Remedial Investigation and Cleanup Action Plan

Franke Tobey Jones –
Master Plan Phase I & II
Tacoma, Washington

for
Franke Tobey Jones

April 14, 2017

GeoEngineers
Earth Science + Technology

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Tacoma, Washington

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April 14, 2017

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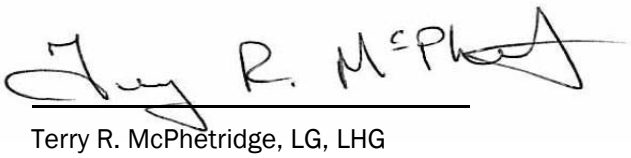

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1.0 INTRODUCTION

This report summarizes the remedial investigation (RI) results and cleanup action plan (CAP) for the proposed expansion of the existing Franke Tobey Jones (FTJ) facility located at 5340 North Bristol Street in Tacoma, Washington. The FTJ facility is generally located north of Vassault Street and North Park Way in Tacoma, Washington. The FTJ facility location is shown on Figure 1, Vicinity Map. The existing FTJ facility layout is shown on Figure 2. The proposed expansion areas are shown on Figures 3 and 4. The expansion areas are herein referred to as the "site."

The FTJ site is located within the Asarco Tacoma Smelter Plume (TSP) boundary known to contain lead- and arsenic-contaminated soil from air fallout related to Asarco's historic operations. The purpose of this RI/CAP report is to summarize the nature and extent of arsenic- and lead-contaminated soil within the proposed expansion areas and the associated CAP to be implemented during future construction activities. The remedial investigation and CAP are completed in general accordance with the Washington State Department of Ecology (Ecology's) TSP Model Remedies guidance (TSPMRG) document dated June 2012.

2.0 GENERAL FTJ FACILITY INFORMATION

The FTJ facility is located at 5340 North Bristol Street, Tacoma, Washington (1138819.439, 723721.671 NAD State Plane WA South). The site consists of approximately 18.13 acres of land covering four parcels (Pierce County parcel nos. 0221232025, 6930000413, 6930000393, and 693000038). The FTJ facility ground surface elevation slopes to the north from approximately 170 to 210 feet relative to the Old City of Tacoma Datum (OCTD). The City of Tacoma zoning for the FTJ facility is multiple family dwelling and two family dwelling. Zoning of surrounding properties consists of one family dwelling.

2.1. FTJ Facility History

The facility was originally developed in 1924 with an approximately 39,000 square foot residential building (Franke Tobey Jones) located on the eastern portion of the site based on information provided in Pierce County Assessor records. An additional 14 residential buildings and support structures were added to the complex over the next 80 years ranging in size between 2,000 and 51,000 square feet. A house formerly located on the northeastern side of the facility not originally associated with FTJ complex was constructed in 1934 based on City of Tacoma records. The house was purchased by FTJ in 2007 and subsequently demolished.

Soil has been graded and moved around during each development stage at the FTJ facility to fill in areas that currently contain grass particularly on the eastern and the southern portions of the FTJ facility.

2.2. Current FTJ Facility Use

The current use of the facility is an elderly retirement facility. Several buildings are currently located on the property including three large buildings (Garden Apartments, Lilian Pratt and Franke Tobey Jones), 11 smaller duplexes and various support structures/carports. The buildings occupy a combined footprint of approximately 188,000 square feet. The remainder of the property is landscaping and hard scape (asphalt, concrete, stepping stones, etc.).

3.0 ESTABLISHMENT OF CLEANUP LEVELS AND TERRESTRIAL ECOLOGICAL EVALUATION

3.1. Cleanup Levels

Cleanup levels were developed for cleanup actions at the FTJ facility in accordance with Model Toxics Control Act (MTCA) for the protection of human health. The MTCA Cleanup Regulation states that MTCA Method A cleanup levels, which are described in 173-340-700(5)(a) and 173-340-704, are protective of human health and are designed for cleanup actions that are relatively straightforward or involve only a few hazardous substances. As specified in Washington Administrative Code (WAC) 173-340-704(1) and 173-340-704(1)(a), Method A unrestricted land use (ULU) cleanup levels may be used at sites that have few hazardous substances and that are undergoing a routine cleanup action as defined in WAC 173-340-200. MTCA Method B cleanup levels were used for comparison of barium, selenium and silver and specific volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAHs) because Method A cleanup levels have not been established for these compounds. Ecology also provides remediation levels for arsenic and lead in soil related to the TSP in the TSPMRG as shown in the table below. A remediation level is the level of a hazardous substance in a medium, such as soil, at which certain cleanup actions may be necessary.

Remedy	Arsenic	Lead
No Further Action	Average <20 mg/kg Maximum <40 mg/kg	Average <250 mg/kg Maximum <500 mg/kg
Mixing	Average <40 mg/kg	Average <500 mg/kg
Consolidation or Capping In Place with Type 1 Cap	Average < 100mg/kg Maximum <200 mg/kg	Average <500 mg/kg Maximum <1,000 mg/kg

Note:

Type 1 cap is 1 a geotextile with 1 foot of non-contaminated soil.

3.2. Terrestrial Ecological Evaluation

Ecology completed a Terrestrial Ecological Evaluation (TEE) for the TSP during the Feasibility Study for the TSP (Ecology 2012). The TSPMRG and associated remediation levels identified above apply to the 2012 TEE results. Therefore, FTJ is not required to provide a TEE as part of this RI/CAP process.

4.0 PREVIOUS FIELD INVESTIGATIONS

United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) for the Ruston/North Tacoma Study Area in 1993. The ROD sets an "action level" for arsenic at 230 parts per million (ppm) and 500 ppm for lead. EPA remediated the soil by excavation or capping if arsenic and lead were detected at concentrations greater than the action levels at the FTJ facility.

EPA and Asarco completed subsurface soil investigations in areas throughout North Tacoma as part of the ROD decision. The objective of the field investigations was to evaluate soil conditions for potential impacts of arsenic and lead related to Asarco's historic smelter operations in Tacoma. A subsurface soil investigation was completed within the streets adjacent to the FTJ facility in 2001 and on the FTJ facility in 2005. Composite soil testing was completed throughout the site to depths up to 18 inches below ground

surface (bgs) for chemical analysis of total arsenic and lead. Arsenic and lead were detected at concentrations greater than the EPA action levels in select samples throughout the site. Arsenic and lead were also detected at concentrations greater than the MTCA Method A ULU cleanup level in a majority of the soil samples collected throughout the FTJ facility.

Remedial actions (excavation) were completed in areas where lead and arsenic concentrations exceeded the EPA action levels to the depth of the contaminated soil or to 1.5 feet bgs (whichever was less) in 2007 and 2008. Analytical results from the confirmation sampling activities following implementation of the remedial actions indicate lead and arsenic were either not detected or were detected at concentrations less than the EPA action levels. However, arsenic was detected at concentrations greater than the MTCA Method A ULU cleanup levels in select confirmation soil samples. The results of the sampling and associated remedial actions are included in Appendix A.

Arsenic-contaminated soil appears to generally be present between the ground surface and at least 18 inches bgs in areas throughout the FTJ facility. Lead-contaminated soil is present in select areas. The depth of arsenic- and lead-contaminated soil was not evaluated further during these investigations.

5.0 2016 SITE CHARACTERIZATION

GeoEngineers performed a subsurface soil investigation in November 2016 at the site to evaluate the lateral and vertical extent of arsenic- and lead-contaminated soil in areas where construction will occur during development of the Phase I expansion in 2017 and to complete a preliminary evaluation of the Phase II expansion area to be implemented within the next 5 years.

Known chemicals of concern at the site include lead and arsenic related to the air fallout from Asarco's smelter operations. Other potential chemicals of concern include VOCs, Resource Conservation and Recovery Act (RCRA) metals, petroleum hydrocarbons and PAHs were evaluated based on field screening and presence of debris within fill material.

Soil samples collected from the borings/test pits were identified using the following identification system: investigation type, location number-start depth-end depth, where investigation type is a test pit or direct–push boring (TP or DP), the location number is numerical identifier and start depth-end depth is the depth interval of specific sample (e.g., DP9-0-0.5 was collected from DP1 from the ground surface to 0.5 feet bgs. The field procedures, sampling methodology and logs are included in Appendix B The field program consisted of the following items:

- Completion of 28 direct-push borings and 12 test pits within the Phase I and Phase II expansion areas at the site. The explorations were completed to depths approximately 3 feet below the fill material or up to 10 feet bgs. Soil samples were collected at 1-foot depth intervals to the base of each exploration. The borings and test pits were completed in a semi-grid pattern in the area around each proposed building footprint.
- Soil samples were screened for arsenic and lead with X-ray fluorescence (XRF) analyzer following completion of the drilling activities.
- Chemical analysis of 88 soil samples for lead and arsenic by EPA method 6010 based on the XRF screening results. An additional 35 soil samples were analyzed for arsenic only by EPA method 6010 based on the initial chemical analytical results or for follow-up analysis to identify vertical limits of the contaminated soil. Samples were submitted for chemical analysis from depths above the arsenic- and

lead-contaminated soil zone, within the arsenic- and lead-contaminated soil zone and below the arsenic- and lead-contaminated soil zone.

- Chemical analysis of soil samples observed within debris and with indications of potential contamination from field screening. Analysis included for VOCs by EPA Method 8260B (three samples), petroleum hydrocarbon identification by Ecology-approved method NWTPH-HCID (eight samples) with appropriate follow-up of diesel- and oil-range petroleum hydrocarbons by Ecology-approved method NWTPH-Dx (two samples), PAHs by EPA Method 8270SIM (eight samples) and RCRA metals by EPA Series Method 6000/7000 (eight samples).

5.1. Site Geology and Hydrogeology

5.1.1. Regional Geology

We reviewed the *Geologic Map of the Gig Harbor Quadrangle, Pierce County Washington* (Booth & Troost, in review) as part of this study. This map indicates soil in the project vicinity consists of Vashon Recessional Outwash (Qvr). The recessional outwash typically overlies glacially consolidated soil, including Vashon Glacial Till (Qvt), Vashon Advance Outwash (Qva), and pre-Vashon deposits based on our experience and geologic descriptions provided by Booth and Troost.

5.1.2. Site Geology and Subsurface Conditions

We typically observed zones of fill underlain by undisturbed recessional outwash and/or glacially consolidated soil in our subsurface explorations. The fill consisted of a mixture of reworked and disturbed native soils, mixed with occasional organics and construction debris such as concrete and brick and generally ranged in thickness from 1 to 8 feet but was up to 25-feet-thick in areas.

The recessional outwash deposits typically consisted of a mixture of sand and gravel with variable silt content typically found in a medium dense to dense condition and up to 18.5 feet thick. The recessional outwash unit was not present in the explored areas of the site. We observed medium dense to very dense soil deposits that varied in composition from gravel with silt and sand to clay with sand below the fill or recessional outwash. For the purposes of this report, we have combined these soil types into a single group (glacially consolidated soil) that may include weathered glacial till, glacial till, and advance outwash.

5.1.3. Groundwater

Our understanding of groundwater conditions at the site is based on our experience in the area and observations noted during our exploration activities. Perched groundwater was observed during the excavation of test pits TP1, TP7, TP8, and TP9 at depths ranging between 4 and 8.5 feet bgs. The perched groundwater appears to be isolated, discontinuous and dispersed throughout the site. Seasonal perched groundwater conditions may develop at other locations on the site. Groundwater levels will likely be lowest during the late summer and early fall months. Groundwater levels should be expected to fluctuate based on season and rainfall events. We did not observe groundwater that we interpret as the regional groundwater table.

6.0 SAMPLING AND ANALYTICAL RESULTS

6.1. Data Quality Assessment

GeoEngineers assessed the quality of soil analytical data generated during the 2016 subsurface investigations conducted by GeoEngineers. The data quality assessment was conducted in accordance with EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA 2016) and followed EPA Stage 2A data validation protocols (EPA 2009). The purpose of the assessment was to evaluate whether the laboratory analytical data met project data quality objectives and are acceptable for their intended use. Data validation reports are included in Appendix C. The quality control elements reviewed during the data quality assessment are described in the data validation reports.

Particularly, the four internal standards did not meet acceptance criteria for sample DP16-8.5-9F. The sample was re-analyzed with similar results. Leaks within the sealed VOA environment caused by sediment between the VOA lip and VOA cap septum can cause low internal standard recovery. The sample was extracted from an 8-ounce jar and analyzed. Consequently, some loss of volatiles may have occurred and methylene chloride may have been introduced into the samples during sample preparation. For these reasons, the positive results and reporting limits for all volatile target analytes were qualified as estimated (J and UJ) in this sample.

The project data quality objectives were met based on the results of the data quality assessment. The data are acceptable for their intended use within the limitations denoted by applied data qualifiers; none of the data were rejected. Qualified data are identified in the data validation reports (Appendix C).

6.2. Soil Analytical Results

Soil samples were submitted for chemical analysis from the borings and test pits to evaluate the vertical extent of lead and arsenic-contaminated soil and to evaluate for the presence of PAHs, petroleum hydrocarbons, VOCs and other metals in the fill. The chemical analytical results are summarized in Tables 1 and 2. The chemical analytical results are summarized relative to the levels described in Section 2.0.

6.2.1. Lead and Arsenic

A majority of the soil samples collected from the 40 boring and test pit locations were field screened with an XRF for lead and arsenic as summarized in Table 1. Select soil samples were submitted for chemical analysis of lead and arsenic to evaluated the vertical and lateral extent of the contaminated soil.

Analytical results indicate that arsenic was detected at concentrations greater than the MTCA Method A ULU cleanup level (20 milligrams per kilogram [mg/kg]) in 50 of the 123 analyzed soil samples. The average concentration of the arsenic contaminated soil is 54 mg/kg utilizing both the XRF instrument and the chemical analytical results for every sample greater than the MTCA Method A ULU cleanup level. The average concentration in soil between the ground surface and 1.5 feet bgs is approximately 26 mg/kg. The average concentration in soil between 1.5 and 9.5 feet bgs is approximately 16 mg/kg. The highest arsenic concentration (180 mg/kg) was detected in soil collected from test pit TP1 at 1 to 1.5 feet bgs.

Arsenic-contaminated soil was typically present from the ground surface to depths ranging between 1 and 9 feet bgs as shown on Figure 2 with the following exceptions.

- Boring DP1. Ranged between 5.5 and 8 feet bgs.

- Boring DP11. Ranged between 2.5 and 5 feet bgs.
- Boring DP12. Ranged between 2.5 and 9 feet bgs.
- Boring DP16. Ranged between 1.5 and 10 feet bgs.
- Boring DP18. Ranged between 5.5 and 7 feet bgs.
- Boring DP25. Ranged between 9 to 9.5 feet bgs (base of boring). However, fill was observed to 11 feet bgs in nearby geotechnical boring B7.
- Boring DP26. Ranged between 2.5 and 5 feet bgs.
- Test Pit TP1. Ranged between 0.5 and 2 feet bgs.
- Test Pit TP7. Ranged between 1.5 and 3 feet bgs.

Lead was detected at a concentration greater than the MTCA Method A ULU cleanup level in only three of the 88 analyzed soil samples. The highest detected lead concentration was 310 mg/kg collected from test pit TP1 from 1 to 1.5 feet bgs. Lead-contaminated soil is present in areas where arsenic-contaminated soil is present.

Arsenic- and lead-contaminated soil appears to be generally limited to the fill material and within 1 foot of the native surface. This distribution of arsenic and lead in soil is consistent with impacts from the TSP. The estimated extent of arsenic-contaminated soil is shown on Figures 3 and 4.

6.2.1.1. Other Metals and PAHs

Soil samples collected from eight locations (DP1, DP4, DP6, DP13, DP16, DP21, DP25 and TP2) were analyzed for PAHs and metals (barium, cadmium, chromium, mercury, selenium and silver) based on the presence of debris in the soil samples. The metals and PAHs were either not detected or were detected at concentrations less than the respective MTCA Method A ULU cleanup levels or Method B criteria.

6.2.1.2. Petroleum Hydrocarbons

Petroleum hydrocarbons were analyzed in soil samples collected from eight locations (DP1, DP4, DP6, DP13, DP16, DP21, DP25 and TP2) by Ecology-approved method NWTPH-HCID based on the observations of a slight sheen noted during field screening. Lube oil-range petroleum hydrocarbons were identified in one soil sample collected from DP16 at 8.5 to 9 feet bgs. This sample was submitted for follow-up analysis of diesel- and lube oil-range petroleum hydrocarbons by Ecology-approved method NWTPH-Dx including the deeper sample from this boring (DP16 from 9 to 9.5 feet bgs) to evaluate the depth of potential contamination. Diesel- and lube oil-range petroleum hydrocarbons were either not detected or were detected at concentrations (less than the respective MTCA method A ULU cleanup levels in these analyzed soil samples. Lube oil-range petroleum hydrocarbons were detected at a concentration of 700 mg/kg from 8.5 to 9 feet bgs and 160 mg/kg from 9 to 9.5 feet bgs in boring DP16. Diesel-range petroleum hydrocarbons were detected at a concentration of 90 mg/kg from 8.5 to 9 feet bgs and not detected from 9 to 9.5 feet bgs. The petroleum-impacted soil is located deeper than the proposed excavation depth during Phase I and Phase II construction activities.

6.2.1.3. Volatile Organic Compounds

A total of three soil samples collected from explorations DP13, DP16 and TP2 were analyzed for VOCs based on debris being present during exploration activities. Methylene chloride was detected at a

concentration (0.085 mg/kg) greater than the MTCA Method A ULU cleanup level (0.02 mg/kg) in one soil sample collected from boring DP16 at 8.5 to 9 feet bgs. Additional follow-up analysis was not completed in other samples near boring DP16 because methylene chloride is a common laboratory contaminant and QA/QC issues were noted in the laboratory report.

7.0 CONCEPTUAL SITE MODEL

The former Asarco copper smelter in Tacoma caused widespread surficial soil contamination in parts of King, Pierce, Kitsap, and Thurston counties. This 1,000-square-mile area is known as the TSP. Airborne particulates with lead and arsenic were deposited on the site since the late 1800s to the 1980s. The site has been redeveloped multiple times between 1924 and 2004. Lead- and arsenic-contaminated soil was graded and distributed as fill throughout the site during redevelopment. The redistribution of fill on the site has buried the arsenic- and lead-contaminated soil deeper (up to 11 feet bgs in areas) than typically encountered with the TSP (18 inches bgs).

8.0 SUMMARY AND CONCLUSIONS OF THE RI

The results of the RI indicate that soil at the site is contaminated with lead and arsenic consistent with air fallout associated with historical Asarco Tacoma Smelter operations. Site development activities over the years at the site distributed the surficial contaminated soil to greater depths than a property with no development activities (surficial soils, typically upper 18 inches or less) as it relates air fallout from Asarco. Lead- and arsenic-contaminated soil extends to a maximum depth of 11 feet bgs at the site although most of the contaminated soil is located within the upper 6 feet.

Arsenic was detected in soil at concentrations greater than the MTCA Method A ULU cleanup level (20 mg/kg) with a maximum concentration of 180 mg/kg. The average concentration of the arsenic contaminated soil is 54 mg/kg utilizing both the XRF instrument and the chemical analytical results for the soil samples. The average concentration is approximately 26 mg/kg in the soil samples collected between the ground surface and 1.5 feet bgs. The average concentration is approximately 16 mg/kg in the soil samples collected between 1.5 and 9.5 feet bgs.

Lead was detected at concentrations greater than the MTCA Method A ULU cleanup level (250 mg/kg) in three soil samples with a maximum concentration of 310 mg/kg. Also, it appears soil at the site has not been contaminated with petroleum products, VOCs, PAHs and other metals greater than the respective MTCA Method A ULU cleanup levels or Method B Criteria.

The results of the remedial investigation indicate the lead- and arsenic-contaminated soil present at the site are suitable for implementation of the TSPMRG model remedies. The selected remedial cleanup alternative is discussed further in the Cleanup Action Plan in Section 9.0.

9.0 CLEANUP ACTION PLAN

The CAP was completed to address arsenic and lead-contaminated soil at the site, identify the remedial cleanup alternative and to specify cleanup standards and other requirements for cleanup of the site. The

CAP addresses soil contamination at the site related to the TSP. The CAP is being prepared under Ecology's Voluntary Cleanup Program (VCP).

The CAP utilizes information gathered during previous investigations described in previous sections regarding environmental conditions of the site. The CAP was prepared in general accordance with the requirements of the MTCA Cleanup Regulation, WAC, Chapter 173-340 and TSPMRG and the Asarco Smelter Site Final Interim Action Plan for the TSP (IA Plan, Ecology 2012). The IA Plan indicates Ecology completed a feasibility study to show that the model remedies are appropriate under certain conditions to meet State cleanup requirements. A feasibility study is not needed for properties under development if contamination is related to the TSP of the model remedies identified in the TSPMRG are used. Chemicals of concern (COC) associated with the TSP are lead and arsenic in shallow soils.

9.1. FTJ Planned Redevelopment

FTJ plans to expand their facility in two phases over the next 5 years. Phase I will be implemented in 2017 with Phase II following within the next 5 years. Components of each phase are discussed further below based on our understanding at the time of this report.

Phase 1. Phase I expansion plan will consist of the following:

- A new skilled nursing facility (SNF) building will be constructed along the eastern edge of the property. The SNF building will be two stories with a footprint of about 33,800 square feet. The lower level will daylight to the east and will be about 8 to 12 feet below grade on the west.
- A new apartment building (Soundview Apartments) will be constructed within the northeast corner of the property. Soundview will be three stories with a footprint of about 14,270 square feet. The lower level will daylight to the north and will be embedded up to about 15 feet on the south.
- One new duplex will be located along the western portion of the property. The duplex will be constructed on-grade and will be one story with an approximate footprint of 3,900 square feet.
- Other site improvements may include retaining walls, infiltration vaults, underground utilities, and pavement areas.

This proposed Phase I expansion plan will generate approximately 25,000 cubic yards of soil during construction. It is anticipated that 20,000 cubic yards of soil will likely be contaminated or impacted with arsenic and/or lead.

Phase II. Phase II expansion plan will include the following:

- An independent living and assisted living facility (IL/AL) expansion, which will be connected to the north side of the existing Lillian Pratt Building. The northern portion of the existing Lillian Pratt Building will be demolished to make room for the IL/AL expansion. The IL/AL expansion will be three stories with an additional at-grade parking lot. Total footprint for the IL/AL facility expansion will be about 63,600 square feet. We anticipate temporary or permanent shoring may be required to construct the below-grade parking structure because of proximity to existing structures.
- Other site improvements may include retaining walls, underground utilities, and pavement areas.

9.2. Regulatory Framework

The RI/CAP is being conducted under the VCP in accordance with the TSPMRG. FTJ will submit the VCP application to Ecology in concurrence with this RI/CAP.

9.3. Project Purpose and Objectives

The purpose of the CAP is to identify the cleanup action alternative for the site utilizing the model remedies outlined in the TSPMRG. The objective of the cleanup is to remediate soil potentially impacted with arsenic in accordance with the TSPMRG and to obtain a No Further Action (NFA) determination with restrictive covenants from Ecology for the Phase I portion of the site. Additional remedial activities are planned during the Phase II expansion and are not described in this CAP. An additional objective of the cleanup is to allow for development of the site for residential use.

9.4. Cleanup Action Objectives

This section presents the basis for the site cleanup action. There are two distinct elements that form the basis for the cleanup action: 1) the cleanup standards and 2) the location and media requiring cleanup action evaluation.

Cleanup action objectives (CAOs) consist of chemical- and soil-specific goals for protecting human health and the environment. The CAOs specify the soil and potential exposure routes and receptors, and proposed cleanup goals.

The objective of the proposed cleanup action is to eliminate, reduce, or otherwise control to the extent feasible and practicable, risks to human health and the environment posed by the arsenic in soil at the Property, in accordance with MTCA and other applicable regulatory requirements. Specifically, the CAOs include mitigating risks to human health posed through direct contact (dermal, incidental inhalation or ingestion) by visitors, workers (including excavation workers), and potential future residents or other users with arsenic in soil.

9.4.1. Cleanup Standards

A cleanup standard is the numeric cleanup level and a point of compliance. The numeric cleanup levels and the point of compliance are consistent with the TSPMRG because the model remedies are planned to be used as part of the cleanup action.

9.5. Cleanup Action Alternative

Ecology has provided five model remedies for cleanup of properties with soil affected by Asarco's historic smelter operations in Tacoma. The five model remedies are listed below.

- Excavate and Remove (Permanent)
- Mix (Permanent)
- Cap In-Place (Non-Permanent)
- Consolidate and Cap (Non-Permanent)
- Institutional Controls (Non-Permanent)

The preferred cleanup action alternative for the Phase I expansion is a combination of the five model remedies. An evaluation of additional cleanup action alternatives is not warranted because the preferred cleanup action alternative follows the TSPMRG model remedies development and is consistent with the intent of WAC 173-340-130(5). Two remedial areas have been identified for the cleanup alternative (Remedial Area 1 and Remedial Area 2). The primary CAP actions are provided below and shown in Figure 4.

1. Excavate the arsenic-contaminated soil from Remedial Area 1 and stockpile the soil on plastic and cover to prevent run-on/run-off. The stockpiled soil will be used later during the construction process for consolidation.
2. Excavate non-contaminated soil from Remedial Area 1 and build a wall to increase storage capacity. The non-contaminated soil will be stockpiled on plastic, sampled and covered for later use as fill material on other portions of the site during construction pending chemical analytical results.
3. Excavate the upper 12 inches of surficial soil in the construction areas and consolidate it in Remedial Area 1. The project anticipates 6 to 8 feet of fill will be placed in this area.
4. Consolidate/mix the excavated soil within Remedial Area 2 to meet site grades and install utilities. Construction activities may include mixing the soil to remediate the lead and/or arsenic to concentrations less than the remediation levels in accordance with TSPMRG. Excavation depths are anticipated to extend up to 15 feet bgs. Soil that is unsuitable for reuse for structural purposes will be consolidated in the southeast portion and consolidated within Remedial Area 1 or stockpiled, sampled and disposed at RCRA subtitle D landfill.
5. Complete earthwork activities (utilities, build walls/foundation) followed by placing a cap at the site with geotextile and 4 to 6 inches of crushed rock. Contaminated soil will be capped with hardscape or 12 inches of non-contaminated soil following building construction. The 4 to 6 inches of crushed rock may be used as part of the non-contaminated soil. Care will be taken to remove soil around the roots of trees that will remain in place. The non-contaminated soil cap may be less than 12 inches in these areas due to the presence of roots.

The following institutional controls will be implemented following construction activities:

- Operations and maintenance manual showing the extent of the geotextile and known arsenic-contaminated soil. The manual will provide guidance to workers that may come in to contact with the lead- and arsenic-contaminated soil.
- Environmental restrictive covenants will be recorded with the county and remain with the land until all contamination is cleaned up. The restrictive covenants notify future property owners that contamination remains at the site, identify the importance of maintaining the remedial cap, etc.

This cleanup action alternative meets the MTCA threshold requirements to protect human health and the environment, comply with cleanup standards, comply with applicable state and federal laws, and provide for compliance monitoring (WAC 173-340-360[2][a]). The preferred cleanup action follows the recommended model remedies outline in the TSPMRG.

9.6. Compliance Sampling

Compliance sampling will be performed to evaluate if arsenic-contaminated soil remains at these locations following grading activities in general accordance with the TSPMRG and WAC 173-340-410. Confirmation

sampling will be performed prior to placement of the remedial cap. The compliance sampling will include collection and chemical analysis of the surficial soils following grading activities to confirm that the cleanup action has met the cleanup standards.

9.6.1. Quantity and Location of Soil Samples

Compliance sampling will include collection of soil samples from 16 locations throughout the remedial areas in an evenly spaced grid in accordance with the TSPMRG. The 16 soil sample locations are shown on Figure 4.

A total of 20 soil samples will be collected during the compliance sampling activities for chemical analysis. One soil sample will be collected from 0 to 6 inches bgs at each location with up to four additional soil samples collected from 6 to 12 inches bgs at four of the 16 sampling locations. Soil sample collection methodology will be performed in general accordance with the TSPMRG.

9.6.2. Chemical Analysis and Reporting

Soil samples will be submitted to an Ecology-accredited laboratory for chemical analysis of arsenic and lead by EPA method 6000 series. The chemical analytical results will be evaluated with respect to the cleanup standards. The sampling methodology and chemical analytical results will be summarized in a final cleanup report.

Additional remedial activities will be completed if lead or arsenic are detected at concentrations greater than the site cleanup levels in accordance with the TSPMRG in the compliance samples.

9.7. Import Material Sampling

Soil samples will be collected of the import material as necessary to insure contaminated soil is not being brought onto the site. One soil sample will be collected for every 500 cubic yards of import material. The soil samples will be submitted for chemical analysis of PAHs, petroleum hydrocarbon identification and RCRA metals. Soil samples will not be collected for manufactured material (i.e., crushed rock).

9.8. Export Sampling

Excavated soil designated for offsite disposal will be stockpiled for sampling and chemical analysis prior to disposal at a Subtitle D landfill. One soil sample per 500 cubic yards will be collected and analyzed for lead and arsenic by EPA method 6010 and follow-up of toxicity characteristic leaching potential by EPA method 1311 as necessary.

9.9. Future Land Use Considerations

The selected cleanup action alternative presented in the CAP is compatible with future expected land use for the FTJ site. The future expected land use of the site is a multi-unit residential apartment complex.

9.10. Applicable State and Federal Laws

The applicable state and federal laws identified as of the writing of this CAP for the cleanup action are:

- MTCA Cleanup Regulation (WAC 173-340)

- Solid waste handling and disposal regulations (40 Code of Federal Regulations [CFR] 241, 257; Chapter 173-350 and -351 WAC)
- Environmental Policy Act (SEPA) (Revised Code of Washington [RCW] 43.21C; WAC 197-11)
- Dangerous Waste Regulations WAC 173-303
- Clean Water Act (CWA)
- Washington State Clean Air Act (RCW 70.94)
- Washington Industrial Safety and Health Act (WISHA) (RCW 49.17) and the Federal Occupational Safety and Health Act (OSHA) (29 CFR 1910, 1926)
- Arsenic Rule (WAC 296-848) and Lead Rule (WAC 296-62-07521)

9.11. Health and Safety and Soil Management

Excavation and soil removal in areas of known contamination the following plans are recommended:

- Development of a Health and Safety plan prepared by the contractor. The Health and Safety plan shall meet the requirements of OSHA 29 CFR 1910.120 The Plan shall include requirements and methods for complying with Arsenic Rule (WAC 296-848) and Lead Rule (WAC 296-62-07521) and use of 40-hour HAZWOPER-trained personnel when contact with contaminated material.
- Development of an Excavation Quality Control Plan that will describe how excavation and grading will be completed to make sure TSPMRG requirements are met.
- Development of a Dust Control Plan describing activities, sources to control, control methods and procedures, source of water and method for hauling and applying, monitoring, corrective measures if dust control actions are insufficient, monitoring, and documentation.
- Development Personnel Dust Exposure Control and Monitoring Plan that includes a personnel air monitoring exposure assessment in compliance with Arsenic Rule (WAC 296-848) and Lead Rule (WAC 296-62-07521).
- Erosion control be established that prevents the potential for contaminated soil from entering surface water. Work areas must be established with clear demarcation to minimize the potential of non-HAZWOPER-trained personnel contacting contaminated materials; this also includes reasonable measures to minimize dust emissions.

9.12. Schedule

The cleanup action is currently scheduled to be performed in June 2017 pending review and approval of applicable permits and regulatory requirements by Ecology and City of Tacoma. The Phase II expansion plan will likely be completed within the next 5 years.

10.0 USE OF THIS REPORT

This RI/CAP has been prepared for the exclusive use of Franke Tobey Jones. Any use of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and written authorization by GeoEngineers, Inc., shall be at the user's sole risk. Any unauthorized use of (or reliance on) this report shall release GeoEngineers, from any liability resulting from

such use (or reliance). Within the limitations of scope, schedule, and budget, GeoEngineers, Inc.'s respective services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. GeoEngineers, Inc. assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available.

