1.0	3.9
MW-21	MW-21-082813	08/28/13	<260	<410	<100	<1.0	<1.0	<1.0	<2.0
	MW-21-050317	05/03/17	<260	<420	<100	<1.0	<1.0	<1.0	<2.0
MTCA Cleanup Levels for Groundwater[4]			**500**		**800**	**5**	**1,000**	**700**	**1,000**

NOTES:

Results in **bold** denote concentrations exceeding applicable cleanup levels.

< denotes analyte not detected at or exceeding the reporting limit listed.

[1]Analyzed by Northwest Method NWTPH-Dx.

[2]Analyzed by Northwest Method NWTPH-Gx.

[3]Analyzed by U.S. Environmental Protection Agency Method 8021B.

[4]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

DRO = total petroleum hydrocarbons (TPH) as diesel-range organics

F = hydrocarbons indicative of heavier fuels are present in sample and are impacting the gasoline result

GRO = TPH as gasoline-range organics

J = result is an estimate

ORO = TPH as oil-range organics

UJ = the analyte was analyzed for but was not detected; the reporting limit is an estimate

* sample analyzed one day out of holding time

Table 8
Summary of Groundwater Analytical Results - Polycyclic Aromatic Hydrocarbons
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Location	Sample Identification	Sample Date	Analytical Results (micrograms per liter)[1]																	
			Non-Carcinogenic Polycyclic Aromatic Hydrocarbons										Carcinogenic Polycyclic Aromatic Hydrocarbons							
			Naphthalene	2-Methylnaphthalene	1-Methylnaphthalene	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	Dibenz(a,h)anthracene	Total Toxic Equivalent Concentration[3]
MW-4	MW-4-080211	08/02/11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.025	0.029	0.011	0.019	0.021	0.031	0.028	0.024	0.043
MW-5	MW-5-080311	08/03/11	<0.096	<0.096	0.52	<0.096	0.13	0.15	<0.096	<0.096	<0.096	<0.096	0.022	0.026	<0.0096	0.019	0.019	0.028	0.027	0.024	0.040
MW-6	MW-6-080211	08/02/11	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	0.021	0.025	<0.0096	0.017	0.019	0.027	0.026	0.024	0.038
MW-7	MW-7-080311	08/03/11	0.12	0.23	3.2	<0.095	0.29	0.65	0.13	<0.095	<0.095	<0.095	0.021	0.016	<0.0095	0.018	0.017	0.027	0.026	0.024	0.037
MW-9	MW-9-080311	08/03/11	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	<0.096	0.022	0.024	<0.0096	0.017	0.019	0.027	0.025	0.024	0.038
MW-12	MW-12-080311	08/03/11	<0.098	<0.098	0.18	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	0.026	0.027	0.012	0.021	0.021	0.032	0.028	0.025	0.044
MTCA Cleanup Levels for Groundwater			**160[2]**			**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**Cleanup Level for Mixture**							**0.1[2]**

NOTES:

< denotes analyte not detected at or exceeding the reporting limit listed.

NE = cleanup levels not established

[1]Analyzed by U.S. Environmental Protection Agency Method 8270D/SIM.

[2]Washington State Model Toxics Control Act Cleanup[Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised November 2013.

[3]Total Toxic Equivalent Concentration for mixtures of carcinogenic PAHs, calculated in accordance with MTCA Section 708(8) of Chapter 173-340 of the Washington Administrative Code.

Table 9
Summary of Groundwater Analytical Results - Metals
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Location	Sample Identification	Sample Date	Analytical Results (micrograms per liter)[1]							
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
MW-4	MW-4-080211	08/02/11	<3.0	<25	<4.0	<10	<1.0	<0.5	<5	<10
MW-5	MW-5-080211	08/02/11	<3.0	91	<4.0	<10	<1.0	<0.5	<5	<10
MW-6	MW-6-080211	08/02/11	<3.0	140	<4.0	<10	<1.0	<0.5	<11	<10
MW-9	MW-9-080311	08/03/11	<3.0	130	<4.0	<10	<1.0	<0.5	<5	<10
MTCA Cleanup Levels for Groundwater			**5[2]**	**2,000[3]**	**5[2]**	**50[2]**	**15[2]**	**2[2]**	**NE**	**NE**

NOTES:

< denotes analyte not detected at or exceeding the reporting limit listed.

NE = cleanup level not established

[1]Analyzed by U.S. Environmental Protection Agency Methods 6000/6010/7000.

[2]Washington State Model Toxics Control Act Cleanup Regulation Method A Cleanup Levels for Groundwater, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as revised 2013.

[3] National Primary Drinking Water Standard Maximum Contaminant Level - http://water.epa.gov/drink/contaminants/index.cfm

Table 10
Cleanup Technology Screening
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Media	General Response Action	Technology	Process Option[1]	Primary Criteria Score[2]		Secondary Criterion Score[2]	Total Score[2]	Rank[3]	Retain[4]
				Implementability	Effectiveness	Relative Cost			
Non-Specific	**No Action**	**None**	**None**	**3**	**0**	**3**	**6**	**2**	**Y**
	Institutional Controls	**Legal**	**Deed Restrictions (Environmental Covenant), Property Use Restrictions, Health Advisories**	**3**	**1**	**3**	**7**	**1**	**Y**
	Monitored Natural Attenuation	**Natural Degradation Processes, Monitoring, Modeling**	**Sample Collection and Analysis, Predictive Modeling**	**3**	**1**	**3**	**7**	**1**	**Y**
Soil	Treat In-Situ	Biological	Bioventing	2	1	2	5	3	N
			Enhanced Bioremediation	2	1	2	5	3	N
		Chemical	Chemical Oxidation	1	1	2	4	4	N
		Physical	Soil Flush	2	1	1	4	4	N
			Soil Vapor Extraction	2	1	2	5	3	N
			Thermal Remediation	1	3	1	5	3	N
	Excavate and Treat or Contain On or Off the Site	Biological	Biopile	2	1	1	4	4	N
			Slurry Phase Biological Remediation	2	2	1	5	3	N
		Physical	Incineration	1	3	1	5	3	N
			Landfill Disposal	**2**	**3**	**2**	**7**	**2**	**Y**
			Thermal Desorption	2	2	1	5	3	N
	Containment	**Capping**	**Physical Barriers and Constructed Cover**	**3**	**2**	**3**	**8**	**1**	**Y**
Groundwater	Treat In-Situ	Biological	Enhanced Bioremediation	1	1	2	4	3	N
		Chemical	Chemical Oxidation	1	1	2	4	3	N
			Passive or Reactive Treatment Wall	2	1	1	4	3	N
		Physical	Air Sparge	1	1	2	4	3	N
			Thermal Remediation	2	2	1	5	2	N
	Collect and Treat Ex-Situ	Biological	Bioreactor	2	1	1	4	3	N
		Chemical	Advanced Oxidation Processes	2	1	1	4	3	N
			Granular Activated Carbon	2	3	1	6	2	N
		Physical	Air Stripping	2	1	1	4	3	N
			Dispose to Sanitary Sewer	**2**	**1**	**2**	**5**	**2**	**Y**
	Containment	**Capping**	**Physical Barriers and Constructed Cover**	**3**	**1**	**3**	**7**	**1**	**Y**
		Vertical Barrier	**Sheet Pile Barrier**	**2**	**3**	**1**	**6**	**2**	**Y**
			Slurry Wall	1	1	1	3	4	N
			Existing Wall	**3**	**1**	**3**	**7**	**1**	**Y**

NOTES:

[1]Process options in **bold** and highlighted are retained for consideration in Cleanup Alternatives 2 through 4.

[2]Scores: 0 least favorable, 3 most favorable

[3]Rank: based on total score for media, scale of 1 (most favorable) to 4 (least favorable)

[4]Retain: Y = Yes, retain for consideration in cleanup alternative(s). N = No, do not retain for consideration in cleanup alternative(s).

Table 11
Summary of Cleanup Alternative Evaluation
Lakeside Aberdeen Facility
Aberdeen Washington
Farallon PN: 525-006

	Alternative 1 **No Action**	**Alternative 2** **Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation**	**Alternative 3** **Source Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls**	**Alternative 4** **Complete Excavation of Soil Exceeding Cleanup Levels**
Description	No action. No additional measures will be taken to clean up property or to provide protection from exposure to COCs remaining at the Site.	Institutional controls in the form of an environmental covenant recorded on the property deed mandating implementation of future protective measures including engineered controls and containment with capping and vertical barriers, groundwater capture and treatment system, and requiring groundwater monitoring of natural attenuation processes and concentrations of COCs over a period of 5 years.	Soil excavation and off-Site disposal at a permitted landfill; Containment involves capping and vertical barriers and requires temporary partial building demolition and restoration.	Soil site-wide excavation and off-Site disposal at a permitted landfill.
Amount of Contaminated Soil Removal (tons)	0	0	3,100	47,090
THRESHOLD REQUIREMENTS				
Protection of Human Health and the Environment	Alternative will not provide additional protection to human health and the environment.	**Yes** - Alternative will protect human health and the environment by limiting future COC exposure and requiring protective measures included in institutional and engineered controls.	**Yes** - Alternative will protect human health and the environment by use of institutional and engineered controls containment measures, and by source excavation.	**Yes** - Alternative will protect human health and the environment by use of institutional and engineered controls containment measures, and by excavation of all areas of the Site where COCs occur above cleanup levels.
Compliance with Cleanup Standards	Alternative will not comply with cleanup standards except over a very long period of time. COCs will remain above cleanup levels until attenuated naturally.	Alternative will not comply with cleanup standards except over a very long period of time. COCs will remain above cleanup levels until attenuated naturally.	**Yes** - Active remedial measure (excavation) will result in compliance with cleanup standards in source areas. Cleanup standards outside of source areas would be achieved over the long term.	**Yes** - Active remedial measures (excavation) will result in compliance with cleanup standards throughout the Site.
Compliance with Applicable State and Federal Laws	Alternative does not comply with MTCA.	**Yes** - Alternative complies with applicable laws.	**Yes** - Alternative complies with applicable laws.	**Yes** - Alternative complies with applicable laws.
Provision for Compliance Monitoring	Alternative does not include provisions for compliance monitoring.	**Yes** - Alternative includes provisions for compliance monitoring.	**Yes** - Alternative includes provisions for compliance monitoring.	**Yes** - Alternative includes provisions for compliance monitoring.
OTHER REQUIREMENTS				
Permanent to the Maximum Extent Practicable (see detail below)	While alternative is permanent and protective with the current containment systems, cleanup standards will be achieved only over a very long period of time and does not provide for protectiveness beyond that provided by existing containment systems.	Alternative is permanent and protective with the current containment systems supplemented with a new vertical barrier and a protective environmental covenant; however, cleanup standards will be achieved only over a very long period of time and monitoring will enable evaluation of natural attenuation processes.	**Yes** - Alternative is permanent and protective to the maximum extent practicable with the current containment systems supplemented with a new vertical barrier and a protective environmental covenant; achievement of cleanup standards will be accelerated by removal of source material and monitoring will enable evaluation of natural attenuation processes.	Alternative is permanent and protective and cleanup standards will be achieved by removal of soil containing COCs exceeding cleanup levels; however, this cleanup alternative is not considered to be practicable.
Restoration Time Frame	Concentrations of COCs will degrade below cleanup levels over many years. As no additional protective controls or monitoring will be employed, the restoration time frame is not considered to be reasonable under MTCA.	Concentrations of COCs will degrade below cleanup levels over many years. As additional protective controls and monitoring will be employed, no off-Site effects of COCs are expected, and shallow groundwater is not considered to be a potable water supply, the restoration time frame is considered to be reasonable under MTCA.	The restoration time frame for groundwater is within 5 years of completing remedial action construction. The restoration time frame for soil after removal of source areas is many years as COCs are naturally attenuated. As additional protective controls, inspections, and monitoring will be employed, no off-Site effects of COCs are expected, and shallow groundwater is not considered to be a potable water supply, the restoration time frame is considered to be reasonable under MTCA.	The restoration time frame for groundwater is within 5 years of completing remedial action construction. The restoration time frame for soil is upon completion of remedial action construction. Protective controls and monitoring is not required. As no off-Site effects of COCs are expected, and shallow groundwater is not considered to be a potable water supply, the restoration time frame is considered to be reasonable under MTCA.
Evaluation Criteria for Permanence to the Maximum Extent Practicable[1]				
Protectiveness (30% weighting Factor)	Alternative will not provide additional protectiveness beyond that provided by existing containment systems and does not include an environmental covenent or monitoring; cleanup standards achieved over a long time period through natural attenuation. = 5.	Alternative provides protection with containment systems, subject to periodic repairs, supplemented with an environmental covenant and monitoring; cleanup standards achieved over a long period of time through natural attenuation. = 6.5.	Alternative provides protection with containment systems, supplemented with source excavation and an environmental covenant; cleanup standards achieved in reasonable period of time; monitoring of natural attenuation of residual levels of COCs. = 8.	Alternative provides protection by removing all soil containing COCs exceeding cleanup levels. = 9.
Permanence (20% weighting Factor)	Alternative will not pernamently reduce the toxicity or volume of haxardous substances except via natural attenuation processes but the existing containment systems will reduce the overall mobility of COCs. = 4.	Alternative will not pernamently reduce the toxicity or volume of haxardous substances except via natural attenuation processes but the containment systems will reduce the overall mobility of COCs. = 4.	Alternative will permanently reduce the volume of hazardous substances with source excavation; the existing containment system will reduce overall mobility of residual COCs until naturally attenuated. = 8.	Alternative will permanently reduce the volume of hazardous substances with mass excavation of all areas where COCs exceed cleanup levels. = 9.
Long-Term Effectiveness (20% weighting Factor)	Alternative is considred to provide effective protection over the long-term but with reliance on the existing on-Site containment systems. = 2.	Alternative is considred to provide effective protection over the long-term but with reliance on containment systems supplemented with engineered and institutional controls and monitoring. = 4.	Alternative provides effective protection over the long-term by source excavation and disposal off-Site at a permitted facility and by containment of residual levels of COCs supplemented by engineered and institutional controls. = 7.	Alternative provides effective protection over the long-term by mass excavation of areas where COCs exceed cleanup levels and disposal off-Site at a permitted facility. = 9.
Short-Term Risk Management (10% weighting Factor)	Alternative does not disturb affected media in the short term; no short-term risk management needed = 8.	Alternative disturbs minor volume of affected media in the short term for installation of engineer controls; no short-term risk management needed = 7.	Alternative disturbs affected media presenting short-term risk to workers, proximate property owners, and during transport off-Site = 7.	Alternative disturbs larger volumes of affected media than Alternative 3 presenting short-term risk to workers, proximate property owners, and during transport off-Site = 5.
Implementability (10% weighting Factor)	Alternative is easily implemented and results in no Site disturbance. =10.	Alternative employs standard construction processes and use of institutional and engineered controls. While components are readily implementable and require minimal Site disturbance. = 9.	Alternative employs standard construction processes and use of institutional and engineered controls. Components are readily implementable and require modest Site disturbance. = 8.	Alternative requires facilities temporarily move and demolition/rebuilding of structures, extensive excavation, and large impact to the Site business operations. = 1.
Public Concerns (10% weighting Factor)	Alternative leaves impacted soil in place. Site is in area zoned for industrial use and public access is restricted. Public exposure will not occur and limited public concern is anticipated = 10.	Alternative leaves impacted soil in place. Site is in area zoned for industrial use and public access is restricted. Public exposure will not occur and limited public concern is anticipated = 10.	Alternative maximizes removal and disposal of impacted soils. Site is in area zoned for industrial use and public access will be restricted during construction activities. Limited public concern during excavation with most during off-Site transport = 9.	Site is in an area zoned for industiral use and public access will be restricted during construction activities. Public concern may be heightened due to scale of excavation and quantity of soil removed. = 9.
MTCA Composite Benefit Score[1]	**5.5**	**6.2**	**7.8**	**7.8**
Overall Alternative Ranking[2]	**4**	**3**	**1**	**2**
Cost	**$0**	**$1,330,000**	**$2,310,000**	**$16,400,000**

NOTES:

[1] Basis for overall Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Composite Benefit Score provided quantitatively with a "score" from 0 (least favorable) to 10 (most favorable) for each of the six evaluation criteria for permanence to the Maximum Extend Practicable above. MTCA Composite Benefit Scores are calculated by summing the mathematical product of the score multiplied by the indicated weighting factor for each of the six criteria. The basis for the weighting factors for the six criteria to evaluate permanence to the maximum extent practicable are obtained from Washington State Department of Ecology guidance cited in the text.

[2] Overall Alternative Ranking from 1 (most favorable) to 4 (least favorable).

Table 12
Summary of Cleanup Alternative Cost Estimates
Former Chevron Bulk Fuel Facility
Lakeside Industries
Aberdeen, Washington
Farallon PN: 525-006

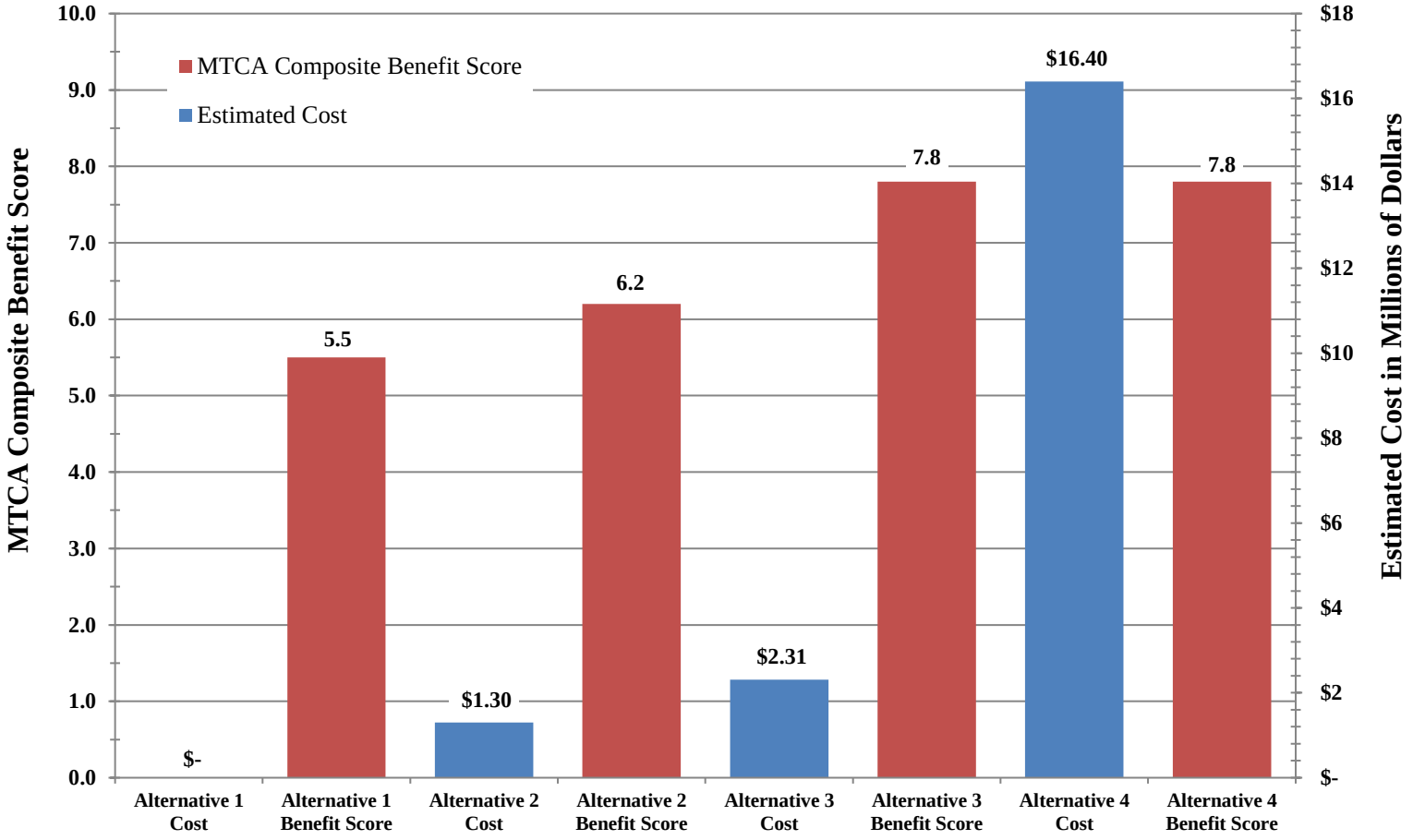
		Alternative 1 No Action	Alternative 2 Institutional and Engineered Controls, Containment, and Monitored Natural Attenuation	Alternative 3 Source Excavation, Containment, Monitored Natural Attenuation, Institutional and Engineered Controls	Alternative 4 Complete Excavation of Soil Exceeding Cleanup Levels
Capital Costs					
Engineering					
	Project Management (7% total construction cost)	$0	$57,800	$108,000	$833,000
	Remedial Design, Permitting (15% total construction cost)	$0	$123,900	$231,000	$1,790,000
	Construction Management (8% total construction cost)	$0	$66,100	$123,000	$952,000
Construction					
	Site Preparation and Construction				
	Mobilization/Demobilization	$0	$0	$28,000	$400,000
	Temporary Facilities	$0	$0	$5,000	$5,000
	Batch Plant Relocation	$0	$0	$0	$1,700,000
	Erosion Control	$0	$0	$20,000	$50,000
	Site Preparation	$0	$0	$10,000	$22,000
	Demolition (structures, foundations, surfacing, wells, utilities, etc.)	$0	$1,700	$46,800	$1,100,000
	Remediation				
	Sheet Pile Barrier and Shoring	$0	$705,950	$746,000	$0
	Excavation & Disposal				
	Excavate, Disposal, and Backfill	$0	$0	$265,000	$3,980,000
	Dewatering & Treatment + Disposal	$0	$0	$80,000	$160,000
	Site Restoration & Compliance Monitoring Wells	$0	$10,000	$32,000	$2,110,000
	Subtotal Construction	$0	$718,000	$1,233,000	$9,530,000
	Contingency and Taxes				
	Contingency Percent	0%	15%	25%	25%
	Contingency Price	$0	$107,700	$308,250	$2,380,000
	Washington and Local Sales Tax (6.5% + 2.0%)	$0	$61,000	$105,000	$810,000
	Total Construction Cost	***$0***	***$826,000***	***$1,540,000***	***$11,900,000***
TOTAL CAPITAL COST		**$0**	**$1,135,000**	**$2,110,000**	**$16,300,000**
Ongoing Periodic and Future Costs					
	Lift Station Operation and Maintenance (5 years)	$0	$84,800	$84,800	$0
	Preparation of Cleanup Action Plan	$0	$25,000	$25,000	$25,000
	Confirmational Groundwater Monitoring	$0	$51,000	$51,000	$51,000
	Progress Reporting	$0	$14,000	$14,000	$14,000
	Closure Report	$0	$20,000	$30,000	$40,000
TOTAL ONGOING PERIODIC and FUTURE COST		**$0**	**$194,800**	**$204,800**	**$130,000**
Remediation Project Total Cost		**$0**	**$1,330,000**	**$2,310,000**	**$16,400,000**
Remediation Project Total Cost Range (-30%/+50%)		**$0**	**$931,000 $2,000,000**	**$1,620,000 $3,470,000**	**$11,500,000 $24,600,000**

CHART

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

Chart 1
Disproportionate Cost Analysis
Lakeside Aberdeen Facility
Aberdeen Washington
Farallon PN: 525-006



FARALLON CONSULTING

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

Quality Service for Environmental Solutions | farallonconsulting.com

CHART 1

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 SARGENT BOULEVARD
ABERDEEN, WASHINGTON

FARALLON PN: 525-006

APPENDIX A
HISTORICAL SITE DRAWINGS AND 1984 HYDROGEOLOGIC REPORT

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

GRAVEL DRIVEWAY

WAREHOUSE

PLATFORM

RAMP

BARREL STEAMER

BARREL RUN

GARAGE

OILED ROAD

TANK NO 15
30 x 35

TANK NO 16
50 x 35

NEW
42 x 41-8½
Bot EL 158
13,500 BBLS

TANK NO 18
71-8 x 30 Ht Bot 162
21,548 BBLS

GRADE AND FOUND AREA TO ELEV 178
TANK YARD CAPACITY 66.0

SUMP

#11

#10

VERTICAL LADDER

NEW 8" STEAM LINE

NEW 6" STEAM LINE TO ELEV 204

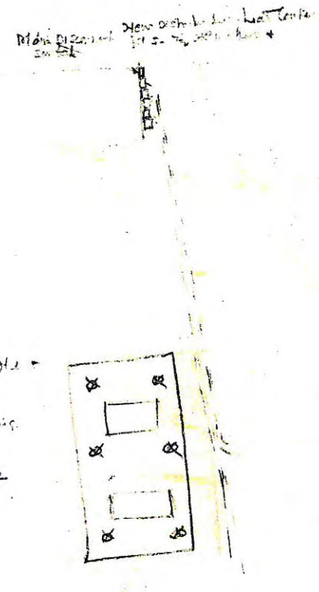
NEW 6" LINE TO ELEV 204

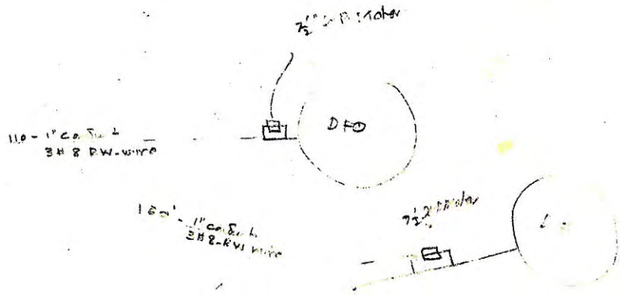
SUMP

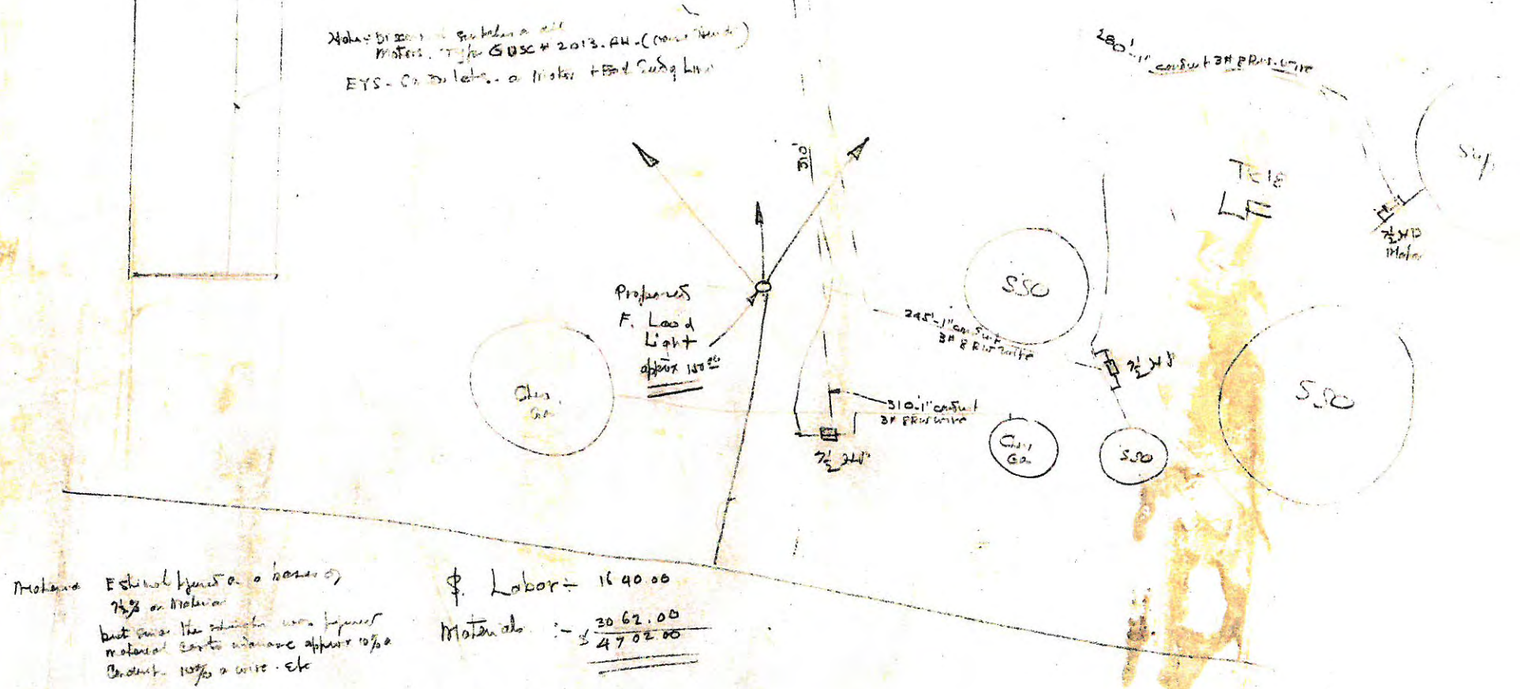
REVISION

STANDARD OIL COMPANY OF CALIFORNIA
ABERDEEN, WASH
PROPOSED IMPROVEMENTS
SCALE 1" = 20' DATE FEB 4th

3-ABER-004-00







DUAL "YEMCO" SUBMERSIBLE SEWAGE PUMPS, MODEL # SS-5, 1½ H.P., 1150 RPM, 230/3/60, 50 GPM @ 14' T.D.H., 3" MAX. SOLIDS SIZE

PUMP CONTROL:
DUPLEX PUMP CONTROL PANEL MTD. INSIDE GARAGE CONTROL PUMPS TO OPERATE ALTERNATELY IN L.W.L. TO L.W.L. RANGE; BOTH PUMPS TO OPERATE IN H.W.L. TO L.W.L. RANGE.

(2) 3" CHECK VALVES
(2) 3" GATE VALVES
3" WYE, P.V.C.
2½" GALV. PRESSURE LINE TO PASS OVER INDUSTRIAL WATER LINE
48" MANHOLE SECTION

LIFT STATION PLAN

A.C. PAVEMENT
24" MANHOLE COVER & RING
INLET
4" C.I.
1000 GALLON SEPTIC TANK
LIQUID LEVEL CONTROL
48" x 24" SHORT CONC. - 18" HIGH
2½" x 2½" RED.
2½" GALV.
3" P.V.C.
H.W.L.
L.W.L.
1'-6"
1'-0"
48" ø M.H. SECTION - CAST-IN BASE
2'-0"

LIQUID LEVEL CONTROL:
NEMA 4 JUNCTION BOX WITH MERCURY SWITCHES. PROVIDE CONTROLS TO OPERATE PUMPS THRU T30 STARTER. PROVIDE HAND-OFF-AUTO CONTROL AND INDICATING LIGHTS. PROVIDE 4 CONDUCTOR CABLE EXTENDED FULL LENGTH OF CONDUIT. ACTUATE ALARM LIGHT WHEN LIQUID LEVEL EXCEEDS H.W.L. BY 6".

SEPTIC TANK & LIFT STATION ELEVATION ⅜"=1'-0"

2'-0"
GROUND LINE
UNTREATED BLDG PAPER
4" PERF P.V.C. DRAINFIELD PIPE.
5'-0"
⅛" - 1½" WASHED GRAVEL FILTER MATERIAL

DRAINFIELD DETAIL ¾"=1'-0"

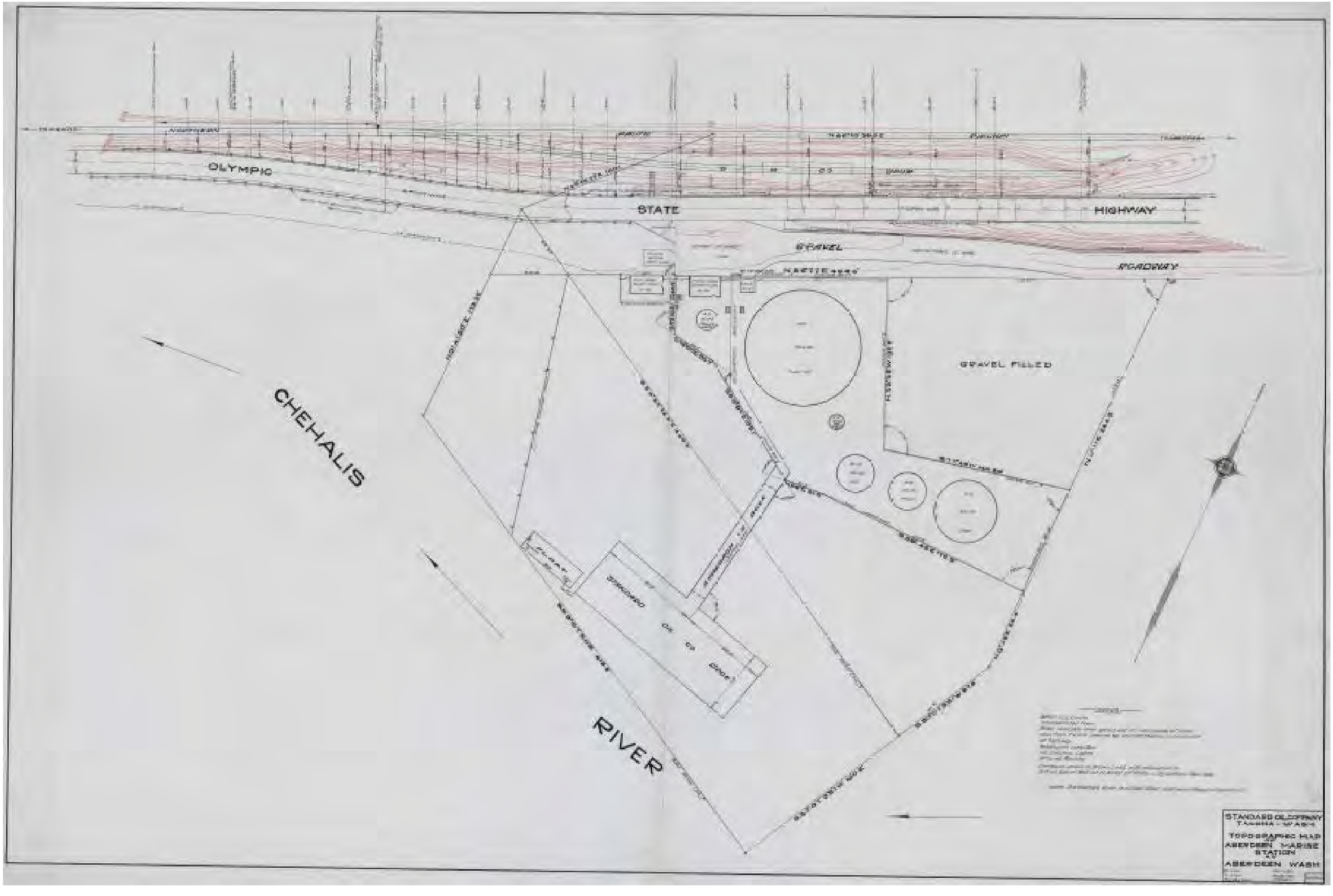
NORTHERN PACIFIC RAILWAY

NOTE: PROPOSED DRAIN FIELD TO BE LOCATED ON CITY PROPERTY

N.P.R.R. R/W
90'-4" PERFORATED P.V.C. DRAINFIELD
50'-0"
W
2½" GALV. PRESSURE LINE PIPE TO PASS OVER IND. WATER LINE.
SEWAGE LIFT STATION
C.B.
12" CONC. S.W. LINE
80' GATE
PARTS STORAGE
EXISTING OFFICE
REST ROOMS
STORAGE DISPLAY
NEW ADDITIONS
1000 GALLON SEPTIC TANK
EXISTING RESTROOM
GARAGE
C.O. PLUG
NEW 4" C.I. SAN. LINE, SLOPE .02%
EXISTING SAN SEWER, PLUG & CONNECT TO SEPTIC TANK
TANK No. 8
WAREHOUSE
PLATFORM
A.C. PAVEMENT
12" CONC. DRAINAGE LINE
BARREL RUN
WASH RACK
TANK No. 16
TANK No. 14
TANK No. 13
EXISTING ROAD
ROAD PRIOR TO 1964
CONCRETE WALL
54" INDUSTRIAL WATER LINE
TK=24
TANK No. 25
TANK No. 20
TANK No. 21
TANK No. 22

STANDARD OIL OF CALIF.
BULK PLANT ABERDEEN, WASH
SCALE: 1" = 20'-0" | APPROVED BY: | DRAWN BY: R.F.L.
DATE: 7-19-71
SEWAGE DISPOSAL SYSTEM
STANDARD OIL WAREHOUSE & PLANT
W. E. BERGLUND, PROF. ENGR. ABERDEEN, WASHINGTON
DRAWING NUMBER 71-111

3-ABER-009-00


OLYMPIC
STATE
HIGHWAY
GRAVEL
GRAVEL FILLED
CHEHALIS
RIVER
STANDARD OIL COMPANY
TACOMA - WASH
TOPOGRAPHIC MAP
ABERDEEN MARINE
STATION
ABERDEEN WASH

STANDARD OIL COMPANY OF CALIFORNIA
ENGINEERING DEPT.

ABERDEEN, WASH.
GROUND PLAN

SCALE 1" = 80'
DRAWN C.H.W.
DATE Oct. 30, 1924
TRACED C.O.H.

PROPERTY LAYOUT
SCALE: 1 IN. = 100 FT.

REGIONAL MAP
SCALE: 1 IN. = 20 mi.

KEY MAP
SCALE: 1"=2000'

OLD STATE HIGHWAY

TANK CAR LOADING RACK 26' LONG

GRAVEL DRIVEWAY

Tank No.8
90'-30'

Tank No.16
30'-35'

Tank
30'-30'

Garage

BARREL RUN

STANDARD OIL COMPANY

Disposed of to State of Wash.

R.R. Right of Way Line

NORTHERN PACIFIC RY.

To Depot

To Tacoma

4035' to Point of Switch

322' to end of spur

S. O. Co. Spur 72 lbs/yard

Pile Bulkhead Line

Rolling Posts set in concrete

Concrete Pipe Across Highway

Ray Bulkhead

Old Timber Bulkhead

Log Boom

Approach to Dock

Water Front Line

Harbor Line

LEASE

CHEHALIS RIVER

PACIFIC OCEAN

ABANDONED HIGHWAY

HARBOR VIEW ADD.

SLOUGH

ELLIOTT

MASON

GRAY'S HARBOR

CENTRALIA

CHEHALIS

PACIFIC

LEWIS

WAHKIAKUM

COWLITZ

TIDAL PLANES ABERDEEN CITY DATUM

Extreme High	17.1
Ordinary High	11.3
Mean Lower Low Water	1.1
Extreme Low	-1.6
Mean Low	+0.1

STRUCTURE	DRAWG. NO.	REMARKS
Water & Fire Mains	4-B	
Sewers		
Drainage	#1305	
Railroads	#1382	
Steam		Systems Design
Power Houses	#4-B	
Tank Foundations	1913	
"	A-8-B-66-F-2	
"	A-8-B-66-F-1	
"	A-8-B-66-F-3	
Fog Ext. Houses	#1317-B	

PROPERTY SCHEDULE						
NO.	FROM	TO	GRANTOR	DATE	RECORD	FILE NO.	ACRES	REMARKS
1		S.O.Co.				3/07		
2		"				3/08		
3		"				3/09		
4		"				3/10		
5		"				3/11		
6		"				3/12		
7		"				3/13		
8		"				3/14		
9		"				3/15		
10		"				3/16		

REVISIONS					
NO.	NATURE	NAME	DATE	CHK'D	APP'D
1	Advance Planning	C.H.W.	2-4-26		
2	Survey from Co. Plan	A.F.L.	11-26		
3	Survey & Plan	C.H.W.	4-27		
4	Survey & Plan	C.H.W.	10-27		

GeoEngineers
Incorporated

(206) 881-7900
2020 124th Ave. N.E.
P.O. Box 6325
Bellevue, WA 98008

Consulting Geotechnical
Engineers and Geologists

July 9, 1984

Chevron USA, Inc.
P.O. Box 220
Seattle, Washington 98111

Attention: Mr. Ken Godwin

Gentlemen:

We are transmitting four copies of our hydrogeologic report for your existing bulk storage facility in Aberdeen, Washington. Our services have been performed under the terms of Contract No. M66CNW03444.

We appreciate the opportunity to be of continued service to Chevron USA, Inc. Please call if you have any questions regarding our report or if we may be of additional service.

Yours very truly,

GeoEngineers, Inc.

James A. Miller

James A. Miller
Senior Geological Engineer

JAM:da

File No. 372-09

REPORT OF HYDROGEOLOGIC SERVICES
EXISTING BULK STORAGE FACILITY
ABERDEEN, WASHINGTON
FOR
CHEVRON USA, INC.

TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

REPORT OF HYDROGEOLOGIC SERVICES
EXISTING BULK STORAGE FACILITY
ABERDEEN, WASHINGTON
FOR
CHEVRON USA, INC.

INTRODUCTION

The results of our hydrogeologic services at your existing bulk storage facility in Aberdeen, Washington are presented in this report. The bulk plant is located on the north bank of the Chehalis River immediately east of the Aberdeen city limits. The facility was constructed in about 1911 and was used until 1980 when operations ceased at the site. The location of the bulk plant and a layout of the facility are indicated on Figure 1. Most of the storage tanks in the Middle and East Tank Yards are being removed at this time.

We understand that the bulk plant property may be purchased by another owner in the near future. The purpose of our services is to determine the extent and nature of potential subsurface contamination at the bulk plant site. Specifically, our services include:

1. Excavating and logging 16 backhoe test pits at the site.
2. Installing 2-inch-diameter monitor wells in each of the test pits.
3. Submitting four soil samples to Laucks Testing Laboratories for various chemical analyses.
4. Sampling the monitor wells for the presence of free (floating) hydrocarbons.
5. Evaluating shallow ground water conditions at the site, including ground water flow direction and tidal effects.
6. Providing opinions and recommendations regarding abatement of subsurface hydrocarbon contamination at the site.

SUBSURFACE SOIL CONDITIONS

Subsurface soil conditions at the bulk plant site were explored by excavating 16 test pits at the locations indicated on Figure 1. Monitor wells were installed in each test pit prior to backfilling. Details of

the excavation program, well installations and field measurements are presented in Appendix 1.

The test pit data indicate that the subsurface soils at the site can be divided into an upper unit of fill and a lower unit of native soils. The fill is variable in composition and consists of moderately to highly weathered sandstone fragments, fine to medium sand with a trace of silt and gravel, and sandy to silty gravel. Fill thicknesses appear to vary from 1-1/2 to over 4 feet in the West Tank Yard, from 3-1/2 to over 4 feet in the Middle Tank Yard, and from 4 to over 7 feet in the East Tank Yard.

Underlying the fill are native soils consisting of clayey silt, organic silt and peat. Test Pit 20, located in the northwestern corner of the East Tank Yard, appears to have encountered sandstone bedrock at a depth of approximately 7 feet.

HYDROCARBON CONTAMINATION

Olfactory, and sometimes visual, evidence of soil contamination by hydrocarbons was found in 10 of the 16 test pits. Hydrocarbon soil contamination was noted in Test Pits 1, 3, 5, 6, 7, 8, 9, 11, 13, and 18.

The monitor wells were sampled for the presence of free (floating) hydrocarbons on June 1, 1984. Free hydrocarbons were not found in any of the monitor wells.

Explosimeter readings were made at a distance of about one foot above the water level within each monitor well. A list of explosimeter readings is included in Appendix 1. The highest reading obtained was well below the explosive range.

GROUND WATER CONDITIONS

Ground water levels in the monitor wells are shallow, ranging from about 1 to 3 feet below present site grades. Contours of water table elevation, based on June 1 measurements in the 16 monitor wells, are shown on Figure 1. The water table elevation contours indicate that the shallow ground water flows in a southerly direction towards the Chehalis River in the vicinity of the tank yards.

Repetitive ground water level measurements in Monitor Wells 6 and 9 indicated little or no variation in water levels despite large tidal changes in the Chehalis River. This suggests that the shallow ground water at

the site is "perched" within the fill which overlies native soils and that the perched ground water is not in direct hydraulic connection with the Chehalis River.

CHEMICAL TESTING

Soil samples from Test Pits 1, 6, 11 and 13 were submitted to Laucks Testing Laboratories for chemical analyses. The testing program is listed below.

TYPE OF TEST	TEST PIT NUMBER			
	1	6	11	13
EP Toxicity	X	X		
Halogenated Hydrocarbons		X	X	X
Total Metals	X	X		
Pentachlorophenol		X		
Polycyclic Aromatic Hydrocarbons	X	X	X	X

The test data are attached in Appendix 2. The test results indicate no specific toxicity hazards as defined by the State of Washington Department of Ecology.

CONCLUSIONS

The presence of soil contamination by hydrocarbons in several of the test pits indicates that hydrocarbons have leaked into the ground during the past operation of the facilities. The apparent absence of free (floating) hydrocarbons in the monitor wells suggests that the subsurface hydrocarbons at the site have been immobilized by contact with soil materials. Based on our measurements, it is our opinion that recovery of subsurface hydrocarbons by pumping or skimming operations is not feasible at this site. The available test data indicate that subsurface soils with residual hydrocarbons are not "hazardous", as defined by the State of Washington Department of Ecology.

The shallow ground water in the site area is probably contaminated by low concentrations of dissolved hydrocarbons. This contamination probably does not pose a threat to local ground water supplies since it is highly unlikely that any water wells are located downgradient from the tank yard. Slow discharge of the shallow ground water into the Chehalis River probably results in dilution of dissolved hydrocarbons below detectable limits.

It is our opinion that hydrocarbon vapors may represent a hazard at this site. It has been our experience that vapor production and migration problems are most troublesome when ground warming occurs during the summer months, thereby increasing the rate of volatilization of buried petroleum products. We recommend that future property owners be made aware of the potential presence of hydrocarbon vapors. Future improvements to the property, particularly construction of below-grade confined spaces, should include provisions for vapor protection and isolation.

Recently published information from nationwide experience indicates potential problems with volatile hydrocarbons from petroleum-contaminated soils penetrating buried plastic water pipes, even when those pipes are pressurized and flowing. We therefore recommend that copper or steel water lines be installed at this site if future property owners anticipate the construction of new potable water lines.

- o O o -

We appreciate the opportunity to be of service on this project. Please call if you have any questions regarding our report.

Respectfully submitted,

GeoEngineers, Inc.

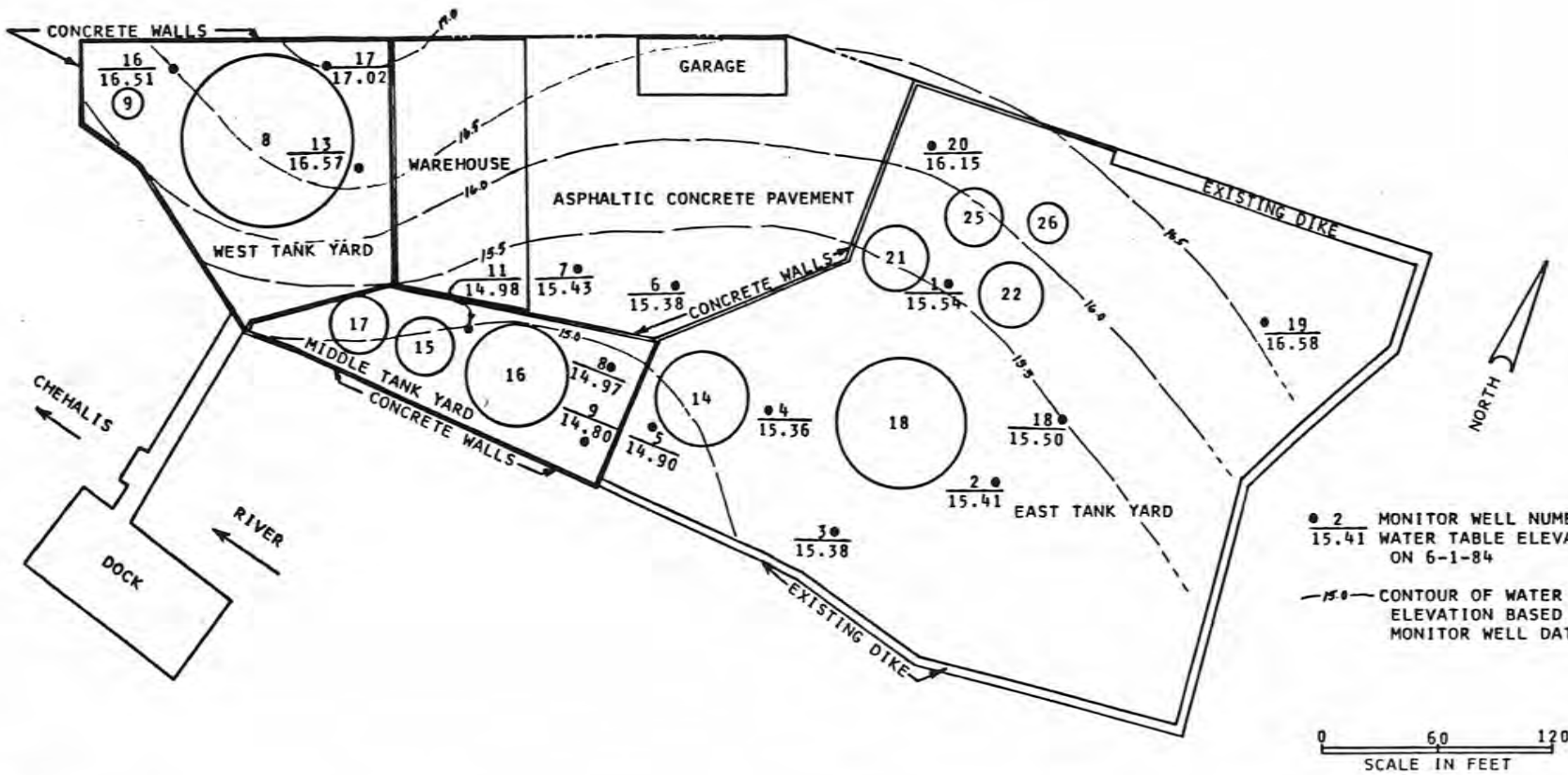
James A. Miller

James A. Miller
Senior Geological Engineer

JAM:da

Attachments

FIGURE 1



REFERENCE:
DRAWING ENTITLED "ABERDEEN, WASH., GROUND PLAN" BY
STANDARD OIL COMPANY OF CALIFORNIA DATED OCT. 30, 1924.

GeoEngineers Inc.

SITE PLAN

APPENDIX 1

FIELD EXPLORATIONS

Sixteen test pits were excavated at the approximate locations indicated on Figure 1 for the purpose of exploring subsurface conditions and installing monitor wells. The test pits were excavated to depths of 5-1/2 to 10 feet with a rubber-tired backhoe owned and operated by the Jack L. Root Construction Company.

A geological engineer from our staff determined the test pit locations, examined and classified the soils encountered, and prepared a detailed log of each excavation. Soils encountered were classified in accordance with the Unified Soil Classification System. Disturbed soil samples were collected and examined in our laboratory. Detailed test pit logs are available in our files.

MONITOR WELL CONSTRUCTION AND MEASUREMENTS

Two-inch-diameter, Schedule 40 PVC pipe was installed to near the base of each test pit excavation. The PVC pipe is machine-slotted (0.02 inch slot size) to allow entry of water and/or free product into the wells. The test pits were backfilled with imported pea gravel. Elevations of the well casing rims were determined by our field engineer to an accuracy of 0.01 feet. Water-finding paste and a weighted fiberglas tape were used to measure subsurface water levels in each of the casings to the nearest 0.01 feet. The results of the June 1, 1984 water level measurements are indicated on Figure 1.

The well casings were also sampled for the potential presence of free (floating) hydrocarbons using a transparent sampler. No free product was found in the wells on June 1, 1984.

EXPLOSIMETER READINGS

Explosimeter readings were made at a distance of about one foot above the water level in each monitor well on June 1, 1984. The measurements were made using our Bacharach Model L Explosimeter. A tabulation of the explosimeter readings is presented below.

Well No.	Explosimeter Readings (% L.E.L.)
1	12
2	0
3	0
4	0
5	0
6	10
7	0
8	6
9	10
11	5
13	0
16	0
17	0
18	10
19	0
20	0

APPENDIX 2

RESULTS OF SOIL TESTING

Laucks
Testing Laboratories, Inc.
940 South Harney Street. Seattle. Washington 98108 (206) 767-5060
Chemistry, Microbiology, and Technical Services

Certificate

GeoEngineers

CLIENT GeoEngineers Inc.
P.O. Box 6325
Bellevue, WA 98008
ATTN: James A. Miller

JUN 2 [illegible]

Routing [illegible]

File 372-09

LABORATORY NO. 84886

DATE June 25, 1984

REPORT ON SOIL

SAMPLE IDENTIFICATION

Samples submitted 5-31-84 and identified as shown below:

TESTS PERFORMED AND RESULTS:

1) Boring 1, Sample 3, Depth 42", Job No. 372-09, Soil type ML, 5-22
2) Boring 6, Sample 2, Depth 2 1/2, Job #372-09, Soil type GP, 5-22
3) Boring No.11, Sample 1, 0-4", 372-09, SW/GP, 5-22
4) 13, 1, 6", 372-09, SW, 5-22

Samples were analyzed in accordance with 40 CFR, Part 261.24 for EP Toxicity, with results as shown below:

	parts per million (mg/L)		
	1	2	MCL
Arsenic	L/0.2	L/0.2	5.0
Barium	L/0.5	L/0.5	100.
Cadmium	L/0.02	L/0.02	1.0
Chromium	L/0.1	L/0.1	5.0
Copper	L/0.1	L/0.1	---
Lead	0.2	0.2	5.0
Mercury	L/0.002	L/0.002	0.2
Selenium	L/0.2	L/0.2	1.0
Silver	L/0.1	L/0.1	5.0

Lauck's
Testing Laboratories, Inc.
940 South Harney Street. Seattle. Washington 98108 (206) 767-5060
Chemistry, Microbiology, and Technical Services

Certificate

GeoEngineers Inc.

LABORATORY NO. 84886

Samples were then analyzed for Halogenated Hydrocarbons in accordance with Washington State Department of Ecology WAC 173-303 with results as follow:

	2	3	4
Halogenated Hydrocarbons* parts per million (mg/kg), as received basis	48.	15.	57.

* reported as the sum of the halogens bromide, chloride, fluoride and iodide. A value of less than 100 mg/kg is classified as undesignated waste

Total Metals	parts per million (mg/kg) 1	2
Arsenic	7.3	1.4
Barium	70.	L/50.
Cadmium	L/2.	L/2.
Chromium	32.	25.
Copper	40.	59.
Lead	40.	L/20.
Mercury	0.07	L/0.05
Selenium	L/0.5	L/0.5
Silver	L/4.	L/4.
	parts per billion (ug/kg)	
Pentachlorophenol	---	22.

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Testing Laboratories, Inc.
940 South Harney Street, Seattle, Washington 98108 (206) 767-5060
Chemistry, Microbiology, and Technical Services

Certificate

GeoEngineers Inc.

LABORATORY NO. 84886

Samples were analyzed also for Gravimetric Polycyclic Aromatic Hydrocarbons in accordance with Washington State Department of Ecology WAC 173-303. The method requires analysis of the sample through successive stages until the result obtained is less than 1% by weight (as received basis) or until the fourth stage has been completed. Results are as shown below:

	% by weight, as received basis*			
	1	2	3	4
Stage 1: Soxhlet Extraction	0.23	0.51	0.28	2.85
Stage 2: Acid/Base Clean Up	---	---	---	0.99

* for 4,5,6 membered rings

Key

MCL = Maximum Contamination Level allowed per regulation.
L/ = Less than

Respectfully submitted,

Laucks Testing Laboratories, Inc.