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Table 1

Summary of Arsenic and Lead - Soil

Franke Tobey Jones Master Plan Phase I & II Expansion

Tacoma, Washington

Building Location	Location Identification	Depth (feet bgs)	Arsenic		Lead		Vertical Extent of Arsenic at Concentrations Greater than the MTCA Method A ULU Cleanup Level
			XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	
Soundview Apartments	DP1-0-0.5	0 to 0.5	**23**	--	**20**	--	0 to 2 and 5.5 to 8 feet bgs
	DP1-1-1.5	1 to 1.5	**23**	**7.4**	<25	**10**	
	DP1-2-2.5	2 to 2.5	<14	**9.8**	<18	**14**	
	DP1-3-3.5	3 to 3.5	<14	--	<18	--	
	DP1-4-4.5	4 to 4.5	<13	--	<17	--	
	DP1-5-5.5	5 to 5.5	<16	--	<20	--	
	DP1-6-6.5	6 to 6.5	**60**	**90**	**81**	**130**	
	DP1-7-7.5	7 to 7.5	**23**	**23**	**46**	**39**	
	DP1-8-8.5	8 to 8.5	<15	**4.5**	<19	--	
	DP1-9-9.5	9 to 9.5	<14	--	<19	--	
	DP1-10-10.5	10 to 10.5	<16	--	<21	--	
	DP1-11-11.5	11 to 11.5	<12	--	<16	--	
	DP1-12-12.5	12 to 12.5	<11	--	<15	--	
	DP2-0-0.5	0 to 0.5	**19**	--	<19	--	None
	DP2-1-1.5	1 to 1.5	**19**	**16**	**21**	**34**	
	DP2-2-2.5	2 to 2.5	<15	--	<18	--	
	DP2-3-3.5	3 to 3.5	<13	--	<17	--	
	DP2-5-5.5	5 to 5.5	<13	--	<17	--	
	DP2-6-6.5	6 to 6.5	<12	--	<15	--	
	DP2-7-7.5	7 to 7.5	<13	--	<16	--	
	DP2-8-8.5	8 to 8.5	<12	--	<16	--	
	DP2-9-9.5	9 to 9.5	<17	--	<23	--	
	DP2-10-10.5	10 to 10.5	<11	--	<15	--	
	DP2-11-11.5	11 to 11.5	<12	--	<15	--	
	DP3-0-0.5	0 to 0.5	<16	--	**23**	--	1.5 to 4 feet bgs
	DP3-1-1.5	1 to 1.5	**17**	**12**	<20	**18**	
	DP3-2-2.5	2 to 2.5	**38**	--	**46**	--	
	DP3-3-3.5	3 to 3.5	**24**	41	**65**	--	
	DP3-4-4.5	4 to 4.5	<26	**3.7**	**<30**	**3.8**	
	DP3-5-5.5	5 to 5.5	<12	--	<17	--	
	DP3-6-6.5	6 to 6.5	13	--	<15	--	
	DP3-7-7.5	7 to 7.5	<14	--	<19	--	
	DP3-8-8.5	8 to 8.5	<12	--	<15	--	
	DP3-9-9.5	9 to 9.5	<12	--	<16	--	
	DP4-0-0.5	0 to 0.5	<16	--	<21	--	None
	DP4-1-1.5	1 to 1.5	<13	2.9 U	<17	2.9 U	
	DP4-2-2.5	2 to 2.5	<12	3.0 U	<16	3.0 U	
	DP4-3-3.5	3 to 3.5	<12	--	<16	--	
	DP4-4-4.5	4 to 4.5	<13	--	<17	--	
	DP4-5-5.5	5 to 5.5	<12	--	<16	--	
	DP4-6-6.5	6 to 6.5	<13	--	<16	--	
	DP4-7-7.5	7 to 7.5	<12	--	<15	--	
	DP4-8-8.5	8 to 8.5	<12	--	<16	--	
	DP4-9-9.5	9 to 9.5	<13	--	<17	--	
	DP5-0-0.5	0 to 0.5	**54**	**69**	**136**	--	0 to 1 feet bgs
	DP5-1-1.5	1 to 1.5	**19**	**15**	<16	**5.8**	
	DP5-2-2.5	2 to 2.5	**15**	--	<16	--	
	DP5-5-5.5	5 to 5.5	<15	--	<19	--	
	DP5-6-6.5	6 to 6.5	<12	--	<16	--	
	DP5-7-7.5	7 to 7.5	<11	--	<15	--	
	DP5-8-8.5	8 to 8.5	<12	--	<16	--	
	DP5-9-9.5	9 to 9.5	--	--	--	--	
	DP6-0-0.5	0 to 0.5	**24**	**47**	<23	**57**	0 to 1 feet bgs
	DP6-1-1.5	1 to 1.5	<14	**11**	<18	--	
	DP6-2-2.5	2 to 2.5	**13**	**5.2**	<15	**4.6**	
	DP6-3-3.5	3 to 3.5	<12	--	<16	--	
	DP6-4-4.5	4 to 4.5	**15**	--	<15	--	
	DP6-5-5.5	5 to 5.5	<12	--	<16	--	
	DP6-6-6.5	6 to 6.5	<14	--	<19	--	
	DP6-7-7.5	7 to 7.5	<15	--	<20	--	
	DP7-0-0.5	0 to 0.5	**15**	**4.5**	<16	**4.6**	None
	DP7-1-1.5	1 to 1.5	<14	--	<17	--	
	DP7-2-2.5	2 to 2.5	<14	--	<18	--	
	DP7-3-3.5	3 to 3.5	<16	--	<20	--	
	DP7-4-4.5	4 to 4.5	<12	--	<16	--	
	DP7-5-5.5	5 to 5.5	<12	--	<16	--	
	DP7-6-6.5	6 to 6.5	<12	--	<16	--	
	DP7-7-7.5	7 to 7.5	<11	--	<15	--	
	DP7-8-8.5	8 to 8.5	<12	--	<17	--	
	DP7-9-9.5	9 to 9.5	<12	--	<15	--	
	DP8-0-0.5	0 to 0.5	**19**	**17**	<19	**15**	None
	DP8-1-1.5	1 to 1.5	**15**	--	<17	--	
	DP8-2-2.5	2 to 2.5	<14	--	<17	--	
	DP8-3-3.5	3 to 3.5	<14	--	<18	--	
	DP8-4-4.5	4 to 4.5	<13	--	<17	--	
	DP8-5-5.5	5 to 5.5	<12	--	<15	--	
	DP8-6-6.5	6 to 6.5	<16	--	<20	--	
	DP8-7-7.5	7 to 7.5	<12	--	<16	--	
	DP8-8-8.5	8 to 8.5	<13	--	<17	--	
	DP8-9-9.5	9 to 9.5	<13	--	<18	--	

Building Location	Location Identification	Depth (feet bgs)	Arsenic		Lead		Vertical Extent of Arsenic at Concentrations Greater than the MTCA Method A ULU Cleanup Level
			XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	
Skilled Nursing Facility	DP9-0-0.5	0 to 0.5	**67**	--	**31**	--	1 to 4 feet bgs
	DP9-1-1.5	1 to 1.5	**39**	**52**	**22**	**31**	
	DP9-2-2.5	2 to 2.5	<14	**7.4**	<18	--	
	DP9-3-3.5	3 to 3.5	**49**	**12**	**27**	**20**	
	DP9-4-4.5	4 to 4.5	<13	--	<17	--	
	DP9-5-5.5	5 to 5.5	<12	--	<16	--	
	DP9-6-6.5	6 to 6.5	<13	--	<17	--	
	DP9-7-7.5	7 to 7.5	<15	--	<19	--	
	DP9-8-8.5	8 to 8.5	<15	--	<19	--	
	DP9-9-9.5	9 to 9.5	<13	--	<17	--	
	DP10-0-0.5	0 to 0.5	**51**	--	**36**	--	0 to 5 feet bgs
	DP10-1-1.5	1 to 1.5	**44**	**26**	**24**	**24**	
	DP10-2-2.5	2 to 2.5	<15	--	31	--	
	DP10-3-3.5	3 to 3.5	**27**	**20**	**29**	**42**	
	DP10-5-5.5	5 to 5.5	<13	**4.7**	18	--	
	DP10-6-6.5	6 to 6.5	<14	--	<18	--	
	DP10-7-7.5	7 to 7.5	<12	--	<18	--	
	DP10-8-8.5	8 to 8.5	<14	--	<17	--	
	DP10-9-9.5	9 to 9.5	<12	--	<17	--	
	DP11-0-0.5	0 to 0.5	<13	--	<19	--	2.5 to 5 feet bgs
	DP11-1-1.5	1 to 1.5	<14	--	<17	--	
	DP11-2-2.5	2 to 2.5	**16**	**10**	<18	**14**	
	DP11-3-3.5	3 to 3.5	**105**	**120**	**69**	**110**	
	DP11-5-5.5	5 to 5.5	**16**	**6.8**	<18	--	
	DP11-6-6.5	6 to 6.5	**18**	--	<16	--	
	DP11-7-7.5	7 to 7.5	<13	--	<17	--	
	DP11-8-8.5	8 to 8.5	<13	--	<17	--	
	DP11-9-9.5	9 to 9.5	<13	--	<17	--	
	DP12-0-0.5	0 to 0.5	<13	--	<17	--	1.5 to 9 feet bgs
	DP12-1-1.5	1 to 1.5	**19**	**14**	**23**	**21**	
	DP12-2-2.5	2 to 2.5	<14	--	<18	--	
	DP12-3-3.5	3 to 3.5	**36**	**37**	**75**	**75**	
	DP12-5-5.5	5 to 5.5	**20**	--	**22**	--	
	DP12-6-6.5	6 to 6.5	**46**	--	**49**	--	
	DP12-7-7.5	7 to 7.5	**51**	--	**130**	--	
	DP12-8-8.5	8 to 8.5	**37**	**67**	**20**	**130**	
	DP12-9-9.5	9 to 9.5	<15	**3.2**	<19	--	
	DP12-10-10.5	10 to 10.5	<12	--	<16	--	
	DP12-11-11.5	11 to 11.5	<12	--	<16	--	
	DP13-0-0.5	0 to 0.5	<13	--	<18	--	1.5 to 8 feet bgs
	DP13-1-1.5	1 to 1.5	<13	**4.3**	<17	**4.2**	
	DP13-2-2.5	2 to 2.5	**46**	**30**	**39**	**41**	
	DP13-3-3.5	3 to 3.5	**40**	--	**97**	--	
	DP13-4-4.5	4 to 4.5	**29**	--	**39**	--	
	DP13-5-5.5	5 to 5.5	<14	--	<17	--	
	DP13-5.5-6F	5.5 to 6	--	--	--	--	
	DP13-6-6.5F	6 to 6.5	--	**53**	--	**88**	
	DP13-6.5-7F	6.5 to 7	--	**24**	--	**20**	
	DP13-7-7.5	7 to 7.5	**19**	**22**	<18	--	
	DP13-8-8.5	8 to 8.5	<14	**4.0**	<18	--	
	DP13-9-9.5	9 to 9.5	<13	--	<17	--	
	DP14-0-0.5	0 to 0.5	**31**	--	**22**	--	0 to 8 feet bgs
	DP14-1-1.5	1 to 1.5	**27**	--	<19	--	
	DP14-2-2.5	2 to 2.5	**32**	**27**	**20**	**36**	
	DP14-3-3.5	3 to 3.5	17	--	<17	--	
	DP14-4-4.5	4 to 4.5	<15	--	<19	--	
	DP14-5-5.5	5 to 5.5	**49**	**58**	**69**	**91**	
	DP14-6-6.5	6 to 6.5	**71**	--	**132**	--	
	DP14-7-7.5	7 to 7.5	**77**	**120**	**84**	**120**	
	DP14-8-8.5	8 to 8.5	<13	**5.8**	<18	--	
	DP14-9-9.5	9 to 9.5	<14	--	19	--	
	DP14-10-10.5	10 to 10.5	<15	--	<19	--	
	DP14-11-11.5	11 to 11.5	<16	--	<19	--	
	DP15-0-0.5	0 to 0.5	**20**	--	<15	--	0 to 6 feet bgs
	DP15-1-1.5	1 to 1.5	**25**	**57**	**25**	**210**	
	DP15-2-2.5	2 to 2.5	**37**	**41**	**38**	**48**	
	DP15-3-3.5	3 to 3.5	**28**	--	<18	--	
	DP15-4-4.5	4 to 4.5	**41**	--	**72**	--	
	DP15-5-5.5	5 to 5.5	**74**	**81**	**45**	**200**	
	DP15-6-6.5	6 to 6.5	**17**	**7.1**	<17	--	
	DP15-7-7.5	7 to 7.5	<13	--	<17	--	
	DP15-8-8.5	8 to 8.5	<14	--	<18	--	
	DP16-0-0.5	0 to 0.5	**16**	**11**	**<18**	**13**	1.5 to 10 feet bgs
	DP16-1-1.5	1 to 1.5	<17	--	<20	--	
	DP16-2-2.5	2 to 2.5	**29**	**21**	**45**	**44**	
	DP16-3-3.5	3 to 3.5	**33**	--	**57**	--	
	DP16-4-4.5	4 to 4.5	<13	--	<16	--	
	DP16-5-5.5	5 to 5.5	**70**	--	**58**	--	
	DP16-6-6.5	6 to 6.5	**56**	--	**80**	--	
	DP16-7-7.5	7 to 7.5	**47**	--	**110**	--	
	DP16-8-8.5F	8 to 8.5	--	--	--	--	
	DP16-8.5-9F	8.5 to 9	--	**58**	--	**67**	
	DP16-9-9.5F	9 to 9.5	--	**110**	--	**280**	
	DP16-10-10.5	10 to 10.5	<13	**7.5**	<17	--	
	DP16-11-11.5	11 to 11.5	14	--	<17	--	

Building Location	Location Identification	Depth (feet bgs)	Arsenic		Lead		Vertical Extent of Arsenic at Concentrations Greater than the MTCA Method A ULU Cleanup Level
			XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	
Skilled Nursing Facility	DP17-0-0.5	0 to 0.5	<9	--	<12	--	1.5 to 9 feet bgs
	DP17-1-1.5	1 to 1.5	**19**	**13**	<16	**20**	
	DP17-2-2.5	2 to 2.5	**28**	--	**34**	--	
	DP17-3-3.5	3 to 3.5	**32**	**25**	**40**	**39**	
	DP17-4-4.5	4 to 4.5	<15	--	<19	--	
	DP17-5-5.5	5 to 5.5	**46**	**56**	**71**	**85**	
	DP17-6-6.5	6 to 6.5	**92**	--	**85**	--	
	DP17-7-7.5	7 to 7.5	**53**	--	**159**	--	
	DP17-8-8.5	8 to 8.5	**57**	**35**	**25**	**22**	
	DP17-9-9.5	9 to 9.5	<14	**6.6**	<18	--	
	DP17-10-10.5	10 to 10.5	<13	--	<18	--	
	DP17-11-11.5	11 to 11.5	<12	--	<16	--	
	DP18-0-0.5	0 to 0.5	<13	--	<17	--	5.5 to 7 feet bgs
	DP18-1-1.5	1 to 1.5	<12	--	<16	--	
	DP18-2-2.5	2 to 2.5	**19**	**13**	**18**	**19**	
	DP18-3-3.5	3 to 3.5	**19**	--	**46**	--	
	DP18-4-4.5	4 to 4.5	<13	--	<16	--	
	DP18-5-5.5	5 to 5.5	<12	--	<16	--	
	DP18-6-6.5	6 to 6.5	**91**	**160**	**122**	**120**	
	DP18-7-7.5	7 to 7.5	**15**	**5.5**	<17	--	
	DP18-8-8.5	8 to 8.5	<14	--	<18	--	
	DP19-0-0.5	0 to 0.5	**22**	--	**32**	--	0 to 3 feet bgs
	DP19-1-1.5	1 to 1.5	**52**	**75**	**83**	**190**	
	DP19-2-2.5	2 to 2.5	**40**	**59**	**41**	**14**	
	DP19-3-3.5	3 to 3.5	<15	**15**	<19	--	
	DP19-5-5.5	5 to 5.5	<13	--	<16	--	
	DP19-6-6.5	6 to 6.5	<13	--	<17	--	
	DP19-7-7.5	7 to 7.5	<13	--	<17	--	
	DP19-8-8.5	8 to 8.5	<11	--	<14	--	
	DP19-9-9.5	9 to 9.5	<12	--	<17	--	
	DP20-0-0.5	0 to 0.5	<13	--	<17	--	0 to 3 feet bgs
	DP20-1-1.5	1 to 1.5	**35**	**28**	**20**	**20**	
	DP20-2-2.5	2 to 2.5	**30**	**27**	<18	**10**	
	DP20-3-3.5	3 to 3.5	<14	2.8 U	<18	--	
	DP20-4-4.5	4 to 4.5	<12	--	<15	--	
	DP20-5-5.5	5 to 5.5	<12	--	<16	--	
	DP20-9-9.5	9 to 9.5	13	--	<15	--	
	DP21-0-0.5	0 to 0.5	<13	--	<18	--	0 to 2 feet bgs
	DP21-1-1.5	1 to 1.5	**67**	**140**	**352**	**280**	
	DP21-2-2.5	2 to 2.5	<13	**9.4**	<17	**5.7**	
	DP21-3-3.5	3 to 3.5	**16**	**6.9**	<16	**7.5**	
	DP21-4-4.5	4 to 4.5	<13	--	<16	--	
	DP21-5-5.5	5 to 5.5	<12	--	<15	--	
	DP21-6-6.5	6 to 6.5	<11	--	<15	--	
	DP21-8-8.5	8 to 8.5	<12	--	<16	--	
	DP21-9-9.5	9 to 9.5	<12	--	<16	--	
	DP22-0-0.5	0 to 0.5	**60**	--	**60**	--	0 to 2 feet bgs
	DP22-1-1.5	1 to 1.5	**23**	**12**	<27	**5.9**	
	DP22-2-2.5	2 to 2.5	<21	**3.1**	<26	2.7 U	
	DP22-5-5.5	5 to 5.5	18	--	<18	--	
	DP22-6-6.5	6 to 6.5	<18	--	<24	--	
	DP22-7-7.5	7 to 7.5	<13	--	<18	--	
	DP23-0-0.5	0 to 0.5	**16**	--	**22**	--	0 to 2 feet bgs
	DP23-1-1.5	1 to 1.5	**51**	**38**	**91**	**58**	
	DP23-2-2.5	2 to 2.5	<16	--	<19	--	
	DP23-3-3.5	3 to 3.5	<14	--	<17	--	
	DP23-4-4.5	4 to 4.5	<14	--	<18	--	
	DP23-5-5.5	5 to 5.5	**16**	**16**	<17	**5.0**	
	DP23-6-6.5	6 to 6.5	<16	--	<20	--	
	DP23-7-7.5	7 to 7.5	**31**	**16**	**36**	**21**	
	DP23-8-8.5	8 to 8.5	**22**	**11**	<21	**16**	
	DP23-9-9.5	9 to 9.5	<13	--	21	--	
	DP24-0-0.5	0 to 0.5	**65**	**34**	<25	**21**	0 to 2 feet bgs
	DP24-1-1.5	1 to 1.5	<16	**23**	<21	--	
	DP24-2-2.5	2 to 2.5	<19	**3.6**	<24	--	
	DP24-3-3.5	3 to 3.5	<12	--	<16	--	
	DP24-5-5.5	5 to 5.5	<12	--	<15	--	
	DP24-6-6.5	6 to 6.5	<14	--	<19	--	
	DP24-7-7.5	7 to 7.5	<22	--	<26	--	
	DP24-8-8.5	8 to 8.5	**19**	2.8 U	<14	2.8 U	
	DP24-9-9.5	9 to 9.5	<13	--	<16	--	
	DP25-0-0.5	0 to 0.5	<14	--	<18	--	9 feet bgs to 11.5 feet bgs based on depth of fill in nearby geotechnical boring
	DP25-1-1.5	1 to 1.5	**15**	**9.2**	<18	**13**	
	DP25-2-2.5	2 to 2.5	<16	--	<20	--	
	DP25-3-3.5	3 to 3.5	<16	--	<21	--	
	DP25-4-4.5	4 to 4.5	<15	--	<20	--	
	DP25-5-5.5	5 to 5.5	<13	--	<17	--	
	DP25-6-6.5	6 to 6.5	<15	--	<19	--	
	DP25-8-8.5F	8 to 8.5	--	**9.1**	--	**14**	
	DP25-9-9.5	9 to 9.5	**42**	**49**	<25	**55**	

Building Location	Location Identification	Depth (feet bgs)	Arsenic		Lead		Vertical Extent of Arsenic at Concentrations Greater than the MTCA Method A ULU Cleanup Level
			XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	
Skilled Nursing Facility	DP26-0-0.5	0 to 0.5	<14	--	21	--	2.5 to 5 feet bgs
	DP26-1-1.5	1 to 1.5	<30	**3.8**	<35	**18**	
	DP26-2-2.5	2 to 2.5	<11	**4.4**	<14	**7.0**	
	DP26-3-3.5	3 to 3.5	**60**	**35**	**96**	**59**	
	DP26-4-4.5	4 to 4.5	**69**	**74**	**255**	**140**	
	DP26-5-5.5	5 to 5.5	<16	2.8 U	<21	--	
	DP26-6-6.5	6 to 6.5	<12	--	<17	--	
	DP26-7-7.5	7 to 7.5	<12	--	<16	--	
	DP26-8-8.5	8 to 8.5	<13	--	<17	--	
	DP26-9-9.5	9 to 9.5	<13	--	<17	--	
	DP27-0-0.5	0 to 0.5	**20**	--	**22**	--	0 to 2 feet bgs
	DP27-1-1.5	1 to 1.5	**68**	**31**	**58**	**34**	
	DP27-2-2.5	2 to 2.5	<13	2.9 U	<17	--	
	DP27-3-3.5	3 to 3.5	<12	--	<16	--	
	DP27-4-4.5	4 to 4.5	<14	--	<18	--	
	DP27-5-5.5	5 to 5.5	<12	--	<16	--	
	DP27-6-6.5	6 to 6.5	13	--	<15	--	
	DP27-7-7.5	7 to 7.5	<12	--	<17	--	
	DP28-0-0.5	0 to 0.5	30	**15**	23	**27**	None
	DP28-1-1.5	1 to 1.5	17	**13**	<20	**17**	
	DP28-2-2.5	2 to 2.5	<16	--	<20	--	
	DP28-3-3.5	3 to 3.5	**16**	--	<16	--	
	DP28-4-4.5	4 to 4.5	<14	--	<18	--	
	DP28-5-5.5	5 to 5.5	**19**	**13**	**37**	**28**	
	DP28-6-6.5	6 to 6.5	<11	--	<15	--	
	DP28-7-7.5	7 to 7.5	<12	--	<16	--	
Phase II Expansion Area	TP1-0-0.5	0 to 0.5	<14	**17**	<17	--	0.5 to 2 feet bgs
	TP1-1-1.5	1 to 1.5	**145**	**180**	**362**	**310**	
	TP1-2-2.5	2 to 2.5	<12	**3.5**	<15	**4.1**	
	TP1-3-3.5	3 to 3.5	<12	**3.0**	<15	--	
	TP1-4-4.5	4 to 4.5	<16	--	24	--	
	TP1-5-5.5	5 to 5.5	<14	--	<17	--	
	TP1-6-6.5	6 to 6.5	<13	--	<17	--	
Duplex	TP2-0-0.5	0 to 0.5	**13**	--	<16	--	0 to 6 feet bgs
	TP2-1-1.5	1 to 1.5	**20**	**13**	<16	**12**	
	TP2-1.5-2F	1.5 to 2	--	--	--	--	
	TP2-2.5-3F	2.5 to 3	**37**	**54**	27	**73**	
	TP2-3-3.5	3 to 3.5	<13	**14**	<17	--	
	TP2-4-4.5	4 to 4.5	**54**	--	**66**	--	
	TP2-5-5.5	5 to 5.5	**17**	**26**	**31**	**38**	
	TP2-6-6.5	6 to 6.5	<12	2.8 U	<16	--	
	TP2-7-7.5	7 to 7.5	<12	--	<16	--	
Phase II Expansion Area	TP3-0-0.5	0 to 0.5	<11	**6.0**	<15	**14**	None
	TP3-1-1.5	1 to 1.5	<13	--	<16	--	
	TP3-2-2.5	2 to 2.5	<14	--	<18	--	
	TP3-3-3.5	3 to 3.5	<13	--	<16	--	
	TP4-0-0.5	0 to 0.5	<11	**3.3**	<15	**8.1**	None
	TP4-1-1.5	1 to 1.5	<14	--	<17	--	
	TP4-2-2.5	2 to 2.5	<13	--	<17	--	
	TP4-3-3.5	3 to 3.5	<13	--	<17	--	
Soundview Apartments	TP5-0-0.5	0 to 0.5	**50**	--	**36**	--	0 to 2 feet bgs
	TP5-1-1.5	1 to 1.5	**22**	**49**	**28**	**60**	
	TP5-2-2.5	2 to 2.5	<13	3.1 U	<18	--	
	TP5-3-3.5	3 to 3.5	<13	--	<16	--	
	TP5-4-4.5	4 to 4.5	<13	--	<17	--	
	TP5-5-5.5	5 to 5.5	<12	--	<16	--	
	TP5-6-6.5	6 to 6.5	<12	--	<16	--	

Building Location	Location Identification	Depth (feet bgs)	Arsenic		Lead		Vertical Extent of Arsenic at Concentrations Greater than the MTCA Method A ULU Cleanup Level
			XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	XRF Values (mg/kg)	Chemical Analytical Results (mg/kg)	
Soundview Apartments	TP6-0-0.5	0 to 0.5	**62**	**69**	**44**	**44**	0 to 1 feet bgs
	TP6-1-1.5	1 to 1.5	<15	**8.9**	<18	--	
	TP6-2-2.5	2 to 2.5	<12	--	<17	--	
	TP6-3-3.5	3 to 3.5	<12	--	<16	--	
	TP6-4.5-4	4.5 to 5	<11	--	<16	--	
	TP6-6-6.3	6 to 6.3	<12	--	<16	--	
Skilled Nursing Facility	TP7-0-0.5	0 to 0.5	<13	--	**20**	--	1.5 to 3 feet bgs
	TP7-1-1.5	1 to 1.5	**19**	**12**	<16	**13**	
	TP7-2-2.5	2 to 2.5	**56**	**55**	**34**	**29**	
	TP7-3-3.5	3 to 3.5	**15**	**11**	<16	--	
	TP7-4.5-5	4.5 to 5	<12	--	<17	--	
	TP7-5-5.5	5 to 5.5	<13	--	<16	--	
	TP7-6-6.5	6 to 6.5	<12	--	<16	--	
	TP8-0-0.5	0 to 0.5	<10	--	17	--	1.5 to 3 feet bgs
	TP8-1-1.5	1 to 1.5	<12	**6.6**	<16	**7.4**	
	TP8-2-2.5	2 to 2.5	**59**	**92**	<17	**35**	
	TP8-3-3.5	3 to 3.5	<12	3.1 U	<16	--	
	TP8-4.5-5	4.5 to 5	<13	--	<18	--	
	TP8-5-5.5	5 to 5.5	<13	--	<17	--	
	TP8-6-6.5	6 to 6.5	<12	--	<16	--	
	TP9-0-0.5	0 to 0.5	**100**	**130**	**244**	--	0 to 2 feet bgs
	TP9-1-1.5	1 to 1.5	**25**	**19**	<18	**3.5**	
	TP9-2-2.5	2 to 2.5	<13	**6.6**	<18	--	
	TP9-3-3.5	3 to 3.5	<13	--	<18	--	
	TP9-4-4.5	4 to 4.5	<14	--	<18	--	
	TP9-5-5.5	5 to 5.5	<13	--	<16	--	
	TP9-6-6.5	6 to 6.5	<14	--	<19	--	
	TP9-8-8.5	8 to 8.5	--	2.9 U	--	2.9 U	
	TP9-11-11.5	11 to 11.5	<11	--	<16	--	
Potential Fill Area	TP10-0-0.5	0 to 0.5	<15	**26**	**65**	--	0 to 2 feet bgs
	TP10-1-1.5	1 to 1.5	**29**	**19**	<15	2.9 U	
	TP10-2-2.5	2 to 2.5	<13	2.9 U	<16	--	
	TP10-3-3.5	3 to 3.5	<12	--	<17	--	
	TP10-4.5-5	4.5 to 5	<13	--	<16	--	
	TP10-5-5.5	5 to 5.5	<13	--	<18	--	
	TP10-6-6.5	6 to 6.5	<12	--	<17	--	
Potential Infiltration Area	TP11-0-0.5	0 to 0.5	**72**	**130**	**71**	**89**	0 to 3 feet bgs
	TP11-1-1.5	1 to 1.5	<12	**6.9**	<16	--	
	TP11-2-2.5	2 to 2.5	**51**	**71**	82	**92**	
	TP11-3-3.5	3 to 3.5	<12	2.9 U	<16	--	
	TP11-5-5.5	5 to 5.5	<12	--	<16	--	
	TP11-6-6.5	6 to 6.5	<11	--	<15	--	
Phase II Expansion Area	TP12A-0-0.5	0 to 0.5	<12	--	<16	--	None
	TP12A-1-1.5	1 to 1.5	**16**	**14**	<18	**9.0**	
	TP12A-2-2.5	2 to 2.5	<12	--	<16	--	
	TP12A-3-3.5	3 to 3.5	<12	--	<16	--	
	TP12A-4-4.5	4 to 4.5	<13	--	<16	--	
Maximum Concentration of Contaminated Soil			180		310		
Average Concentration of Contaminated Soil[4]			54		278		
Maximum Concentration of Soil Samples Collected Between 0 to 1.5 feet bgs[5]			180		310		
Average Concentration of Soil Samples Collected Between 0 to 1.5 feet bgs[5]			26		34		
Maximum Concentration of Soil Samples Collected Between 1.5 to 9.5 feet bgs[6]			160		280		
Average Concentration of Soil Samples Collected Between 1.5 to 9.5 feet bgs[6]			16		21		
MTCA Method A ULU Cleanup Level			20	20	250	250	
Tacoma Smelter Plume Remediation Levels	**No Further Action**		Average <20 mg/kg Maximum <40 mg/kg		Average <250 mg/kg Maximum <500 mg/kg		
	Appropriate for Mixing		Average <40 mg/kg		Average <500 mg/kg		
	Appropriate For Consolidation or Capping in Place with Type 1 Cap		Average < 100 mg/kg Maximum <200 mg/kg		Average <500 mg/kg Maximum <1,000 mg/kg		

Notes:

[1] Chemical analysis performed by OnSite Environmental, Inc., of Redmond, Washington.

[2] Sample ID = Test pit number - starting depth of sample [feet bgs] -end depth [feet bgs] (i.e., Test pit 2 collected 0-2 feet bgs = TP2-0-2) or Direct-push boring number - starting depth of sample [feet bgs] - end depth [feet bgs] (i.e., Direct-push boring no. 9 collected 0 to 3 feet bgs = DP9-0-3).

[3] Metals were analyzed by U.S. Environmental Protection Agency (EPA) method 6010C.

[4] Calculated by taking the average or maximum concentration of contaminated soil. If chemical analytical data was not available, then the XRF data was used in the calculation.

[5] Calculated by taking the average or maximum of soil samples collected during this investigation where measurements are known from the ground surface to 1.5 feet bgs. If chemical analytical data was not available then then XRF data was used in the calculation. If the chemical of concern was not detected, then half the detection limit value was used.

[6] Calculated by taking the average or maximum of all soil samples collected during this investigation where measurements are known from the 1.5 to the full depth of the testing. If chemical analytical data was not available then then XRF data was used in the calculation. If the chemical of concern was not detected, then half the detection limit value was used in calculation.

NA = Not applicable
bgs = below ground surface
EPA = United States Environmental Protection Agency
MTCA = Model Toxics Control Act
-- = Not analyzed
mg/kg = milligram per kilogram
U = Analyte was not detected at or greater than the listed reporting limit
Bold font type indicates the chemical of concern was detected in the sample at concentrations greater than laboratory reporting limits.
Bold font type and gray shading indicates that the detected concentration is greater than the respective MTCA cleanup level.

Table 2

Summary of Petroleum Hydrocarbons, PAHs, Other Metals and VOCs - Soil[1]

Franke Tobey Jones Master Plan Phase I & II Expansion

Tacoma, Washington

Sample Identification	DP1-2-2.5	DP4-2-2.5	DP6-2-2.5	DP13-6-6.5F	DP16-8.5-9F	DP16-9-9.5F	DP21-2-2.5	DP25-8-8.5F	TP2-2.5-3-F	MTCA Method A Cleanup Level
Sample Date	11/1/2016	11/1/2016	11/1/2016	11/2/2016	11/2/2016	11/2/2016	11/2/2016	11/2/2016	11/9/2016	
Sample Depth (feet bgs)	2 to 2.5	2 to 2.5	2 to 2.5	6 to 6.5	8.5 to 9	9 to 9.5	2 to 2.5	8 to 8.5	2.5 to 3	
Field Screening	SS	SS	SS	SS	SS	NS	SS	SS	SS	
Soil Type	Fill	Native	Native	Fill	Fill	Fill	Fill	Fill	Fill	
Building Location	Sound View Apartments			Skilled Nursing Facility				None	Duplex	
Petroleum Hydrocarbons (mg/kg)[3]										
Hydrocarbon Identification (NWTPH-HCID)										
Gasoline-range hydrocarbons	23 U	24 U	25 U	28 U	26 U	--	24 U	24 U	27 U	30/100[13]
Diesel-range hydrocarbons	58 U	61 U	62 U	69 U	64 U	--	60 U	60 U	65 U	2,000
Lube oil-range hydrocarbons	120 U	120 U	120 U	140 U	**DET**	--	120 U	120 U	**130**	2,000
NWTPH-Dx[4]										
Diesel-range hydrocarbons	--	--	--	--	**90**	35 UJ	--	--	32 U	2,000
Lube oil-range hydrocarbons	--	--	--	--	**700**	**160 J**	--	--	**220**	2,000
RCRA Metals (mg/kg)[5]										
Barium	**110**	**59**	**180**	**130**	**110**	--	**130**	**150**	**100**	16,000
Cadmium	0.58 U	0.61 U	0.62 U	**1.6**	**1.0**	--	0.60 U	0.60 U	**1.0**	2
Chromium	**83**	**35**	**40**	**71**	**40**	--	**53**	**46**	**49**	2,000
Mercury	0.29 U	0.30 U	0.31 U	**1.1**	**0.43**	--	0.30 U	0.30 U	**0.35**	2
Selenium	12 U	12 U	12 U	14 U	13 U	--	12 U	12 U	13 U	400[14]
Silver	1.2 U	1.2 U	1.2 U	1.4 U	1.3 U	--	1.2 U	1.2 U	1.3 U	400[14]
VOCs (mg/kg)[6]										
Benzene	--	--	--	0.0013 U	0.0012 UJ	--	--	0.00087 U	--	0.03
Ethylbenzene	--	--	--	0.0013 U	**0.0051 J**	--	--	0.00087 U	--	6
Toluene	--	--	--	**0.0097**	0.0062 UJ	--	--	0.0043 U	--	7
Total Xylenes[7]	--	--	--	0.0026 U	0.0025 UJ	--	--	0.0017 U	--	9
2-Butanone (MEK)[8]	--	--	--	**0.078**	**0.13 J**	--	--	0.0043 U	--	48,000[14]
Acetone[8]	--	--	--	**0.99**	**0.58 J**	--	--	**0.064**	--	72,000[14]
Carbon Disulfide[8]	--	--	--	**0.0045**	**0.0015 J**	--	--	0.00087 U	--	8,000[14]
Methylene Chloride[8]	--	--	--	0.013 U	**0.085 J[12]**	--	--	0.0087 U	--	0.02
PAHs[9] (mg/kg)										
Acenaphthene	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	4,800[14]
Acenaphthylene	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	NE
Anthracene	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	24,000[14]
Fluoranthene	0.0078 U	0.0081 U	0.0082 U	**0.018**	**0.013**	**0.016 J**	0.0080 U	0.0081 U	**0.020**	3,200[14]
Fluorene	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	3,200[14]
Phenanthrene	0.0078 U	0.0081 U	0.0082 U	**0.010**	**0.011**	**0.016 J**	0.0080 U	0.0081 U	**0.016**	NE
Benzo(g,h,i)perylene	0.0078 U	0.0081 U	0.0082 U	**0.013**	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	NE
Pyrene	0.0078 U	0.0081 U	0.0082 U	**0.017**	**0.012**	**0.0093 J**	0.0080 U	0.0081 U	**0.016**	2,400[14]
Naphthalenes[9, 10] (mg/kg)										
Naphthalene	0.0078 U	0.0081 U	0.0082 U	**0.017**	**0.013**	**0.016 J**	0.0080 U	0.0081 U	0.0086 U	MTCA Method A ULU cleanup level for the sum of all Naphthalenes is 5 mg/kg
1-Methylnaphthalene	0.0078 U	0.0081 U	0.0082 U	**0.010**	0.0085 U	**0.0094 J**	0.0080 U	0.0081 U	0.0086 U	
2-Methylnaphthalene	0.0078 U	0.0081 U	0.0082 U	**0.018**	0.0085 U	**0.011 J**	0.0080 U	0.0081 U	0.0086 U	
Total Naphthalenes[5]	--	--	--	**0.045**	**0.013**	**0.036 J**	--	--	--	
cPAHs[9] (mg/kg)										
Benzo (a) anthracene (TEF 0.1)	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	**0.0088**	MTCA Method A ULU cleanup level for the sum of all cPAHs is 0.1 mg/kg
Chrysene (TEF 0.01)	0.0078 U	0.0081 U	0.0082 U	**0.016**	**0.015**	**0.01 J**	0.0080 U	0.0081 U	**0.012**	
Benzo (b) fluoranthene (TEF 0.1)	0.0078 U	0.0081 U	0.0082 U	**0.022**	**0.018**	0.0092 UJ	0.0080 U	0.0081 U	**0.015**	
Benzo (j,k) fluoranthene (TEF 0.1)	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	
Benzo (a) pyrene (TEF 1)	0.0078 U	0.0081 U	0.0082 U	**0.015**	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	
Indeno (1,2,3-cd) pyrene (TEF 0.1)	0.0078 U	0.0081 U	0.0082 U	**0.013**	**0.0086**	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	
Dibenz (a,h) anthracene (TEF 0.1)	0.0078 U	0.0081 U	0.0082 U	0.0092 U	0.0085 U	0.0092 UJ	0.0080 U	0.0081 U	0.0086 U	
Total TTEC of cPAHs[11] (ND=0.5 RL)	0.006 UT	0.006 UT	0.006 UT	**0.02 T**	**0.008 T**	**0.007 JT**	0.006 UT	0.006 UT	**0.008 T**	

Notes:

[1] Chemical analysis performed by OnSite Environmental, Inc. of Redmond, Washington.

[2] Sample identification is the boring number - starting depth - ending depth in feet (i.e., soil sample B1-5-6 was collected from boring B1 from 5 to 6 feet bgs.

[3] Petroleum hydrocarbons were analyzed by Ecology-approved method NWTPH-HCID.

[4] Ecology-approved method NWTPH-Dx with acid/silica gel cleanup.

[5] Metals analyzed by United States Environmental Protection Agency (EPA) 6000/7000 series method.

[6] Volatile organic compounds (VOCs) analyzed by United States Environmental Protection Agency (EPA) method 8260B. Only detected analytes shown. See lab report in Appendix C for full list of analytes.

[7] Total xylenes is the sum of m,p xylene and o-xylene. The lower detection limit is shown.

[8] Acetone, 2-Butanone, Carbon Disulfide, and methylene chloride are common laboratory contaminants.

[9] Polycyclic aromatic hydrocarbons (PAHs) were analyzed by United States Environmental Protection Agency (EPA) method 8270D/SIM.

[10] Total naphthalenes consists of 1-methylnaphthalene, 2-methylnaphthalene and naphthalene.

[11] Total Toxic Equivalent Concentration (TTEC) is the sum of each individual cPAH concentration multiplied by its corresponding Toxicity Equivalency Factor (TEF).

[12] The laboratory noted that the sample vials for Sample DP16-8.5-9F contained grit between the lip and cap septum, rendering them unusable; therefore, the samples were extracted from 8 ounce jars and analyzed. Consequently, some loss of volatiles may have occurred and methylene chloride may have been introduced into the samples during sample preparation. For these reasons, the positive results and reporting limits for all volatile target analytes were qualified as estimated (J and UJ) in this sample.

[13] Model Toxics Control Act (MTCA) Method A cleanup level for gasoline is 30 mg/kg if benzene is detected or if the sum of toluene, ethylbenzene and xylenes are greater than or equal to 1% of the total gasoline detection.

[14] MTCA Method B criteria level represented because MTCA Method A cleanup level has not been established.

Ecology = Washington State Department of Ecology

EPA = United States Environmental Protection Agency

PAHs = polycyclic aromatic hydrocarbons

cPAHs = carcinogenic polycyclic aromatic hydrocarbons

ULU = unrestricted land use

TTEC = Total Toxic Equivalent Concentration

TEF = Toxicity Equivalency Factor as defined in WAC 173-340-900 Table 708-2

T = Total Sum

J = Estimated result

U = Analyte was not detected at or greater than the listed practical quantitative limit

SS = Slight Sheen

NE = not established

N/A = not applicable

bgs = below ground surface

MTCA = Model Toxics Control Act

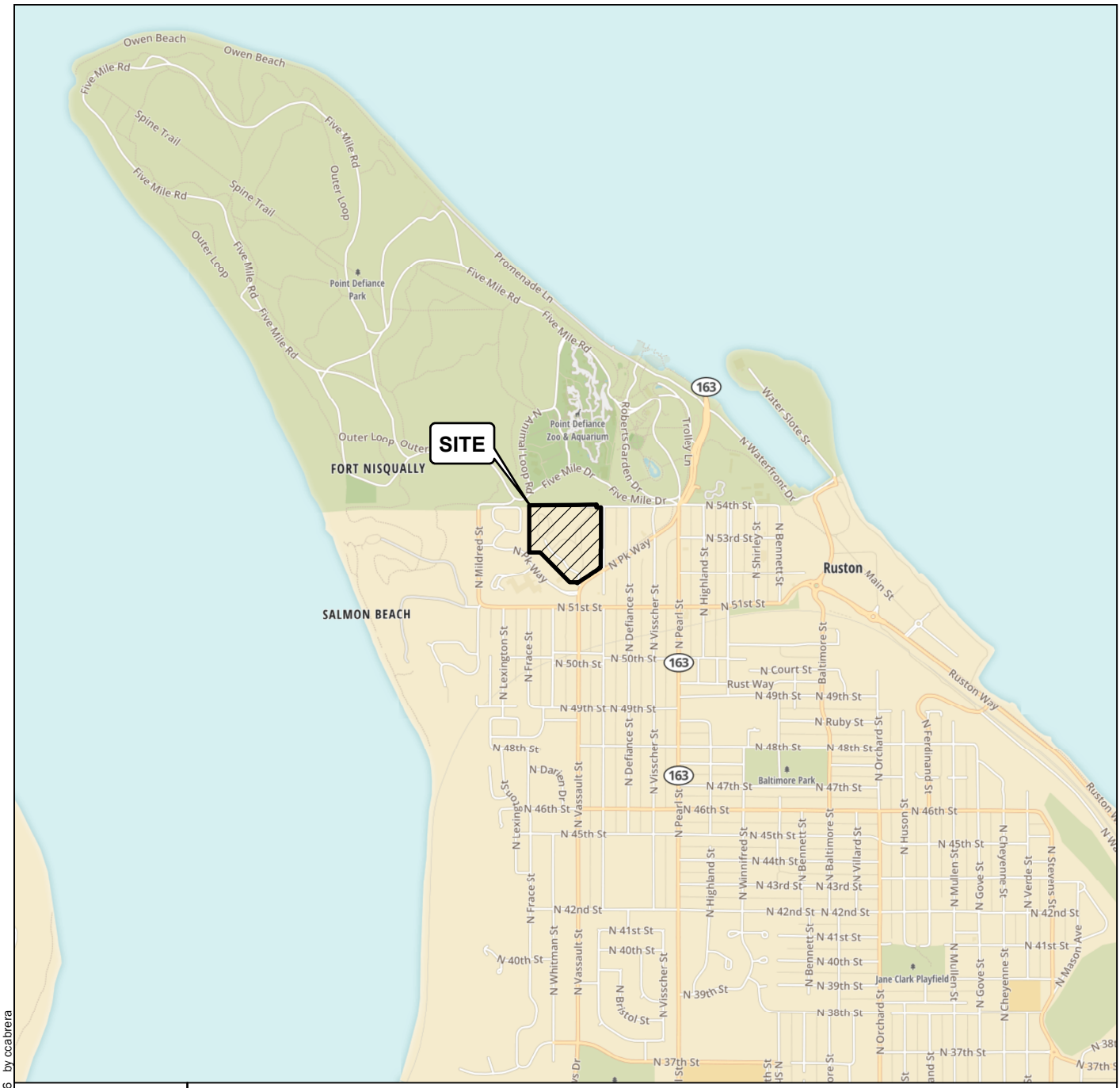
mg/kg = milligram per kilogram

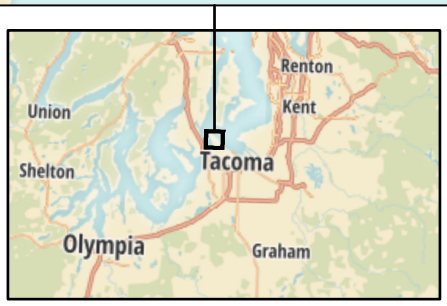
-- = sample not analyzed for this compound

Bold font type indicates that the analyte was detected.

Detected concentration is greater than Ecology's Reuse Criteria for commercial fill above the water table.

Detected concentration is greater than the respective MTCA Method A cleanup level or Method B screening level





N
W E
S

2,000 0 2,000

Feet

Vicinity Map

Franke Tobey Jones
Tacoma, Washington

GeoEngineers

Figure 1

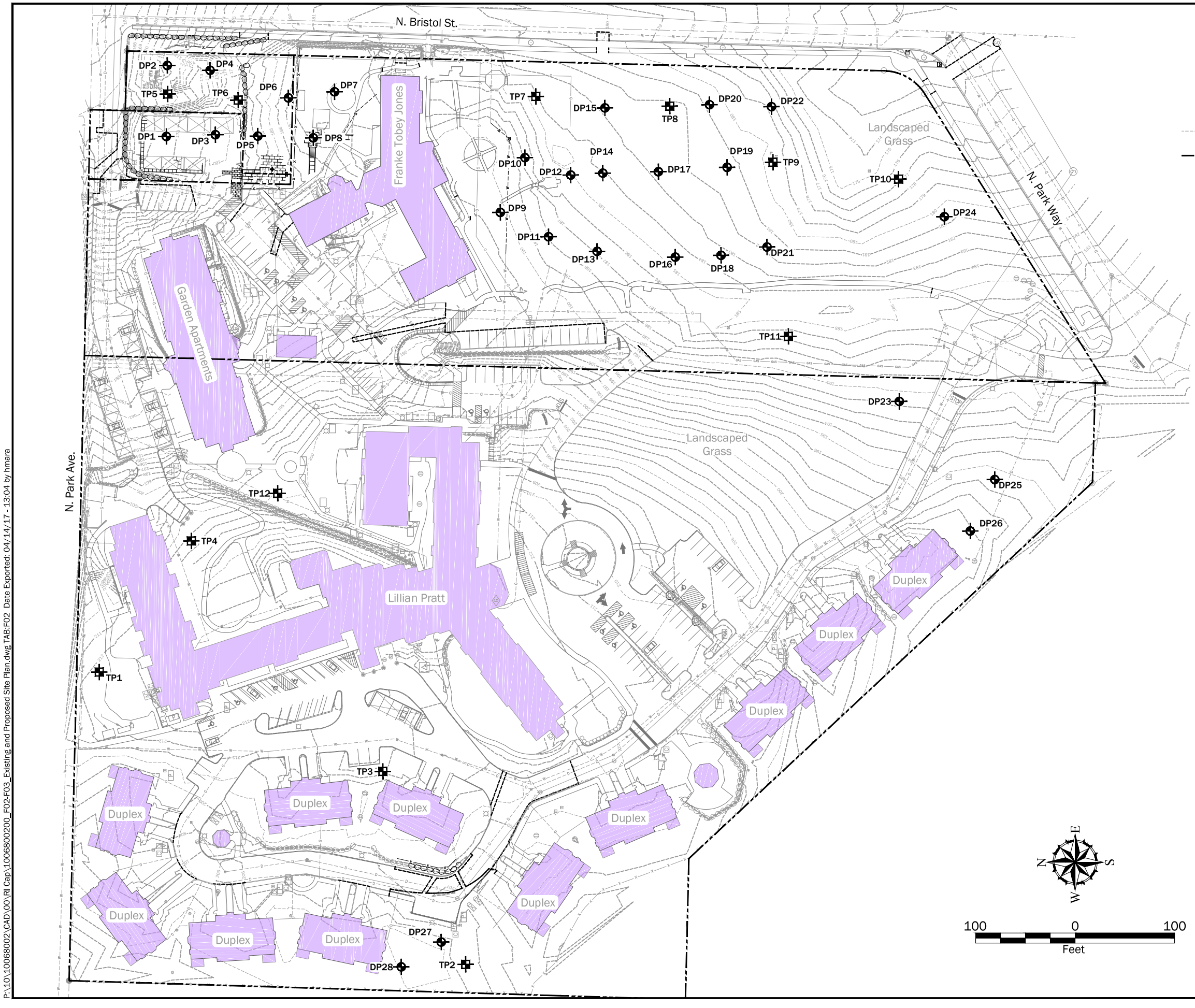
Notes:

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

Data Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 UTM Zone 10N

P:\10\10068002\GIS\MXDs\10068002_F01_VM.mxd Date Exported: 12/07/16 by ccabrera



Legend

- DP1 — Approximate Location and Identification Direct-Push Boring
- TP1 — Approximate Location and Identification Test Pit
- Grey Text — Existing Site Features
- 200 — Existing 1 Foot Contours
- Pierce County Parcel Boundary
- Existing Building Outline

Notes:

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

Data Source:
Base CAD files provided by ABHL on 04/14/17.

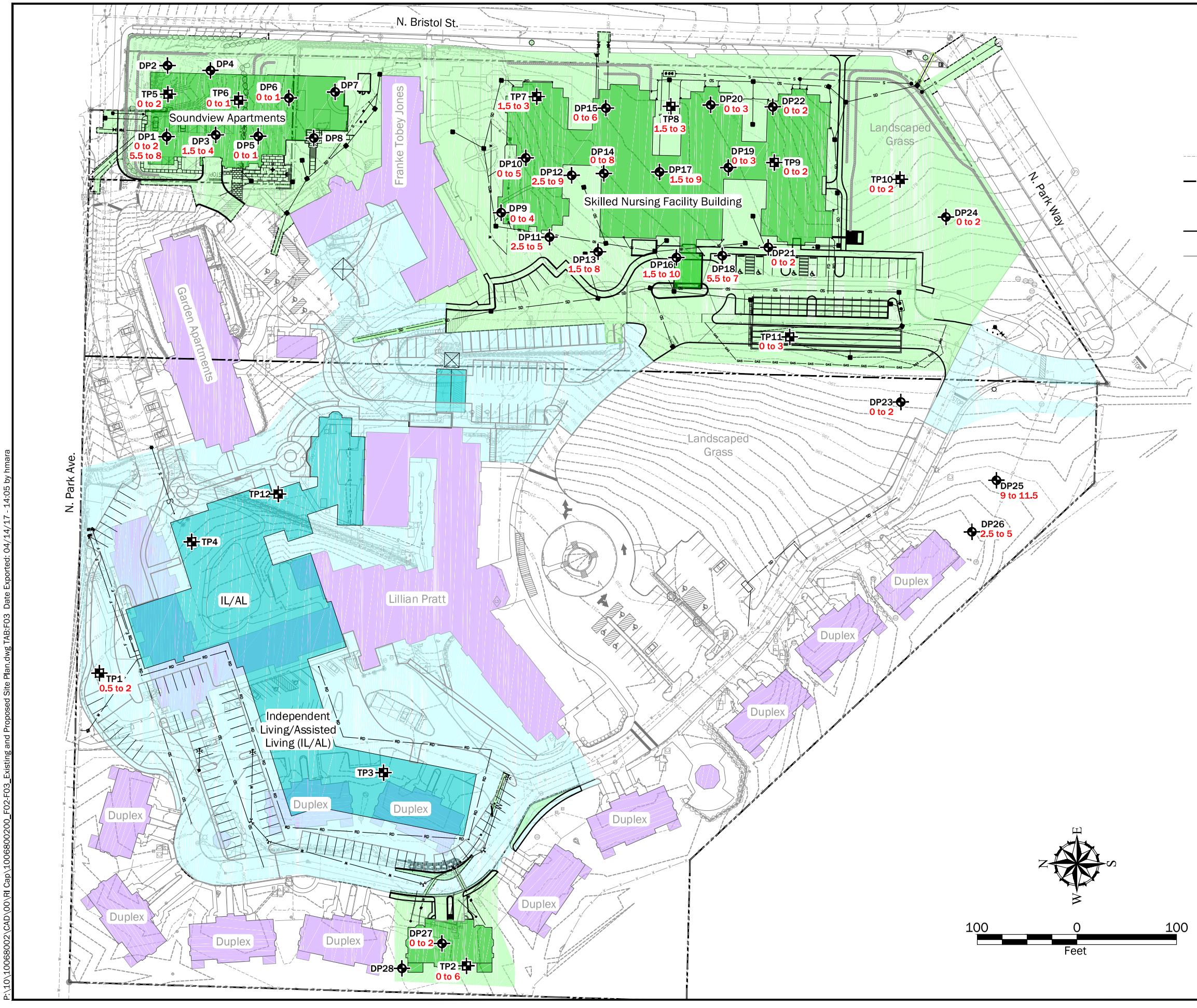
Existing FTJ Facility Features

Franke Tobey Jones
Tacoma, Washington

GeoEngineers

Figure 2

P:\10\10068002\CAD\00\RI Cap\10068002200_F02-F03_Existing and Proposed Site Plan.dwg TAB:F02 Date Exported: 04/14/17 - 13:04 by hmara



Legend

- DP1 — Approximate Location and Identification Direct-Push Boring
- TP1 — Approximate Location and Identification Test Pit
- 0 to 1 — Estimated Depth of Arsenic-Contaminated Soil (Feet bgs)
- Grey Text — Existing Site Features
- 200 — Existing 1 Foot Contours
- Pierce County Parcel Boundary
- Existing Building Outline
- Proposed Phase 1 Expansion
- Proposed Phase 2 Expansion
- Proposed Phase 1 Expansion Building Outline
- Proposed Phase 1 Expansion Asphalt/Pavement/Landscaping
- Proposed Phase 2 Expansion Building Outline
- Proposed Phase 2 Expansion Asphalt/Pavement/Landscaping

Notes:

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

Data Source:
Base CAD files provided by ABHL on 04/14/17.

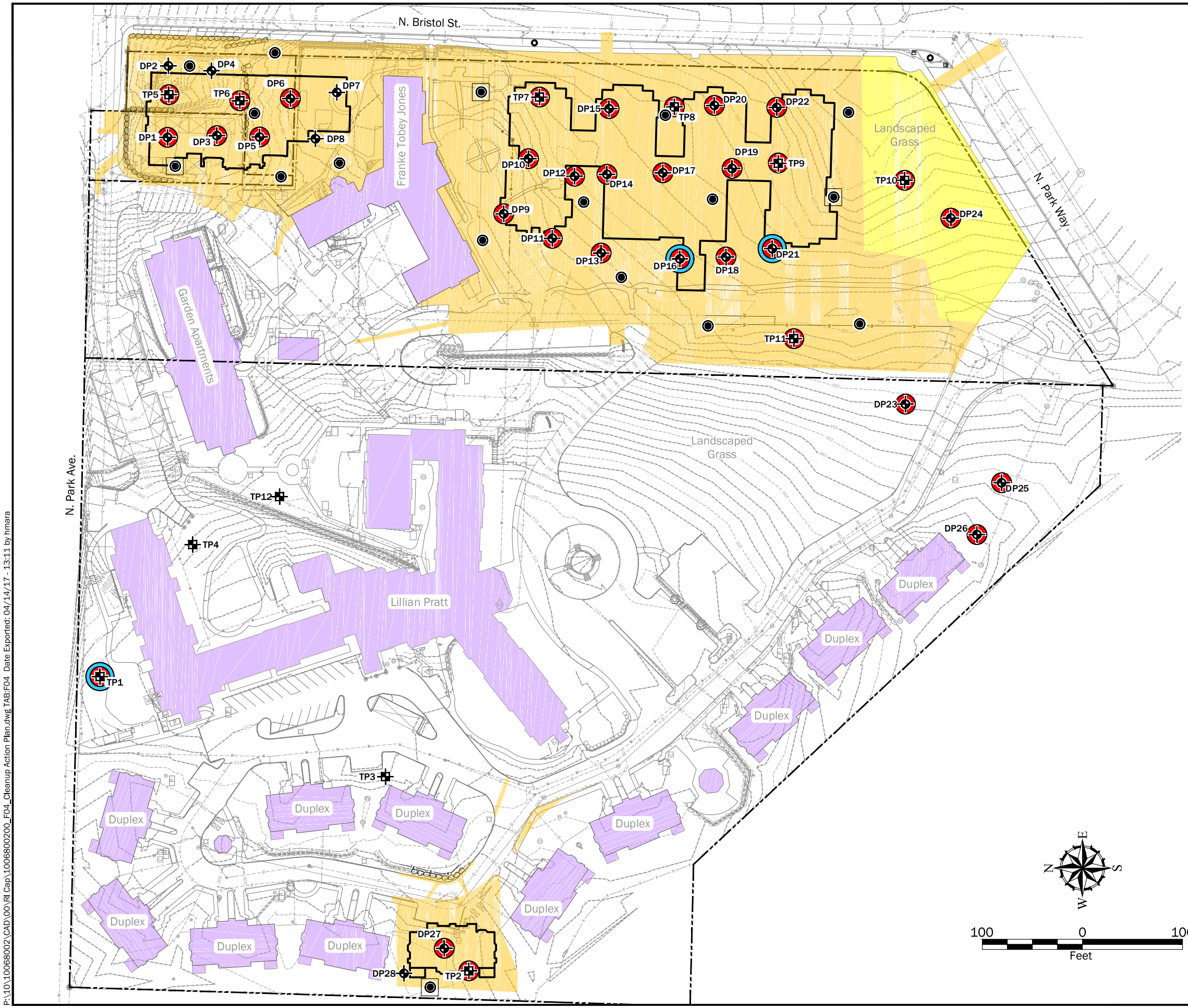
Proposed Site Features with Estimated Extent of Arsenic Contaminated Soil

Franke Tobey Jones
Tacoma, Washington

GeoEngineers

Figure 3

P:\10\10068002\CAD\00\RI Cap\10068002200_F02-F03_Existing and Proposed Site Plan.dwg TAB:F03 Date Exported: 04/14/17 - 14:05 by hmara



Legend

- DP1 — Approximate Location and Identification Direct-Push Boring
- TP1 — Approximate Location and Identification Test Pit
- Approximate Location of Confirmation Sample to be Collected From 0 to 6 Inches bgs Following Grading Activities
- Approximate Location of Confirmation Sample to be Collected from 6 to 12 Inches Following Grading Activities
- Arsenic-Contaminated Soil Present in Investigation Location. See Figure 3 Estimated Depths and Table 1 for Chemical Analytical Data.
- Lead-Contaminated Soil Present in Investigation Location. See Table 1 for Chemical Analytical Data.
- Grey Text — Existing Site Features
- Existing 1 Foot Contours
- Pierce County Parcel Boundary
- Existing Building Outline
- Remedial Area 1 — Approximate Area Where Soil Will Be Consolidated and Capped
- Remedial Area 2 — Approximate Area Where 1 Foot of Soil Will Be Stripped and Consolidated in the Southeast Portion of the Site. Then Mixed/Regraded and Capped
- Proposed Building Outline

Notes:

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

Data Source:
Base CAD files provided by ABHL on 04/14/17.

Phase 1 Expansion - Cleanup Action Plan

Franke Tobey Jones
Tacoma, Washington

GeoEngineers

Figure 4

P:\10\10068002\CAD\00\RI Cap\10068002200_F04_Cleanup Action Plan.dwg TAB:F04 Date Exported: 04/14/17 - 13:11 by hmara

APPENDIX A
2001 to 2008 Sampling Results

MRC CONSTRUCTION, LLC
SITEWORK UTILITIES & ENVIRONMENTAL
RUSTON, WA. (253)759-4829

December 18, 2006

Franke Tobey Jones Home
5340 N. Bristol
Tacoma, WA 98407

Re: AC01

Dear Franke Tobey Jones Home,

As you know, your property at 6414 Parkway Street was tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Replacement Project. Asarco has reached an agreement with EPA that requires testing of yards in Ruston and North Tacoma to determine which yards might require soil replacement. This agreement states that yards will require remediation if the arsenic concentration exceeds 230 part per million or the lead concentration exceeds 500 parts per million (the EPA action levels).

Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Because your sample results are below the EPA action levels for arsenic and lead, your property does not need to be remediated. We have enclosed a brochure from the Program For Area Clean-up (PACE) as additional information. If you have any questions, please contact Michele Wilkins at 759-6015. Thank you for your cooperation.

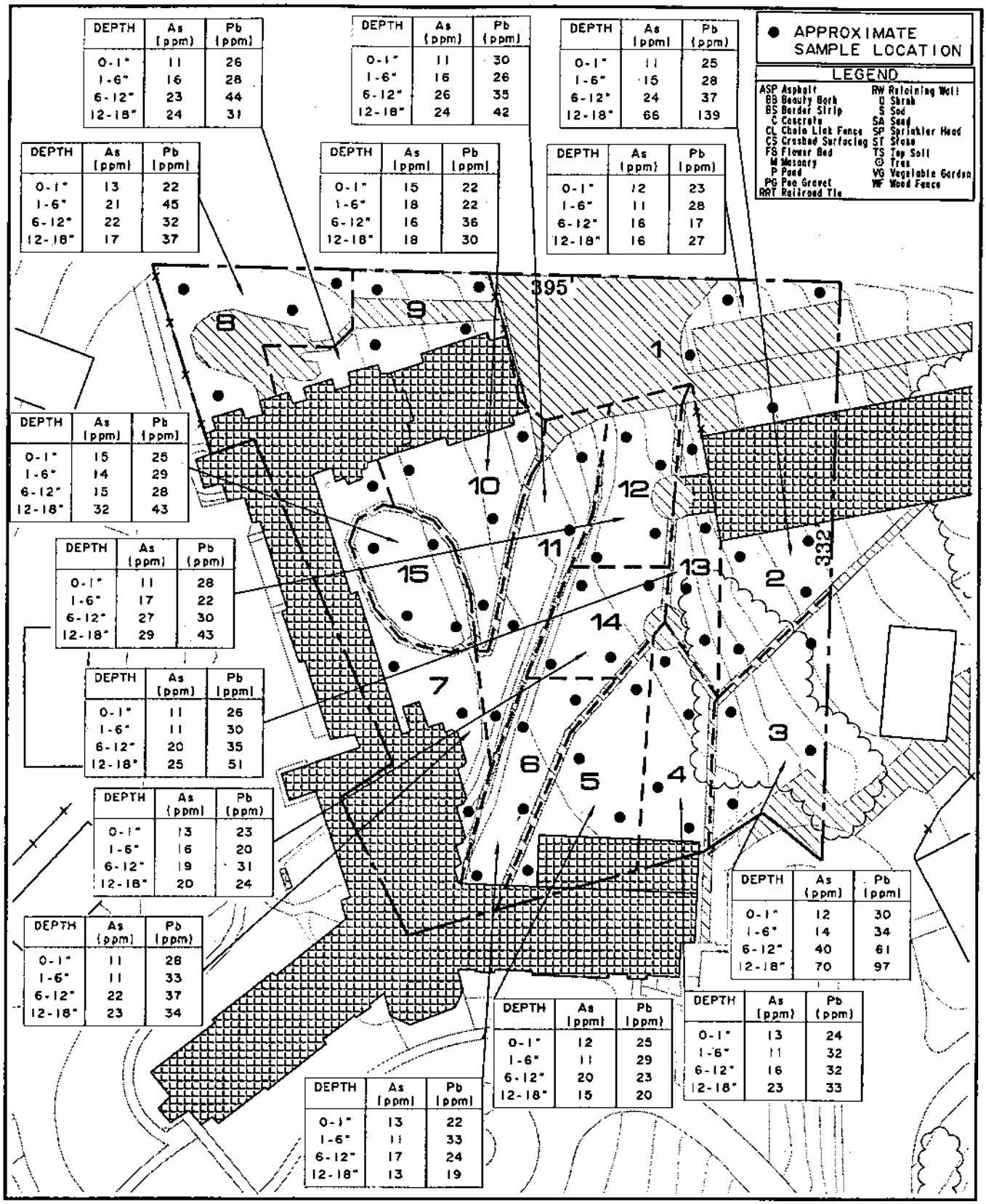
Sincerely,

Ric Rademacher
Tacoma Projects Manager

"Information for Owners of Property That Will Not Require Remediation" enclosed
cc Tenant

5219 North Shirley Street Suite 003
Tacoma, WA 98407

(253) 759-4829
Fax: (253) 759-1088



11/9/05

ACOI-IC5

NORTH

0 20 40 60 80

SCALE IN FEET

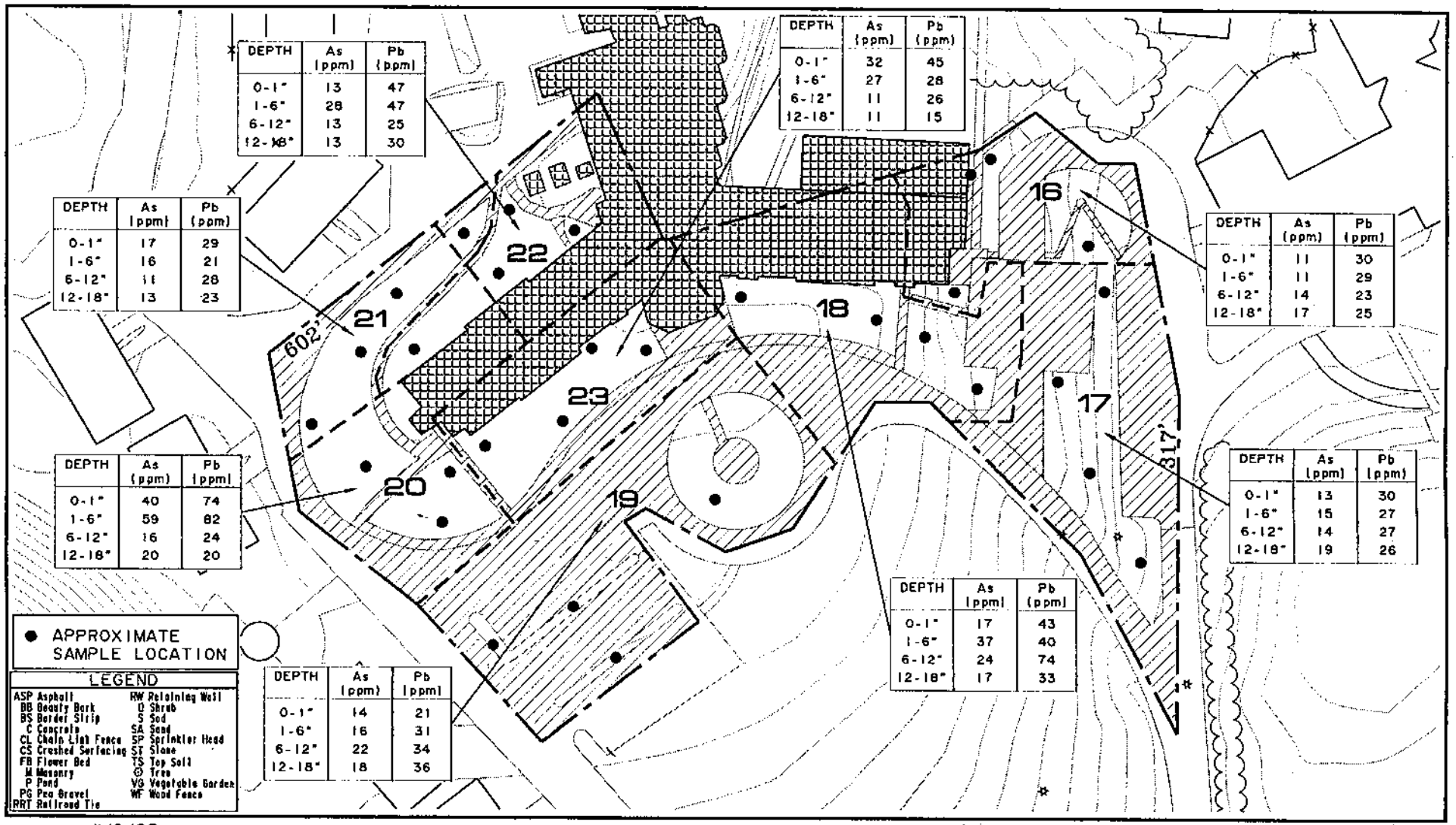
Asarco Consulting, Inc.

PROPERTY SITE CODE: ACOI-1

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



11/9/05

AC01-2C5

NORTH

0 20 40 60 80

SCALE IN FEET

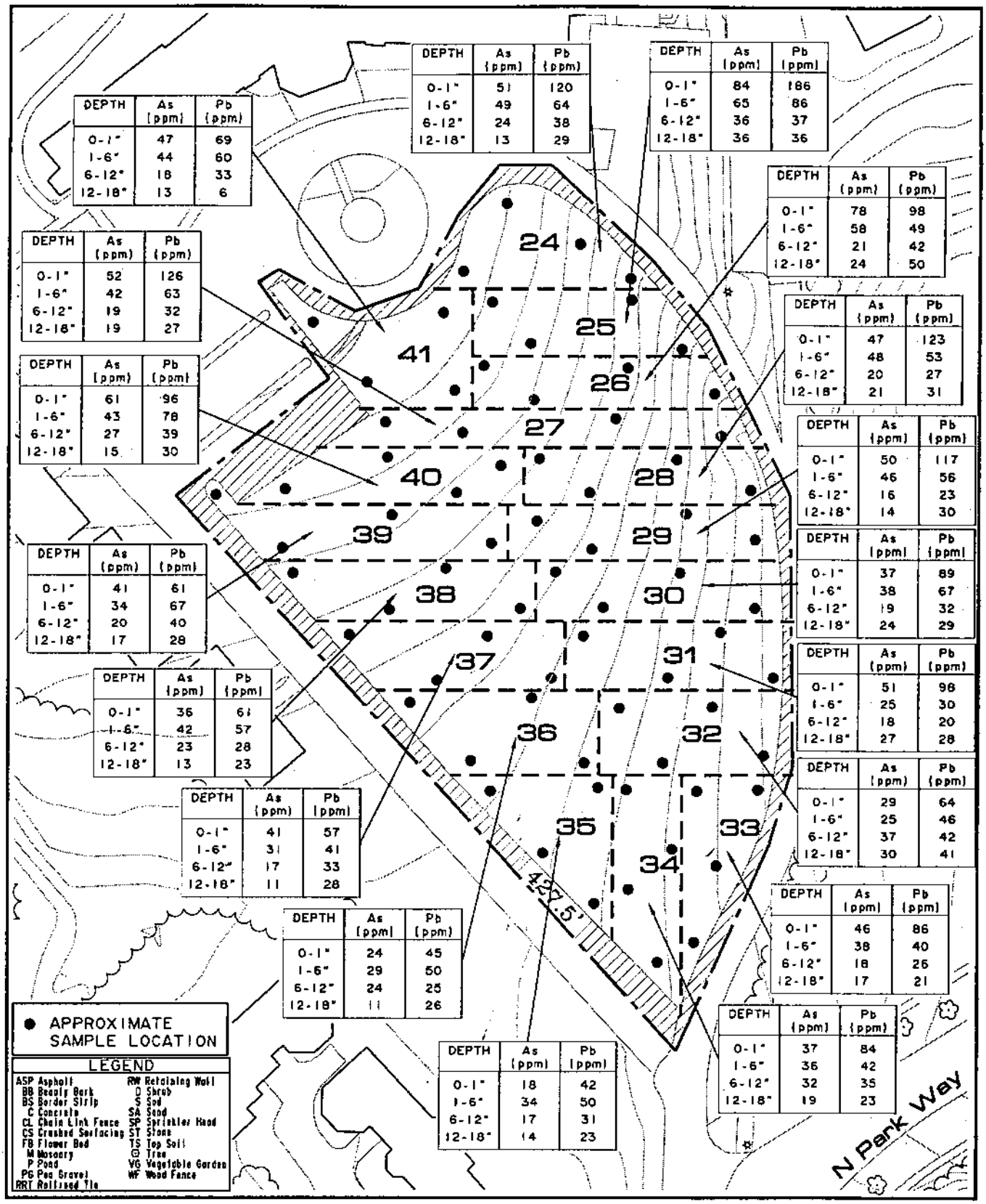
Asarco Consulting, Inc.