J. M. Owens

JMO:bg

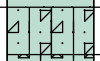
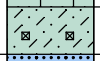
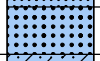
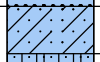
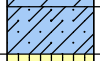
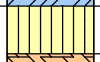
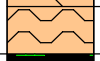
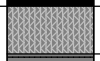
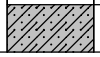
APPENDIX B
BORING LOGS, TEST PIT LOGS, AND MONITORING WELL COMPLETION DIAGRAMS

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

FARALLON CONSULTING

USCS Classification and Graphic Legend

Major Divisions			USCS Graphic Symbol	USCS Letter Symbol	Lithologic Description
Coarse-Grained Soil (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well graded GRAVEL, well graded GRAVEL with sand
				GP	Poorly graded GRAVEL, GRAVEL with sand
		GRAVEL WITH FINES (Appreciable amount of fines)		GP-GM	Poorly graded GRAVEL - GRAVEL with sand and silt
				GM	Silty GRAVEL
				GC	Clayey GRAVEL
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well graded SAND
				SP	Poorly graded SAND
		SAND WITH FINES (Appreciable amount of fines)		SP-SM	Poorly graded SAND - silty SAND
				SM	Silty SAND
				SC	Clayey SAND
				SM-ML	SILT - Silty SAND
Fine-Grained Soil (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	SILT
				CL	CLAY
				OL	Organic SILT
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic SILT
				CH	Inorganic CLAY
				OH	Organic CLAY
		Highly Organic Soil		PT	Peat
OTHER MATERIALS	PAVEMENT			AC	Asphalt concrete
				CO	Concrete
	OTHER			RK	Bedrock
				WD	Wood Debris
				DB	Debris (Miscellaneous)
				PC	Portland cement

Legend

- Sample Interval
- G — Grab Sample Interval
- Water level at time of drilling
- Water level at time of sampling
- Blank Casing
- Screened Casing
- Cement Grout
- Bentonite
- Sand Pack
- Well Cap

_____ Solid line indicates sharp contact between units well defined.

_ _ _ _ _ _ _ Dashed line indicates gradational contact between units.

feet bgs = feet below ground surface
NE = Not Encountered
NA = Not Applicable
PID = Photoionization Detector
PN = Project Number
*ppm = parts per million total organic vapors in isobutylene equivalents using a 10.6 electron volt lamp
USCS = Unified Soil Classification System

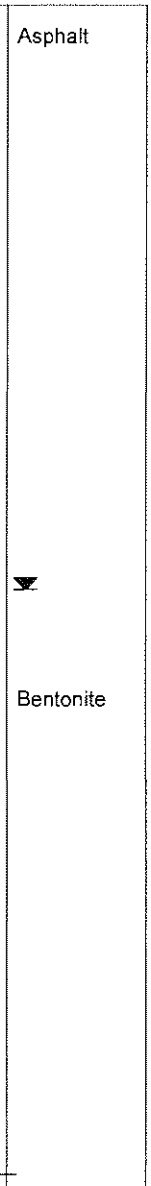
FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: B1

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/13/09 1005	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/13/09 1145	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	6
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	PID (units)	Sample ID
0	Asphalt	AC			
	Poorly graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine gravel, fine sand, dark brown, moist, odor, sheen, red oxides from 1.5 feet to 2 feet.	GP			
	Concrete	CO	100	75.1	B1-2
	Poorly graded GRAVEL with silt and sand (65% gravel, 25% sand, 10% silt), fine to medium sand, gray, moist to 6 feet then wet, odor, sheen, rounded gravel.	GP-GM			B1-4
5	SILT (100% silt), dark brown, wet, odor, sheen.	ML	80	40.2	
	SILT (100% silt), tan, wet, odor, sheen.	ML			
	SILT (100% silt), dark brown, wet, odor, sheen, wood debris at 7.6 feet.	ML			
	Poorly graded GRAVEL with sand (65% gravel, 30% sand, 5% silt), coarse gravel, fine to medium sand, gray, wet, odor, sheen, rounded gravel.	GP			B1-011309-8
	SILT (100% silt), dark brown, wet, slight odor, no sheen, woody debris at 11 feet, wood chunk from 11 to 11.2 feet.	ML			
10			90	15.6	B1-11
	SILT (100% silt), brown, wet, no odor, no sheen.	ML			



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
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Issaquah, WA 98027

Log of Boring: B2

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/13/09 1155	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/13/09 1340	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	9
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	Co							Concrete
		Poorly graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine gravel, fine to medium sand, gray, moist, odor, slight sheen, rounded gravel.	GP							
		Silty GRAVEL with sand (50% gravel, 30% sand, 20% silt), fine to coarse gravel, fine sand, brown, moist to slightly wet, no odor, no sheen.	GM		50		2.8	B2-2		
5		Poorly graded SAND with gravel (60% sand, 35% gravel, 5% silt), fine gravel, fine to medium sand, slight odor, slight sheen.	SP					B2-5		
		SILT (100% silt), dark brown, moist, slight odor, slight sheen.	ML				1.5			Bentonite
		SILT (100% silt), tan, moist, slight odor, slight sheen.	ML							
		Poorly graded GRAVEL with silt and sand (60% gravel, 30% sand, 10% silt), fine gravel, fine sand, gray, moist to 9 feet then wet, odor, sheen.	GP-GM							
10		SILT (100% silt), dark brown, moist to wet, no odor, no sheen.	ML				2.8	B2-011309-10		

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-12			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
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Issaquah, WA 98027

Log of Boring: B3

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/13/09 1355	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/13/09 1605	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	6
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	20
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	PID (units)	Sample ID	Boring/Well Construction Details
0	Asphalt	AC				Asphalt
	Poorly graded SAND with silt and gravel (60% sand, 30% gravel, 10% silt), fine sand, fine gravel, gray, odor, sheen, staining at 3.5 feet.	SP-SM	60	562	B3-2	
	Sandy SILT (60% silt, 30% sand, 10% gravel), fine sand, fine gravel, brown, moist to slightly wet, strong solvent-like odor, sheen, staining.	ML			B3-4	
5	Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine gravel, gray, moist to 6 feet then wet, strong odor, sheen.	SP	80	225	B3-011309-6	▼
	SILT (100% silt), greenish-gray, wet, odor, sheen.	ML				
10			60	28.6		Bentonite
	SILT (100% silt), brown, wet, odor, slight sheen.	ML				
	Peat (100% peat), dark brown, slightly wet, slight odor, slight sheen, root-rhizomes, wood debris.	PT	60	17.2		
15		ML				
	SILT (100% silt), brown, slightly wet, odor, no sheen, wood fragment at 15.25 feet.	ML				
	SILT (95% silt, 5% sand), brownish-green, slight odor, no sheen.					
	SILT (100% silt), green, slightly wet, no odor, no sheen.	ML	90	1.5		
20						

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: B4

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/13/09 1615	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/13/09 1715	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Boring/Well Construction Details
0	Asphalt	AC					Concrete
1	Poorly graded SAND with silt and gravel (60% sand, 30% gravel, 10% silt), fine sand, fine gravel, gray, odor, sheen.	SP-SM					
2	Sandy SILT (60% silt, 30% sand, 10% gravel), fine sand, fine gravel, brown, moist to slightly wet, odor, sheen.	ML	20		28.8	B4-2	
3	Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine gravel, gray, moist to 8.5 feet then wet, odor, sheen.	SP					
4						B4-4	
5							
6			60		43.5		
7							
8						B4-011309-8	
9	SILT (100% silt), gray, wet, odor, no sheen.	ML					
	PEAT (100% peat), dark brown, slightly wet, odor, sheen, root-rhizomes, wood debris.	PT					
10	SILT (100% silt), brown, slightly wet, odor, no sheen.	ML	100		7.2		Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: B5

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 0720	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 0835	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	7
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	PID (units)	Sample ID	Boring/Well Construction Details
0		Asphalt	AC				Asphalt
		Poorly graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine gravel, fine sand, brown, moist, no odor, no sheen.	GP				
		Poorly graded GRAVEL (90% gravel, 10% sand), coarse gravel, fine sand, gray, moist, no odor, no sheen, angular gravel.	GP				
		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), brown, moist, no odor, no sheen.	SP / GP	70	1.2	B5-2	
		Poorly graded GRAVEL (85% gravel, 10% sand, 5% silt), coarse gravel, fine sand, brown, moist, no odor, no sheen, rounded gravel.	SM				
		Silty SAND (70% sand, 25% silt, 5% gravel), fine sand, fine gravel, brown, moist, no odor, no sheen.					
5						B5-5	
				70	92.7		
		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, coarse gravel, gray, moist to 7 feet then wet, odor, sheen, staining.	SP				▼
						B5-011409-8	
		SILT (100% silt), gray, wet, odor, no sheen.	ML				
10				90	45.7		Bentonite
		SILT (100% silt), dark brown, wet, slight odor, no sheen.	ML				

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
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Issaquah, WA 98027

Log of Boring: B6

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 0900	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1010	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Boring/Well Construction Details
0	Asphalt	AC					Asphalt
	Poorly graded SAND with gravel (70% sand, 25% gravel, 5% silt), fine sand, fine gravel, brown, moist, odor, sheen.	SP					
	Poorly graded GRAVEL (85% gravel, 10% sand, 5% silt), coarse gravel, fine sand, brown, moist, odor, sheen, rounded gravel.	GP					
	Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, coarse gravel, gray, moist, odor, sheen.	SP	50		2.8	B6-2	
5	Well-graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine to coarse sand, gray, moist, odor, sheen	GW	90		21.6	B6-5	
	SILT (100% silt), brown, odor, no sheen.	ML					
	Well-graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine to medium sand, gray, moist to 8.5 feet then wet, odor, no sheen.	GW					▼
	SILT (100% silt), brown, wet, slight odor, no sheen.	ML				B6-011409-9	
10			90		2.5		Bentonite
	PEAT (100% peat), dark brown, moist, no odor, no sheen, wood debris.	PT					

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: B7

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	1/14/09 1025	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1125	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	PID (units)	Sample ID	Boring/Well Construction Details
0	Asphalt	AC				Asphalt
1	SILT (100% silt), gray, moist to wet, no odor, no sheen. Water observed at 5 feet, possibly due to concrete coring work.	ML				
2			100	0.0		
3						
4					B7-4	
5						
6			50	0.0	B7-6	
7						
8	SILT (100% silt), brown, moist to wet, no odor, no sheen.	ML				
	SILT with sand (75% silt, 25% sand), brownish-gray, wet at 8.5 feet, no odor, no sheen.	ML				
9	SILT (100% silt), brown, wet, no odor, no sheen, wood debris from 9 to 11.5 feet.	ML			B7-011409-9	
10			90	0.0		Bentonite
	PEAT (100% peat), dark brown, moist, no odor, no sheen.	PT				

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: B8

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 1135	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1235	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	7
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Asphalt	AC							Asphalt
		Fill - rounded pea gravel, gray, moist, no odor, no sheen.	GP							
1		Poorly graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine gravel, fine sand, brown, moist, odor, sheen.	GP							
2		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine gravel, brown, moist, odor, sheen.	SP		60		145	B8-2		
3										
4		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine to coarse gravel, gray, moist to 7 feet then wet, odor, sheen, staining.	SP							
5								B8-5		
6					70		325			
7										
8								B8-011409-9		
9		SILT (100% silt), brown, wet, odor, no sheen.	ML							
10					80		10.7			Bentonite
		PEAT (100% peat), dark brown, wet, no odor, no sheen.	PT							
		Wood debris, no odor, no sheen, pier-like, laminated.	DB							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Issaquah, WA 98027

Log of Boring: B9

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 1310	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1415	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	6.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	PID (units)	Sample ID	Boring/Well Construction Details
0		Asphalt	AC				Asphalt
		Poorly graded SAND with silt and gravel (65% sand 25% gravel, 10% silt), fine sand, fine to coarse gravel, moist, odor, slight sheen.	SP-SM	60	33.2	B9-2	
		Sandy SILT (65% silt, 35% sand), fine sand, brown, moist, odor, sheen.	ML			B9-4	
5				70	45.6		
		Silty SAND (65% sand, 25% silt, 10% gravel), fine sand, fine to coarse gravel, wet, strong bunker-like odor, sheen, staining.	SM				
		Poorly graded SAND (95% sand, 5% silt), fine sand, green, odor, no sheen.	SP				
		No recovery, driller reports material very soft.				B9-011409-8	
10				0	NM		Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B10

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 1435	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1545	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine gravel, brown, moist, no odor, no sheen.	SP							
		Fill - pea gravel (90% pea gravel, 5% sand, 5% silt), fine gravel, fine sand, black, moist, no odor, no sheen.	GP		60		3.5	B10-2		
			GP							
		Poorly graded GRAVEL (85% gravel, 10% sand, 5% silt), coarse gravel, fine sand, gray, moist, no odor, no sheen, angular gravel.	SP							
		Poorly graded SAND with gravel (60% sand, 35% gravel, 5% silt), fine to coarse gravel, fine sand, gray, moist, odor, no sheen, red oxides between 6 and 6.5 feet.								
5							245	B10-6		
		Silty SAND (60% sand, 35% silt, 5% gravel), fine sand, fine gravel, moist, odor, slight sheen, red oxides between 7 and 7.5 feet.	SM							
		Silty SAND with gravel (60% sand, 20% silt, 20% gravel), fine sand, fine gravel, green, moist to 8 feet then wet, odor, sheen.	SM					B10-011409-8		
		SILT (100% silt), brownish green, wet, odor, no sheen.	ML							
10		Poorly graded SAND (95% sand, 5% silt), fine sand, green, wet, odor, no sheen.	SP				56.5			Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B11

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/14/09 1555	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/14/09 1650	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	9
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Poorly graded SAND with gravel (65% sand, 30% gravel, 5% silt), fine sand, fine gravel, gray, moist, no odor, no sheen.	SP							
		Concrete	CO							
		Well-graded GRAVEL with sand (60% gravel, 35% sand, 5% silt), fine to coarse gravel, fine to medium sand, brown, moist to wet, no odor, no sheen.	GW		60		0.0	B11-2		
5		Silty SAND (65% sand, 35% silt), fine sand, green, moist.	SM		90		0.3	B11-5		
		Sandy SILT (60% silt, 30% sand, 10% gravel), fine sand, fine gravel, green, moist to 9 feet then wet, no odor, no sheen.	ML							
10					60		0.2	B11-011409-10		Bentonite

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): 8-12
Filter Pack: NA
Surface Seal: NA
Annular Seal: NA
Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: X: NA Y: NA

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Log of Boring: B12

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/15/09 0745	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/15/09 0900	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Poorly graded SAND with silt and gravel (60% sand, 30% gravel, 10% silt), fine sand, fine to coarse gravel, gray, moist, no odor, no sheen	SP-SM							
		Sandy SILT (55% silt, 35% sand, 10% gravel), fine sand, coarse gravel, green, moist, no odor, no sheen, angular gravel.	ML		80		0.0	B12-2		
5		Silty SAND (80% sand, 20% silt), fine sand, green, moist, no odor, no sheen, red oxidation between 7.5 and 7.9 feet.	SM		60		0.0	B12-6		
		Silty SAND (65% sand, 35% silt), fine sand, green, moist to 8.5 feet then wet, no odor, no sheen.	SM							▼
10					100		0.0	B12-011509-10		Bentonite
		SILT (100% silt), brown, wet, no odor, no sheen.	ML							
		SILT (100% silt), gray, moist, no odor, no sheen, driller reports very dense.	ML							

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): 8-12
Filter Pack: NA
Surface Seal: NA
Annular Seal: NA
Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: X: NA Y: NA

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Log of Boring: B13

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/15/09 0920	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/15/09 1030	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Well-graded GRAVEL with sand (80% gravel, 15% sand, 5% silt), fine to coarse gravel, fine sand, gray, moist to wet, no odor, no sheen.	GW		70		0.0	B13-2		
		Silty SAND (80% sand, 20% silt), fine sand, green, moist, no odor, no sheen, red oxidation between 2.8 and 6 feet.	SM							
5		Poorly-graded SAND with gravel (60% sand, 35% gravel, 5% silt), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SP		80		0.0	B13-6		
		Silty SAND (80% sand, 20% silt), fine sand, green, moist to 8 feet then wet, no odor, no sheen.	SM					B13-011509-9		
10		SILT (100% silt), dark brown, wet, no odor, no sheen.	ML		100		0.0			Bentonite
		SILT (100% silt), brown, wet, no odor, no sheen.	ML							
		PEAT (100% peat), dark brown, moist, no odor, no sheen.	PT							
		Wood debris, no odor.	DB							
		SILT (100% silt), brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B14

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/15/09 1045	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/15/09 1140	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Poorly graded SAND with gravel (60% sand, 35% gravel, 5% silt), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SP							
					60		0.0	B14-2		
		Silty SAND (80% sand, 20% silt), fine sand, green, moist, no odor, no sheen.	SM							
5		Poorly graded SAND with silt (90% sand, 10% silt), green, moist, no odor, no sheen.	SP-SM		60		0.0	B14-6		
		Silty SAND (80% sand, 20% silt), fine sand, green, moist to 8.5 feet then wet, no odor, no sheen.	SM					B14-011509-9		
10		SILT (100% silt), brown, wet, no odor, no sheen.	ML		100		0.0			Bentonite
		SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B15

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/15/09 1205	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/15/09 1320	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	7.5
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO						Concrete
		Poorly graded gravel with sand (75% gravel, 20% sand, 5% silt), fine gravel, fine sand, brown, moist no odor, no sheen.	GP						
		SILT with sand (75% silt, 20% sand, 5% gravel), fine sand, fine gravel, brown, moist, no odor, no sheen.	ML	70		0.0	B15-2		
		Poorly graded GRAVEL with silt and sand (65% gravel, 25% sand, 10% silt), coarse gravel, fine sand, brown, sweet odor, no sheen, rounded gravel.	GP-GM						
5		Silty SAND with gravel (60% sand, 20% silt, 20% gravel), fine sand, fine gravel, brown, sweet odor, no sheen.	SM	70		3.5	B15-6		
		Poorly graded GRAVEL (85% gravel, 10% sand, 5% silt), coarse gravel, fine sand, gray, moist to 7.5 feet then wet, petroleum-like odor, sheen, rounded to subrounded gravel.	GP						▼
		SILT (90% silt, 10% sand), fine sand, brown, wet, odor, sheen.	ML				B15-011509-9		
		SILT (100% silt), dark brown, wet, no odor, no sheen.	ML						
10				100		35.6			Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6-10			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B16

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	1/15/09 1405	**Sampler Type:**	4' Macrocore
Date/Time Completed:	1/15/09 1545	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9630	**Depth of Water ATD (ft bgs):**	9
Drilling Company:	Cascade Drilling	**Total Boring Depth (ft bgs):**	12
Drilling Foreman:	Frank Scott	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		Concrete	CO							Concrete
		Poorly graded GRAVEL with sand (60% gravel, 35% sand, 5% silt), fine gravel, fine sand, brown, moist, no odor, no sheen.	GP							
		Silty SAND (80% sand, 20% silt), fine sand, green, moist, no odor, no sheen.	SM				5.0	B16-2		
5		SILT (100% silt), brown, moist, no odor, no sheen.	ML				4.3	B16-6		
		Wood debris, laminated, beige, no odor, no sheen.	DB							
		SILT (100% silt), brown, moist to 9 feet then wet, no odor, no sheen.	ML							
10							1.8	B16-011509-10		Bentonite
		SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-12			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B17

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/19/11 920	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/19/11 1040	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	8.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Marty Huan	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.5' Well graded GRAVEL with sand (70% gravel, 20% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen, angular gravel fill.	GW							Fill
		0.5-2.0' Silty SAND (65% sand, 25% silt, 10% gravel), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SM							
		2.0-2.2' Asphalt (100% asphalt), black, moist, odor, sheen.	AC		100	NA	0.0	B17-2.0		
		2.2-5.5' Silty SAND (65% sand, 25% silt, 10% gravel), fine sand, fine to coarse gravel, olive-grey, moist, no odor, no sheen.	SM							
5		5.5-8.0' SILT (100% silt), green, moist, no odor, no sheen, very soft.	ML		60	NA	0.0	B17-6.0	X	
		8.0-11.5' SILT (90% silt, 5% sand, 5% gravel), fine sand, fine gravel, green, wet, no odor, no sheen.	ML					B17-041911-GW	X	
10					90	NA	0.0			Bentonite
		11.5-12.0' SILT (100% silt), brown, wet, no odor, no sheen, soft.	ML							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-11	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B18

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/19/11 1050	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/19/11 1140	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Marty Huan	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.6' Well graded GRAVEL with sand (75% gravel, 25% sand), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen, angular gravel fill.	GW						Fill
		0.6-2.5' Silty SAND (65% sand, 25% silt, 10% gravel), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SM	100	NA				
		2.5-3.0' Asphalt (100% asphalt), black, moist, odor, sheen.	AC						
		3.0-3.8' Silty SAND (60% sand, 30% silt, 10% gravel), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SM			0.8	B18-3.8		
		3.8-4.0' Well graded GRAVEL with sand (60% gravel, 30% sand, 10% silt), fine to coarse gravel, fine sand, gray, moist, odor, sheen.	GW						
5		4.0-7.0' Well graded GRAVEL (90% gravel, 10% sand, 10% silt), fine to coarse gravel, fine sand, gray, moist, petro-odor, no sheen.	GW	100	NA	0.0	B18-6.0	X	
		7.0-9.0' Silty SAND (50% sand, 40% silt, 10% gravel), fine sand, fine gravel, brown, moist to wet, no odor, no sheen.	SM						
		9.0-12.0' Poorly graded SAND (95% sand, 5% silt), fine sand, green, wet, no odor, no sheen.	SP				B18-041911-GW	X	
10				100	NA	0.0			Bentonite
15									

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-11	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B19

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/19/11 1150	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/19/11 1305	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	8.5
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Marty Huan	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-2.4' Well graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen, angular gravel fill.	GW		90	NA				Fill
		2.4-2.7' Asphalt (100% asphalt), black, moist, odor, sheen.	AC							
		2.7-5.0' Poorly graded SAND with gravel (70% sand, 30% gravel), fine sand, fine gravel, brown, moist, no odor, no sheen.	SP				0.0	B19-2.0		
5		5.0-6.0' Poorly graded GRAVEL with sand (75% gravel, 25% sand), coarse gravel, fine sand, brown, moist, no odor, no sheen, rounded gravel.	GP							
		6.0-7.5' Poorly graded SAND (95% sand, 5% silt), fine sand, green, moist, no odor, no sheen.	SP		95	NA	0.0	B19-6.0	X	
		7.5-8.0 Poorly graded SAND (95% sand, 5% silt), fine sand, brown, moist, no odor, no sheen.	SP							
		8.0-11.0' Well graded GRAVEL with sand (50% gravel, 45% sand, 5% silt), fine to coarse gravel, fine sand, brown, wet, petro-odor, no sheen, rounded gravel.	GW		100	NA	0.0	B19-041911-GW	X	Bentonite
10		11.0-12.0' Poorly graded SAND (95% sand, 5% silt), fine sand, gray, wet, no odor, no sheen.	SP							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-11	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B20

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/19/11 1315	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/19/11 1425	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	8.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Marty Huan	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-5.0' Well graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen, angular gravel fill.	GW		100	NA	0.0	B20-2.0		Fill
5		5.0-7.0' SILT (100% silt), green, moist, no odor, no sheen.	ML		100	NA	111			
		7.0-9.0' Silty SAND (70% sand, 30% silt), fine sand, greenish-brown, moist to wet, petro-odor, sheen.	SM					B20-7.0	X	
		9.0-12.0' WOOD debris (100% wood), brown, wet, odor, no sheen.	WD					B20-041911-GW	X	
10					100	NA	12.3			Bentonite
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-11	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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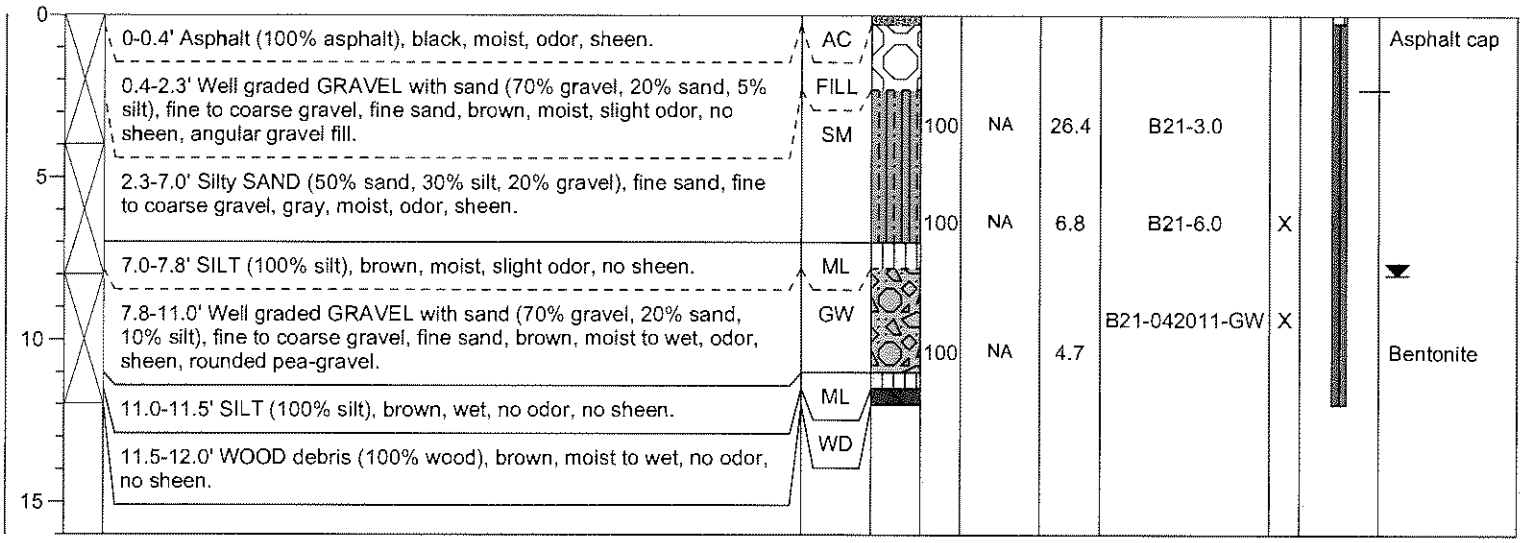
Log of Boring: B21

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 0800	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 0920	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	8.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:**NA
Screened Interval (ft bgs):	8-11	**Boring Abandonment:**	Bentonite		**Y:**NA

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Log of Boring: B22

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 0945	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1115	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	8.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts	PID (ppmv)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.2' Asphalt (100% asphalt), black, moist, odor, sheen.	AC							Asphalt cap
		0.2-0.7' Void (100%)	HOLES		40	NA	0.0	B22-2.0		
		0.7-2.5' Well graded GRAVEL with sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, brown, moist to wet, no odor, no sheen, rounded gravel. Water appears to be perched, puddle on surface near boring.	GW							
5			BLANK		40	NA	27.8	B22-5.0	X	
		2.5-4.0' No soil in liner.	GW							
		4.0-6.0' Well graded GRAVEL with sand (70% gravel, 20% sand, 10% silt), fine sand, brown, wet, odor, sheen.	WD							
10			BLANK		60	NA	0.0	B22-042011-GW	X	Bentonite
		6.0-7.0' WOOD debris (100% wood), brown, wet, no odor, no sheen.	GW							
		7.0-8.0' No soil in liner.	ML							
		8.0-10.5' Well graded GRAVEL with sand (65% gravel, 25% sand, 10% silt), fine to coarse gravel, fine sand, brown, wet, no odor, no sheen.								
15		10.5-12.0' SILT (100% silt), brown, wet, organic odor, no sheen, soft.								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:**NA
Screened Interval (ft bgs):	8-11	**Boring Abandonment:**	Bentonite		**Y:**NA

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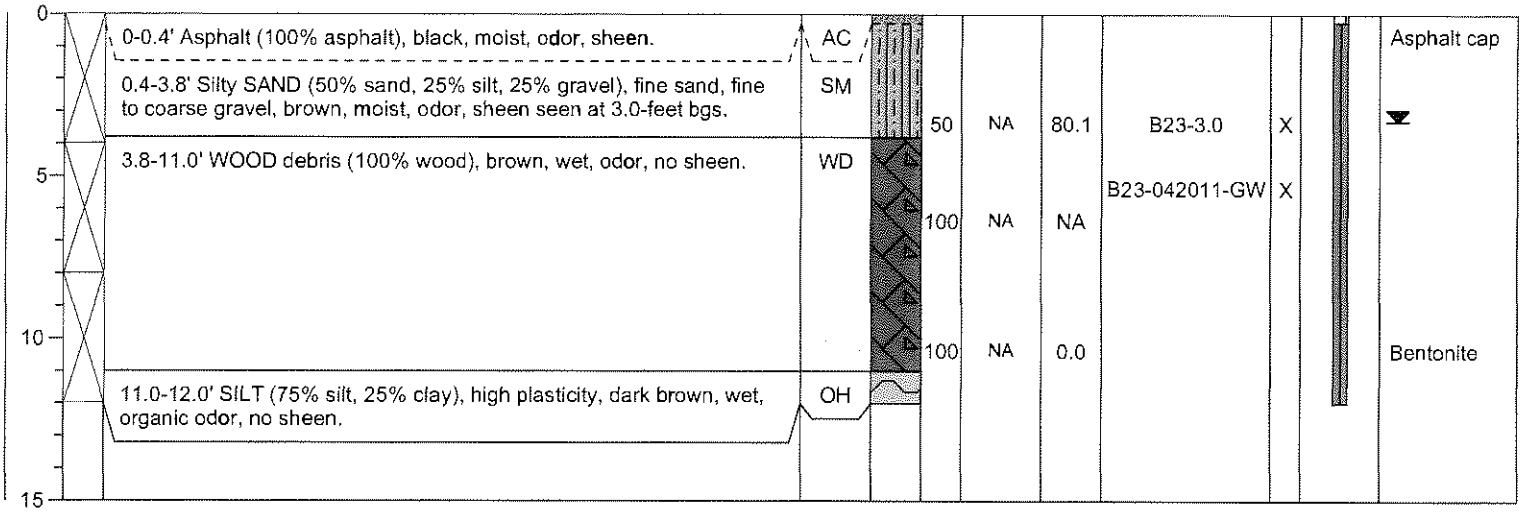
Log of Boring: B23

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 1125	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1240	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	3.3
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:**NA
Screened Interval (ft bgs):	3-6'	**Boring Abandonment:**	Bentonite		**Y:**NA

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Log of Boring: B24

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 1250	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1345	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	8.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts	PID (ppmv)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist, odor, sheen.	AC							Asphalt cap
		0.4-3.0' Silty SAND with gravel (50% sand, 25% silt, 25% gravel), fine sand, fine to coarse gravel, brown, moist, odor, sheen starts at 2.0-feet.	SM / GW		100	NA	227	B24-2.0	X	
5		3.0-6.0' Well graded GRAVEL with sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, brown, moist to wet, odor, sheen.								
		6.0-8.0' SILT (100%), dark brown, wet, slight odor between 6.0 to 7.5-feet, no odor at 8.0-feet, no sheen.	ML		100	NA	44.0	B24-042011-GW	X	
10										Bentonite
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	X:NA
Screened Interval (ft bgs):	4-7'	**Boring Abandonment:**	Bentonite		Y:NA

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Log of Boring: B25

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 1355	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1510	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	7.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts	PID (ppmv)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist, odor, sheen.	AC							Asphalt cap
		0.4-3.5' Poorly graded SAND with gravel (50% sand, 40% gravel, 10% silt), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SP		50	NA	38.6	B25-3.0		
5		3.5-7.5' Poorly graded SAND with gravel (70% sand, 20% gravel, 10% silt), fine sand, fine to coarse gravel, brown, moist to wet, odor, sheen.	SP		40	NA	42.8	B25-6.0	X	
		7.5-12.0' SILT (100% silt), dark brown, wet, odor to 8.5-feet, no sheen.	ML		50	NA	28.6	B25-042011-GW	X	Bentonite
10										
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	7-10'	**Boring Abandonment:**	Bentonite		**Y:** NA

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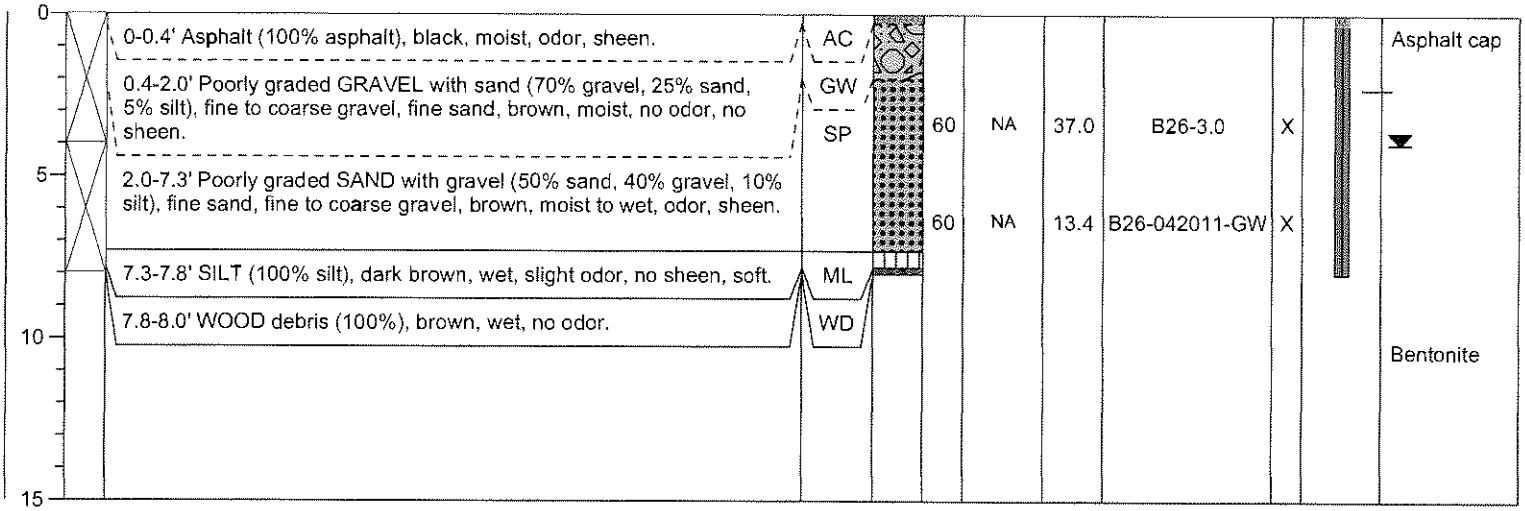
Log of Boring: B26

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 1515	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1545	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	4.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	8.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:**NA
Screened Interval (ft bgs):	4-7'	**Boring Abandonment:**	Bentonite		**Y:**NA

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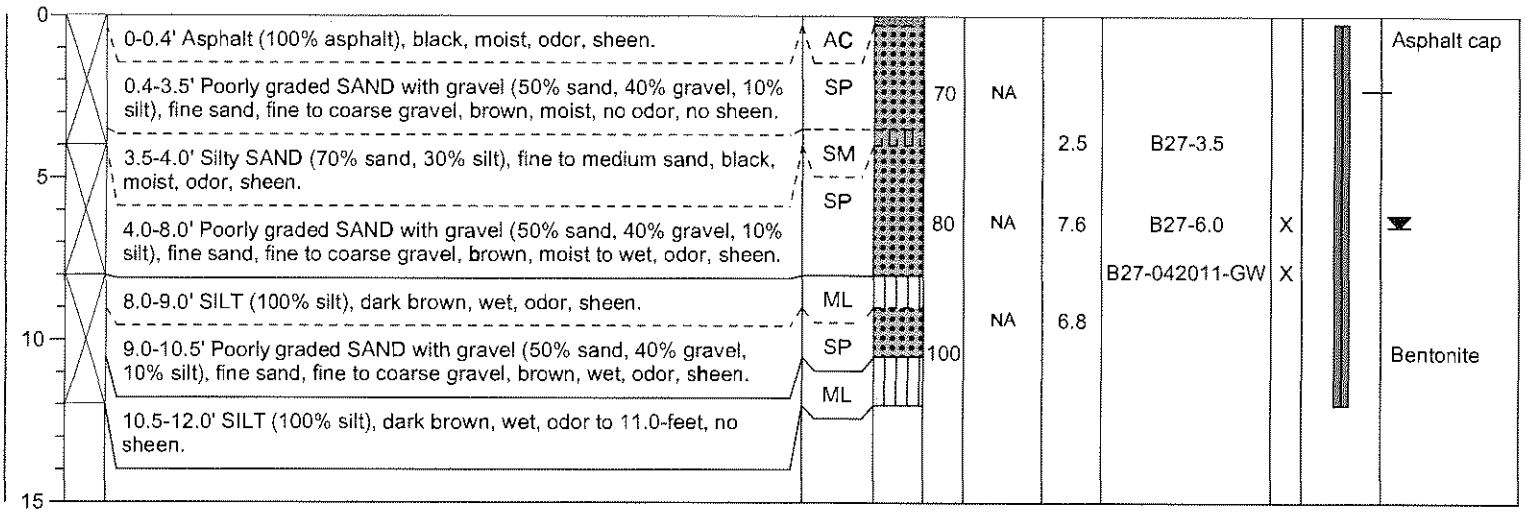
Log of Boring: B27

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/20/11 1555	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/20/11 1645	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	6.5
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	X:NA
Screened Interval (ft bgs):	7-10'	**Boring Abandonment:**	Bentonite		Y:NA

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Log of Boring: B28

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/21/11 0745	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 0825	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist.	AC							Asphalt cap
		0.4-3.5' Poorly graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen.	GP		100	NA	0.0			
		3.5-7.0' Poorly graded SAND with gravel (50% sand, 40% gravel, 10% silt), fine sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen, rounded gravel.	SP				0.7	B28-3.5	X	
5					60	NA	33.2	B28-042111-GW	X	
		7.0-8.0' SILT (100% silt), dark brown, wet, slight odor, no sheen.	ML							
		8.0-10.0' Poorly graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, wet, odor, no sheen.	GW							
10		10.0-11.5' SILT (100% silt), dark brown, wet, odor to 10.5-feet, no sheen.	ML		50	NA	5.0			Bentonite
		11.5-12.0' WOOD debris (100%), brown, wet, no odor, no sheen.	WD							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5-8'			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B29

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/21/11 0840	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 0900	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	5.5
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	8.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist.	AC							Asphalt cap
		0.4-5.5' Poorly graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, petro-odor, no sheen, angular gravel fill.	GP		100	NA	0.0			
							0.3	B29-3.0	X	
5		5.5-5.8' Wood debris (100%), brown, wet, odor, sheen.	WD							
		5.8-8.0' SILT (100% silt), brown, wet, odor to 6.3-feet, no sheen.	ML		100	NA	6.7	B29-042111-GW	X	Bentonite
10										
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5-8'	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA **Y:** NA

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Log of Boring: B30

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/21/11 0950	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 1015	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	8.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist.	AC							Asphalt cap
		0.4-5.0' Poorly graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist to wet, petro-odor, sheen, angular gravel fill.	GP		60	NA	236	B30-3.0	X	
5		5.0-7.2' Poorly graded SAND with gravel (50% sand, 40% gravel, 10% silt), fine sand, fine to coarse gravel, brown, wet, odor, sheen, rounded gravel.	SP		100	NA	53.7	B30-042111-GW	X	Bentonite
		7.2-8.0' SILT (100% silt), dark brown, wet, odor to 7.5-feet, no sheen.	ML							
10										
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5-8'	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B31

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/21/11 1025	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 1130	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	9.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist.	AC							Asphalt cap
		0.4-3.5' Poorly graded GRAVEL with silt and sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, gray, moist, slight petro-odor, no sheen.	GP-GM		100	NA	3.0	B31-3.0	X	
		3.5-7.5' Poorly graded SAND with gravel (70% sand, 20% gravel, 10% silt), fine sand, fine to coarse gravel, gray, moist, odor, no sheen.	SP		100	NA	0.9	B31-6.0		
5		7.5-8.0' SILT (100% silt), dark brown, moist to slight wet, no odor, no sheen.	ML							
		8.0-10.0' Poorly graded SAND with gravel (70% sand, 20% gravel, 10% silt), fine sand, fine to coarse gravel, gray, moist to wet, no odor, no sheen.	SP							
10		10.0-10.5' WOOD debris (100%), brown, wet, no odor, no sheen.	WD		60	NA	0.0	B31-042111-GW	X	Bentonite
		10.5-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	9-12'	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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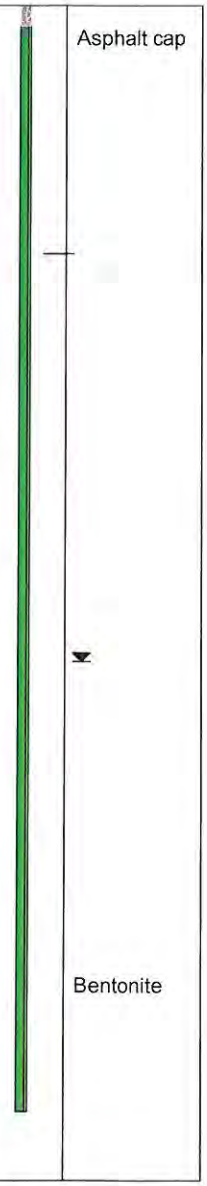
Log of Boring: B32

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/21/11 1140	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 1240	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	9.5
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	16.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0-0.4' Asphalt (100% asphalt), black, moist.	AC					
		0.4-3.6' Poorly graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, gray, moist, no odor, no sheen, angular gravel fill.	GP	100	NA	0.0	B32-2.0	
		3.6-6.5' Poorly graded SAND with gravel (50% sand, 40% gravel, 10% silt), fine sand, fine to coarse gravel, gray, moist, no odor, no sheen.	SP	70	NA	0.0	B32-6.0	X
5		6.5-8.8' Silty SAND (70% sand, 30% silt), fine sand, blackish-gray, moist, no odor, no sheen.	SM					
		8.8-11.5' SILT with sand (80% silt, 20% sand), fine sand, gray, moist to wet, no odor, no sheen.	ML	100	NA	0.0	B32-042111-GW	X
10		11.5-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML					
					NA			
15								



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	9-12'			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B33

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/21/11 1245	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 1315	**Drive Hammer (lbs):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water (ft bgs):**	9.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs)	Lithologic Description	USCS	% Recovery	Blow Counts	PID (ppmv)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0	0-0.4' Asphalt (100% asphalt), black, moist, odor, sheen.	AC						Asphalt cap
	0.4-2.3' Silty SAND (70% sand, 20% silt, 10% gravel), fine sand, fine to coarse gravel, brown, moist, no odor, no sheen.	SM	90	NA	0.0	B33-2.0		
5	2.3-3.5' Silty SAND (50% sand, 45% silt, 5% gravel), fine sand, fine to coarse gravel, dark brown, moist, no odor, no sheen.	SM						
	3.5-5.5' Silty SAND (80% sand, 20% silt), fine sand, blackish-gray, moist, no odor, no sheen.	SM	50	NA	0.0	B33-6.0	X	
	5.5-12.0' Silty SAND (70% sand, 30% silt), fine sand, blackish-gray, moist to wet, no odor, no sheen.							▼
10			100	NA	0.0	B33-042111-GW	X	Bentonite
15								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft msl):**	NA
Casing Diameter (in):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft msl):**	NA
Screen Slot Size (in):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:**NA
Screened Interval (ft bgs):	9-12'	**Boring Abandonment:**	Bentonite		**Y:**NA

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Log of Boring: B34

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	4/19/11 1440	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/19/11 1620	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	9.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Marty Huan	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-6.0' Well graded GRAVEL with sand (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist, no odor, no sheen, angular gravel fill.	GW		100	NA	0.0			Fill
5		6.0-11.0' Silty SAND (70% sand, 30% silt), fine sand, green, moist to wet, petro-odor, no sheen.	SM		100	NA	41.8	B34-7.0	X	
10					100	NA	312	B34-041911-GW	X	Bentonite
		11.0-12.0' SILT (100% silt), brown, moist to wet, no odor, no sheen.	ML							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	8-11	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B35

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	4/21/11 1405	**Sampler Type:**	4' Macrocore
Date/Time Completed:	4/21/11 1455	**Drive Hammer (lbs.):**	NA
Equipment:	Stratoprobe BR187	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	John Mefford	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.4' Asphalt (100% asphalt), black, moist, odor, sheen.	AC						Asphalt cap
		0.4-2.5' Well graded GRAVEL with sand (70% gravel, 20% sand, 5% silt), fine to coarse gravel, fine sand, gray, moist, odor, no sheen.	GW	100	NA	86.0	B35-2.0		
		2.5-6.7' Poorly graded SAND with gravel (50% sand, 40% gravel, 10% silt), fine sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen.	SP			115	B35-4.0	X	
5				100	NA	31.4	B35-042111-GW	X	
		6.7-9.0' SILT (100% silt), dark brown, wet, odor to 6.9-feet, no sheen.	ML						
		9.0-10.0' WOOD debris (100% wood), brown, wet, odor, no sheen.	WD						
10		10.0-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML	100	NA	0.0			Bentonite
15									

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5-8'	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B36

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 11:15	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 11:50	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	5.5'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-1.5' Concrete (100% concrete), white, dry, no odor, no sheen.	CO							
		1.5-7.0' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, grey, moist to wet, odor, sheen.	SW-SM		100	NA	64.9	B36-3.5		
5							66.5	B36-5.0	X	Water level
					70	NA		B36-072511-GW	X	
		7.0-7.7' WOOD (100% wood), brown, wet, no odor, no sheen.	WD							
		7.7-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							Fill
10					50	NA	0.2			Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5 to 8' bgs			**Surveyed Location:**	X: 98666.478 Y: 20175.524

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Log of Boring: B37

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 11:55	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 12:30	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-2.8' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	GW-GM		100	NA				
		2.8-4.0' SILT (95% silt, 5% sand), fine sand, green, moist to slight wet, no odor, no sheen.	ML				0.3	B37-3.5	X	Fill
		4.0-6.5' Silty SAND (60% sand, 35% silt, 5% gravel), fine sand, fine to coarse gravel, greenish-brown, wet, slight odor, no sheen.	SM					B37-072511-GW	X	Water level
5					100	NA	0.2			
		6.5-10.0' SILT (90% silt, 10% sand), fine sand, brown, wet, organic (natural) odor, monochromatic white sheen.	ML							
10		10.0-12.0' SILT (100% silt), fine sand, dark brown, wet, organic (natural) odor, no sheen.	ML		100	NA	0.0			Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	4 to 7' bgs			**Surveyed Location:**	X: 98708.318 Y: 20221.861

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Log of Boring: B38

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 10:30	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 11:05	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-1.1' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, grey, moist, no odor, no sheen.	GW-GM							
		1.21-1.4' Asphalt (100% asphalt), black.	AC							
		1.4-5.0' Poorly graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to medium sand, fine to coarse gravel, grey, moist to wet, no odor, no sheen.	SP-SM		100	NA	0.8	B38-3.5	X	Water level
5		5.0-7.5' SILT (100% silt), brown, moist to wet, no odor, no sheen.	ML		100	NA	0.3	B38-5.5		Fill
								B38-072511-GW	X	
		7.5-10.5' Silty SAND (60% sand, 40% silt), fine to coarse sand, dark brown, wet, no odor, no sheen. Observe root rhizomes between 8 to 10-feet bgs.	SM							
10					100	NA	0.0			Bentonite
		10.5-12.0' SILT (100% silt), brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	4 to 7' bgs			**Surveyed Location:**	X: 98523.070 Y: 20151.184

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Log of Boring: B39

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 8:35	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 9:15	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	7.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-1.2' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, grey, moist, odor, sheen.	GW-GM							
		1.2-4.0' Poorly graded SAND with silt and gravel Fill (60% sand, 30% gravel, 10% silt), fine sand, fine to coarse gravel, brown, moist, petro-odor, sheen.	SP-SM		100	NA	58.3	B39-2.0		
		4.0-5.2' SILT (100% silt), brown, moist, odor, no sheen.	ML							Fill
5		5.2-8.0' Well-graded GRAVEL with silt and sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist to wet, petro-odor, sheen.	GW-GM		100	NA	36.3	B39-6.5	X	Water level
		8.0-10.4' SILT (100% silt), brown, wet, slight odor, no sheen.	ML		100	NA		B39-072511-GW	X	
10		10.4-12.0' Silty SAND (60% sand, 30% silt, 10% gravel), fine to coarse sand, fine to coarse gravel, brown, wet, odor, no sheen.	SM							Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6 to 9' bgs			**Surveyed Location:**	X: 98470.904 Y: 20112.496

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Log of Boring: B40

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 9:25	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 10:10	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	6.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.5' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.5-1.2' Well-graded GRAVEL with silt and sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, grey, moist, no odor, no sheen. Observe concrete chunks between 0.5 to 1.2-feet bgs.	GW-GM / SP-SM							
		1.2-3.5' Poorly graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine sand, fine to coarse gravel, grey, moist, no odor, no sheen. Observe metal fence post support at 1.3-feet bgs.				NA				
					100		0.0	B40-3.0		Fill
		3.5-4.2' SILT (100% silt), brown, moist, no odor, no sheen.	ML							
5		4.2-10.2' Well-graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist to wet, petro-odor, sheen. Observe staining between 6 to 9-feet bgs.	GW				115	B40-5.5	X	Water level
					100	NA		B40-072511-GW	X	
							77.1			
10										
					100	NA				Bentonite
		10.2-12.0' SILT (100% silt), brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	6 to 9' bgs			**Surveyed Location:**	X: 98433.895 Y: 20073.833

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Log of Boring: B41

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/26/11 @ 8:10	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/26/11 @ 8:55	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-0.8' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, petro-odor, sheen.	GW-GM							
		0.8-3.5' Well-graded SAND with gravel Fill (75% sand, 15% gravel, 5% silt), fine to coarse sand, fine to coarse gravel, grey, moist, petro-odor, sheen.	SW		100	NA				
		3.5-5.5' Silty SAND Fill (60% sand, 30% silt, 10% gravel), fine to coarse sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen.	SM				34.2	B41-3.5	X	Water level
5								B41-072611-GW	X	
		5.5-6.3' SILT (100% silt), brown, wet, petro-odor, no sheen.	ML		95	NA	12.9			Fill
		6.3-7.5' WOOD (100% wood), brown, wet, odor, no sheen.	WD							
		7.5-8.3' SILT (100% silt), greenish-brown, wet, odor, no sheen.	ML							
		8.3-8.7' WOOD (100% wood), brown, wet, no odor, no sheen.	WD							
		8.7-9.2' SILT (100% silt), dark brown, wet, organic (natural) odor, no sheen.	ML							
			ML							
10		9.2-9.8' SILT (100% silt), greenish-brown, wet, no odor, no sheen.	SW-SM		100	NA	1.1			Bentonite
		9.8-12.0' Well-graded SAND with silt and gravel (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, wet, no odor, no sheen.								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	4 to 7' bgs			**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B42

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 13:25	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 14:00	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-1.1' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, slight odor, no sheen.	GW-GM / SW-SM							
		1.1-5.5' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, grey, moist to wet, petro-odor, sheen.			100	NA	72.0	B42-3.5	X	Water level
5								B42-072511-GW	X	
		5.5-9.0' SILT (100% silt), brown, wet, slight odor, no sheen.	ML		100	NA	13.5			Fill
		9.0-10.0' Silty SAND (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, greenish-brown, wet, slight odor, slight sheen.	SM							
10		10.0-11.2' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML		100	NA	0.5			Bentonite
		11.2-12.0' SILT (100% silt), greenish-brown, wet, no odor, no sheen.	ML							

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010			**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	4 to 7' bgs	**Annular Seal:**	NA	**Surveyed Location:** X: NA	Y: NA

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Log of Boring: B43

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	7/25/11 @ 12:40	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/25/11 @ 13:20	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	5.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC						Asphalt cap
		0.3-3.5' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	GW-GM	100	NA				
		3.5-7.5' SILT (100% silt), dark brown, moist to wet, slight odor, slight sheen.	ML			0.9	B43-3.5		Fill
5						26.3	B43-4.5	X	Water level
				90	NA		B43-072511-GW	X	
		7.5-10.0' SILT (100% silt), greenish-brown, wet, petro-odor, slight sheen to 7.5-feet bgs; no sheen at 8-feet bgs.	ML						
						40.4			
10		10.0-11.5' SILT (100% silt), brown, wet, organic (natural) odor, no sheen.	ML	80	NA				Bentonite
		11.5-12.0' SILT (100% silt), greenish-brown, wet, no odor, no sheen.	ML						

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	5 to 8' bgs			**Surveyed Location:**	X: 98785.739 Y: 19999.390

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Log of Boring: B44

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/29/11 @ 15:15	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/29/11 @ 16:05	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	3.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Asphalt cap
		0.3-3.5' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	GW-GM							
		1.6-2.9' Silty SAND (65% sand, 35% silt), fine to medium sand, brown, moist, no odor, no sheen.	SM		70	NA		B44-2.5	X	
		2.9-6.2' Well-graded SAND with gravel (70% sand, 25% gravel, 5% silt), fine to coarse sand, fine to coarse gravel, grey, moist to wet at 3.0-feet bgs, odor, no sheen.	SW				12.2			Water level Fill
5								B44-6.0		
		6.2-6.5' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML		80	NA	22.7	B44-072911-GW	X	
		6.5-6.9' SILT (100% silt), tan, wet, no odor, no sheen.	ML							
		6.9-7.9' WOOD (100% wood), light brown, wet, aromatic odor, no sheen.	WD							
		7.9-10.5' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							
10					70	NA	0.8	B44-10.0		Bentonite
		10.5-11.8' PEAT (100% peat), dark brown, wet, no odor, no sheen.	PT							
		11.8-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	3 to 6' bgs			**Surveyed Location:**	X: 98666.478 Y: 20175.524

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Log of Boring: B45

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Emerald Erickson

Date/Time Started:	4/5/13 @ 10:37	**Sampler Type:**	5' Macrocore
Date/Time Completed:	4/5/13 @ 10:55	**Drive Hammer (lbs.):**	Auto
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	5.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.5'
Drilling Foreman:	Nick Knopf	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.5' GRAVEL with sand (80% gravel, 15% sand, 5% silt), fine to coarse gravel, fine to medium sand, medium brown, moist, no odor. Observed asphalt grindings.	GW				0.0			Asphalt cap
					10	NA				
5		5.0-7.5' Silty SAND (60% sand, 35% silt, 5% gravel), fine to medium sand, fine gravel, gray to greenish-gray, moist to wet, hydrocarbon-like odor. Observed piece of wood from 6 to 6.2-feet bgs.	SM		50	NA	0.2	B45-5.0	X	Water level
10		10.0-12.5' SILT (95% silt, 5% sand), fine sand, brown to dark brown, moist, no odor, no sheen.	ML							Bentonite
					50	NA	0.0	B45-12.0	X	
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	NA			**Surveyed Location:** **X:** NA	**Y:** NA

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Log of Boring: B46

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 9:00	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 9:35	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC							
		0.3-1.7 Poorly graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, light brown, moist, no odor.	SP-SM							
		1.7-3.9 Silty SAND (60% sand, 40% silt), greenish gray, fine sand, moist, no odor.	SM		72	NA				
		3.9-5.0 No Recovery					9.8	B46-080613-3.9 @ 0905		
5		5.0-6.7 Silty SAND (60% sand, 40% silt), greenish gray, fine sand, moist, no odor.	SM							Water level
		6.7-7.1 Wood Debris	WD							
		7.1-8.1 SILT (100% silt), olive gray, wet, no odor, minor wood debris throughout.	ML		62	NA	11.0	B46-080613-7.4 @ 0922		Bentonite
		8.1-10.0 No Recovery								
10		10.0-13.9 SILT (100% silt), olive gray, wet, no odor, minor wood debris throughout.	ML		78	NA				
		13.9-15.0 No Recovery					7.1	B46-080613-13.9 @ 0928		
15										

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: **X:** NA **Y:** NA

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Log of Boring: B47

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 9:45	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 10:10	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	3.6
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC					
		0.3-2.0 Poorly graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse sand, gray, moist, no odor.	SP-SM					
		2.0-3.7 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist to wet, no odor.	SM	68	NA			
		3.7-5.0 No Recovery				14.8	B47-080613-3.7 @ 0947	Water level
5		5.0-9.3 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM	100	NA			Bentonite
		9.3-10.0 SILT (100% silt), brown, wet, no odor, wood debris throughout.	ML					
10		10.0-13.6 SILT (100% silt), brown, wet, no odor, wood debris throughout.	ML	72	NA	12.6	B47-080613-10.0 @ 0954	
		13.6-15.0 No Recovery				8.6	B47-080613-13.6 @ 1000	
15								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	NA			**Surveyed Location:** **X:** NA	**Y:** NA

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Log of Boring: B48

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 10:15	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 10:40	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC							
		0.3-1.9 Poorly graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse gravel, gray, moist, no odor.	SP-SM							
		1.9-2.9 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM		52	NA	13.6	B48-080613-2.9 @ 1020		
		2.9-5.0 No Recovery								
5		5.0-7.1 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM							Water level
		7.1-7.6 Wood Debris	WD				5.8	B48-080613-7.1 @ 1028		Bentonite
		7.6-8.5 SILT (100% silt), brown, wet, no odor.	ML		70	NA				
		8.5-10.0 No Recovery								
10		10.0-13.3 SILT (100% silt), brown, wet, no odor, wood debris throughout.	ML		66	NA				
		13.3-15.0 No Recovery					3.9	B48-080613-13.3 @ 1034		
15										

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: X: NA Y: NA

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Log of Boring: B49

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 10:45	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 11:25	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	5.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC					
		0.3-2.1 Poorly graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse gravel, fine to coarse sand, gray, dry, no odor.	SP-SM					
		2.1-3.3 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM	60	NA	14.8	B49-080613-3.3 @ 1050	
		3.3-5.0 No Recovery						
5		5.0-7.9 Silty SAND (60% sand, 40% silt), fine sand, , greenish gray, wet, no odor.	SM					Water level
		7.9-8.5 SILT (100% silt), brown, wet, no odor.	ML	70	NA	13.5	B49-080613-8.5 @ 1100	Bentonite
		8.5-10.0 No Recovery						
10		10.0-15.0 SILT (100% silt), brown, wet, no odor, wood debris throughout but significantly less than previous borings.	ML	100	NA	4.2	B49-080613-15.0 @ 1118	
15								
20								

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	NA			**Surveyed Location:** **X:** NA	**Y:** NA

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Log of Boring: B50

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 11:30	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 12:00	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	6.1
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC					
		0.3-3.3 Silty SAND (60% sand, 40% silt), fine sand, light brown, dry, no odor.	SM	60	NA			
		3.3-5.0 No Recovery				1.2	B50-080613-3.3 @ 1135	
5		5.0-5.2 Silty SAND (60% sand, 40% silt), fine sand, light brown, moist, strong petroleum odor.	SM					
		5.2-8.3 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet at 6.1' bgs, strong petroleum odor 5.2-6.1 bgs.	SM	66	NA	277	B50-080613-6.1 @ 1139	Water level Bentonite
		8.3-10.0 No Recovery				20.6	B50-080613-8.3 @ 1142	
10		10.0-10.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet, slight petroleum odor.	SM					
		10.8-12.4 SILT (100% silt), grayish brown, wet, no odor.	ML			0.0	B50-080613-10.8 @ 1146	
		12.4-15.0 No Recovery		48	NA	0.0	B50-080613-12.4 @ 1200	
15								

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: X: NA Y: NA

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Issaquah, Washington 98027

Log of Boring: B51

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 12:07	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 12:30	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	6.2
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC							
		0.3-3.1 Silty SAND (60% sand, 40% silt), fine sand, light brown to greensih gray starting at 1.9, moist, no odor.	SM		58	NA				
		3.1-5.0 No Recovery								
5		5.0-8.0 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet, no odor at 6.2, slight petroleum odor at 8.0.	SM				7.9	B51-080613-6.2 @ 1213		Water level
					60	NA				Bentonite
		8,0-10,0 No Recovery					13.0	B51-080613-8.0 @ 1215		
10		10.0-11.0 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet, slight petroleum odor throughout.	SM							
		11.0-13.6 SILT (100% silt), brownish gray, wet, no odor. Thick, wet organics at 13.1-13.2.	ML		72	NA	10.1	B51-080613-11.0 @ 1221		
		13.6-15.0 No Recovery					0.0	B51-080613-13.6 @ 1225		
15										

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: **X:** NA **Y:** NA

FARALLON consulting
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Issaquah, Washington 98027

Log of Boring: B52

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 12:57	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 13:25	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	6.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black	AC							
		0.3-1.8 Poorly Graded SAND with Silt and Gravel (50% sand, 40% gravel, 10% silt), fine to coarse grade sand, fine to coarse grade gravel, light brown, dry, no odor.	SP-SM							
		1.8-3.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM		70	NA				
		3.8-5.0 No Recovery								
5		5.0-6.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist from 5.0-6.0, wet from 6.0-6.8, no odor.	SM							Water level
		6.8-7.0 Wood Debris	WD				0.0	B52-080613-6.5 @ 1310		
		7.0-10.0 No Recovery			40	NA				
10		10.0-12.8 SILT (100% silt), brown, wet, no odor. Wood Debris throughout lense 11.2-11.3 bgs.	ML				0.7	B52-080613-10.0 @ 1315		Bentonite
		12.8-15.0 No Recovery			56	NA	0.0	B52-080613-12.8 @ 1317		
15										

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	NA			**Surveyed Location:** **X:** NA	**Y:** NA

FARALLON consulting
975 5th Avenue Northwest
Issaquah, Washington 98027

Log of Boring: B53

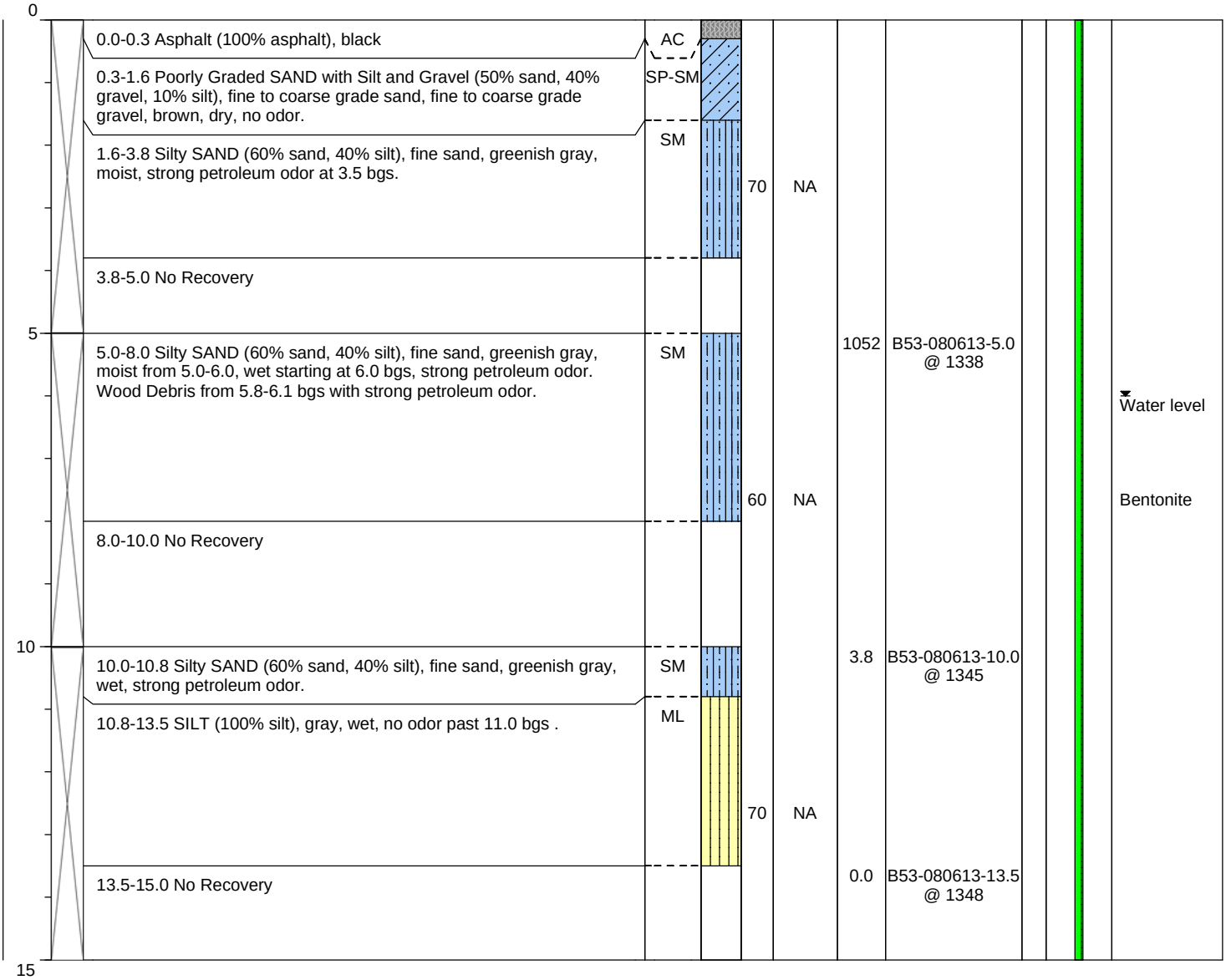
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 13:30	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 14:00	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	6.0
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-0.3 Asphalt (100% asphalt), black	AC					
		0.3-1.6 Poorly Graded SAND with Silt and Gravel (50% sand, 40% gravel, 10% silt), fine to coarse grade sand, fine to coarse grade gravel, brown, dry, no odor.	SP-SM					
		1.6-3.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, strong petroleum odor at 3.5 bgs.	SM	70	NA			
		3.8-5.0 No Recovery						
5		5.0-8.0 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist from 5.0-6.0, wet starting at 6.0 bgs, strong petroleum odor. Wood Debris from 5.8-6.1 bgs with strong petroleum odor.	SM	60	NA	1052	B53-080613-5.0 @ 1338	
		8.0-10.0 No Recovery						
10		10.0-10.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet, strong petroleum odor.	SM			3.8	B53-080613-10.0 @ 1345	
		10.8-13.5 SILT (100% silt), gray, wet, no odor past 11.0 bgs .	ML	70	NA			
		13.5-15.0 No Recovery				0.0	B53-080613-13.5 @ 1348	
15								



Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: **X:** NA **Y:** NA

FARALLON consulting
975 5th Avenue Northwest
Issaquah, Washington 98027

Log of Boring: B54

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: D. Kayhan

Date/Time Started:	8/6/13 14:10	**Sampler Type:**	5' Macrocore
Date/Time Completed:	8/6/13 14:40	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	5.7
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0		0.0-3.4 Silty SAND (60% sand, 40% silt), fine sand, rusty/light brown, moist, no odor.	SM	68	NA			
		3.4-5.0 No Recovery						
5		5.0-7.8 Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist from 5.0-5.7 bgs, wet at 5.7 bgs, no odor.	SM	56	NA	7.3	B54-080613-7.8 @ 1433	Water level; Bentonite
		7.8-10.0 No Recovery						
10		10.0-13.2 SILT (100% silt), brown to olive gray, wet, no odor. Organic layer containing wood debris from 11.8-12.0 bgs.	ML	64	NA			
		13.2-15.0 No Recovery				0.0	B54-080613-13.2 @ 1435	
15								

Well Construction Information

Monument Type: NA
Casing Diameter (inches): NA
Screen Slot Size (inches): NA
Screened Interval (ft bgs): NA

Filter Pack: NA
Surface Seal: NA
Annular Seal: NA

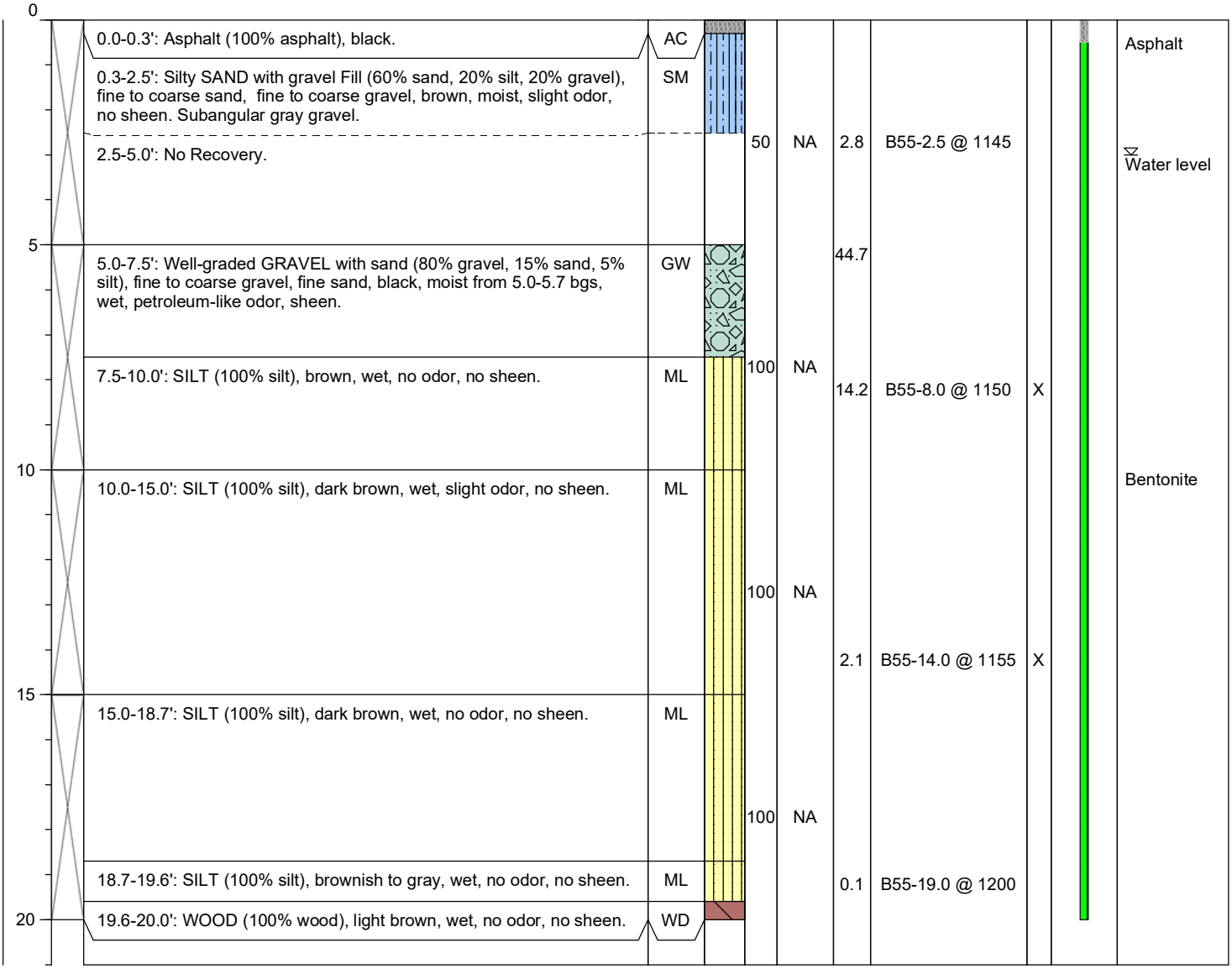
Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: Bentonite
Surveyed Location: **X:** NA **Y:** NA