PROPERTY SITE CODE: AC01-2

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



DEPTH	As (ppm)	Pb (ppm)
0-1"	47	69
1-6"	44	60
6-12"	18	33
12-18"	13	6

DEPTH	As (ppm)	Pb (ppm)
0-1"	51	120
1-6"	49	64
6-12"	24	38
12-18"	13	29

DEPTH	As (ppm)	Pb (ppm)
0-1"	84	186
1-6"	65	86
6-12"	36	37
12-18"	36	36

DEPTH	As (ppm)	Pb (ppm)
0-1"	78	98
1-6"	58	49
6-12"	21	42
12-18"	24	50

DEPTH	As (ppm)	Pb (ppm)
0-1"	52	126
1-6"	42	63
6-12"	19	32
12-18"	19	27

DEPTH	As (ppm)	Pb (ppm)
0-1"	47	123
1-6"	48	53
6-12"	20	27
12-18"	21	31

DEPTH	As (ppm)	Pb (ppm)
0-1"	61	96
1-6"	43	78
6-12"	27	39
12-18"	15	30

DEPTH	As (ppm)	Pb (ppm)
0-1"	50	117
1-6"	46	56
6-12"	16	23
12-18"	14	30

DEPTH	As (ppm)	Pb (ppm)
0-1"	41	61
1-6"	34	67
6-12"	20	40
12-18"	17	28

DEPTH	As (ppm)	Pb (ppm)
0-1"	37	89
1-6"	38	67
6-12"	19	32
12-18"	24	29

DEPTH	As (ppm)	Pb (ppm)
0-1"	36	61
1-6"	42	57
6-12"	23	28
12-18"	13	23

DEPTH	As (ppm)	Pb (ppm)
0-1"	51	98
1-6"	25	30
6-12"	18	20
12-18"	27	28

DEPTH	As (ppm)	Pb (ppm)
0-1"	41	57
1-6"	31	41
6-12"	17	33
12-18"	11	28

DEPTH	As (ppm)	Pb (ppm)
0-1"	29	64
1-6"	25	46
6-12"	37	42
12-18"	30	41

DEPTH	As (ppm)	Pb (ppm)
0-1"	24	45
1-6"	29	50
6-12"	24	25
12-18"	11	26

DEPTH	As (ppm)	Pb (ppm)
0-1"	46	86
1-6"	38	40
6-12"	18	26
12-18"	17	21

DEPTH	As (ppm)	Pb (ppm)
0-1"	37	84
1-6"	36	42
6-12"	32	35
12-18"	19	23

DEPTH	As (ppm)	Pb (ppm)
0-1"	18	42
1-6"	34	50
6-12"	17	31
12-18"	14	23

11/9/05

AC01-3C5

NORTH

0 20 40 60 80

SCALE IN FEET

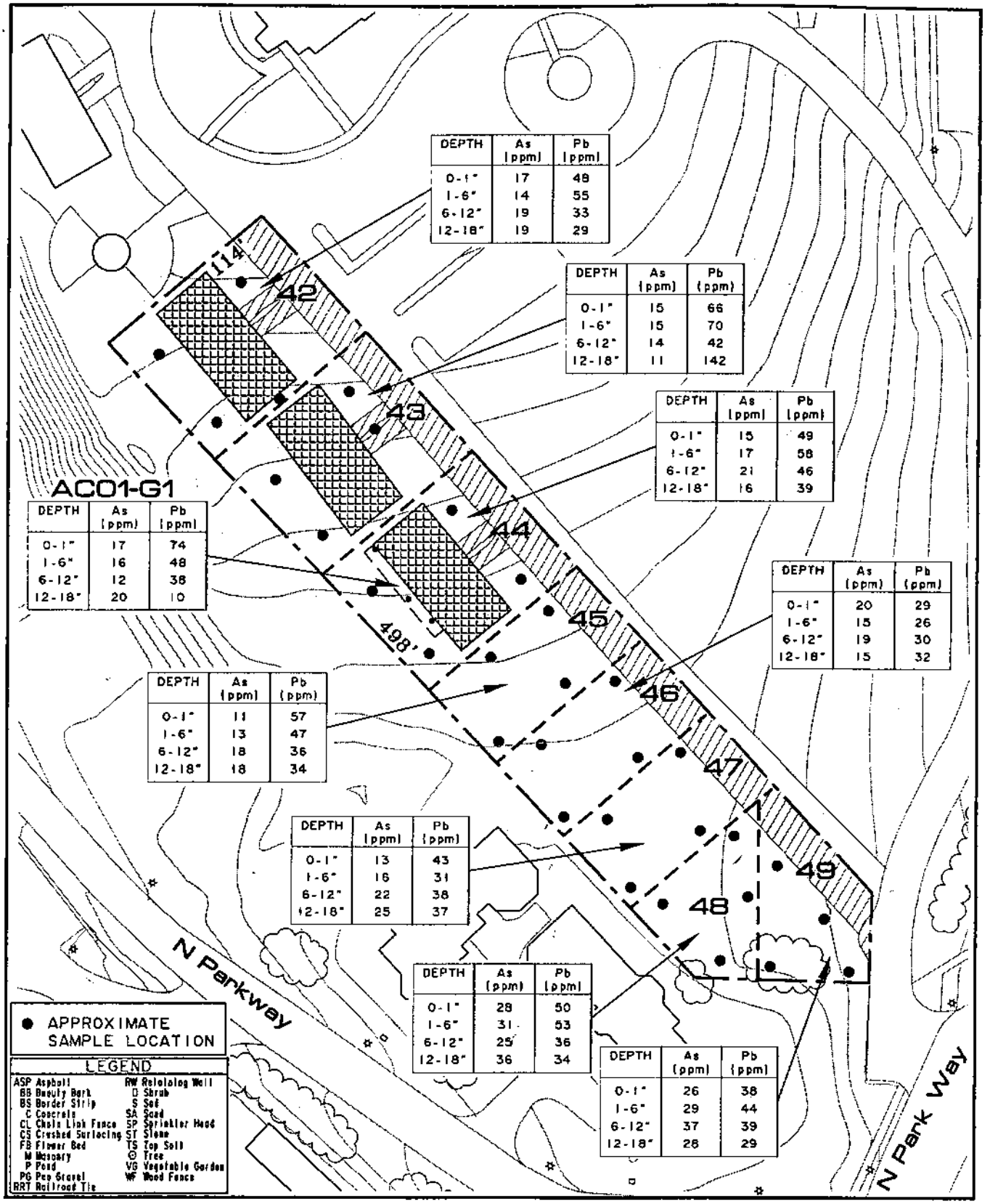
Asarco Consulting, Inc.

PROPERTY SITE CODE: AC01-3

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones Home (Ed Mawe)

PROPERTY RESIDENT:



11/10/05

ACO1-4C5

NORTH

0 20 40 60 80

SCALE IN FEET

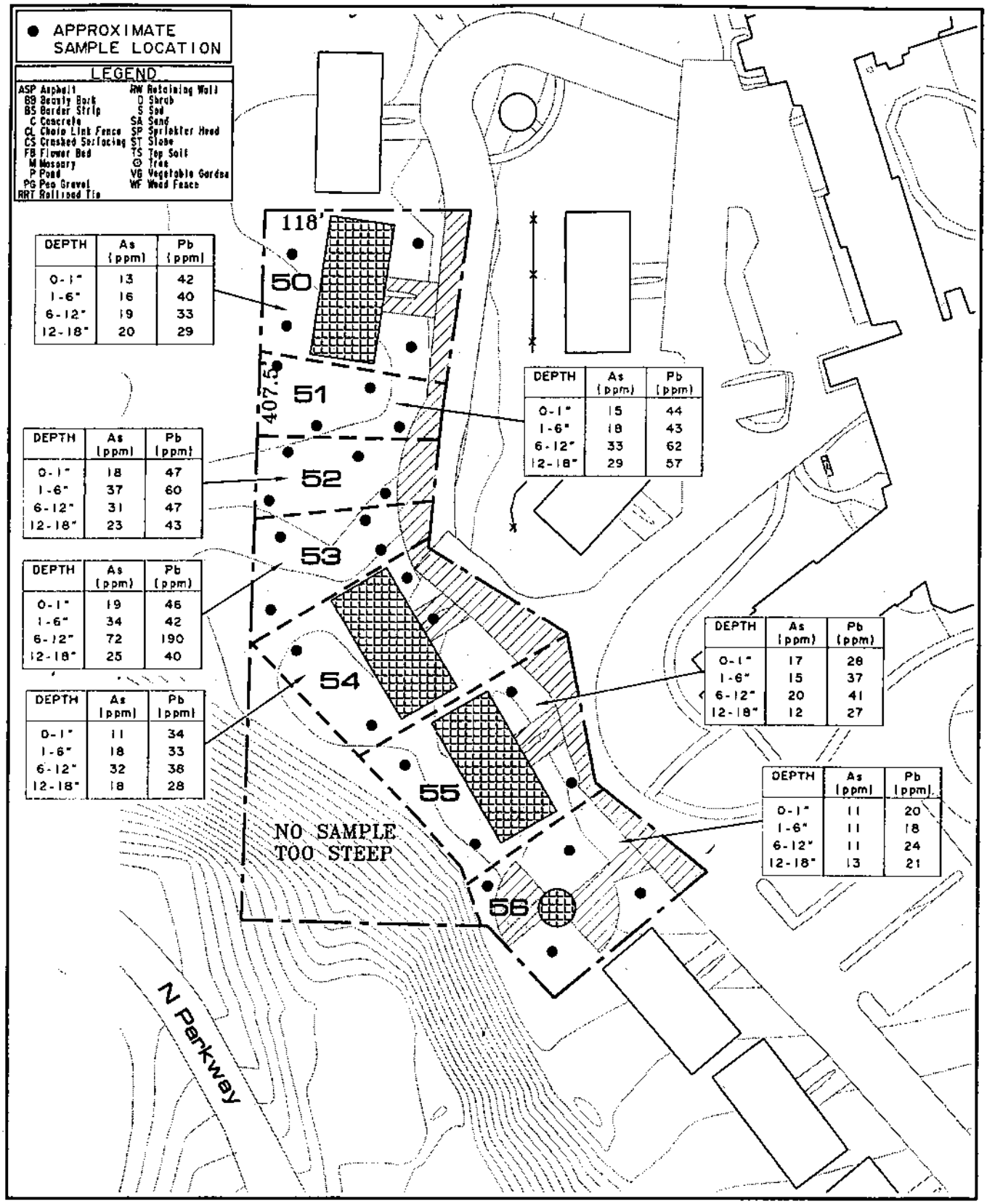
Asarco Consulting, Inc.

PROPERTY SITE CODE: ACO1-4

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



11/9/05

AC01-5C5

NORTH

0 20 40 60 80

SCALE IN FEET

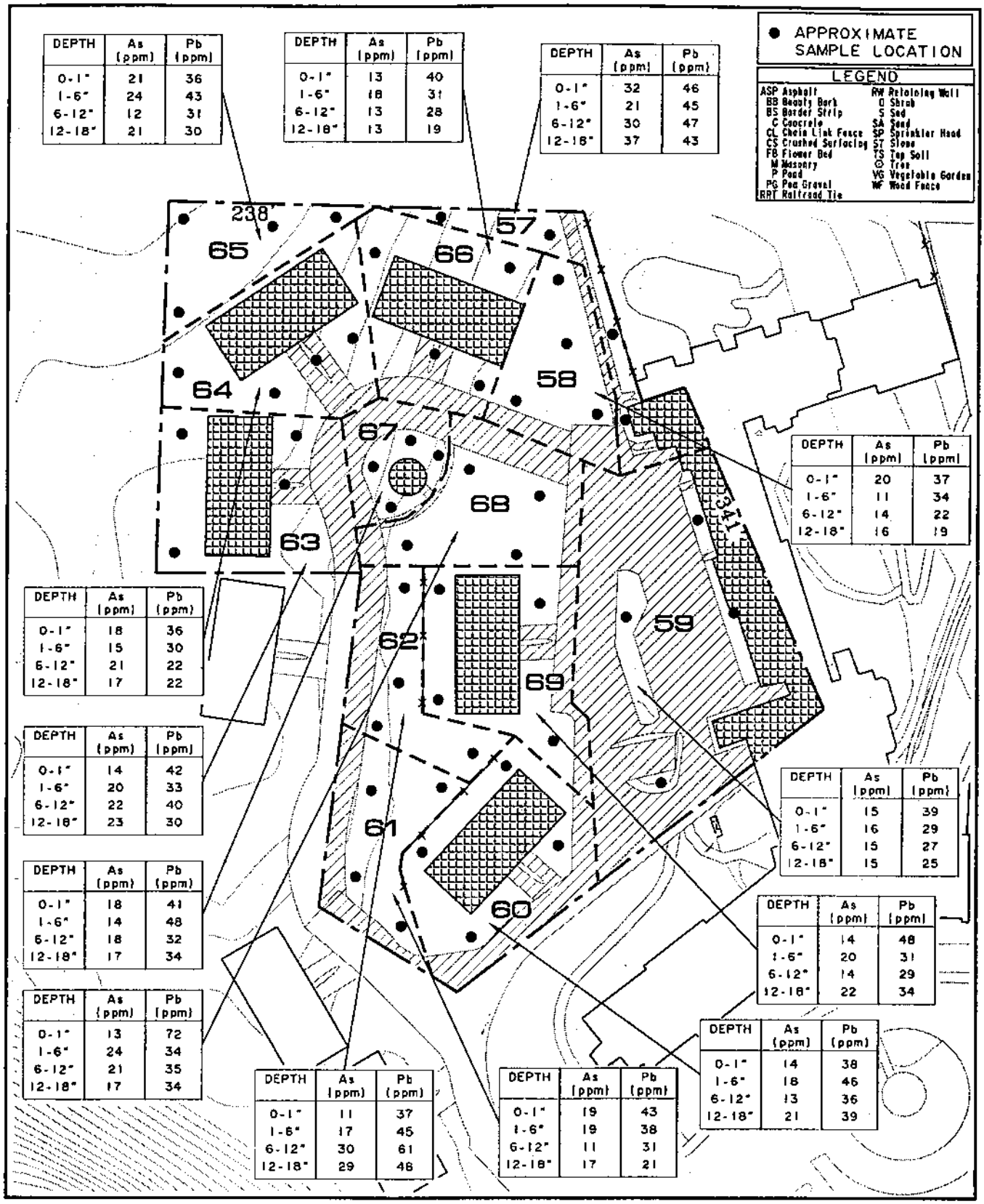
Asarco Consulting, Inc.

PROPERTY SITE CODE: AC01-5

SITE ADDRESS: 4320 N Bristol St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



11/9/05

AC01-6C5

NORTH

0 20 40 60 80

SCALE IN FEET

Asarco Consulting, Inc.

PROPERTY SITE CODE: AC01-6

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:

SITE ADDRESS	NAME	SITE CODE
6414 NO Parkway	Franke Tobey Jones Home (Owner) (253)752-6621	AC01

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
01	0 - 1	12	23	NONE
01	1 - 6	11	28	
01	6 - 12	16	17	
01	12 - 18	16	27	
02	0 - 1	11	25	NONE
02	1 - 6	15	28	
02	6 - 12	24	37	
02	12 - 18	66	139	
03	0 - 1	12	30	NONE
03	1 - 6	14	34	
03	6 - 12	40	61	
03	12 - 18	70	97	
04	0 - 1	13	24	NONE
04	1 - 6	11	32	
04	6 - 12	16	32	
04	12 - 18	23	33	
05	0 - 1	12	25	NONE
05	1 - 6	11	29	
05	6 - 12	20	23	
05	12 - 18	15	20	
06	0 - 1	13	22	NONE
06	1 - 6	11	33	
06	6 - 12	17	24	
06	12 - 18	13	19	
07	0 - 1	11	28	NONE
07	1 - 6	11	33	
07	6 - 12	22	37	
07	12 - 18	23	34	
08	0 - 1	13	22	NONE
08	1 - 6	21	45	
08	6 - 12	22	32	
08	12 - 18	17	37	
09	0 - 1	11	26	NONE
09	1 - 6	16	28	
09	6 - 12	23	44	
09	12 - 18	24	31	
10	0 - 1	15	22	NONE
10	1 - 6	18	22	
10	6 - 12	16	36	
10	12 - 18	18	30	
11	0 - 1	11	30	NONE
11	1 - 6	16	26	
11	6 - 12	26	35	
11	12 - 18	24	42	
12	0 - 1	11	28	NONE
12	1 - 6	17	22	
12	6 - 12	27	30	
12	12 - 18	29	43	
13	0 - 1	11	26	NONE

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

13	1 - 6	11	30	
13	6 - 12	20	35	
13	12 - 18	25	51	
14	0 - 1	13	23	NONE
14	1 - 6	16	20	
14	6 - 12	19	31	
14	12 - 18	20	24	
15	0 - 1	15	25	NONE
15	1 - 6	14	29	
15	6 - 12	15	28	
15	12 - 18	32	43	
16	0 - 1	11	30	NONE
16	1 - 6	11	29	
16	6 - 12	14	23	
16	12 - 18	17	25	
17	0 - 1	13	30	NONE
17	1 - 6	15	27	
17	6 - 12	14	27	
17	12 - 18	19	26	
18	0 - 1	17	43	NONE
18	1 - 6	37	40	
18	6 - 12	24	74	
18	12 - 18	17	33	
19	0 - 1	14	21	NONE
19	1 - 6	16	31	
19	6 - 12	22	34	
19	12 - 18	18	36	
20	0 - 1	40	74	NONE
20	1 - 6	59	82	
20	6 - 12	16	24	
20	12 - 18	20	20	
21	0 - 1	17	29	NONE
21	1 - 6	16	21	
21	6 - 12	11	28	
21	12 - 18	13	23	
22	0 - 1	13	47	NONE
22	1 - 6	28	47	
22	6 - 12	13	25	
22	12 - 18	13	30	
23	0 - 1	32	45	NONE
23	1 - 6	27	28	
23	6 - 12	11	26	
23	12 - 18	11	15	
24	0 - 1	51	120	NONE
24	1 - 6	49	64	
24	6 - 12	24	38	
24	12 - 18	13	29	
25	0 - 1	84	186	NONE
25	1 - 6	65	86	
25	6 - 12	36	37	
25	12 - 18	36	36	
26	0 - 1	78	98	NONE
26	1 - 6	58	69	
26	6 - 12	21	42	
26	12 - 18	24	50	
27	0 - 1	52	126	NONE
27	1 - 6	42	63	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

27	6 - 12	19	32	
27	12 - 18	19	27	
28	0 - 1	47	123	NONE
28	1 - 6	48	53	
28	6 - 12	20	27	
28	12 - 18	21	31	
29	0 - 1	50	117	NONE
29	1 - 6	46	56	
29	6 - 12	16	23	
29	12 - 18	14	30	
30	0 - 1	37	89	NONE
30	1 - 6	38	67	
30	6 - 12	19	32	
30	12 - 18	24	29	
31	0 - 1	51	98	NONE
31	1 - 6	25	30	
31	6 - 12	18	20	
31	12 - 18	27	28	
32	0 - 1	29	64	NONE
32	1 - 6	25	46	
32	6 - 12	37	42	
32	12 - 18	30	41	
33	0 - 1	46	86	NONE
33	1 - 6	38	40	
33	6 - 12	18	26	
33	12 - 18	17	21	
34	0 - 1	37	84	NONE
34	1 - 6	36	42	
34	6 - 12	32	35	
34	12 - 18	19	23	
35	0 - 1	18	42	NONE
35	1 - 6	34	50	
35	6 - 12	17	31	
35	12 - 18	14	23	
36	0 - 1	24	45	NONE
36	1 - 6	29	50	
36	6 - 12	24	25	
36	12 - 18	11	26	
37	0 - 1	41	57	NONE
37	1 - 6	31	41	
37	6 - 12	17	33	
37	12 - 18	11	28	
38	0 - 1	36	61	NONE
38	1 - 6	42	57	
38	6 - 12	23	28	
38	12 - 18	13	23	
39	0 - 1	41	61	NONE
39	1 - 6	34	67	
39	6 - 12	20	40	
39	12 - 18	17	28	
40	0 - 1	61	96	NONE
40	1 - 6	43	78	
40	6 - 12	27	39	
40	12 - 18	15	30	
41	0 - 1	47	69	NONE
41	1 - 6	44	60	
41	6 - 12	18	33	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

41	12 - 18	13	6	
42	0 - 1	17	48	NONE
42	1 - 6	14	55	
42	6 - 12	19	33	
42	12 - 18	19	29	
43	0 - 1	15	66	NONE
43	1 - 6	15	70	
43	6 - 12	14	42	
43	12 - 18	11	142	
44	0 - 1	15	49	NONE
44	1 - 6	17	58	
44	6 - 12	21	46	
44	12 - 18	16	39	
45	0 - 1	11	57	NONE
45	1 - 6	13	47	
45	6 - 12	18	36	
45	12 - 18	18	34	
46	0 - 1	20	29	NONE
46	1 - 6	15	26	
46	6 - 12	19	30	
46	12 - 18	15	32	
47	0 - 1	13	43	NONE
47	1 - 6	16	31	
47	6 - 12	22	38	
47	12 - 18	25	37	
48	0 - 1	28	50	NONE
48	1 - 6	31	53	
48	6 - 12	25	36	
48	12 - 18	36	34	
49	0 - 1	26	38	NONE
49	1 - 6	29	44	
49	6 - 12	37	39	
49	12 - 18	28	29	
50	0 - 1	13	42	NONE
50	1 - 6	16	40	
50	6 - 12	19	33	
50	12 - 18	20	29	
51	0 - 1	15	44	NONE
51	1 - 6	18	43	
51	6 - 12	33	62	
51	12 - 18	29	57	
52	0 - 1	18	47	NONE
52	1 - 6	37	60	
52	6 - 12	31	47	
52	12 - 18	23	43	
53	0 - 1	19	46	NONE
53	1 - 6	34	42	
53	6 - 12	72	190	
53	12 - 18	25	40	
54	0 - 1	11	34	NONE
54	1 - 6	18	33	
54	6 - 12	32	38	
54	12 - 18	18	28	
55	0 - 1	17	28	NONE
55	1 - 6	15	37	
55	6 - 12	20	41	
55	12 - 18	12	27	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

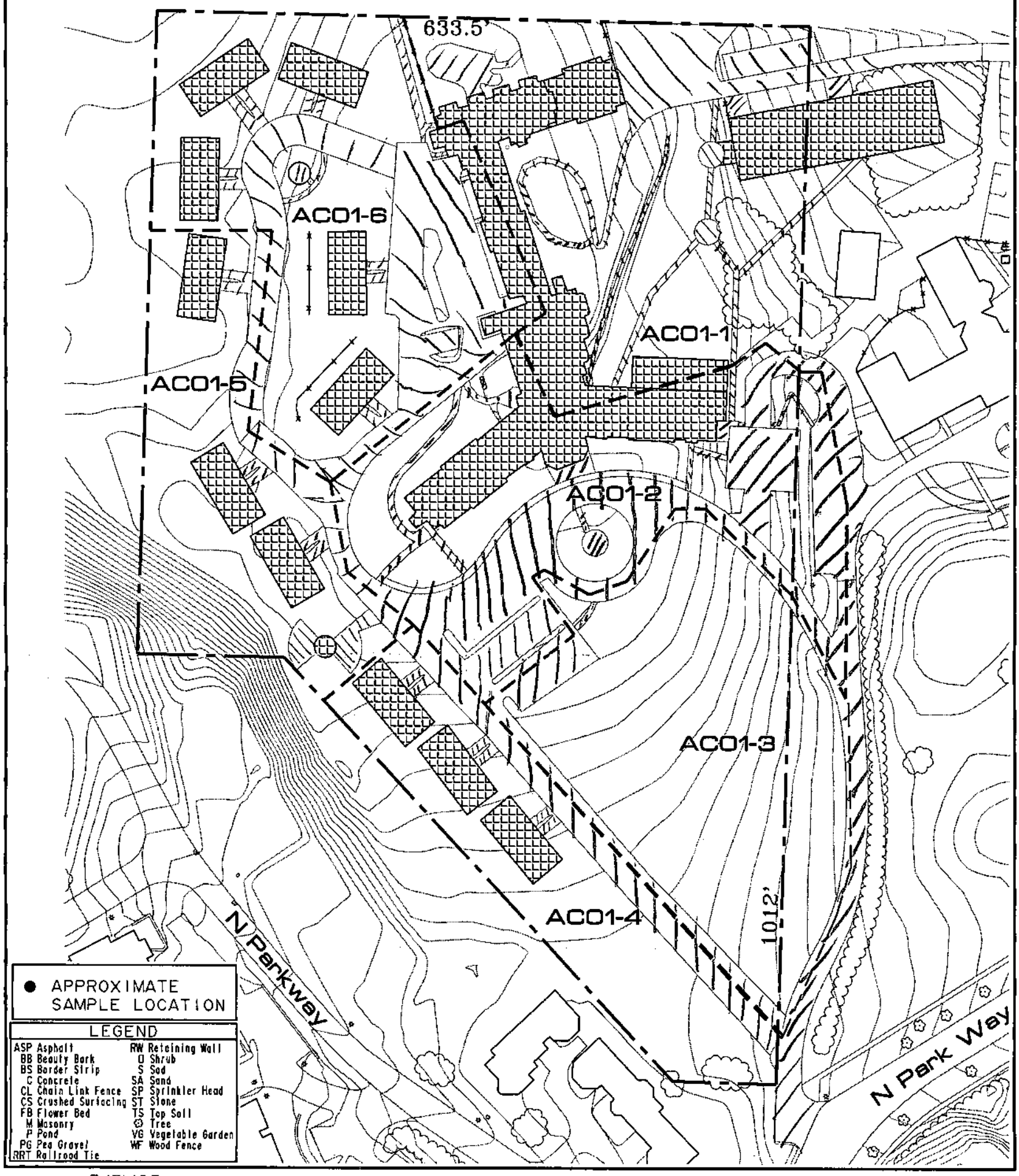
56	0 - 1	11	20	NONE
56	1 - 6	11	18	
56	6 - 12	11	24	
56	12 - 18	13	21	
57	0 - 1	32	46	NONE
57	1 - 6	21	45	
57	6 - 12	30	47	
57	12 - 18	37	43	
58	0 - 1	20	37	NONE
58	1 - 6	11	34	
58	6 - 12	14	22	
58	12 - 18	16	19	
59	0 - 1	15	39	NONE
59	1 - 6	16	29	
59	6 - 12	15	27	
59	12 - 18	15	25	
60	0 - 1	14	38	NONE
60	1 - 6	18	46	
60	6 - 12	13	36	
60	12 - 18	21	39	
61	0 - 1	19	43	NONE
61	1 - 6	19	38	
61	6 - 12	11	31	
61	12 - 18	17	21	
62	0 - 1	11	37	NONE
62	1 - 6	17	45	
62	6 - 12	30	61	
62	12 - 18	29	48	
63	0 - 1	14	42	NONE
63	1 - 6	20	33	
63	6 - 12	22	40	
63	12 - 18	23	30	
64	0 - 1	18	36	NONE
64	1 - 6	15	30	
64	6 - 12	21	22	
64	12 - 18	17	22	
65	0 - 1	21	36	NONE
65	1 - 6	24	43	
65	6 - 12	23	31	
65	12 - 18	21	30	
66	0 - 1	13	40	NONE
66	1 - 6	18	31	
66	6 - 12	13	28	
66	12 - 18	13	19	
67	0 - 1	18	41	NONE
67	1 - 6	14	48	
67	6 - 12	18	32	
67	12 - 18	17	34	
68	0 - 1	13	72	NONE
68	1 - 6	24	34	
68	6 - 12	21	35	
68	12 - 18	17	34	
69	0 - 1	14	48	NONE
69	1 - 6	20	31	
69	6 - 12	14	29	
69	12 - 18	22	34	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

G	0 - 1	17	74	NONE
G	1 - 6	16	48	
G	6 - 12	12	38	
G	12 - 18	20	16	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	24	51
1 - 6	24	42
6 - 12	21	37
12 - 18	21	35

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg



3/31/05

AC01C5

Asarco Consulting, Inc.

PROPERTY SITE CODE: AC01

SITE ADDRESS: 4340 N Bristol St

PROPERTY OWNER: Franke Tobey Jones Home (Ed Mawe)

PROPERTY RESIDENT:

ASARCO
Consulting Inc.

October 14, 2004

Marion Ganz
C/o James Ganz
5354 N. Bristol Street
Tacoma, WA 98407

Re: AD01

Dear Mr. Ganz:

As you know, your property at 5354 N. Bristol Street was tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Replacement Project. Asarco has reached an agreement with EPA that requires testing of yards in Ruston and North Tacoma to determine which yards might require soil replacement. This agreement states that yards will require remediation if the arsenic concentration exceeds 230 part per million or the lead concentration exceeds 500 parts per million (the EPA action levels).

Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Because your sample results are below the EPA action levels for arsenic and lead, your property does not need to be remediated. We have enclosed a brochure from the Program For Area Clean-up (PACE) as additional information. If you have any questions, please contact Karen Pickett at 756-5436. Thank you for your cooperation.

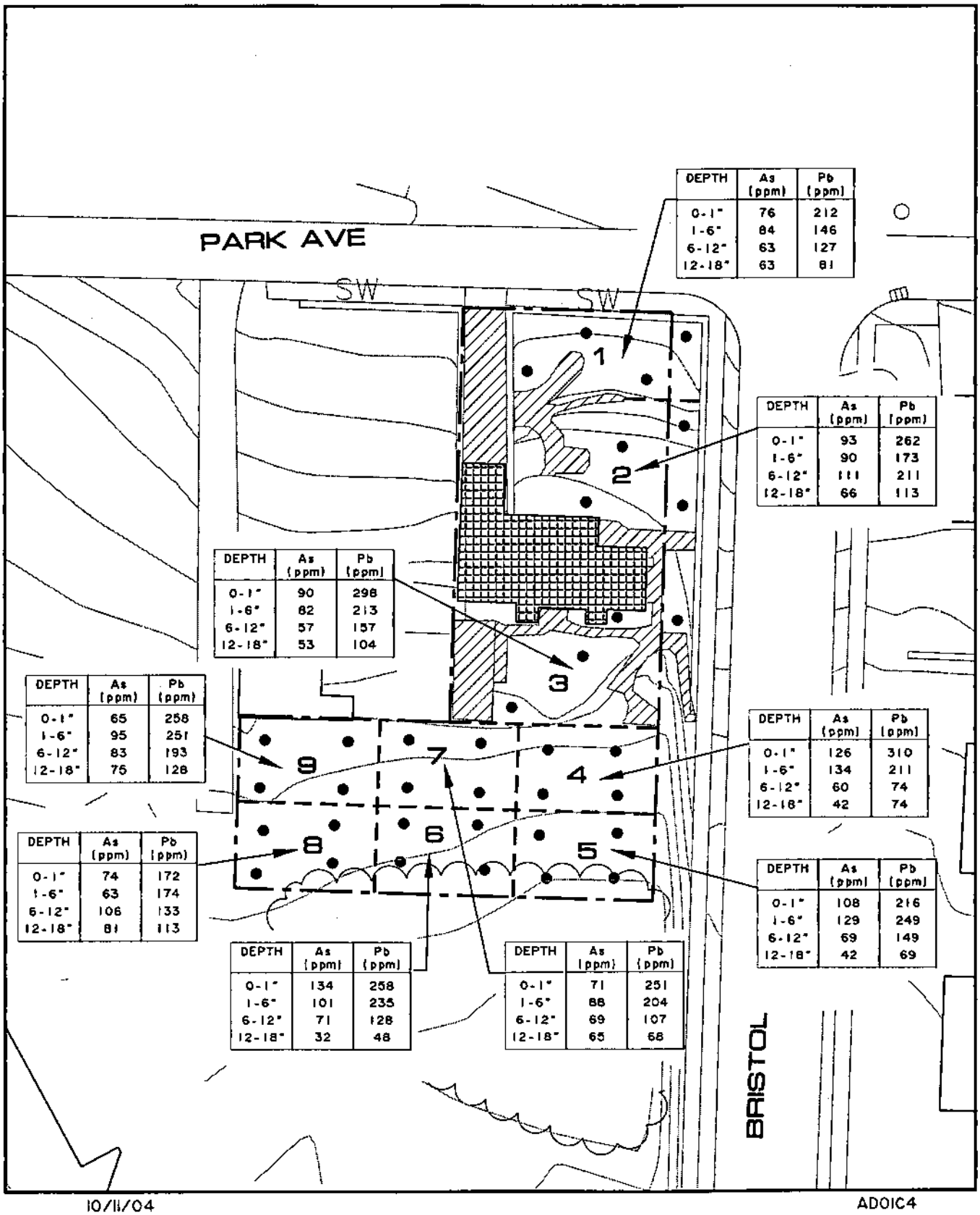
Sincerely,

Sue O'Neill

Sue O'Neill
Tacoma Projects Manager

"Information for Owners of Property That Will Not Require Remediation" enclosed

5219 N. SHIRLEY STREET, SUITE 100 · TACOMA, WASHINGTON 98407
(253) 752-1470 · FAX (253) 752-7663



10/11/04

ADOIC4

NORTH

0 10 20 30 40

SCALE IN FEET

Asarco Consulting, Inc.

PROPERTY SITE CODE: ADOI

SITE ADDRESS: 5354 N. Bristol St.

PROPERTY OWNER: Marion Ganz

PROPERTY RESIDENT:

SITE ADDRESS	NAME	SITE CODE
5354 No Bristol St	James (for Marian) Ganz (Owner) (253)759-5307	AD01

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
1	0 - 1	76	212	NONE
1	1 - 6	84	146	
1	6 - 12	63	127	
1	12 - 18	63	81	
2	0 - 1	93	262	NONE
2	1 - 6	90	173	
2	6 - 12	111	211	
2	12 - 18	66	113	
3	0 - 1	90	298	NONE
3	1 - 6	82	213	
3	6 - 12	57	157	
3	12 - 18	53	104	
4	0 - 1	126	310	NONE
4	1 - 6	134	211	
4	6 - 12	60	74	
4	12 - 18	42	74	
5	0 - 1	108	216	NONE
5	1 - 6	129	249	
5	6 - 12	69	149	
5	12 - 18	42	69	
6	0 - 1	134	258	NONE
6	1 - 6	101	235	
6	6 - 12	71	128	
6	12 - 18	32	48	
7	0 - 1	71	251	NONE
7	1 - 6	88	204	
7	6 - 12	69	107	
7	12 - 18	65	68	
8	0 - 1	74	172	NONE
8	1 - 6	63	174	
8	6 - 12	106	133	
8	12 - 18	81	113	
9	0 - 1	65	258	NONE
9	1 - 6	95	251	
9	6 - 12	83	193	
9	12 - 18	75	128	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	93	249
1 - 6	96	206
6 - 12	77	142
12 - 18	58	89

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

MRC CONSTRUCTION, LLC
SITEWORK UTILITIES & ENVIRONMENTAL
RUSTON, WA. (253)759-4829

December 18, 2006

Franke Tobey Jones Home
5340 Bristol St
Tacoma, WA 98407

Re: AD02

Dear Franke Tobey Jones Home,

As you know, your property at 6208 Park Street was tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Replacement Project. Asarco has reached an agreement with EPA that requires testing of yards in Ruston and North Tacoma to determine which yards might require soil replacement. This agreement states that yards will require remediation if the arsenic concentration exceeds 230 part per million or the lead concentration exceeds 500 parts per million (the EPA action levels).

Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Because your sample results are below the EPA action levels for arsenic and lead, your property does not need to be remediated. We have enclosed a brochure from the Program For Area Clean-up (PACE) as additional information. If you have any questions, please contact Michele Wilkins at 759-6015. Thank you for your cooperation.

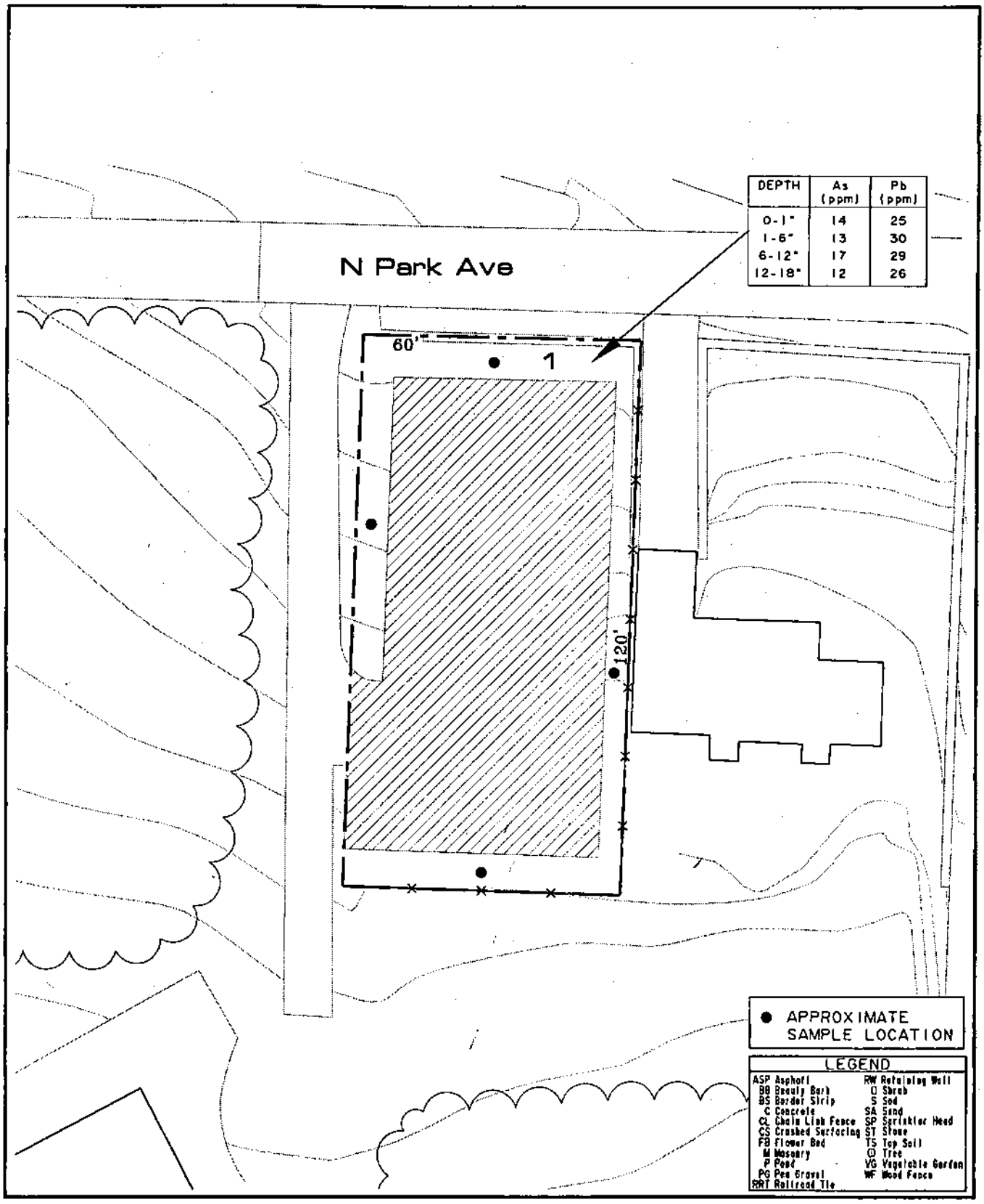
Sincerely,

Ric Rademacher
Tacoma Projects Manager

"Information for Owners of Property That Will Not Require Remediation" enclosed
cc Tenant

5219 North Shirley Street Suite 003
Tacoma, WA 98407

(253) 759-4829
Fax: (253) 759-1088



11/9/05

AD02C4

NORTH

0 10 20 30

SCALE IN FEET

Asarco Consulting, Inc

PROPERTY SITE CODE: AD02

SITE ADDRESS: 6208 N Park Ave

PROPERTY OWNER: Edward Mawl

PROPERTY RESIDENT: Franke Tobey Jones Home

SITE ADDRESS	NAME	SITE CODE
6208 NO Park St	Franke Tobey Jones Home (Owner) (253)752-6621	AD02

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
1	0 - 1	14	25	NONE
1	1 - 6	13	30	
1	6 - 12	17	29	
1	12 - 18	12	26	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	14	25
1 - 6	13	30
6 - 12	17	29
12 - 18	12	26

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

MRC CONSTRUCTION, LLC
SITEWORK UTILITIES & ENVIRONMENTAL
RUSTON, WA. (253)759-4829

September 26, 2007

Franke Tobey Jones Home
5340 N Bristol St
Tacoma, WA 98407

Re: AD03

Dear Frank Tobey Jones Home,

Thank you for your cooperation during the remediation of your property at 5335 NO Vassault. Exposed soils requiring remediation under the Ruston-North Tacoma Residential Soils Work Plan that are above the Environmental Protection Agency action levels (arsenic – 230 part per million, lead – 500 part per million) have been removed from the property. Please refer to the enclosed map of your property for specific details.

Sampling was performed after excavation of the property and the results are attached to this letter. This information should be retained for your reference in case any future questions arise concerning your property.

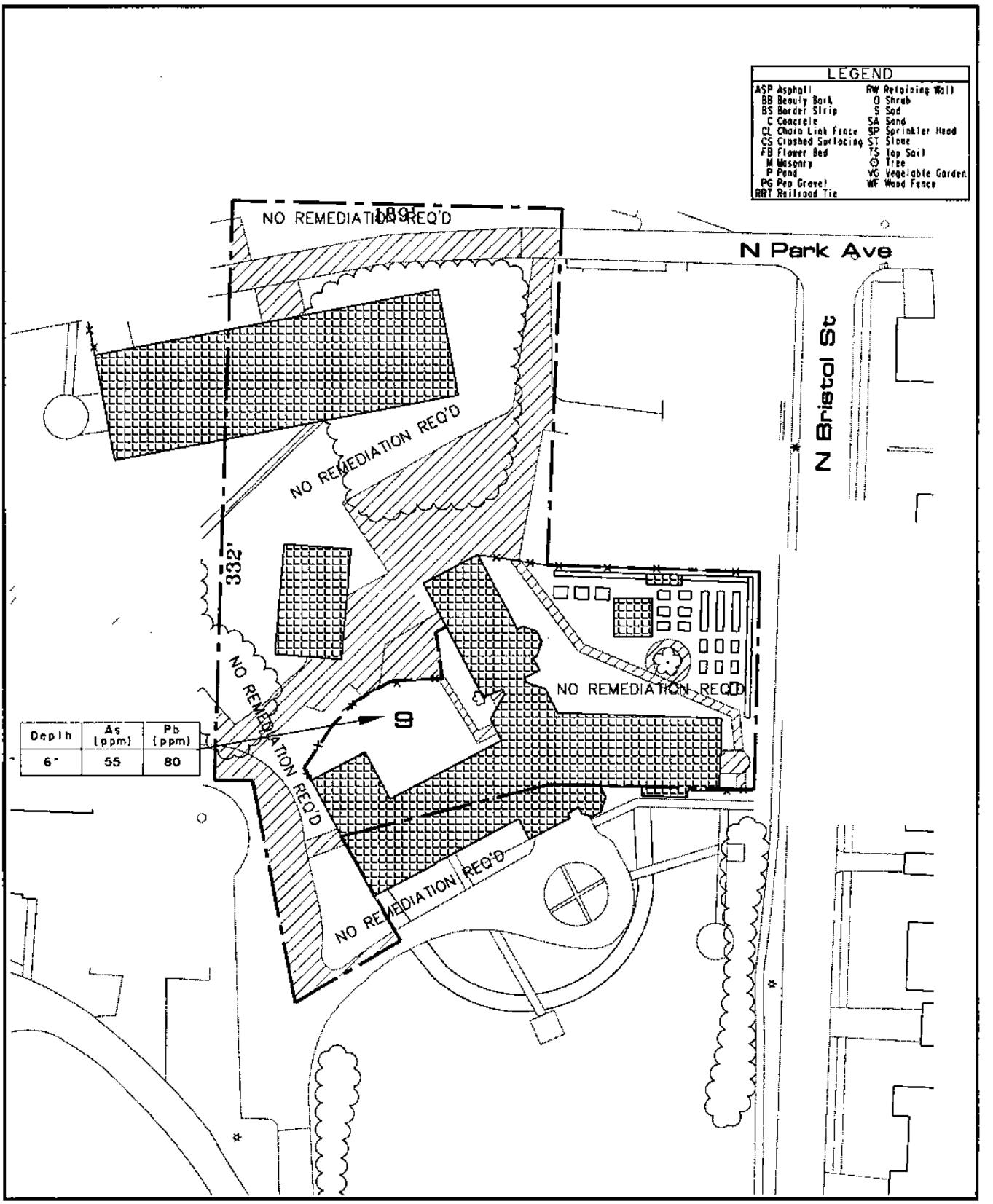
We appreciate your consideration throughout this period of sampling and remediation. If you have any questions, please contact Michele Wilkins of the Asarco Information Center at (253) 759-6015.

Sincerely,

Ric Rademacher
Project Manager

5219 North Shirley Street Suite 003
Tacoma, WA 98407

(253) 759-4829
Fax: (253) 759-1088



08/24/07 CONFIRMATIONAL SAMPLING AD03-IC5

NORTH

0 20 40 60 80

SCALE IN FEET

MRC Construction, LLC

PROPERTY SITE CODE: AD03-1

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:

Ruston Soils Post Remediation Report

Address
5335 No Vassault

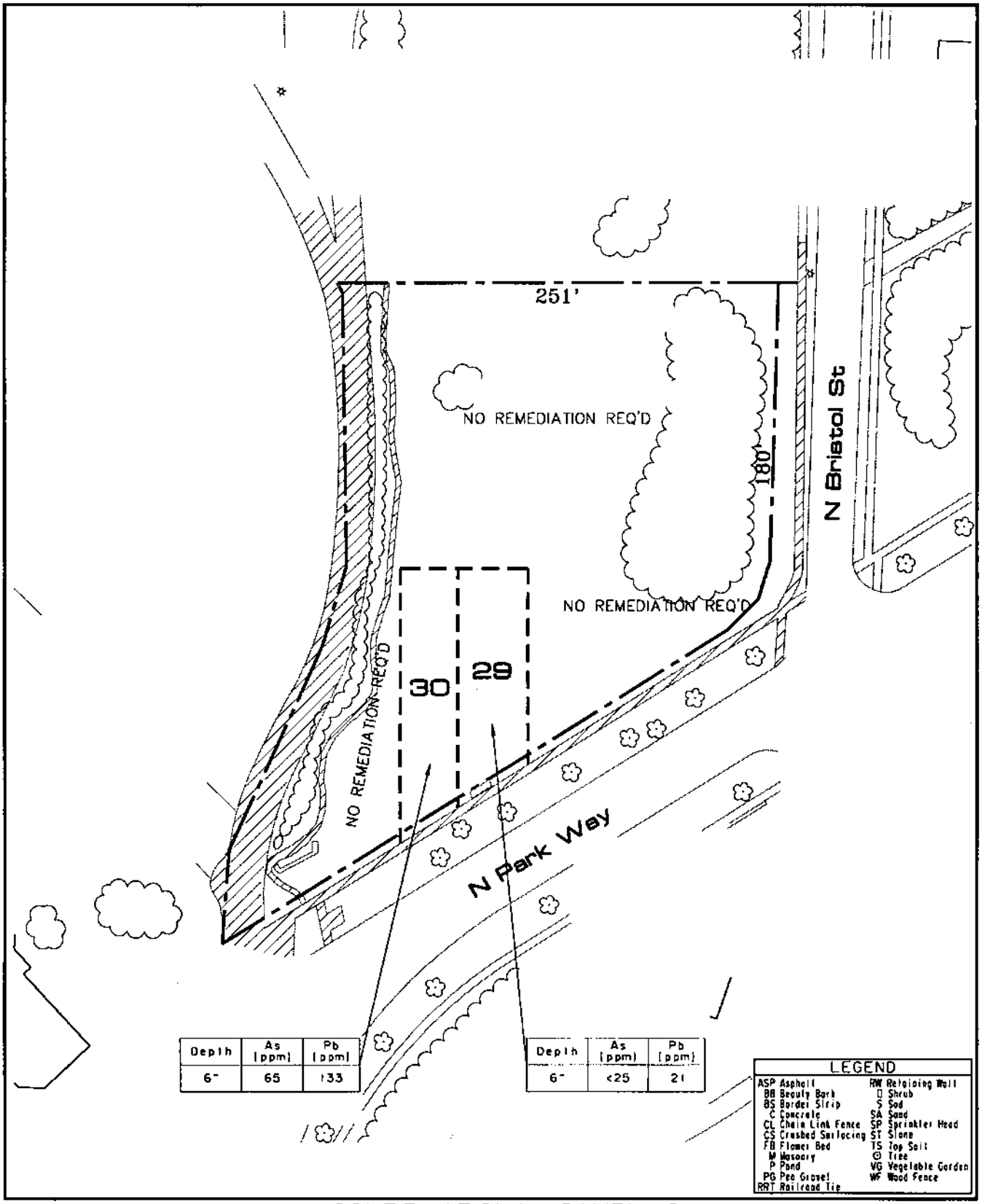
Owner
Franke Tobey Jones Home (Owner)

Site Code
AD03

SubUnit	Sample Number	Lab Number	Sample Date	Sample Time	Excvt Depth(inches)	Sample Depth(inches)	Analysis Date	Arsenic (ppm)	Lead (ppm)	Comments
9	AD03-PST-09-B1		8/21/2007	:1	1	1 - 6 INCHES		55	80	
29	AD03-PST-29-B1		8/8/2007	09:34	1	1 - 6 inches		16	21	
30	AD03-PST-30-B1		8/10/2007	11:09	1	1 - 6 inches		65	133	

Notes: (1) Depth at which samples were taken

Print Date 1/22/2008



08/24/07 CONFIRMATIONAL SAMPLING AD03-3C5

NORTH

0 20 40 60 80

SCALE IN FEET

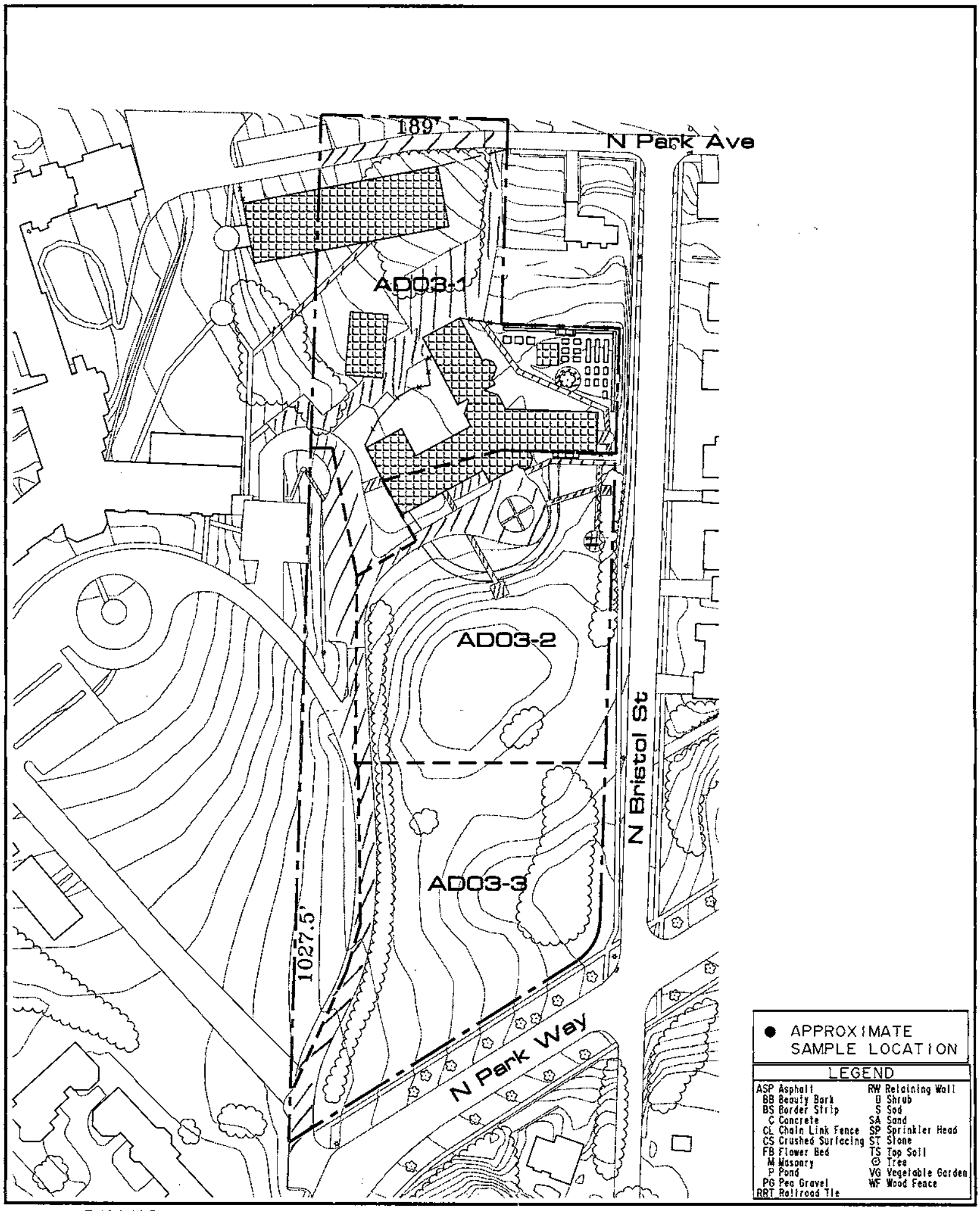
MRC Construction, LLC

PROPERTY SITE CODE: AD03-3

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones Home (Ed Mawe)

PROPERTY RESIDENT:



3/28/05

AD03C5

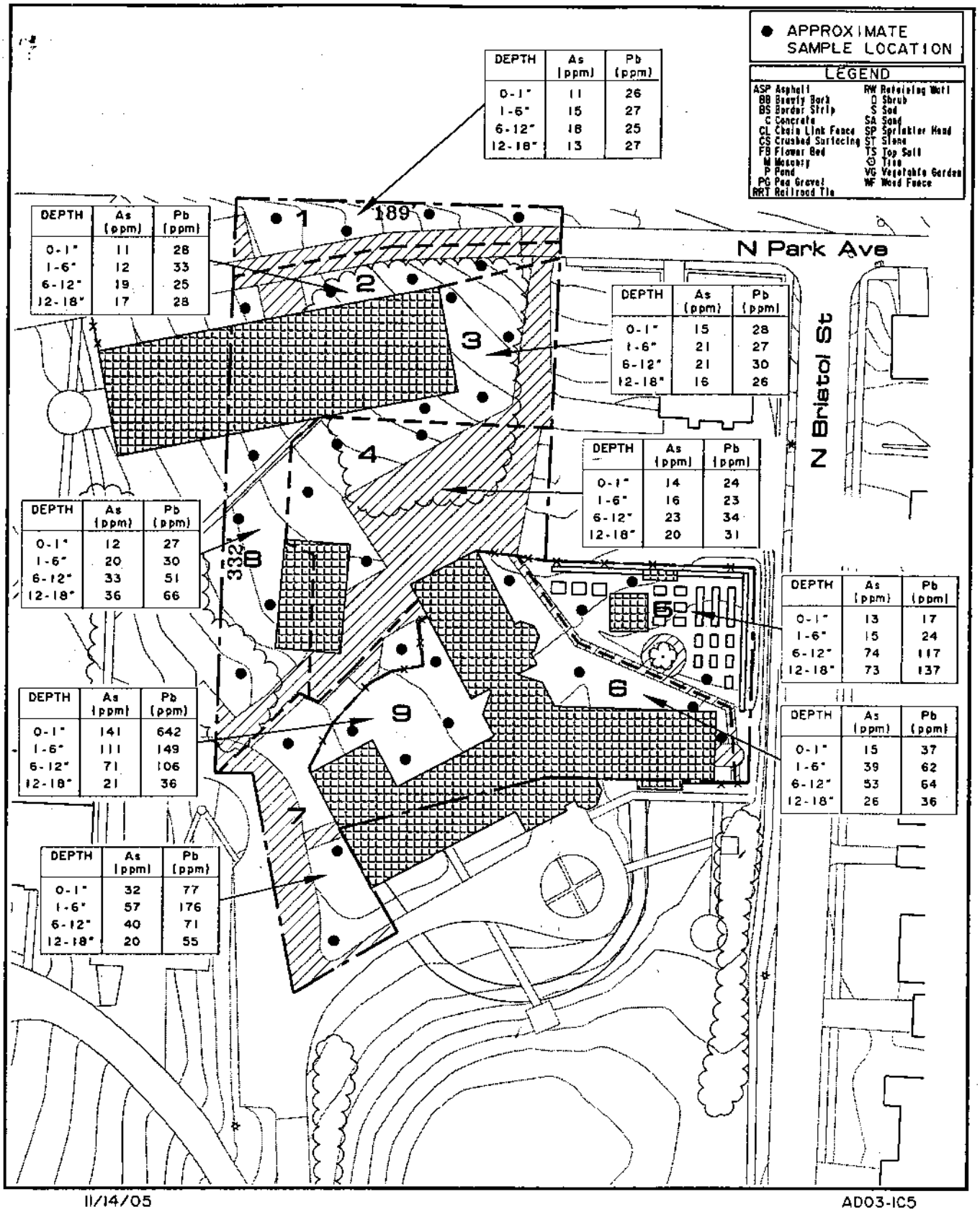
Asarco Consulting, Inc.

PROPERTY SITE CODE: AD03

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



11/14/05

AD03-IC5

NORTH

0 20 40 60 80

SCALE IN FEET

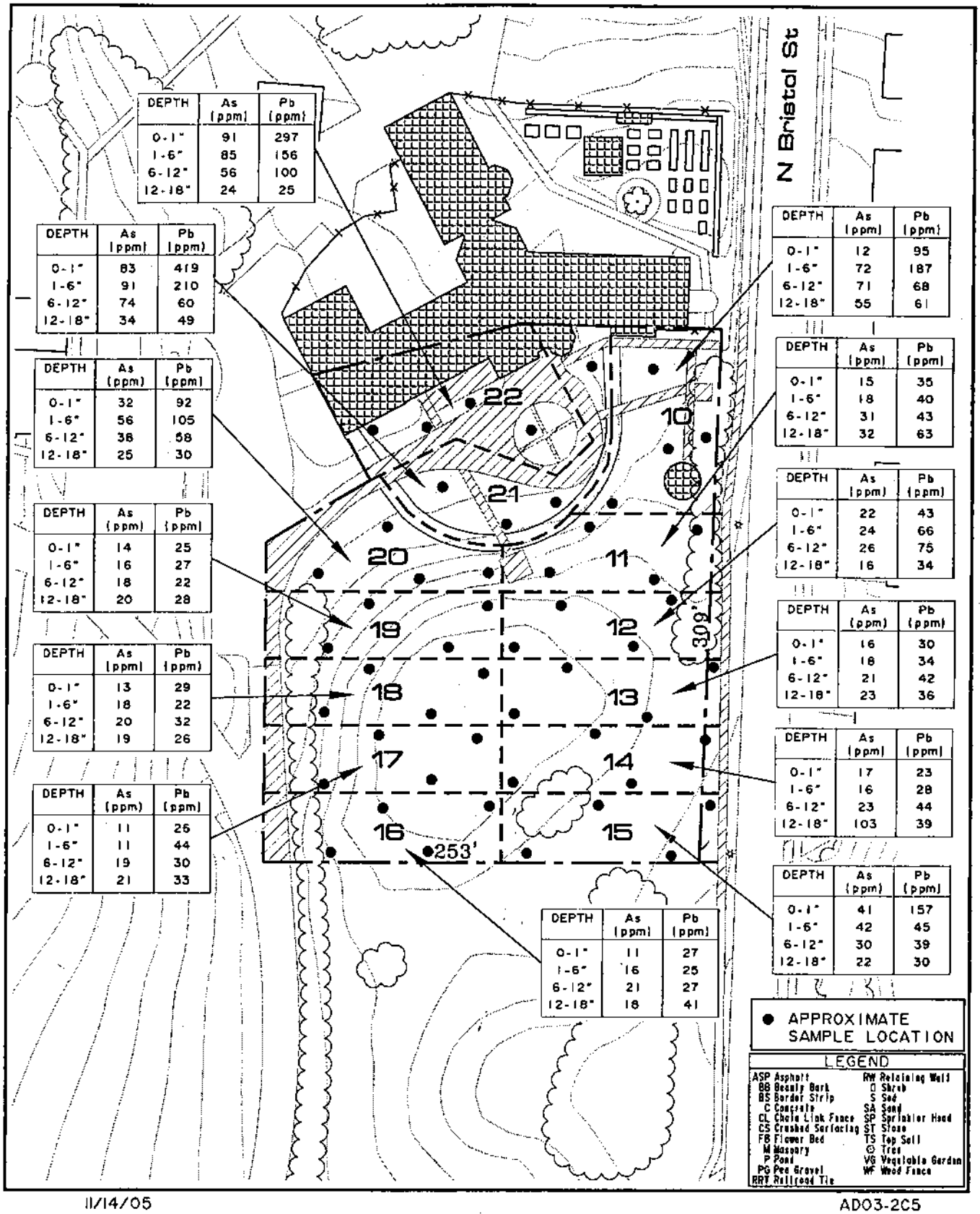
Asarco Consulting, Inc.

PROPERTY SITE CODE: AD03-1

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT:



11/14/05

AD03-2C5

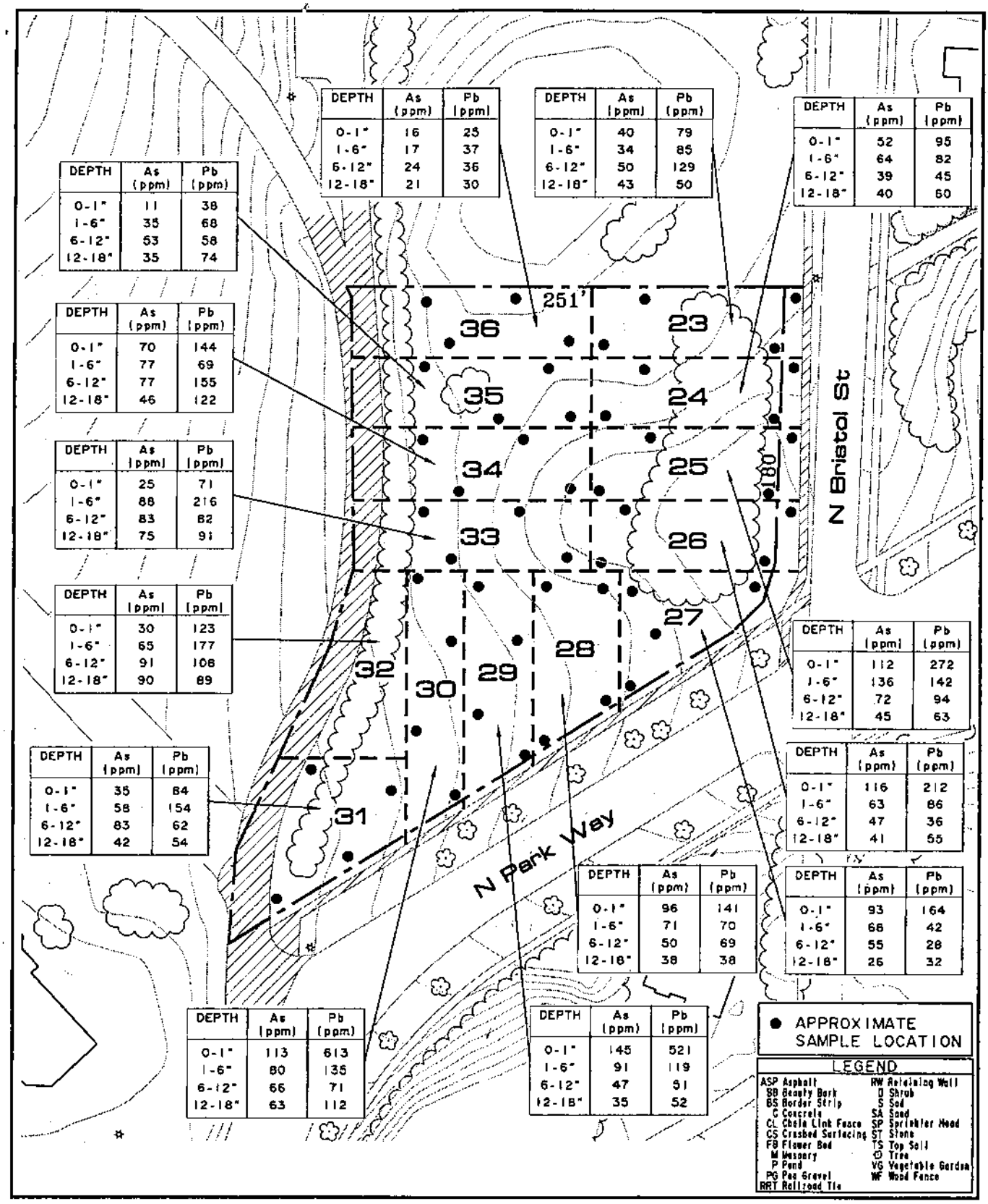
Asarco Consulting, Inc.

PROPERTY SITE CODE: AD03-2

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones Home (Ed Mawe)

PROPERTY RESIDENT:



11/14/05

AD03-3C5

NORTH

0 20 40 60 80

SCALE IN FEET

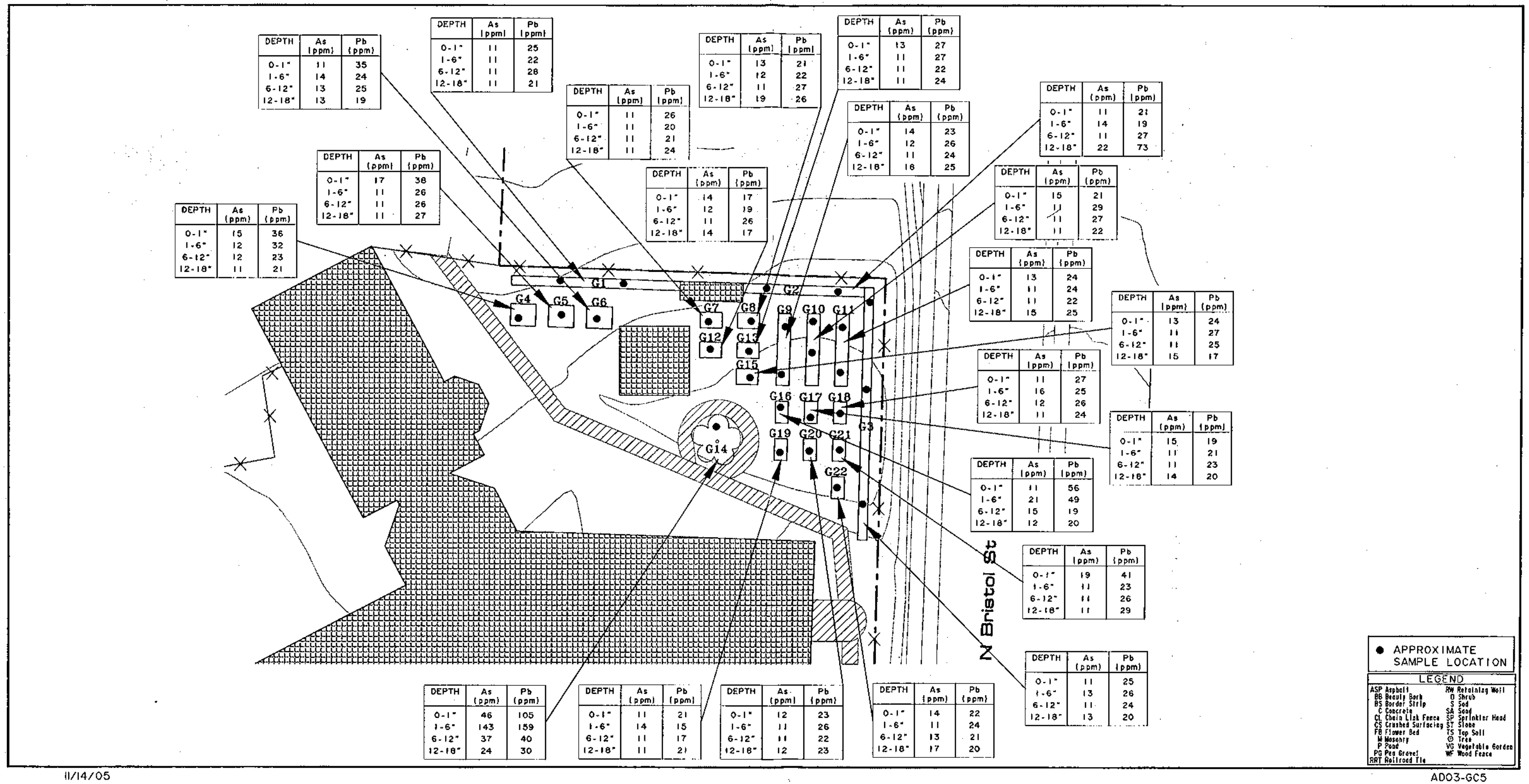
Asarco Consulting, Inc.