Log of Boring: B55

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1140	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1210	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	3.0
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.3': Asphalt (100% asphalt), black.	AC					
	0.3-2.5': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, slight odor, no sheen. Subangular gray gravel.	SM					
	2.5-5.0': No Recovery.		50	NA	2.8	B55-2.5 @ 1145	
5	5.0-7.5': Well-graded GRAVEL with sand (80% gravel, 15% sand, 5% silt), fine to coarse gravel, fine sand, black, moist from 5.0-5.7 bgs, wet, petroleum-like odor, sheen.	GW			44.7		
	7.5-10.0': SILT (100% silt), brown, wet, no odor, no sheen.	ML	100	NA	14.2	B55-8.0 @ 1150	X
10	10.0-15.0': SILT (100% silt), dark brown, wet, slight odor, no sheen.	ML	100	NA	2.1	B55-14.0 @ 1155	X
15	15.0-18.7': SILT (100% silt), dark brown, wet, no odor, no sheen.	ML	100	NA			
	18.7-19.6': SILT (100% silt), brownish to gray, wet, no odor, no sheen.	ML			0.1	B55-19.0 @ 1200	
20	19.6-20.0': WOOD (100% wood), light brown, wet, no odor, no sheen.	WD					



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B56

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1215	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1305	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	3.0
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.6': Asphalt (100% asphalt), black.	AC					
	0.6-3.3': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist to wet @ 3.0-feet bgs, no odor, no sheen. Subangular gray gravel.	SM	100	NA	0.3	B56-3.0 @ 1220	
	3.3-5.0': No Recovery.						
5	5.0-5.6': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, wet, slight odor, no sheen. Subangular gray gravel.	SM			2.6		
		ML					
	5.6-6.2': SILT (100% silt), gray, wet, odor, no sheen.	ML					
	6.2-10.0': SILT (100% silt), dark brown, wet, slight odor, no sheen.		100	NA	3.7	B56-8.0 @ 1225	X
10	10.0-13.0': WOOD (100% wood), light brown, slight wet to wet @ 10-feet bgs, no odor, no sheen.	WD	100	NA	12.6		
	13.0-13.5': Silty SAND with gravel (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, dark gray, wet, petroleum-like odor, no sheen. Subrounded to subangular gray and green gravel.	SM					
		ML			8.4	B56-14.0 @ 1245	X
15	13.5-15.0': SILT (100% silt), dark brown, wet, no odor, no sheen.	ML					
	15.0-17.2': SILT (100% silt), dark brown, wet, no odor, no sheen.						
	17.2-20.0': SILT (100% silt), gray, wet, no odor, no sheen.	ML	100	NA	0.6	B56-19.0 @ 1255	X
20							

Boring/Well Construction Details: Asphalt; Water level; Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B57

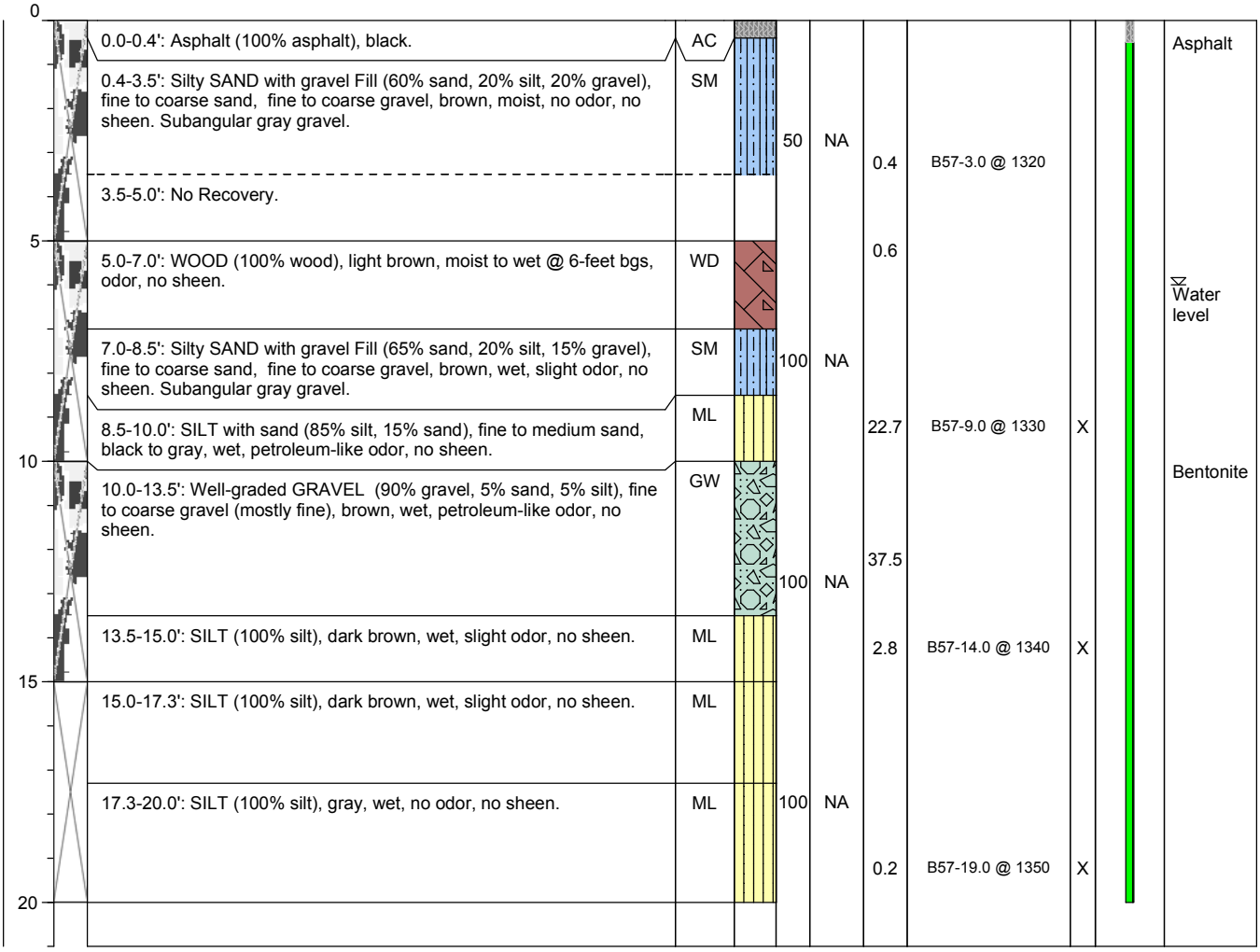
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1315	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1355	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	6.0
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.4': Asphalt (100% asphalt), black.	AC					
	0.4-3.5': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen. Subangular gray gravel.	SM	50	NA	0.4	B57-3.0 @ 1320	
	3.5-5.0': No Recovery.						
5	5.0-7.0': WOOD (100% wood), light brown, moist to wet @ 6-feet bgs, odor, no sheen.	WD			0.6		
	7.0-8.5': Silty SAND with gravel Fill (65% sand, 20% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, brown, wet, slight odor, no sheen. Subangular gray gravel.	SM	100	NA			
	8.5-10.0': SILT with sand (85% silt, 15% sand), fine to medium sand, black to gray, wet, petroleum-like odor, no sheen.	ML			22.7	B57-9.0 @ 1330	X
10	10.0-13.5': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), brown, wet, petroleum-like odor, no sheen.	GW	100	NA	37.5		
	13.5-15.0': SILT (100% silt), dark brown, wet, slight odor, no sheen.	ML			2.8	B57-14.0 @ 1340	X
15	15.0-17.3': SILT (100% silt), dark brown, wet, slight odor, no sheen.	ML					
	17.3-20.0': SILT (100% silt), gray, wet, no odor, no sheen.	ML	100	NA			
					0.2	B57-19.0 @ 1350	X
20							



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B58

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1400	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1440	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	~6.0'
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.4': Asphalt (100% asphalt), black.	AC							Asphalt
		0.4-2.8': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen. Subangular to subrounded gray gravel.	SM		50	NA	0.4	B58-2.5 @ 1405		
		2.8-5.0': No Recovery.								
5		5.0-10.0': No Recovery. Driller stated felt like a void. Observed outside of rod wet between 6.0 to 10.0-feet bgs.			100	NA	NR			Water level
10		10.0-14.2': SILT (100% silt), light brown, wet, petroleum-like odor, no sheen.	ML		100	NA			X	Bentonite
		14.2-15.0': SILT (100% silt), dark brown, wet, slight petroleum-like odor, no sheen.	ML				3.0	B58-14.0 @ 1415	X	
15		15.0-16.5': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), gray, wet, petroleum-like odor, sheen.	GW				21.2			
		16.5-17.6': SILT (100% silt), dark brown, wet, slight odor to no odor @ 17.5-feet bgs, no sheen.	ML		100	NA				
		17.6-20.0': SILT (100% silt), gray, wet, no odor, no sheen.	ML				2.3	B58-19.0 @ 1425	X	
20							0.4			

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B59

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1445	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1530	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	3.0
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.4': Asphalt (100% asphalt), black.	AC					
	0.3-3.5': Silty SAND with gravel Fill (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor to petroleum-like odor from 2.5 to 3.5-feet bgs, stringer sheen. Subangular gray gravel.	SM	75	NA	8.8	B59-3.0 @ 1450	X
	3.5-3.7': SILT (100% silt), dark brown, wet, petroleum-like odor, no sheen.	ML					
5	3.7-5.0': No Recovery.	GW					
	5.0-7.5': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), fine sand, gray, moist from 5.0-5.7 bgs, wet, petroleum-like odor, sheen.				16.5		
	7.5-8.8': SILT (100% silt), dark brown, wet, petroleum-like odor, no sheen.	ML	100	NA			
	8.8-10.0': SILT (100% silt), gray, wet, slight odor, no sheen.	ML			4.2	B59-9.0 @ 1500	
10	10.0-15.0': SILT (100% silt), grayish brown, wet, no odor, no sheen.	ML	100	NA	1.2	B59-14.0 @ 1510	X
15	15.0-15.3': SILT (100% silt), brown, wet, no odor, no sheen.	ML					
	15.3-16.7': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), fine sand, gray, wet, no odor, no sheen.	GW					
	16.7-20.0': SILT (100% silt), gray, wet, no odor, no sheen.	ML	100	NA	0.3	B59-19.0 @ 1520	X
20							

Boring/Well Construction Details: Asphalt; Water level; Bentonite

Well Construction Information

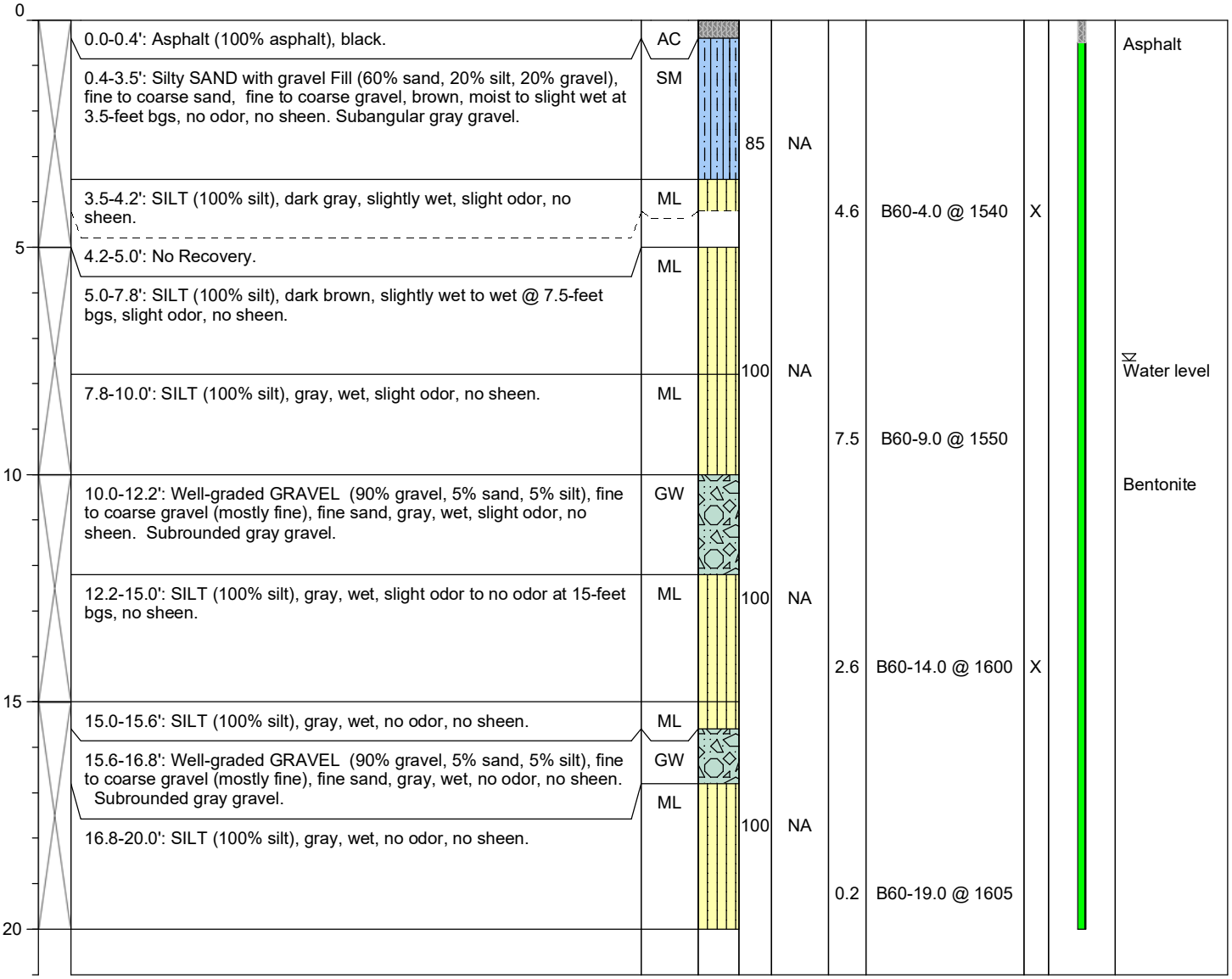
Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B60

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1535	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1610	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	7.5
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.4': Asphalt (100% asphalt), black.	AC					
	0.4-3.5': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist to slight wet at 3.5-feet bgs, no odor, no sheen. Subangular gray gravel.	SM	85	NA			
	3.5-4.2': SILT (100% silt), dark gray, slightly wet, slight odor, no sheen.	ML			4.6	B60-4.0 @ 1540	X
5	4.2-5.0': No Recovery.	ML					
	5.0-7.8': SILT (100% silt), dark brown, slightly wet to wet @ 7.5-feet bgs, slight odor, no sheen.		100	NA			
	7.8-10.0': SILT (100% silt), gray, wet, slight odor, no sheen.	ML			7.5	B60-9.0 @ 1550	
10	10.0-12.2': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), fine sand, gray, wet, slight odor, no sheen. Subrounded gray gravel.	GW					
	12.2-15.0': SILT (100% silt), gray, wet, slight odor to no odor at 15-feet bgs, no sheen.	ML	100	NA	2.6	B60-14.0 @ 1600	X
15	15.0-15.6': SILT (100% silt), gray, wet, no odor, no sheen.	ML					
	15.6-16.8': Well-graded GRAVEL (90% gravel, 5% sand, 5% silt), fine to coarse gravel (mostly fine), fine sand, gray, wet, no odor, no sheen. Subrounded gray gravel.	GW					
	16.8-20.0': SILT (100% silt), gray, wet, no odor, no sheen.	ML	100	NA	0.2	B60-19.0 @ 1605	
20							



Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

Log of Boring: B61

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: K. Scott

Date/Time Started:	5/2/17 @ 1615	**Sampler Type:**	5' Macrocore
Date/Time Completed:	5/2/17 @ 1700	**Drive Hammer (lbs.):**	AUTO
Equipment:	Geoprobe 7822DT	**Depth of Water ATD (ft bgs):**	3.0"
Drilling Company:	Holt Drilling	**Total Boring Depth (ft bgs):**	20.0
Drilling Foreman:	Michael Running	**Total Well Depth (ft bgs):**	NA
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.4': Asphalt (100% asphalt), black.	AC					
	0.4-1.1': Silty SAND with gravel Fill (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen. Subangular to subrounded gray gravel.	SM / ML					
	1.1-1.8': SILT (100% silt), light brown, moist, no odor, no sheen.	ML	80	NA			
	1.8-4.2': SILT with sand (85% silt, 15% sand), fine sand, green, moist to wet @ 3.0-feet bgs, no odor, no sheen.				0.3	B61-4.0 @ 1620	
5	4.2-5.0': No Recovery.	ML					
	5.0-8.6': SILT with sand (80% silt, 20% sand), fine sand, green, moist to wet at 8.0-feet bgs, slight odor, no sheen.		85	NA	6.8	B61-8.0 @ 1630	X
	8.6-9.2': SILT (100% silt), green, wet, slight odor, no sheen.	ML					
10	9.2-10.0': No Recovery.	ML					
	10.0-15.0': SILT with sand (75% silt, 20% sand, 5% gravel), fine sand, fine gravel, green, wet, slight odor, no sheen.		100	NA	3.9	B61-14.0 @ 1640	X
15	15.0-18.6': SILT with sand (75% silt, 20% sand, 5% gravel), fine sand, fine gravel, green, wet, slight odor, no sheen.	ML	100	NA			
	18.6-20.0': SILT (100% silt), dark brown, wet, no odor, no sheen.	ML			0.4	B61-19.0 @ 1650	
20							

Boring/Well Construction Details: Asphalt; Water level; Bentonite

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	NA	**Annular Seal:**	NA	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	NA	**Boring Abandonment:**	Bentonite		**Y:** NA

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Log of Boring: MW-1

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/27/11 @ 12:30	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/27/11 @ 14:00	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	8.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.2' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.2-1.3' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
		1.3-2.5' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen. Observed round 3 to 5-inch cobbles between 1.5 to 2.0-feet bgs.	FILL		100	NA	0.0			Bentonite
		2.5-6.5' Silty SAND (70% sand, 30% silt), fine sand, green with red mottling between 3.5 to 4.0-feet bgs, moist, slight odor, no sheen.	SM							Sand
5					100	NA				
		6.5-7.0' Silty SAND (80% sand, 20% silt), fine sand, brown, moist, slight odor, no sheen.	SM							Fill
		7.0-8.0' Silty SAND (70% sand, 30% silt), fine sand, greenish-brown, moist to wet, slight odor, no sheen.	SM				124	MW1-7.5	X	Water level
		8.0-10.8' Silty SAND (60% sand, 40% silt), fine sand, green, wet, no odor, no sheen.	SM							
10					100	NA	1.5			Screen
		10.8-12.0' SILT (100% silt), tan, wet, no odor, no sheen.	ML							End cap

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 4 to 12' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98958.649 Y: 20138.942

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Log of Boring: MW-2

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/27/11 @ 14:10	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/27/11 @ 17:15	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	9.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	16'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	16'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-1.9' Asphalt (100% asphalt), black.	AC							Monument Well cap
		1.9-2.8' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL		100	NA	0.0			Concrete
		2.8-4.0' Silty SAND (70% sand, 30% silt), fine sand, green, moist, no odor, no sheen.	FILL							Bentonite
		4.0-11.5' Silty SAND (80% sand, 20% silt), fine sand, yellowish-orange, moist to slight wet, no odor, no sheen.	SM							Fill
5					100	NA	0.0			Sand
							0.0	MW2-8.5	X	Water level
10					100	NA	0.0			
		11.5-12.2' SILT (100% silt), dark grey, slight wet, no odor, no sheen, hard.	ML							Screen
		12.2-12.8' Sandy SILT (65% silt, 35% sand), fine sand, yellowish-orange, wet, no odor, no sheen.	ML							
		12.8-16.0' SILT (100% silt), dark grey, slight wet, no odor, no sheen.	ML		100	NA	0.0			End cap
15										

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 6 to 16' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98941.092 Y: 20293.606

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Log of Boring: MW-3

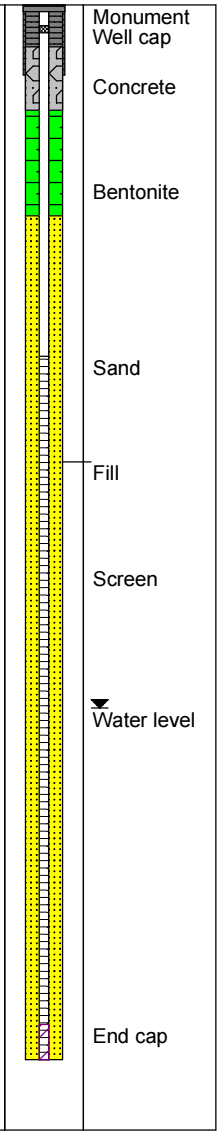
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/27/11 @ 7:50	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/27/11 @ 9:05	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	10.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	16'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	15'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.3' Asphalt (100% asphalt), black.	AC					
	0.3-1.1' Well-graded GRAVEL with sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	GW-GM SW-SM					
	1.1-3.3' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist, no odor, no sheen.		80	NA	0.1		
	3.3-6.5' Silty SAND Fill (60% sand, 35% silt, 5% gravel), fine sand, fine gravel, green, moist, no odor, no sheen.	SM					
5			70	NA	0.0		
	6.5-7.0' PEAT (100% peat), brown, moist, organic odor, no sheen.	PT					
	7.0-8.0' SILT (100% silt), brown, moist, no odor, no sheen.	ML					
	8.0-10.2' SILT (90% silt, 5% sand, 5% gravel), fine sand, fine gravel, greyish-brown, moist to slight wet, no odor, no sheen.	ML				MW6-9.5	
10			80	NA	0.1		
	10.2-11.3' PEAT (100% peat), brown, moist to slight wet, organic odor, no sheen.	PT					
	11.3-11.7' SILT (100% silt), tan, slight wet, no odor, no sheen.	ML					
	11.7-12.3' WOOD (100% wood), brown, moist, no odor, no sheen.	WD					
	12.3-14.0' SILT (90% silt, 5% sand, 5% gravel), fine sand, fine gravel, brown, wet, no odor, no sheen.	ML					
	14.0-14.4' PEAT (100% peat), brown, moist, organic odor, no sheen.	PT	90	NA	0.0		
15	14.4-16.0' SILT (100% silt), brown, wet, no odor, no sheen.	ML					



Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 5 to 15' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98797.409 Y: 20229.860

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Log of Boring: MW-4

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/28/11 @ 8:10	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/28/11 @ 9:30	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	5.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-0.2' Asphalt (100% asphalt), black.	AC					
		0.2-1.0' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL					
			FILL					
		1.0-1.5' Silty SAND (75% sand, 25% silt), fine sand, greenish-brown, moist, no odor, no sheen.	FILL	100	NA	0.2		
		1.5-5.0' Silty SAND (60% sand, 40% silt), fine sand, green, moist, no odor, no sheen. Observed red-mottling between 4.5 to 5.0-feet bgs.						
5		5.0-10.3' SILT (90% silt, 10% sand), dark brown, moist to wet, no odor, no sheen.	ML			0.1	MW4-5.0	X
				100	NA			
10		10.3-12.0' SILT (100% silt), green, wet, no odor, no sheen.	ML	60	NA	0.0		
15								

Boring/Well Construction Details: Monument Well cap; Concrete; Bentonite; Fill; Water level; Sand; Screen; End cap

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	10/20 silica sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Boring Abandonment:**	NA
Screened Interval (ft bgs):	2.5 to 12.5' bgs			**Surveyed Location:**	X: 98790.309 Y: 19999.461

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Log of Boring: MW-5

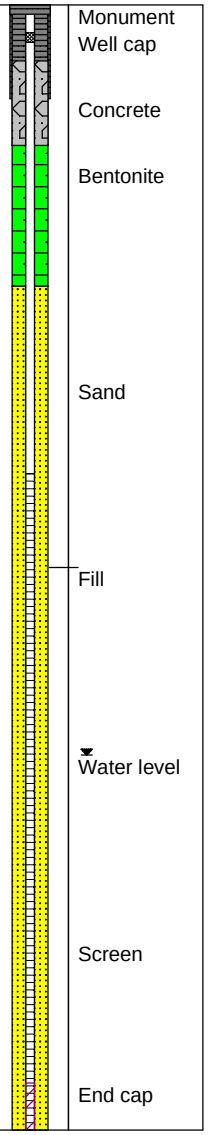
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/27/11 @ 9:15	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/27/11 @ 10:35	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	8.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-0.3' Asphalt (100% asphalt), black.	AC					
		0.4-1.0' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL					
		1.0-6.0' Silty SAND Fill (70% sand, 25% silt, 5% gravel), fine sand, fine gravel, green, moist, petro-odor, sheen.	FILL	100	NA	44.3		
5		6.0-7.5' SILT (100% silt), brown, moist to slight wet, petro odor, sheen.	ML	100	NA	40.8		
		7.5-8.0' WOOD (100% wood), brown, moist, chemical odor, no sheen.	WD				MW5-7.5	X
		8.0-10.3' Silty SAND (60% sand, 40% silt), fine sand, brown, wet, slight odor, no sheen.	SM					
10		10.3-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML	80	NA	0.0		



Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 5 to 12' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98795.971 Y: 20101.184

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Log of Boring: MW-6

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/26/11 @ 9:25	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/26/11 @ 11:10	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	3.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12.5'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0	0.0-0.3' Asphalt (100% asphalt), black.	AC					Monument Well cap
	0.3-0.9' Well-graded GRAVEL with sand Fill (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL					Concrete
	0.9-3.5' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen.	FILL	80	NA	105	MW6-3.0	Bentonite Water level
5	3.5-5.7' Well-graded Silty SAND Fill (60% sand, 25% silt, 15% gravel), fine to coarse sand, fine to coarse gravel, brown, wet, petro-odor, sheen.	FILL					
	5.7-7.1' SILT (100% silt), brown, wet, petro-odor, no sheen, soft.	ML	100	NA	117		Fill
	7.1-8.0' SILT (100% silt), greenish-brown, wet, odor, no sheen, firm.	ML					
	8.0-9.2' Silty SAND with gravel (60% sand, 20% silt, 20% gravel), fine to coarse sand, fine to coarse gravel, grey, wet, odor, no sheen.	SM					Sand
	9.2-10.3' SILT (100% silt), greyish-brown, wet, odor, no sheen.	ML					
10	10.3-10.9' PEAT (100% peat), brown, moist, organic odor, no sheen.	PT	100	NA	7.2		Screen
	10.9-12.0' SILT (100% silt), greenish-brown, wet, no odor, no sheen.	ML					
							End cap

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 2.5 to 12.5' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98746.473 Y: 19989.172

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Log of Boring: MW-7

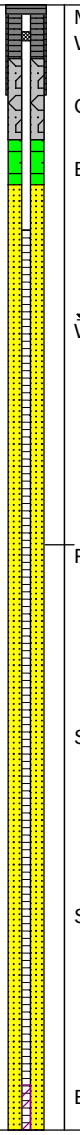
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/27/11 @ 10:45	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/27/11 @ 12:00	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	3.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-0.5' Asphalt (100% asphalt), black.	AC					
		0.5-1.5' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL					
		1.5-6.0' SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, grey, moist to wet, petro-odor, sheen.	FILL	100	NA	71.4	MW7-3.0	X
5		6.0-6.8' SILT (100% silt), tan, wet, odor, no sheen.	ML	100	NA	24.3		
		6.8-8.5' SILT (100% silt), greenish-brown, wet, odor, no sheen.	ML					
		8.5-9.7' Silty SAND (65% sand, 25% silt, 10% gravel), fine to coarse sand, fine gravel, brown, wet, odor, no sheen.	SM					
10		9.7-10.5' SILT (100% silt), brown, wet, slight odor, no sheen.	ML	60	NA	14.8		
		10.5-11.1' PEAT (100% peat), brown, wet, organic odor, no sheen.	PT					
		11.1-12.0' SILT (100% silt), tan, wet, no odor, no sheen.	ML					



Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 2.5 to 12.5' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98698.460 Y: 20090.762

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Log of Boring: MW-8

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/29/11 @ 13:55	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/29/11 @ 15:05	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Direct push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0-0.3' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.3-2.8' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
					100	NA				Bentonite
		2.8-4.0' SILT (95% silt, 5% sand), fine sand, green, moist to slight wet, no odor, no sheen.	FILL				0.3			
										Water level
5		4.0-6.5' Silty SAND (60% sand, 35% silt, 5% gravel), fine sand, fine to coarse gravel, greenish-brown, wet, slight odor, no sheen.	FILL							
					100	NA	0.2			
		6.5-10.0' SILT (90% silt, 10% sand), fine sand, brown, wet, organic (natural) odor, monochromatic white sheen.	ML							Fill
										Sand
10		10.0-12.0' SILT (100% silt), fine sand, dark brown, wet, organic (natural) odor, no sheen.	ML		100	NA	0.0			Screen
										End cap

Well Construction Information

Monument Type:	NA	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	Bentonite
Screened Interval (ft bgs):	2.5 to 12.5' bgs			**Surveyed Location:**	X: 98702.250 Y: 20222.583

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Log of Boring: MW-9

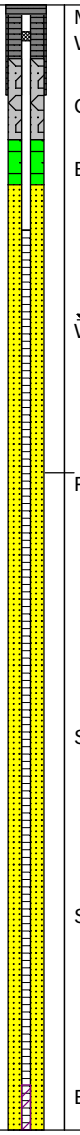
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/26/11 @ 11:15	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/26/11 @ 12:25	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	3.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12.5'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0	0.0-0.3' Asphalt (100% asphalt), black.	AC					
	0.3-1.5' Well-graded GRAVEL with sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL					
	1.5-5.2' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen.	FILL	100	NA	267	MW9-3.0	X
5	5.2-6.4' SILT (100% silt), greenish-brown, wet, odor, no sheen.	ML	100	NA	86.4		
	6.4-6.7' WOOD (100% wood), light brown, wet, chemical-odor, no sheen.	WD					
	6.7-6.9' SILT (100% silt), green, wet, odor, no sheen.	ML					
	6.9-9.0' Silty SAND (65% sand, 25% silt, 10% gravel), fine to coarse sand, fine to coarse gravel, brown, wet, petro-odor, sheen.	SM					
	9.0-11.0' SILT (100% silt), brownish-green, wet, odor, no sheen.	ML					
10			75	NA	0.2		
	11.0-11.5' PEAT (100% peat), brown, moist, organic odor, no sheen.	PT					
	11.5-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML					



Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 2.5 to 12.5' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98655.204 Y: 19991.384

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Log of Boring: MW-10

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/28/11 @ 9:55	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/28/11 @ 11:05	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.3-1.2' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, brown, moist, no odor, no sheen.	FILL							Concrete
		1.2-6.2' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coase sand, fine to coarse gravel, brown, moist to wet, odor, no sheen.	FILL		90	NA	5.5	MW10-3.5	X	Bentonite Water level
5		6.2-11.0' SILT Fill (95% silt, 5% wood), brown, wet, no odor, no sheen.	FILL		90	NA	25.8			Sand
10		11.0-112.0' WOOD (100% wood), brown, wet, no odor, no sheen.	WD		70	NA	0.1			Screen Fill End cap
15										

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 2.5 to 12.5' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98615.364 Y: 20072.417

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Log of Boring: MW-11

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/26/11 @ 12:55	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/26/11 @ 15:00	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	7.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12.5'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.3-1.5' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
		1.5-6.5' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist, petro-odor, no sheen.	FILL		90	NA	0.2	MW11-6.5		Bentonite
5					80	NA	8.1			Sand
		6.5-8.0' SILT (100% silt), greenish-brown with red mottling, wet, odor, no sheen.	ML							Fill
		8.0-10.5' Poorly graded SAND with gravel (80% sand, 15% gravel, 5% silt), fine to medium sand, fine to coarse gravel, brown, wet, odor, no sheen.	SP							Water level
10					60	NA	0.0			Screen
		10.5-10.9' WOOD (100% wood), brown, wet, no odor, no sheen.	WD							
		10.9-12.0' SILT (100% silt), brown, wet, no odor, no sheen.	ML							End cap

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 4 to 12' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98555.562 Y: 20002.877

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Log of Boring: MW-12

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/28/11 @ 11:25	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/28/11 @ 12:35	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	3.8'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.3-2.1' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
					90	NA				Bentonite
		2.1-6.9' Well-graded SAND with gravel Fill (70% sand, 25% gravel, 5% silt), fine to coase sand, fine to coarse gravel, brown, moist to wet, petro-odor, sheen.	FILL				74.3	MW12-3.0	X	Water level
5					90	NA	14.3			Sand
		6.9-10.2' SILT Fill (100% silt), greenish-brown, wet, slight odor to 8-feet bgs than no odor, no sheen.	FILL							Screen
10					90	NA	1.2			Fill
		10.2-10.7' WOOD (100% wood), light brown, wet, no odor, no sheen.	WD							
		10.7-12.0' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML							End cap
15										

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	10/20 silica sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Boring Abandonment:**	NA
Screened Interval (ft bgs):	2.5 to 12.5' bgs			**Surveyed Location:**	X: 98496.387 Y: 20044.027

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Log of Boring: MW-13

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/28/11 @ 13:05	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/28/11 @ 14:20	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	4.0'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.9' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.9-1.5' Well-graded GRAVEL with silt sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
			FILL							Bentonite
		1.5-2.4' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist, petro odor, no sheen.	CO		100	NA				
		2.4-2.6' Concrete (100% concrete), white, dry, no odor, no sheen.	FILL							
		2.6-6.5' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, black to 4.5-feet bgs, and brown between 4.5 to 6.5-feet bgs, moist to wet, petro odor, sheen.					18.0	MW13-3.5	X	Water level
5										Sand
					80	NA	16.3			
		6.5-8.0' SILT (100% silt), tan, wet, odor to 7.0-feet bgs than no odor, no sheen.	ML							Fill
		8.0-12.0' PEAT (100% peat), dark brown, wet, no odor, no sheen.	PT							Screen
10					50	NA	0.5			
										End cap

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 2.5 to 12.5' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98496.534 Y: 20100.477

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Log of Boring: MW-14

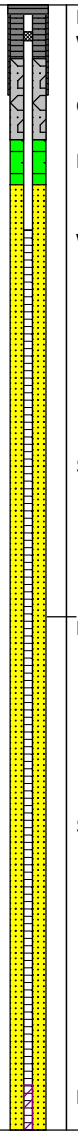
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/28/11 @ 14:30	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/28/11 @ 15:45	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	2.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-1.5' Asphalt (100% asphalt), black.	AC					
		1.5-1.8' Concrete (100% concrete), white, dry, no odor, no sheen.	CO					
		1.8-2.6' SILT Fill (100% silt), green, moist, no odor, no sheen.	FILL	90	NA	0.0	MW14-2.0	X
		2.6-5.5' Well-graded GRAVEL with sand Fill (75% gravel, 20% sand, 5% silt), fine to coarse gravel, fine to coarse sand, greyish-green, wet, no odor, no sheen. Observed round to subrounded pea-gravel.	FILL					
5		5.5-6.8' Silty SAND Fill (85% sand, 15% silt), fine sand, green, wet, no odor, no sheen.	FILL	100	NA	0.0		
		6.8-10.8' SILT (100% silt), dark brown, wet, no odor, no sheen.	ML					
10				50	NA	0.0		
		10.8-12.0' PEAT (100% peat), dark brown, wet, organic (natural) odor, no sheen.	PT					



Well Construction Information

Monument Type:	Morris	**Filter Pack:**	10/20 silica sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Boring Abandonment:**	NA
Screened Interval (ft bgs):	2.5 to 12.5' bgs			**Surveyed Location:**	X: 98495.364 Y: 20171.411

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Log of Boring: MW-15

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/29/11 @ 8:30	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/29/11 @ 9:40	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	7.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	14'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	14'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.4' Asphalt (100% asphalt), black.	AC						Monument Well cap
		0.4-1.6' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL						Concrete
		1.6-5.4' Well-graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine to coarse gravel, fine to coarse sand, brown, moist, no odor, no sheen.	FILL	100	NA	0.0			Bentonite
5		5.4-7.7' Poorly graded SAND with silt Fill (90% sand, 10% silt), fine sand, greenish-brown, moist to wet, no odor, no sheen.	FILL	100	NA	0.0	MW15-7.0		Sand Water level Fill
		7.7-8.2' PEAT (100% peat), dark brown, wet, organic (natural) odor, no sheen.	PT						
		8.2-10.3' Silty SAND (65% sand, 135% silt), fine sand, brown, wet, no odor, no sheen.	SM						
10		10.3-14.0' SILT (100% silt), greenish-brown, wet, no odor, no sheen.	ML	100	NA	0.0			Screen End cap

Well Construction Information

Monument Type: Morris
Casing Diameter (inches): 2"
Screen Slot Size (inches): 0.010
Screened Interval (ft bgs): 4 to 14' bgs

Filter Pack: 10/20 silica sand
Surface Seal: Concrete
Annular Seal: Bentonite

Ground Surface Elevation (ft): NA
Top of Casing Elevation (ft): NA
Boring Abandonment: NA
Surveyed Location: X: 98329.057 Y: 20080.658

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Log of Boring: MW-16

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	7/29/11 @ 12:15	**Sampler Type:**	4' macrocore
Date/Time Completed:	7/29/11 @ 13:45	**Drive Hammer (lbs.):**	Auto
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	9.5'
Drilling Company:	ESN Drilling	**Total Boring Depth (ft bgs):**	12'
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5'
Drilling Method:	Geoprobe		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3' Asphalt (100% asphalt), black.	AC							Monument Well cap
		0.3-1.8' Well-graded GRAVEL with silt and sand Fill (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine to coarse sand, grey, moist, no odor, no sheen.	FILL							Concrete
		1.8-3.2' SILT Fill (100% silt), greenish-brown, moist, no odor, no sheen.	FILL		100	NA	0.3			Bentonite
		3.2-3.3' WOOD (100% wood), light brown, moist, no odor, no sheen.	WD							
		3.3-4.5' SILT Fill (100% silt), brown, moist, no odor, no sheen.	FILL							Sand
5		4.5-5.1' Asphalt (100% asphalt), black.	AC							
		5.1-5.6' Well-graded GRAVEL with silt Fill (80% gravel, 10% sand, 10% silt), fine to coarse gravel, fine to medium sand, greenish-grey, moist, no odor, no sheen.	FILL / ML		100	NA	0.8			Fill
		5.6-8.0' SILT (100% silt), brown, moist to slight wet, no odor, no sheen.	ML							
		8.0-10.1' Silty SAND (65% sand, 35% silt), fine sand, greenish-brown, slightly wet to wet at 9.5-feet bgs, petro odor, slight sheen.	SM				4.8	MW16-9.0	X	Screen
10		10.1-12.0' SILT (100% silt), dark brown, wet, slight petro odor to 10.3-feet bgs, no odor between 10.3 to 12-feet bgs, no sheen.	ML		100	NA	0.0			Water level
										End cap

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	10/20 silica sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Boring Abandonment:**	NA
Screened Interval (ft bgs):	2.5 to 12.5' bgs			**Surveyed Location:**	X: 98576.547 Y: 20211.326

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Log of Boring: MW-17

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	7/29/11 @ 9:55	**Sampler Type:**	4' Macrocore
Date/Time Completed:	7/29/11 @ 11:05	**Drive Hammer (lbs.):**	NA
Equipment:	Powerprobe 9500	**Depth of Water ATD (ft bgs):**	6.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0
Drilling Foreman:	Don Harnden	**Total Well Depth (ft bgs):**	12.5
Drilling Method:	Direct push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0	0-0.5' Asphalt (100% asphalt), black.	AC						Monument Well cap
	0.5-1.2' Well-graded GRAVEL with silt and sand (70% gravel, 20% sand, 10% silt), fine to coarse gravel, fine sand, grey, moist, no odor, no sheen. Observe concrete chunks between 0.5 to 1.2-feet bgs.	GW-GM / SP-SM						Concrete
	1.2-3.5' Poorly graded SAND with silt and gravel Fill (70% sand, 20% gravel, 10% silt), fine sand, fine to coarse gravel, grey, moist, no odor, no sheen. Observe metal fence post support at 1.3-feet bgs.		100	NA	0.0	B40-3.0		Bentonite
	3.5-4.2' SILT (100% silt), brown, moist, no odor, no sheen.	ML						Fill
	4.2-10.2' Well-graded GRAVEL with sand (70% gravel, 25% sand, 5% silt), fine to coarse gravel, fine sand, brown, moist to wet, petro-odor, sheen. Observe staining between 6 to 9-feet bgs.	GW						Sand
5			100	NA	115	B40-5.5	X	Water level
						B40-072511-GW	X	
					77.1			Screen
10			100	NA				
	10.2-12.0' SILT (100% silt), brown, wet, no odor, no sheen.	ML						End cap

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	NA	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	NA	**Surface Seal:**	NA	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	NA	**Boring Abandonment:**	NA
Screened Interval (ft bgs):	6 to 9' bgs			**Surveyed Location:**	X: 98433.895 Y: 20073.833

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Log of Boring: MW-18

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Emerald Erickson

Date/Time Started:	04-05-2013 / 0900	**Sampler Type:**	5' Macrocore
Date/Time Completed:	04-05-2013 / 0924	**Drive Hammer (lbs.):**	Auto
Equipment:	Geoprobe 7900	**Depth of Water ATD (ft bgs):**	5.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	12.0'
Drilling Foreman:	Nick Knopf	**Total Well Depth (ft bgs):**	12.0'
Drilling Method:	Direct Push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-3.0': Poorly graded SAND with silt and gravel (70% sand, 15% silt, 15% gravel), fine to medium sand, fine to coarse gravel, medium brown, moist, no odor.	SP-SM		60	NA				Monument Well cap; Concrete; Bentonite; Sand
		3.0-5.0': No recovery.								
5		5.0-8.0': Silty SAND (70% sand, 30% silt), fine sand, green, wet at 5.0' bgs, hydrocarbon-like odor, sheen.	SM		60	NA	506	MW-18-5.0 @ 1015	X	Water level; Screen
		8.0-10.0': No recovery.								
10		10.0-11.5': SILT (90% silt, 10% sand), fine sand, medium brown to dark brown, wet, no odor.	ML		100	NA				
		11.5-12.0': WOOD (100% wood), light brown, hydrocarbon-like odor, no sheen. Refusal at 12.0' bgs due to wood.	WD				0.4	@ 12.0'		End cap

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	10/20 silica sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Surveyed Location:**	**X:** 98876.79
Screened Interval (ft bgs):	3.0-12.0'	**Boring Abandonment:**	NA		**Y:** 19976.23

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Log of Boring: MW-19

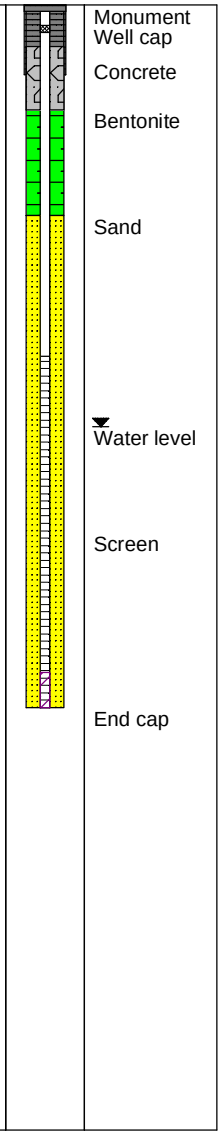
Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Dincer Kayhan

Date/Time Started:	08-15-2013 / 0843	**Sampler Type:**	5' Macrocore
Date/Time Completed:	08-15-2013 / 0940	**Drive Hammer (lbs.):**	Auto
Equipment:	Geoprobe 7800	**Depth of Water ATD (ft bgs):**	6.0'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0'
Drilling Foreman:	Brian	**Total Well Depth (ft bgs):**	10.0'
Drilling Method:	Direct Push		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed
0		0.0-0.3': Asphalt.	AC					
		0.3-1.2': Poorly graded SAND with silt and gravel (50% sand, 40% gravel, 10% silt), fine to coarse sand, fine to coarse gravel, brown, moist, no odor.	SP-SM					
		1.2-3.0': Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM	60	NA	21.2	MW19-3.0-081513 @ 0858	
		3.0-5.0': No recovery.						
5		5.0-8.0': Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, wet at 6.0' bgs, no odor.	SM			1.8	MW19-6.0-081513 @ 0907	
		8.0-8.4': Sandy SILT (60% silt, 30% sand, 10% gravel), fine to medium sand, fine gravel, grayish black, wet, no odor.	ML	68	NA			
		8.4-10.0': No recovery.						
10		10.0-10.5': Sandy SILT (60% silt, 30% sand, 10% gravel), fine to medium sand, fine gravel, grayish black, wet, no odor.	ML					
		10.5-10.9': Wood debris, no odor.	WD					
		10.9-14.0': SILT (100% silt), gray, wet, no odor.	ML	80	NA	1.2	MW19-12.0-081513 @ 0915	
		14.0-15.0': No recovery.						
15								



Well Construction Information

Monument Type:	Morris	**Filter Pack:**	2/12 sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010	**Annular Seal:**	Bentonite	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	5.0-10.0'	**Boring Abandonment:**	NA		**Y:** NA

FARALLON consulting
975 5th Avenue Northwest
Issaquah, Washington 98027

Log of Boring: MW-20

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Dincer Kayhan

Date/Time Started:	08-15-2013 / 0952	**Sampler Type:**	5' Macrocore
Date/Time Completed:	08-15-2013 / 1050	**Drive Hammer (lbs.):**	Auto
Equipment:	Geoprobe 9630	**Depth of Water ATD (ft bgs):**	6.8'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0'
Drilling Foreman:	Brian	**Total Well Depth (ft bgs):**	14.0'
Drilling Method:	Direct Push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0	0.0-0.3': Asphalt.	AC					Monument Well cap
	0.3-1.1': Silty SAND with gravel (50% sand, 30% gravel, 20% silt), fine to coarse sand, fine to coarse gravel, brown.	SM					Concrete
	1.1-2.7': Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, no odor.	SM	54	NA	2.3	MW20-2.7-081513 @ 0958	Bentonite
	2.7-5.0': No recovery.						Sand
5	5.0-7.8': Silty SAND (60% sand, 40% silt), fine sand, greenish gray, moist, wet at 6.8' bgs, odor at 6.0' bgs.	SM			73.5	MW20-6.5-081513 @ 1000	Water level
	7.8-10.0': No recovery.		56	NA			Screen
10	10.0-11.3': Silty SAND (60% sand, 40% silt), fine sand, greenish gray, wet, odor, sheen.	SM			13.6	MW20-10.5-081513 @ 1012	
	11.3-11.4': Wood debris.	WD					
	11.4-14.2': SILT (100% silt), gray, wet, no odor.	ML	84	NA	4.2	MW20-12.0-081513 @ 1015	
	14.2-15.0': No recovery.				1.3	MW20-14.2-081513 @ 1019	End cap
15							

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	2/12 sand	**Ground Surface Elevation (ft):**	NA
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete	**Top of Casing Elevation (ft):**	NA
Screen Slot Size (inches):	0.010"	**Annular Seal:**	Bentonite	**Surveyed Location:**	**X:** NA
Screened Interval (ft bgs):	4.0-14.0'	**Boring Abandonment:**	NA		**Y:** NA

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Issaquah, Washington 98027

Log of Boring: MW-21

Client: Lakeside Industries
Project: Aberdeen Site
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Dincer Kayhan

Date/Time Started:	08-15-2013 / 1100	**Sampler Type:**	5' Macrocore
Date/Time Completed:	08-15-2013 / 1219	**Drive Hammer (lbs.):**	Auto
Equipment:	Geoprobe 9630	**Depth of Water ATD (ft bgs):**	5.4'
Drilling Company:	ESN	**Total Boring Depth (ft bgs):**	15.0'
Drilling Foreman:	Brian	**Total Well Depth (ft bgs):**	13.0'
Drilling Method:	Direct Push		

Depth (feet bgs.)	Lithologic Description	USCS	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Boring/Well Construction Details
0	0.0-5.0': Silty SAND (60% sand, 40% silt). green, moist, no odor. Hand augered to clear any potential water line.	SM					Monument Well cap; Concrete; Bentonite; Sand
5	5.0-6.6': Silty SAND (60% sand, 40% silt), green to gray, moist, wet at 5.4' bgs.	SM					Water level
	6.6-10.0': No recovery.		32	NA	0.4	MW21-6.6-081513 @ 1119	Screen
10	10.0-10.9': Silty SAND (60% sand, 40% silt), green to gray, wet.	SM			0.6	MW21-10.5-081513 @ 1122	
	10.9-13.3': SILT (100% silt), gray, wet, no odor.	ML	66	NA			
	13.3-15.0': No recovery.				0.0	MW21-13.3-081513 @ 1125	End cap
15							

Well Construction Information

Monument Type:	Morris	**Filter Pack:**	2/12 sand
Casing Diameter (inches):	2"	**Surface Seal:**	Concrete
Screen Slot Size (inches):	0.010"	**Annular Seal:**	Bentonite
Screened Interval (ft bgs):	3.0-13.0'	**Boring Abandonment:**	NA

Ground Surface Elevation (ft):	NA
Top of Casing Elevation (ft):	NA
Surveyed Location:	**X:** NA
	Y: NA

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Issaquah, Washington 98027

Log of Boring: TP1

Client: Lakeside Industries
Project: Aberdeen Facility
Location: Aberdeen, WA
Farallon PN: 525-006
Logged By: Ken Scott

Date/Time Started:	3/21/12 @ 10:20	**Sampler Type:**	Bucket
Date/Time Completed:	3/21/12 @ 12:10	**Drive Hammer (lbs.):**	
Equipment:	John Deere 710D	**Depth of Water ATD (ft bgs):**	5.7
Drilling Company:	Lakeside Industries	**Total Boring Depth (ft bgs):**	7.0
Drilling Foreman:	Brian Bartlett	**Total Well Depth (ft bgs):**	
Drilling Method:	Excavation		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.4" Asphalt (100% asphalt), black.	AC							
		0.4-3.6' Silty GRAVEL with sand Fill (65% gravel, 20% sand, 15% silt), fine to coarse gravel, fine to coarse sand, brown, moist, no odor to 2.8-feet bgs, no sheen. Observed 3-inch round to subrounded cobbles between 1.5 to 3-feet bgs. Observed staining at 2.8-feet bgs with sheen seen on northside of test-pit.	GM		100%	N/A	NM			
		3.6-7.0' SILT (100% silt), black, moist to wet, petro odor, no sheen on southside test-pit. Observed round wood pier piling in center of test-pit between 4.0 to 7.0-feet bgs. A 7-foot high concrete seawall was on southside of test-pit, and the bottom of seawall was tied-into silt layer at 4-feet bgs. Observed groundwater on northside of test-pit with a sheen at 5.7-feet bgs.	ML		100%	N/A	NM	TP1-3.5 @ 11:15		
5					100%	N/A	NM	TP1-4.5 @ 11:30		
					100%	N/A	NM	TP1-7.0 @ 11:45		
10										

Well Construction Information

Monument Type:	**Filter Pack:**	**Ground Surface Elevation (ft):**
Casing Diameter (inches):	**Surface Seal:**	**Top of Casing Elevation (ft):**
Screen Slot Size (inches):	**Annular Seal:**	**Boring Abandonment:**
Screened Interval (ft bgs):		**Surveyed Location:** X: Y:

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975 5th Avenue Northwest
Issaquah, Washington 98027

Log of Boring: TP2

Client: Lakeside Industries
Project: Aberdeen Facility
Location: Aberdeen, WA

Farallon PN: 525-006

Logged By: Ken Scott

Date/Time Started:	3/21/12 @ 12:30	**Sampler Type:**	Bucket
Date/Time Completed:	3/21/12 @ 14:15	**Drive Hammer (lbs.):**	
Equipment:	John Deere 710D	**Depth of Water ATD (ft bgs):**	5.7
Drilling Company:	Lakeside Industries	**Total Boring Depth (ft bgs):**	7.0
Drilling Foreman:	Brian Bartlett	**Total Well Depth (ft bgs):**	
Drilling Method:	Excavation		

Depth (feet bgs.)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (ppm)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0		0.0-0.3 Asphalt (100% asphalt), black.	AC							
		0.3-3.8' Silty GRAVEL with sand Fill (60% gravel, 25% sand, 15% silt), fine to coarse gravel, fine to coarse sand, brown, moist, no odor to 3.0-feet bgs, no sheen. Observed 3-inch round to subrounded cobbles between 1.5 to 3-feet bgs. Observed staining at 3.0-feet bgs.	GM		100%	N/A	NM			
		3.8-7.0' SILT (90% silt, 10% wood), black to grey at 6.5-feet bgs, moist to wet, petro odor to 6.5-feet bgs., slight sheen seen at 3.8-feet bgs, no sheen on southside test-pit or deeper than 3.8-feet bgs. Observed wood pier piling debris from historic dock between 3.8 to 5.5-feet bgs. A 7-foot high concrete seawall was on southside of test-pit, and the bottom of seawall was tied-into silt layer at 4-feet bgs. Observed metal support cable tied-into seawall at 5-feet bgs. Observed groundwater on northside of test-pit at 5.7-feet bgs.	ML		100%	N/A	NM	TP2-4.0 @ 13:40		
5					100%	N/A	NM	TP2-4.5 @ 13:45		
					100%	N/A	NM	TP2-7.0 @ 13:50		
10										

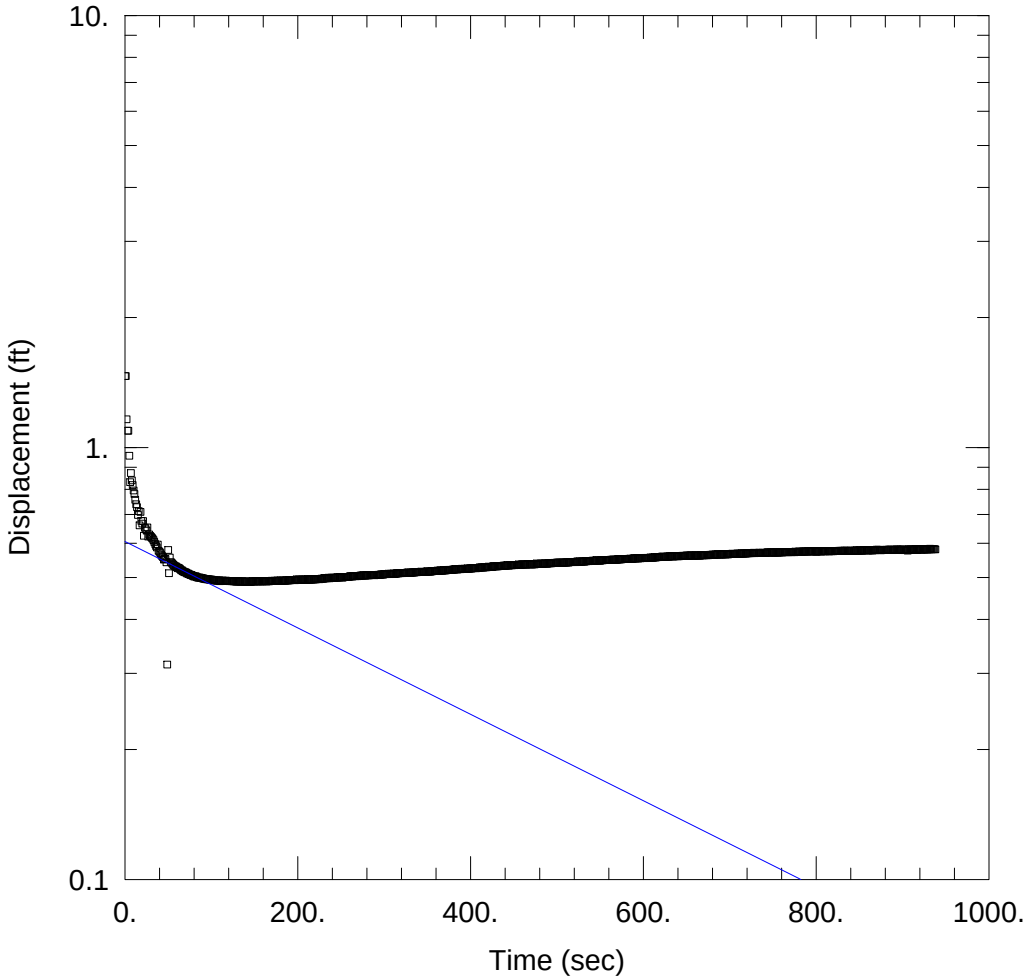
Well Construction Information

Monument Type:	**Filter Pack:**	**Ground Surface Elevation (ft):**
Casing Diameter (inches):		**Top of Casing Elevation (ft):**
Screen Slot Size (inches):	**Surface Seal:**	**Boring Abandonment:**
Screened Interval (ft bgs):	**Annular Seal:**	**Surveyed Location: X:** **Y:**

APPENDIX C
AQUIFER TESTING DATA

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006



FALLING HEAD

Data Set: P:\...\MW-6 falling head.aqt
Date: 11/07/17 Time: 10:46:25

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-6
Test Date: 9/28/17

AQUIFER DATA

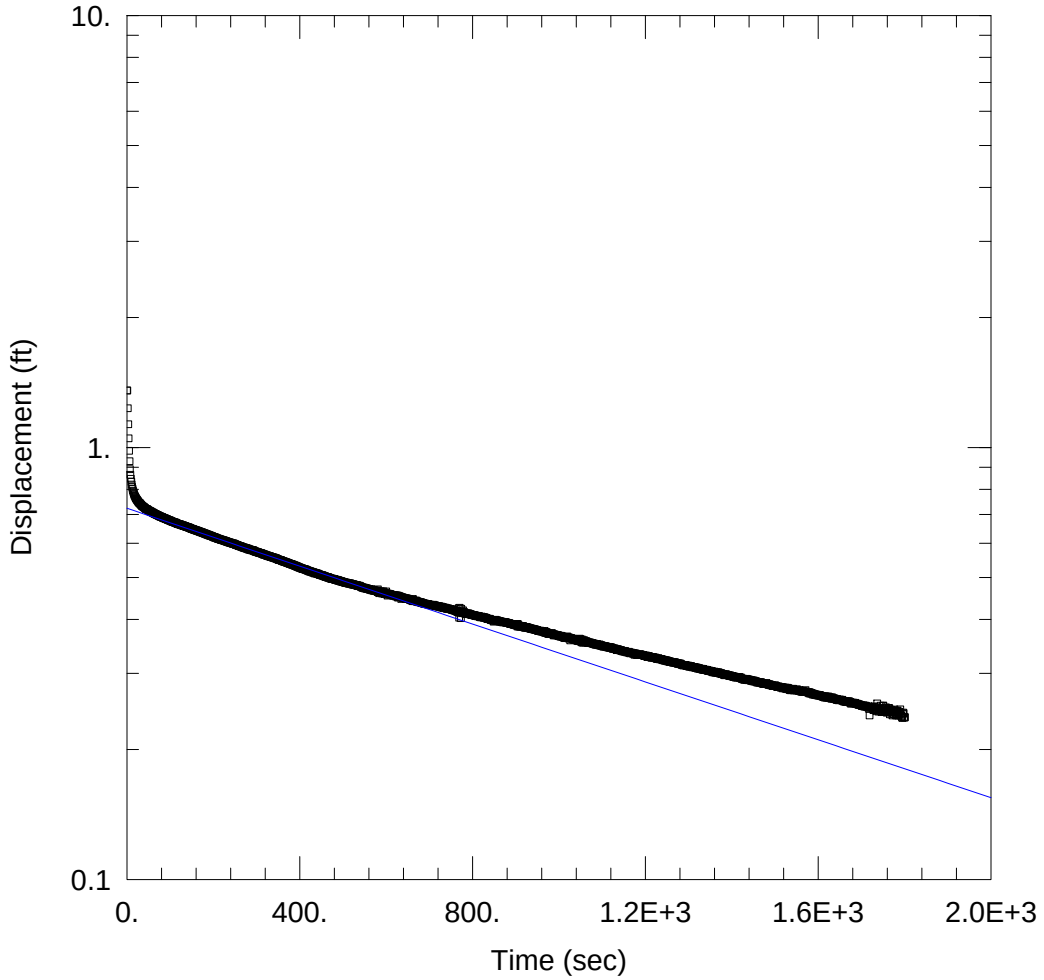
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 1.464 ft Static Water Column Height: 9.23 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.36E-5 cm/sec y0 = 0.6059 ft