PROPERTY SITE CODE: AD03-3

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones Home (Ed Mawe)

PROPERTY RESIDENT:



DEPTH	As (ppm)	Pb (ppm)
0-1"	11	35
1-6"	14	24
6-12"	13	25
12-18"	13	19

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	25
1-6"	11	22
6-12"	11	28
12-18"	11	21

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	26
1-6"	11	20
6-12"	11	21
12-18"	11	24

DEPTH	As (ppm)	Pb (ppm)
0-1"	13	21
1-6"	12	22
6-12"	11	27
12-18"	19	26

DEPTH	As (ppm)	Pb (ppm)
0-1"	13	27
1-6"	11	27
6-12"	11	22
12-18"	11	24

DEPTH	As (ppm)	Pb (ppm)
0-1"	14	23
1-6"	12	26
6-12"	11	24
12-18"	16	25

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	21
1-6"	14	19
6-12"	11	27
12-18"	22	73

DEPTH	As (ppm)	Pb (ppm)
0-1"	17	38
1-6"	11	26
6-12"	11	26
12-18"	11	27

DEPTH	As (ppm)	Pb (ppm)
0-1"	14	17
1-6"	12	19
6-12"	11	26
12-18"	14	17

DEPTH	As (ppm)	Pb (ppm)
0-1"	15	21
1-6"	11	29
6-12"	11	27
12-18"	11	22

DEPTH	As (ppm)	Pb (ppm)
0-1"	15	36
1-6"	12	32
6-12"	12	23
12-18"	11	21

DEPTH	As (ppm)	Pb (ppm)
0-1"	13	24
1-6"	11	24
6-12"	11	22
12-18"	15	25

DEPTH	As (ppm)	Pb (ppm)
0-1"	13	24
1-6"	11	27
6-12"	11	25
12-18"	15	17

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	27
1-6"	16	25
6-12"	12	26
12-18"	11	24

DEPTH	As (ppm)	Pb (ppm)
0-1"	15	19
1-6"	11	21
6-12"	11	23
12-18"	14	20

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	56
1-6"	21	49
6-12"	15	19
12-18"	12	20

DEPTH	As (ppm)	Pb (ppm)
0-1"	19	41
1-6"	11	23
6-12"	11	26
12-18"	11	29

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	25
1-6"	13	26
6-12"	11	24
12-18"	13	20

DEPTH	As (ppm)	Pb (ppm)
0-1"	46	105
1-6"	143	159
6-12"	37	40
12-18"	24	30

DEPTH	As (ppm)	Pb (ppm)
0-1"	11	21
1-6"	14	15
6-12"	11	17
12-18"	11	21

DEPTH	As (ppm)	Pb (ppm)
0-1"	12	23
1-6"	11	26
6-12"	11	22
12-18"	12	23

DEPTH	As (ppm)	Pb (ppm)
0-1"	14	22
1-6"	11	24
6-12"	13	21
12-18"	17	20

NORTH

0 10 20 30

SCALE IN FEET

11/14/05

AD03-GC5

Asarco Consulting, Inc.

PROPERTY SITE CODE: AD03-G

SITE ADDRESS: 5335 N Vassault St

PROPERTY OWNER: Franke Tobey Jones (Ed Mawe)

PROPERTY RESIDENT: Raised Garden Boxes Sampling

SITE ADDRESS	NAME	SITE CODE
5335 No Vassault St	Franke Tobey Jones Home (Owner) (253)752-6621	AD03

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
01	0 - 1	11	26	NONE
01	1 - 6	15	27	
01	6 - 12	18	25	
01	12 - 18	13	27	
02	0 - 1	11	28	NONE
02	1 - 6	12	33	
02	6 - 12	19	25	
02	12 - 18	17	28	
03	0 - 1	15	28	NONE
03	1 - 6	21	27	
03	6 - 12	21	30	
03	12 - 18	16	26	
04	0 - 1	14	24	NONE
04	1 - 6	16	23	
04	6 - 12	23	34	
04	12 - 18	20	31	
05	0 - 1	13	17	NONE
05	1 - 6	15	24	
05	6 - 12	74	117	
05	12 - 18	73	137	
06	0 - 1	15	37	NONE
06	1 - 6	39	62	
06	6 - 12	53	64	
06	12 - 18	26	36	
07	0 - 1	32	77	NONE
07	1 - 6	57	176	
07	6 - 12	40	71	
07	12 - 18	20	55	
08	0 - 1	12	27	NONE
08	1 - 6	20	30	
08	6 - 12	33	51	
08	12 - 18	36	66	
09	0 - 1	141	642	1
09	1 - 6	111	149	
09	6 - 12	71	106	
09	12 - 18	21	36	
10	0 - 1	23	95	NONE
10	1 - 6	72	187	
10	6 - 12	71	68	
10	12 - 18	55	61	
11	0 - 1	15	35	NONE
11	1 - 6	18	40	
11	6 - 12	31	43	
11	12 - 18	32	63	
12	0 - 1	22	43	NONE
12	1 - 6	24	66	
12	6 - 12	26	75	
12	12 - 18	16	34	
13	0 - 1	16	30	NONE

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

13	1 - 6	18	34	
13	6 - 12	21	42	
13	12 - 18	23	36	
14	0 - 1	17	23	NONE
14	1 - 6	16	28	
14	6 - 12	23	44	
14	12 - 18	103	39	
15	0 - 1	41	157	NONE
15	1 - 6	42	45	
15	6 - 12	30	39	
15	12 - 18	22	30	
16	0 - 1	11	27	NONE
16	1 - 6	16	25	
16	6 - 12	21	27	
16	12 - 18	18	41	
17	0 - 1	11	26	NONE
17	1 - 6	11	44	
17	6 - 12	19	30	
17	12 - 18	21	33	
18	0 - 1	13	29	NONE
18	1 - 6	18	22	
18	6 - 12	20	32	
18	12 - 18	19	26	
19	0 - 1	14	25	NONE
19	1 - 6	16	27	
19	6 - 12	18	22	
19	12 - 18	20	28	
20	0 - 1	32	92	NONE
20	1 - 6	56	105	
20	6 - 12	38	58	
20	12 - 18	25	30	
21	0 - 1	83	419	NONE
21	1 - 6	91	210	
21	6 - 12	74	60	
21	12 - 18	34	49	
22	0 - 1	91	297	NONE
22	1 - 6	85	156	
22	6 - 12	56	100	
22	12 - 18	24	25	
23	0 - 1	40	79	NONE
23	1 - 6	34	85	
23	6 - 12	50	129	
23	12 - 18	43	50	
24	0 - 1	52	95	NONE
24	1 - 6	64	82	
24	6 - 12	39	45	
24	12 - 18	40	60	
25	0 - 1	112	272	NONE
25	1 - 6	136	142	
25	6 - 12	72	94	
25	12 - 18	45	63	
26	0 - 1	116	212	NONE
26	1 - 6	63	86	
26	6 - 12	47	36	
26	12 - 18	41	55	
27	0 - 1	93	164	NONE
27	1 - 6	68	42	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

27	6 - 12	55	28	
27	12 - 18	26	32	
28	0 - 1	96	141	NONE
28	1 - 6	71	70	
28	6 - 12	50	69	
28	12 - 18	38	38	
29	0 - 1	145	521	1
29	1 - 6	91	119	
29	6 - 12	47	51	
29	12 - 18	35	52	
30	0 - 1	113	613	1
30	1 - 6	80	135	
30	6 - 12	66	71	
30	12 - 18	63	112	
31	0 - 1	35	84	NONE
31	1 - 6	58	154	
31	6 - 12	83	62	
31	12 - 18	42	54	
32	0 - 1	30	123	NONE
32	1 - 6	65	177	
32	6 - 12	91	108	
32	12 - 18	90	89	
33	0 - 1	25	71	NONE
33	1 - 6	88	216	
33	6 - 12	83	82	
33	12 - 18	75	91	
34	0 - 1	70	144	NONE
34	1 - 6	77	69	
34	6 - 12	77	155	
34	12 - 18	46	122	
35	0 - 1	11	38	NONE
35	1 - 6	35	68	
35	6 - 12	53	58	
35	12 - 18	35	74	
36	0 - 1	16	25	NONE
36	1 - 6	17	37	
36	6 - 12	24	36	
36	12 - 18	21	30	
G1	0 - 1	11	25	NONE
G1	1 - 6	11	22	
G1	6 - 12	11	28	
G1	12 - 18	11	21	
G2	0 - 1	11	21	NONE
G2	1 - 6	14	19	
G2	6 - 12	11	27	
G2	12 - 18	22	73	
G3	0 - 1	11	25	NONE
G3	1 - 6	13	26	
G3	6 - 12	11	24	
G3	12 - 18	13	20	
G4	0 - 1	15	36	NONE
G4	1 - 6	12	32	
G4	6 - 12	12	23	
G4	12 - 18	11	21	
G5	0 - 1	17	38	NONE
G5	1 - 6	11	26	
G5	6 - 12	11	26	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

G5	12 - 18	11	27	
G6	0 - 1	11	35	NONE
G6	1 - 6	14	24	
G6	6 - 12	13	25	
G6	12 - 18	13	19	
G7	0 - 1	11	26	NONE
G7	1 - 6	11	20	
G7	6 - 12	11	21	
G7	12 - 18	11	24	
G8	0 - 1	13	21	NONE
G8	1 - 6	12	22	
G8	6 - 12	11	27	
G8	12 - 18	19	26	
G9	0 - 1	14	23	NONE
G9	1 - 6	12	26	
G9	6 - 12	11	24	
G9	12 - 18	18	25	
G10	0 - 1	15	21	NONE
G10	1 - 6	11	29	
G10	6 - 12	11	27	
G10	12 - 18	11	22	
G11	0 - 1	13	24	NONE
G11	1 - 6	11	24	
G11	6 - 12	11	22	
G11	12 - 18	15	25	
G12	0 - 1	14	17	NONE
G12	1 - 6	12	19	
G12	6 - 12	11	26	
G12	12 - 18	14	17	
G13	0 - 1	13	27	NONE
G13	1 - 6	11	27	
G13	6 - 12	11	22	
G13	12 - 18	11	24	
G14	0 - 1	46	105	NONE
G14	1 - 6	143	159	
G14	6 - 12	37	40	
G14	12 - 18	24	30	
G15	0 - 1	13	24	NONE
G15	1 - 6	11	27	
G15	6 - 12	11	25	
G15	12 - 18	15	17	
G16	0 - 1	11	56	NONE
G16	1 - 6	21	49	
G16	6 - 12	15	19	
G16	12 - 18	12	20	
G17	0 - 1	15	19	NONE
G17	1 - 6	11	21	
G17	6 - 12	11	23	
G17	12 - 18	14	20	
G18	0 - 1	11	27	NONE
G18	1 - 6	16	25	
G18	6 - 12	12	26	
G18	12 - 18	11	24	
G19	0 - 1	11	32	NONE
G19	1 - 6	14	15	
G19	6 - 12	11	17	
G19	12 - 18	11	21	

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

G20	0 - 1	12	23	NONE
G20	1 - 6	11	26	
G20	6 - 12	11	22	
G20	12 - 18	12	23	
G21	0 - 1	19	41	NONE
G21	1 - 6	11	23	
G21	6 - 12	11	26	
G21	12 - 18	11	29	
G22	0 - 1	14	22	NONE
G22	1 - 6	11	24	
G22	6 - 12	13	21	
G22	12 - 18	17	20	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	33	94
1 - 6	37	64
6 - 12	33	47
12 - 18	28	42

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

MRC CONSTRUCTION, LLC
SITEWORK UTILITIES & ENVIRONMENTAL
RUSTON, WA. (253)759-4829

July 25, 2008

City of Tacoma
747 Market St.
Tacoma, WA 98407

Re: ADS1, ADS2, AEA1, AES2, AFA1, AFS2, AGS1, AIS1, AJA1, AJS4, AKS1, AKS4, ALS1, ALS4, BCA1, BEA1, BES1, BFS5, BFS5-Flower Beds, BFS6, BLA1, BLS2, B LS4, BMA1, BMS1, BNA1, BNS3, BNS4, BOA1, BOS1, CCS3, CDS4, CES7, CFA1, CGA1, CGS1, CGS4, CNS1, COA1, CPS1, CPS4, CQS1, DAS1, DDA1, DDS2, DEA1, DES2, DIS3, DIS3-Flower Beds, DJA1, DJS1, DKS3, DKS5, DLS3, DLS4

Thank you for your cooperation during the remediation of your property at the above miscellaneous properties. Exposed soils requiring remediation under the Ruston-North Tacoma Residential Soils Work Plan that are above the Environmental Protection Agency action levels (arsenic – 230 part per million, lead – 500 part per million) have been removed from the property. Please refer to the enclosed map of your property for specific details.

Sampling was performed after excavation of the property and the results are attached to this letter. This information should be retained for your reference in case any future questions arise concerning your property.

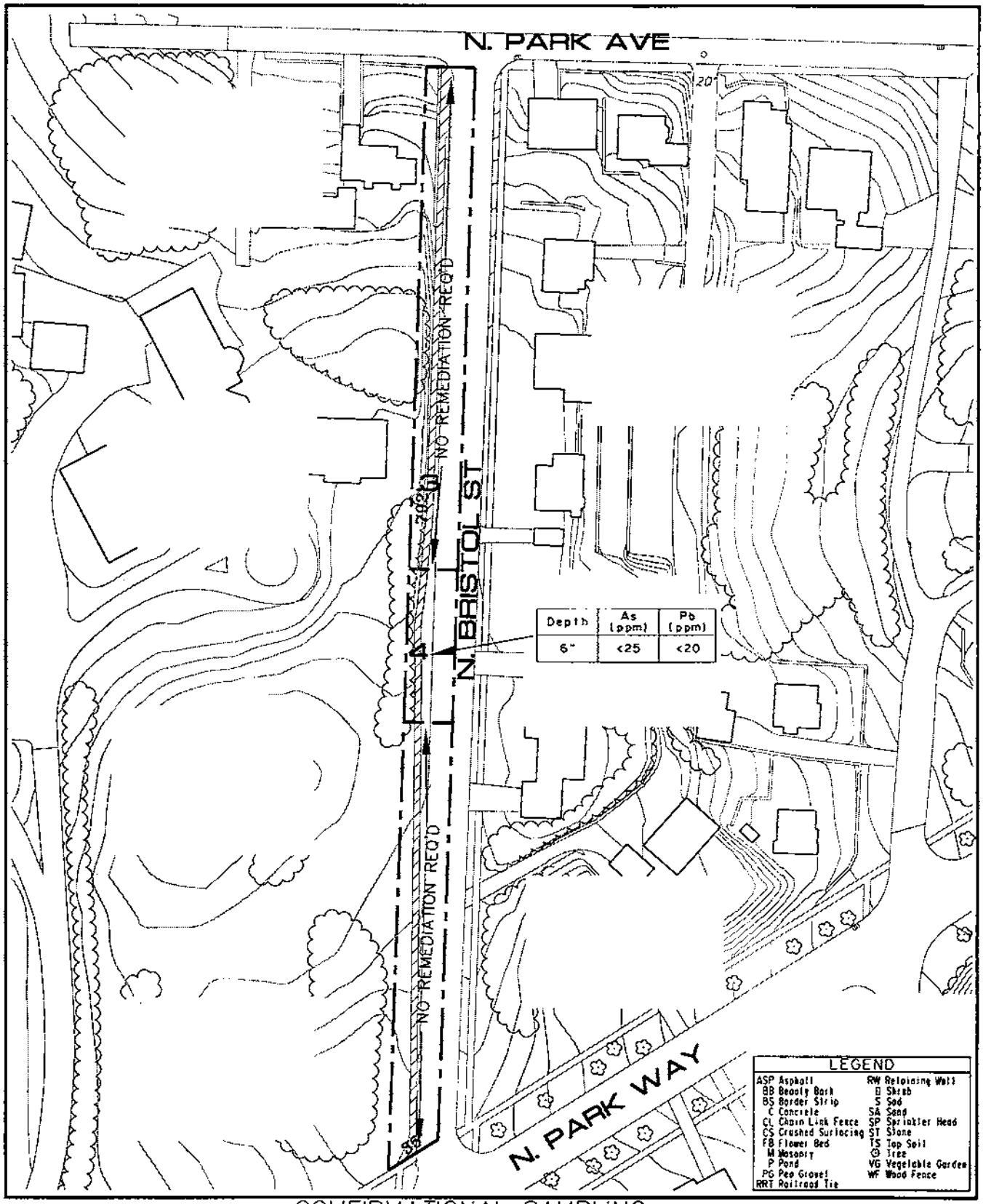
We appreciate your consideration throughout this period of sampling and remediation. If you have any questions, please contact Michele Wilkins of the Asarco Information Center at (253) 759-6015.

Sincerely,

Ric Rademacher
Project Manager

5219 North Shirley Street Suite 003
Tacoma, WA 98407

(253) 759-4829
Fax: (253) 759-1088



03/31/08 COMFIRMATIONAL SAMPLING ADSIW1

NORTH

0 50 100

SCALE IN FEET

MRC Construction, LLC

PROPERTY SITE CODE: ADSI

SITE ADDRESS: RW, N. Bristol St. / Park Ave, ParkWay

PROPERTY OWNER: City of Tacoma

PROPERTY RESIDENT:

Ruston Soils Post Remediation Report

Address
R/W NO Bristol/Park way,N.ParkAv

Owner
City of Tacoma (Owner)

Site Code
ADS1

SubUnit	Sample Number	Lab Number	Sample Date	Sample Time	Excvt Depth(inches)	Sample Depth(inches)	Analysis Date	Arsenic (ppm)	Lead (ppm)	Comments
4	ADS1-PST-04-B1		3/25/2008	10:36	1	1 - 6 inches		< 25	< 20	

Notes: (1) Depth at which samples were taken

Print Date 3/28/2008

ASARCO

Thomas E. Martin
Site Manger
Tacoma Plant

December 10, 2001

City of Tacoma
Mike Dalin, Engineering
747 Market St. Fifth Floor
Tacoma, WA 98402

Re: AES2 AKS4 JRA1 JVA1 PAA1 PHA1 OTA1 AJS4 ADS1 AKS1 BES1 OYA1

Dear Mr. Dalin,

As you know, your property at various locations was recently tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Removal Project. Asarco has reached an agreement with EPA that requires testing of properties in Ruston and North Tacoma to determine which properties might require soil replacement. This agreement states that properties will require remediation if the arsenic concentrations exceed 230 parts per million or the lead concentrations exceed 500 parts per million.

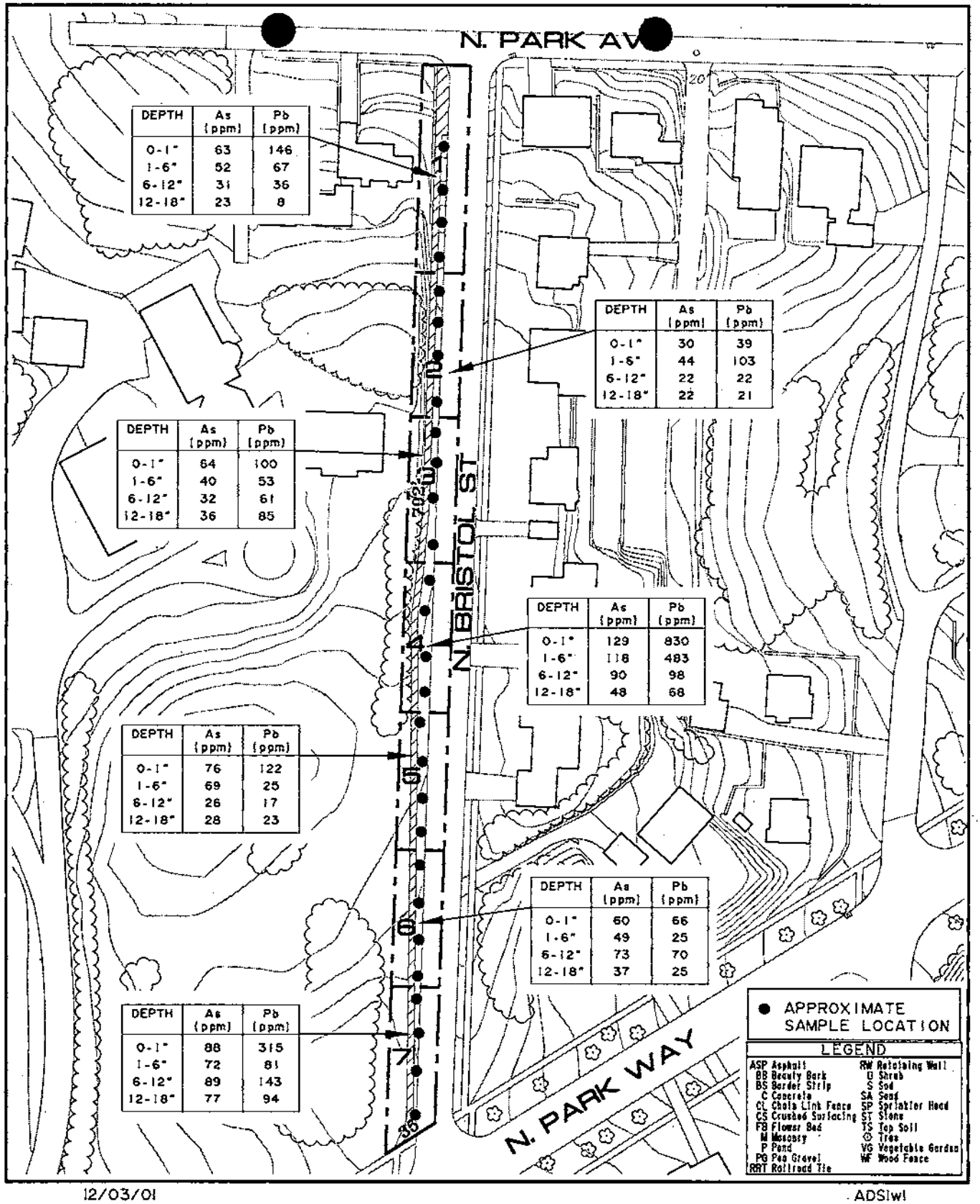
Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Some or all of these samples are above the EPA action levels for arsenic or lead (see table), and your property will need remediation. A representative from Asarco or Hydrometrics, Inc., will be contacting you to discuss activities planned for the property when a date has been scheduled for remediation. Also enclosed is an informational brochure from the Community Protection Measures Program that applies to your property. In the meantime, if you have questions, please call Karen Pickett at 756-5436. Thank you for your cooperation.

Sincerely,

Thomas E. Martin

ASARCO Incorporated P.O. Box 1677 Tacoma, WA 98401 (253) 756-0201
INFORMATION CENTER (253) 756-5436 FAX: (253) 756-0250
email: tmartin@asarco.com



12/03/01

ADSIwl

Hydrometrics, Inc.

PROPERTY SITE CODE: ADSI

SITE ADDRESS: RW, N. Bristol St. / Park Ave, Park Way

PROPERTY OWNER: City of Tacoma

PROPERTY RESIDENT:

SITE ADDRESS	NAME	SITE CODE
R/W NO Bristol/Park	City of Tacoma (Owner)	ADS1

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
		0	0	NONE
1	0 - 1	63	146	NONE
1	1 - 6	52	67	
1	6 - 12	31	36	
1	12 - 18	23	8	
2	0 - 1	30	39	NONE
2	1 - 6	44	103	
2	6 - 12	22	22	
2	12 - 18	22	21	
3	0 - 1	64	100	NONE
3	1 - 6	40	53	
3	6 - 12	32	61	
3	12 - 18	36	85	
4	0 - 1	129	830	1
4	1 - 6	118	483	
4	6 - 12	90	98	
4	12 - 18	48	68	
5	0 - 1	76	122	NONE
5	1 - 6	69	25	
5	6 - 12	26	17	
5	12 - 18	28	23	
6	0 - 1	60	66	NONE
6	1 - 6	49	25	
6	6 - 12	73	70	
6	12 - 18	37	25	
7	0 - 1	88	315	NONE
7	1 - 6	72	81	
7	6 - 12	89	143	
7	12 - 18	77	94	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	73	231
1 - 6	63	120
6 - 12	52	64
12 - 18	39	46

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

MRC CONSTRUCTION, LLC
SITEWORK UTILITIES & ENVIRONMENTAL
RUSTON, WA. (253)759-4829

July 25, 2008

City of Tacoma
747 Market St.
Tacoma, WA 98407

Re: ADS1, ADS2, AEA1, AES2, AFA1, AFS2, AGS1, AIS1, AJA1, AJS4, AKS1, AKS4, ALS1, ALS4, BCA1, BEA1, BES1, BFS5, BFS5-Flower Beds, BFS6, BLA1, BLS2, B LS4, BMA1, BMS1, BNA1, BNS3, BNS4, BOA1, BOS1, CCS3, CDS4, CES7, CFA1, CGA1, CGS1, CGS4, CNS1, COA1, CPS1, CPS4, CQS1, DAS1, DDA1, DDS2, DEA1, DES2, DIS3, DIS3-Flower Beds, DJA1, DJS1, DKS3, DKS5, DLS3, DLS4

Thank you for your cooperation during the remediation of your property at the above miscellaneous properties. Exposed soils requiring remediation under the Ruston-North Tacoma Residential Soils Work Plan that are above the Environmental Protection Agency action levels (arsenic – 230 part per million, lead – 500 part per million) have been removed from the property. Please refer to the enclosed map of your property for specific details.

Sampling was performed after excavation of the property and the results are attached to this letter. This information should be retained for your reference in case any future questions arise concerning your property.

We appreciate your consideration throughout this period of sampling and remediation. If you have any questions, please contact Michele Wilkins of the Asarco Information Center at (253) 759-6015.

Sincerely,

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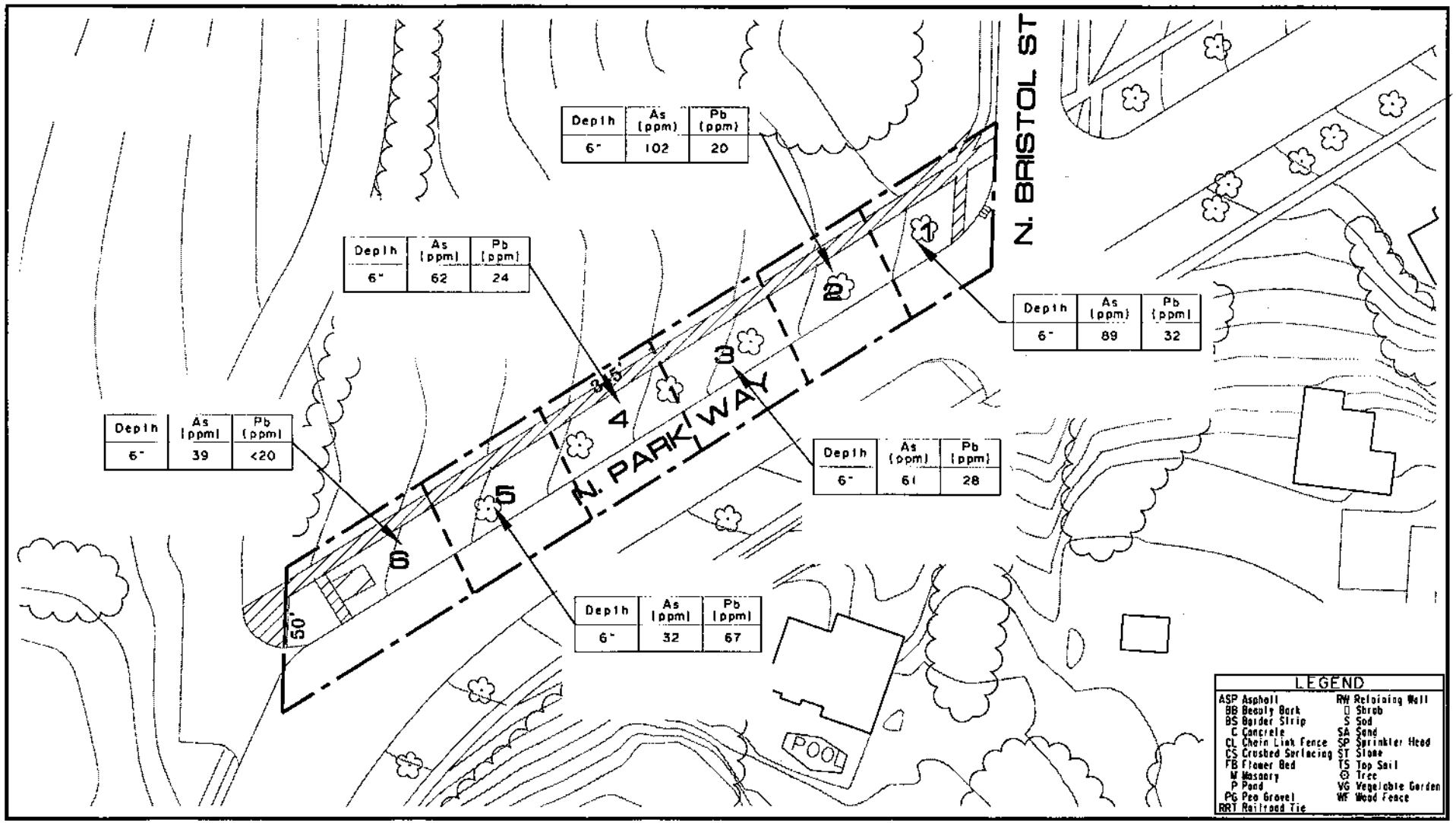

04/14/08

CONFIRMATIONAL SAMPLING

ADS2WI

NORTH

0 30 60

SCALE IN FEET

MRC Construction, LLC

PROPERTY SITE CODE: ADS2

SITE ADDRESS: RW, N. Park Way. / Bristol St.

PROPERTY OWNER: City of Tacoma

PROPERTY RESIDENT:

Ruston Soils Post Remediation Report

Address
R/W NO Park/Vasault,Bristol

Owner
City of Tacoma (Owner)

Site Code
ADS2

SubUnit	Sample Number	Lab Number	Sample Date	Sample Time	Excvt Depth(inches)	Sample Depth(inches)	Analysis Date	Arsenic (ppm)	Lead (ppm)	Comments
1	ADS2-PST-01-B1		4/8/2008	10:16	1	1 - 6 inches		89	32	
2	ADS2-PST-02-B1		4/7/2008	12:35	1	1 - 6 inches		102	20	
3	ADS2-PST-03-B1		4/4/2008	13:56	1	1 - 6 inches		61	28	
4	ADS2-PST-04-B1		4/4/2008	11:41	1	1 - 6 inches		62	24	
5	ADS2-PST-05-B1		4/4/2008	07:23	1	1 - 6 inches		32	67	
6	ADS2-PST-06-B1		4/3/2008	13:13	1	1 - 6 inches		39	< 20	

Notes: (1) Depth at which samples were taken

Print Date 4/11/2008

ASARCO

Thomas E. Martin
Site Manger
Tacoma Plant

December 11, 2001

Mr. Mike Dalin, Engineering
City of Tacoma
747 Market St. Fifth Floor
Tacoma, WA 98402

Re: ~~ADS2~~ ALS1

Dear Mr. Dalin:

As you know, your property at various locations was recently tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Removal Project. Asarco has reached an agreement with EPA that requires testing of properties in Ruston and North Tacoma to determine which properties might require soil replacement. This agreement states that properties will require remediation if the arsenic concentrations exceed 230 parts per million or the lead concentrations exceed 500 parts per million.

Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Some or all of these samples are above the EPA action levels for arsenic or lead (see table), and your property will need remediation. A representative from Asarco or Hydrometrics, Inc., will be contacting you to discuss activities planned for the property when a date has been scheduled for remediation. Also enclosed is an informational brochure from the Community Protection Measures Program that applies to your property. In the meantime, if you have questions, please call Karen Pickett at 756-5436. Thank you for your cooperation.

Sincerely,

Thomas E. Martin

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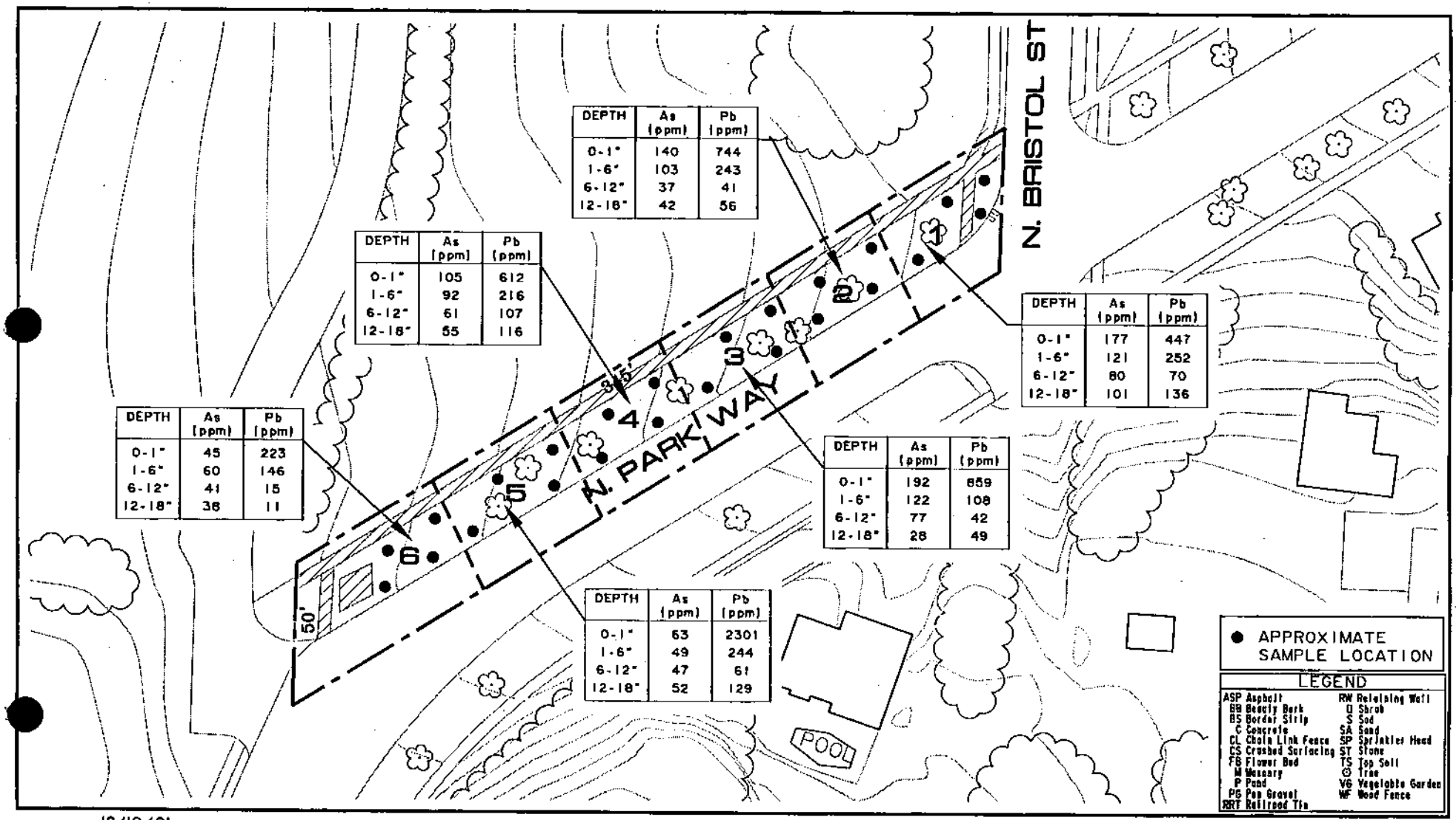
INFORMATION CENTER (253) 756-5436 FAX: (253) 756-0250
email: tmartin@asarco.com



12/10/01

ADS2wl

NORTH

0 30 60

SCALE IN FEET

Hydrometrics, Inc.

PROPERTY SITE CODE: ADS2

SITE ADDRESS: RW, N. Park Way / Bristol St.