RISING HEAD

Data Set: P:\...\MW-6 rising head.aqt
Date: 11/06/17 Time: 14:33:26

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-6
Test Date: 9/28/17

AQUIFER DATA

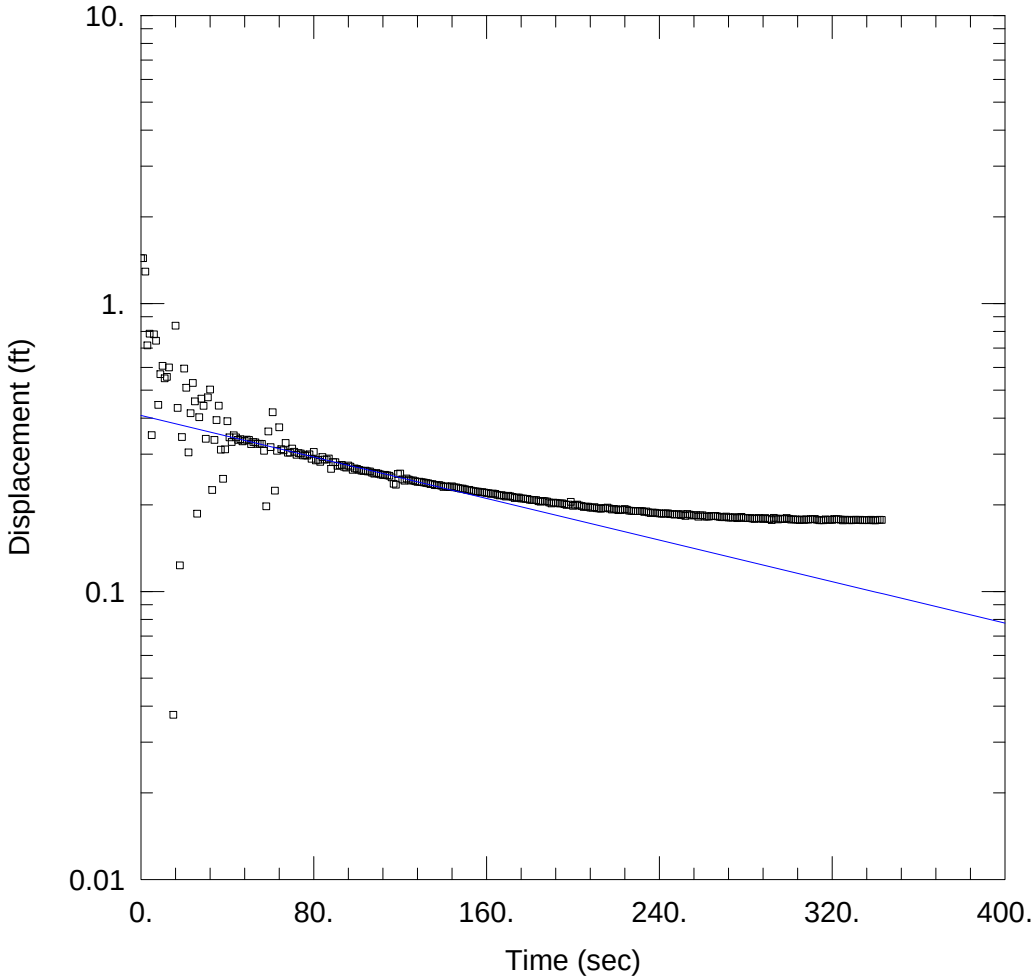
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 1.356 ft Static Water Column Height: 9.81 ft
Total Well Penetration Depth: 10.39 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.484E-5 cm/sec y0 = 0.7233 ft



FALLING HEAD

Data Set: P:\...\MW-7 falling head.aqt
Date: 11/06/17 Time: 13:58:06

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-7
Test Date: 9/28/17

AQUIFER DATA

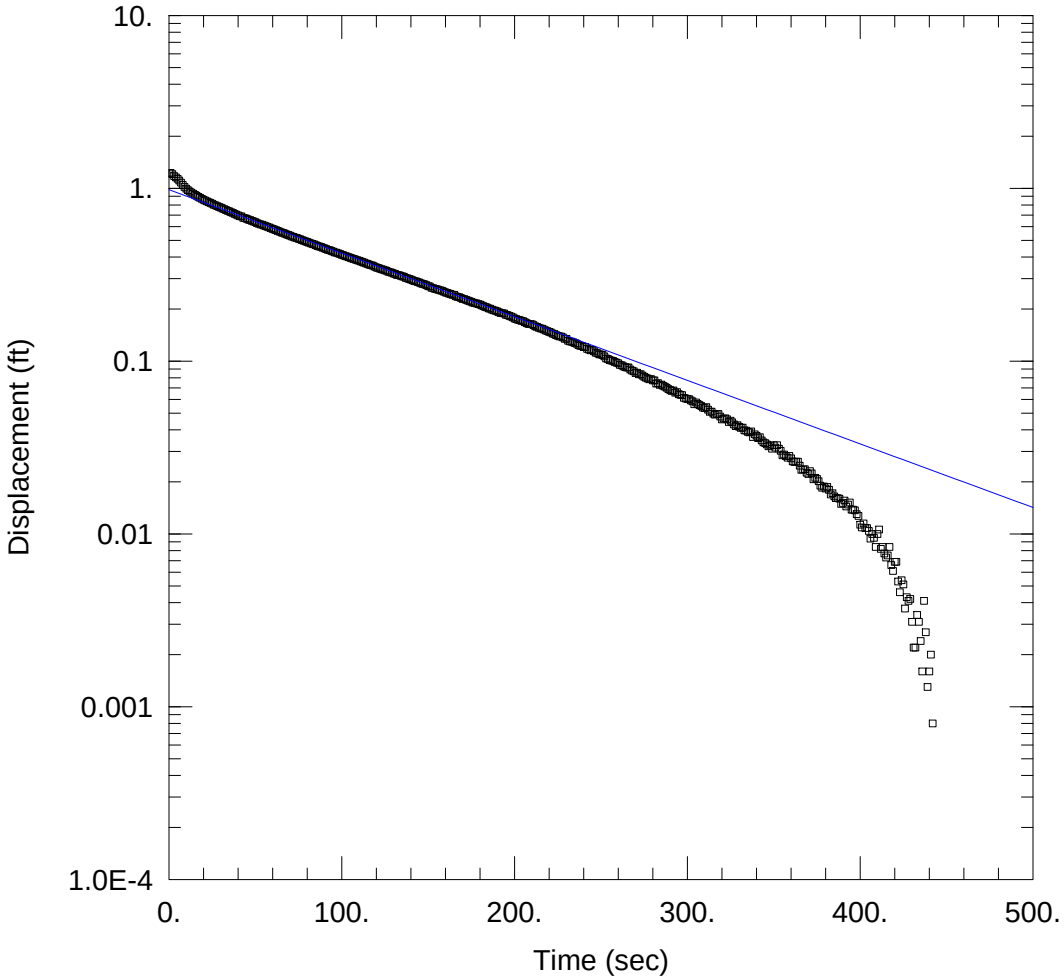
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 1.437 ft Static Water Column Height: 9.9 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0001327 cm/sec y0 = 0.4087 ft



RISING HEAD

Data Set: P:\...\MW-7 rising head.aqt
Date: 11/06/17 Time: 14:09:00

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-7
Test Date: 9/28/17

AQUIFER DATA

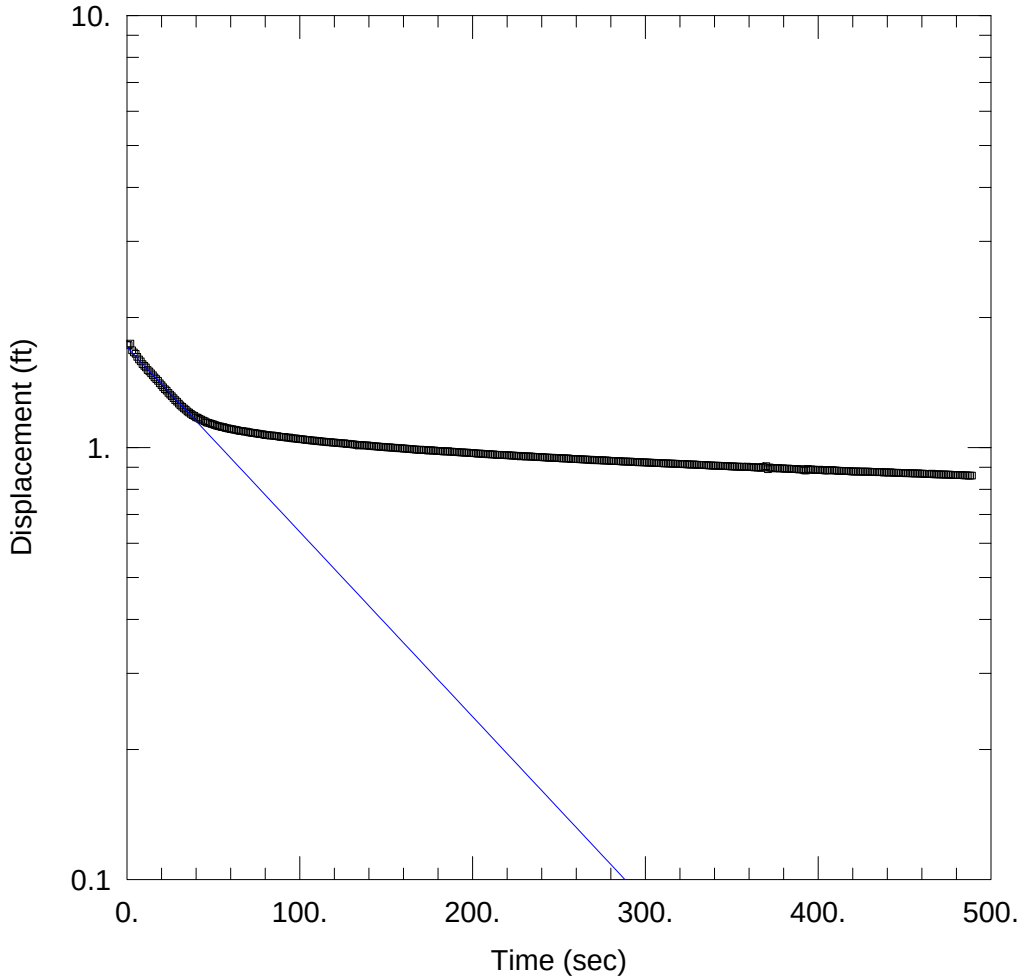
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 1.229 ft Static Water Column Height: 10.14 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 0.0002706 cm/sec y0 = 0.9813 ft



RISING HEAD

Data Set: P:\525 Lakeside\525006 Aberdeen Site\Working Folder\Slug-Test 2017\MW-8 rising head.aqt
Date: 11/06/17 Time: 14:58:42

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-8
Test Date: 9/28/17

AQUIFER DATA

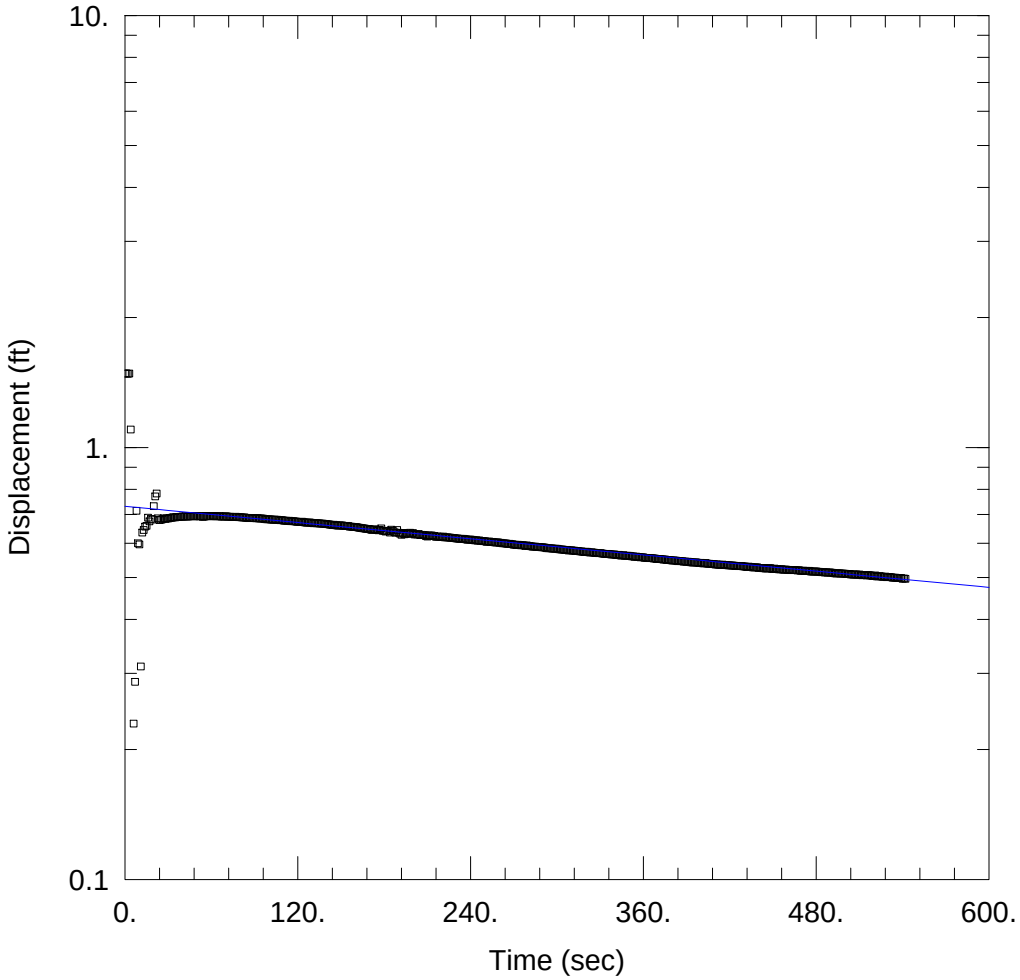
Saturated Thickness: 10. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-8)

Initial Displacement: 1.726 ft
Total Well Penetration Depth: 11.16 ft
Casing Radius: 0.083 ft
Static Water Column Height: 10.14 ft
Screen Length: 10. ft
Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.000322 cm/sec
y0 = 1.707 ft



FALLING HEAD

Data Set: P:\...\MW-9 falling head.aqt
Date: 11/06/17 Time: 14:54:01

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-9
Test Date: 9/28/17

AQUIFER DATA

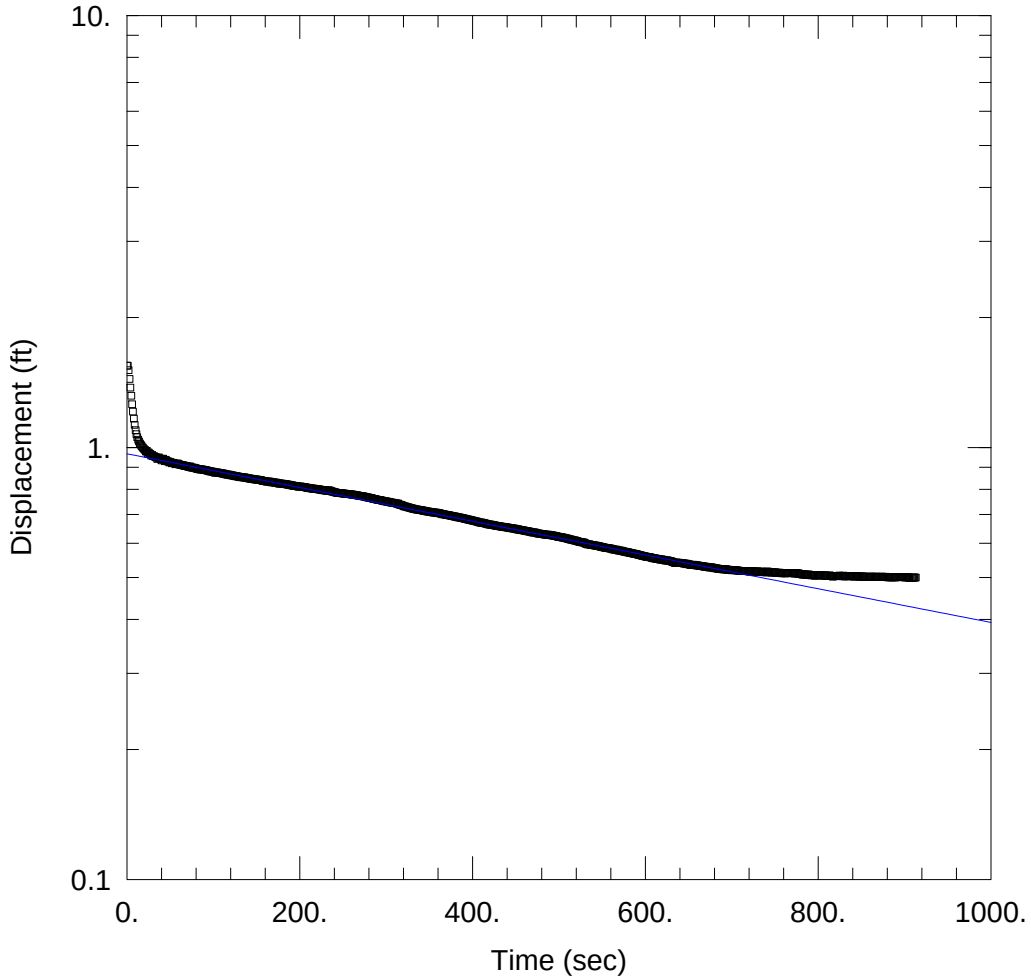
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9)

Initial Displacement: 1.484 ft Static Water Column Height: 9.17 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.3E-5 cm/sec y0 = 0.7308 ft



RISING HEAD

Data Set: P:\...\MW-9 rising head.aqt
Date: 11/06/17 Time: 14:56:03

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-9
Test Date: 9/28/17

AQUIFER DATA

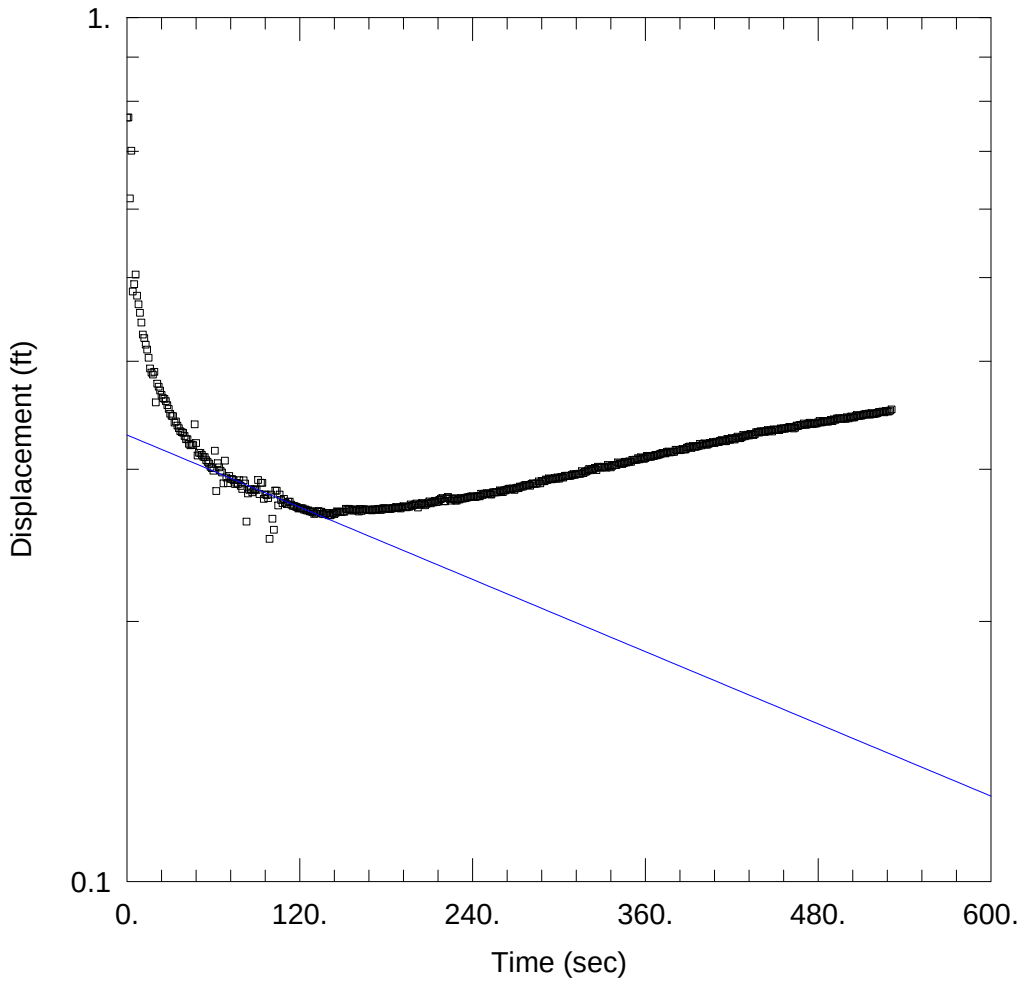
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9)

Initial Displacement: 1.547 ft Static Water Column Height: 10.23 ft
Total Well Penetration Depth: 10.81 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 2.921E-5 cm/sec y0 = 0.9671 ft



FALLING HEAD

Data Set: P:\...\MW-10 falling head.aqt
Date: 11/06/17 Time: 15:16:17

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-10
Test Date: 9/29/17

AQUIFER DATA

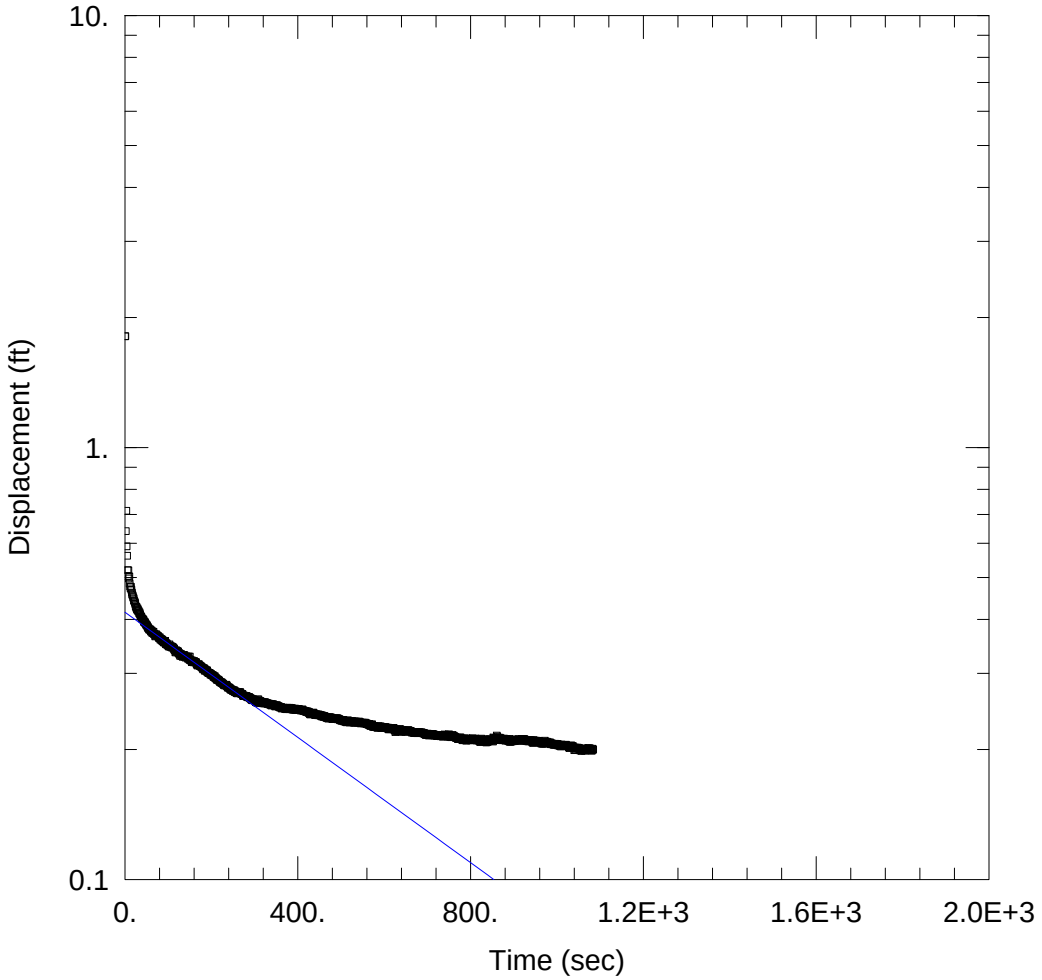
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 0.766 ft Static Water Column Height: 10.73 ft
Total Well Penetration Depth: 11.02 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 5.231E-5 cm/sec y0 = 0.3287 ft



RISING HEAD

Data Set: P:\...\MW-10 rising head.aqt
Date: 11/06/17 Time: 15:13:01

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-10
Test Date: 9/29/17

AQUIFER DATA

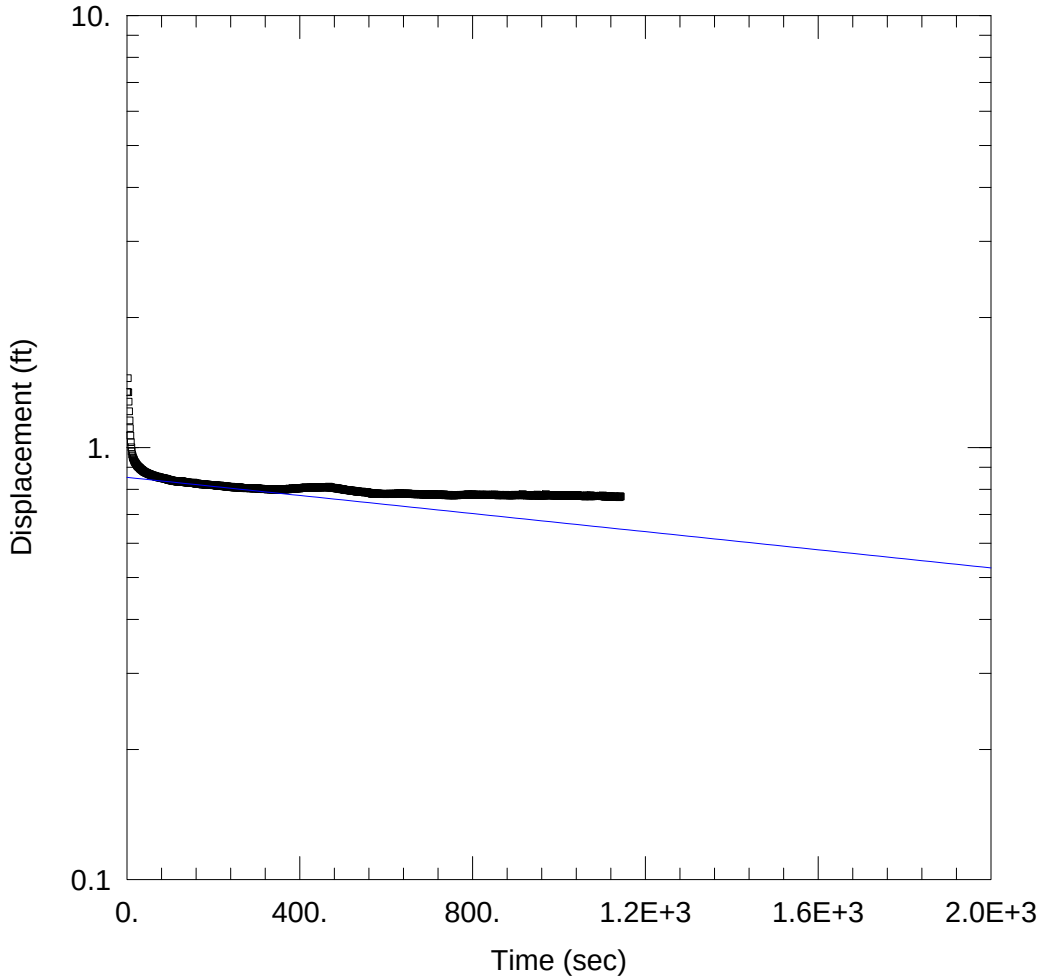
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.81 ft Static Water Column Height: 11.15 ft
Total Well Penetration Depth: 11.44 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 5.483E-5 cm/sec y0 = 0.4157 ft



RISING HEAD

Data Set: P:\...\MW-12 rising head.aqt
Date: 11/06/17 Time: 15:56:49

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-12
Test Date: 9/29/17

AQUIFER DATA

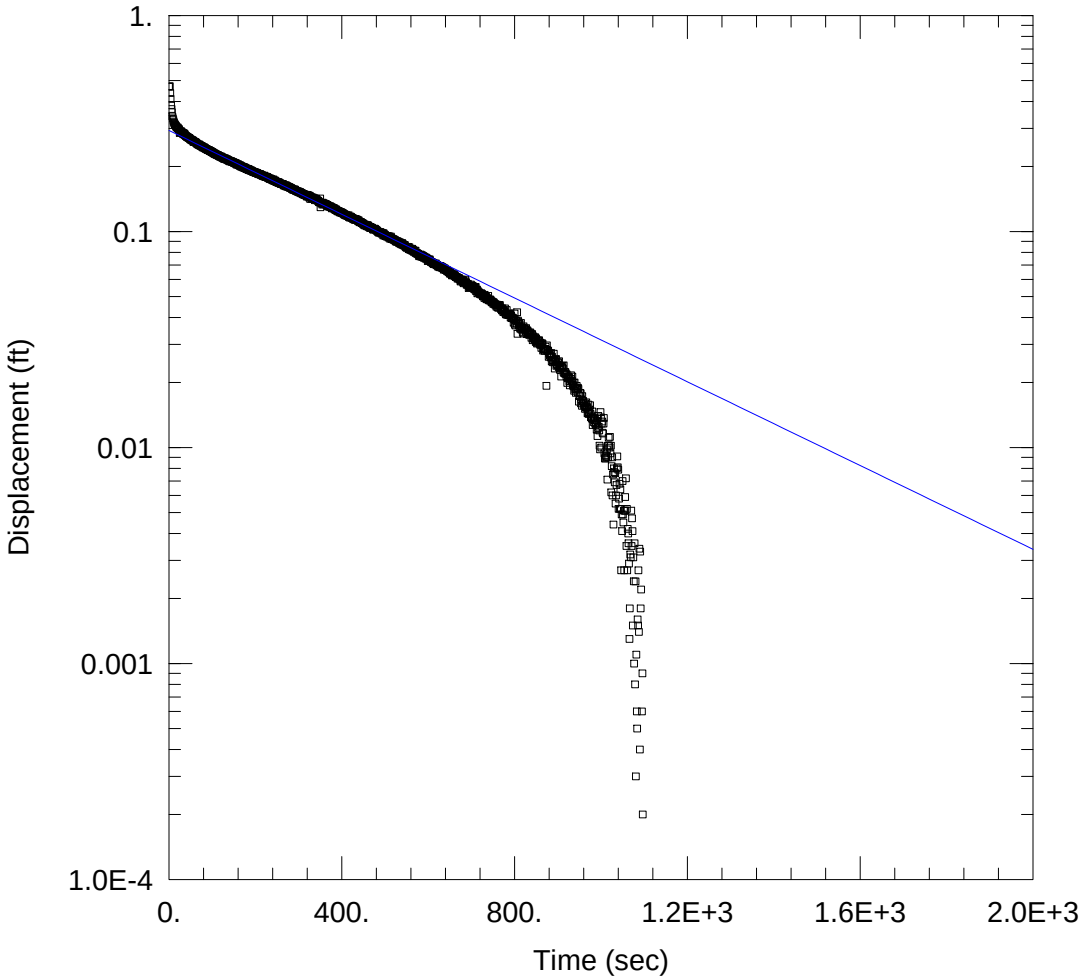
Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-12)

Initial Displacement: 1.345 ft Static Water Column Height: 9.96 ft
Total Well Penetration Depth: 10.26 ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.752E-6 cm/sec y0 = 0.8529 ft



RISING HEAD

Data Set: P:\...\MW-18 rising head.aqt
Date: 11/06/17 Time: 16:22:58

PROJECT INFORMATION

Company: Farallon
Client: Lakeside Industries
Project: 525-006
Location: Aberdeen, WA
Test Well: MW-18
Test Date: 9/28/17

AQUIFER DATA

Saturated Thickness: 10. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-18)

Initial Displacement: 0.4688 ft Static Water Column Height: 6.1 ft
Total Well Penetration Depth: 10. ft Screen Length: 10. ft
Casing Radius: 0.083 ft Well Radius: 0.188 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice
K = 7.134E-5 cm/sec y0 = 0.2936 ft

Table C-1
Summary of Aquifer Testing Results
Lakeside Industries Aberdeen Facility
Aberdeen, Washington
Farallon PN: 525-006

Monitoring Well Tested	Date Tested	Test Conducted	Estimated Hydraulic Conductivity (centimeters/second)	Average Hydraulic Conductivity (centimeters/second)	Hydraulic Conductivity Geometric Mean (centimeters/second)	Groundwater Seepage Velocity (feet per year)[1]
MW-6	9/29/2017	Falling Head	7.36E-05	4.92E-05	5.89E-05	8.5
	9/29/2017	Rising Head	2.48E-05			
MW-7	9/28/2017	Falling Head	1.33E-04	2.02E-04		
	9/28/2017	Rising Head	2.71E-04			
MW-8	9/28/2017	Falling Head	Inconclusive	3.22E-04		
	9/28/2017	Rising Head	3.22E-04			
MW-9	9/28/2017	Falling Head	2.30E-05	2.61E-05		
	9/28/2017	Rising Head	2.92E-05			
MW-10	9/29/2017	Falling Head	5.23E-05	5.36E-05		
	9/29/2017	Rising Head	5.48E-05			
MW-12	9/29/2017	Falling Head	Inconclusive	7.75E-06		
	9/29/2017	Rising Head	7.75E-06			
MW-18	9/28/2017	Falling Head	Inconclusive	7.13E-05		
	9/28/2017	Rising Head	7.13E-05			

NOTES:

[1]Groundwater seepage velocity (V) = Kl/n, where
K = hydraulic conductivity
l = hydraulic gradient of 0.035 foot per foot (September 2013)
n = effective porosity of 0.25 (unitless) for silty sands and gravels

APPENDIX D
TIDAL STUDY DATA

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

LAKESIDE TIDAL STUDY

A tidal study was conducted during a 24-hour tidal cycle on December 7 and 8, 2011 at the Lakeside Aberdeen facility in Aberdeen Washington (the Site).

The tidal study included installation of electric pressure-logging transducers in monitoring wells MW-6, MW-7, MW-8, MW-9, and MW-10. Surface water level fluctuations in the Chehalis River were evaluated using data from the National Oceanic and Atmospheric Administration (NOAA) Aberdeen Station #9441187, west of the Site.

Recording of groundwater levels at each well using the transducers was initiated at 10:00 a.m. on December 7, 2011 during a high tide cycle. Measurements were recorded at 5-minute intervals for approximately 26 hours.

The relative groundwater level fluctuations recorded in the monitoring wells during the tidal study are provided graphically on the included figures. The surface water elevation tidal fluctuation recorded in the Chehalis River at the Aberdeen Station is also depicted graphically over the same time period. The surface water elevation fluctuation in the Chehalis River at Aberdeen Station #9441187 was approximately 10 feet during the study period.

The relative change (i.e., the difference between the highest recorded elevation and the lowest recorded elevation) in groundwater elevations measured in Site monitoring wells is summarized as follows:

- Monitoring well MW-6, located approximately 20 feet from the top of the river bank, and very close to the concrete retaining wall, displayed a groundwater elevation tidal response of approximately 0.06 foot.

- Monitoring well MW-7, located approximately 120 feet from the top of the river bank, did not display a groundwater elevation tidal response and may reflect either no tidal response or a transducer malfunction.

- Monitoring well MW-8, located approximately 255 feet from the top of the river bank, did not display a groundwater elevation tidal response and may reflect either no tidal response or a transducer malfunction.

- Monitoring well MW-9, located approximately 20 feet from the top of the river bank, and very close to the concrete retaining wall, displayed a groundwater elevation tidal response of approximately 0.15 foot.

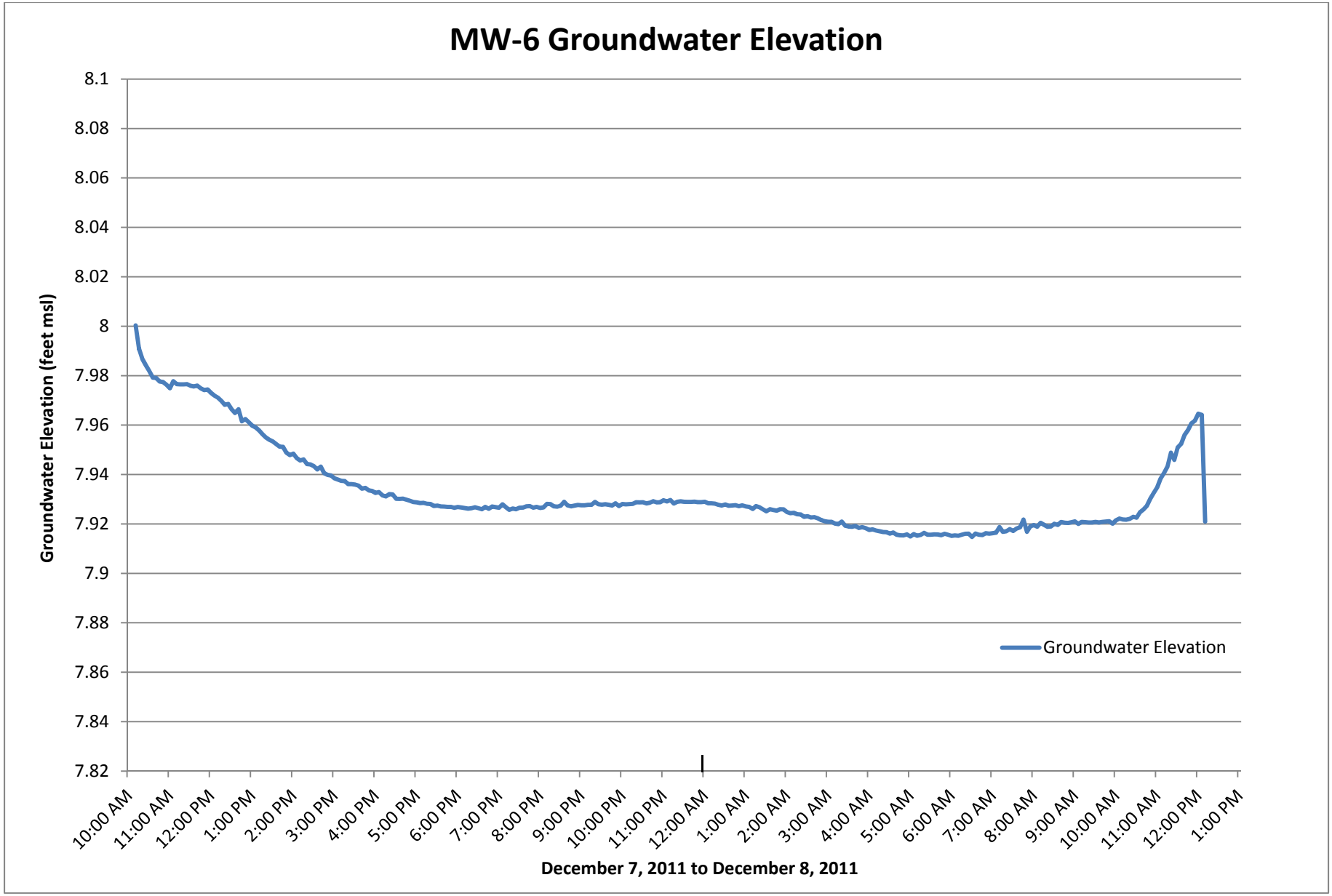
- Monitoring well MW-10, located approximately 100 feet from the top of the river bank, displayed a groundwater elevation tidal response of approximately 0.23 foot.

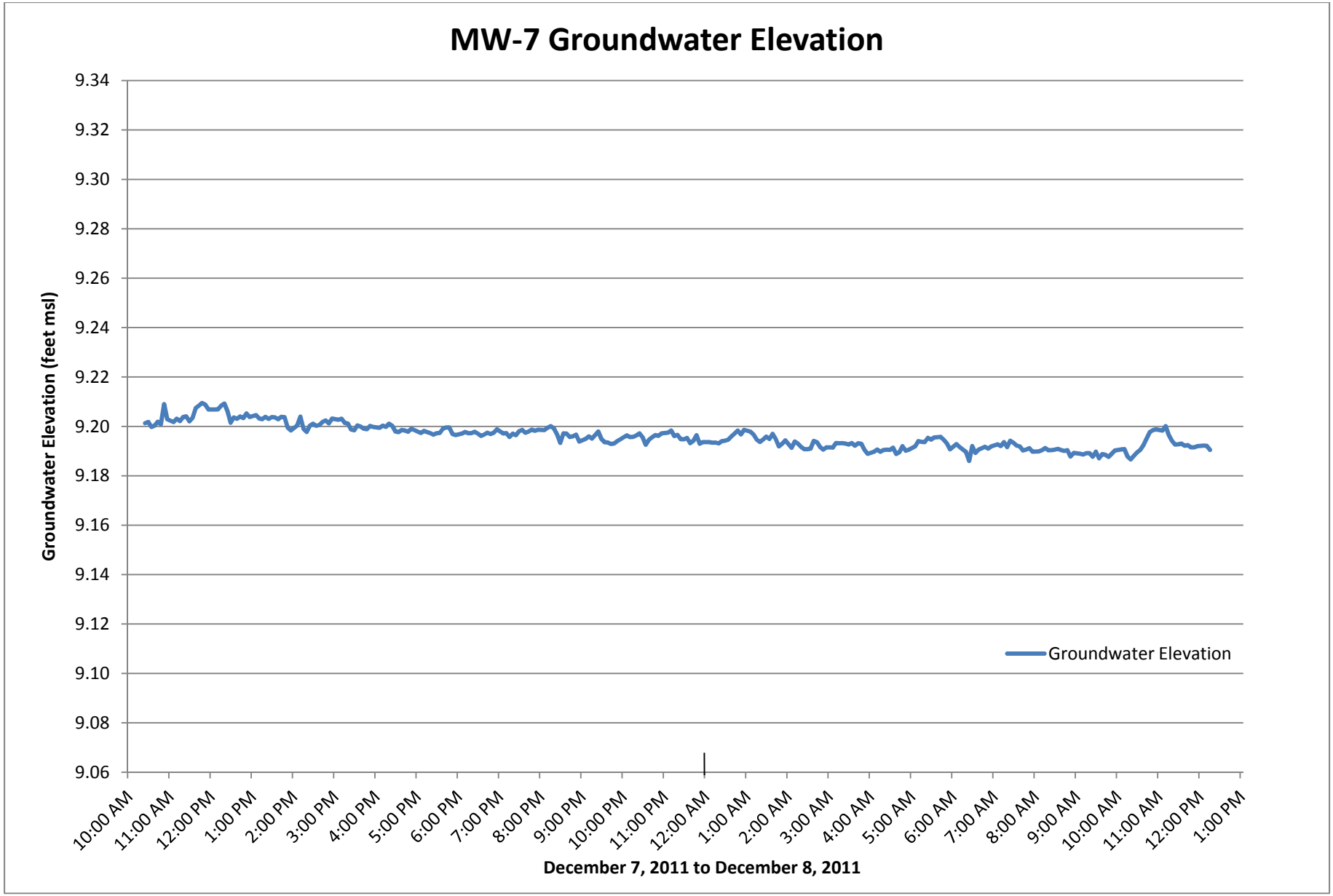
The relative change in groundwater elevations measured in the two monitoring wells that displayed the greatest tidal response ranged from approximately 0.15 foot in monitoring well MW-9 to approximately 0.23 foot in monitoring well MW-10. Monitoring well MW-6, the other

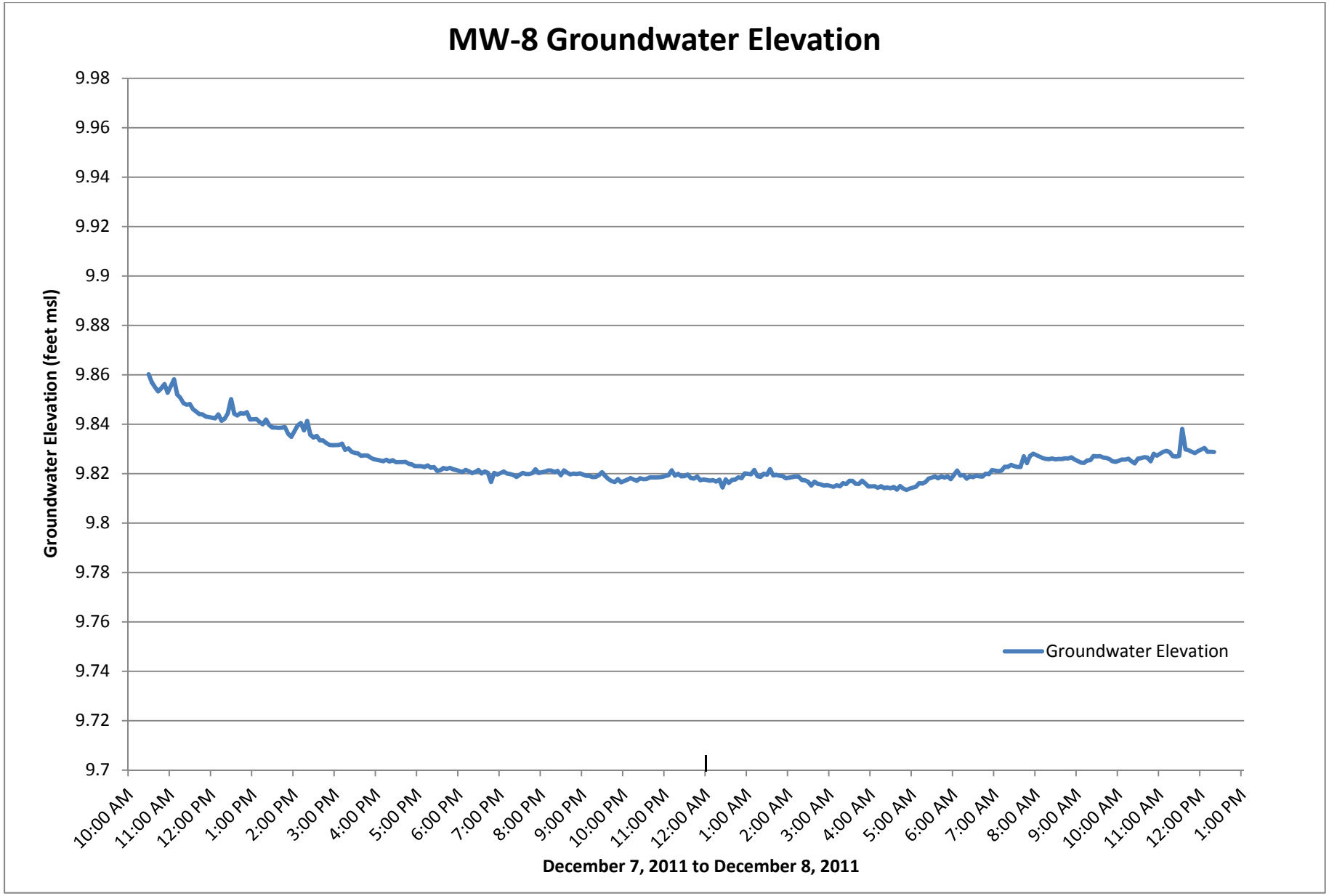
well that possibly displayed a recordable tidal response had a groundwater elevation change of approximately 0.06 foot.

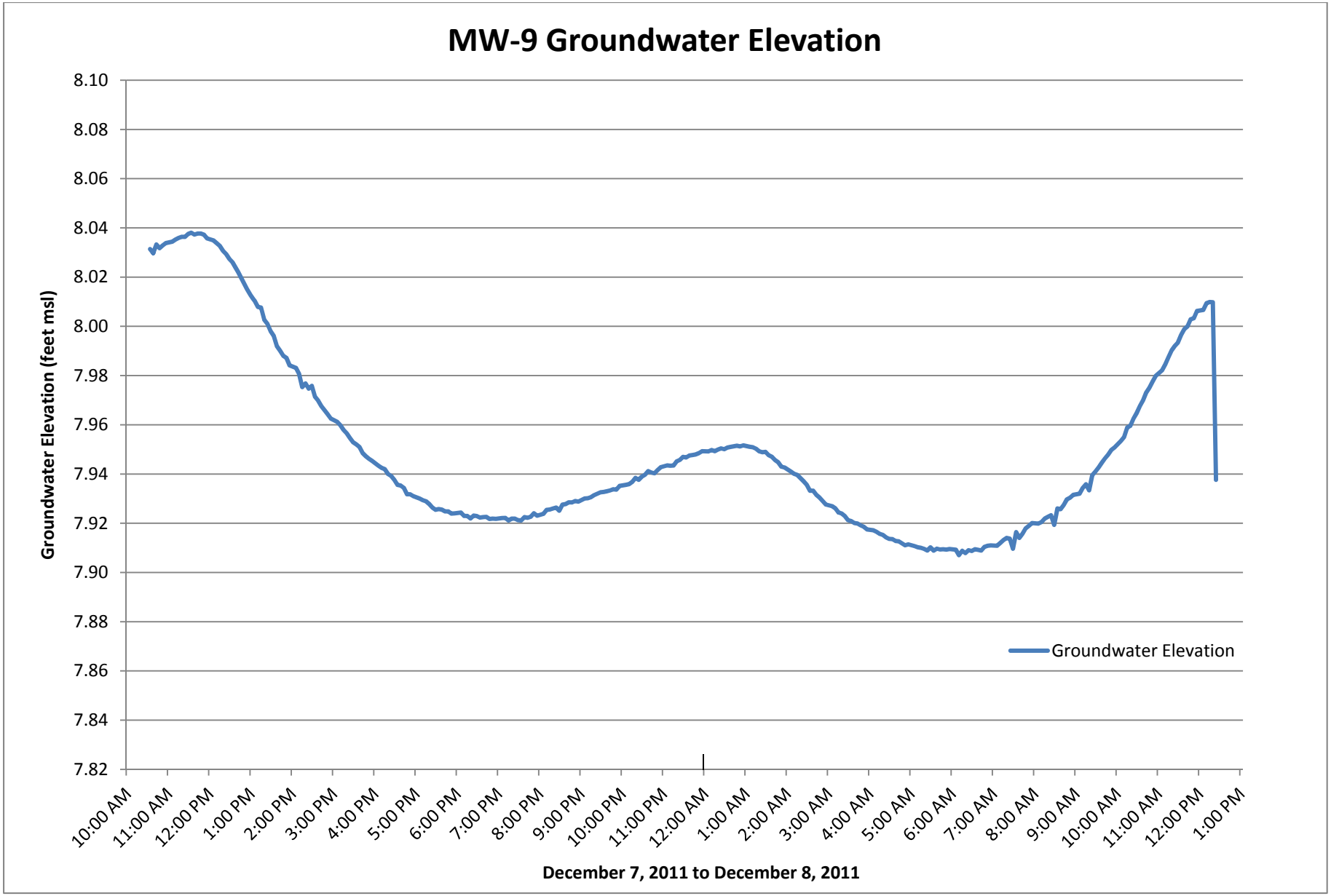
Groundwater elevation data recorded in monitoring wells MW-7 and MW-8 show little or no elevation change and/or tidal pattern. The lack of recorded tidal response could be related to transducer malfunctions. However, these two wells are also the furthest wells from the Chehalis River that were included in the tidal study, so it is possible that they represent actual recorded tidal responses of essentially zero at these locations.

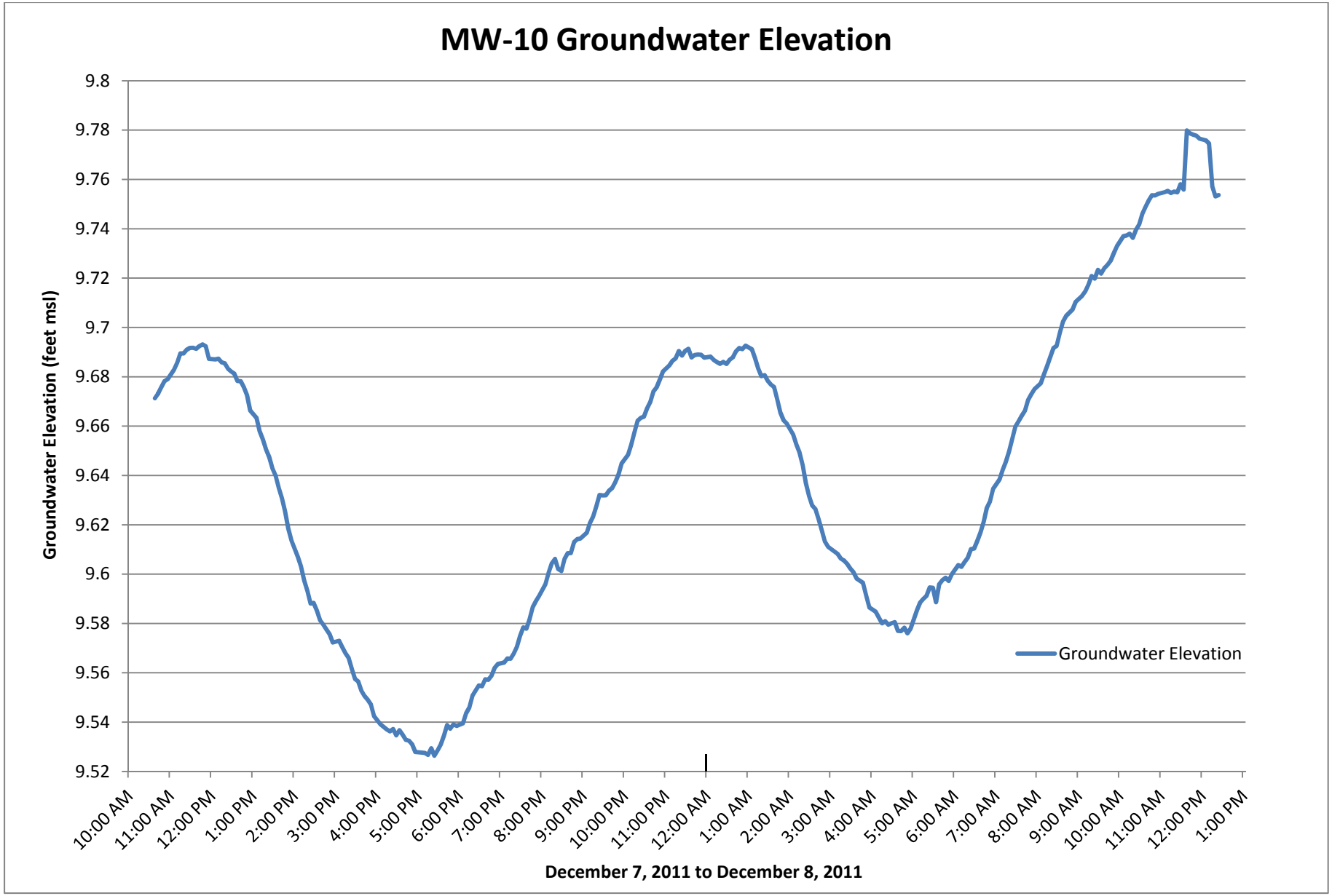
The relatively muted groundwater fluctuations, ranging from approximately 0.15 to 0.23 foot in the two wells that displayed the greatest groundwater elevation response to the tide, compared to the large (10-feet elevation) river tidal fluctuation, suggest a very limited connection between the shallow groundwater-bearing zone at the Site and the surface water of the Chehalis River.

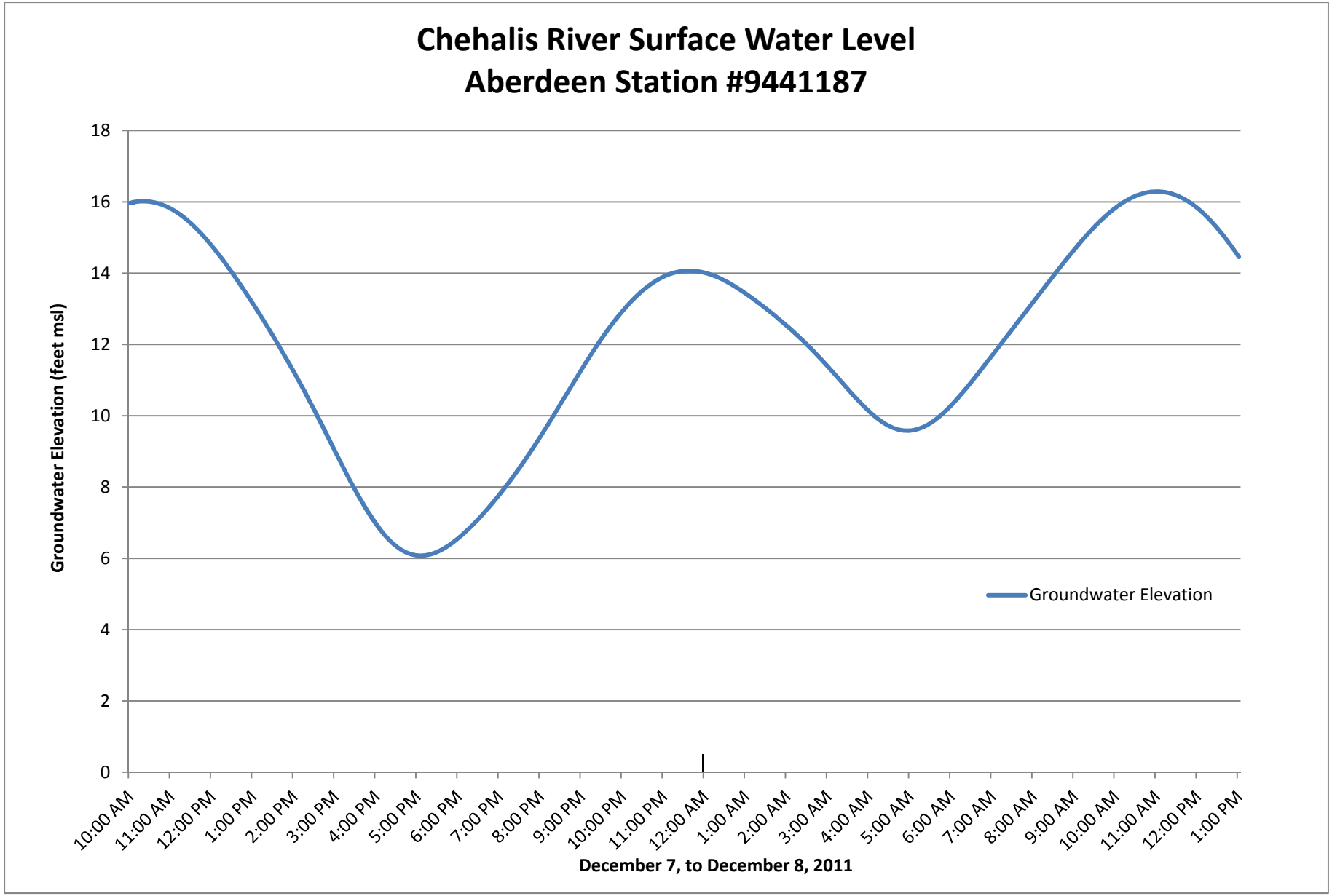

MW-6 Groundwater Elevation
Groundwater Elevation (feet msl)
8.1
8.08
8.06
8.04
8.02
8
7.98
7.96
7.94
7.92
7.9
7.88
7.86
7.84
7.82
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
December 7, 2011 to December 8, 2011
Groundwater Elevation


MW-7 Groundwater Elevation
Groundwater Elevation (feet msl)
9.34
9.32
9.30
9.28
9.26
9.24
9.22
9.20
9.18
9.16
9.14
9.12
9.10
9.08
9.06
Groundwater Elevation
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
December 7, 2011 to December 8, 2011


MW-8 Groundwater Elevation
Groundwater Elevation (feet msl)
9.98
9.96
9.94
9.92
9.9
9.88
9.86
9.84
9.82
9.8
9.78
9.76
9.74
9.72
9.7
Groundwater Elevation
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
December 7, 2011 to December 8, 2011


MW-9 Groundwater Elevation
Groundwater Elevation (feet msl)
8.10
8.08
8.06
8.04
8.02
8.00
7.98
7.96
7.94
7.92
7.90
7.88
7.86
7.84
7.82
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
Groundwater Elevation
December 7, 2011 to December 8, 2011


MW-10 Groundwater Elevation
Groundwater Elevation (feet msl)
9.8
9.78
9.76
9.74
9.72
9.7
9.68
9.66
9.64
9.62
9.6
9.58
9.56
9.54
9.52
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
Groundwater Elevation
December 7, 2011 to December 8, 2011


Chehalis River Surface Water Level
Aberdeen Station #9441187
Groundwater Elevation (feet msl)
18
16
14
12
10
8
6
4
2
0
Groundwater Elevation
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
December 7, to December 8, 2011

APPENDIX E
LABORATORY ANALYTICAL REPORTS
(PROVIDED ON CD IN PRINT REPORT)

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

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

May 4, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1104-151

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on April 22, 2011.

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

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

Case Narrative

Samples were collected on April 19, 20, and 21, 2011 and received by the laboratory on April 22, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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 (soil) 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.

NWTPH Dx (water) Analysis

The samples were received with their pH levels above 2. A pH below 2 is required by the method. As they were collected in Hydrochloric Acid preserved containers, it is suspected that the matrix may be effecting the pH. The holding time for unpreserved samples is 7 days instead of 14 days. Because of this, samples B17-041911-GW, B18-041911-GW, B19-041911-GW, B20-041911-GW, and B34-041911-GW were extracted and analyzed out of holding time.

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.