PROPERTY OWNER: City of Tacoma

PROPERTY RESIDENT:

SITE ADDRESS	NAME	SITE CODE
R/W NO Park/Vasault,Bristol WY	City of Tacoma (Owner)	ADS2

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
1	0 - 1	177	447	1
1	1 - 6	121	252	
1	6 - 12	80	70	
1	12 - 18	101	136	
2	0 - 1	140	744	1
2	1 - 6	103	243	
2	6 - 12	37	41	
2	12 - 18	42	56	
3	0 - 1	192	859	1
3	1 - 6	122	108	
3	6 - 12	77	42	
3	12 - 18	28	49	
4	0 - 1	105	612	1
4	1 - 6	92	216	
4	6 - 12	61	107	
4	12 - 18	55	116	
5	0 - 1	63	2301	1
5	1 - 6	49	244	
5	6 - 12	47	61	
5	12 - 18	52	129	
6	0 - 1	45	223	1
6	1 - 6	60	146	
6	6 - 12	41	15	
6	12 - 18	38	11	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	120	864
1 - 6	91	202
6 - 12	57	56
12 - 18	53	83

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

ASARCO

Thomas E. Martin
Site Manger
Tacoma Plant

December 10, 2001

City of Tacoma
Mike Dalin, Engineering
747 Market St. Fifth Floor
Tacoma, WA 98402

Re: ORA1 OUA1 PIS2 BES4 OSA1 ~~ADS4~~ BES2 BNS1

Dear Mr. Dalin,

As you know, your property at various locations was recently tested for arsenic and lead content in connection with the Ruston/North Tacoma Soil Replacement Project. Asarco has reached an agreement with EPA that requires testing of properties in Ruston and North Tacoma to determine which properties might require soil replacement. This agreement states that properties will require remediation if the arsenic concentration exceed 230 part per million or the lead concentrations exceed 500 parts per million.

Composite samples were collected in a number of subunits from your property and analyzed for arsenic and lead concentrations. Each composite was obtained by combining samples collected from the same depths at four different locations within each subunit. Depth intervals from which samples were collected are 0"-1", 1"-6", 6"-12", 12"-18". Results of these samples are listed on the attached table (see next page).

Because your sample results are below the EPA action levels for arsenic and lead, your property does not need to be remediated. We have enclosed a brochure form the Tacoma-Pierce County Health Department as additional information for you. If you have any questions, please contact Karen Pickett at 756-5436. Thank you for your

Sincerely,

Thomas E. Martin

ASARCO Incorporated P.O. Box 1677 Tacoma, WA 98401 (253) 756-0201
INFORMATION CENTER (253) 756-5436 FAX: (253) 756-0250
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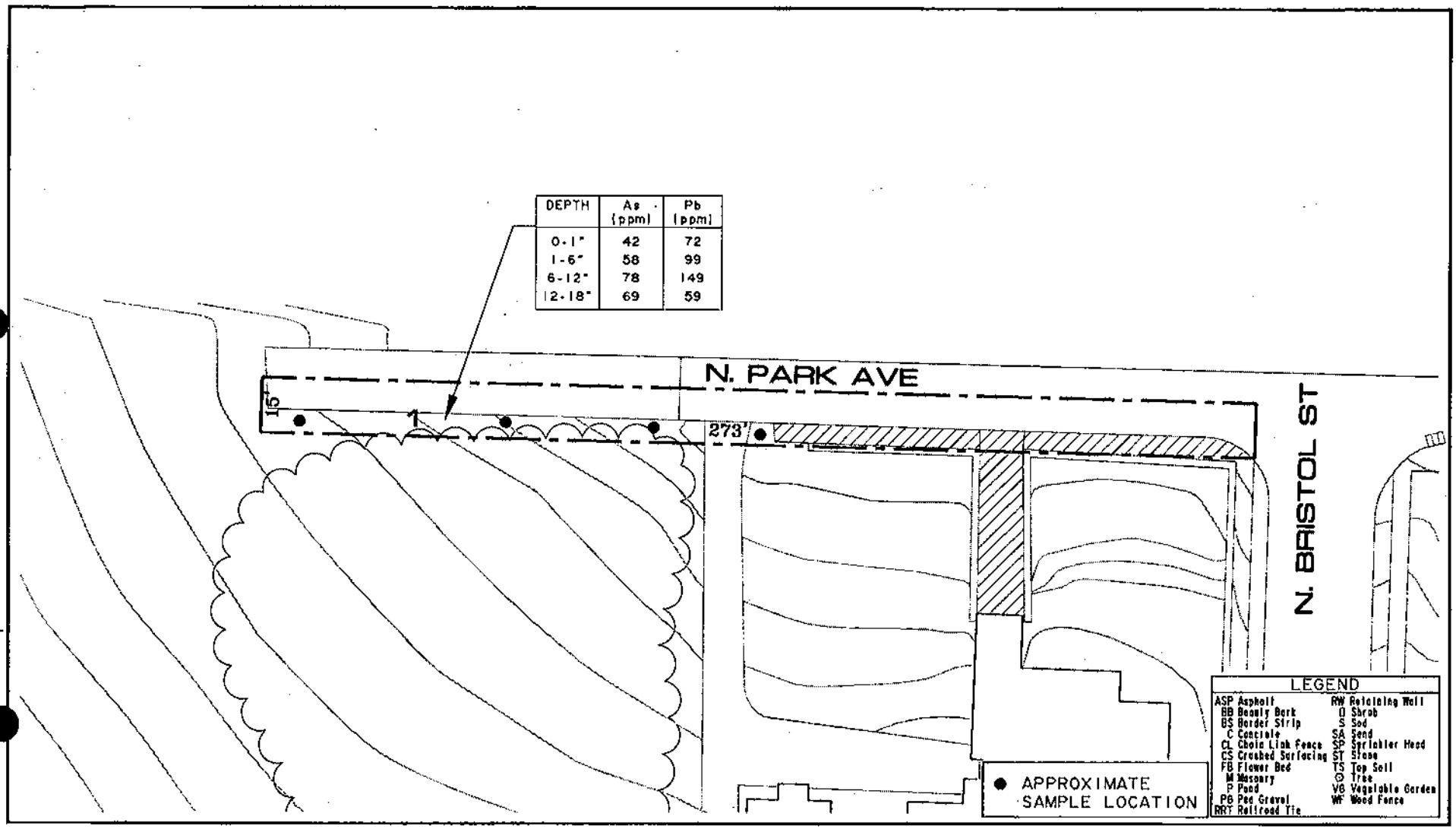

12/03/01

ADS4wl

NORTH

0 10 20 30 40

SCALE IN FEET

Hydrometrics, Inc.

PROPERTY SITE CODE: ADS4

SITE ADDRESS: RW, N. Park Ave. / Bristol

PROPERTY OWNER: City of Tacoma

PROPERTY RESIDENT:

SITE ADDRESS	NAME	SITE CODE
R/W NO Park Ave/Vassult,Bristol	City of Tacoma (Owner)	ADS4

SUBUNIT	DEPTH (Inches)	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH (Inches)
		0	0	NONE
1	0 - 1	42	72	NONE
1	1 - 6	58	99	
1	6 - 12	78	149	
1	12 - 18	69	59	

DEPTH (Inches)	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	42	72
1 - 6	58	99
6 - 12	78	149
12 - 18	69	59

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

APPENDIX B
Subsurface Explorations

SOIL CLASSIFICATION CHART

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

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

ADDITIONAL MATERIAL SYMBOLS

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

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

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

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

A "WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

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

Sheen Classification

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

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

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE B-1

Rev. 02/16

Drilled: Start 11/1/2016 End 11/1/2016	Total Depth (ft): 15	Logged By: HM Checked By: TSD	Driller: ESN NW		Drilling Method: Direct Push
Surface Elevation (ft): 174 Vertical Datum: NGVD29		Hammer Data: Pneumatic			Drilling Equipment: Bobcat Powerprobe 9100-SK
Easting (X): 1139249 Northing (Y): 724201		System Datum: WA State Plane,South NAD83 (feet)			Groundwater: Date Measured / Depth to Water (ft) / Elevation (ft): None Observed
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		49			DP1-0-0.5		AC	Asphalt concrete pavement			
								SM	Gray silty sand with occasional fine gravel (moist) (fill)	SS	<1	
						DP1-1-1.5 CA				SS	<1	
						DP1-2-2.5 CA						
						DP1-3-3.5				SS	<1	
170						DP1-4-4.5				SS	<1	
	5		25			DP1-5-5.5						
								SP-SM	Light brown-gray fine to medium sand with silt, occasional fine gravel (moist) (fill)	SS	<1	
						DP1-6-6.5 CA						
						DP1-7-7.5 CA			Grades to dark gray, organic matter (moist) (fill)	NS	<1	
						DP1-8-8.5 CA				NS	<1	
165								SP-SM	Light brown fine sand with silt (moist) (native)			
						DP1-9-9.5						
	10		60			DP1-10-10.5						
						DP1-11-11.5						
						DP1-12=12.5				NS	<1	
								SM	Light brown silty fine to medium sand (moist) (native)	NS	<1	
160										NS	<1	
	15									NS	<1	

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

Log of Boring DP1

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-2
Sheet 1 of 1

Drilled Start 11/1/2016 End 11/1/2016	Total Depth (ft) 15	Logged By HM Checked By TSD	Driller ESN NW	Drilling Method Direct Push	
Surface Elevation (ft) 172 Vertical Datum NGVD29		Hammer Data Pneumatic		Drilling Equipment Bobcat Powerprobe 9100-SK	
Easting (X) 1139328 Northing (Y) 724188		System Datum WA State Plane,South NAD83 (feet)		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft): None Observed	
Notes:					

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32			DP2-0-0.5		SM	Brown silty fine to medium sand with organic matter (moist) (fill)	NS	<1	
								SP-SM	Light brown fine to medium sand with silt and occasional fine gravel (moist) (native)			
						DP2-1-1.5 CA				NS	<1	
170						DP2-2-2.5				NS	<1	
						DP2-3-3.5				NS	<1	
	5		29			DP2-5-5.5			Grades finer, less fine gravel (moist)	NS	<1	
						DP2-6-6.5				NS	<1	
165						DP2-7-7.5				NS	<1	
						DP2-8-8.5						
						DP2-9-9.5						
	10		36			DP10-10-10.5		SP	Brown fine to coarse sand with trace silt (native)	NS	<1	
						DP2-11-11.5				NS	<1	
160										NS	<1	
	15											

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

Log of Boring DP2

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-3
Sheet 1 of 1

Drilled	Start 11/1/2016	End 11/1/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	176 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139251 724151		System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:						None Observed				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		45			DP3-0-0.5		AC	Asphalt concrete pavement	SS	<1	
175								SP-SM	Gray fine to medium sand with silt, occasional fine to coarse gravel (moist) (fill)			
						DP3-1-1.5 CA				SS	<1	
						DP3-2-2.5				SS	<1	
						DP3-3-3.5 CA		SP-SM	Brown-buff fine to medium sand with silt, occasional fine gravel (moist) (fill)	SS	<1	
						DP3-4-4.5 CA						
	5		60			DP3-5-5.5						
170						DP3-6-6.5						
						DP3-7-7.5		SM	Light brown fine to medium sand with silt (moist) (native)	SS	<1	
						DP3-8-8.5				SS	<1	
						DP3-9-9.5				SS	<1	
	10											

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

Log of Boring DP3

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-4
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/1/2016	11/1/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
172 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139304 / 724150	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		34			DP4-0-0.5		TS	Approximately 6 inches of topsoil and sod	NS	<1	
								SM	Light brown fine to coarse sand with silt (native)			
170						DP4-1-1.5 CA				SS	<1	
						DP4-2-2.5 CA				SS		
						DP4-3-3.5		SM	Light brown fine to coarse sand with silt (moist) (native)	NS	<1	
						DP4-4-4.5						
	5		45			DP4-5-5.5				NS	<1	
						DP4-6-6.5						
165						DP4-7-7.5				NS	<1	
						DP4-8-8.5				NS	<1	
						DP4-9-9.5				NS	<1	
	10											

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

Log of Boring DP4

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-5
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/1/2016	11/1/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
179 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139250 724109	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		24			DP5-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod			
								SM	Light brown fine sand with silt and occasional fine gravel (moist) (native)	NS	<1	
						DP5-1-1.5 CA				SS	<1	
						DP5-2-2.5				SS	<1	
175									No recovery			
	5		50			DP5-5-5.5		SP-SM	Light brown-gray fine to medium sand with silt (moist) (native)	NS	<1	
						DP5-6-6.5				NS	<1	
						DP5-7-7.5				NS	<1	
						DP5-8-8.5				NS	<1	
170						DP5-9-9.5				NS	<1	
	10											

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

Log of Boring DP5

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-6
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
	11/1/2016	11/1/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	183 NGVD29	Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK
Easting (X) / Northing (Y)	1139288 724078	System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		35			DP6-0-0.5 CA		TS	Approximately 3 inches of topsoil and sod			
								SM	Dark brown silty sand with trace gravel and occasional organic matter (roots, wood debris) (moist) (fill)	SS	<1	
						DP6-1-1.5 CA				SS	<1	
						DP6-2-2.5 CA				SS	<1	
180								SP-SM	Brown fine to medium sand with silt (moist) (native)			
						DP6-3-3.5				NS	<1	
						DP6-4-4.5						
	5		34			DP6-5-5.5				NS	<1	
						DP6-6-6.5				NS	<1	
						DP6-7-7.5				NS	<1	
175						DP6-8-8.5				NS	<1	
						DP6-9-9.5						
	10											

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

Log of Boring DP6

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-7
Sheet 1 of 1

Drilled	Start 11/1/2016	End 11/1/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	184 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139314 724051		System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:						None Observed				

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		38			DP7-0-0.5 CA		SP	Light brown fine to medium sand with fine gravel and organic matter (moist) (fill)			
						DP7-1-1.5				NS	<1	
						DP7-2-2.5			No organic matter observed	NS	<1	
						DP7-3-3.5				NS	<1	
180						DP7-4-4.5						
	5		48			DP7-5-5.5		SP-SM	Brown fine to coarse sand with silt and trace gravel (moist) (native)	NS	<1	
						DP7-6-6.5				NS	<1	
						DP7-7-7.5				NS	<1	
						DP7-8-8.5				NS	<1	
175						DP7-9-9.5				NS	<1	
	10											

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

Log of Boring DP7

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-8
Sheet 1 of 1

Drilled	Start 11/1/2016	End 11/1/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	184 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139248 724053		System Datum	WA State Plane,South NAD83 (feet)	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)	None Observed		
Notes:										

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		34			DP8-0-0.5 CA		GP	Brown fine to coarse gravel (moist) (fill)	NS	<1	
								SP	Light brown fine to medium sand and fine gravel (moist) (fill)			
						DP8-1-1.5				NS	<1	
						DP8-2-2.5						
								SP-SM	Gray fine sand with silt and occasional fine gravel (fill) (native)			
						DP8-3-3.5				NS	<1	
180						DP8-4-4.5						
	5		42			DP8-5-5.5				NS	<1	
						DP8-6-6.5						
						DP8-7-7.5			Grades to no gravel	NS	<1	
						DP8-8-8.5				NS	<1	
175						DP8-9-9.5						
	10											

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

Log of Boring DP8

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-9
Sheet 1 of 1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	11/1/2016	11/1/2016	10	HM	TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	187 NGVD29	Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK
Easting (X) / Northing (Y)	1139173 723865	System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured / Depth to Water (ft) / Elevation (ft): See Remarks

Notes:

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36					TS	Approximately 3 to 6 inches of topsoil and sod			
						DP9-0-0.5		SM	Light brown silty fine to medium sand and occasional fine gravel, occasional woody debris (moist) (fill)	NS	<1	
						DP9-1-1.5 CA				NS	<1	
185						DP9-2-2.5 CA				NS	<1	
						DP9-3-3.5 CA				NS	<1	
						DP9-4-4.5						
	5		38			DP9-5-5.5		CL	Light gray clay with sand, olive brown-mottling (very dense, moist) (native)	NS	<1	Perched groundwater observed at approximately 5 feet below ground surface during drilling
						DP9-6-6.5				NS	<1	
180						DP9-7-7.5						
						DP9-8-8.5				NS	<1	
						DP9-9-9.5						
	10											

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

Log of Boring DP9

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-10
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/1/2016	11/1/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
184 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139228 / 723840	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): See Remarks

Notes:

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		29			DP10-0-0.5		SM	Brown silty fine to medium sand, occasional fine gravel with organic matter (moist) (fill) (fill to 4 feet)	SS	<1	
						DP10-1-1.5 CA				NS	<1	
						DP10-2-2.5				NS	<1	
						DP10-3-3.5 CA				NS	<1	
180												
	5		48			DP10-5-5.5 CA		CL	Light gray clay with sand, olive brown-mottling and occasional organic matter (moist) (native)	NS	<1	Perched groundwater observed at approximately 5 feet below ground surface during drilling
						DP10-6-6.5						
						DP10-7-7.5				NS	<1	
						DP10-8-8.5						
175												
						DP10-9-9.5				NS	<1	
	10											

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

Log of Boring DP10

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II

Project Location: Tacoma, Washington

Project Number: 10068-002-00

Figure B-11

Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	184 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139149 723816		System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:							None Observed			

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		29			DP11-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SP-SM	Brown fine to coarse sand with fine to coarse gravel and silt (moist) (fill)			
						DP11-1-1.5						
						DP11-2-2.5 CA			Grades with some organics	NS	<1	
						DP11-3-3.5 CA			No recovery			
180												
	5		40			DP11-5-5.5 CA		ML	Brown silt with fine sand and occasional fine gravel (moist) (native)			
						DP11-6-6.5				NS	<1	
						DP11-7-7.5						
						DP11-8-8.5				NS	<1	
175												
						DP11-9-9.5						
	10											

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

Log of Boring DP11

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-12
Sheet 1 of 1

Drilled Start 11/1/2016 End 11/1/2016	Total Depth (ft) 15	Logged By HM Checked By TSD	Driller ESN NW	Drilling Method Direct Push	
Surface Elevation (ft) 181 Vertical Datum NGVD29		Hammer Data Pneumatic		Drilling Equipment Bobcat Powerprobe 9100-SK	
Easting (X) 1139230 Northing (Y) 723794		System Datum WA State Plane,South NAD83 (feet)		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft): None Observed	
Notes:					

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
180	0		23			DP12-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SP-SM	Brown fine to coarse sand with silt and fine to coarse gravel and organic matter (moist) (fill)			
						DP12-1-1.5 CA						
						DP12-2-2.5				NS	<1	
						DP12-3-3.5 CA						
175	5		52			DP12-5-5.5		SM	No recovery Black silty fine to coarse sand with organic matter (fill)	NS	<1	
						DP12-6-6.5				NS	<1	
						DP12-7-7.5			Brown fine to medium sand with silt and organic matter (fill)			
								ML	Gray silt with fine to medium sand and occasional gravel (moist) (native)			
						DP12-8-8.5 CA				NS	<1	
						DP12-9-9.5 CA						
170	10		60			DP12-10-10.5				NS	<1	
						DP12-11-11.5				NS	<1	
										NS	<1	
										NS	<1	
										NS	<1	
	15											

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

Log of Boring DP12

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-13
Sheet 1 of 1

Drilled Start 11/2/2016 End 11/2/2016	Total Depth (ft) 15	Logged By HM Checked By TSD	Driller ESN NW	Drilling Method Direct Push	
Surface Elevation (ft) 183 Vertical Datum NGVD29		Hammer Data Pneumatic		Drilling Equipment Bobcat Powerprobe 9100-SK	
Easting (X) 1139134 Northing (Y) 723768		System Datum WA State Plane,South NAD83 (feet)		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft): None Observed	
Notes:					

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		39			DP13-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	SS	<1	
								SM	Brown silty fine to coarse sand with occasional gravel and organic matter (moist) (fill)			
						DP13-1-1.5 CA				SS	<1	
						DP13-2-2.5 CA			Grades to gray	SS	<1	
180						DP13-3-3.5				SS	<1	
						DP13-4-4.5						
	5		32			DP13-5-5.5		SP	Gray coarse sand, trace silt (moist)	NS	<1	
						DP13-5.5-6						
						DP13-6-6.5 CA		SP-SM	Dark brown fine sand with silt and organic matter (moist) (fill)			
						DP13-6.5-7 CA						
						DP13-7-7.5 CA				NS	<1	
175						DP13-8-8.5 CA				SS		
						DP13-9-9.5		ML	Gray-green silt (moist) (native)			
	10		9							NS	<1	
170									No recovery			
	15											

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

Log of Boring DP13

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-14
Sheet 1 of 1

Drilled	Start 11/1/2016	End 11/1/2016	Total Depth (ft)	15	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	180 NGVD29		Hammer Data	Pneumatic			Drilling Equipment	Bobcat Powerprobe 9100-SK		
Easting (X) / Northing (Y)	1139212 723762		System Datum	WA State Plane,South NAD83 (feet)			Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)	None Observed
Notes:										

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		38			DP14-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SP-SM	Brown fine to coarse sand with silt and organic matter (moist) (fill)			
						DP14-1-1.5						
						DP14-2-2.5 CA				NS	<1	
									Grades to gray			
						DP14-3-3.5			Gray fine to coarse sand with silt and occasional coarse gravel (moist) (fill)	NS	<1	
						DP14-4-4.5						
175	5		29			DP14-5-5.5 CA				NS	<1	
						DP14-6-6.5						
						DP14-7-7.5 CA		ML	Gray-green silt with sand with orange-mottling (hard, moist) (native)	NS	<1	
						DP14-8-8.5 CA						
						DP14-9-9.5						
170	10		21			DP14-10-10.5						
						DP14-11-11.5						
165	15											

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

Log of Boring DP14

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II

Project Location: Tacoma, Washington

Project Number: 10068-002-00

Figure B-15

Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	179 / NGVD29		Hammer Data	Pneumatic			Drilling Equipment	Bobcat Powerprobe 9100-SK		
Easting (X) / Northing (Y)	1139278 / 723760		System Datum	WA State Plane,South NAD83 (feet)			Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)	None Observed
Notes:										

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
175	0		35			DP15-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SM	Dark brown silty fine sand with organic matter (moist) (fill)			
						DP15-1-1.5 CA				NS	<1	
								SP	Gray coarse sand, trace silt (moist) (fill)			
						DP15-2-2.5 CA		SP-SM	Brown fine to medium sand with silt and organic matter (moist) (fill)	NS	<1	
						DP15-3-3.5				NS	<1	
						DP15-4-4.5						
	5		48			DP15-5-5.5 CA		ML	Gray-blue silt with fine gravel and sand (moist) (native)	NS	<1	
						DP15-6-6.5 CA						
						DP15-7-7.5				NS	<1	
170						DP15-8-8.5				NS	<1	
						DP15-9-9.5						
	10											

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

Log of Boring DP15

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-16
Sheet 1 of 1

Drilled Start 11/2/2016 End 11/2/2016	Total Depth (ft) 15	Logged By HM Checked By TSD	Driller ESN NW	Drilling Method Direct Push	
Surface Elevation (ft) 181 Vertical Datum NGVD29		Hammer Data Pneumatic		Drilling Equipment Bobcat Powerprobe 9100-SK	
Easting (X) 1139128 Northing (Y) 723689		System Datum WA State Plane,South NAD83 (feet)		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft): None Observed	
Notes:					

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
180	0		49			DP16-0-0.5 CA		TS	Approximately 3 to 6 inches of topsoil and sod			
								SM	Brown silty fine to coarse sand with occasional gravel and organic matter (moist) (fill)	SS	<1	
						DP16-1-1.5				SS	<1	
						DP16-2-2.5 CA						
						DP16-3-3.5				SS	<1	
						DP16-4-4.5				SS	<1	
175	5		25			DP16-5-5.5		SP-SM	Brown fine to medium sand with silt and occasional gravel (moist) (fill)	SS	<1	
						DP16-6-6.5						
						DP16-7-7.5				NS	<1	
						DP16-8-8.5				NS	<1	
						DP16-8.5-9 CA						
						DP16-9-9.5 CA						
170	10		60			DP16-10-10.5 CA		ML	Gray/green silt with sand and occasional gravel (native)			
						DP16-11-11.5				NS	<1	
						DP16-12-12.5				NS	<1	
										NS	<1	
										NS	<1	
	15									NS	<1	

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

Log of Boring DP16

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-17
Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	15	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	179 NGVD29		Hammer Data	Pneumatic			Drilling Equipment	Bobcat Powerprobe 9100-SK		
Easting (X) / Northing (Y)	1139214 723706		System Datum	WA State Plane,South NAD83 (feet)			Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)	None Observed
Notes:										

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32			DP17-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SP-SM	Brown fine to coarse sand with silt and gravel (moist) (fill)			
						DP17-1-1.5 CA				NS	<1	
						DP17-2-2.5				NS	<1	
						DP17-3-3.5 CA				NS	<1	
175						DP17-4-4.5						
	5		29			DP17-5-5.5 CA				NS	<1	
						DP17-6-6.5				NS	<1	
						DP17-7-7.5				NS	<1	
						DP17-8-8.5 CA						
170						DP17-9-9.5 CA		ML	Gray/green silt with sand, orange-mottling (moist) (native)			
	10		15			DP17-10-10.5				NS	<1	
						DP17-11-11.5				NS	<1	
										NS	<1	
165									No recovery			
	15											

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

Log of Boring DP17

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-18
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
180 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139130 / 723643	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		45			DP18-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SM	Brown silty fine to coarse sand with occasional gravel and organic matter (fill) (moist)			
						DP18-1-1.5				NS	<1	
						DP18-2-2.5 CA				NS	<1	
						DP18-3-3.5				NS	<1	
						DP18-4-4.5		SP-SM	Brown fine to medium sand with silt, gravel and organic matter (moist) (fill)			
175	5		60			DP18-5-5.5						
						DP18-6-6.5 CA						
								ML	Gray/green silt with sand (moist) (native)			
						DP18-7-7.5 CA				NS	<1	
						DP18-8-8.5				NS	<1	
170	10					DP18-9-9.5				NS	<1	

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

Log of Boring DP18

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II

Project Location: Tacoma, Washington

Project Number: 10068-002-00

Figure B-19

Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
178 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139218 / 723637	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		29			DP19-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	
								SP-SM	Light brown fine to coarse sand with silt (moist) (fill)			
						DP19-1-1.5 CA				NS	<1	
								SP	Dark brown fine sand with organic matter (moist) (fill)			
						DP19-2-2.5 CA		SP-SM	Light brown fine to medium sand with silt (moist) (native)	NS	<1	
175						DP19-3-3.5 CA				NS	<1	
									No recovery			
	5		51			DP19-5-5.5		SM	Gray/green silty sand with coarse gravel (moist) (native)	NS	<1	
						DP19-6-6.5						
						DP19-7-7.5				NS	<1	
170						DP19-8-8.5						
						DP19-9-9.5						
	10											

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

Log of Boring DP19

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-20
Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	177 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139281 723655		System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:						None Observed				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		40			DP20-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod			
								SM	Brown fine to coarse sand with trace silt and occasional fine gravel (moist) (fill)	NS	<1	
175						DP20-1-1.5 CA				NS	<1	
						DP20-2-2.5 CA				NS	<1	
								SP	Brown medium to coarse sand with gravel (moist) (native)			
						DP20-3-3.5 CA				NS	<1	
						DP20-4-4.5						
	5		44			DP20-5-5.5		GP	Gray fine to coarse gravel with trace silt and coarse sand (moist) (native)	NS	<1	
						DP20-6-6.5						
170						DP20-7-7.5				NS	<1	
						DP20-8-8.5			Grades to less gravel	NS	<1	
						DP20-9-9.5				NS	<1	
	10											

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

Log of Boring DP20

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-21
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
178 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1139138 / 723597	WA State Plane,South NAD83 (feet)	Date Measured / Depth to Water (ft) / Elevation (ft): None Observed

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		36			DP21-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod			
								SP	Dark brown silty sand with organic matter (moist)			
						DP21-1-1.5 CA				SS	<1	
								SM	Orange silty sand with black mottling (organic matter) (fill)			
						DP21-2-2.5 CA		SM	Light brown silty sand with organic matter (fill)	SS	<1	
175						DP21-3-3.5 CA				SS	<1	
						DP21-4-4.5						
	5		45			DP21-5-5.5		GP	Brown fine to coarse gravel, trace silt and occasional sand(moist) (native)	NS	<1	
						DP21-6-6.5				NS	<1	
						DP21-7-7.5				NS	<1	
170						DP21-8-8.5				NS	<1	
						DP21-9-9.5						
	10											

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

Log of Boring DP21

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-22
Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	175 NGVD29		Hammer Data	Pneumatic	Drilling Equipment	Bobcat Powerprobe 9100-SK				
Easting (X) / Northing (Y)	1139279 723592		System Datum	WA State Plane,South NAD83 (feet)	Groundwater	Date Measured	Depth to Water (ft)	Elevation (ft)		
Notes:							None Observed			

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		18			DP22-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod			
								SP-SM	Brown fine to coarse sand with silt and coarse gravel (moist) (fill)			
						DP22-1-1.5 CA				NS	<1	
						DP22-2-2.5 CA				NS	<1	
									No recovery			
170	5		24			DP22-5-5.5		GP	Brown fine to coarse gravel and coarse sand (moist) (native)	NS	1.1	
						DP22-6-6.5						
						DP22-7-7.5				NS	<1	
						DP22-8-8.5						
									No recovery			
165	10											

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

Log of Boring DP22

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-23
Sheet 1 of 1

Drilled	Start 11/2/2016	End 11/2/2016	Total Depth (ft)	10	Logged By / Checked By	HM / TSD	Driller	ESN NW	Drilling Method	Direct Push
Surface Elevation (ft) / Vertical Datum	187 / NGVD29		Hammer Data	Pneumatic			Drilling Equipment	Bobcat Powerprobe 9100-SK		
Easting (X) / Northing (Y)	1138983 / 723464		System Datum	WA State Plane,South NAD83 (feet)			Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)	
Notes:								None Observed		

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		35			DP23-0-0.5		TS	Approximately 6 inches of topsoil and sod	NS	<1	
								SM	Brown-gray silty fine to medium sand with mottling (moist) (fill)			
						DP23-1-1.5 CA				NS	<1	
185						DP23-2-2.5		SP	Gray fine to medium sand (fill)	NS	<1	
						DP23-3-3.5				NS	<1	
						DP23-4-4.5						
	5		44			DP23-5-5.5 CA		SP	Gray coarse sand (moist) (fill)	NS	<1	
								SP-SM	Brown fine to medium sand with organic matter with silt (fill?)			
						DP23-6-6.5		SP	Brown fine to medium sand with organic matter, no silt (fill?)	NS	<1	
180						DP23-7-7.5 CA		SP	Gray fine to medium sand with occasional coarse gravel and trace silt (moist) (native)	NS	<1	
						DP23-8-8.5 CA				NS	<1	
						DP23-9-9.5						
	10											

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

Log of Boring DP23

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-24
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
177 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)
1139169 / 723419	WA State Plane,South NAD83 (feet)	None Observed		

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample / Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		26				SP	Approximately 6 inches of topsoil and sod			
					DP24-0-0.5 CA		SM	Light brown fine to medium silty sand with organic matter and occasional fine gravel (moist) (fill)	NS	<1	
					DP24-1-1.5 CA				NS	<1	
175					DP24-2-2.5 CA		SP-SM	Brown silty fine to medium sand with silt and organic matter (moist) (fill)	OS	<1	
					DP24-3-3.5						
	5		32		DP24-5-5.5		SP-SM	Brown fine to coarse sand with fine to coarse gravel and silt (moist) (native?)	NS	<1	
					DP24-6-6.5				NS	<1	
170					DP24-7-7.5				NS	<1	
								Grades coarser, no gravel (moist)			
					DP24-8-8.5 CA						
					DP24-9-9.5				NS	<1	
	10										

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

Log of Boring DP24

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-25
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
192 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater
1138904 / 723368	WA State Plane,South NAD83 (feet)	Date Measured: — Depth to Water (ft): None Observed — Elevation (ft):

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		34			DP25-0-0.5		TS	Approximately 6 inches of topsoil and sod			
								SP	Brown-gray fine to medium sand with silt (moist) (fill)	NS	<1	
						DP25-1-1.5 CA				NS	<1	
190								SM	Brown silty fine to coarse sand with gravel and occasional organic matter (moist) (fill)			
						DP25-2-2.5				NS	<1	
						DP25-3-3.5						
						DP25-4-4.5						
	5		41			DP25-5-5.5		SM	Gray-brown silty fine sand, occasional coarse gravel and occasional organic matter (fill)	NS	<1	
						DP25-6-6.5				NS	<1	
185						DP25-7-7.5			With lense of gray silt	NS	<1	
						DP25-7.5-8						
						DP25-8-8.5 CA			Wood debris	NS	<1	
						DP25-9-9.5 CA				NS	<1	
	10								Boring terminated at approximately 10 feet below ground surface due to refusal during drilling			

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

Log of Boring DP25

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-26
Sheet 1 of 1

Drilled: Start 11/2/2016 End 11/2/2016	Total Depth (ft): 15	Logged By: HM Checked By: TSD	Driller: ESN NW		Drilling Method: Direct Push
Surface Elevation (ft): 194 Vertical Datum: NGVD29		Hammer Data: Pneumatic			Drilling Equipment: Bobcat Powerprobe 9100-SK
Easting (X): 1138853 Northing (Y): 723392		System Datum: WA State Plane,South NAD83 (feet)			Groundwater: Date Measured / Depth to Water (ft) / Elevation (ft): None Observed
Notes:					

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		31			DP26-0-0.5		TS	Approximately 6 inches of topsoil and sod			
								SM	Brown silty fine to coarse sand with gravel and occasional organic matter (moist) (fill)			
						DP26-1-1.5 CA				NS	<1	
						DP26-2-2.5 CA				NS	<1	
						DP26-3-3.5 CA				NS	<1	
190						DP26-4-4.5 CA						
	5		40			DP26-5-5.5 CA		SM	Gray silty fine to medium sand with gravel and mottling (moist) (fill)	NS	<1	
						DP26-6-6.5				NS	<1	
						DP26-7-7.5				NS	<1	
						DP26-8-8.5			Organic debris observed	NS	<1	
185						DP26-9-9.5		SP	Gray fine to coarse sand with trace silt and occasional fine gravel (moist)			
	10		4							NS	<1	
									Gray fine to coarse sand with gravel (moist)			
									No recovery			
180												
	15								Boring terminated at approximately 15 feet below ground surface due to refusal			

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

Log of Boring DP26

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-27
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
202 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)
1138439 / 723924	WA State Plane,South NAD83 (feet)	None Observed		

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		32			DP27-0-0.5		TS	Approximately 3 inches of topsoil and sod	NS	<1	
								SM	Dark brown silty fine to coarse sand with gravel (moist) (native)			
						DP27-1-1.5 CA						
200						DP27-2-2.5 CA				OS	<1	
						DP27-3-3.5				NS	<1	
										NS	<1	
	5		43			DP27-5-5.5		SP	Brown coarse sand, trace silt, occasional fine gravel (moist) (native)	NS	<1	
						DP27-6-6.5				NS	<1	
195								ML	Gray fine to medium silt with sand and with fine gravel (native)			
						DP27-7-7.5				NS	<1	
						DP27-8-8.5				NS	<1	
	10											

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

Log of Boring DP27

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-28
Sheet 1 of 1

Drilled Start	End	Total Depth (ft)	Logged By / Checked By	Driller	Drilling Method
11/2/2016	11/2/2016	10	HM / TSD	ESN NW	Direct Push

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
202 NGVD29	Pneumatic	Bobcat Powerprobe 9100-SK

Easting (X) / Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)
1138414 / 723965	WA State Plane,South NAD83 (feet)	None Observed		