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B17-6.0**					
Laboratory ID:	04-151-02					
Benzene	**ND**	0.020	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.060	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	0.060	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	0.060	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.060	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	6.0	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***80***	***68-124***				
Client ID:	**B18-6.0**					
Laboratory ID:	04-151-05					
Benzene	**ND**	0.020	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.065	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	0.065	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	0.065	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.065	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	6.5	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***97***	***68-124***				
Client ID:	**B19-6.0**					
Laboratory ID:	04-151-08					
Benzene	**ND**	0.020	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	5.0	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***93***	***68-124***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B20-7.0**					
Laboratory ID:	04-151-11					
Benzene	**0.039**	0.023	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.12	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**0.90**	0.12	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**1.1**	0.12	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.60	EPA 8021	4-27-11	4-27-11	U1
Gasoline	**ND**	12	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***98***	***68-124***				
Client ID:	**B34-7.0**					
Laboratory ID:	04-151-13					
Benzene	**0.024**	0.022	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.11	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**0.18**	0.11	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**0.28**	0.11	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.11	EPA 8021	4-27-11	4-27-11	
Gasoline	**54**	11	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***94***	***68-124***				
Client ID:	**B23-3.0**					
Laboratory ID:	04-151-21					
Benzene	**0.079**	0.020	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.093	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**0.82**	0.093	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**1.9**	0.093	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.93	EPA 8021	4-27-11	4-27-11	U1
Gasoline	**ND**	9.3	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***86***	***68-124***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B24-2.0**					
Laboratory ID:	04-151-23					
Benzene	**0.099**	0.022	EPA 8021	4-27-11	4-27-11	
Toluene	**0.15**	0.11	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**0.25**	0.11	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**0.42**	0.11	EPA 8021	4-27-11	4-27-11	
o-Xylene	**0.60**	0.11	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	11	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***85***	***68-124***				
Client ID:	**B26-3.0**					
Laboratory ID:	04-151-28					
Benzene	**ND**	0.020	EPA 8021	4-27-11	4-28-11	
Toluene	**ND**	0.091	EPA 8021	4-27-11	4-28-11	
Ethyl Benzene	**ND**	0.091	EPA 8021	4-27-11	4-28-11	
m,p-Xylene	**0.43**	0.091	EPA 8021	4-27-11	4-28-11	
o-Xylene	**ND**	0.46	EPA 8021	4-27-11	4-28-11	U1
Gasoline	**ND**	9.1	NWTPH-Gx	4-27-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***90***	***68-124***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0427S1					
Benzene	**ND**	0.020	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	0.050	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	5.0	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***91***	***68-124***				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	04-151-02									
	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					***80***	***81***	***68-124***			
SPIKE BLANKS										
Laboratory ID:	SB0427S1									
	SB	SBD	SB	SBD		SB	SBD			
Benzene	**0.885**	**0.897**	1.00	1.00		**89**	**90**	77-114	1	9
Toluene	**0.919**	**0.931**	1.00	1.00		**92**	**93**	80-115	1	9
Ethyl Benzene	**0.924**	**0.939**	1.00	1.00		**92**	**94**	80-118	2	9
m,p-Xylene	**0.939**	**0.955**	1.00	1.00		**94**	**96**	82-118	2	9
o-Xylene	**0.935**	**0.953**	1.00	1.00		**94**	**95**	82-116	2	9
Surrogate:										
Fluorobenzene						***85***	***83***	***68-124***		

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B17-041911-GW**					
Laboratory ID:	04-151-03					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***93***	***73-121***				
Client ID:	**B18-041911-GW**					
Laboratory ID:	04-151-06					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***91***	***73-121***				
Client ID:	**B19-041911-GW**					
Laboratory ID:	04-151-09					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***91***	***73-121***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B20-041911-GW**					
Laboratory ID:	04-151-12					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**240**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***90***	***73-121***				
Client ID:	**B34-041911-GW**					
Laboratory ID:	04-151-14					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**510**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***91***	***73-121***				
Client ID:	**B23-042011-GW**					
Laboratory ID:	04-151-22					
Benzene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**560**	400	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***92***	***73-121***				

Date of Report: May 4, 2011
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Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B24-042011-GW**					
Laboratory ID:	04-151-24					
Benzene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**8.8**	4.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**13**	4.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**4500**	400	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***95***	***73-121***				
Client ID:	**B26-042011-GW**					
Laboratory ID:	04-151-29					
Benzene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**6.0**	4.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	4.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**1200**	400	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***91***	***73-121***				

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Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0427W1					
Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Toluene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
m,p-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
o-Xylene	**ND**	1.0	EPA 8021	4-27-11	4-27-11	
Gasoline	**ND**	100	NWTPH-Gx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***90***	***73-121***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-174-01										
	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						***90***	***92***	***73-121***			
MATRIX SPIKES											
Laboratory ID:	04-174-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**46.4**	**45.5**	50.0	50.0	ND	**93**	**91**	82-120	2	8	
Toluene	**47.2**	**45.5**	50.0	50.0	ND	**94**	**91**	84-119	4	8	
Ethyl Benzene	**46.9**	**44.4**	50.0	50.0	ND	**94**	**89**	84-122	5	9	
m,p-Xylene	**46.8**	**44.3**	50.0	50.0	ND	**94**	**89**	85-121	5	9	
o-Xylene	**47.3**	**44.7**	50.0	50.0	ND	**95**	**89**	84-121	6	9	
Surrogate:											
Fluorobenzene						***95***	***90***	***73-121***			

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Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B17-6.0**					
Laboratory ID:	04-151-02					
Diesel Range Organics	**64**	27	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**180**	55	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***92***	***50-150***				
Client ID:	**B18-6.0**					
Laboratory ID:	04-151-05					
Diesel Range Organics	**ND**	29	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**160**	57	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***82***	***50-150***				
Client ID:	**B19-6.0**					
Laboratory ID:	04-151-08					
Diesel Range Organics	**ND**	27	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***108***	***50-150***				
Client ID:	**B20-7.0**					
Laboratory ID:	04-151-11					
Diesel Range Organics	**2100**	30	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	4-28-11	4-28-11	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***110***	***50-150***				
Client ID:	**B34-7.0**					
Laboratory ID:	04-151-13					
Diesel Range Organics	**430**	30	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**65**	59	NWTPH-Dx	4-28-11	4-28-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***97***	***50-150***				
Client ID:	**B21-6.0**					
Laboratory ID:	04-151-16					
Diesel Range Organics	**3100**	28	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	300	NWTPH-Dx	4-28-11	4-28-11	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***114***	***50-150***				

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NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B22-5.0**					
Laboratory ID:	04-151-19					
Diesel Range Organics	**170**	32	NWTPH-Dx	4-28-11	5-2-11	N
Lube Oil	**1200**	65	NWTPH-Dx	4-28-11	5-2-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***105***	***50-150***				
Client ID:	**B23-3.0**					
Laboratory ID:	04-151-21					
Diesel Range Organics	**1500**	27	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**640**	54	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***115***	***50-150***				
Client ID:	**B24-2.0**					
Laboratory ID:	04-151-23					
Diesel Range Organics	**11000**	280	NWTPH-Dx	4-28-11	4-29-11	
Lube Oil	**7100**	550	NWTPH-Dx	4-28-11	4-29-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**B25-6.0**					
Laboratory ID:	04-151-26					
Diesel Range Organics	**2400**	30	NWTPH-Dx	4-28-11	4-29-11	
Lube Oil	**1300**	59	NWTPH-Dx	4-28-11	4-29-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***111***	***50-150***				
Client ID:	**B26-3.0**					
Laboratory ID:	04-151-28					
Diesel Range Organics	**3400**	28	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**1100**	56	NWTPH-Dx	4-28-11	4-28-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***97***	***50-150***				
Client ID:	**B27-6.0**					
Laboratory ID:	04-151-31					
Diesel Range Organics	**3100**	59	NWTPH-Dx	4-28-11	4-29-11	
Lube Oil	**3200**	120	NWTPH-Dx	4-28-11	4-29-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***103***	***50-150***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B28-3.5**					
Laboratory ID:	04-151-33					
Diesel Range Organics	**770**	27	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**1000**	53	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***112***	***50-150***				
Client ID:	**B29-3.0**					
Laboratory ID:	04-151-35					
Diesel Range Organics	**ND**	27	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil	**87**	53	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***119***	***50-150***				
Client ID:	**B30-3.0**					
Laboratory ID:	04-151-37					
Diesel Range Organics	**3500**	27	NWTPH-Dx	4-28-11	4-29-11	
Lube Oil	**1100**	55	NWTPH-Dx	4-28-11	4-29-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***106***	***50-150***				
Client ID:	**B31-3.0**					
Laboratory ID:	04-151-39					
Diesel Range Organics	**160**	27	NWTPH-Dx	4-28-11	4-28-11	N
Lube Oil	**360**	55	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***113***	***50-150***				
Client ID:	**B32-6.0**					
Laboratory ID:	04-151-43					
Diesel Range Organics	**ND**	28	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***92***	***50-150***				
Client ID:	**B33-6.0**					
Laboratory ID:	04-151-46					
Diesel Range Organics	**ND**	26	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***106***	***50-150***				
Client ID:	**B35-4.0**					
Laboratory ID:	04-151-49					
Diesel Range Organics	**5800**	55	NWTPH-Dx	4-28-11	4-29-11	
Lube Oil	**890**	110	NWTPH-Dx	4-28-11	4-29-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***102***	***50-150***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
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NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0428S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	4-28-11	4-28-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	4-28-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***112***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	04-151-02						
	ORIG	DUP					
Diesel Range Organics	**58.4**	**48.8**			18	NA	
Lube Oil	**168**	**179**			6	NA	
Surrogate:							
o-Terphenyl			***92*** ***105***	***50-150***			
Laboratory ID:	04-151-08						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			***108*** ***109***	***50-150***			

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Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B17-041911-GW**					
Laboratory ID:	04-151-03					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***100***	***50-150***				
Client ID:	**B18-041911-GW**					
Laboratory ID:	04-151-06					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***100***	***50-150***				
Client ID:	**B19-041911-GW**					
Laboratory ID:	04-151-09					
Diesel Range Organics	**0.25**	0.16	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil	**1.2**	0.26	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***100***	***50-150***				
Client ID:	**B20-041911-GW**					
Laboratory ID:	04-151-12					
Diesel Range Organics	**0.81**	0.26	NWTPH-Dx	4-27-11	4-27-11	M
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***102***	***50-150***				
Client ID:	**B34-041911-GW**					
Laboratory ID:	04-151-14					
Diesel Range Organics	**0.51**	0.26	NWTPH-Dx	4-27-11	4-27-11	M
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***104***	***50-150***				
Client ID:	**B21-042011-GW**					
Laboratory ID:	04-151-17					
Diesel Range Organics	**8.8**	0.27	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	1.2	NWTPH-Dx	4-27-11	4-27-11	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***110***	***50-150***				

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Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B22-042011-GW**					
Laboratory ID:	04-151-20					
Diesel Range Organics	**ND**	0.28	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***105***	***50-150***				
Client ID:	**B23-042011-GW**					
Laboratory ID:	04-151-22					
Diesel Range Organics	**30**	0.28	NWTPH-Dx	4-27-11	4-27-11	M
Lube Oil	**15**	0.45	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***128***	***50-150***				
Client ID:	**B24-042011-GW**					
Laboratory ID:	04-151-24					
Diesel Range Organics	**40**	0.28	NWTPH-Dx	4-27-11	4-27-11	M
Lube Oil	**17**	0.45	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***129***	***50-150***				
Client ID:	**B25-042011-GW**					
Laboratory ID:	04-151-27					
Diesel Range Organics	**1.7**	0.16	NWTPH-Dx	4-27-11	4-27-11	M1
Lube Oil	**0.47**	0.26	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***96***	***50-150***				
Client ID:	**B26-042011-GW**					
Laboratory ID:	04-151-29					
Diesel Range Organics	**19**	0.31	NWTPH-Dx	4-27-11	4-27-11	M
Lube Oil Range Organics	**ND**	2.0	NWTPH-Dx	4-27-11	4-27-11	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***117***	***50-150***				
Client ID:	**B27-042011-GW**					
Laboratory ID:	04-151-32					
Diesel Range Organics	**12**	0.28	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil	**9.9**	0.44	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***126***	***50-150***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B28-042111-GW**					
Laboratory ID:	04-151-34					
Diesel Range Organics	**9.1**	0.28	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil	**1.7**	0.45	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***120***	***50-150***				
Client ID:	**B29-042111-GW**					
Laboratory ID:	04-151-36					
Diesel Range Organics	**2.0**	0.29	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil	**0.70**	0.47	NWTPH-Dx	4-27-11	4-27-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***111***	***50-150***				
Client ID:	**B30-042111-GW**					
Laboratory ID:	04-151-38					
Diesel Range Organics	**4.9**	0.28	NWTPH-Dx	4-27-11	4-27-11	M1
Lube Oil	**0.61**	0.45	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***115***	***50-150***				
Client ID:	**B31-042111-GW**					
Laboratory ID:	04-151-41					
Diesel Range Organics	**0.29**	0.16	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.26	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***112***	***50-150***				
Client ID:	**B32-042111-GW**					
Laboratory ID:	04-151-44					
Diesel Range Organics	**ND**	0.29	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.46	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***110***	***50-150***				
Client ID:	**B33-042111-GW**					
Laboratory ID:	04-151-47					
Diesel Range Organics	**ND**	0.28	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.45	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***117***	***50-150***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B35-042111-GW**					
Laboratory ID:	04-151-50					
Diesel Range Organics	**39**	0.28	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	4.2	NWTPH-Dx	4-27-11	4-27-11	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***129***	***50-150***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0427W1					
Diesel Range Organics	**ND**	0.13	NWTPH-Dx	4-27-11	4-27-11	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***120***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	04-151-03						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			***100*** ***99***	***50-150***			
Laboratory ID:	04-174-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			***124*** ***114***	***50-150***			

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B20-7.0**					
Laboratory ID:	04-151-11					
Naphthalene	**0.17**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
2-Methylnaphthalene	**0.69**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
1-Methylnaphthalene	**1.4**	0.040	EPA 8270/SIM	4-27-11	4-28-11	
Acenaphthylene	**0.038**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Acenaphthene	**0.23**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Fluorene	**0.58**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Phenanthrene	**0.29**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Anthracene	**0.036**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Fluoranthene	**0.0097**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Pyrene	**0.0082**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Benzo[a]anthracene	**ND**	0.040	EPA 8270/SIM	4-27-11	4-28-11	
Chrysene	**ND**	0.040	EPA 8270/SIM	4-27-11	4-28-11	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Benzo[k]fluoranthene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Benzo[g,h,i]perylene	**ND**	0.0079	EPA 8270/SIM	4-27-11	4-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
2-Fluorobiphenyl	***51***	***43 - 109***				
Pyrene-d10	***64***	***38 - 128***				
Terphenyl-d14	***74***	***33 - 119***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0427S1					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Fluorene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Anthracene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Pyrene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Chrysene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Benzo[k]fluoranthene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	4-27-11	4-27-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
2-Fluorobiphenyl	***82***	***43 - 109***				
Pyrene-d10	***85***	***38 - 128***				
Terphenyl-d14	***86***	***33 - 119***				

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0427S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0637**	**0.0633**	0.0833	0.0833	76	76	43 - 108	1	27	
Acenaphthylene	**0.0670**	**0.0671**	0.0833	0.0833	80	81	52 - 120	0	21	
Acenaphthene	**0.0663**	**0.0659**	0.0833	0.0833	80	79	59 - 113	1	17	
Fluorene	**0.0678**	**0.0661**	0.0833	0.0833	81	79	64 - 117	3	14	
Phenanthrene	**0.0656**	**0.0642**	0.0833	0.0833	79	77	67 - 112	2	12	
Anthracene	**0.0701**	**0.0683**	0.0833	0.0833	84	82	59 - 110	3	16	
Fluoranthene	**0.0713**	**0.0692**	0.0833	0.0833	86	83	68 - 120	3	15	
Pyrene	**0.0679**	**0.0662**	0.0833	0.0833	82	79	69 - 121	3	17	
Benzo[a]anthracene	**0.0592**	**0.0573**	0.0833	0.0833	71	69	63 - 114	3	12	
Chrysene	**0.0681**	**0.0661**	0.0833	0.0833	82	79	67 - 118	3	12	
Benzo[b]fluoranthene	**0.0619**	**0.0592**	0.0833	0.0833	74	71	58 - 125	4	20	
Benzo[k]fluoranthene	**0.0635**	**0.0620**	0.0833	0.0833	76	74	42 - 134	2	26	
Benzo[a]pyrene	**0.0611**	**0.0596**	0.0833	0.0833	73	72	55 - 111	2	19	
Indeno(1,2,3-c,d)pyrene	**0.0716**	**0.0711**	0.0833	0.0833	86	85	60 - 125	1	20	
Dibenz[a,h]anthracene	**0.0725**	**0.0722**	0.0833	0.0833	87	87	62 - 125	0	19	
Benzo[g,h,i]perylene	**0.0716**	**0.0712**	0.0833	0.0833	86	85	61 - 124	1	19	
Surrogate:										
2-Fluorobiphenyl					***86***	***84***	***43 - 109***			
Pyrene-d10					***91***	***87***	***38 - 128***			
Terphenyl-d14					***87***	***83***	***33 - 119***			

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

TOTAL METALS
EPA 6010B/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	04-151-21					
Client ID:	**B23-3.0**					
Arsenic	**ND**	11	6010B	4-26-11	4-27-11	
Cadmium	**ND**	0.54	6010B	4-26-11	4-27-11	
Chromium	**24**	0.54	6010B	4-26-11	4-27-11	
Lead	**35**	5.4	6010B	4-26-11	4-27-11	
Mercury	**ND**	0.27	7471A	4-27-11	4-27-11	
Lab ID:	04-151-23					
Client ID:	**B24-2.0**					
Arsenic	**ND**	11	6010B	4-26-11	4-27-11	
Cadmium	**1.0**	0.55	6010B	4-26-11	4-27-11	
Chromium	**19**	0.55	6010B	4-26-11	4-27-11	
Lead	**59**	5.5	6010B	4-26-11	4-27-11	
Mercury	**1.2**	0.55	7471A	4-27-11	4-27-11	
Lab ID:	04-151-28					
Client ID:	**B26-3.0**					
Arsenic	**ND**	11	6010B	4-26-11	4-27-11	
Cadmium	**ND**	0.56	6010B	4-26-11	4-27-11	
Chromium	**18**	0.56	6010B	4-26-11	4-27-11	
Lead	**110**	5.6	6010B	4-26-11	4-27-11	
Mercury	**ND**	0.28	7471A	4-27-11	4-27-11	

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted: 4-26&27-11
Date Analyzed: 4-27-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB0426S2&MB0427S1

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.25

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 4-26&27-11
Date Analyzed: 4-27-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-173-18

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**19.3**	**16.6**	15	0.50	
Lead	**11.8**	**18.7**	46	5.0	C
Mercury	**ND**	**ND**	11	0.25	

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 4-26&27-11
Date Analyzed: 4-27-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-173-18

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**101**	101	**99.8**	100	1	
Cadmium	50	**48.2**	96	**47.7**	95	1	
Chromium	100	**117**	97	**123**	104	5	
Lead	250	**250**	95	**245**	93	2	
Mercury	0.50	**0.573**	97	**0.565**	95	2	

Date of Report: May 4, 2011
Samples Submitted: April 22, 2011
Laboratory Reference: 1104-151
Project: 525-006

% MOISTURE

Date Analyzed: 4-27&28-11

Client ID	Lab ID	% Moisture
B17-6.0	04-151-02	9
B18-6.0	04-151-05	12
B19-6.0	04-151-08	7
B20-7.0	04-151-11	16
B34-7.0	04-151-13	15
B21-6.0	04-151-16	12
B22-5.0	04-151-19	23
B23-3.0	04-151-21	8
B24-2.0	04-151-23	9
B25-6.0	04-151-26	16
B26-3.0	04-151-28	10
B27-6.0	04-151-31	15
B28-3.5	04-151-33	6
B29-3.0	04-151-35	6
B30-3.0	04-151-37	8
B31-3.0	04-151-39	8
B32-6.0	04-151-43	9
B33-6.0	04-151-46	5
B35-4.0	04-151-49	9

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

Chain of Custody

OnSite Environmental Inc.
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE INDUSTRIES
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 04-151

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270D	PAHs by 8270D / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	% Moisture
1	B17-2.0	4/19/11	940	S	2														
2	B17-6.0		950	S	2		☒	☒											☒
3	B17-041911-GW		1000	W	5		☒	☒											
4	B18-3.8		1100	S	2														
5	B18-6.0		1115	S	2		☒	☒											☒
6	B18-041911-GW		1135	W	5		☒	☒											
7	B19-2.0		1200	S	2														
8	B19-6.0		1215	S	2		☒	☒											☒
9	B19-041911-GW		1235	W	5		☒	☒											
10	B20-2.0		1330	S	2														

	Signature	Company	Date	Time
Relinquished by	Ken Scott	FARALLON	4/22/11	11:00
Received by			4/22/11	1330
Relinquished by				
Received by				
Relinquished by				
Received by				
Reviewed by/Date		Reviewed by/Date		

Comments/Special Instructions:

Note: The Gx BTEX soil samples preserved w/ methanol. ~~Hold samples, will call w/ Analysis next Tuesday.~~ DB

☒ Added 4/26/11. DB (STA)

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE INDUSTRIES
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 04-151

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
11	B20-7.0	4/19/11	1340	S	3		⊗		⊗				⊗								⊗
12	B20-041911-GW		1410	W	5		⊗		⊗												
13	B34-7.0		1450	S	3		⊗		⊗												⊗
14	B34-041911-GW	↓	1515	W	5		⊗		⊗												
15	B21-3.0	4/20/11	810	S	1																
16	B21-6.0		820	S	1				⊗												⊗
17	B21-042011-GW		835	W	2				⊗												
18	B22-2.0		1000	S	1																
19	B22-5.0		1010	S	1				⊗												⊗
20	B22-042011-GW	↓	1035	W	2				⊗												

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	4/22/11	11:00
Received		ORG	4/22/11	1530
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

See page #1

⊗ Added 4/26/11. DJS

Chromatograms with final report ☐

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE INDUSTRIES
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 04-151

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA (MTCA) Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
21	B23-3.0	4/20/11	1130	S	3		☒		☒									☒			☒
22	B23-042011-GW		1205	W	7		☒		☒												
23	B24-2.0		1255	S	3		☒		☒									☒			☒
24	B24-042011-GW		1315	W	7		☒		☒												
25	B25-3.0		1400	S	1																
26	B25-6.0		1410	S	1				☒												☒
27	B25-042011-GW		1420	W	2				☒												
28	B26-3.0		1520	S	3		☒		☒									☒			☒
29	B26-042011-GW		1530	W	7		☒		☒												
30	B27-3.5	↓	1600	S	1																

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	4/22/11	11:00
Received		ORC	4/22/11	1530
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

See page #1

☒ Added 4/26/11 . DB

Chromatograms with final report ☐

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE INDUSTRIES
Project Manager: AKOS FEKETE
Sampled by: Ken Smith

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: 04-151

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
31	B27-6.0	4/20/11	1610	S	1				☒												☒
32	B27-042011-GW	↓	1620	W	2				☒												
33	B28-3.5	4/21/11	755	S	1				☒												☒
34	B28-042111-GW		810	W	2				☒												
35	B29-3.0		840	S	1				☒												☒
36	B29-042111-GW		900	W	2				☒												
37	B30-3.0		1000	S	1				☒												☒
38	B30-042111-GW		1010	W	2				☒												
39	B31-3.0		1030	S	1				☒												☒
40	B31-6.0	↓	1040	S	1																

	Signature	Company	Date	Time
Relinquished	Ken Smith	FARALLON	4/22/11	11:00
Received		QE	4/22/11	1530
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

See page #1

☒ Added 4/26/11. DB

Chromatograms with final report ☐

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE INDUSTRIES
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 04-151

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	% Moisture
41	B31-042111-GW	4/21/11	1100	W	2				☒												
42	B32-2.0		1145	S	1																
43	B32-6.0		1155	S	1				☒												☒
44	B32-042111-GW		1230	W	2				☒												
45	B33-2.0		1250	S	1																
46	B33-6.0		1300	S	1				☒												☒
47	B33-042111-GW		1310	W	2				☒												
48	B35-2.0		1420	S	1																
49	B35-4.0		1425	S	1				☒												☒
50	B35-042111-GW	↓	1430	W	2				☒												

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	4/22/11	11:00
Received		OBE	4/22/11	1530
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

See page #1

☒ Added 4/26/11. DB

Chromatograms with final report ☐

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

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

July 27, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1107-179

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on July 27, 2011.

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

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

Case Narrative

Samples were collected on July 25, 2011 and received by the laboratory on July 27, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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 (soil) 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.

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B43-4.5**					
Laboratory ID:	07-179-16					
Benzene	**0.064**	0.020	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	0.053	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**ND**	0.053	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**0.077**	0.053	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	0.053	EPA 8021	7-26-11	7-26-11	
Gasoline	**28**	5.3	NWTPH-Gx	7-26-11	7-26-11	O
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***105***	***68-124***				
Client ID:	**B42-3.5**					
Laboratory ID:	07-179-18					
Benzene	**0.29**	0.053	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	0.26	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**1.3**	0.26	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**2.2**	0.26	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	1.3	EPA 8021	7-26-11	7-26-11	U1
Gasoline	**1200**	26	NWTPH-Gx	7-26-11	7-26-11	O
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***96***	***68-124***				

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0726S1					
Benzene	**ND**	0.020	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	0.050	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**ND**	0.050	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	0.050	EPA 8021	7-26-11	7-26-11	
Gasoline	**ND**	5.0	NWTPH-Gx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***107***	***68-124***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-179-16										
	ORIG	DUP									
Benzene	**0.0614**	**0.0632**	NA	NA		NA		NA	3	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**0.0730**	**0.0721**	NA	NA		NA		NA	1	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**26.7**	**28.0**	NA	NA		NA		NA	5	30	
Surrogate:											
Fluorobenzene						***105***	***104***	***68-124***			
SPIKE BLANKS											
Laboratory ID:	SB0726S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.09**	**1.05**	1.00	1.00		**109**	**105**	77-114	4	9	
Toluene	**1.13**	**1.09**	1.00	1.00		**113**	**109**	80-115	4	9	
Ethyl Benzene	**1.11**	**1.07**	1.00	1.00		**111**	**107**	80-118	4	9	
m,p-Xylene	**1.12**	**1.08**	1.00	1.00		**112**	**108**	82-118	4	9	
o-Xylene	**1.11**	**1.08**	1.00	1.00		**111**	**108**	82-116	3	9	
Surrogate:											
Fluorobenzene						***109***	***105***	***68-124***			

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B43-072511-GW**					
Laboratory ID:	07-179-17					
Benzene	**5.6**	4.0	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
Gasoline	**1100**	400	NWTPH-Gx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***100***	***73-121***				
Client ID:	**B42-072511-GW**					
Laboratory ID:	07-179-19					
Benzene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	4.0	EPA 8021	7-26-11	7-26-11	
Gasoline	**660**	400	NWTPH-Gx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***100***	***73-121***				

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0726W1					
Benzene	**ND**	1.0	EPA 8021	7-26-11	7-26-11	
Toluene	**ND**	1.0	EPA 8021	7-26-11	7-26-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	7-26-11	7-26-11	
m,p-Xylene	**ND**	1.0	EPA 8021	7-26-11	7-26-11	
o-Xylene	**ND**	1.0	EPA 8021	7-26-11	7-26-11	
Gasoline	**ND**	100	NWTPH-Gx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***98***	***73-121***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-161-01										
	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						***99***	***104***	***73-121***			
MATRIX SPIKES											
Laboratory ID:	07-161-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**53.3**	**54.3**	50.0	50.0	ND	**107**	**109**	82-120	2	8	
Toluene	**53.8**	**54.1**	50.0	50.0	ND	**108**	**108**	84-119	1	8	
Ethyl Benzene	**52.5**	**51.8**	50.0	50.0	ND	**105**	**104**	84-122	1	9	
m,p-Xylene	**51.9**	**51.3**	50.0	50.0	ND	**104**	**103**	85-121	1	9	
o-Xylene	**51.8**	**51.4**	50.0	50.0	ND	**104**	**103**	84-121	1	9	
Surrogate:											
Fluorobenzene						***108***	***106***	***73-121***			

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B39-6.5**					
Laboratory ID:	07-179-02					
Diesel Range Organics	**2400**	27	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**270**	54	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***113***	***50-150***				
Client ID:	**B40-5.5**					
Laboratory ID:	07-179-05					
Diesel Range Organics	**4000**	140	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**3800**	280	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***96***	***50-150***				
Client ID:	**B38-3.5**					
Laboratory ID:	07-179-07					
Diesel Range Organics	**ND**	26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**59**	53	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***107***	***50-150***				
Client ID:	**B36-5.0**					
Laboratory ID:	07-179-11					
Diesel Range Organics	**3300**	130	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**2100**	270	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***92***	***50-150***				
Client ID:	**B37-3.5**					
Laboratory ID:	07-179-13					
Diesel Range Organics	**ND**	34	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil Range Organics	**ND**	67	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***87***	***50-150***				
Client ID:	**B43-4.5**					
Laboratory ID:	07-179-16					
Diesel Range Organics	**ND**	26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***107***	***50-150***				

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B42-3.5**					
Laboratory ID:	07-179-18					
Diesel Range Organics	**9300**	270	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**9100**	540	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0726S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***110***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	07-179-02						
	ORIG	DUP					
Diesel Range Organics	**2250**	**2160**			4	NA	
Lube Oil	**250**	**236**			6	NA	
Surrogate:							
o-Terphenyl			***113*** ***100***	***50-150***			

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B39-072511-GW**					
Laboratory ID:	07-179-03					
Diesel Range Organics	**9.3**	0.26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**1.1**	0.42	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***85***	***50-150***				
Client ID:	**B40-072511-GW**					
Laboratory ID:	07-179-06					
Diesel Range Organics	**96**	5.5	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**36**	8.8	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S
Client ID:	**B38-072511-GW**					
Laboratory ID:	07-179-09					
Diesel Range Organics	**0.33**	0.26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**0.62**	0.42	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***80***	***50-150***				
Client ID:	**B36-072511-GW**					
Laboratory ID:	07-179-12					
Diesel Range Organics	**7.3**	0.27	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**1.2**	0.43	NWTPH-Dx	7-26-11	7-26-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***89***	***50-150***				
Client ID:	**B37-072511-GW**					
Laboratory ID:	07-179-14					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***93***	***50-150***				
Client ID:	**B43-072511-GW**					
Laboratory ID:	07-179-17					
Diesel Range Organics	**2.9**	0.26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**0.68**	0.41	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***86***	***50-150***				

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B42-072511-GW**					
Laboratory ID:	07-179-19					
Diesel Range Organics	**6.8**	0.26	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil	**6.8**	0.42	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***93***	***50-150***				

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0726W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-26-11	7-26-11	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	7-26-11	7-26-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***84***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	07-179-03						
	ORIG	DUP					
Diesel Range Organics	**9.32**	**5.18**			57	NA	
Lube Oil	**1.12**	**0.746**			40	NA	
Surrogate:							
o-Terphenyl			***85*** ***81***	***50-150***			

Date of Report: July 27, 2011
Samples Submitted: July 27, 2011
Laboratory Reference: 1107-179
Project: 525-006

% MOISTURE

Date Analyzed: 7-26-11

Client ID	Lab ID	% Moisture
B39-6.5	07-179-02	8
B40-5.5	07-179-05	11
B38-3.5	07-179-07	5
B36-5.0	07-179-11	6
B37-3.5	07-179-13	25
B43-4.5	07-179-16	5
B42-3.5	07-179-18	7

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.

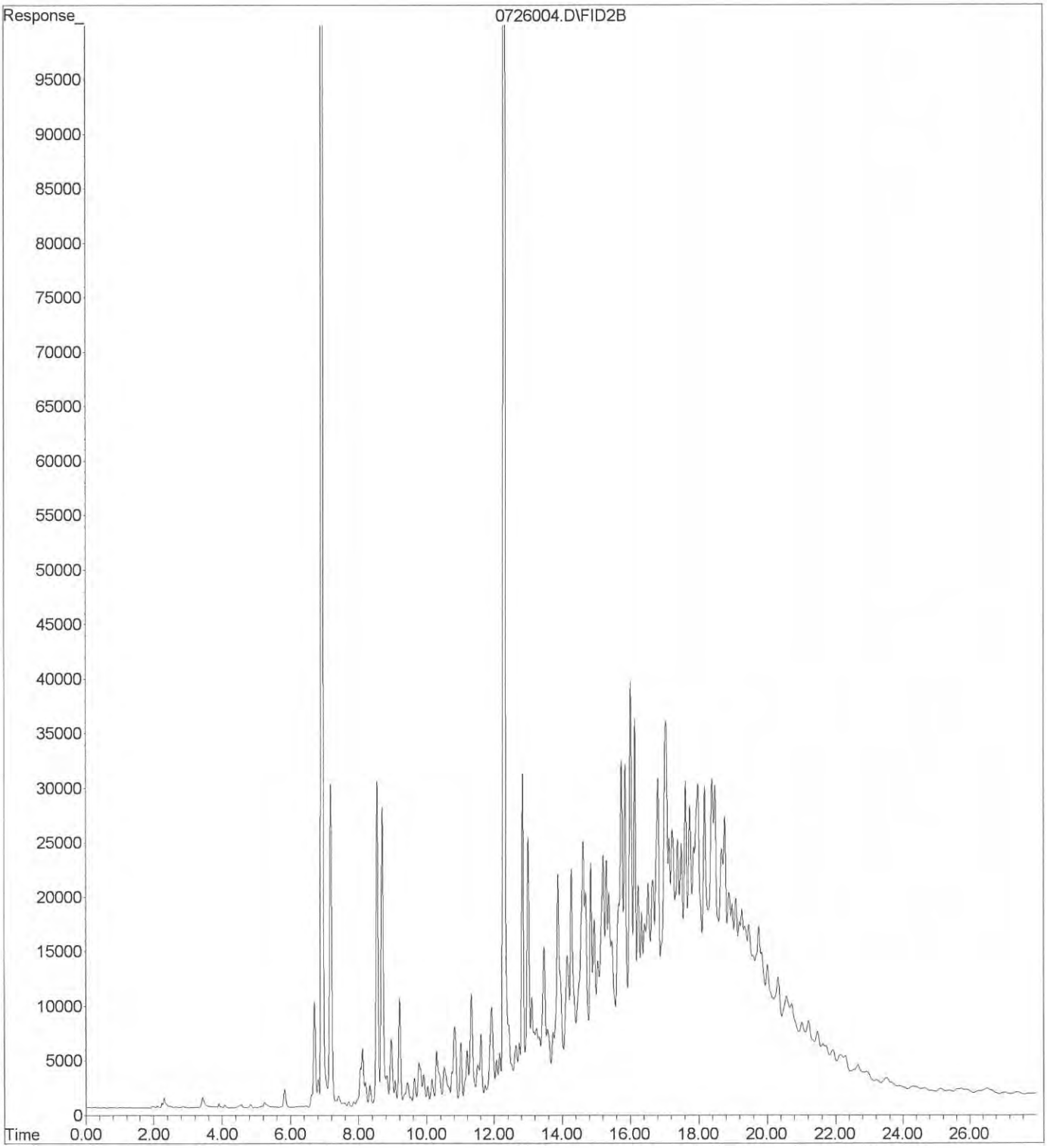
X - Sample extract treated with a mercury cleanup procedure.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

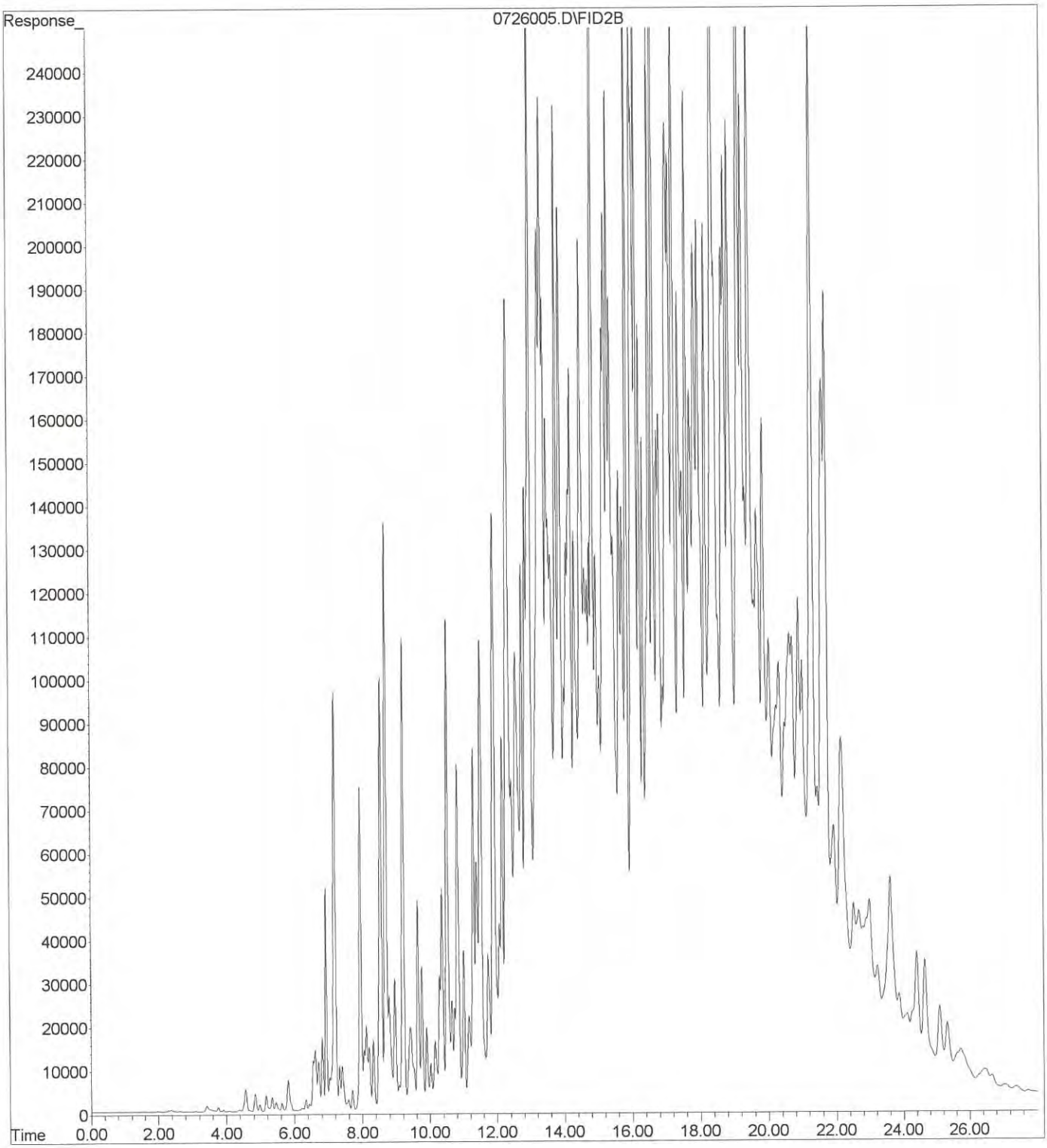
Z -

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

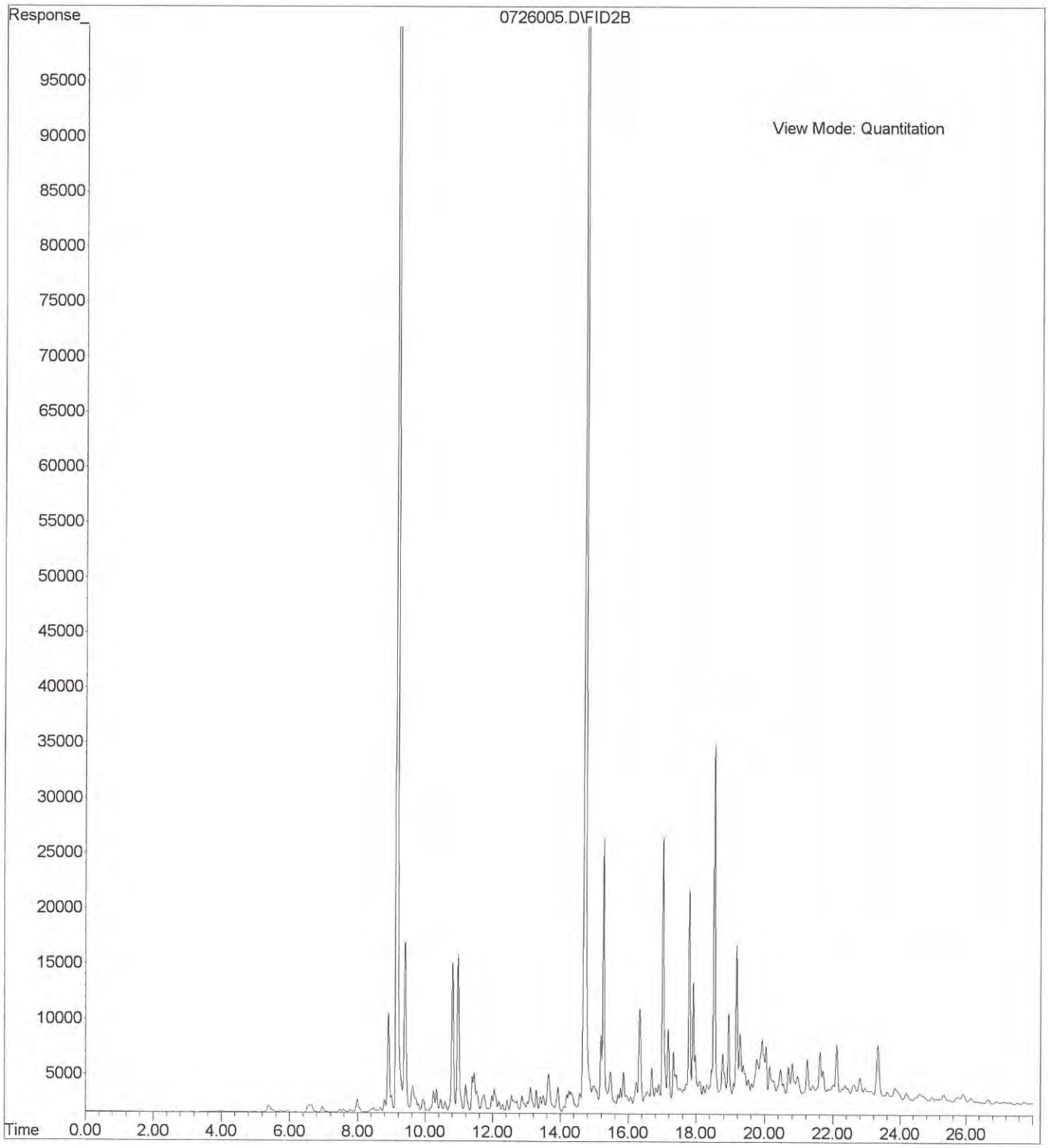
File : X:\BTEX\DARYL\DATA\D110726\0726004.D
Operator :
Acquired : 26 Jul 2011 12:51 using AcqMethod 110630V.M
Instrument : Daryl
Sample Name: 07-179-16s
Misc Info : V2-26-24
Vial Number: 4



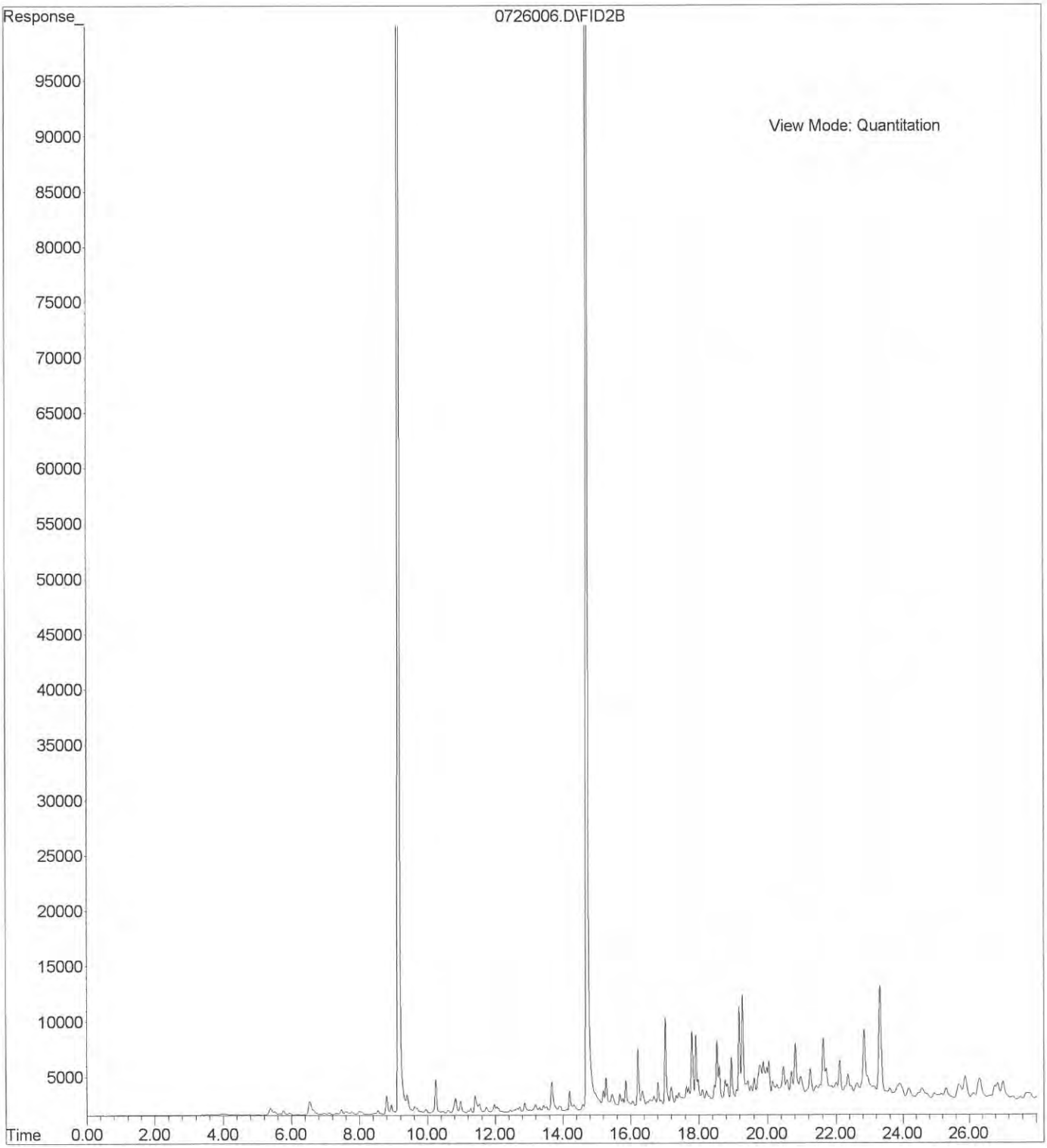
File : X:\BTEX\DARYL\DATA\D110726\0726005.D
Operator :
Acquired : 26 Jul 2011 13:32 using AcqMethod 110630V.M
Instrument : Daryl
Sample Name: 07-179-18s 1:250
Misc Info : V2-26-24
Vial Number: 5



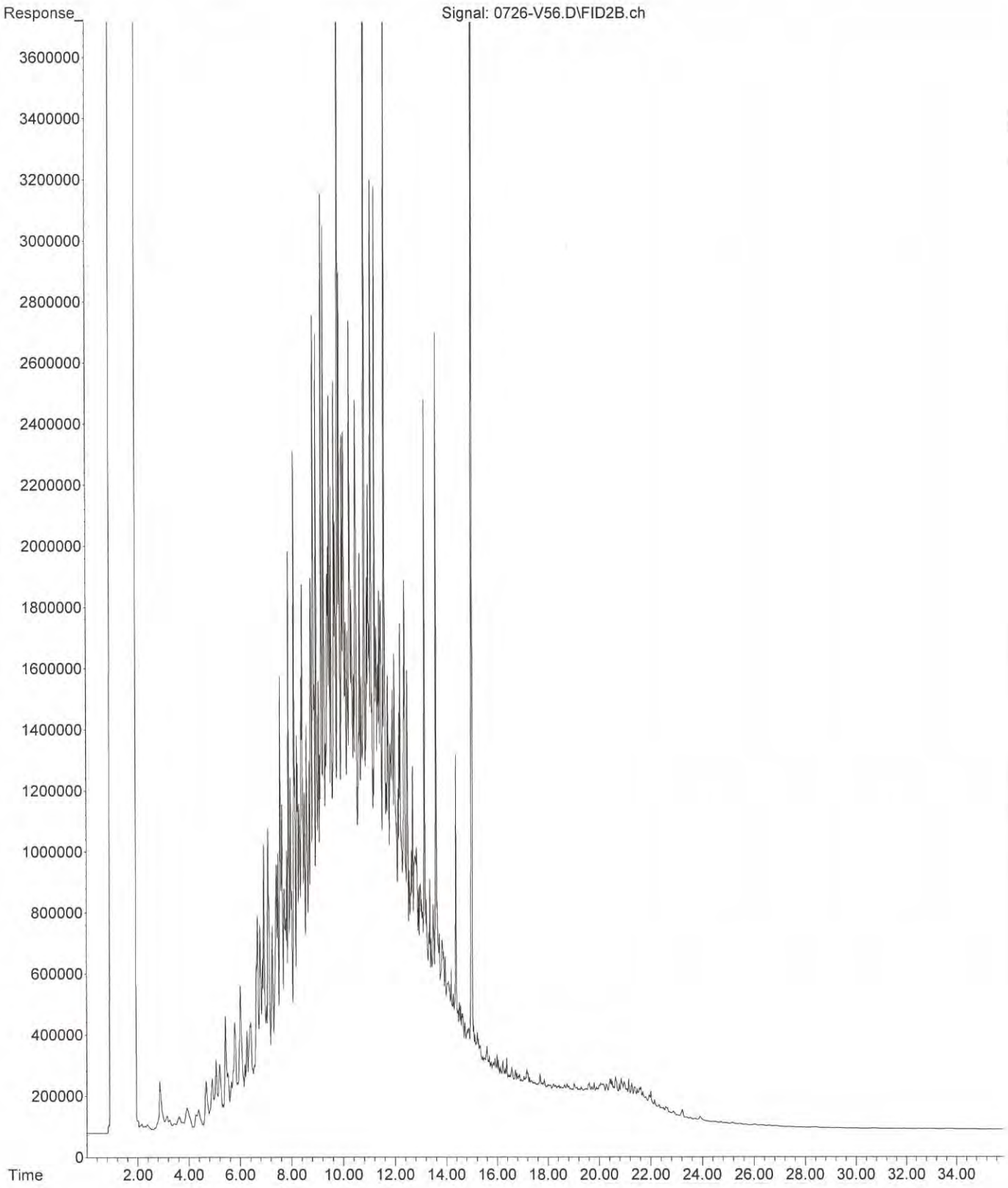
File : X:\BTEX\HOPE\DATA\H110726\0726005.D
Operator :
Acquired : 26 Jul 2011 12:46 using AcqMethod 110630.M
Instrument : HOPE
Sample Name: 07-179-17c 1:4
Misc Info : V2-26-24
Vial Number: 5



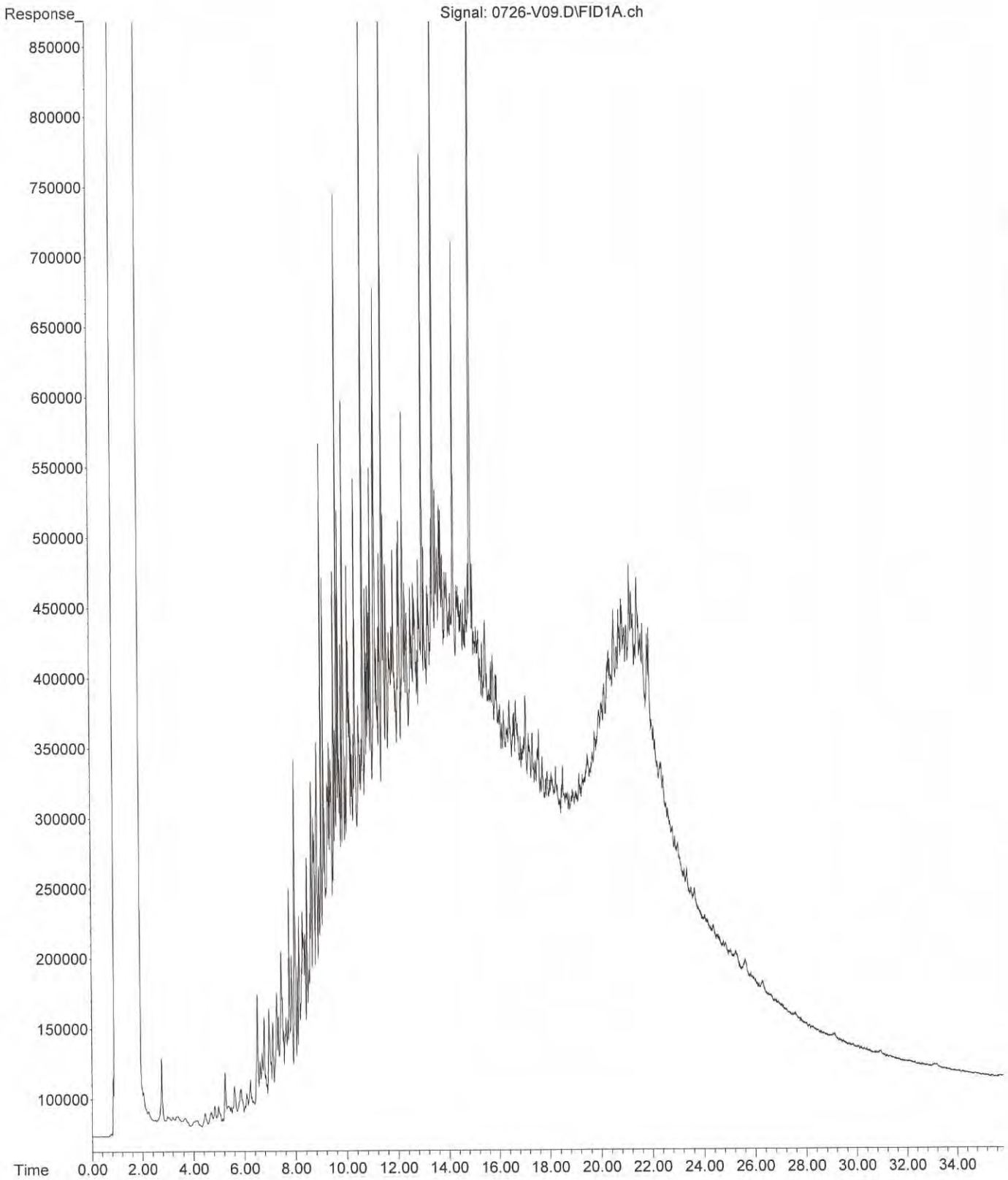
File : X:\BTEX\HOPE\DATA\H110726\0726006.D
Operator :
Acquired : 26 Jul 2011 13:21 using AcqMethod 110630.M
Instrument : HOPE
Sample Name: 07-179-19c 1:4
Misc Info : V2-26-24
Vial Number: 6



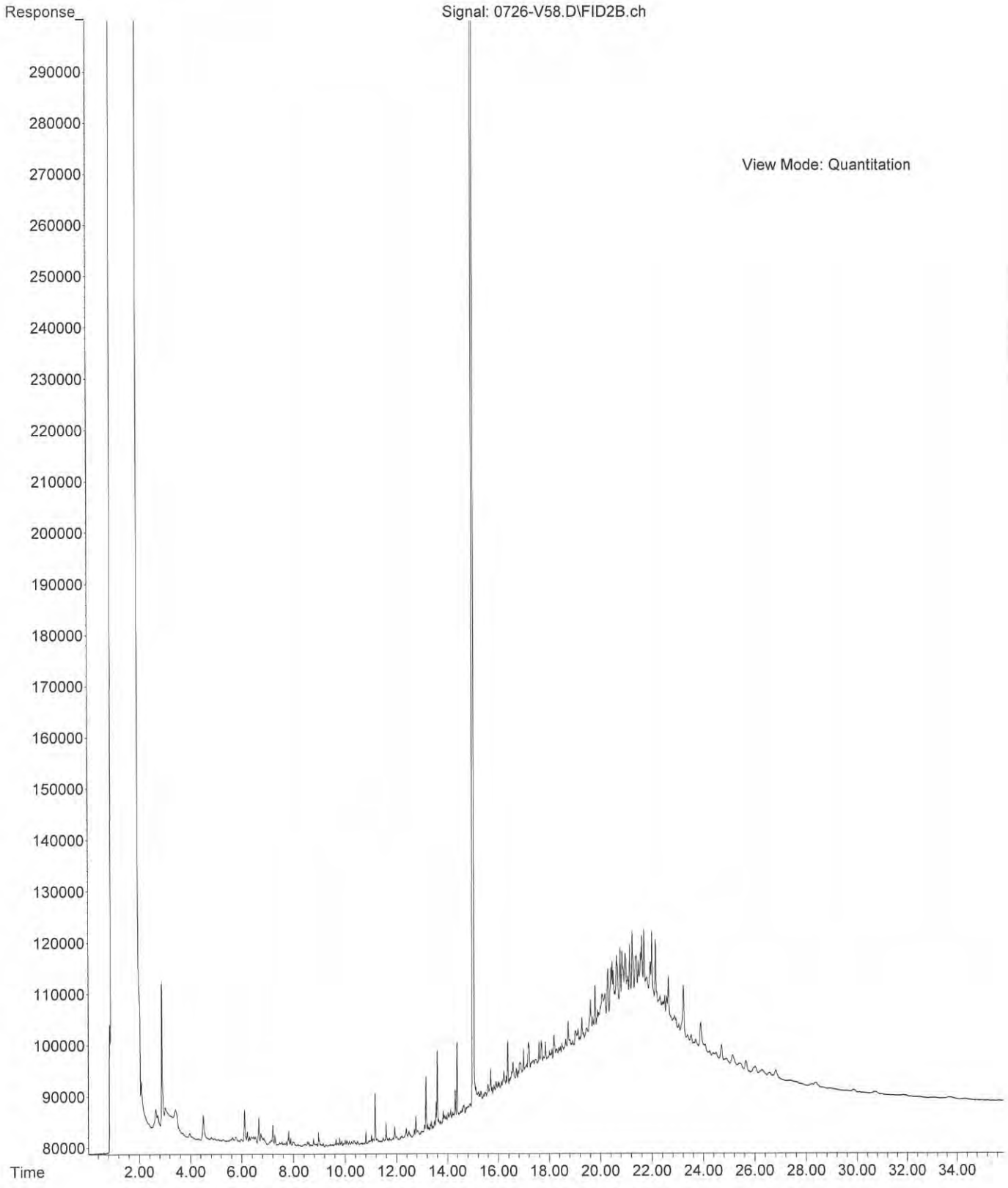
File :C:\msdchem\2\DATA\V110726.SEC\0726-V56.D
Operator :
Acquired : 26 Jul 2011 13:07 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-02
Misc Info :
Vial Number: 56



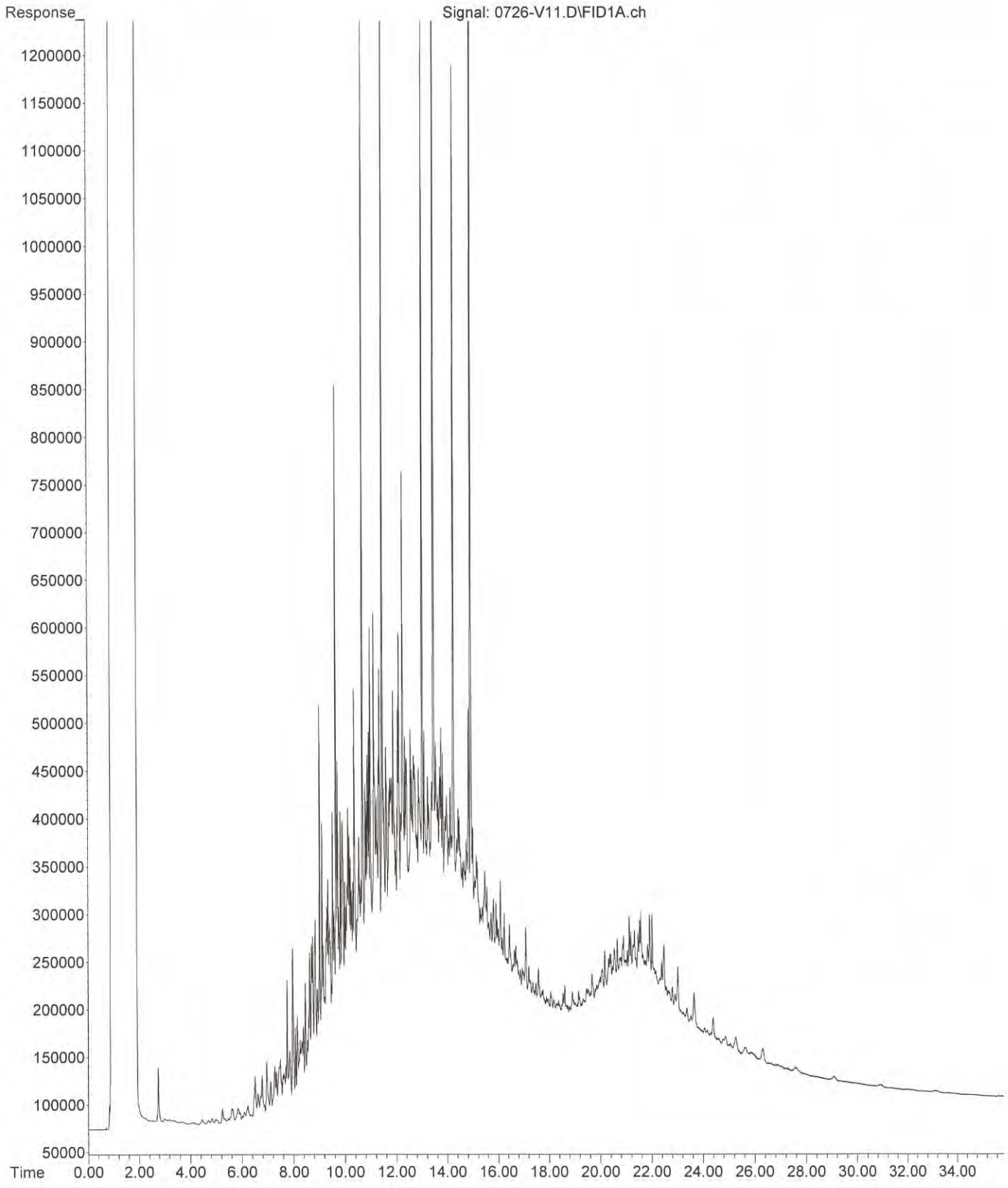
File : C:\msdchem\2\DATA\V110726\0726-V09.D
Operator :
Acquired : 26 Jul 2011 15:07 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-05 5X
Misc Info :
Vial Number: 9



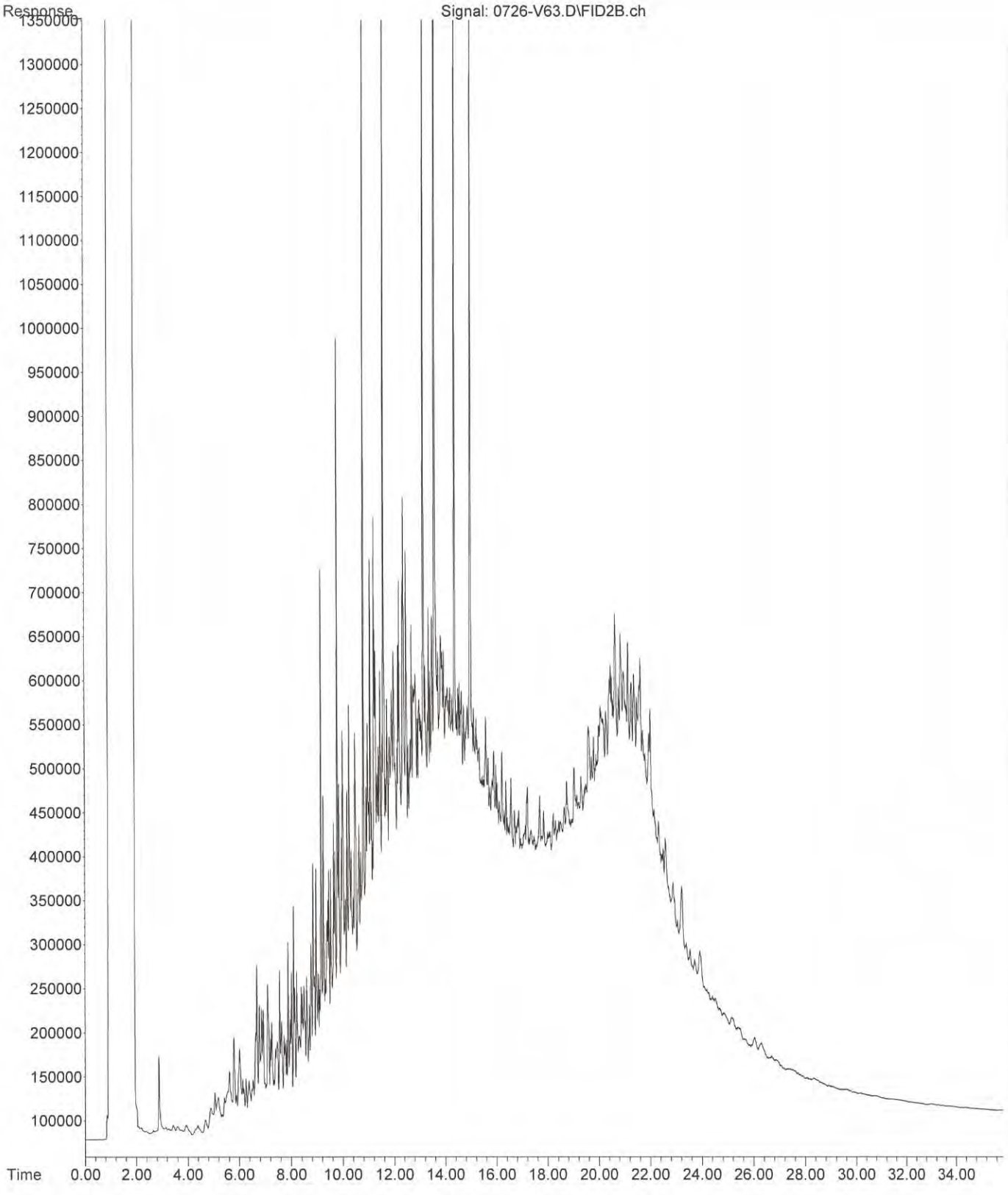
File : C:\msdchem\2\DATA\V110726.SEC\0726-V58.D
Operator :
Acquired : 26 Jul 2011 14:27 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-07
Misc Info :
Vial Number: 58



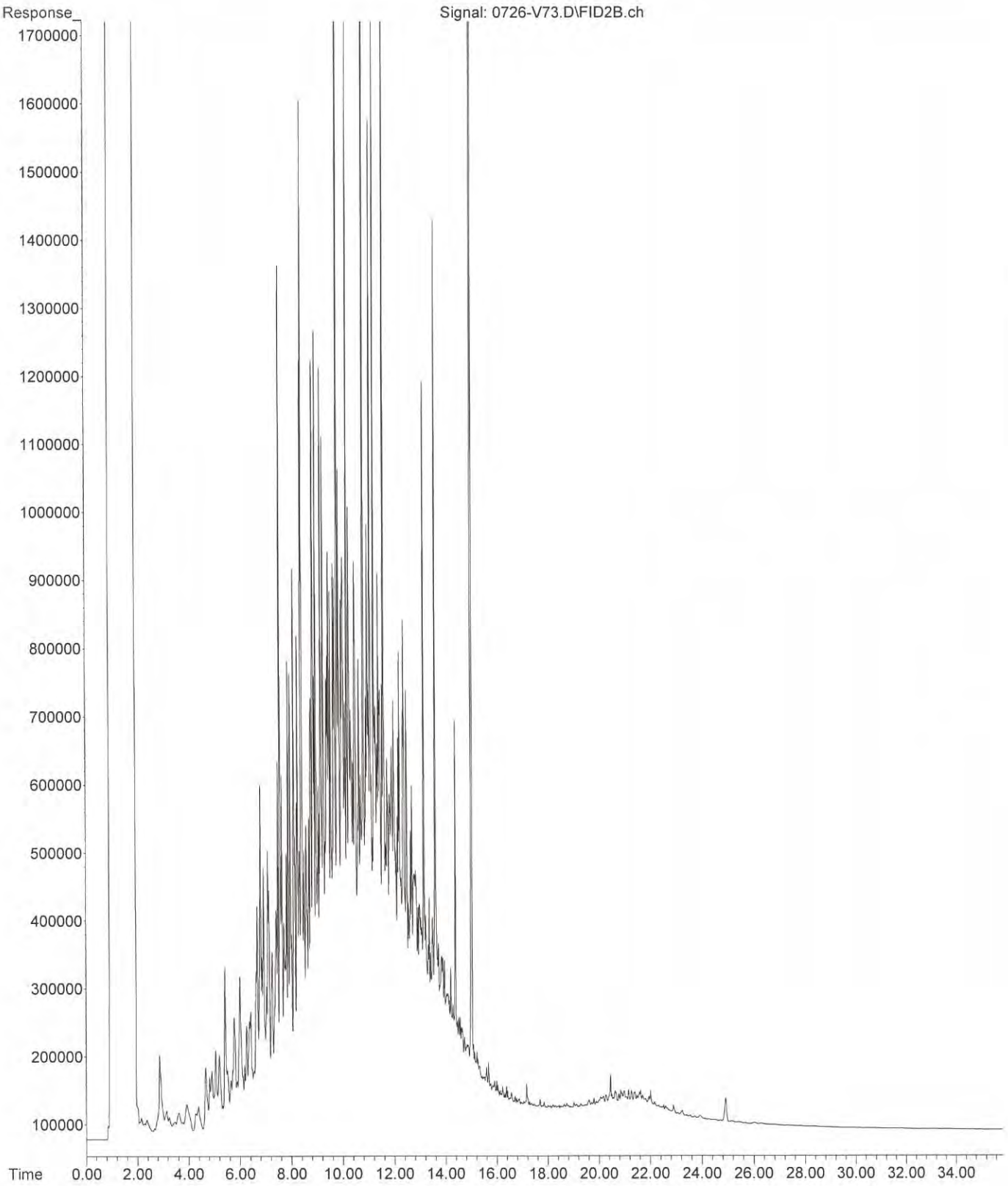
File : C:\msdchem\2\DATA\V110726\0726-V11.D
Operator :
Acquired : 26 Jul 2011 16:27 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-11 5X
Misc Info :
Vial Number: 11



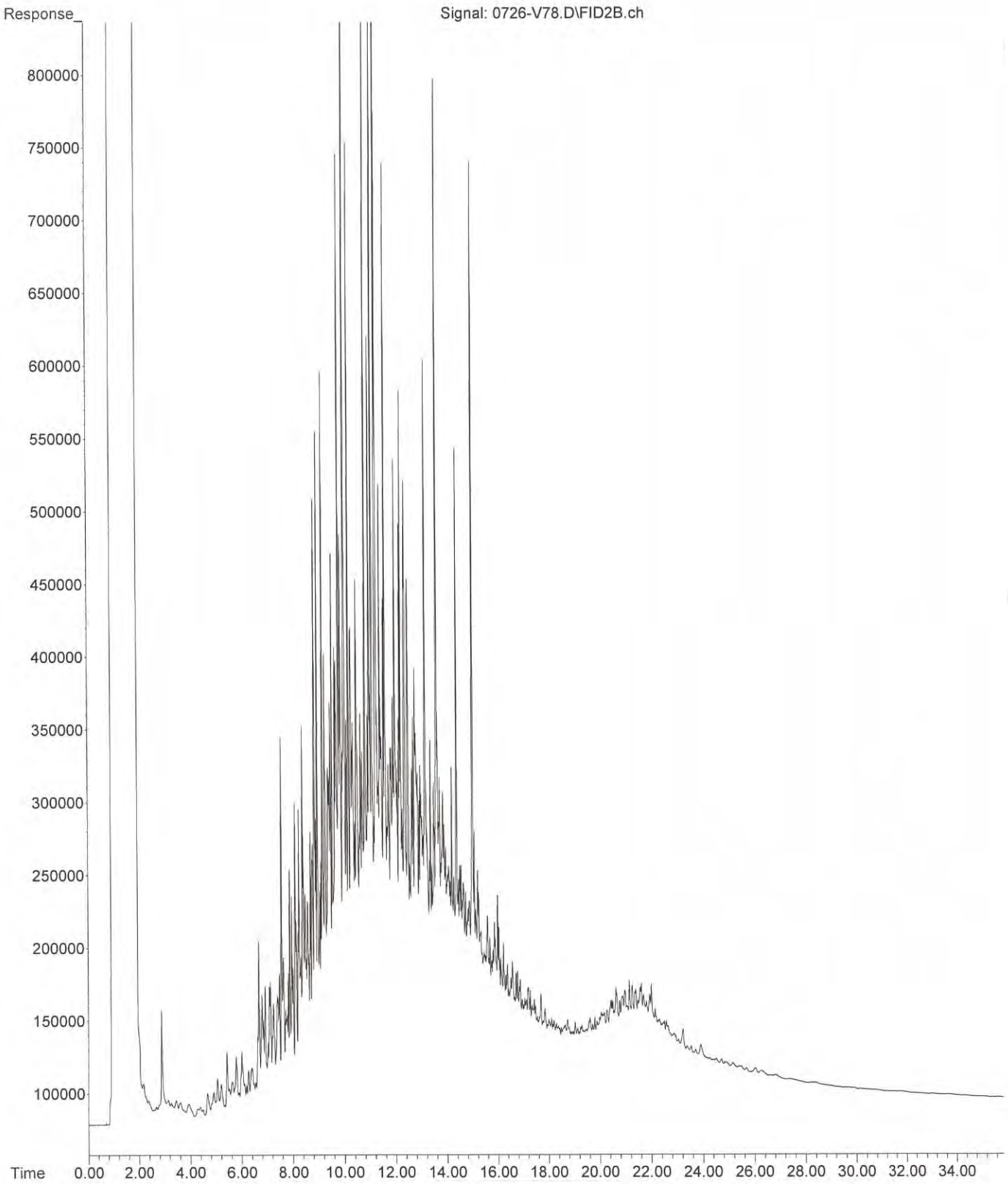
File : C:\msdchem\2\DATA\V110726.SEC\0726-V63.D
Operator :
Acquired : 26 Jul 2011 17:47 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-18 500ul
Misc Info :
Vial Number: 63



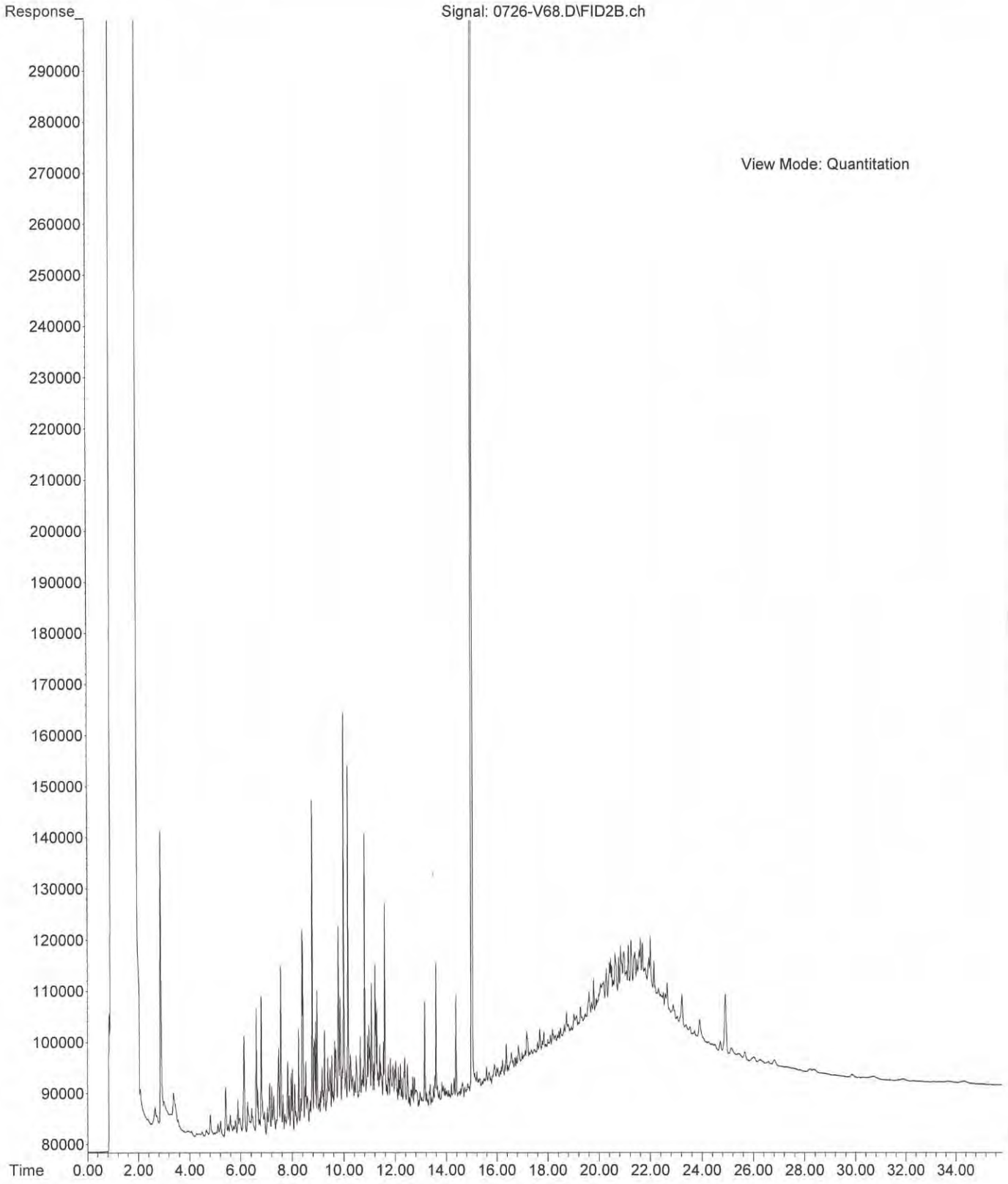
File : C:\msdchem\2\DATA\V110726.SEC\0726-V73.D
Operator :
Acquired : 27 Jul 2011 00:27 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-03
Misc Info :
Vial Number: 73



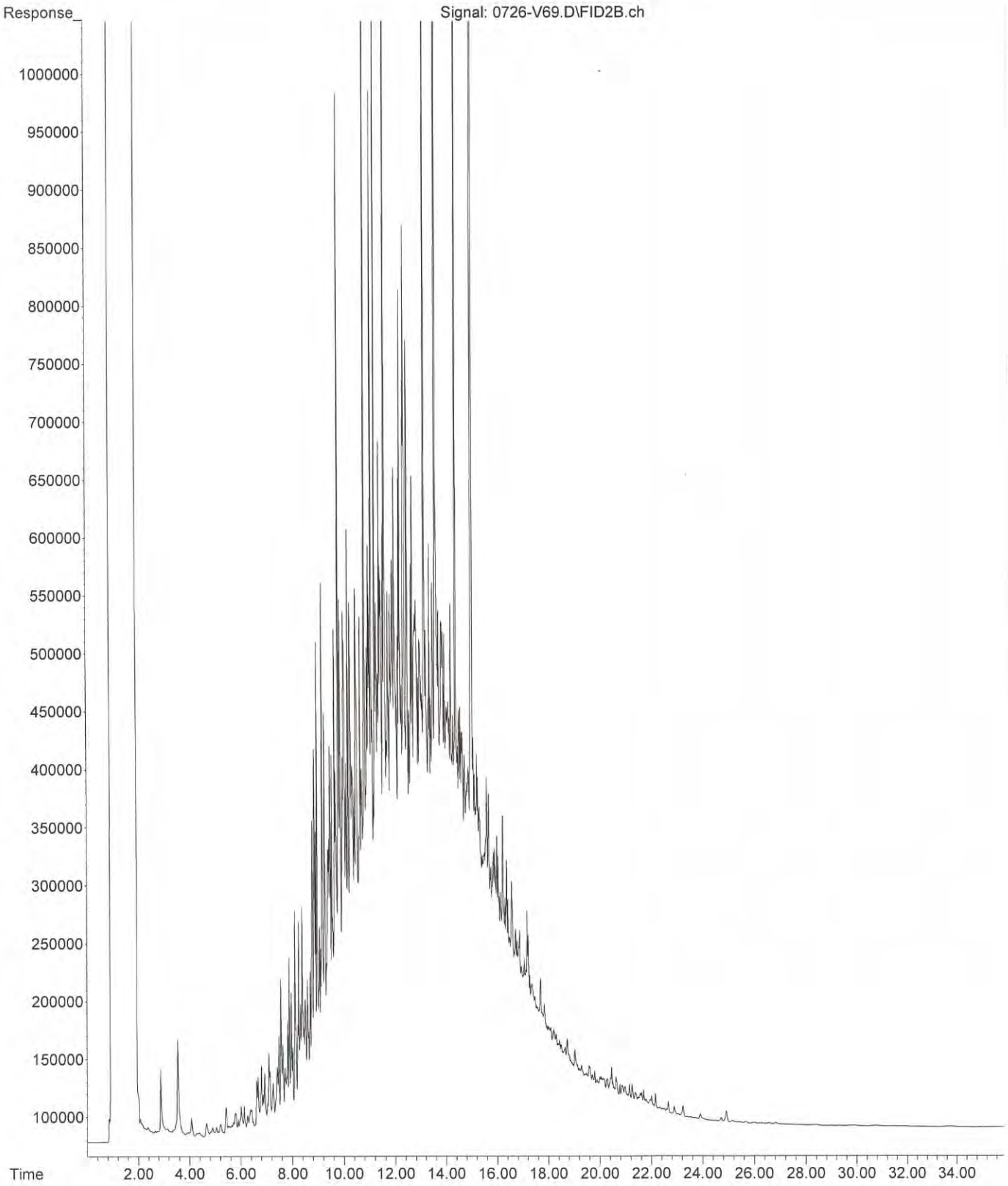
File : C:\msdchem\2\DATA\V110726.SEC\0726-V78.D
Operator :
Acquired : 27 Jul 2011 3:46 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-06 20X
Misc Info :
Vial Number: 78



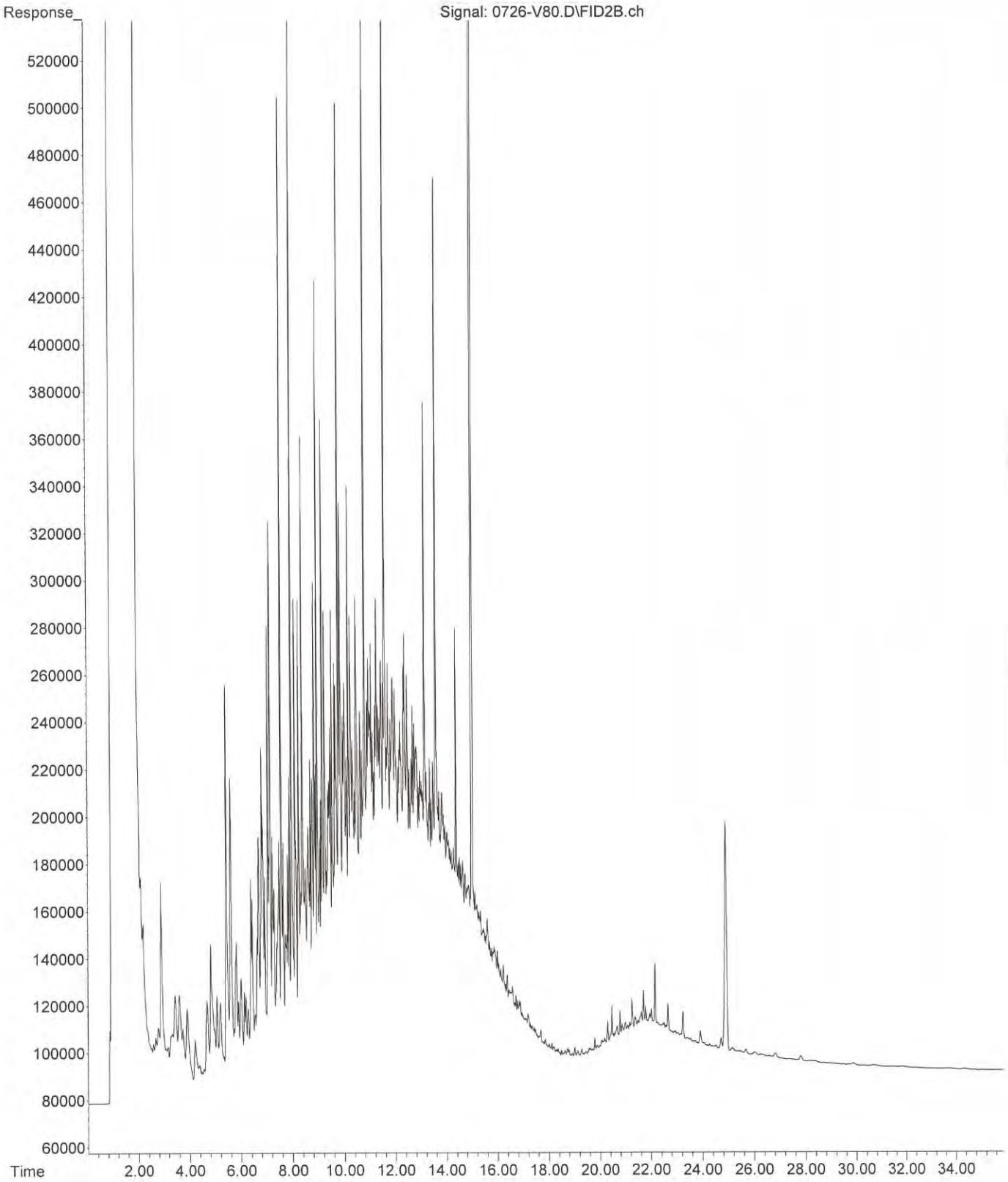
File : C:\msdchem\2\DATA\V110726.SEC\0726-V68.D
Operator :
Acquired : 26 Jul 2011 21:07 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-09
Misc Info :
Vial Number: 68



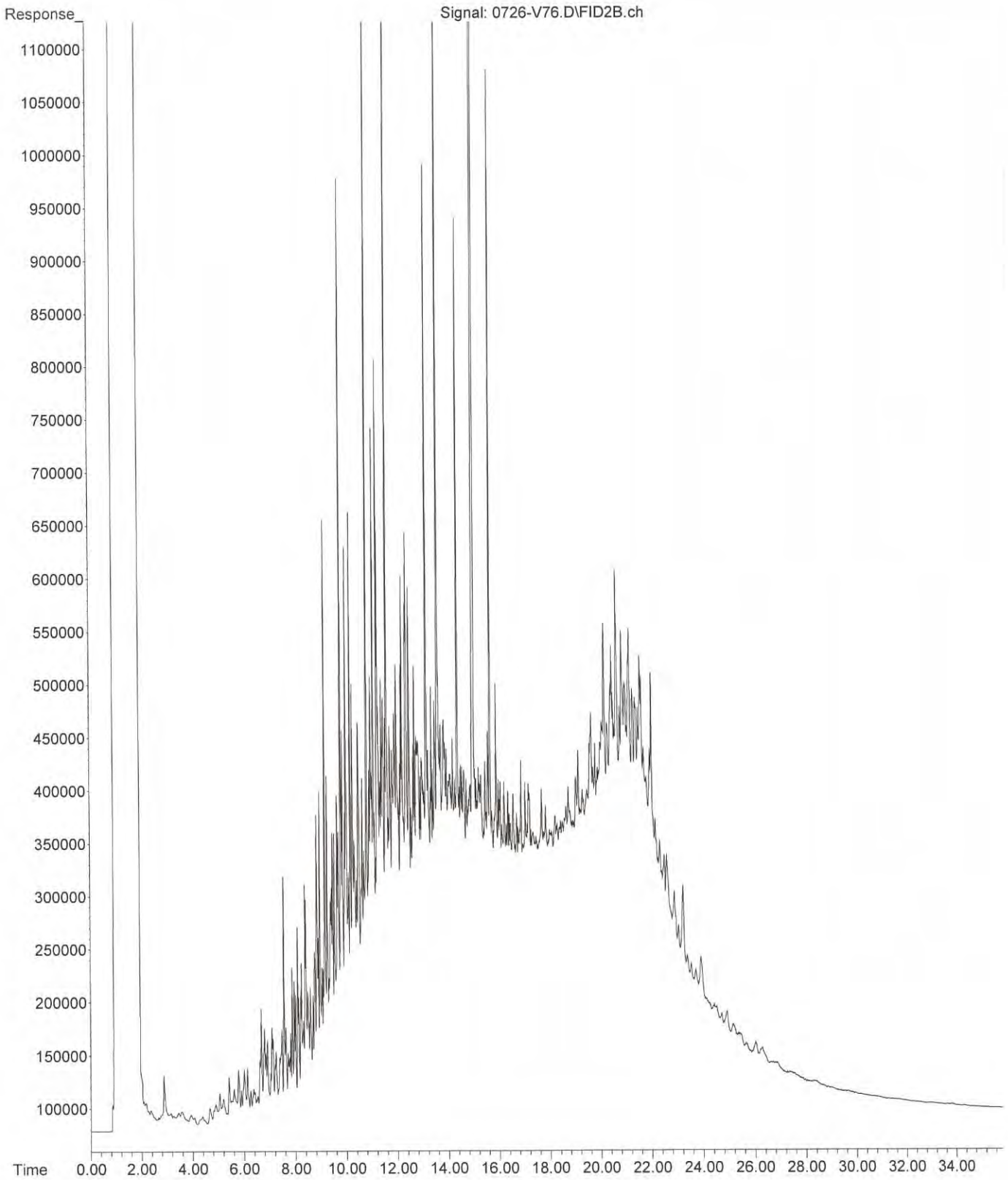
File :C:\msdchem\2\DATA\V110726.SEC\0726-V69.D
Operator :
Acquired : 26 Jul 2011 21:47 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-12
Misc Info :
Vial Number: 69



File : C:\msdchem\2\DATA\V110726.SEC\0726-V80.D
Operator :
Acquired : 27 Jul 2011 5:06 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-17
Misc Info :
Vial Number: 80



File : C:\msdchem\2\DATA\V110726.SEC\0726-V76.D
Operator :
Acquired : 27 Jul 2011 2:26 using AcqMethod V110710F.M
Instrument : VIGO
Sample Name: 07-179-19
Misc Info :
Vial Number: 76



Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen FACILITY
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

- [x] Same Day
- [ ] 1 Day
- [ ] 2 Day
- [ ] 3 Day
- [ ] Standard (7 working days)
- [ ] _____ (other)

Laboratory Number: 07-179

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH					% Moisture
1	B39-2.0	7/25/11	845	S	1																				
2	B39-6.5		855	S	1			X																	X
3	B39-072511-GW		905	W	2			X																	
4	B40-3.0		940	S	1																				
5	B40-5.5		950	S	1			X																	X
6	B40-072511-GW		1000	W	2			X																	
7	B38-3.5		1035	S	1			X																	X
8	B38-5.5		1045	S	1																				
9	B38-072511-GW		1055	W	2			X																	
10	B36-3.5		1120	S	1																				

	Signature	Company	Date	Time
Relinquished by	Ken Scott	FARALLON	7/25/11	1440
Received by		CORE	7/26/11	925
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:
ANALYZE SAMPLES ON SAME DAY & CALL AKOS FEKETE KEN SCOTT @ VERIS AT ANALYTICAL RESULTS.

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen FACILITY
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

☒ Same Day ☐ 1 Day
☐ 2 Day ☐ 3 Day
☐ Standard (7 working days)
☐ _____ (other)

Laboratory Number: 07-179

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	% Moisture
11	B36-5.0	7/25/11	1130	S	1			X													X
12	B36-072511-GW		1140	W	2			X													
13	B37-3.5		1210	S	1			X													X
14	B37-072511-GW		1220	W	2			X													
15	B43-3.5		1245	S (X7)	2																
16	B43-4.5		1250	S	2		X	X													X
17	B43-072511-GW		1305	W	5		X	X													
18	B42-3.5		1335	S	2		X	X													X
19	B42-072511-GW		1345	W	5		X	X													

	Signature	Company	Date	Time
Relinquished by	Ken Scott	FARALLON	7/25/11	1440
Received by		OSE	7/26/11	925
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions: ANALYZE SAMPLES ON SAME-DAY & call AKOS FEKETE & Ken Scott @ verbal ANALYTICAL results.

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy

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

July 29, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1107-201

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on July 28, 2011.

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

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

Case Narrative

Samples were collected on July 26 and 27, 2011 and received by the laboratory on July 28, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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 (soil) 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.

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B41-3.5**					
Laboratory ID:	07-201-01					
Diesel Range Organics	**3000**	27	NWTPH-Dx	7-28-11	7-28-11	
Lube Oil	**1100**	54	NWTPH-Dx	7-28-11	7-28-11	N1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***109***	***50-150***				

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-28-11	7-28-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***116***	***50-150***				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-201-01							
	ORIG	DUP						
Diesel Range Organics	**2800**	**2020**				32	NA	
Lube Oil	**1050**	**753**				33	NA	N1
Surrogate:								
o-Terphenyl			***109***	***98***	***50-150***			

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B41-072611-GW**					
Laboratory ID:	07-201-02					
Diesel Range Organics	**2.0**	0.27	NWTPH-Dx	7-28-11	7-28-11	
Lube Oil	**1.4**	0.44	NWTPH-Dx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***101***	***50-150***				

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-28-11	7-28-11	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***100***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	07-201-02						
	ORIG	DUP					
Diesel Range Organics	**2.04**	**1.44**			34	NA	
Lube Oil	**1.43**	**1.01**			34	NA	
Surrogate:							
o-Terphenyl			***101*** ***111***	***50-150***			

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B41-3.5**					
Laboratory ID:	07-201-01					
Benzene	**0.023**	0.020	EPA 8021	7-28-11	7-28-11	
Toluene	**ND**	0.10	EPA 8021	7-28-11	7-28-11	
Ethyl Benzene	**0.11**	0.10	EPA 8021	7-28-11	7-28-11	
m,p-Xylene	**0.55**	0.10	EPA 8021	7-28-11	7-28-11	
o-Xylene	**ND**	0.50	EPA 8021	7-28-11	7-28-11	U1
Gasoline	**ND**	10	NWTPH-Gx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***107***	***68-124***				

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

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 8021	7-28-11	7-28-11	
Toluene	**ND**	0.050	EPA 8021	7-28-11	7-28-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	7-28-11	7-28-11	
m,p-Xylene	**ND**	0.050	EPA 8021	7-28-11	7-28-11	
o-Xylene	**ND**	0.050	EPA 8021	7-28-11	7-28-11	
Gasoline	**ND**	5.0	NWTPH-Gx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***104***	***68-124***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-196-05										
	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						***104***	***104***	***68-124***			
SPIKE BLANKS											
Laboratory ID:	SB0728S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.06**	**1.06**	1.00	1.00		**106**	**106**	77-114	0	9	
Toluene	**1.12**	**1.10**	1.00	1.00		**112**	**110**	80-115	2	9	
Ethyl Benzene	**1.09**	**1.08**	1.00	1.00		**109**	**108**	80-118	1	9	
m,p-Xylene	**1.15**	**1.09**	1.00	1.00		**115**	**109**	82-118	5	9	
o-Xylene	**1.11**	**1.10**	1.00	1.00		**111**	**110**	82-116	1	9	
Surrogate:											
Fluorobenzene						***103***	***104***	***68-124***			

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B41-072611-GW**					
Laboratory ID:	07-201-02					
Benzene	**ND**	4.0	EPA 8021	7-28-11	7-28-11	
Toluene	**ND**	4.0	EPA 8021	7-28-11	7-28-11	
Ethyl Benzene	**ND**	4.0	EPA 8021	7-28-11	7-28-11	
m,p-Xylene	**ND**	4.0	EPA 8021	7-28-11	7-28-11	
o-Xylene	**ND**	4.0	EPA 8021	7-28-11	7-28-11	
Gasoline	**ND**	400	NWTPH-Gx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***99***	***73-121***				

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728W1					
Benzene	**ND**	1.0	EPA 8021	7-28-11	7-28-11	
Toluene	**ND**	1.0	EPA 8021	7-28-11	7-28-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	7-28-11	7-28-11	
m,p-Xylene	**ND**	1.0	EPA 8021	7-28-11	7-28-11	
o-Xylene	**ND**	1.0	EPA 8021	7-28-11	7-28-11	
Gasoline	**ND**	100	NWTPH-Gx	7-28-11	7-28-11	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***98***	***73-121***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-135-11										
	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						***100***	***99***	***73-121***			
MATRIX SPIKES											
Laboratory ID:	07-135-11										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**52.6**	**53.4**	50.0	50.0	ND	**105**	**107**	82-120	2	8	
Toluene	**52.6**	**53.2**	50.0	50.0	ND	**105**	**106**	84-119	1	8	
Ethyl Benzene	**50.5**	**51.2**	50.0	50.0	ND	**101**	**102**	84-122	1	9	
m,p-Xylene	**50.0**	**50.5**	50.0	50.0	ND	**100**	**101**	85-121	1	9	
o-Xylene	**50.3**	**50.8**	50.0	50.0	ND	**101**	**102**	84-121	1	9	
Surrogate:											
Fluorobenzene						***102***	***103***	***73-121***			

Date of Report: July 29, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201
Project: 525-006

% MOISTURE

Date Analyzed: 7-28-11

Client ID	Lab ID	% Moisture
B41-3.5	07-201-01	8

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

ON-SITE LAB

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

~~TestAmerica Seattle~~ ON-SITE LAB
~~5755 8th Street E.~~ REDMOND, WA
~~Tacoma, WA 98424~~ 14648 NE 95th St
~~Tel: 253-922-2310~~ REDMOND, WA
~~Fax 253-922-5047~~ 98052
~~www.testamericainc.com~~

☒ Rush (5 AM 2-DAY ON B41)
☐ Short Hold (Hold All other Samples)

Chain of Custody Record

Client: FARALLON	Client Contact: ARON FEKETE	Date:	Chain of Custody Number: 7133
Address: 975 5th Avenue NW	Telephone Number (Area Code)/Fax Number: 425-295-0800	Lab Number: 07-201	Page 1 of 1
City: ISSAQUAH / State: WA / Zip Code: 98027	Sampler: Ken Scott	Lab Contact: DAVE BAUMGARTEN	
Project Name and Location (State): Aberdeen Facility	Billing Contact:		
Contract/Purchase Order/Quote No.: 525-006			

	Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis: NWTPH-DX	NWTPH-GX/BTEX	% Moisture	# of containers
1	B41-3.5	7/26/11	~~0920~~				X							X	X	X	2
2	B41-072611-GW		835		X									X	X		5
3	MW6-3.0		940				X										3
4	MW9-~~(KS)~~ 3.0		1130				X										3
5	MW11-6.5		1310				X										2
6	MW3-9.5	7/27/11	815				X										2
7	MW5-7.5		935				X										3
8	MW7-3.0		1055				X										2
9	MW1-7.5		1245				X										2
10	MW2-8.5		1420				X										2

Special Instructions/ Conditions of Receipt

Cooler: ☐ Yes ☐ No Cooler Temp:_____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By Sign/Print: Ken Scott	7/27/11	1440	1. Received By Sign/Print: MOON	7/28/11	915
2. Relinquished By Sign/Print:			2. Received By Sign/Print:		
3. Relinquished By Sign/Print:			3. Received By Sign/Print:		

Comments:

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)

OnSite Environmental Inc.

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

August 15, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1107-201B

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on July 28, 2011.

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

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

Case Narrative

Samples were collected on July 26 and 27, 2011 and received by the laboratory on July 28, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW9-3.0**					
Laboratory ID:	07-201-04					
Diesel Range Organics	**48**	28	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**MW3-9.5**					
Laboratory ID:	07-201-06					
Diesel Range Organics	**380**	38	NWTPH-Dx	8-5-11	8-6-11	N
Lube Oil	**1100**	77	NWTPH-Dx	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW5-7.5**					
Laboratory ID:	07-201-07					
Diesel Range Organics	**ND**	48	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	96	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW7-3.0**					
Laboratory ID:	07-201-08					
Diesel Range Organics	**3400**	26	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil	**2200**	53	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				
Client ID:	**MW1-7.5**					
Laboratory ID:	07-201-09					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**MW2-8.5**					
Laboratory ID:	07-201-10					
Diesel Range Organics	**ND**	34	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	67	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0805S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	07-201-08						
	ORIG	DUP					
Diesel Range Organics	**3180**	**2370**			29	NA	
Lube Oil	**2080**	**1610**			25	NA	
Surrogate:							
o-Terphenyl			*108* *112*	*50-150*			

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW9-3.0**					
Laboratory ID:	07-201-04					
Benzene	**ND**	0.020	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.059	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**ND**	0.059	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**ND**	0.059	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.059	EPA 8021	8-1-11	8-1-11	
Gasoline	**ND**	5.9	NWTPH-Gx	8-1-11	8-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*68-124*				
Client ID:	**MW3-9.5**					
Laboratory ID:	07-201-06					
Benzene	**ND**	0.026	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.13	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**ND**	0.13	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**ND**	0.13	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.13	EPA 8021	8-1-11	8-1-11	
Gasoline	**ND**	13	NWTPH-Gx	8-1-11	8-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*106*	*68-124*				
Client ID:	**MW5-7.5**					
Laboratory ID:	07-201-07					
Benzene	**0.20**	0.032	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.16	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**0.45**	0.16	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**0.41**	0.16	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.16	EPA 8021	8-1-11	8-1-11	
Gasoline	**390**	16	NWTPH-Gx	8-1-11	8-1-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*122*	*68-124*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW7-3.0**					
Laboratory ID:	07-201-08					
Benzene	**0.079**	0.020	EPA 8021	8-1-11	8-2-11	
Toluene	**0.28**	0.10	EPA 8021	8-1-11	8-2-11	
Ethyl Benzene	**0.84**	0.10	EPA 8021	8-1-11	8-2-11	
m,p-Xylene	**2.1**	0.10	EPA 8021	8-1-11	8-2-11	
o-Xylene	**ND**	1.0	EPA 8021	8-1-11	8-2-11	U1
Gasoline	**ND**	10	NWTPH-Gx	8-1-11	8-2-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*68-124*				
Client ID:	**MW1-7.5**					
Laboratory ID:	07-201-09					
Benzene	**0.099**	0.020	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.081	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**ND**	0.081	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**ND**	0.081	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.081	EPA 8021	8-1-11	8-1-11	
Gasoline	**20**	8.1	NWTPH-Gx	8-1-11	8-1-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*68-124*				
Client ID:	**MW2-8.5**					
Laboratory ID:	07-201-10					
Benzene	**ND**	0.020	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.086	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**ND**	0.086	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**ND**	0.086	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.086	EPA 8021	8-1-11	8-1-11	
Gasoline	**23**	8.6	NWTPH-Gx	8-1-11	8-1-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*68-124*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0801S1					
Benzene	**ND**	0.020	EPA 8021	8-1-11	8-1-11	
Toluene	**ND**	0.050	EPA 8021	8-1-11	8-1-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	8-1-11	8-1-11	
m,p-Xylene	**ND**	0.050	EPA 8021	8-1-11	8-1-11	
o-Xylene	**ND**	0.050	EPA 8021	8-1-11	8-1-11	
Gasoline	**ND**	5.0	NWTPH-Gx	8-1-11	8-1-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*108*	*68-124*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-220-02										
	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						*108*	*106*	*68-124*			
SPIKE BLANKS											
Laboratory ID:	SB0801S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.04**	**0.987**	1.00	1.00		**104**	**99**	77-114	5	9	
Toluene	**1.06**	**1.01**	1.00	1.00		**106**	**101**	80-115	5	9	
Ethyl Benzene	**1.02**	**1.00**	1.00	1.00		**102**	**100**	80-118	2	9	
m,p-Xylene	**1.02**	**0.994**	1.00	1.00		**102**	**99**	82-118	3	9	
o-Xylene	**1.01**	**0.997**	1.00	1.00		**101**	**100**	82-116	1	9	
Surrogate:											
Fluorobenzene						*105*	*102*	*68-124*			

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW9-3.0**					
Laboratory ID:	07-201-04					
Naphthalene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**0.049**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**0.043**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**0.044**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.065**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**0.039**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.052**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.051**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.069**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.062**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.058**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.058**	0.037	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*43 - 109*				
Pyrene-d10	*112*	*38 - 128*				
Terphenyl-d14	*93*	*33 - 119*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW7-3.0**					
Laboratory ID:	07-201-08					
Naphthalene	**ND**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**0.48**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**1.9**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**0.090**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**0.11**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**0.38**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**0.37**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**0.088**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**0.059**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**0.17**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.070**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**0.12**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.037**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**ND**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.073**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.035**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**ND**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.039**	0.035	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*43 - 109*				
Pyrene-d10	*112*	*38 - 128*				
Terphenyl-d14	*81*	*33 - 119*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0805S2					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Fluorene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*43 - 109*				
Pyrene-d10	*74*	*38 - 128*				
Terphenyl-d14	*74*	*33 - 119*				

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-061-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0608**	**0.0644**	0.0833	0.0833	ND	73	77	39 - 110	6	21	
Acenaphthylene	**0.0609**	**0.0624**	0.0833	0.0833	ND	73	75	47 - 124	2	21	
Acenaphthene	**0.0634**	**0.0665**	0.0833	0.0833	ND	76	80	50 - 120	5	20	
Fluorene	**0.0631**	**0.0661**	0.0833	0.0833	ND	76	79	52 - 126	5	21	
Phenanthrene	**0.0695**	**0.0655**	0.0833	0.0833	ND	83	79	41 - 130	6	22	
Anthracene	**0.0621**	**0.0631**	0.0833	0.0833	ND	75	76	48 - 124	2	23	
Fluoranthene	**0.0668**	**0.0644**	0.0833	0.0833	ND	80	77	40 - 137	4	23	
Pyrene	**0.0679**	**0.0648**	0.0833	0.0833	ND	82	78	36 - 139	5	23	
Benzo[a]anthracene	**0.0566**	**0.0487**	0.0833	0.0833	ND	68	58	43 - 127	15	21	
Chrysene	**0.0587**	**0.0527**	0.0833	0.0833	ND	70	63	41 - 133	11	19	
Benzo[b]fluoranthene	**0.0516**	**0.0578**	0.0833	0.0833	ND	62	69	40 - 132	11	25	
Benzo(j,k)fluoranthene	**0.0521**	**0.0550**	0.0833	0.0833	ND	63	66	35 - 132	5	25	
Benzo[a]pyrene	**0.0544**	**0.0566**	0.0833	0.0833	ND	65	68	37 - 131	4	26	
Indeno(1,2,3-c,d)pyrene	**0.0527**	**0.0554**	0.0833	0.0833	ND	63	67	39 - 134	5	23	
Dibenz[a,h]anthracene	**0.0557**	**0.0586**	0.0833	0.0833	ND	67	70	40 - 137	5	21	
Benzo[g,h,i]perylene	**0.0537**	**0.0577**	0.0833	0.0833	ND	64	69	35 - 135	7	22	
Surrogate:											
2-Fluorobiphenyl						*77*	*78*	*43 - 109*			
Pyrene-d10						*76*	*76*	*38 - 128*			
Terphenyl-d14						*69*	*59*	*33 - 119*			

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

TOTAL METALS
EPA 6010B/7471A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	07-201-04					
Client ID:	**MW9-3.0**					
Arsenic	**46**	11	6010B	8-3-11	8-3-11	
Barium	**35**	2.8	6010B	8-3-11	8-3-11	
Cadmium	**2.0**	0.56	6010B	8-3-11	8-3-11	
Chromium	**27**	0.56	6010B	8-3-11	8-3-11	
Lead	**8.7**	5.6	6010B	8-3-11	8-3-11	
Mercury	**ND**	0.28	7471A	8-3-11	8-3-11	
Selenium	**ND**	11	6010B	8-3-11	8-3-11	
Silver	**ND**	0.56	6010B	8-3-11	8-3-11	

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-3-11
Date Analyzed:	8-3-11
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0803S2&MB0803S4

Analyte	Method	Result	PQL
Arsenic	6010B	**ND**	10
Barium	6010B	**ND**	2.5
Cadmium	6010B	**ND**	0.50
Chromium	6010B	**ND**	0.50
Lead	6010B	**ND**	5.0
Mercury	7471A	**ND**	0.050
Selenium	6010B	**ND**	10
Silver	6010B	**ND**	0.50

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
DUPLICATE QUALITY CONTROL

Date Extracted: 8-3-11
Date Analyzed: 8-3-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-018-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**44.1**	**45.3**	3	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**36.7**	**36.5**	1	0.50	
Lead	**230**	**236**	2	5.0	
Mercury	**ND**	**ND**	NA	0.25	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	0.50	

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

TOTAL METALS
EPA 6010B/7471A
MS/MSD QUALITY CONTROL

Date Extracted: 8-3-11
Date Analyzed: 8-3-11

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 08-018-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**97.6**	98	**99.4**	99	2	
Barium	100	**169**	125	**153**	109	10	
Cadmium	50.0	**46.3**	93	**47.0**	94	1	
Chromium	100	**132**	95	**133**	96	1	
Lead	250	**446**	86	**431**	80	3	
Mercury	0.500	**1.52**	92	**1.49**	87	2	
Selenium	100	**94.1**	94	**94.9**	95	1	
Silver	25.0	**23.2**	93	**23.3**	93	0	

Date of Report: August 15, 2011
Samples Submitted: July 28, 2011
Laboratory Reference: 1107-201B
Project: 525-006

% MOISTURE

Date Analyzed: 8-1-11

Client ID	Lab ID	% Moisture
MW9-3.0	07-201-04	11
MW3-9.5	07-201-06	35
MW5-7.5	07-201-07	48
MW7-3.0	07-201-08	5
MW1-7.5	07-201-09	17
MW2-8.5	07-201-10	25

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

ON-SITE LAB

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~~Fax 253-922-5047~~ 98052
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☒ Rush (5 AMS-DAY ON B41)
☐ Short Hold (Hold All other Samples)

Chain of Custody Record

Client: FARALLON	Client Contact: ARAS FEKETE	Date:	Chain of Custody Number: 7133
Address: 975 5th Avenue NW	Telephone Number (Area Code)/Fax Number: 425-295-0800	Lab Number: 07-201	Page 1 of 1
City: Issaquah, State: WA, Zip Code: 98027	Sampler: Ken Scott	Lab Contact: DAVE BARNESTON	
Project Name and Location (State): Aberdeen Facility	Billing Contact:		
Contract/Purchase Order/Quote No.: 525-006			

	Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	NWTPH-DX	NWTPH-GX/BTEX	PAHs	PCBs Aroclors	% Moisture	# of containers	Special Instructions/ Conditions of Receipt
1	B41-3.5	7/26/11	~~0920~~				X							X	X			X	2	S.D.
2	B41-072611-GW		835		X									X	X				5	
3	MW6-3.0		940				X												3	
4	MW9-~~(KS)~~ 3.0		1130				X							(X)	(X)	(X)	(X)	(X)	3	
5	MW11-6.5		1310				X												2	
6	MW3-9.5	7/27/11	815				X							(X)	(X)			(X)	2	
7	MW5-7.5		935				X							(X)	(X)			(X)	3	
8	MW7-3.0		1055				X							(X)	(X)	(X)		(X)	2	
9	MW1-7.5		1245				X							(X)	(X)			(X)	2	
10	MW2-8.5		1420				X							(X)	(X)			(X)	2	

Cooler: ☐ Yes ☐ No Cooler Temp:_____

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): ☐ 24 Hours ☐ 48 Hours ☐ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By Sign/Print: Ken Scott	7/27/11	1440	1. Received By Sign/Print: MVAN	7/28/11	915
2. Relinquished By Sign/Print:			2. Received By Sign/Print:		
3. Relinquished By Sign/Print:			3. Received By Sign/Print:		

Comments: (X) Added 8/1/11 per STA

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)

OnSite Environmental Inc.

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

August 15, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1108-008

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on August 1, 2011.

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

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

Case Narrative

Samples were collected on July 28 and 29, 2011 and received by the laboratory on August 1, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

The surrogate recovery is outside of the control limits on the high end for sample MW4-5.0. However, since the sample was non-detect 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.

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-5.0**					
Laboratory ID:	08-008-01					
Benzene	**ND**	0.028	EPA 8021	8-3-11	8-3-11	
Toluene	**ND**	0.14	EPA 8021	8-3-11	8-3-11	
Ethyl Benzene	**ND**	0.14	EPA 8021	8-3-11	8-3-11	
m,p-Xylene	**ND**	0.14	EPA 8021	8-3-11	8-3-11	
o-Xylene	**ND**	0.14	EPA 8021	8-3-11	8-3-11	
Gasoline	**ND**	14	NWTPH-Gx	8-3-11	8-3-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*153*	*68-124*				Q
Client ID:	**MW12-3.0**					
Laboratory ID:	08-008-03					
Benzene	**ND**	0.020	EPA 8021	8-3-11	8-3-11	
Toluene	**ND**	0.064	EPA 8021	8-3-11	8-3-11	
Ethyl Benzene	**ND**	0.064	EPA 8021	8-3-11	8-3-11	
m,p-Xylene	**ND**	0.064	EPA 8021	8-3-11	8-3-11	
o-Xylene	**ND**	0.064	EPA 8021	8-3-11	8-3-11	
Gasoline	**ND**	6.4	NWTPH-Gx	8-3-11	8-3-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*68-124*				
Client ID:	**MW13-3.5**					
Laboratory ID:	08-008-04					
Benzene	**ND**	0.022	EPA 8021	8-3-11	8-3-11	
Toluene	**ND**	0.11	EPA 8021	8-3-11	8-3-11	
Ethyl Benzene	**ND**	0.11	EPA 8021	8-3-11	8-3-11	
m,p-Xylene	**0.32**	0.11	EPA 8021	8-3-11	8-3-11	
o-Xylene	**0.21**	0.11	EPA 8021	8-3-11	8-3-11	
Gasoline	**ND**	11	NWTPH-Gx	8-3-11	8-3-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*68-124*				

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0803S2					
Benzene	**ND**	0.020	EPA 8021	8-3-11	8-3-11	
Toluene	**ND**	0.050	EPA 8021	8-3-11	8-3-11	
Ethyl Benzene	**ND**	0.050	EPA 8021	8-3-11	8-3-11	
m,p-Xylene	**ND**	0.050	EPA 8021	8-3-11	8-3-11	
o-Xylene	**ND**	0.050	EPA 8021	8-3-11	8-3-11	
Gasoline	**ND**	5.0	NWTPH-Gx	8-3-11	8-3-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*68-124*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-018-02										
	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						*108*	*106*	*68-124*			
MATRIX SPIKES											
Laboratory ID:	08-018-02										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**0.995**	**1.04**	1.00	1.00	ND	**100**	**104**	79-121	4	10	
Toluene	**1.02**	**1.07**	1.00	1.00	ND	**102**	**107**	83-121	5	14	
Ethyl Benzene	**1.00**	**1.07**	1.00	1.00	ND	**100**	**107**	83-123	7	9	
m,p-Xylene	**0.996**	**1.06**	1.00	1.00	ND	**100**	**106**	84-123	6	10	
o-Xylene	**0.995**	**1.06**	1.00	1.00	ND	**100**	**106**	82-124	6	10	
Surrogate:											
Fluorobenzene						*103*	*106*	*68-124*			

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW4-5.0**					
Laboratory ID:	08-008-01					
Diesel Range Organics	**ND**	51	NWTPH-Dx	8-5-11	8-6-11	
Lube Oil	**180**	100	NWTPH-Dx	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				
Client ID:	**MW10-3.5**					
Laboratory ID:	08-008-02					
Diesel Range Organics	**4100**	160	NWTPH-Dx	8-5-11	8-6-11	
Lube Oil	**1000**	320	NWTPH-Dx	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				
Client ID:	**MW12-3.0**					
Laboratory ID:	08-008-03					
Diesel Range Organics	**450**	140	NWTPH-Dx	8-5-11	8-6-11	
Lube Oil	**880**	270	NWTPH-Dx	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**MW13-3.5**					
Laboratory ID:	08-008-04					
Diesel Range Organics	**8600**	280	NWTPH-Dx	8-5-11	8-6-11	
Lube Oil	**13000**	570	NWTPH-Dx	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**MW14-2.0**					
Laboratory ID:	08-008-05					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**MW16D-9.0**					
Laboratory ID:	08-008-11					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil	**110**	62	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**B44-2.5**					
Laboratory ID:	08-008-12					
Diesel Range Organics	**ND**	28	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil	**66**	56	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0805S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-5-11	8-5-11	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	08-008-12						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil	**59.0**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*98* *96*	*50-150*			

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B44-072911-GW**					
Laboratory ID:	08-008-15					
Diesel Range Organics	**13**	0.28	NWTPH-Dx	8-4-11	8-4-11	
Lube Oil	**4.3**	0.44	NWTPH-Dx	8-4-11	8-4-11	N1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0804W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-4-11	8-4-11	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-4-11	8-4-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	07-202-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*98* *93*	*50-150*			

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW12-3.0**					
Laboratory ID:	08-008-03					
Naphthalene	**0.083**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**0.090**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**ND**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**0.045**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**0.081**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**0.075**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**0.069**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.050**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**0.044**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.051**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.042**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.063**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.052**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**ND**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.059**	0.036	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*68*	*43 - 109*				
Pyrene-d10	*86*	*38 - 128*				
Terphenyl-d14	*75*	*33 - 119*				

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0805S2					
Naphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Acenaphthylene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Acenaphthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Fluorene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Phenanthrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Chrysene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270/SIM	8-5-11	8-6-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*43 - 109*				
Pyrene-d10	*74*	*38 - 128*				
Terphenyl-d14	*74*	*33 - 119*				

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

PAHs by EPA 8270D/SIM
MS/MSD QUALITY CONTROL
(with silica gel clean-up)

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-061-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0608**	**0.0644**	0.0833	0.0833	ND	73	77	39 - 110	6	21	
Acenaphthylene	**0.0609**	**0.0624**	0.0833	0.0833	ND	73	75	47 - 124	2	21	
Acenaphthene	**0.0634**	**0.0665**	0.0833	0.0833	ND	76	80	50 - 120	5	20	
Fluorene	**0.0631**	**0.0661**	0.0833	0.0833	ND	76	79	52 - 126	5	21	
Phenanthrene	**0.0695**	**0.0655**	0.0833	0.0833	ND	83	79	41 - 130	6	22	
Anthracene	**0.0621**	**0.0631**	0.0833	0.0833	ND	75	76	48 - 124	2	23	
Fluoranthene	**0.0668**	**0.0644**	0.0833	0.0833	ND	80	77	40 - 137	4	23	
Pyrene	**0.0679**	**0.0648**	0.0833	0.0833	ND	82	78	36 - 139	5	23	
Benzo[a]anthracene	**0.0566**	**0.0487**	0.0833	0.0833	ND	68	58	43 - 127	15	21	
Chrysene	**0.0587**	**0.0527**	0.0833	0.0833	ND	70	63	41 - 133	11	19	
Benzo[b]fluoranthene	**0.0516**	**0.0578**	0.0833	0.0833	ND	62	69	40 - 132	11	25	
Benzo(j,k)fluoranthene	**0.0521**	**0.0550**	0.0833	0.0833	ND	63	66	35 - 132	5	25	
Benzo[a]pyrene	**0.0544**	**0.0566**	0.0833	0.0833	ND	65	68	37 - 131	4	26	
Indeno(1,2,3-c,d)pyrene	**0.0527**	**0.0554**	0.0833	0.0833	ND	63	67	39 - 134	5	23	
Dibenz[a,h]anthracene	**0.0557**	**0.0586**	0.0833	0.0833	ND	67	70	40 - 137	5	21	
Benzo[g,h,i]perylene	**0.0537**	**0.0577**	0.0833	0.0833	ND	64	69	35 - 135	7	22	
Surrogate:											
2-Fluorobiphenyl						*77*	*78*	*43 - 109*			
Pyrene-d10						*76*	*76*	*38 - 128*			
Terphenyl-d14						*69*	*59*	*33 - 119*			

Date of Report: August 15, 2011
Samples Submitted: August 1, 2011
Laboratory Reference: 1108-008
Project: 525-006

% MOISTURE

Date Analyzed: 8-3&5-11

Client ID	Lab ID	% Moisture
MW4-5.0	08-008-01	51
MW10-3.5	08-008-02	22
MW12-3.0	08-008-03	9
MW13-3.5	08-008-04	11
MW14-2.0	08-008-05	21
MW16D-9.0	08-008-11	19
B44-2.5	08-008-12	11

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 08-008

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	% Moisture
1	MW4-5.0	7/28/11	820	S	3		X	X													10
2	MW10-3.5		1010	S	2			X													
3	MW12-3.0		1135	S	3		X	X				X									
4	MW13-3.5		1325	S	2		X	X													
5	MW14-2.0	↓	1445	S	1		X	X													
6	MW15A-7.5	7/29/11	820	S	2																
7	MW15B-7.0		845	S	2																
8	MW16A-3.5		1135	S	2																
9	MW16B-6.0		1150	S	2																
10	MW16C-2.5	↓	1205	S	2																

	Signature	Company	Date	Time	Comments/Special Instructions:
Relinquished by	Ken Scott	FARALLON	8/1/11	1215	
Received by		OBC	8/1/11	1445	
Relinquished by					
Received by					
Relinquished by					
Received by					

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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Chain of Custody

OnSite Environmental Inc.
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • Fax: (425) 885-4603

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Day
- ☐ 3 Day
- ☒ Standard (7 working days)
- ☐ _____ (other)

Laboratory Number: 08-008

Requested Analysis

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles by 8260B	Halogenated Volatiles by 8260B	Semivolatiles by 8270C	PAHs by 8270C / SIM	PCBs by 8082	Pesticides by 8081A	Herbicides by 8151A	Total RCRA Metals (8)	TCLP Metals	HEM by 1664	VPH	EPH	% Moisture
11	MW16D-9.0	7/29/11	1245	S	2			X													X
12	B44-2.5		1520	S	2			X													X
13	B44-6.0		1525	S	2																
14	B44-10.0		1535	S	2																
15	B44-072911-GW		1555	W	2			X													

	Signature	Company	Date	Time
Relinquished by	Ken Scott	FARALLON	8/1/11	1215
Received by		ODE	8/1/11	1445
Relinquished by				
Received by				
Relinquished by				
Received by				

Comments/Special Instructions:

Reviewed by/Date

Reviewed by/Date

Chromatograms with final report ☐

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OnSite Environmental Inc.

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

August 16, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1108-048

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on August 4, 2011.

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

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

Case Narrative

Samples were collected on August 2 and 3, 2011 and received by the laboratory on August 4, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Total Metals EPA 6010B/200.8/7470A Analysis

The practical quantitation limit of Selenium for sample MW-6-080211 is elevated due to interferences present in the sample.

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.

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-080211**					
Laboratory ID:	08-048-02					
Benzene	**16**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**17**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**14**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**3.2**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**1400**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-2-080211**					
Laboratory ID:	08-048-03					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Client ID:	**MW-3-080211**					
Laboratory ID:	08-048-04					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*73-121*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-4-080211**					
Laboratory ID:	08-048-05					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				
Client ID:	**MW-6-080211**					
Laboratory ID:	08-048-06					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**140**	100	NWTPH-Gx	8-5-11	8-5-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*73-121*				
Client ID:	**MW-15-080311**					
Laboratory ID:	08-048-10					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**130**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*73-121*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-9-080311**					
Laboratory ID:	08-048-11					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**100**	100	NWTPH-Gx	8-5-11	8-5-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*73-121*				
Client ID:	**MW-5-080311**					
Laboratory ID:	08-048-12					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**190**	100	NWTPH-Gx	8-5-11	8-5-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-7-080311**					
Laboratory ID:	08-048-13					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**240**	100	NWTPH-Gx	8-5-11	8-5-11	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*73-121*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-10-080311**					
Laboratory ID:	08-048-14					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Client ID:	**MW-12-080311**					
Laboratory ID:	08-048-15					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*73-121*				
Client ID:	**MW-13-080311**					
Laboratory ID:	08-048-16					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0805W1					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*99*	*73-121*				
Laboratory ID:	MB0805W2					
Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Toluene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Ethyl Benzene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
m,p-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
o-Xylene	**ND**	1.0	EPA 8021	8-5-11	8-5-11	
Gasoline	**ND**	100	NWTPH-Gx	8-5-11	8-5-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*73-121*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-048-03										
	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						*93*	*88*	*73-121*			
Laboratory ID:	08-048-04										
	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						*98*	*91*	*73-121*			
MATRIX SPIKES											
Laboratory ID:	08-048-03										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**52.7**	**53.0**	50.0	50.0	ND	**105**	**106**	82-120	1	8	
Toluene	**54.3**	**54.5**	50.0	50.0	ND	**109**	**109**	84-119	0	8	
Ethyl Benzene	**53.8**	**54.1**	50.0	50.0	ND	**108**	**108**	84-122	1	9	
m,p-Xylene	**52.5**	**52.6**	50.0	50.0	ND	**105**	**105**	85-121	0	9	
o-Xylene	**53.1**	**52.9**	50.0	50.0	ND	**106**	**106**	84-121	0	9	
Surrogate:											
Fluorobenzene						*99*	*101*	*73-121*			

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-080211**					
Laboratory ID:	08-048-02					
Diesel Range Organics	**ND**	0.58	NWTPH-Dx	8-8-11	8-8-11	U1
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				
Client ID:	**MW-2-080211**					
Laboratory ID:	08-048-03					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				
Client ID:	**MW-3-080211**					
Laboratory ID:	08-048-04					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**MW-4-080211**					
Laboratory ID:	08-048-05					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**MW-6-080211**					
Laboratory ID:	08-048-06					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**MW-8-080211**					
Laboratory ID:	08-048-07					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-16-080211**					
Laboratory ID:	08-048-08					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*107*	*50-150*				
Client ID:	**MW-14-080211**					
Laboratory ID:	08-048-09					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				
Client ID:	**MW-15-080311**					
Laboratory ID:	08-048-10					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				
Client ID:	**MW-9-080311**					
Laboratory ID:	08-048-11					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				
Client ID:	**MW-5-080311**					
Laboratory ID:	08-048-12					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-7-080311**					
Laboratory ID:	08-048-13					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				

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Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-10-080311**					
Laboratory ID:	08-048-14					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*102*	*50-150*				
Client ID:	**MW-12-080311**					
Laboratory ID:	08-048-15					
Diesel Range Organics	**0.31**	0.27	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.44	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**MW-13-080311**					
Laboratory ID:	08-048-16					
Diesel Range Organics	**0.40**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**MW-17-080311**					
Laboratory ID:	08-048-17					
Diesel Range Organics	**1.4**	0.26	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
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Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0808W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-8-11	8-8-11	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	08-049-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*86*	*50-150*			
Laboratory ID:	08-048-02						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	U1
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*103*	*50-150*			

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-4-080211**					
Laboratory ID:	08-048-05					
Naphthalene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.10	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.029**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**0.011**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.019**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.021**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.031**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.028**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.024**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.025**	0.010	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*55*	*38 - 105*				
Pyrene-d10	*94*	*37 - 121*				
Terphenyl-d14	*70*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6-080211**					
Laboratory ID:	08-048-06					
Naphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.025**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**ND**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.017**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.019**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.027**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.026**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.024**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.021**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*55*	*38 - 105*				
Pyrene-d10	*104*	*37 - 121*				
Terphenyl-d14	*86*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-9-080311**					
Laboratory ID:	08-048-11					
Naphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.024**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**ND**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.017**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.019**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.027**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.025**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.024**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.022**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*38 - 105*				
Pyrene-d10	*108*	*37 - 121*				
Terphenyl-d14	*78*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-5-080311**					
Laboratory ID:	08-048-12					
Naphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**0.52**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**0.13**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**0.15**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.026**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**ND**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.019**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.019**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.028**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.027**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.024**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.022**	0.0096	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*63*	*38 - 105*				
Pyrene-d10	*92*	*37 - 121*				
Terphenyl-d14	*71*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-7-080311**					
Laboratory ID:	08-048-13					
Naphthalene	**0.12**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**0.23**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**3.2**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**0.29**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**0.65**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**0.13**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.095	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.016**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**ND**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.018**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.017**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.027**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.026**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.024**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.021**	0.0095	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*38 - 105*				
Pyrene-d10	*99*	*37 - 121*				
Terphenyl-d14	*65*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-12-080311**					
Laboratory ID:	08-048-15					
Naphthalene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
2-Methylnaphthalene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
1-Methylnaphthalene	**0.18**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthylene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Acenaphthene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Fluorene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Phenanthrene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Anthracene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Fluoranthene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Pyrene	**ND**	0.098	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]anthracene	**0.027**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Chrysene	**0.012**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[b]fluoranthene	**0.021**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Benzo(j,k)fluoranthene	**0.021**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[a]pyrene	**0.032**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Indeno(1,2,3-c,d)pyrene	**0.028**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Dibenz[a,h]anthracene	**0.025**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Benzo[g,h,i]perylene	**0.026**	0.0098	EPA 8270/SIM	8-5-11	8-11-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*38 - 105*				
Pyrene-d10	*105*	*37 - 121*				
Terphenyl-d14	*73*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0805W1					
Naphthalene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
2-Methylnaphthalene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
1-Methylnaphthalene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Acenaphthylene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Acenaphthene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Fluorene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Phenanthrene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Anthracene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Fluoranthene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Pyrene	**ND**	0.10	EPA 8270/SIM	8-8-11	8-8-11	
Benzo[a]anthracene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Chrysene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Benzo[b]fluoranthene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Benzo(j,k)fluoranthene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Benzo[a]pyrene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Indeno(1,2,3-c,d)pyrene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Dibenz[a,h]anthracene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Benzo[g,h,i]perylene	**ND**	0.010	EPA 8270/SIM	8-8-11	8-8-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*38 - 105*				
Pyrene-d10	*80*	*37 - 121*				
Terphenyl-d14	*82*	*32 - 112*				

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

PAHs by EPA 8270D/SIM
SB/SBD QUALITY CONTROL
(with silica gel clean-up)

Matrix: Water
Units: ug/L

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0805W1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.295**	**0.354**	0.500	0.500	59	71	38 - 110	18	35	
Acenaphthylene	**0.349**	**0.396**	0.500	0.500	70	79	47 - 120	13	30	
Acenaphthene	**0.340**	**0.393**	0.500	0.500	68	79	46 - 113	14	26	
Fluorene	**0.362**	**0.410**	0.500	0.500	72	82	60 - 104	12	25	
Phenanthrene	**0.394**	**0.423**	0.500	0.500	79	85	61 - 99	7	19	
Anthracene	**0.400**	**0.427**	0.500	0.500	80	85	55 - 122	7	19	
Fluoranthene	**0.432**	**0.445**	0.500	0.500	86	89	58 - 129	3	18	
Pyrene	**0.426**	**0.441**	0.500	0.500	85	88	57 - 126	3	22	
Benzo[a]anthracene	**0.399**	**0.395**	0.500	0.500	80	79	51 - 124	1	18	
Chrysene	**0.425**	**0.430**	0.500	0.500	85	86	53 - 123	1	20	
Benzo[b]fluoranthene	**0.297**	**0.263**	0.500	0.500	59	53	53 - 126	12	18	
Benzo(j,k)fluoranthene	**0.294**	**0.256**	0.500	0.500	59	51	51 - 126	14	23	
Benzo[a]pyrene	**0.351**	**0.323**	0.500	0.500	70	65	52 - 127	8	21	
Indeno(1,2,3-c,d)pyrene	**0.409**	**0.361**	0.500	0.500	82	72	49 - 123	12	26	
Dibenz[a,h]anthracene	**0.411**	**0.322**	0.500	0.500	82	64	39 - 125	24	31	
Benzo[g,h,i]perylene	**0.349**	**0.328**	0.500	0.500	70	66	40 - 125	6	30	
Surrogate:										
2-Fluorobiphenyl					*64*	*76*	*38 - 105*			
Pyrene-d10					*85*	*89*	*37 - 121*			
Terphenyl-d14					*87*	*85*	*32 - 112*			

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

DISSOLVED METALS
EPA 200.8/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-048-05					
Client ID:	**MW-4-080211**					
Arsenic	**ND**	3.0	200.8		8-15-11	
Barium	**ND**	25	200.8		8-15-11	
Cadmium	**ND**	4.0	200.8		8-15-11	
Chromium	**ND**	10	200.8		8-15-11	
Lead	**ND**	1.0	200.8		8-15-11	
Mercury	**ND**	0.50	7470A		8-8-11	
Selenium	**ND**	5.0	200.8		8-15-11	
Silver	**ND**	10	200.8		8-15-11	
Lab ID:	08-048-06					
Client ID:	**MW-6-080211**					
Arsenic	**ND**	3.0	200.8		8-15-11	
Barium	**140**	25	200.8		8-15-11	
Cadmium	**ND**	4.0	200.8		8-15-11	
Chromium	**ND**	10	200.8		8-15-11	
Lead	**ND**	1.0	200.8		8-15-11	
Mercury	**ND**	0.50	7470A		8-8-11	
Selenium	**ND**	11	200.8		8-15-11	U1
Silver	**ND**	10	200.8		8-15-11	

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

DISSOLVED METALS
EPA 200.8/7470A

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-048-11					
Client ID:	**MW-9-080311**					
Arsenic	**ND**	3.0	200.8		8-15-11	
Barium	**130**	25	200.8		8-15-11	
Cadmium	**ND**	4.0	200.8		8-15-11	
Chromium	**ND**	10	200.8		8-15-11	
Lead	**ND**	1.0	200.8		8-15-11	
Mercury	**ND**	0.50	7470A		8-8-11	
Selenium	**ND**	5.0	200.8		8-15-11	
Silver	**ND**	10	200.8		8-15-11	
Lab ID:	08-048-12					
Client ID:	**MW-5-080311**					
Arsenic	**ND**	3.0	200.8		8-15-11	
Barium	**91**	25	200.8		8-15-11	
Cadmium	**ND**	4.0	200.8		8-15-11	
Chromium	**ND**	10	200.8		8-15-11	
Lead	**ND**	1.0	200.8		8-15-11	
Mercury	**ND**	0.50	7470A		8-8-11	
Selenium	**ND**	5.0	200.8		8-15-11	
Silver	**ND**	10	200.8		8-15-11	

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

DISSOLVED METALS
EPA 200.8/7470A
METHOD BLANK QUALITY CONTROL

Date Analyzed: 8-8&15-11

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0808D1&MB0815D1

Analyte	Method	Result	PQL
Arsenic	200.8	**ND**	3.0
Barium	200.8	**ND**	25
Cadmium	200.8	**ND**	4.0
Chromium	200.8	**ND**	10
Lead	200.8	**ND**	1.0
Mercury	7470A	**ND**	0.50
Selenium	200.8	**ND**	5.0
Silver	200.8	**ND**	10

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

DISSOLVED METALS
EPA 200.8/7470A
DUPLICATE QUALITY CONTROL

Date Analyzed: 8-8&15-11

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-048-05

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	3.0	
Barium	**ND**	**ND**	NA	25	
Cadmium	**ND**	**ND**	NA	4.0	
Chromium	**ND**	**ND**	NA	10	
Lead	**ND**	**ND**	NA	1.0	
Mercury	**ND**	**ND**	NA	0.50	
Selenium	**ND**	**ND**	NA	5.0	
Silver	**ND**	**ND**	NA	10	

Date of Report: August 16, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048
Project: 525-006

DISSOLVED METALS
EPA 200.8/7470A
MS/MSD QUALITY CONTROL

Date Analyzed: 8-8&15-11

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-048-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**101**	101	**101**	101	0	
Barium	100	**118**	118	**117**	117	1	
Cadmium	100	**101**	101	**99.1**	99	2	
Chromium	100	**100**	100	**100**	100	0	
Lead	100	**100**	100	**99.3**	99	1	
Mercury	12.5	**12.0**	96	**12.1**	97	1	
Selenium	100	**98.6**	99	**98.4**	98	0	
Silver	100	**92.8**	93	**92.1**	92	1	

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

Chain of Custody

OnSite Environmental Inc.
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Phone: (425) 883-3881 • www.onsite-env.com

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 08-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Dissolved metals RCRA 8						% Moisture
1	MW-11-080211-LNAPL	8/2/11	1020	WO	1																						
2	MW-1-080211		1145	W	5		X		X																		
3	MW-2-080211		1235	W	5		X		X																		
4	MW-3-080211		1325	W	5		X		X																		
5	MW-4-080211		1495	W	8		X		X				X								X						
6	MW-6-080211		1455	W	8		X		X				X								X						
7	MW-8-080211		1545	W	2				X																		
8	MW-16-080211		1615	W	2				X																		
9	MW-14-080211	↓	1705	W	2				X																		
10	MW-15-080311	8/3/11	850	W	5		X		X																		

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	8/4/11	930
Received		CRE	8/4/11	1330
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

All metal samples field-filtered

Chromatograms with final report ☐

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKos Feketé
Sampled by: Ken Scott

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: 08-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Dissolved metals RCRA 8						% Moisture
11	MW-9-080311	8/3/11	945	W	8		X		X				X								X						
12	MW-5-080311		1055	W	8		X		X				X								X						
13	MW-7-080311		1155	W	7		X		X				X														
14	MW-10-080311		1245	W	5		X		X																		
15	MW-12-080311		1345	W	7		X		X				X														
16	MW-13-080311		1435	W	5		X		X																		
17	MW-17-080311		1515	W	2				X																		
18	Trip blank	↓		W	2																						
										(K)																	

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	8/4/11	930
Received		GSE	8/4/11	1330
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

see page #1

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

August 23, 2011

Akos Fekete
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1108-048B

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on August 4, 2011.

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

Date of Report: August 23, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048B
Project: 525-006

Case Narrative

Samples were collected on August 2 and 3, 2011 and received by the laboratory on August 4, 2011. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: August 23, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048B
Project: 525-006

NWTPH-HCID

Matrix: Product
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-11-080211-LNAPL**					
Laboratory ID:	08-048-01					
Gasoline Range Organics	**ND**	9000	NWTPH-HCID	8-19-11	8-19-11	U1
Diesel Range Organics	**Detected**	18000	NWTPH-HCID	8-19-11	8-19-11	
Lube Oil	**Detected**	36000	NWTPH-HCID	8-19-11	8-19-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

Date of Report: August 23, 2011
Samples Submitted: August 4, 2011
Laboratory Reference: 1108-048B
Project: 525-006

NWTPH-HCID
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0819S1					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	8-19-11	8-19-11	
Diesel Range Organics	**ND**	50	NWTPH-HCID	8-19-11	8-19-11	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	8-19-11	8-19-11	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

Chain of Custody

Page 1 of 2

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

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 08-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Dissolved metals RCRA 8							% Moisture
1	MW-11-080211-LNAPL	8/2/11	1020	W	1	~~O~~	~~X~~		~~X~~																			
2	MW-1-080211		1145	W	5		X		X																			
3	MW-2-080211		1235	W	5		X		X																			
4	MW-3-080211		1325	W	5		X		X																			
5	MW-4-080211		1495	W	8		X		X				X								X							
6	MW-6-080211		1455	W	8		X		X				X								X							
7	MW-8-080211		1545	W	2				X																			
8	MW-16-080211		1615	W	2				X																			
9	MW-14-080211	↓	1705	W	2				X																			
10	MW-15-080311	8/3/11	850	W	5		X		X																			

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	8/4/11	930
Received		CORE	8/4/11	1330
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
All metal samples field-filtered
~~Added 8/16/11. DB (STA)~~ Cancelled 8/17/11 Insufficient Sample
Added 8/17/11. DB (STA)

Chromatograms with final report ☐

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: AKOS FEKETE
Sampled by: Ken Scott

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: 08-048

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA / MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664	Dissolved metals RCRA 8							% Moisture
11	MW-9-080311	8/3/11	945	W	8		X		X				X								X							
12	MW-5-080311		1055	W	8		X		X				X								X							
13	MW-7-080311		1155	W	7		X		X				X															
14	MW-10-080311		1245	W	5		X		X																			
15	MW-12-080311		1345	W	7		X		X				X															
16	MW-13-080311		1435	W	5		X		X																			
17	MW-17-080311		1515	W	2				X																			
18	Trip blank			W	2																							
										K																		

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	8/4/11	930
Received		GSE	8/4/11	1330
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

see page #1

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

March 30, 2012

Akos Fekete
Farallon Consulting, LLC
Queen Anne Square East Bldg.
200 West Mercer Street, Suite 302
Seattle, WA 98119

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1203-187

Dear Akos:

Enclosed are the analytical results and associated quality control data for samples submitted on March 23, 2012.

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

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

Case Narrative

Samples were collected on March 22 and 23, 2012 and received by the laboratory on March 23, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-032212**					
Laboratory ID:	03-187-01					
Benzene	**16**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**1.3**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**19**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**11**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**2.8**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**1600**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*73-121*				
Client ID:	**MW-2-032212**					
Laboratory ID:	03-187-02					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Client ID:	**MW-3-032212**					
Laboratory ID:	03-187-03					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-4-032212**					
Laboratory ID:	03-187-04					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-6-032212**					
Laboratory ID:	03-187-05					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-8-032212**					
Laboratory ID:	03-187-06					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-16-032212**					
Laboratory ID:	03-187-07					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Client ID:	**MW-14-032212**					
Laboratory ID:	03-187-08					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-15-032212**					
Laboratory ID:	03-187-09					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-9-032312**					
Laboratory ID:	03-187-10					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Client ID:	**MW-5-032312**					
Laboratory ID:	03-187-11					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				
Client ID:	**MW-7-032312**					
Laboratory ID:	03-187-12					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**170**	100	NWTPH-Gx	3-28-12	3-28-12	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-10-032312**					
Laboratory ID:	03-187-13					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				
Client ID:	**MW-12-032312**					
Laboratory ID:	03-187-14					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*73-121*				
Client ID:	**MW-13-032312**					
Laboratory ID:	03-187-15					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-17-032312**					
Laboratory ID:	03-187-16					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				
Client ID:	**MW-11-032312**					
Laboratory ID:	03-187-17					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0328W1					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*73-121*				
Laboratory ID:	MB0328W2					
Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Toluene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Ethyl Benzene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
m,p-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
o-Xylene	**ND**	1.0	EPA 8021	3-28-12	3-28-12	
Gasoline	**ND**	100	NWTPH-Gx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*73-121*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	03-187-02										
	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						*93*	*92*	*73-121*			
Laboratory ID:	03-187-04										
	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						*92*	*93*	*73-121*			
MATRIX SPIKES											
Laboratory ID:	03-187-02										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**49.2**	**51.5**	50.0	50.0	ND	**98**	**103**	82-120	5	8	
Toluene	**49.8**	**53.7**	50.0	50.0	ND	**100**	**107**	84-119	8	8	
Ethyl Benzene	**50.3**	**52.2**	50.0	50.0	ND	**101**	**104**	84-122	4	9	
m,p-Xylene	**50.8**	**54.0**	50.0	50.0	ND	**102**	**108**	85-121	6	9	
o-Xylene	**50.9**	**52.0**	50.0	50.0	ND	**102**	**104**	84-121	2	9	
Surrogate:											
Fluorobenzene						*94*	*92*	*73-121*			

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-1-032212**					
Laboratory ID:	03-187-01					
Diesel Range Organics	**ND**	0.71	NWTPH-Dx	3-28-12	3-28-12	U1
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**MW-2-032212**					
Laboratory ID:	03-187-02					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				
Client ID:	**MW-3-032212**					
Laboratory ID:	03-187-03					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**MW-4-032212**					
Laboratory ID:	03-187-04					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**MW-6-032212**					
Laboratory ID:	03-187-05					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW-8-032212**					
Laboratory ID:	03-187-06					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-16-032212**					
Laboratory ID:	03-187-07					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-14-032212**					
Laboratory ID:	03-187-08					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**MW-15-032212**					
Laboratory ID:	03-187-09					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**MW-9-032312**					
Laboratory ID:	03-187-10					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**MW-5-032312**					
Laboratory ID:	03-187-11					
Diesel Range Organics	**ND**	0.27	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.43	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				
Client ID:	**MW-7-032312**					
Laboratory ID:	03-187-12					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-10-032312**					
Laboratory ID:	03-187-13					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-12-032312**					
Laboratory ID:	03-187-14					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-13-032312**					
Laboratory ID:	03-187-15					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**MW-17-032312**					
Laboratory ID:	03-187-16					
Diesel Range Organics	**1.0**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil	**0.58**	0.42	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				
Client ID:	**MW-11-032312**					
Laboratory ID:	03-187-17					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil	**0.44**	0.41	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				

Date of Report: March 30, 2012
Samples Submitted: March 23, 2012
Laboratory Reference: 1203-187
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0328W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	3-28-12	3-28-12	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	3-28-12	3-28-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

Analyte	Result		Recovery		Limits	RPD	Limit	Flags
DUPLICATE								
Laboratory ID:	03-187-01							
	ORIG	DUP						
Diesel Range Organics	**ND**	**ND**				NA	NA	U1
Lube Oil Range Organics	**ND**	**ND**				NA	NA	
Surrogate:								
o-Terphenyl			*88*	*88*	*50-150*			
Laboratory ID:	03-187-05							
	ORIG	DUP						
Diesel Range Organics	**ND**	**ND**				NA	NA	
Lube Oil Range Organics	**ND**	**ND**				NA	NA	
Surrogate:								
o-Terphenyl			*94*	*95*	*50-150*			

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.

Y - Sample extract treated with an acid/silica gel cleanup procedure.

Z -

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

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: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: Akos Fekete
Sampled by: Ken Scott

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: 03-187

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664					% Moisture
	MW-1-032212	3/22/12	1015	W	5		X		X																	
	MW-2-032212		1055	W	5		X		X																	
	MW-3-032212		1135	W	5		X		X																	
	MW-4-032212		1220	W	5		X		X																	
	MW-6-032212		1310	W	5		X		X																	
	MW-8-032212		1345	W	5		X		X																	
	MW-16-032212		1430	W	5		X		X																	
	MW-14-032212		1505	W	5		X		X																	
	MW-15-032212	↓	1540	W	5		X		X																	
	MW-9-032312	3/23/12	850	W	5		X		X																	

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	3/23/12	1730
Received		OnSite Env.	3/23/12	1730
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

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

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: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: Akos Fekete
Sampled by: Ken Scott

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: 03-187

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664					% Moisture
	MW-5-032312	3/23/12	930	W	5		X		X																	
	MW-7-032312		1010	W	5		X		X																	
	MW-10-032312		1100	W	5		X		X																	
	MW-12-032312		1145	W	5		X		X																	
	MW-13-032312		1225	W	5		X		X																	
	MW-17-032312		1310	W	5		X		X																	
	MW-11-032312		1405	W	5		X		X																	

KS

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Scott	FARALLON	3/23/12	1730	
Received		Onsite Env	3/23/12	1730	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

December 10, 2012

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1211-230

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on November 30, 2012.

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

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

Case Narrative

Samples were collected on November 30, 2012 and received by the laboratory on November 30, 2012. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

The MTCA Method A clean-up level for Benzene is not achievable in samples B27A-10.5 and B9A-9.0 due to their high moisture content.

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.

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B27A-3.5**					
Laboratory ID:	11-230-01					
Gasoline	**ND**	5.2	NWTPH-Gx	12-3-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*70-132*				
Client ID:	**B27A-10.5**					
Laboratory ID:	11-230-03					
Benzene	**ND**	0.046	EPA 8021B	12-3-12	12-3-12	
Toluene	**ND**	0.23	EPA 8021B	12-3-12	12-3-12	
Ethyl Benzene	**ND**	0.23	EPA 8021B	12-3-12	12-3-12	
m,p-Xylene	**ND**	0.23	EPA 8021B	12-3-12	12-3-12	
o-Xylene	**ND**	0.23	EPA 8021B	12-3-12	12-3-12	
Gasoline	**ND**	23	NWTPH-Gx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*70-132*				
Client ID:	**B9A-5.0**					
Laboratory ID:	11-230-05					
Gasoline	**ND**	8.1	NWTPH-Gx	12-3-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*114*	*70-132*				
Client ID:	**B9A-9.0**					
Laboratory ID:	11-230-06					
Benzene	**ND**	0.034	EPA 8021B	12-3-12	12-3-12	
Toluene	**ND**	0.17	EPA 8021B	12-3-12	12-3-12	
Ethyl Benzene	**ND**	0.17	EPA 8021B	12-3-12	12-3-12	
m,p-Xylene	**ND**	0.17	EPA 8021B	12-3-12	12-3-12	
o-Xylene	**ND**	0.17	EPA 8021B	12-3-12	12-3-12	
Gasoline	**ND**	17	NWTPH-Gx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*122*	*70-132*				

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1203S2					
Benzene	**ND**	0.020	EPA 8021B	12-3-12	12-3-12	
Toluene	**ND**	0.050	EPA 8021B	12-3-12	12-3-12	
Ethyl Benzene	**ND**	0.050	EPA 8021B	12-3-12	12-3-12	
m,p-Xylene	**ND**	0.050	EPA 8021B	12-3-12	12-3-12	
o-Xylene	**ND**	0.050	EPA 8021B	12-3-12	12-3-12	
Gasoline	**ND**	5.0	NWTPH-Gx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*107*	*70-132*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	12-004-01										
	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						*115*	*114*	*70-132*			
SPIKE BLANKS											
Laboratory ID:	SB1203S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.02**	**1.04**	1.00	1.00		**102**	**104**	71-125	2	11	
Toluene	**1.03**	**1.05**	1.00	1.00		**103**	**105**	77-125	2	11	
Ethyl Benzene	**1.03**	**1.03**	1.00	1.00		**103**	**103**	76-125	0	10	
m,p-Xylene	**1.04**	**1.03**	1.00	1.00		**104**	**103**	78-124	1	9	
o-Xylene	**1.00**	**0.985**	1.00	1.00		**100**	**99**	77-123	2	9	
Surrogate:											
Fluorobenzene						*105*	*106*	*70-132*			

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

NWTPH-Dx
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**S-S-5-120112**					
Laboratory ID:	12-003-07					
Diesel Range Organics	**ND**	27	NWTPH-Dx	12-3-12	12-3-12	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*124*	*50-150*				
Client ID:	**S-N-4-120112**					
Laboratory ID:	12-003-09					
Diesel Fuel #2	**8500**	140	NWTPH-Dx	12-3-12	12-4-12	
Lube Oil Range Organics	**ND**	420	NWTPH-Dx	12-3-12	12-4-12	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				F
Client ID:	**S-E-2-120112**					
Laboratory ID:	12-003-10					
Diesel Fuel #2	**44**	29	NWTPH-Dx	12-3-12	12-3-12	
Lube Oil Range Organics	**ND**	58	NWTPH-Dx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*118*	*50-150*				

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

NWTPH-Dx
QUALITY CONTROL
(with acid/silica gel clean-up)

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1203S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	12-3-12	12-3-12	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	12-3-12	12-3-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				

Analyte	Result		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	12-002-01							
	ORIG	DUP						
Diesel Range Organics	**ND**	**ND**				NA	NA	U1
Lube Oil	**17500**	**16900**				3	NA	
Surrogate:								
o-Terphenyl			---	---	*50-150*			S,S

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B27A-3.5**					
Laboratory ID:	11-230-01					
Aliphatic C5-C6	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C6-C8	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C8-C10	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C10-C12	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aliphatic:	**NA**		NWTPH-VPH	12-3-12	12-4-12	
Aromatic C8-C10	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C10-C12	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C12-C13	**6.5**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aromatic:	**6.5**		NWTPH-VPH	12-3-12	12-4-12	
Methyl t-butyl ether	**ND**	0.052	EPA 8021B	12-3-12	12-4-12	
Benzene	**ND**	0.020	EPA 8021B	12-3-12	12-4-12	
Toluene	**ND**	0.052	EPA 8021B	12-3-12	12-4-12	
Ethylbenzene	**ND**	0.052	EPA 8021B	12-3-12	12-4-12	
m,p-Xylene	**ND**	0.052	EPA 8021B	12-3-12	12-4-12	
o-Xylene	**ND**	0.052	EPA 8021B	12-3-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*70-132*				

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

VOLATILE PETROLEUM HYDROCARBONS

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B9A-5.0**					
Laboratory ID:	11-230-05					
Aliphatic C5-C6	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C6-C8	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C8-C10	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C10-C12	**17**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aliphatic:	**17**		NWTPH-VPH	12-3-12	12-4-12	
Aromatic C8-C10	**7.9**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C10-C12	**6.9**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C12-C13	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aromatic:	**15**		NWTPH-VPH	12-3-12	12-4-12	
Methyl t-butyl ether	**ND**	0.081	EPA 8021B	12-3-12	12-4-12	
Benzene	**ND**	0.020	EPA 8021B	12-3-12	12-4-12	
Toluene	**ND**	0.081	EPA 8021B	12-3-12	12-4-12	
Ethylbenzene	**ND**	0.081	EPA 8021B	12-3-12	12-4-12	
m,p-Xylene	**ND**	0.081	EPA 8021B	12-3-12	12-4-12	
o-Xylene	**ND**	0.081	EPA 8021B	12-3-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*114*	*70-132*				

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

VOLATILE PETROLEUM HYDROCARBONS
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1203S2					
Aliphatic C5-C6	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C6-C8	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C8-C10	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aliphatic C10-C12	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aliphatic:	**NA**		NWTPH-VPH	12-3-12	12-4-12	
Aromatic C8-C10	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C10-C12	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Aromatic C12-C13	**ND**	5.0	NWTPH-VPH	12-3-12	12-4-12	
Total Aromatic:	**NA**		NWTPH-VPH	12-3-12	12-4-12	
Methyl t-butyl ether	**ND**	0.050	EPA 8021B	12-3-12	12-4-12	
Benzene	**ND**	0.020	EPA 8021B	12-3-12	12-4-12	
Toluene	**ND**	0.050	EPA 8021B	12-3-12	12-4-12	
Ethylbenzene	**ND**	0.050	EPA 8021B	12-3-12	12-4-12	
m,p-Xylene	**ND**	0.050	EPA 8021B	12-3-12	12-4-12	
o-Xylene	**ND**	0.050	EPA 8021B	12-3-12	12-4-12	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*101*	*70-132*				

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

VOLATILE PETROLEUM HYDROCARBONS
DUPLICATE QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	12-004-01									
	ORIG	DUP								
Aliphatic C5-C6	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Aliphatic C6-C8	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Aliphatic C8-C10	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Aliphatic C10-C12	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Total Aliphatic:	**NA**	**NA**	NA	NA		NA	NA	NA	30	
Aromatic C8-C10	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Aromatic C10-C12	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Aromatic C12-C13	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Total Aromatic:	**NA**	**NA**	NA	NA		NA	NA	NA	30	
MTBE	**ND**	**ND**	NA	NA		NA	NA	NA	30	
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	
Surrogate:										
Fluorobenzene						*110* *112*	*70-132*			

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

VOLATILE PETROLEUM HYDROCARBONS
SPIKE BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS											
Laboratory ID:	SB1203S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.999**	**1.04**	1.00	1.00		**100**	**104**	71-125	4	11	
Toluene	**1.02**	**1.06**	1.00	1.00		**102**	**106**	77-125	4	11	
Ethyl Benzene	**1.01**	**1.05**	1.00	1.00		**101**	**105**	76-125	4	10	
m,p-Xylene	**1.02**	**1.06**	1.00	1.00		**102**	**106**	78-124	4	9	
o-Xylene	**0.975**	**1.00**	1.00	1.00		**98**	**100**	77-123	3	9	
Surrogate:											
Fluorobenzene						*105*	*106*	*70-132*			

Date of Report: December 10, 2012
Samples Submitted: November 30, 2012
Laboratory Reference: 1211-230
Project: 525-006

% MOISTURE

Date Analyzed: 12-3-12

Client ID	Lab ID	% Moisture
B27A-3.5	11-230-01	9
B27A-10.5	11-230-03	53
B9A-5.0	11-230-05	26
B9A-9.0	11-230-06	48

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.

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

December 10, 2012

Mr. David Baumeister
OnSite Environmental Inc.
14648 NE 95th Street
Redmond, WA 98052

Dear Mr. Baumeister,

On December 3rd, 2 samples were received by our laboratory and assigned our laboratory project number EV12120002. The project was identified as your Lab Ref #11-230 / Proj #525-006. The sample identification and requested analyses are outlined on the attached chain of custody record.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052	DATE:	12/10/2012
		ALS JOB#:	EV12120002
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	David Baumeister		
CLIENT PROJECT:	Lab Ref #11-230 / Proj #525-006		

CASE NARRATIVE

No sample abnormalities were qualified in this report.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052	DATE:	12/10/2012
		ALS JOB#:	EV12120002
		ALS SAMPLE#:	-01
CLIENT CONTACT:	David Baumeister	DATE RECEIVED:	12/3/2012
CLIENT PROJECT:	Lab Ref #11-230 / Proj #525-006	COLLECTION DATE:	11/30/2012 9:40:00 AM
CLIENT SAMPLE ID	B27A-3.5	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aliphatics	NWEPH	**37**	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aliphatics	NWEPH	**500**	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aliphatics	NWEPH	**460**	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aliphatics	NWEPH	**820**	5.0	1	MG/KG	12/04/2012	EBS
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aromatics	NWEPH	**18**	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aromatics	NWEPH	**370**	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aromatics	NWEPH	**820**	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aromatics	NWEPH	**1400**	5.0	1	MG/KG	12/04/2012	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWEPH	**95.0**	12/04/2012	EBS
p-Terphenyl	NWEPH	**109**	12/04/2012	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052	DATE: ALS JOB#: ALS SAMPLE#:	12/10/2012 EV12120002 -02
CLIENT CONTACT:	David Baumeister	DATE RECEIVED:	12/3/2012
CLIENT PROJECT:	Lab Ref #11-230 / Proj #525-006	COLLECTION DATE:	11/30/2012 11:25:00 AM
CLIENT SAMPLE ID	B9A-5.0	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	**8.4**	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aliphatics	NWEPH	**8.5**	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aliphatics	NWEPH	**38**	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aliphatics	NWEPH	**91**	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aliphatics	NWEPH	**150**	5.0	1	MG/KG	12/04/2012	EBS
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aromatics	NWEPH	**5.8**	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aromatics	NWEPH	**49**	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aromatics	NWEPH	**82**	5.0	1	MG/KG	12/04/2012	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
C25	NWEPH	**90.0**	12/04/2012	EBS
p-Terphenyl	NWEPH	**107**	12/04/2012	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052	DATE:	12/10/2012
		ALS SDG#:	EV12120002
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	David Baumeister		
CLIENT PROJECT:	Lab Ref #11-230 / Proj #525-006		

LABORATORY BLANK RESULTS

MBLK-1242012 - Batch R79505 - Soil by NWEPH

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aliphatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C8-C10 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C10-C12 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C12-C16 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C16-C21 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS
>C21-C34 Aromatics	NWEPH	U	5.0	1	MG/KG	12/04/2012	EBS

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	OnSite Environmental Inc. 14648 NE 95th Street Redmond, WA 98052	DATE:	12/10/2012
		ALS SDG#:	EV12120002
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	David Baumeister		
CLIENT PROJECT:	Lab Ref #11-230 / Proj #525-006		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: R79505 - Soil by NWEPH

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
>C8-C10 Aliphatics - BS	NWEPH	**74.0**			12/04/2012	EBS
>C8-C10 Aliphatics - BSD	NWEPH	**72.0**	**3**		12/04/2012	EBS
>C10-C12 Aliphatics - BS	NWEPH	**78.0**			12/04/2012	EBS
>C10-C12 Aliphatics - BSD	NWEPH	**77.0**	**1**		12/04/2012	EBS
>C12-C16 Aliphatics - BS	NWEPH	**78.0**			12/04/2012	EBS
>C12-C16 Aliphatics - BSD	NWEPH	**79.0**	**1**		12/04/2012	EBS
>C16-C21 Aliphatics - BS	NWEPH	**78.0**			12/04/2012	EBS
>C16-C21 Aliphatics - BSD	NWEPH	**81.0**	**4**		12/04/2012	EBS
>C21-C34 Aliphatics - BS	NWEPH	**79.0**			12/04/2012	EBS
>C21-C34 Aliphatics - BSD	NWEPH	**81.0**	**3**		12/04/2012	EBS
>C8-C10 Aromatics - BS	NWEPH	**76.0**			12/04/2012	EBS
>C8-C10 Aromatics - BSD	NWEPH	**83.0**	**9**		12/04/2012	EBS
>C10-C12 Aromatics - BS	NWEPH	**77.0**			12/04/2012	EBS
>C10-C12 Aromatics - BSD	NWEPH	**83.0**	**8**		12/04/2012	EBS
>C12-C16 Aromatics - BS	NWEPH	**79.0**			12/04/2012	EBS
>C12-C16 Aromatics - BSD	NWEPH	**85.0**	**7**		12/04/2012	EBS
>C16-C21 Aromatics - BS	NWEPH	**82.0**			12/04/2012	EBS
>C16-C21 Aromatics - BSD	NWEPH	**86.0**	**5**		12/04/2012	EBS
>C21-C34 Aromatics - BS	NWEPH	**73.0**			12/04/2012	EBS
>C21-C34 Aromatics - BSD	NWEPH	**75.0**	**3**		12/04/2012	EBS

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

EV1212O002

OnSite Environmental Inc.

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

Laboratory Reference #: 11-230

Subcontract Laboratory: ALS Environmental

Attention: Rick Bagan

8620 Holly Drive Everett, WA 98208

Phone Number: (425) 356-2600

Date/Time: _____

Turnaround Request:

1 Day 2 Day 3 Day

(Standard)

Other: _____

Project Manager: David Baumeister

email: dbaumeister@onsite-env.com

Project Number: 525-006

Project Name: _____

	Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	# of Cont.	Requested Analysis
1		B27A-3.5	11/30/12	0940	S	1	EPH
2		B9A-5.0	↓	1125	↓	↓	↓

Signature	Company	Date	Time	Comments/Special Instructions
Relinquished by:	CORE	12/3/12	1237	EDDs
Received by:	Speedy	12-3	1237	
Relinquished by:	Speedy	12-3	1:25	
Received by: Shawn Nakuna	ALS	12/3/12	1:25	
Relinquished by:				
Received by:				

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: FARALLON
Project Number: 525-006
Project Name: Aberdeen Facility
Project Manager: Jerry Perkele
Sampled by: Ken Scott

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: 11-230

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	No. of Cont.	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260B	Halogenated Volatiles 8260B	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082	Organochlorine Pesticides 8081A	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664	NW-Method VPH	NW-Method EPH			% Moisture
1	B27A-3.5	11/30/12	940	S	2		X		X													X	X			X
2	B27A-6.5		950	S	2																					
3	B27A-10.5		1005	S	2		X		X																	X
4	B9A-4.0		1115	S	2																					
5	B9A-5.0		1125	S	2		X		X													X	X			X
6	B9A-9.0		1135	S	2		X		X																	X
							K5																			

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	11/30/12	1505
Received		OSE	11/30/12	1505
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

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

April 10, 2013

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1304-051

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on April 5, 2013.

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

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

Case Narrative

Samples were collected on April 5, 2013 and received by the laboratory on April 5, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-18-5.0**					
Laboratory ID:	04-051-01					
Benzene	**0.081**	0.025	EPA 8021B	4-8-13	4-9-13	
Toluene	**ND**	0.12	EPA 8021B	4-8-13	4-9-13	
Ethyl Benzene	**0.54**	0.12	EPA 8021B	4-8-13	4-9-13	
m,p-Xylene	**0.26**	0.12	EPA 8021B	4-8-13	4-9-13	
o-Xylene	**ND**	0.12	EPA 8021B	4-8-13	4-9-13	
Gasoline	**180**	12	NWTPH-Gx	4-8-13	4-9-13	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*104*	*70-132*				
Client ID:	**B-45-5.0**					
Laboratory ID:	04-051-02					
Benzene	**ND**	0.020	EPA 8021B	4-8-13	4-9-13	
Toluene	**ND**	0.055	EPA 8021B	4-8-13	4-9-13	
Ethyl Benzene	**ND**	0.055	EPA 8021B	4-8-13	4-9-13	
m,p-Xylene	**ND**	0.055	EPA 8021B	4-8-13	4-9-13	
o-Xylene	**ND**	0.055	EPA 8021B	4-8-13	4-9-13	
Gasoline	**ND**	5.5	NWTPH-Gx	4-8-13	4-9-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*70-132*				
Client ID:	**B-45-12.0**					
Laboratory ID:	04-051-03					
Benzene	**0.10**	0.034	EPA 8021B	4-8-13	4-9-13	
Toluene	**ND**	0.17	EPA 8021B	4-8-13	4-9-13	
Ethyl Benzene	**ND**	0.17	EPA 8021B	4-8-13	4-9-13	
m,p-Xylene	**ND**	0.17	EPA 8021B	4-8-13	4-9-13	
o-Xylene	**ND**	0.17	EPA 8021B	4-8-13	4-9-13	
Gasoline	**ND**	17	NWTPH-Gx	4-8-13	4-9-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*105*	*70-132*				

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0408S1					
Benzene	**ND**	0.020	EPA 8021B	4-8-13	4-8-13	
Toluene	**ND**	0.050	EPA 8021B	4-8-13	4-8-13	
Ethyl Benzene	**ND**	0.050	EPA 8021B	4-8-13	4-8-13	
m,p-Xylene	**ND**	0.050	EPA 8021B	4-8-13	4-8-13	
o-Xylene	**ND**	0.050	EPA 8021B	4-8-13	4-8-13	
Gasoline	**ND**	5.0	NWTPH-Gx	4-8-13	4-8-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*70-132*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-056-01										
	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						*91*	*93*	*70-132*			
SPIKE BLANKS											
Laboratory ID:	SB0408S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.989**	**0.996**	1.00	1.00		**99**	**100**	71-125	1	11	
Toluene	**1.01**	**1.01**	1.00	1.00		**101**	**101**	77-125	0	11	
Ethyl Benzene	**0.985**	**0.960**	1.00	1.00		**99**	**96**	76-125	3	10	
m,p-Xylene	**1.01**	**0.968**	1.00	1.00		**101**	**97**	78-124	4	9	
o-Xylene	**0.980**	**0.912**	1.00	1.00		**98**	**91**	77-123	7	9	
Surrogate:											
Fluorobenzene						*94*	*96*	*70-132*			

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-18-5.0**					
Laboratory ID:	04-051-01					
Diesel Fuel #2	**1700**	31	NWTPH-Dx	4-8-13	4-8-13	
Lube Oil	**600**	62	NWTPH-Dx	4-8-13	4-8-13	N1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				
Client ID:	**B-45-5.0**					
Laboratory ID:	04-051-02					
Diesel Fuel #2	**540**	31	NWTPH-Dx	4-8-13	4-8-13	
Lube Oil	**1300**	61	NWTPH-Dx	4-8-13	4-8-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**B-45-12.0**					
Laboratory ID:	04-051-03					
Diesel Range Organics	**ND**	58	NWTPH-Dx	4-8-13	4-8-13	
Lube Oil	**160**	120	NWTPH-Dx	4-8-13	4-8-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0408S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	4-8-13	4-8-13	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	4-8-13	4-8-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	04-046-04						
	ORIG	DUP					
Diesel Range Organics	**47.9**	**71.6**			40	NA	
Lube Oil	**1070**	**423**			87	NA	
Surrogate:							
o-Terphenyl			*82* *87*	*50-150*			

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	04-051-01					
Client ID:	**MW-18-5.0**					
Lead	**14**	6.2	6010C	4-8-13	4-8-13	
Lab ID:	04-051-02					
Client ID:	**B-45-5.0**					
Lead	**ND**	6.1	6010C	4-8-13	4-8-13	
Lab ID:	04-051-03					
Client ID:	**B-45-12.0**					
Lead	**ND**	12	6010C	4-8-13	4-8-13	

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	4-8-13
Date Analyzed:	4-8-13
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0408SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 4-8-13
Date Analyzed: 4-8-13

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-051-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**11.0**	**10.7**	2	5.0	

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 4-8-13
Date Analyzed: 4-8-13

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 04-051-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**254**	97	**256**	98	1	

Date of Report: April 10, 2013
Samples Submitted: April 5, 2013
Laboratory Reference: 1304-051
Project: 525-006

% MOISTURE

Date Analyzed: 4-8-13

Client ID	Lab ID	% Moisture
MW-18-5.0	04-051-01	19
B-45-5.0	04-051-02	18
B-45-12.0	04-051-03	57

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.

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

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: Farallon
Project Number: 925-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Bottele
Sampled by: Emerald Gregor-Mularoy

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: 04-051

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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	Lead by EPA 6010						% Moisture
1	~~B-1~~ MW-18-5.0	4/5/13	1015	soil	2		X		X												X						X
2	B-45-5.0	"	1100	"	1		X		X												X						X
3	B-45-12.0	"	1105	"	1		X		X												X						X

	Signature	Company	Date	Time
Relinquished	Emerald Mularoy	Farallon	4/5/13	1800
Received		Emily Ec	4/5/13	1800
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

April 19, 2013

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1304-100

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on April 11, 2013.

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

Date of Report: April 19, 2013
Samples Submitted: April 11, 2013
Laboratory Reference: 1304-100
Project: 525-006

Case Narrative

Samples were collected on April 11, 2013 and received by the laboratory on April 11, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: April 19, 2013
Samples Submitted: April 11, 2013
Laboratory Reference: 1304-100
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-18-041113**					
Laboratory ID:	04-100-01					
Benzene	**39**	1.0	EPA 8021B	4-16-13	4-16-13	
Toluene	**4.7**	1.0	EPA 8021B	4-16-13	4-16-13	
Ethyl Benzene	**34**	1.0	EPA 8021B	4-17-13	4-17-13	
m,p-Xylene	**2.4**	1.0	EPA 8021B	4-17-13	4-17-13	
o-Xylene	**3.5**	1.0	EPA 8021B	4-17-13	4-17-13	
Gasoline	**2300**	100	NWTPH-Gx	4-16-13	4-16-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*71-116*				

Date of Report: April 19, 2013
Samples Submitted: April 11, 2013
Laboratory Reference: 1304-100
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0416W2					
Benzene	**ND**	1.0	EPA 8021B	4-16-13	4-16-13	
Toluene	**ND**	1.0	EPA 8021B	4-16-13	4-16-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	4-16-13	4-16-13	
m,p-Xylene	**ND**	1.0	EPA 8021B	4-16-13	4-16-13	
o-Xylene	**ND**	1.0	EPA 8021B	4-16-13	4-16-13	
Gasoline	**ND**	100	NWTPH-Gx	4-16-13	4-16-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*71-116*				
Laboratory ID:	MB0417W1					
Benzene	**ND**	1.0	EPA 8021B	4-17-13	4-17-13	
Toluene	**ND**	1.0	EPA 8021B	4-17-13	4-17-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	4-17-13	4-17-13	
m,p-Xylene	**ND**	1.0	EPA 8021B	4-17-13	4-17-13	
o-Xylene	**ND**	1.0	EPA 8021B	4-17-13	4-17-13	
Gasoline	**ND**	100	NWTPH-Gx	4-17-13	4-17-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*71-116*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-114-11										
	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*	*90*	*71-116*			
MATRIX SPIKES											
Laboratory ID:	04-114-10										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**45.1**	**48.1**	50.0	50.0	ND	**90**	**96**	81-121	6	11	
Toluene	**45.3**	**48.0**	50.0	50.0	ND	**91**	**96**	83-122	6	13	
Ethyl Benzene	**44.4**	**47.1**	50.0	50.0	ND	**89**	**94**	81-121	6	15	
m,p-Xylene	**44.9**	**47.3**	50.0	50.0	ND	**90**	**95**	80-119	5	16	
o-Xylene	**44.7**	**47.0**	50.0	50.0	ND	**89**	**94**	80-119	5	15	
Surrogate:											
Fluorobenzene						*93*	*94*	*71-116*			

Date of Report: April 19, 2013
Samples Submitted: April 11, 2013
Laboratory Reference: 1304-100
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-18-041113**					
Laboratory ID:	04-100-01					
Diesel Range Organics	**3.9**	0.26	NWTPH-Dx	4-12-13	4-15-13	M
Lube Oil Range Organics	**ND**	1.4	NWTPH-Dx	4-12-13	4-15-13	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Date of Report: April 19, 2013
Samples Submitted: April 11, 2013
Laboratory Reference: 1304-100
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0412W1					
Diesel Range Organics	**ND**	0.13	NWTPH-Dx	4-12-13	4-16-13	
Lube Oil Range Organics	**ND**	0.20	NWTPH-Dx	4-12-13	4-16-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*75*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	04-087-06						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			*78* *96*	*50-150*			

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.

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

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: Faralon
Project Number: 525-006
Project Name: Lakeside Industries
Project Manager: Jerry Portele
Sampled by: Emerald Erickson-Mulanax

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: 04-100

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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-18-041113	4/11/13	1323	water	5		X		X												

EJEM

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Emerald Mulanax	Faralon	4/11/13	1755	
Received		EJEM	4/11/13	1755	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

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

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

August 14, 2013

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1308-045

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on August 7, 2013.

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

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

Case Narrative

Samples were collected on August 6, 2013 and received by the laboratory on August 7, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Method 5035A VOA vials were not provided for sample B53-080613-5.0. The sample was therefore extracted from a 4-ounce jar for 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.

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B46-080613-3.9**					
Laboratory ID:	08-045-01					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.047	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.047	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.047	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.047	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.7	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***94***	***71-121***				
Client ID:	**B47-080613-3.7**					
Laboratory ID:	08-045-04					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.3	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***100***	***71-121***				
Client ID:	**B47-080613-10.0**					
Laboratory ID:	08-045-05					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.066	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.066	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.066	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.066	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	6.6	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***88***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B48-080613-7.1**					
Laboratory ID:	08-045-08					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.045	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.045	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.045	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.045	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.5	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***87***	***71-121***				
Client ID:	**B49-080613-3.3**					
Laboratory ID:	08-045-10					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.052	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.052	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.052	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.052	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	5.2	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***101***	***71-121***				
Client ID:	**B50-080613-6.1**					
Laboratory ID:	08-045-14					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.093	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**0.43**	0.093	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**0.28**	0.093	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.093	EPA 8021B	8-12-13	8-12-13	
Gasoline	**130**	9.3	NWTPH-Gx	8-12-13	8-12-13	O
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***95***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B50-080613-10.8**					
Laboratory ID:	08-045-16					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.059	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.059	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.059	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.059	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	5.9	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***83***	***71-121***				
Client ID:	**B51-080613-8.0**					
Laboratory ID:	08-045-18					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.044	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.044	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.044	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.044	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.4	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***95***	***71-121***				
Client ID:	**B51-080613-13.6**					
Laboratory ID:	08-045-19					
Benzene	**ND**	0.028	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.14	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.14	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.14	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.14	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	14	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***95***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B52-080613-6.5**					
Laboratory ID:	08-045-20					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.048	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.048	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.048	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.048	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.8	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***87***	***71-121***				
Client ID:	**B52-080613-12.8**					
Laboratory ID:	08-045-22					
Benzene	**ND**	0.022	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	11	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***94***	***71-121***				
Client ID:	**B53-080613-5.0**					
Laboratory ID:	08-045-23					
Benzene	**0.97**	0.075	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.37	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**13**	0.37	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**3.4**	0.37	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	1.9	EPA 8021B	8-12-13	8-12-13	U1
Gasoline	**1700**	37	NWTPH-Gx	8-12-13	8-12-13	O
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***95***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B53-080613-13.5**					
Laboratory ID:	08-045-25					
Benzene	**ND**	0.023	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.11	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	11	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***100***	***71-121***				
Client ID:	**B54-080613-7.8**					
Laboratory ID:	08-045-26					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.043	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	4.3	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***93***	***71-121***				
Client ID:	**B54-080613-13.2**					
Laboratory ID:	08-045-27					
Benzene	**ND**	0.029	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.15	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.15	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.15	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.15	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	15	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***100***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0812S1					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	5.0	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***87***	***71-121***				
Laboratory ID:	MB0812S2					
Benzene	**ND**	0.020	EPA 8021B	8-12-13	8-12-13	
Toluene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
o-Xylene	**ND**	0.050	EPA 8021B	8-12-13	8-12-13	
Gasoline	**ND**	5.0	NWTPH-Gx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***94***	***71-121***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-045-04										
	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						***100***	***100***	***71-121***			
Laboratory ID:	08-059-05										
	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***	***90***	***71-121***			
SPIKE BLANKS											
Laboratory ID:	SB0812S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.932**	**0.899**	1.00	1.00		**93**	**90**	73-121	4	10	
Toluene	**0.965**	**0.924**	1.00	1.00		**97**	**92**	75-124	4	10	
Ethyl Benzene	**0.987**	**0.950**	1.00	1.00		**99**	**95**	75-125	4	9	
m,p-Xylene	**0.997**	**0.957**	1.00	1.00		**100**	**96**	75-126	4	9	
o-Xylene	**1.00**	**0.964**	1.00	1.00		**100**	**96**	74-123	4	8	
Surrogate:											
Fluorobenzene						***91***	***86***	***71-121***			

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B46-080613-3.9**					
Laboratory ID:	08-045-01					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***103***	***50-150***				
Client ID:	**B47-080613-3.7**					
Laboratory ID:	08-045-04					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***93***	***50-150***				
Client ID:	**B47-080613-10.0**					
Laboratory ID:	08-045-05					
Diesel Range Organics	**ND**	34	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	68	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***96***	***50-150***				
Client ID:	**B48-080613-7.1**					
Laboratory ID:	08-045-08					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***114***	***50-150***				
Client ID:	**B49-080613-3.3**					
Laboratory ID:	08-045-10					
Diesel Range Organics	**ND**	34	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	68	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***107***	***50-150***				
Client ID:	**B50-080613-6.1**					
Laboratory ID:	08-045-14					
Diesel Fuel #2	**460**	31	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	8-12-13	8-12-13	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***91***	***50-150***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B50-080613-10.8**					
Laboratory ID:	08-045-16					
Diesel Range Organics	**ND**	35	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**140**	70	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***99***	***50-150***				
Client ID:	**B51-080613-8.0**					
Laboratory ID:	08-045-18					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***110***	***50-150***				
Client ID:	**B51-080613-13.6**					
Laboratory ID:	08-045-19					
Diesel Range Organics	**ND**	55	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**230**	110	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***101***	***50-150***				
Client ID:	**B52-080613-6.5**					
Laboratory ID:	08-045-20					
Diesel Range Organics	**ND**	33	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***85***	***50-150***				
Client ID:	**B52-080613-12.8**					
Laboratory ID:	08-045-22					
Diesel Range Organics	**50**	47	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**240**	94	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***80***	***50-150***				
Client ID:	**B53-080613-5.0**					
Laboratory ID:	08-045-23					
Diesel Fuel #2	**3300**	32	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	220	NWTPH-Dx	8-12-13	8-12-13	U1
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***109***	***50-150***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B53-080613-13.5**					
Laboratory ID:	08-045-25					
Diesel Range Organics	**ND**	48	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	97	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***74***	***50-150***				
Client ID:	**B54-080613-7.8**					
Laboratory ID:	08-045-26					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***99***	***50-150***				
Client ID:	**B54-080613-13.2**					
Laboratory ID:	08-045-27					
Diesel Range Organics	**ND**	58	NWTPH-Dx	8-12-13	8-12-13	
Lube Oil Range Organics	**200**	120	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***91***	***50-150***				

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

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	8-12-13	8-12-13	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-12-13	8-12-13	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***94***	***50-150***				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	08-045-08						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	
Lube Oil Range Organics	**ND**	**ND**			NA	NA	
Surrogate:							
o-Terphenyl			***114*** ***108***	***50-150***			
Laboratory ID:	08-055-13						
	ORIG	DUP					
Mineral Oil	**88.7**	**87.3**			2	NA	
Lube Oil	**149**	**135**			10	NA	
Surrogate:							
o-Terphenyl			***121*** ***112***	***50-150***			

Date of Report: August 14, 2013
Samples Submitted: August 7, 2013
Laboratory Reference: 1308-045
Project: 525-006

% MOISTURE

Date Analyzed: 8-12-13

Client ID	Lab ID	% Moisture
B46-080613-3.9	08-045-01	20
B47-080613-3.7	08-045-04	18
B47-080613-10.0	08-045-05	26
B48-080613-7.1	08-045-08	18
B49-080613-3.3	08-045-10	27
B50-080613-6.1	08-045-14	19
B50-080613-10.8	08-045-16	29
B51-080613-8.0	08-045-18	19
B51-080613-13.6	08-045-19	55
B52-080613-6.5	08-045-20	24
B52-080613-12.8	08-045-22	47
B53-080613-5.0	08-045-23	21
B53-080613-13.5	08-045-25	48
B54-080613-7.8	08-045-26	19
B54-080613-13.2	08-045-27	57

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

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: Farallon
Project Number: 525-006
Project Name: Lakeside
Project Manager: Jerry P. & Riley C.
Sampled by: Dincer Kayhan

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
~~☒ Standard (7 Days)~~
(TPH analysis 5 Days)
☒ Wed 8/14
(other)

Laboratory Number: 08-045

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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	B46-080613-3.9	8/6/13	0905	soil	2		X		X												X
2	" - 7.4		0922																		
3	" - 13.9		0928																		
4	B47-080613-3.7		0947				X		X												X
5	" - 10.0		0954				X		X												X
6	" - 13.6		1000																		
7	B48-080613-2.9		1020				~~X~~ NO		~~X~~ NO	NO											
8	" - 7.1		1028				X		X												X
9	" - 13.3		1034																		

	Signature	Company	Date	Time
Relinquished				
Received		Spectrum	8/7	9:17a
Relinquished		Spectrum	8/7	10:10a
Received		CORE	8/7/13	1010
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~We'll call for analysis~~
~~WILL CALL TO CONFIRM~~
SAMPLES HOLD UNTIL THEN. DS

Chromatograms with final report ☐

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

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: Farallon
Project Number: 525-006
Project Name: Lakeside
Project Manager: Jerry P. & Riley C.
Sampled by: Dincer Kayhan

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
~~☒ Standard (7 Days)~~ DD
(TPH analysis 5 Days)
☒ 8/12 (other)

Laboratory Number: 08-045

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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
10	B49-080613-3.3	8/6/13	1050	soil	2		X		X												X
11	" -8.5		1055																		
12	" -15.0		1100																		
13	B50-080613-3.3		1135																		
14	" -6.1		1139				X		X												X
15	" -8.3		1142																		
16	" -10.8		1146				X		X												X
17	" -12.4		1200																		
—	~~B51-080613-6.2~~		~~1213~~				NO ~~X~~ (DX)														NOT A SAMPLE
18	" -8.0		1215				X		X												X

	Signature	Company	Date	Time
Relinquished				
Received		Spectra	8/7	9:17a
Relinquished		Spectra	8/7	10:10a
Received			8/7/13	1010
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~We'll call for analysis~~
~~WILL CALL TO CONFIRM~~
~~SAMPLES HOLD UNTIL THEN~~
DX

Chromatograms with final report ☐

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

Chain of Custody

Page 3 of 3

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

Laboratory Number: 08-045

Company: Farallon
Project Number: 525-006
Project Name: Lakeside
Project Manager: Jerry P. & Riley C.
Sampled by: Dincer Kayhan

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
~~☒ Standard (7 Days)~~
(TPH analysis 5 Days)
☒ 8/14
(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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
~~—~~	~~B51-080613-11.0~~	~~8/6/13~~	~~1221~~	~~Soil~~								NOT A SAMPLE									
19	B51-080613-13.6	8/6/13	1225	Soil	1		X		X												X
20	B52-080613-6.5	8/6/13	1310	Soil	1		X		X												X
~~21~~	~~B52-080613-10.0~~	~~8/6/13~~	~~1315~~	~~Soil~~								NOT RECEIVED. DB									
22	B52-080613-12.8	8/6/13	1317	Soil	1		X		X												X
23	B53-080613-5.0	8/6/13	1338	Soil	1		X		X												X
24	B53-080613-10.0	8/6/13	1345	Soil	1																
25	B53-080613-13.5	8/6/13	1348	Soil	1		X		X												X
26	B54-080613-7.8	8/6/13	1433	Soil	1		X		X												X
27	B54-080613-13.2	8/6/13	1435	Soil	1		X		X												X

	Signature	Company	Date	Time
Relinquished				
Received		Geo	8/7	9:17a
Relinquished		Geo	8/7	10:16a
Received		GSE	8/7/13	1010
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~We'll call for analysis~~
~~WILL CALL FOR A~~ TO CONFIRM
~~SAMPLES HOLD UNTIL THEN~~
DB

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

September 4, 2013

Riley Conkin
Farallon Consulting, LLC
Queen Anne Square East Bldg.
200 West Mercer Street, Suite 302
Seattle, WA 98119

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1308-222

Dear Riley:

Enclosed are the analytical results and associated quality control data for samples submitted on August 29, 2013.

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

Date of Report: September 4, 2013
Samples Submitted: August 29, 2013
Laboratory Reference: 1308-222
Project: 525-006

Case Narrative

Samples were collected on August 28, 2013 and received by the laboratory on August 29, 2013. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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.

Date of Report: September 4, 2013
Samples Submitted: August 29, 2013
Laboratory Reference: 1308-222
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-21-082813**					
Laboratory ID:	08-222-01					
Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Toluene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
o-Xylene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Gasoline	**ND**	100	NWTPH-Gx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*71-112*				
Client ID:	**MW-19-082813**					
Laboratory ID:	08-222-02					
Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Toluene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
m,p-Xylene	**7.2**	1.0	EPA 8021B	8-30-13	8-30-13	
o-Xylene	**2.1**	1.0	EPA 8021B	8-30-13	8-30-13	
Gasoline	**ND**	100	NWTPH-Gx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*71-112*				
Client ID:	**MW-20-082813**					
Laboratory ID:	08-222-03					
Benzene	**65**	1.0	EPA 8021B	8-30-13	8-30-13	
Toluene	**1.3**	1.0	EPA 8021B	8-30-13	8-30-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
m,p-Xylene	**2.7**	1.0	EPA 8021B	8-30-13	8-30-13	
o-Xylene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Gasoline	**460**	100	NWTPH-Gx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-112*				

Date of Report: September 4, 2013
Samples Submitted: August 29, 2013
Laboratory Reference: 1308-222
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0830W1					
Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Toluene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
o-Xylene	**ND**	1.0	EPA 8021B	8-30-13	8-30-13	
Gasoline	**ND**	100	NWTPH-Gx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*71-112*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-195-01										
	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						*81*	*81*	*71-112*			
MATRIX SPIKES											
Laboratory ID:	08-195-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**49.7**	**45.4**	50.0	50.0	ND	**99**	**91**	78-120	9	12	
Toluene	**51.0**	**47.3**	50.0	50.0	ND	**102**	**95**	80-121	8	12	
Ethyl Benzene	**51.5**	**47.8**	50.0	50.0	ND	**103**	**96**	81-120	7	13	
m,p-Xylene	**52.3**	**49.1**	50.0	50.0	ND	**105**	**98**	81-119	6	13	
o-Xylene	**52.1**	**49.1**	50.0	50.0	ND	**104**	**98**	79-117	6	13	
Surrogate:											
Fluorobenzene						*110*	*99*	*71-112*			

Date of Report: September 4, 2013
Samples Submitted: August 29, 2013
Laboratory Reference: 1308-222
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-21-082813**					
Laboratory ID:	08-222-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	8-30-13	8-30-13	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*68*	*50-150*				
Client ID:	**MW-19-082813**					
Laboratory ID:	08-222-02					
Diesel Range Organics	**0.74**	0.26	NWTPH-Dx	8-30-13	8-30-13	
Lube Oil Range Organics	**0.64**	0.41	NWTPH-Dx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**MW-20-082813**					
Laboratory ID:	08-222-03					
Diesel Range Organics	**2.7**	0.26	NWTPH-Dx	8-30-13	8-30-13	
Lube Oil Range Organics	**1.2**	0.41	NWTPH-Dx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Date of Report: September 4, 2013
Samples Submitted: August 29, 2013
Laboratory Reference: 1308-222
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0830W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	8-30-13	8-30-13	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	8-30-13	8-30-13	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

Analyte	Result		Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE							
Laboratory ID:	08-220-01						
	ORIG	DUP					
Diesel Range Organics	**ND**	**ND**			NA	NA	U1
Lube Oil Range Organics	**1.11**	**1.04**			7	NA	
Surrogate:							
o-Terphenyl			*82* *77*	*50-150*			

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

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: 08-222

Company: FARALLON
Project Number: 525-0010
Project Name: LAKESIDE ABERDEEN
Project Manager: RILEY C JERRY P
Sampled by: DINGER

Turnaround Request (in working days)
(Check One)
- [x] ~~Same Day~~ NX
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [x] 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/ MTCA Metals (circle one)	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-21-082813	8/28	1240	W	5		X		X												
2	MW-19-082813	↓	1340	↓	↓		X		X												
3	MW-20-082813	↓	1447	↓	↓		X		X												

	Signature	Company	Date	Time
Relinquished		FARALLON	8/29	1200
Received		Speedy	8/29	1:30p
Relinquished		Speedy	8/29	2:53p
Received		ONE	8/28/13	1453
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

Chromatograms with final report ☐

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

OnSite Environmental Inc.

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

June 12, 2015

Riley Conkin
Farallon Consulting, LLC
720 Olive Way , Suite 840
Seattle, WA 98119

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1505-280B

Dear Riley:

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

Date of Report: June 12, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280B
Project: 525-006

Case Narrative

Samples were collected on May 29, 2015 and received by the laboratory on May 29, 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.

Date of Report: June 12, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280B
Project: 525-006

TOTAL LEAD
EPA 6010C

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	05-280-01					
Client ID:	**SFE Trench-1**					
Lead	**54**	5.5	6010C	6-11-15	6-11-15	

Date of Report: June 12, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280B
Project: 525-006

TOTAL LEAD
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted:	6-11-15
Date Analyzed:	6-11-15
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB0611SM1

Analyte	Method	Result	PQL
Lead	6010C	**ND**	5.0

Date of Report: June 12, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280B
Project: 525-006

TOTAL LEAD
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 6-11-15
Date Analyzed: 6-11-15

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-199-32

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**53.9**	**54.0**	0	5.0	

Date of Report: June 12, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280B
Project: 525-006

TOTAL LEAD
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 6-11-15
Date Analyzed: 6-11-15

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 05-199-32

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	250	**281**	91	**281**	91	0	

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

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: ~~Lakeside Industries, Inc.~~ DB / FARALLON
Project Number: 525-006
Project Name: Aberdeen Site
Project Manager: Riley Conkin
Sampled by: Amanda Neice

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: 05-280

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 LEAD	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	SFE Trench-1	5-29-15	8:05	Soil	~~1~~ 2		X		X										(X)			X
	~~SFE Trench-2~~	~~5-29-15~~		~~Soil~~	~~2~~ DB																	

JR

	Signature	Company	Date	Time
Relinquished	Amanda Nei	Lakeside Industries	5-29-15	12:20pm
Received		Farallon	5/29/15	1420
Relinquished		Farallon	5/29/15	1430
Received		T. Dog.	5/29/15	2:30pm
Relinquished		T Dog	5/29/15	3:30pm
Received			5/29/15	1530
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~all~~ (X) Added 6/11/15. DB (1 day TAT)

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

June 5, 2015

Riley Conkin
Farallon Consulting, LLC
720 Olive Way , Suite 840
Seattle, WA 98119

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1505-280

Dear Riley:

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

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

Case Narrative

Samples were collected on May 29, 2015 and received by the laboratory on May 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 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.

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SFE Trench-1**					
Laboratory ID:	05-280-01					
Benzene	**0.091**	0.020	EPA 8021B	6-1-15	6-3-15	
Toluene	**0.25**	0.067	EPA 8021B	6-1-15	6-3-15	
Ethyl Benzene	**ND**	0.067	EPA 8021B	6-1-15	6-3-15	
m,p-Xylene	**0.16**	0.067	EPA 8021B	6-1-15	6-3-15	
o-Xylene	**ND**	0.067	EPA 8021B	6-1-15	6-3-15	
Gasoline	**ND**	6.7	NWTPH-Gx	6-1-15	6-3-15	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***79***	***68-123***				

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0601S1					
Benzene	**ND**	0.020	EPA 8021B	6-1-15	6-1-15	
Toluene	**ND**	0.050	EPA 8021B	6-1-15	6-1-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	6-1-15	6-1-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	6-1-15	6-1-15	
o-Xylene	**ND**	0.050	EPA 8021B	6-1-15	6-1-15	
Gasoline	**ND**	5.0	NWTPH-Gx	6-1-15	6-1-15	
Surrogate:	***Percent Recovery***	***Control Limits***				
Fluorobenzene	***85***	***68-123***				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-274-07										
	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						***78***	***83***	***68-123***			
SPIKE BLANKS											
Laboratory ID:	SB0601S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.916**	**0.839**	1.00	1.00		**92**	**84**	75-117	9	13	
Toluene	**0.922**	**0.859**	1.00	1.00		**92**	**86**	78-118	7	12	
Ethyl Benzene	**0.927**	**0.866**	1.00	1.00		**93**	**87**	78-118	7	12	
m,p-Xylene	**0.930**	**0.910**	1.00	1.00		**93**	**91**	78-121	2	13	
o-Xylene	**0.929**	**0.890**	1.00	1.00		**93**	**89**	77-119	4	13	
Surrogate:											
Fluorobenzene						***84***	***79***	***68-123***			

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SFE Trench-1**					
Laboratory ID:	05-280-01					
Diesel Range Organics	**810**	140	NWTPH-Dx	6-2-15	6-3-15	N
Lube Oil	**4000**	280	NWTPH-Dx	6-2-15	6-3-15	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***61***	***50-150***				

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0602S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-2-15	6-2-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-2-15	6-2-15	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***72***	***50-150***				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-016-01									
	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						***76*** ***67***	***50-150***			

Date of Report: June 5, 2015
Samples Submitted: May 29, 2015
Laboratory Reference: 1505-280
Project: 525-006

% MOISTURE

Date Analyzed: 6-1-15

Client ID	Lab ID	% Moisture
SFE Trench-1	05-280-01	9

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

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: 05-280

Company: ~~Lakeside Industries, Inc~~ DB / FARALLON
Project Number: 525-006
Project Name: Aberdeen Site
Project Manager: Riley Conkin
Sampled by: Amanda Neice

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	SFE Trench-1	5-29-15	8:05	Soil	~~1~~ 2		X		X													X
	~~SFE Trench-2~~	~~5-29-15~~		~~Soil~~	~~2~~ → D2																	

	Signature	Company	Date	Time
Relinquished	Amanda Nei	Lakeside Industries	5-29-15	12:20pm
Received		Farallon	5/29/15	1420
Relinquished		Farallon	5/29/15	1430
Received		T. Dog.	5/29/15	2:30 pm
Relinquished		T Dog	5/29/15	3:30pm
Received			5/29/15	1530
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions: attn M

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

June 8, 2016

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1606-060

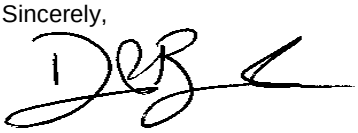
Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on June 7, 2016.

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

Date of Report: June 8, 2016
Samples Submitted: June 7, 2016
Laboratory Reference: 1606-060
Project: 525-006

Case Narrative

Samples were collected on June 7, 2016 and received by the laboratory on June 7, 2016. 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.

Date of Report: June 8, 2016
Samples Submitted: June 7, 2016
Laboratory Reference: 1606-060
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SP1-E-060716**					
Laboratory ID:	06-060-03					
Diesel Fuel #2	**16000**	270	NWTPH-Dx	6-7-16	6-7-16	
Lube Oil	**12000**	530	NWTPH-Dx	6-7-16	6-7-16	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***---***	***50-150***				S

Date of Report: June 8, 2016
Samples Submitted: June 7, 2016
Laboratory Reference: 1606-060
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0607S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-7-16	6-7-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-7-16	6-7-16	
Surrogate:	***Percent Recovery***	***Control Limits***				
o-Terphenyl	***89***	***50-150***				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	06-050-02									
	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						***62*** ***68***	***50-150***			

Date of Report: June 8, 2016
Samples Submitted: June 7, 2016
Laboratory Reference: 1606-060
Project: 525-006

% MOISTURE

Date Analyzed: 6-7-16

Client ID	Lab ID	% Moisture
SP1-E-060716	06-060-03	6

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

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: FARALLON
Project Number: 525-006
Project Name: Lakeside Industries
Project Manager: Jerry Portele
Sampled by: Ken Scott

Turnaround Request (in working days)

(Check One)

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

Laboratory Number: 06-060

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	SPI-W-060716	6/7/16	1055	S	2																	
2	SPI-C-060716		1100	S	2																	
3	SPI-E-060716		1105	S	2				X													X
4	TR-W-1.5		1120	S	2																	
5	TR-E-1.5		1125	S	2																	
6	TR-S-1.5		1130	S	2																	
7	TR-N-1.5		1135	S	2																	
8	TR-B-2.0	↓	1145	S	2																	
									X5													

	Signature	Company	Date	Time
Relinquished	Ken Scott	FARALLON	6/7/16	1455
Received		GSE	6/7/16	1455
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

RUN SPI-E-060716 ON 24-hour rush for Dx. Call Jerry Portele ASAP to give verbal Analytical results.

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 5, 2017

Riley Conkin
Farallon Consulting, LLC
1809 7th Ave., Suite 1111
Seattle, WA 98101

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1704-263

Dear Riley:

Enclosed are the analytical results and associated quality control data for samples submitted on April 27, 2017.

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

Date of Report: May 5, 2017
Samples Submitted: April 27, 2017
Laboratory Reference: 1704-263
Project: 525-006

Case Narrative

Samples were collected on April 26, 2017 and received by the laboratory on April 27, 2017. 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.

Date of Report: May 5, 2017
Samples Submitted: April 27, 2017
Laboratory Reference: 1704-263
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FW1-042617**					
Laboratory ID:	04-263-01					
Benzene	**ND**	4.0	EPA 8021B	5-3-17	5-3-17	
Toluene	**ND**	4.0	EPA 8021B	5-3-17	5-3-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-3-17	5-3-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-3-17	5-3-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-3-17	5-3-17	
Gasoline	**ND**	400	NWTPH-Gx	5-3-17	5-3-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				

Date of Report: May 5, 2017
Samples Submitted: April 27, 2017
Laboratory Reference: 1704-263
Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0503W1					
Benzene	**ND**	1.0	EPA 8021B	5-3-17	5-3-17	
Toluene	**ND**	1.0	EPA 8021B	5-3-17	5-3-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-3-17	5-3-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-3-17	5-3-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-3-17	5-3-17	
Gasoline	**ND**	100	NWTPH-Gx	5-3-17	5-3-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-264-01										
	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						*94*	*93*	*61-118*			
MATRIX SPIKES											
Laboratory ID:	04-264-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**49.2**	**48.2**	50.0	50.0	ND	**98**	**96**	80-120	2	13	
Toluene	**49.7**	**48.7**	50.0	50.0	ND	**99**	**97**	81-115	2	14	
Ethyl Benzene	**51.0**	**49.9**	50.0	50.0	ND	**102**	**100**	81-114	2	12	
m,p-Xylene	**50.1**	**49.1**	50.0	50.0	ND	**100**	**98**	81-114	2	13	
o-Xylene	**50.1**	**49.2**	50.0	50.0	ND	**100**	**98**	81-113	2	11	
Surrogate:											
Fluorobenzene						*95*	*95*	*61-118*			

Date of Report: May 5, 2017
Samples Submitted: April 27, 2017
Laboratory Reference: 1704-263
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**FW1-042617**					
Laboratory ID:	04-263-01					
Diesel Fuel #2	**27**	0.26	NWTPH-Dx	5-2-17	5-3-17	
Lube Oil Range Organics	**ND**	9.9	NWTPH-Dx	5-2-17	5-3-17	U1
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

Date of Report: May 5, 2017
Samples Submitted: April 27, 2017
Laboratory Reference: 1704-263
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0502W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	5-2-17	5-3-17	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	5-2-17	5-3-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-253-06										
	ORIG	DUP									
Diesel Range Organics	**0.678**	**0.580**	NA	NA		NA		NA	16	NA	
Lube Oil Range	**ND**	**0.515**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*86*	*71*	*50-150*			

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

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: Farallon
Project Number: 525-006
Project Name: Lakeside
Project Manager: Riley Conkin
Sampled by: MB

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: 04-263

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	~~NWTPH-Gx~~ DB	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	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	FW1-042617	4/26/17	0820	W	5		X	X	X																		
2	FW2-042617	4/26/17	0825	W	5																						
												MB															

	Signature	Company	Date	Time
Relinquished	Matt Bowers	Farallon	4/26/17	1500
Received	RLM	Alpha	4/27/17	10:20
Relinquished	RLM	Alpha	4/27/17	11:35
Received		Alpha Test	4/27/17	1135
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

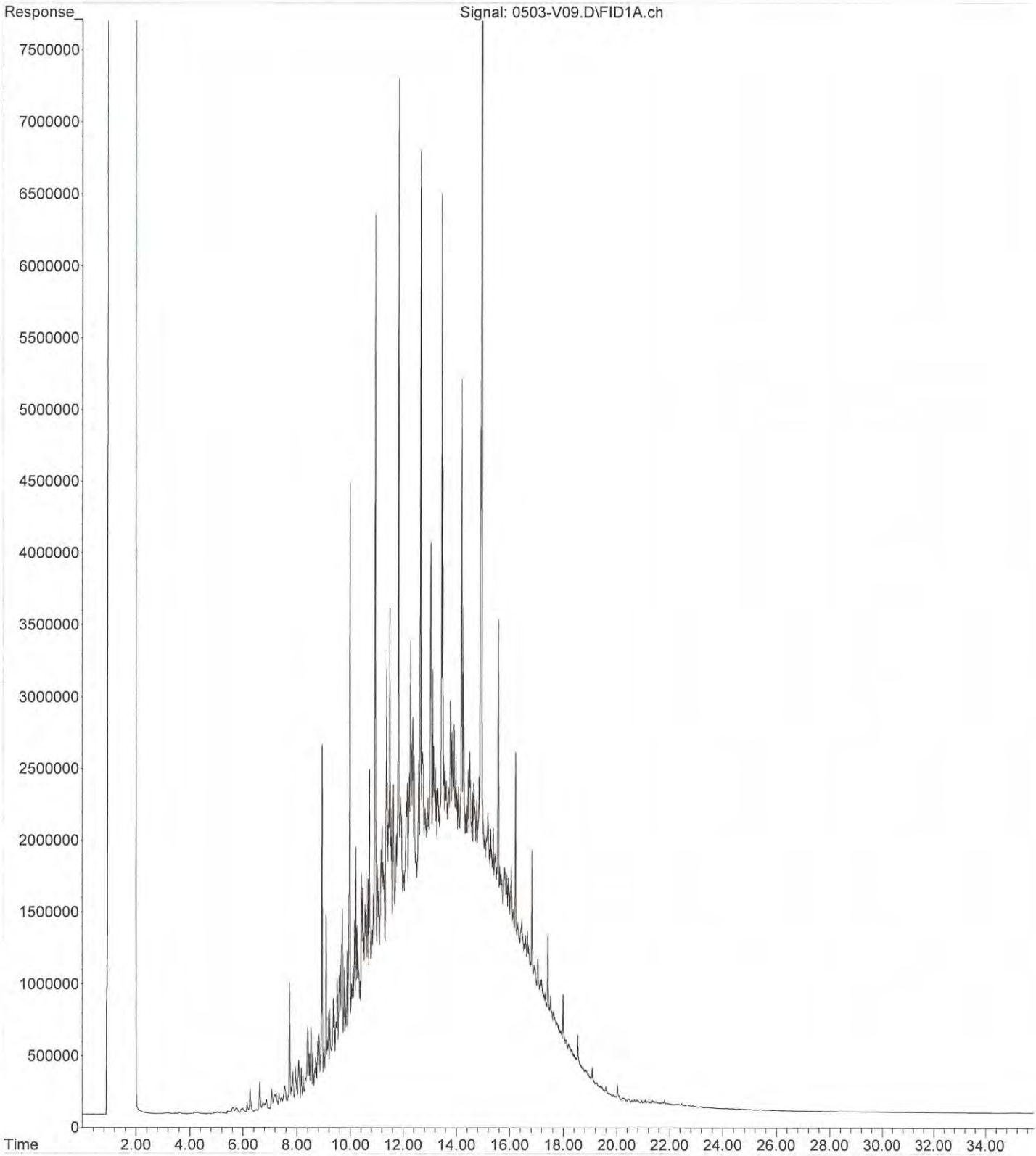
Comments/Special Instructions

HOLD FW2-042617

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

File :X:\DIESELS\VIGO\DATA\V170503\0503-V09.D
Operator :
Acquired : 3 May 2017 13:24 using AcqMethod V170502F.M
Instrument : Vigo
Sample Name: 04-263-01
Misc Info :
Vial Number: 9



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

May 19, 2017

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1705-076B

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on May 4, 2017.

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

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

Case Narrative

Samples were collected on May 2, 2017 and received by the laboratory on May 4, 2017. 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

Sample B59-19.0 was extracted one day out of hold-time.

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.

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B56-19.0**					
Laboratory ID:	05-076-08					
Diesel Range Organics	**ND**	49	NWTPH-Dx	5-16-17	5-16-17	
Lube Oil Range Organics	**140**	97	NWTPH-Dx	5-16-17	5-16-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*119*	*50-150*				
Client ID:	**B58-19.0**					
Laboratory ID:	05-076-15					
Diesel Range Organics	**ND**	51	NWTPH-Dx	5-16-17	5-16-17	
Lube Oil Range Organics	**ND**	100	NWTPH-Dx	5-16-17	5-16-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*69*	*50-150*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0516S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	5-16-17	5-16-17	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	5-16-17	5-16-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*74*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-092-03										
	ORIG	DUP									
Diesel Range Organics	**65.0**	**53.6**	NA	NA		NA		NA	19	NA	
Lube Oil Range Organics	**150**	**144**	NA	NA		NA		NA	4	NA	
Surrogate:											
o-Terphenyl						*64*	*68*	*50-150*			

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B59-19.0**					
Laboratory ID:	05-076-19					
Benzo[a]anthracene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Chrysene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo[b]fluoranthene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo(j,k)fluoranthene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo[a]pyrene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Dibenz[a,h]anthracene	**ND**	0.012	EPA 8270D/SIM	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*32 - 122*				
Pyrene-d10	*77*	*33 - 125*				
Terphenyl-d14	*86*	*36 - 118*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0517S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*91*	*32 - 122*				
Pyrene-d10	*89*	*33 - 125*				
Terphenyl-d14	*104*	*36 - 118*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

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:	05-217-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzo[a]anthracene	**0.0827**	**0.0857**	0.0833	0.0833	ND	99	103	30 - 143	4	31	
Chrysene	**0.0795**	**0.0806**	0.0833	0.0833	ND	95	97	32 - 129	1	33	
Benzo[b]fluoranthene	**0.0766**	**0.0765**	0.0833	0.0833	ND	92	92	23 - 140	0	29	
Benzo(j,k)fluoranthene	**0.0819**	**0.0867**	0.0833	0.0833	ND	98	104	32 - 119	6	30	
Benzo[a]pyrene	**0.0783**	**0.0804**	0.0833	0.0833	ND	94	97	31 - 131	3	32	
Indeno(1,2,3-c,d)pyrene	**0.0679**	**0.0698**	0.0833	0.0833	ND	82	84	31 - 130	3	28	
Dibenz[a,h]anthracene	**0.0780**	**0.0803**	0.0833	0.0833	ND	94	96	40 - 119	3	27	
Surrogate:											
2-Fluorobiphenyl						*83*	*83*	*32 - 122*			
Pyrene-d10						*88*	*88*	*33 - 125*			
Terphenyl-d14						*98*	*97*	*36 - 118*			

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076B
Project: 525-006

% MOISTURE

Date Analyzed: 5-16-17

Client ID	Lab ID	% Moisture
B56-19.0	05-076-08	48
B58-19.0	05-076-15	51
B59-19.0	05-076-19	44

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

Chain of Custody

Page 1 of 3

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

Laboratory Number: 05-076

Company: PARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Partelo
Sampled by: Ken Smith

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 (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) ePAHs only	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	B55-2.5	5/2/17	1145	S	2																						
2	B55-8.0		1150	S	2		X		X																		X
3	B55-14.0		1155	S	5		X		X					X													X
4	B55-19.0		1200	S	5																						
5	B56-3.0		1220	S	2																						
6	B56-8.0		1225	S	2		X		X																		X
7	B56-14.0		1245	S	5		X		X					X													X
8	B56-19.0		1255	S	5				(X)																		(X)
9	B57-3.0		1320	S	2																						
10	B57-9.0		1330	S	2		X		X																		X

	Signature	Company	Date	Time
Relinquished	Ken Smith	PARALLON	5/3/17	1000
Received	Van	spdy	5/4/17	1100
Relinquished	Van	spdy	5/4/17	1200
Received		DSE	5/4/17	1200
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~Hold samples, will call @ analysis Monday.~~ DB
(X) Added 5/16/17. DB (STA)

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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: FARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Portele
Sampled by: Ken Smith

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: 05-076

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) c PAHs only	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
11	B57-14.0	5/2/17	1340	S	5		X		X					X													X
12	B57-19.0		1350	S	5		X		X					X													X
13	B58-~~2.0~~ 2.5 DB		1405	S	2		X		X																		X
14	B58-14.0		1415	S	5		X		X					X													X
15	B58-19.0		1425	S	5				(X)																		(X)
~~16~~	~~B58-(14.5)~~																										
16	B59-3.0		1450	S	2		X		X																		X
~~17~~ 17	B59-9.0		1500	S	2		~~X~~ NO																				
18	B59-14.0		1510	S	5		X		X					X													X
19	B59-19.0		1520	S	5									(X)													(X)

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Smith	FARALLON	5/3/17	1800	~~See page #1~~
Received	Van	Spdy	5/~~4~~/17	1100	
Relinquished	Van	Spdy		1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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: FARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Portele
Sampled by: Ken Smith

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: 05-076

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) cPAHs only	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
20	B60-4.0	5/1/17	1540	S	2		X		X																		X
21	B60-9.0		1550	S	2																						
22	B60-14.0		1600	S	5		X		X					X													X
23	B60-19.0		1605	S	5																						
24	B61-4.0		1620	S	2																						
25	B61-8.0		1630	S	2		X		X																		X
26	B61-14.0		1640	S	5		X		X					X													X
27	B61-19.0	↓	1650	S	5																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Smith	FARALLON	5/3/17	1800	See page #1
Received	Van	Speedy	5/4/17	1100	
Relinquished	Van	Spdy	5/4/17	1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

May 15, 2017

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1705-076

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on May 4, 2017.

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

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

Case Narrative

Samples were collected on May 2, 2017 and received by the laboratory on May 4, 2017. 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.

The MTCA Method A cleanup level of 0.030 ppm for Benzene is not achievable for samples B55-8.0, B55-14.0, B56 –8.0, B56-14.0, B57-14.0, B57-19.0, B58-14.0, B59-3.0, and B60-4.0 due to the low dry weight of the sample in addition to the low sample weight in the provided VOA vial.

The MTCA Method A cleanup level of 30.0 ppm for fresh gasoline is not achievable for samples B56-14.0, B57-14.0, and B58-14.0 due to the low dry weight of the sample in addition to the low sample weight in the provided VOA vial..

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.

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B55-8.0**					
Laboratory ID:	05-076-02					
Benzene	**ND**	0.056	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	28	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*79*	*63-124*				
Client ID:	**B55-14.0**					
Laboratory ID:	05-076-03					
Benzene	**ND**	0.056	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.28	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	28	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*63-124*				
Client ID:	**B56-8.0**					
Laboratory ID:	05-076-06					
Benzene	**ND**	0.051	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.25	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.25	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.25	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.25	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	25	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*71*	*63-124*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B56-14.0**					
Laboratory ID:	05-076-07					
Benzene	**ND**	0.090	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.45	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.45	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.45	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.45	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	45	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*63-124*				
Client ID:	**B57-9.0**					
Laboratory ID:	05-076-10					
Benzene	**0.076**	0.043	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.21	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**0.35**	0.21	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**2.3**	0.21	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	2.1	EPA 8021B	5-10-17	5-10-17	
Gasoline	**350**	21	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*63-124*				
Client ID:	**B57-14.0**					
Laboratory ID:	05-076-11					
Benzene	**ND**	0.13	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.66	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.66	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.66	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.66	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	66	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*80*	*63-124*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B57-19.0**					
Laboratory ID:	05-076-12					
Benzene	**ND**	0.039	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.19	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.19	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.19	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.19	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	19	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*63-124*				
Client ID:	**B58-2.5**					
Laboratory ID:	05-076-13					
Benzene	**ND**	0.020	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.061	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.061	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.061	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.061	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	6.1	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*63-124*				
Client ID:	**B58-14.0**					
Laboratory ID:	05-076-14					
Benzene	**ND**	0.078	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.39	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.39	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.39	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.39	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	39	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*63-124*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B59-3.0**					
Laboratory ID:	05-076-16					
Benzene	**ND**	0.046	EPA 8021B	5-10-17	5-11-17	
Toluene	**ND**	0.23	EPA 8021B	5-10-17	5-11-17	
Ethyl Benzene	**ND**	0.23	EPA 8021B	5-10-17	5-11-17	
m,p-Xylene	**0.27**	0.23	EPA 8021B	5-10-17	5-11-17	
o-Xylene	**ND**	0.23	EPA 8021B	5-10-17	5-11-17	
Gasoline	**46**	23	NWTPH-Gx	5-10-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*63-124*				
Client ID:	**B59-14.0**					
Laboratory ID:	05-076-18					
Benzene	**ND**	0.024	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.12	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.12	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.12	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.12	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	12	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*94*	*63-124*				
Client ID:	**B60-4.0**					
Laboratory ID:	05-076-20					
Benzene	**ND**	0.039	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.20	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**0.29**	0.20	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**0.54**	0.20	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-10-17	5-10-17	
Gasoline	**120**	20	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*63-124*				

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NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B60-14.0**					
Laboratory ID:	05-076-22					
Benzene	**ND**	0.021	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.11	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.11	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.11	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.11	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	11	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*103*	*63-124*				
Client ID:	**B61-8.0**					
Laboratory ID:	05-076-25					
Benzene	**0.041**	0.020	EPA 8021B	5-10-17	5-11-17	
Toluene	**ND**	0.078	EPA 8021B	5-10-17	5-11-17	
Ethyl Benzene	**ND**	0.078	EPA 8021B	5-10-17	5-11-17	
m,p-Xylene	**ND**	0.078	EPA 8021B	5-10-17	5-11-17	
o-Xylene	**ND**	0.078	EPA 8021B	5-10-17	5-11-17	
Gasoline	**30**	7.8	NWTPH-Gx	5-10-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*63-124*				
Client ID:	**B61-14.0**					
Laboratory ID:	05-076-26					
Benzene	**ND**	0.020	EPA 8021B	5-10-17	5-11-17	
Toluene	**ND**	0.097	EPA 8021B	5-10-17	5-11-17	
Ethyl Benzene	**ND**	0.097	EPA 8021B	5-10-17	5-11-17	
m,p-Xylene	**ND**	0.097	EPA 8021B	5-10-17	5-11-17	
o-Xylene	**ND**	0.097	EPA 8021B	5-10-17	5-11-17	
Gasoline	**ND**	9.7	NWTPH-Gx	5-10-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*63-124*				

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Project: 525-006

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0510S1					
Benzene	**ND**	0.020	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	5.0	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*78*	*63-124*				
Laboratory ID:	MB0510S2					
Benzene	**ND**	0.020	EPA 8021B	5-10-17	5-10-17	
Toluene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
Ethyl Benzene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
m,p-Xylene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
o-Xylene	**ND**	0.050	EPA 8021B	5-10-17	5-10-17	
Gasoline	**ND**	5.0	NWTPH-Gx	5-10-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*77*	*63-124*				

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Project: 525-006

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-076-13										
	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*	*63-124*			
Laboratory ID:	05-076-22										
	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						*103*	*102*	*63-124*			
SPIKE BLANKS											
Laboratory ID:	SB0510S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.867**	**0.834**	1.00	1.00		**87**	**83**	70-124	4	12	
Toluene	**0.888**	**0.867**	1.00	1.00		**89**	**87**	73-119	2	12	
Ethyl Benzene	**0.909**	**0.886**	1.00	1.00		**91**	**89**	74-117	3	12	
m,p-Xylene	**0.909**	**0.883**	1.00	1.00		**91**	**88**	75-117	3	13	
o-Xylene	**0.917**	**0.894**	1.00	1.00		**92**	**89**	75-116	3	12	
Surrogate:											
Fluorobenzene						*83*	*80*	*63-124*			

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Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B55-8.0**					
Laboratory ID:	05-076-02					
Diesel Range Organics	**90**	54	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**150**	110	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*55*	*50-150*				
Client ID:	**B55-14.0**					
Laboratory ID:	05-076-03					
Diesel Range Organics	**ND**	59	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	120	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				
Client ID:	**B56-8.0**					
Laboratory ID:	05-076-06					
Diesel Range Organics	**ND**	56	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	110	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*58*	*50-150*				
Client ID:	**B56-14.0**					
Laboratory ID:	05-076-07					
Diesel Range Organics	**ND**	130	NWTPH-Dx	5-11-17	5-12-17	
Lube Oil Range Organics	**260**	260	NWTPH-Dx	5-11-17	5-12-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**B57-9.0**					
Laboratory ID:	05-076-10					
Diesel Range Organics	**1000**	65	NWTPH-Dx	5-11-17	5-10-17	M
Lube Oil Range Organics	**320**	130	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**B57-14.0**					
Laboratory ID:	05-076-11					
Diesel Range Organics	**140**	89	NWTPH-Dx	5-11-17	5-12-17	
Lube Oil Range Organics	**620**	180	NWTPH-Dx	5-11-17	5-12-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				

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Project: 525-006

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B57-19.0**					
Laboratory ID:	05-076-12					
Diesel Range Organics	**ND**	51	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	100	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**B58-2.5**					
Laboratory ID:	05-076-13					
Diesel Range Organics	**ND**	26	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil	**140**	52	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**B58-14.0**					
Laboratory ID:	05-076-14					
Diesel Range Organics	**ND**	80	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**450**	160	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*63*	*50-150*				
Client ID:	**B59-3.0**					
Laboratory ID:	05-076-16					
Diesel Range Organics	**ND**	56	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	110	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**B59-14.0**					
Laboratory ID:	05-076-18					
Diesel Range Organics	**ND**	37	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	75	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*61*	*50-150*				
Client ID:	**B60-4.0**					
Laboratory ID:	05-076-20					
Diesel Range Organics	**ND**	54	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	110	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*67*	*50-150*				

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NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B60-14.0**					
Laboratory ID:	05-076-22					
Diesel Range Organics	**ND**	37	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	75	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*65*	*50-150*				
Client ID:	**B61-8.0**					
Laboratory ID:	05-076-25					
Diesel Range Organics	**2600**	330	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil	**4100**	660	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**B61-14.0**					
Laboratory ID:	05-076-26					
Diesel Range Organics	**ND**	35	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	69	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

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NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0510S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	5-11-17	5-10-17	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	5-11-17	5-10-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Laboratory ID:	MB0512S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	5-11-17	5-12-17	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	5-11-17	5-12-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-059-01										
	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						*68*	*65*	*50-150*			
Laboratory ID:	05-051-07										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**2140**	**2120**	NA	NA		NA		NA	1	NA	
Surrogate:											
o-Terphenyl						---	---	*50-150*			S,S
Laboratory ID:	05-061-08										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**217**	**146**	NA	NA		NA		NA	39	NA	
Surrogate:											
o-Terphenyl						*93*	*109*	*50-150*			

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Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B55-14.0**					
Laboratory ID:	05-076-03					
Benzo[a]anthracene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.016	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*78*	*32 - 122*				
Pyrene-d10	*74*	*33 - 125*				
Terphenyl-d14	*86*	*36 - 118*				

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Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B56-14.0**					
Laboratory ID:	05-076-07					
Benzo[a]anthracene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.024	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*32 - 122*				
Pyrene-d10	*69*	*33 - 125*				
Terphenyl-d14	*79*	*36 - 118*				

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Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B57-14.0**					
Laboratory ID:	05-076-11					
Benzo[a]anthracene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.035	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*59*	*32 - 122*				
Pyrene-d10	*55*	*33 - 125*				
Terphenyl-d14	*77*	*36 - 118*				

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Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B57-19.0**					
Laboratory ID:	05-076-12					
Benzo[a]anthracene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.013	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*32 - 122*				
Pyrene-d10	*77*	*33 - 125*				
Terphenyl-d14	*87*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
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Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B58-14.0**					
Laboratory ID:	05-076-14					
Benzo[a]anthracene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.021	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*32 - 122*				
Pyrene-d10	*65*	*33 - 125*				
Terphenyl-d14	*75*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B59-14.0**					
Laboratory ID:	05-076-18					
Benzo[a]anthracene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**0.022**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**0.019**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*32 - 122*				
Pyrene-d10	*78*	*33 - 125*				
Terphenyl-d14	*111*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B60-14.0**					
Laboratory ID:	05-076-22					
Benzo[a]anthracene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.0099	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*76*	*32 - 122*				
Pyrene-d10	*68*	*33 - 125*				
Terphenyl-d14	*72*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**B61-14.0**					
Laboratory ID:	05-076-26					
Benzo[a]anthracene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.0093	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*90*	*32 - 122*				
Pyrene-d10	*80*	*33 - 125*				
Terphenyl-d14	*94*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0511S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	5-11-17	5-11-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*91*	*32 - 122*				
Pyrene-d10	*91*	*33 - 125*				
Terphenyl-d14	*103*	*36 - 118*				

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

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:	05-061-02										
	MS	MSD	MS	MSD		MS	MSD				
Benzo[a]anthracene	**0.0811**	**0.0828**	0.0833	0.0833	ND	97	99	30 - 143	2	31	
Chrysene	**0.0759**	**0.0762**	0.0833	0.0833	ND	91	91	32 - 129	0	33	
Benzo[b]fluoranthene	**0.0744**	**0.0730**	0.0833	0.0833	ND	89	88	23 - 140	2	29	
Benzo(j,k)fluoranthene	**0.0710**	**0.0758**	0.0833	0.0833	ND	85	91	32 - 119	7	30	
Benzo[a]pyrene	**0.0745**	**0.0756**	0.0833	0.0833	ND	89	91	31 - 131	1	32	
Indeno(1,2,3-c,d)pyrene	**0.0769**	**0.0777**	0.0833	0.0833	ND	92	93	31 - 130	1	28	
Dibenz[a,h]anthracene	**0.0765**	**0.0790**	0.0833	0.0833	ND	92	95	40 - 119	3	27	
Surrogate:											
2-Fluorobiphenyl						*86*	*86*	*32 - 122*			
Pyrene-d10						*80*	*80*	*33 - 125*			
Terphenyl-d14						*93*	*97*	*36 - 118*			

Date of Report: May 15, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-076
Project: 525-006

% MOISTURE

Date Analyzed: 5-10-17

Client ID	Lab ID	% Moisture
B55-8.0	05-076-02	53
B55-14.0	05-076-03	58
B56-8.0	05-076-06	55
B56-14.0	05-076-07	72
B57-9.0	05-076-10	62
B57-14.0	05-076-11	81
B57-19.0	05-076-12	51
B58-2.5	05-076-13	4
B58-14.0	05-076-14	69
B59-3.0	05-076-16	55
B59-14.0	05-076-18	33
B60-4.0	05-076-20	54
B60-14.0	05-076-22	33
B61-8.0	05-076-25	24
B61-14.0	05-076-26	28

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

Chain of Custody

Page 1 of 3

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

Laboratory Number: 05-076

Company: PARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Partelle
Sampled by: Ken Smith

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 (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) cPAHs only	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	B55-2.5	5/2/17	1145	S	2																						
2	B55-8.0		1150	S	2		X		X																		X
3	B55-14.0		1155	S	5		X		X					X													X
4	B55-19.0		1200	S	5																						
5	B56-3.0		1220	S	2																						
6	B56-8.0		1225	S	2		X		X																		X
7	B56-14.0		1245	S	5		X		X					X													X
8	B56-19.0		1255	S	5																						
9	B57-3.0		1320	S	2																						
10	B57-9.0		1330	S	2		X		X																		X

	Signature	Company	Date	Time
Relinquished	Ken Smith	PARALLON	5/3/17	1000
Received	Van	spdy	5/4/17	1100
Relinquished	Van	spdy	5/4/17	1200
Received		OSE	5/4/17	1200
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~Hold samples, will call @ analysis monday.~~ DB

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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: FARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Partelle
Sampled by: Ken Smith

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: 05-076

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) c PAHs only	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
11	B57-14.0	5/2/17	1340	S	5		X		X					X													X
12	B57-19.0		1350	S	5		X		X					X													X
13	B58-~~2.0~~ 2.5 DB		1405	S	2		X		X																		X
14	B58-14.0		1415	S	5		X		X					X													X
15	B58-19.0		1425	S	5																						
~~16~~	~~B58-(illegible)~~																										
16	B59-3.0		1450	S	2		X		X																		X
~~17~~ 17	B59-9.0		1500	S	2		~~X~~ NO																				
18	B59-14.0		1510	S	5		X		X					X													X
19	B59-19.0		1520	S	5																						

	Signature	Company	Date	Time
Relinquished	Ken Smith	FARALLON	5/3/17	1800
Received	Van	Spdy	5/~~4~~/17	1100
Relinquished	Van	Spdy		1200
Received	(signature)	(illegible)	5/4/17	1200
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
~~See page # 1~~

Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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: FARALLON
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: Jerry Perkele
Sampled by: Ken Smith

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: 05-076

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level) cPAHs only	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
20	B60-4.0	5/1/17	1540	S	2		X		X																		X
21	B60-9.0		1550	S	2																						
22	B60-14.0		1600	S	5		X		X					X													X
23	B60-19.0		1605	S	5																						
24	B61-4.0		1620	S	2																						
25	B61-8.0		1630	S	2		X		X																		X
26	B61-14.0		1640	S	5		X		X					X													X
27	B61-19.0		1650	S	5																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Smith	FARALLON	5/3/17	1800	See page #1
Received	Van	Speedy	5/4/17	1100	
Relinquished	Van	Speedy	5/4/17	1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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

May 19, 2017

Jerry Portele
Farallon Consulting, LLC
975 5th Avenue NW
Issaquah, WA 98027

Re: Analytical Data for Project 525-006
Laboratory Reference No. 1705-077

Dear Jerry:

Enclosed are the analytical results and associated quality control data for samples submitted on May 4, 2017.

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

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

Case Narrative

Samples were collected on May 2 and 3, 2017 and received by the laboratory on May 4, 2017. 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

Samples MW-8-050217 and MW-2-050217 were extracted and analyzed one day out of hold time.

All VOA vials provided for samples MW-10-050317 and MW-1-050317 contained headspace. Some loss of volatiles may have occurred.

NWTPH Dx Analysis

Samples MW-8-050217 and MW-2-050217 were extracted and analyzed one day out of hold time.

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.

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-8-050217**					
Laboratory ID:	05-077-01					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*61-118*				
Client ID:	**MW-2-050217**					
Laboratory ID:	05-077-02					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				
Client ID:	**MW-20-050317**					
Laboratory ID:	05-077-03					
Benzene	**56**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**2.9**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**1.0**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**500**	100	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-16-050317**					
Laboratory ID:	05-077-04					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				
Client ID:	**MW-18-050317**					
Laboratory ID:	05-077-05					
Benzene	**31**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**4.3**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**4.6**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**1500**	400	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*61-118*				
Client ID:	**MW-14-050317**					
Laboratory ID:	05-077-06					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-15-050317**					
Laboratory ID:	05-077-07					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				
Client ID:	**MW-17-050317**					
Laboratory ID:	05-077-08					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				
Client ID:	**MW-19-050317**					
Laboratory ID:	05-077-09					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**13**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				

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Project: 525-006

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-13-050317**					
Laboratory ID:	05-077-10					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*61-118*				
Client ID:	**MW-12-050317**					
Laboratory ID:	05-077-11					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*61-118*				
Client ID:	**MW-11-050317**					
Laboratory ID:	05-077-12					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-21-050317**					
Laboratory ID:	05-077-13					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*93*	*61-118*				
Client ID:	**MW-10-050317**					
Laboratory ID:	05-077-14					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*61-118*				
Client ID:	**MW-4-050317**					
Laboratory ID:	05-077-15					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-9-050317**					
Laboratory ID:	05-077-16					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				
Client ID:	**MW-7-050317**					
Laboratory ID:	05-077-17					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**160**	100	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				
Client ID:	**MW-3-050317**					
Laboratory ID:	05-077-18					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6-050317**					
Laboratory ID:	05-077-19					
Benzene	**11**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*61-118*				
Client ID:	**MW-1-050317**					
Laboratory ID:	05-077-20					
Benzene	**10**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**1300**	400	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-5-050317**					
Laboratory ID:	05-077-21					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*61-118*				
Client ID:	**DUP1-050317**					
Laboratory ID:	05-077-22					
Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	4.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	400	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				
Client ID:	**DUP2-050317**					
Laboratory ID:	05-077-23					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**160**	100	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*61-118*				

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NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DUP3-050317**					
Laboratory ID:	05-077-24					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**480**	100	NWTPH-Gx	5-17-17	5-17-17	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				

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Project: 525-006

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0517W1					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*61-118*				
Laboratory ID:	MB0517W2					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*61-118*				
Laboratory ID:	MB0517W3					
Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Toluene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Ethyl Benzene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
m,p-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
o-Xylene	**ND**	1.0	EPA 8021B	5-17-17	5-17-17	
Gasoline	**ND**	100	NWTPH-Gx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*85*	*61-118*				

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NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	05-077-16									
	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						*90* *94*	*61-118*			
Laboratory ID:	05-077-13									
	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* *95*	*61-118*			
Laboratory ID:	05-151-02									
	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						*88* *85*	*61-118*			

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Samples Submitted: May 4, 2017
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NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	05-077-16										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**45.5**	**45.3**	50.0	50.0	ND	**91**	**91**	80-120	0	13	
Toluene	**46.1**	**46.0**	50.0	50.0	ND	**92**	**92**	81-115	0	14	
Ethyl Benzene	**47.0**	**47.0**	50.0	50.0	ND	**94**	**94**	81-114	0	12	
m,p-Xylene	**46.2**	**46.5**	50.0	50.0	ND	**92**	**93**	81-114	1	13	
o-Xylene	**46.4**	**46.1**	50.0	50.0	ND	**93**	**92**	81-113	1	11	
Surrogate:											
Fluorobenzene						*89*	*88*	*61-118*			
Laboratory ID:	05-151-02										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**44.6**	**41.6**	50.0	50.0	ND	**89**	**83**	80-120	7	13	
Toluene	**45.4**	**42.1**	50.0	50.0	ND	**91**	**84**	81-115	8	14	
Ethyl Benzene	**46.4**	**43.0**	50.0	50.0	ND	**93**	**86**	81-114	8	12	
m,p-Xylene	**45.6**	**42.4**	50.0	50.0	ND	**91**	**85**	81-114	7	13	
o-Xylene	**45.7**	**42.3**	50.0	50.0	ND	**91**	**85**	81-113	8	11	
Surrogate:											
Fluorobenzene						*86*	*88*	*61-118*			

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NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-8-050217**					
Laboratory ID:	05-077-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**MW-2-050217**					
Laboratory ID:	05-077-02					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**MW-20-050317**					
Laboratory ID:	05-077-03					
Diesel Range Organics	**2.7**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**1.6**	0.42	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				
Client ID:	**MW-16-050317**					
Laboratory ID:	05-077-04					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*61*	*50-150*				
Client ID:	**MW-18-050317**					
Laboratory ID:	05-077-05					
Diesel Range Organics	**4.1**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**2.5**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**MW-14-050317**					
Laboratory ID:	05-077-06					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*74*	*50-150*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-15-050317**					
Laboratory ID:	05-077-07					
Diesel Range Organics	**0.42**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**0.46**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**MW-17-050317**					
Laboratory ID:	05-077-08					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil	**0.43**	0.41	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**MW-19-050317**					
Laboratory ID:	05-077-09					
Diesel Range Organics	**0.31**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**0.44**	0.42	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MW-13-050317**					
Laboratory ID:	05-077-10					
Diesel Range Organics	**0.30**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**MW-12-050317**					
Laboratory ID:	05-077-11					
Diesel Range Organics	**1.3**	0.29	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**0.63**	0.46	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**MW-11-050317**					
Laboratory ID:	05-077-12					
Diesel Range Organics	**2.4**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**3.4**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*74*	*50-150*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-21-050317**					
Laboratory ID:	05-077-13					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**MW-10-050317**					
Laboratory ID:	05-077-14					
Diesel Range Organics	**0.44**	0.25	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**MW-4-050317**					
Laboratory ID:	05-077-15					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				
Client ID:	**MW-9-050317**					
Laboratory ID:	05-077-16					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**MW-7-050317**					
Laboratory ID:	05-077-17					
Diesel Range Organics	**0.62**	0.25	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				
Client ID:	**MW-3-050317**					
Laboratory ID:	05-077-18					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MW-6-050317**					
Laboratory ID:	05-077-19					
Diesel Range Organics	**0.34**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil Range Organics	**0.43**	0.42	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				
Client ID:	**MW-1-050317**					
Laboratory ID:	05-077-20					
Diesel Range Organics	**1.3**	0.26	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**0.62**	0.41	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				
Client ID:	**MW-5-050317**					
Laboratory ID:	05-077-21					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	5-17-17	5-18-17	
Lube Oil Range Organics	**ND**	0.42	NWTPH-Dx	5-17-17	5-18-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				

Date of Report: May 19, 2017
Samples Submitted: May 4, 2017
Laboratory Reference: 1705-077
Project: 525-006

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0517W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	5-17-17	5-1-81	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	5-17-17	5-1-81	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				
Laboratory ID:	MB0517W2					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	5-17-17	5-17-17	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	5-17-17	5-17-17	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-077-09										
	ORIG	DUP									
Diesel Range Organics	**0.314**	**0.305**	NA	NA		NA		NA	3	NA	
Lube Oil Range Organics	**0.442**	**0.440**	NA	NA		NA		NA	0	NA	
Surrogate:											
o-Terphenyl						*82*	*79*	*50-150*			
Laboratory ID:	05-077-20										
	ORIG	DUP									
Diesel Range Organics	**1.36**	**1.34**	NA	NA		NA		NA	1	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1,
Surrogate:											
o-Terphenyl						*99*	*95*	*50-150*			

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

Chain of Custody

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

Company: FARALLON
Project Number: 525-006
Project Name: LAKESIDE ABERDEEN
Project Manager: Jerry Partelle
Sampled by: ANASTASIA BURNS.

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: 05-077

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	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	MW-8-050217	5/2/17	1456	W	5		X		X																		
2	MW-2-050217	↓	1706	W	5		X		X																		
3	MW-20-050317	5-3-17	8:16		5																						
4	MW-16-050317		8:30																								
5	MW-18-050317		8:52																								
6	MW-14-050317		8:59																								
7	MW-15-050317		9:29																								
8	MW-17-050317		10:00																								
9	MW-19-050317		10:28																								
10	MW-13-050317	↓	10:33	↓	↓		↓		↓																		

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Smith	FARALLON	5-4-17	800	
Received	Van	Spdy	5/4/17	1100	
Relinquished	Van	Spdy	5/4/17	1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

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: Farallon
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: J. Poetele
Sampled by: A. Burns / K. Scott

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: 05-077

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	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
11	MW-12-050317	5-3-17	11:05	Water	5		X		X																		
12	MW-11-050317		11:30																								
13	MW-21-050317		11:31																								
14	MW-10-050317		12:05																								
15	MW-4-050317		12:31																								
16	MW-9-050317		13:10																								
17	MW-7-050317		13:45																								
18	MW-3-050317		14:30																								
19	MW-6-050317		14:31																								
20	MW-1-050317		15:03																								

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Ken Scott	Farallon	5-4-17	800	
Received	Van	Spdy	5/4/17	1100	
Relinquished	Van	Spdy	5/4/17	1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

Chain of Custody

Page 3 of 3

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

Company: Farallon
Project Number: 525-006
Project Name: Lakeside Aberdeen
Project Manager: J. Postele
Sampled by: A. Burns / K. Scott

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: 05-077

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (☐ Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	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
21	MW-5-050317	5-3-17	15:30	Water	5		X		X																		
22	DUP1-050317		10:02		5				cancelled DB																		
23	DUP2-050317		13:48		3				cancelled DB																		
24	DUP3-050317	↓	11:33	↓	3		↓		cancelled DB																		
					DB																						
			A3																								

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	Kim Smith	Farallon	5-4-17	800	
Received	Van	5pdy	5/4/17	1100	
Relinquished	Van	5pdy	5/4/17	1200	
Received			5/4/17	1200	
Relinquished					
Received					Data Package: Standard ☐ Level III ☐ Level IV ☐
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

APPENDIX F
TERRESTRIAL ECOLOGICAL EVALUATION FORMS

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Lakeside Industries Aberdeen Site	
Facility/Site Address: 2400 Sargent Boulevard	
Facility/Site No: 84657452	VCP Project No.: SW1161

Step 2: IDENTIFY EVALUATOR			
Please identify below the person who conducted the evaluation and their contact information.			
Name: Eric Buer			Title: Senior Hydrogeologist
Organization: Farallon Consulting, L.L.C.			
Mailing address: 1809 7th Avenue Suite 1111			
City: Seattle		State: WA	Zip code: 98101
Phone: (425) 394-4418	Fax: (425) 295-0850	E-mail: ebuer@farallonconsulting.com	

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 2**.*

☐ No or Unknown *If you answered **"NO" or "UKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☒ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☐ No *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☐ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?
Check all that apply. See WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

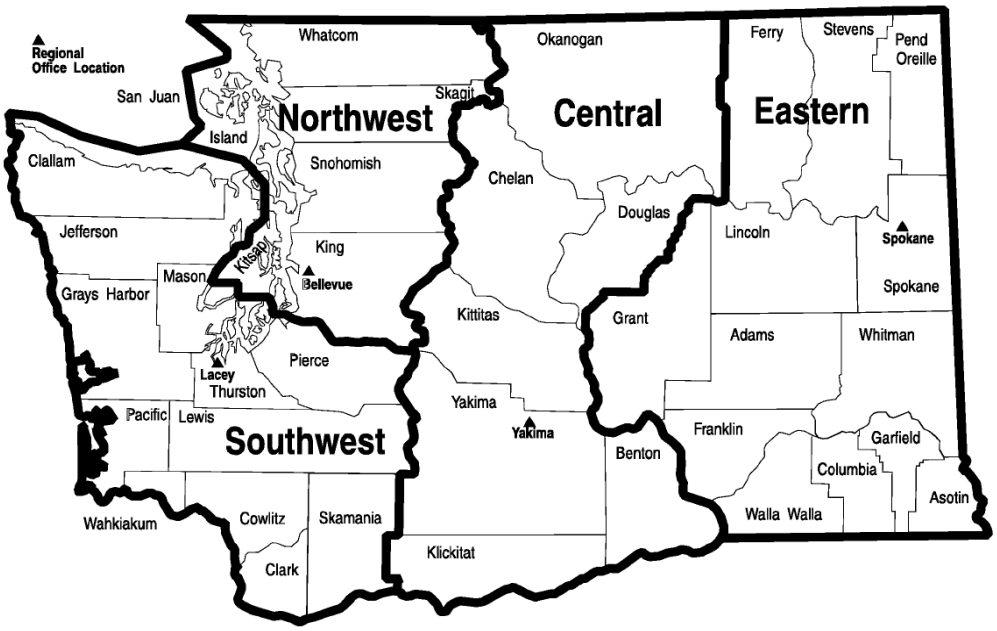
☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295



APPENDIX G
INADVERTENT DISCOVERY PLAN

LAKESIDE INDUSTRIES ABERDEEN SITE
2400 Sargent Boulevard
Aberdeen, Washington

Farallon PN: 525-006

DEPARTMENT OF ECOLOGY
State of Washington

PLAN AND PROCEDURES FOR THE UNANTICIPATED DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS[1]

PROJECT TITLE: Remedial Investigation/Feasibility Study, Lakeside Industries Aberdeen Site, Aberdeen, Washington

COUNTY WASHINGTON: Grays Harbor

Section, Township, Range: Section 10, Township 17, Range 9

1. INTRODUCTION

The following Inadvertent Discovery Plan (IDP) outlines procedures to perform in the event of discovering archaeological materials or human remains, in accordance with state and federal laws.

2. RECOGNIZING CULTURAL RESOURCES

A cultural resource discovery could be prehistoric or historic. Examples include:

a. An accumulation of shell, burned rocks, or other food related materials.

b. Bones or small pieces of bone.

c. An area of charcoal or very dark stained soil with artifacts.

d. Stone tools or waste flakes (i.e. an arrowhead. or stone chips).

e. Clusters of tin cans or bottles, logging or agricultural equipment that appears to be older than 50 years.

f. Buried railroad tracks, decking, or other industrial materials.

When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

STEP 1: *Stop Work*. If any employee, contractor or subcontractor believes that he or she has uncovered a cultural resource at any point in the project, all work must stop immediately. Notify the appropriate party(s). Leave the surrounding area untouched, and provide a demarcation adequate to provide the total security, protection, and integrity of the discovery. The discovery location must be secured at all times by a temporary fence or other onsite security.

STEP 2: *Notify Archaeological Monitor or Licensed Archaeologist*. If there is an Archaeological Monitor for the project, notify that person. If there is a monitoring plan in place, the monitor will follow the outlined procedure.

[1] If you need this document in a format for the visually impaired, call Water Quality Reception at Ecology, (360) 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

STEP 3: *Notify the Project Manager* of this project and contact the Ecology Staff Project Manager, or other applicable contacts:

Project Manager: Name: Eric Buer, Farallon Consulting Phone: (206) 661-3536 (cell) Email: ebuer@farallonconsulting.com	Ecology Staff Project Manager: Name: Chris Maurer Phone: (360) 407-7223 (office) Email: christopher.maurer@ecy.wa.gov

Assigned Alternates:

Assigned Project Manager Alternate: Name: Riley Conkin, Farallon Consulting Phone: (425) 417-4076 (cell) Email: rconkin@farallonconsulting.com	Ecology Cultural Resource Specialist (Alternate): Name: Dawn Hooper Phone: (360) 407-7182 (office) email: dawn.hooper@ecy.wa.gov

The Project Manager or applicable staff will make all calls and necessary notifications. **If human remains are encountered**, treat them with dignity and respect at all times. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed. **Do not call 911 or speak with the media. Do not take pictures unless directed to do so by DAHP. See Section 5.**

4. FURTHER CONTACTS AND CONSULTATION

A. **Project Manager's Responsibilities**:

- *Protect Find*: The Project Manager is responsible for taking appropriate steps to protect the discovery site. All work will stop immediately in a surrounding area adequate to provide for the complete security of location, protection, and integrity of the resource. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. Work in the immediate area will not resume until treatment of the discovery has been completed following provisions for treating archaeological/cultural material as set forth in this document.

- *Direct Construction Elsewhere on-Site*: The Project Manager may direct construction away from cultural resources to work in other areas prior to contacting the concerned parties.

- *Contact Senior Staff*: If the Senior Staff person has not yet been contacted, the Project Manager must do so.

B. **Senior Staff Responsibilities**:

- *Identify Find*: The Senior Staff (or a delegated Cultural Resource Specialist), will ensure that a qualified professional archaeologist examines the area to determine if there is an archaeological find.

    - If it is determined not to be of archaeological, historical, or human remains, work may proceed with no further delay.

- If it is determined to be an archaeological find, the Senior Staff or Cultural Resource Specialist will continue with all notifications.

- If the find may be human remains or funerary objects, the Senior Staff or Cultural Resource Specialist will ensure that a qualified physical anthropologist examines the find. **If it is determined to be human remains, the procedure described in Section 5 will be followed.**

- *Notify DAHP*: The Senior Staff (or a delegated Cultural Resource Specialist) will contact the involved federal agencies (if any) and the Washington Department of Archaeology and Historic Preservation (DAHP).

- *Notify Tribes*: If the discovery may be of interest to Native American Tribes, the DAHP and Ecology Supervisor or Coordinator will coordinate with the interested and/or affected tribes.

General Contacts

Federal Agencies: NA **State Agencies**: DAHP

Agency: Department of Archaeology and Historic Preservation (DAHP) Name: (see below) Title: (see below) Phone: (see below) Email:

Department of Archaeology and Historic Preservation (DAHP):

Dr. Allyson Brooks State Historic Preservation Officer (360) 586-3066 Assigned Alternate:	Rob Whitlam, Ph.D. Staff Archaeologist (360) 586-3050 Assigned Alternate:

The DAHP or appropriate Ecology Staff will contact the interested and affected Tribes for a specific project.

Further Activities

- Archaeological discoveries will be documented as described in Section 6.
- Construction in the discovery area may resume as described in Section 7.

5. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Do not take photographs by any means, unless you are pre-approved to do so.

If the project occurs on federal lands or receives federal funding (e.g., national forest or park, military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 apply, and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Manager will comply with applicable state and federal laws, and the following procedure:

A. **In all cases you must notify a law enforcement agency or Medical Examiner/Coroner's Office**:

In addition to the actions described in Sections 3 and 4, the Project Manager will immediately notify the local law enforcement agency or medical examiner/coroner's office.

The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human, whether the discovery site constitutes a crime scene, and will then notify DAHP.

Enter contact information below:

- Aberdeen Police Department non-emergency phone number: (360) 533-3180
- Grays Harbor Radio non-emergency phone number (after hours): (360) 533-8765

B. **Participate in Consultation**:

Per RCW 27.44.055, RCW 68.50, and RCW 68.60, DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation.

C. **Further Activities**:

- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in RCW 27.44.055, RCW 68.50, and RCW 68.60.

- When consultation and documentation activities are complete, construction in the discovery area may resume as described in Section 7.

6. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological deposits discovered during construction will be assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

Project staff will ensure the proper documentation and field assessment will be made of any discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and a contracted consultant (if any).

All prehistoric and historic cultural material discovered during project construction will be recorded by a professional archaeologist on a cultural resource site or isolate form using standard and approved techniques. Site overviews, features, and artifacts will be photographed; stratigraphic profiles and soil/sediment descriptions will be prepared for minimal subsurface exposures. Discovery locations will be documented on scaled site plans and site location maps.

Cultural features, horizons and artifacts detected in buried sediments may require further evaluation using hand-dug test units. Units may be dug in controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. A test excavation unit or small trench might also be used to determine if an intact occupation surface is present. Test units will be used only when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. Excavations will be conducted using state-of-the-art techniques for controlling provenience, and the chronology of ownership, custody and location recorded with precision.

Spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock will be recorded for each probe on a standard form. Test excavation units will be recorded on unit-level forms, which include plan maps for each excavated level, and material type, number, and vertical provenience (depth below surface and stratum association where applicable) for all artifacts recovered from the level. A stratigraphic profile will be drawn for at least one wall of each test excavation unit.

Sediments excavated for purposes of cultural resources investigation will be screened through 1/8-inch mesh, unless soil conditions warrant ¼-inch mesh.

All prehistoric and historic artifacts collected from the surface and from probes and excavation units will be analyzed, catalogued, and temporarily curated. Ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology and the affected tribes.

Within 90 days of concluding fieldwork, a technical report describing any and all monitoring and resultant archaeological excavations will be provided to the Project Manager, who will forward the report for review and delivery to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s).

If assessment activity exposes human remains (burials, isolated teeth, or bones), the process described in Section 5 will be followed.

7. PROCEEDING WITH WORK

Work outside the discovery location may continue while documentation and assessment of the cultural resources proceed. A professional archaeologist must determine the boundaries of the discovery location. In consultation with Ecology, DAHP and any affected tribes, the Project Manager will determine the appropriate level of documentation and treatment of the resource. If there is a federal nexus, Section 106 consultation and associated federal laws will make the final determinations about treatment and documentation.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Manager, DAHP, any affected tribes, Ecology (and the federal agencies, if any) determine that compliance with state and federal law is complete.

8. RECIPIENT/PROJECT PARTNER RESPONSIBILITY

The Project Recipient/Project Partner is responsible for developing an IDP. The IDP must be immediately available onsite, be implemented to address any discovery, and be available by request by any party. The Project Manager and staff will review the IDP during a project kickoff or pre-construction meeting.

We recommend that you print images in color for accuracy.

Implement the IDP / UDP if …

You see chipped stone artifacts.

- Glass-like material
- Angular
- “Unusual” material for area
- “Unusual” shape
- Regularity of flaking
- Variability of size

Implement the IDP / UDP if …

You see ground or pecked stone artifacts.

- Striations or scratching
- Unusual or unnatural shapes
- Unusual stone
- Etching
- Perforations
- Pecking
- Regularity in modifications
- Variability of size, function, and complexity

Implement the IDP / UDP if …

You see bone or shell artifacts.

- Often smooth
- Unusual shape
- Carved
- Often pointed if used as a tool
- Often wedge shaped like a "shoehorn"

Bone Awls from Oregon and Bone Wedge from California

Implement the IDP / UDP if …

You see bone or shell artifacts.

- Often smooth
- Unusual shape
- Perforated
- Variability of size

Implement the IDP / UDP if …

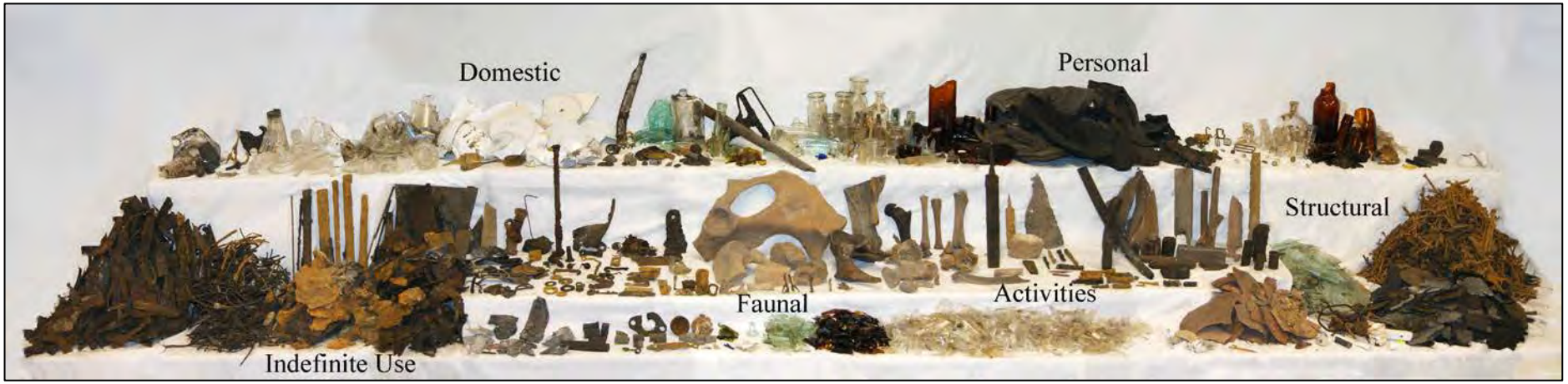
You see fiber or wood artifacts.

- Wet environments needed for preservation
- Variability of size, function, and complexity
- Rare

Artifacts from Mud Bay, Olympia, Washington

Implement the IDP / UDP if …

You see historic period artifacts.



Artifacts from Downtown Seattle, Alaskan Way Viaduct (Upper Left and Lower) and Unknown Site (Upper Right)

Implement the IDP / UDP if …

You see strange, different or interesting looking dirt, rocks, or

- Human activities leave traces in the ground that may or may not have artifacts associated with them
- "Unusual" accumulations of rock (especially fire-cracked rock)
- "Unusual" shaped accumulations of rock (e.g., similar to a fire ring)
- Charcoal or charcoal-stained soils
- Oxidized or burnt-looking soils
- Accumulations of shell
- Accumulations of bones or artifacts
- Look for the "unusual" or out of place (e.g., rock piles or accumulations in areas with few rock)

Implement the IDP / UDP if …

You see strange, different or interesting looking dirt, rocks, or

- "Unusual" accumulations of rock (especially fire-cracked rock)
- "Unusual" shaped accumulations of rock (e.g., similar to a fire ring)
- Look for the "unusual" or out of place (e.g., rock piles or accumulations in areas with few rock)

Site on Muckleshoot Indian Reservation, near WSDOT ROW along SR 164

Implement the IDP / UDP if …

You see strange, different or interesting looking dirt, rocks, or

- Often have a layered or “layer cake” appearance
- Often associated with black or blackish soil
- Often have very crushed and compacted shells

Implement the IDP / UDP if …

You see historic foundations or buried structures.