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		31			DP28-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	NS	<1	
								SM	Brown fine to medium silty sand with organic matter (moist) (fill)			
						DP28-1-1.5 CA				NS	<1	
									Grades to siltier, brown with organic matter (moist)			
200						DP28-2-2.5				NS	<1	
									Grades gray with organic matter			
						DP28-3-3.5						
						DP28-4-4.5						
								SP	Gray coarse sand, trace silt, occasional organic matter (tree roots?) (native)			
	5		44			DP28-5-5.5 CA				NS	<1	
						DP28-6-6.5						
195						DP28-7-7.5			Grades to brown fine to coarse sand			
						DP28-8-8.5		SP-SM	Brown fine sand with silt (moist)	NS	<1	
						DP28-9-9.5				NS	<1	
	10											

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

Log of Boring DP28

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-29
Sheet 1 of 1

Date Excavated 11/9/2016	Total Depth (ft) 10.5	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) 212 Vertical Datum NGVD29		Easting (X) 1138714 Northing (Y) 724266		Coordinate System WA State Plane,South Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		X	TP1-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	NS	<1	
211	1	X	TP1-1-1.5 CA		SM	Brown silty fine to coarse sand with gravel, occasional cobbles, organic matter and iron oxide staining (medium dense, moist) (fill)	NS	<1	
						Approximate 6-inch layer of silty fine to coarse sand with (decomposed grass, roots and intact roots from 1½ to 2 feet)			
210	2	X	TP1-2-2.5 CA				SS	2.4	
					GP-GM	Gray-brown fine to coarse gravel with silt and sand, organic matter (roots) and occasional cobbles (dense, moist) (recessional outwash)			
209	3	X	TP1-3-3.5 CA				NS	<1	
						Becomes wet			
208	4	X	TP1-4-4.5				NS	<1	Perched groundwater observed at 4 feet during excavation
					SM	Gray silty fine to coarse sand with gravel and occasional iron oxide staining (very dense, moist) (glacially consolidated soil)			
207	5	X	TP1-5-5.5				NS	<1	
206	6	X	TP1-6-6.5		SP-SM	Gray fine to coarse sand with silt and occasional gravel (dense, moist)	NS	<1	
205	7	X	TP1-7-7.5		SM	Gray silty fine to coarse sand with gravel and occasional cobbles (very dense, moist)	NS	<1	
204	8	X	TP1-8-8.5				NS	<1	
203	9	X	TP1-9-9.5			Becomes cemented at approximately 9 feet	NS	<1	Very difficult digging
202	10	X	TP1-10-10.5						
						Test pit completed at 10½ feet Moderate groundwater seepage observed at approximately 4 feet No caving observed			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-1

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-30
Sheet 1 of 1

Date Excavated	11/9/2016	Total Depth (ft)	12	Logged By / Checked By	BTK/HM / MM	Excavator	Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) / Vertical Datum	206 NGVD29			Easting (X) / Northing (Y)	1138421 723898			Coordinate System / Horizontal Datum	WA State Plane,South NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		X	TP2-0-0.5		TS	Approximately 3 inches of topsoil and sod	NS	<1	Probes approximately 8 to 12 inches at surface
					SM	Brown silty fine to coarse sand with occasional gravel and trace construction debris (brick) (loose, moist) (fill)			
205	1	X	TP2-1-1.5 CA				NS	<1	
					SM	Dark brown to black silty fine to coarse sand with gravel, organic matter (roots, wood chunks) and significant construction debris (brick, plastic, PVC, logs, asphalt) (loose, moist)			
204	2	X	TP2-2-2.5				NS	<1	Boulder (approximately 18 inches)
		X	TP2-2.5-3 CA						
203	3	X	TP2-3-3.5 CA				SS	<1	Layer not present on north end of test pit; layer continues to depth of 7 feet at southern half of test pit
202	4	X	TP2-4-4.5		SM	Brown silty fine to coarse sand with gravel and occasional organic matter (loose, moist)	NS	<1	Probes approximately 24 inches at 4 feet
201	5	X	TP2-5-5.5 CA				NS	<1	
200	6	X	TP2-6-6.5 CA				NS	<1	
199	7	X	TP2-7-7.5		SP-SM	Brown fine to medium sand with silt (medium dense, moist) (recessional outwash)	NS	<1	
198	8	X	TP2-8-8.5				NS	<1	
						Grades with gray mottling and iron oxide staining			
197	9	X	TP2-9-9.5		SM	Gray silty fine to coarse sand with gravel (dense, moist) (glacially consolidated soil)	NS	<1	Digging becomes harder
196	10	X	TP2-10-10.5						
195	11								
194	12								

Test pit completed at 12 feet
No groundwater seepage observed
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-2

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-31
Sheet 1 of 1

Date Excavated 11/9/2016	Total Depth (ft) 6.5	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment Komatsu WB140
Surface Elevation (ft) 212 Vertical Datum NGVD29		Easting (X) 1138615 Northing (Y) 723981		Coordinate System WA State Plane,South Horizontal Datum NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP3-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	NS	<1	Probes approximately 9 inches at surface
211	1	X	TP3-1-1.5		SM	Brown-gray silty fine to coarse sand with occasional gravel and organic matter (black decomposed wood) (medium dense, moist) (fill)	NS	<1	
210	2	X	TP3-2-2.5		SM	Brown silty fine to medium sand (medium dense, moist) (recessional outwash)	NS	<1	
209	3	X	TP3-3-3.5		SM	Brown-gray silty fine to coarse sand with gravel and significant iron oxide staining (dense, moist) (glacially consolidated soil)	NS	<1	
208	4	X	TP3-4-4.5				NS	<1	
207	5	X	TP3-5-5.5		SM	Gray silty fine to coarse sand with gravel (very dense, moist)	NS	<1	Increased resistance in digging
206	6	X	TP3-6-6.5				NS	<1	

Test pit completed at 6½ feet
No groundwater seepage observed
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-3

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-32
Sheet 1 of 1

Date Excavated 11/9/2016	Total Depth (ft) 9.5	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) 206 Vertical Datum NGVD29		Easting (X) 1138846 Northing (Y) 724173		Coordinate System WA State Plane,South Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		X	TP4-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	NS	<1	
205	1	X	TP4-1-1.5		SM	Gray-brown silty fine to coarse sand with gravel and occasional cobbles (dense, moist) (glacially consolidated soil)	NS	<1	
						Grades to brown			
204	2	X	TP4-2-2.5				NS	<1	
203	3	X	TP4-3-3.5			Grades to gray-brown	NS	<1	
202	4	X	TP4-4-4.5		SM	Gray silty fine to coarse sand with gravel, significant iron oxide staining and occasional cobbles (very dense, moist)	NS	<1	
201	5	X	TP4-5-5.5				NS	<1	
200	6	X	TP4-6-6.5				NS	<1	
199	7	X	TP4-7-7.5				NS	<1	
						Grades dense			
198	8								
197	9				SP-SM	Gray-tan fine to medium sand with silt (dense, moist)			

Test pit completed at 9½ feet
No groundwater seepage observed
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-4

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-33
Sheet 1 of 1

Date Excavated	11/9/2016	Total Depth (ft)	13.5	Logged By / Checked By	BTK/HM / MM	Excavator	Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) / Vertical Datum	171 NGVD29	Easting (X) / Northing (Y)	1139296 724197	Coordinate System / Horizontal Datum	WA State Plane,South NAD83 (feet)				

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP5-0-0.5		TS	Approximately 1-inch of topsoil/sod	NS	<1	Probes approximately 6 inches at surface
					SM	Brown silty fine to coarse sand with gravel and construction debris (brick, concrete) (medium dense, moist) (fill)			
170	1		TP5-1-1.5 CA				NS	<1	
					SP-SM	Gray-tan fine to medium sand with silt (dense, moist) (glacially consolidated soil)			
169	2		TP5-2-2.5 CA				NS	<1	
168	3		TP5-3-3.5				NS	<1	
167	4		TP5-4-4.5				NS	<1	Probes approximately 2 inches at 4 feet
166	5		TP5-5-5.5				NS	<1	
165	6		TP5-6-6.5		SP	Gray-tan fine to medium sand with trace silt (dense, moist)	NS	<1	
164	7		TP5-7-7.5				NS	<1	
163	8		TP5-8-8.5				NS	<1	
162	9		TP5-9-9.5				NS	<1	
161	10		TP5-10-10.5				NS	<1	
160	11								
159	12								
158	13		TP5-13-13.5			Grades with olive mottling	NS	<1	

Test pit completed at 13½ feet
No groundwater seepage observed
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-5

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-34
Sheet 1 of 1

Date Excavated 11/9/2016	Total Depth (ft) 13	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) Vertical Datum 177 NGVD29		Easting (X) 1139290 Northing (Y) 724126		Coordinate System Horizontal Datum	WA State Plane,South NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP6-0-0.5 CA		TS	Approximately 3 inches of topsoil	NS	<1	Probes approximately 10 inches at surface; Large (2-foot) boulder at surface
					SM	Brown-gray silty fine to coarse sand with gravel and occasional iron oxide staining (medium dense, moist) (fill)			
176	1		TP6-1-1.5 CA				SS	1.0	
175	2		TP6-2-2.5		SM	Gray-tan silty fine to medium sand with occasional iron oxide staining (dense, moist) (glacially consolidated soil)	SS	<1	Includes stratifications of higher fines content (approximately 0.5- to 1-inch-thick)
174	3		TP6-3-3.5				NS	<1	
173	4		TP6-4-4.5				NS	<1	Probes approximately 1 to 2 inches at 4 feet
172	5		TP6-5-5.5				NS	<1	
171	6		TP6-6-6.5				NS	<1	
170	7		TP6-7-7.5		SP-SM	Gray-tan fine to medium sand with silt (dense, moist)	NS	<1	
169	8		TP6-8-8.5				NS	<1	
168	9		TP6-9-9.5				NS	<1	
167	10		TP6-10-10.5		SM	Gray-brown silty fine to medium sand with lenses of gray silt with sand (approximately 0.5- to 1-inch-thick) (dense, moist)	NS	<1	
166	11								Significant iron oxide staining
165	12								
164	13		TP6-12.5-13		SP	Gray-tan fine to medium sand (dense, moist)	NS	<1	No iron oxide staining
						Test pit completed at 13 feet No groundwater seepage observed No caving observed			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-6

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-35
Sheet 1 of 1

Date Excavated	11/8/2016	Total Depth (ft)	13.5	Logged By / Checked By	BTK/HM / MM	Excavator	Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) / Vertical Datum	184 NGVD29	Easting (X) / Northing (Y)	1139293 723827	Coordinate System / Horizontal Datum	WA State Plane,South NAD83 (feet)				

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name / Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		☒	TP7-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	NS	<1	Probes approximately 9 inches at surface
183	1	☒	TP7-1-1.5 CA		SM	Gray-brown silty fine to coarse sand with gravel (loose, moist) (fill)	NS	<1	
182	2	☒	TP7-2-2.5 CA		SM	Brown-black silty fine to coarse sand with organic matter (decomposed grass, roots) (loose, moist)	NS	<1	
181	3	☒	TP7-3-3.5 CA		SM	Brown-gray silty fine to medium sand with occasional lenses of gray silt with sand and trace organic matter (decomposed wood) and occasional iron oxide staining (medium dense, moist)	NS	<1	
180	4	☒	TP7-4-4.5		CL	Light gray clay with sand, olive-brown mottling and occasional organic matter (roots) (medium stiff, moist)	NS	<1	
179	5	☒	TP7-5-5.5				NS	<1	Perched groundwater observed at 5 feet during excavation
178	6	☒	TP7-6-6.5				NS	<1	
177	7	☒	TP7-7-7.5				NS	<1	
176	8	☒	TP7-8-8.5				NS	<1	
175	9	☒	TP7-9-9.5				NS	<1	
174	10				SM	Brown silty fine to medium sand (medium dense, moist) (glacially consolidated soil)			
173	11								
172	12	☒	TP7-12-12.5			Grades to fine sand	NS	<1	
171	13					Grades to dense			

Test pit completed at 13½ feet
Moderate groundwater seepage observed at approximately 5 feet
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-7

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-36
Sheet 1 of 1

Date Excavated 11/8/2016	Total Depth (ft) 13	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) Vertical Datum 182 NGVD29		Easting (X) Northing (Y) 1139283 723692		Coordinate System Horizontal Datum	WA State Plane,South NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP8-0-0.5		TS	Approximately 3 to 6 inches of topsoil and sod	SS SS	<1 <1	3-inch-thick asphalt chunk in topsoil Probes approximately 3 to 6 inches at surface
181	1		TP8-1-1.5 CA		SM	Brown-gray silty fine to coarse sand with occasional gravel (medium dense, moist) (fill)	SS	<1	
180	2		TP8-2-2.5 CA		SM	Dark brown silty fine to coarse sand with significant organic matter (loose, moist)	NS	<1	
179	3		TP8-3-3.5 CA		ML	Brown-gray silt with sand and olive-gray and orange (iron oxide) mottling (stiff, moist)	NS	<1	
178	4		TP8-4-4.5				NS	<1	Probes approximately 3 inches at 4 feet
177	5		TP8-5-5.5				NS	<1	
176	6		TP8-6-6.5		SM	Brown-gray silty fine to coarse sand with occasional gravel (dense, moist) (glacially consolidated soil)	NS	<1	
175	7		TP8-7-7.5				NS	<1	
174	8		TP8-8-8.5		SM	Brown-gray silty fine to medium sand (dense, moist)	NS	<1	
173	9								
172	10		TP8-10-10.5				NS	<1	
171	11				SP-SM	Tan fine sand with silt (dense, moist)			
170	12								
169	13					Test pit completed at 13 feet Moderate to significant groundwater seepage observed at approximately ½ foot No caving observed			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-8

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-37
Sheet 1 of 1

Date Excavated 11/8/2016	Total Depth (ft) 12.5	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment Komatsu WB140
Surface Elevation (ft) 180 Vertical Datum NGVD29		Easting (X) 1139227 Northing (Y) 723589		Coordinate System WA State Plane,South Horizontal Datum NAD83 (feet)

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		X	TP9-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	SS	<1	Probes approximately 3 inches at surface
179	1	X	TP9-1-1.5 CA		GP	Brown fine to coarse gravel with sand, trace silt and organic matter (roots) and occasional cobbles (medium dense, moist) (recessional outwash)	NS	<1	Approximately 1- to 2-inch roots
178	2	X	TP9-2-2.5 CA				NS	<1	
177	3	X	TP9-3-3.5		SP-SM	Gray-brown fine to coarse sand with silt, gravel and occasional cobbles (medium dense, moist)	NS	<1	
176	4	X	TP9-4-4.5				NS	<1	
175	5	X	TP9-5-5.5				NS	<1	
174	6	X	TP9-6-6.5		GP	Gray-brown fine to coarse gravel with sand and trace silt (medium dense, moist)	NS	<1	
173	7	X	TP9-7-7.5				NS	<1	
172	8	X	TP9-8-8.5 CA			Grades to dense Grades to wet	SS	<1	Perched groundwater observed at 8.5 feet during excavation
171	9	X	TP9-9-9.5				NS	<1	
170	10	X	TP9-10-10.5		GM	Gray-brown silty fine to coarse gravel with sand and occasional cobbles (dense, wet)	NS	<1	
169	11	X	TP9-11-11.5				NS	<1	
168	12				SM	Gray silty fine to medium sand (dense, wet) (glacially consolidated soil)			

Test pit completed at 12½ feet
Moderate to significant groundwater seepage observed at approximately 8½ feet
Moderate caving observed at approximately 7½ feet

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-9

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-38
Sheet 1 of 1

Date Excavated	11/8/2016	Total Depth (ft)	13.5	Logged By / Checked By	BTK/HM / MM	Excavator	Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) / Vertical Datum	177 NGVD29	Easting (X) / Northing (Y)	1139210 723462	Coordinate System / Horizontal Datum	WA State Plane,South NAD83 (feet)				

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP10-0-0.5 CA		TS	Approximately 3 inches of topsoil	NS	<1	Probes approximately 3 inches at surface
					SM	Brown-gray silty fine to medium sand with occasional gravel, iron oxide staining and occasional organic matter (roots) (loose, moist) (fill)			
176	1		TP10-1-1.5 CA				SS	<1	
175	2		TP10-2-2.5 CA		SP-SM	Brown-gray fine to medium sand with silt and trace organic matter (roots) (loose, moist)	NS	<1	
174	3		TP10-3-3.5				NS	<1	
173	4		TP10-4-4.5				SS	<1	Probes approximately 12 inches at 4 feet
172	5		TP10-5-5.5		SM	Brown-gray silty fine to medium sand with occasional gravel and occasional organic matter (roots) (loose, moist)	NS	<1	
171	6		TP10-6-6.5				NS	<1	Occasional cobbles noted in spoils from 0 to 10 feet
170	7		TP10-7-7.5				SS	<1	
169	8					Grades to with gravel, trace cobbles, trace iron oxide staining, trace organic matter (roots) and trace metal debris			
168	9		TP10-8.5-9				NS	<1	
			TP10-9-9.5		SP-SM	Brown fine to medium sand with silt, gravel, organic matter (roots, decomposed organic matter, wood chunks), occasional cobbles and boulders (loose, moist)	NS	<1	
167			TP10-9.5-10				SS	<1	
	10		TP10-10-10.5				NS	<1	
166	11		TP10-11-11.5		SM	Gray-brown silty fine to coarse sand with gravel, occasional iron oxide staining, occasional cobbles and boulders (dense, moist) (glacially consolidated soil)	NS	<1	Granite chunk and other round boulders
165	12								
164	13				SM	Brown-gray silty fine to coarse sand with gravel (dense, moist)			Partially cemented boulder noted at bottom

Test pit completed at 13½ feet
No groundwater seepage observed
Moderate caving observed at approximately 3½ feet

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-10

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-39
Sheet 1 of 1

Date Excavated 11/8/2016	Total Depth (ft) 12.5	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) 187 Vertical Datum NGVD29		Easting (X) 1139052 Northing (Y) 723573		Coordinate System WA State Plane,South Horizontal Datum NAD83 (feet)	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
			TP11-0-0.5 CA		TS	Approximately 6 inches of topsoil and sod	NS	<1	Probes approximately 8 inches at surface Boulders are approximately 12 to 18 inches
186	1		TP11-1-1.5 CA		SM	Brown-gray silty fine to medium sand with occasional iron oxide staining, occasional cobbles and boulders (medium dense, moist) (fill)	NS	<1	
185	2		TP11-2-2.5 CA		SM	Dark gray silty fine to medium sand with trace gravel and 3-inch layer of organic matter (roots) (dense, moist)	NS	<1	Approximately 3 inches organic matter
184	3		TP11-3-3.5		SP-SM	Tan-brown fine sand with silt and trace gravel (dense, moist) (glacially consolidated soil)	NS	<1	
183	4								Probes approximately 2 inches at 4 feet
182	5		TP11-5-5.5				NS	<1	
181	6		TP11-6-6.5				NS	<1	
180	7		TP11-7-7.5				NS	<1	
179	8								
178	9		TP11-9-9.5		SP	Tan fine to medium sand with trace silt (dense, moist)	NS	<1	
177	10								
176	11		TP11-10-5.11				NS	<1	
175	12								

Test pit completed at 12½ feet
No groundwater seepage observed
No caving observed

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-11

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-40
Sheet 1 of 1

Date Excavated	11/9/2016	Total Depth (ft)	8	Logged By BTK/HM Checked By MM	Excavator Kelly's Excavating	Excavation Equipment	Komatsu WB140
Surface Elevation (ft) Vertical Datum	200 NGVD29	Easting (X) Northing (Y)	1138894 724087	Coordinate System Horizontal Datum	WA State Plane,South NAD83 (feet)		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor	Notes
		X	TP12-0-0.5		TS	Approximately 6 inches of topsoil and sod	NS	<1	Probes approximately 9 inches at surface
					SM	Gray silty fine to medium sand with occasional cobbles (medium dense, moist) (glacially consolidated soil)			
199	1	X	TP12-1-1.5 CA				NS	<1	
198	2	X	TP12-2-2.5				NS	<1	
197	3	X	TP12-3-3.5				SS	<1	
196	4	X	TP12-4-4.5			Grades to dense with higher fines content	NS	<1	Probes approximately 1 to 2 inches at 4 feet
195	5	X	TP12-5-5.5				NS	<1	
194	6	X	TP12-6-6.5				NS	<1	
193	7	X	TP12-7-7.5				NS	<1	
192	8					Test pit completed at 8 feet No groundwater seepage observed No caving observed			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.

Log of Test Pit TP-12

GeoEngineers

Project: Franke Tobey Jones - Master Plan Phase I & II
Project Location: Tacoma, Washington
Project Number: 10068-002-00

Figure B-41
Sheet 1 of 1

APPENDIX C
Chemical Analytical Program

GeoEngineers

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Data Validation Report

Project: Franke Tobey Jones – Master Plan Phase I and II
2016 Soil Samples

GEI File No: 10068-002-00

Date: March 28, 2017

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA, 2009) of analytical data from the analyses of soil samples collected as part of the 2016 sampling events, and the associated laboratory quality control (QC) samples. The samples were obtained from the Franke Tobey Jones facility located at 5340 North Bristol Street in Tacoma, Washington.

Objective and Quality Control Elements

GeoEngineers, Inc. (GeoEngineers) completed the data validation consistent with the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA, 2008) and Inorganic Superfund Data Review (USEPA 2010) (National Functional Guidelines) to determine if the laboratory analytical results meet the project objectives and are usable for their intended purpose. Data usability was assessed by determining if:

- The samples were analyzed using well-defined and acceptable methods that provide reporting limits below applicable regulatory criteria;
- The precision and accuracy of the data are well-defined and sufficient to provide defensible data; and
- The quality assurance/quality control (QA/QC) procedures utilized by the laboratory meet acceptable industry practices and standards.

The laboratory data was reviewed for the following QC elements:

- Data Package Completeness
- Chain-of-Custody Documentation
- Holding Times and Sample Preservation
- Surrogate Recoveries
- Method Blanks
- Matrix Spikes/Matrix Spike Duplicates
- Laboratory Control Samples/Laboratory Control Sample Duplicates
- Laboratory Duplicates
- Miscellaneous

Validated Sample Delivery Groups

This data validation included review of the sample delivery groups (SDGs) listed below in Table 1.

TABLE 1: SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
1611-054	DP1-2-2.5, DP4-2-2.5, DP6-2-2.5, DP21-2-2.5
1611-055	DP13-6-6.5F, DP13-6.5-7F, DP16-8.5-9F, DP16-9-9.5F, DP25-8-8.5F
1611-124	TP2-2.5-3-F
1611-146	DP1-1-1.5, DP1-6-6.5, DP1-7-7.5, DP1-8-8.5, DP2-1-1.5, DP3-1-1.5, DP3-3-3.5, DP3-4-4.5, DP4-1-1.5, DP5-0-0.5, DP5-1-1.5, DP6-0-0.5, DP6-1-1.5, DP7-0-0.5, DP8-0-0.5, DP9-1-1.5, DP9-2-2.5, DP9-3-3.5, DP10-1-1.5, DP10-3-3.5, DP10-5-5.5, DP11-2-2.5, DP11-3-3.5, DP11-5-5.5, DP12-1-1.5, DP12-3-3.5, DP12-8-8.5, DP12-9-9.5, DP13-1-1.5, DP13-2-2.5, DP13-7-7.5, DP13-8-8.5, DP14-2-2.5, DP14-5-5.5, DP14-7-7.5, DP14-8-8.5, DP15-1-1.5, DP15-2-2.5, DP15-5-5.5, DP15-6-6.5, DP16-0-0.5, DP16-2-2.5, DP16-10-10.5, DP17-1-1.5, DP17-3-3.5, DP17-5-5.5, DP17-8-8.5, DP17-9-9.5, DP18-2-2.5, DP18-6-6.5, DP18-7-7.5, DP19-1-1.5, DP19-2-2.5, DP19-3-3.5, DP20-1-1.5, DP20-2-2.5, DP20-3-3.5, DP21-1-1.5, DP21-3-3.5, DP22-1-1.5, DP22-2-2.5, DP23-1-1.5, DP23-5-5.5, DP23-7-7.5, DP23-8-8.5, DP24-0-0.5, DP24-1-1.5, DP24-2-2.5, DP24-8-8.5, DP25-1-1.5, DP25-9-9.5, DP26-1-1.5, DP26-2-2.5, DP26-3-3.5, DP26-4-4.5, DP26-5-5.5, DP27-1-1.5, DP27-2-2.5, DP28-0-0.5, DP28-1-1.5, DP28-5-5.5
1611-147	TP1-0-0.5, TP1-1-1.5, TP1-2-2.5, TP1-3-3.5, TP2-1-1.5, TP2-3-3.5, TP2-5-5.5, TP2-6-6.5, TP3-0-0.5, TP4-0-0.5, TP5-1-1.5, TP5-2-2.5, TP6-0-0.5, TP6-1-1.5, TP7-1-1.5, TP7-2-2.5, TP7-3-3.5, TP8-1-1.5, TP8-2-2.5, TP8-3-3.5, TP9-0-0.5, TP9-1-1.5, TP9-2-2.5, TP9-8-8.5, TP10-0-0.5, TP10-1-1.5, TP10-2-2.5, TP11-0-0.5, TP11-1-1.5, TP11-2-2.5, TP11-3-3.5, TP12-1-1.5

Chemical Analysis Performed

OnSite Environmental, Inc. (OnSite), located in Redmond, Washington, performed laboratory analysis on the samples using one or more of the following methods:

- Hydrocarbon Identification (NWTPH-HCID) by Method NWTPH-HCID;
- Petroleum Hydrocarbons (NWTPH-Dx) by Method NWTPH-Dx;
- Volatile Organic Compounds (VOCs) by Method SW8260C;
- Polycyclic Aromatic Hydrocarbons (PAHs) by Method SW8270D-SIM; and
- Total Metals by Methods EPA6010C/EPA6020A/EPA7471B

Data Validation Summary

The results for each of the QC elements are summarized below.

Data Package Completeness

OnSite provided the required deliverables for the data validation according to the National Functional Guidelines. The laboratory followed adequate corrective action processes and the identified anomalies were discussed in the relevant laboratory case narrative.

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical reports. The laboratory did not include the sample receipt forms that discuss any anomalies with the samples once they are received by the laboratory.

Holding Times and Sample Preservation

The sample holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for each analysis, with the exceptions noted below. The laboratory did not include the sample receipt forms; therefore, the sample cooler temperatures could not be verified that they were within the control limits upon arrival at the laboratory.

SDG 1611-055: (NWTPH-Dx) The 14-day holding time for NWTPH-Dx analysis was exceeded by seven days in Sample DP16-9-9.5F. The positive result for lube oil-range hydrocarbons and the reporting limit for diesel-range hydrocarbons were qualified as estimated (J and UJ, respectively) in this sample.

(PAHs) The 14-day holding time for PAH analysis was exceeded by seven days in Sample DP16-9-9.5F. The positive results for 1-Methylnaphthalene, 2-Methylnaphthalene, chrysene, fluoranthene, naphthalene, phenanthrene, and pyrene were qualified as estimated (J) in this sample. The reporting limits for acenaphthene, acenaphthylene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo(j,k)fluoranthene, dibenz[a,h]anthracene, fluorene, and indeno(1,2,3-c,d)pyrene were qualified as estimated (UJ) in this sample.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in an environmental sample. Surrogates are used for organic analyses and are added to the samples, standards, and blanks to serve as an accuracy and specificity check of each analysis. The surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. The surrogate percent recoveries for field samples were within the laboratory control limits.

Method Blanks

Method blanks are analyzed to ensure that laboratory procedures and reagents do not introduce measurable concentrations of the analytes of interest. A method blank was analyzed with each batch of samples, at a frequency of 1 per 20 samples. For the sample batches, method blanks for the applicable methods were analyzed at the required frequency. None of the analytes of interest were detected above the reporting limits in the method blanks.

Matrix Spikes/Matrix Spike Duplicates

Since the actual analyte concentration in an environmental sample is not known, the accuracy of a particular analysis is usually inferred by performing a matrix spike (MS) analysis on one sample from the associated batch, known as the parent sample. One aliquot of the sample is analyzed in the normal manner and then a second aliquot of the sample is spiked with a known amount of analyte concentration and analyzed. From these analyses, a percent recovery is calculated. Matrix spike duplicate (MSD) analyses are generally performed for organic analyses as a precision check and analyzed in the same sequence as a matrix spike. Using the result values from the MS and MSD, the relative percent difference (RPD) is

calculated. The percent recovery control limits for MS and MSD analyses are specified in the laboratory documents, as are the RPD control limits for MS/MSD sample sets.

One MS/MSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for all analyses and the percent recovery and RPD values were within the proper control limits.

Laboratory Control Samples/Laboratory Control Sample Duplicates

A laboratory control sample (LCS) is a blank sample that is spiked with a known amount of analyte and then analyzed. An LCS is similar to an MS, but without the possibility of matrix interference. Given that matrix interference is not an issue, the LCS/LCSD control limits for accuracy and precision are usually more rigorous than for MS/MSD analyses. Additionally, data qualification based on LCS/LCSD analyses would apply to the samples in the associated batch, instead of just the parent sample. The percent recovery control limits for LCS and LCSD analyses are specified in the laboratory documents, as are the RPD control limits for LCS/LCSD sample sets.

One LCS/LCSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for each analysis and the percent recovery and RPD values were within the proper control limits.

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. The RPD control limits are specified in the laboratory documents. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met, with the following exceptions:

SDG 1611-055: (NWTPH-Dx) A laboratory duplicate was performed with an RPD outlier; however, it was performed on a sample that was not associated with the field samples collected by GeoEngineers. For this reason, no action was required.

SDG 1611-124: (NWTPH-Dx) A laboratory duplicate was performed with an RPD outlier; however, it was performed on a sample that was not associated with the field samples collected by GeoEngineers. For this reason, no action was required.

Miscellaneous

SDG 1611-055: (VOCs) The laboratory noted that the sample vials for Sample DP16-8.5-9F contained grit between the lip and cap septum, rendering them unusable; therefore, the samples were extracted from eight-ounce jars and analyzed. Consequently, some loss of volatiles may have occurred and methylene chloride may have been introduced into the samples during sample preparation. For these reasons, the positive results and reporting limits for all volatile target analytes were qualified as estimated (J and UJ) in this sample.

The result for acetone exceeded the instrument calibration range in Sample DP16-8.5-9F. For this reason, the positive result for this target analyte was qualified as estimated (J) in this sample.

Overall Assessment

As was determined by this data validation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recovery values. Precision was acceptable, as demonstrated by the LCS/LCSD, MS/MSD, and laboratory/field duplicate RPD values, with the exceptions noted above.

All data are acceptable for the intended use, with the following qualifications listed below in Table 2.

TABLE 2: SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Reason
DP16-8.5-9F	2-Butanone	J	See Miscellaneous
	Acetone	J	See Miscellaneous
	Carbon disulfide	J	See Miscellaneous
	Ethylbenzene	J	See Miscellaneous
	Methylene chloride	J	See Miscellaneous
	All other VOC target analytes	UJ	See Miscellaneous
DP16-9-9.5F	1-Methylnaphthalene	J	Holding Time
	2-Methylnaphthalene	J	Holding Time
	Acenaphthene	UJ	Holding Time
	Acenaphthylene	UJ	Holding Time
	Anthracene	UJ	Holding Time
	Benzo[a]anthracene	UJ	Holding Time
	Benzo[a]pyrene	UJ	Holding Time
	Benzo[b]fluoranthene	UJ	Holding Time
	Benzo[g,h,i]perylene	UJ	Holding Time
	Benzo(j,k)fluoranthene	UJ	Holding Time
	Chrysene	J	Holding Time
	Dibenz[a,h]anthracene	UJ	Holding Time
	Diesel-range hydrocarbons	UJ	Holding Time
	Fluoranthene	J	Holding Time
	Fluorene	UJ	Holding Time
	Indeno(1,2,3 c,d)pyrene	UJ	Holding Time
	Lube oil-range hydrocarbons	J	Holding Time
	Naphthalene	J	Holding Time
	Phenanthrene	J	Holding Time
	Pyrene	J	Holding Time

References

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA). "Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," EPA-540-R-08-01. June 2008.

U.S. Environmental Protection Agency (USEPA). "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review," EPA-540-R-10-011. January 2010.

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

November 11, 2016

Tricia DeOme
GeoEngineers, Inc.
1101 Fawcett Avenue South, Suite 200
Tacoma, WA 98402

Re: Analytical Data for Project 10068-002-00
Laboratory Reference No. 1611-054

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on November 3, 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: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

Case Narrative

Samples were collected on November 1 and 2, 2016 and received by the laboratory on November 3, 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: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DP1-2-2.5	11-054-01	Soil	11-1-16	11-3-16	
DP4-2-2.5	11-054-02	Soil	11-1-16	11-3-16	
DP6-2-2.5	11-054-03	Soil	11-1-16	11-3-16	
DP21-2-2.5	11-054-04	Soil	11-2-16	11-3-16	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

NWTPH-HCID

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP1-2-2.5**					
Laboratory ID:	11-054-01					
Gasoline Range Organics	**ND**	23	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	58	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				
Client ID:	**DP4-2-2.5**					
Laboratory ID:	11-054-02					
Gasoline Range Organics	**ND**	24	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	61	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*140*	*50-150*				
Client ID:	**DP6-2-2.5**					
Laboratory ID:	11-054-03					
Gasoline Range Organics	**ND**	25	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	62	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*122*	*50-150*				
Client ID:	**DP21-2-2.5**					
Laboratory ID:	11-054-04					
Gasoline Range Organics	**ND**	24	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	60	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP1-2-2.5**					
Laboratory ID:	11-054-01					
Naphthalene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0078	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*32 - 122*				
Pyrene-d10	*78*	*33 - 125*				
Terphenyl-d14	*76*	*36 - 118*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP4-2-2.5**					
Laboratory ID:	11-054-02					
Naphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*32 - 122*				
Pyrene-d10	*87*	*33 - 125*				
Terphenyl-d14	*85*	*36 - 118*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP6-2-2.5**					
Laboratory ID:	11-054-03					
Naphthalene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0082	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*61*	*32 - 122*				
Pyrene-d10	*55*	*33 - 125*				
Terphenyl-d14	*54*	*36 - 118*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP21-2-2.5**					
Laboratory ID:	11-054-04					
Naphthalene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0080	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*32 - 122*				
Pyrene-d10	*73*	*33 - 125*				
Terphenyl-d14	*71*	*36 - 118*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-054-01					
Client ID:	**DP1-2-2.5**					
Arsenic	**9.8**	2.9	6020A	11-10-16	11-11-16	
Barium	**110**	2.9	6010C	11-10-16	11-10-16	
Cadmium	**ND**	0.58	6010C	11-10-16	11-10-16	
Chromium	**83**	0.58	6010C	11-10-16	11-10-16	
Lead	**14**	2.9	6020A	11-10-16	11-11-16	
Mercury	**ND**	0.29	7471B	11-10-16	11-10-16	
Selenium	**ND**	12	6010C	11-10-16	11-10-16	
Silver	**ND**	1.2	6010C	11-10-16	11-10-16	
Lab ID:	11-054-02					
Client ID:	**DP4-2-2.5**					
Arsenic	**ND**	3.0	6020A	11-10-16	11-11-16	
Barium	**59**	3.0	6010C	11-10-16	11-10-16	
Cadmium	**ND**	0.61	6010C	11-10-16	11-10-16	
Chromium	**35**	0.61	6010C	11-10-16	11-10-16	
Lead	**ND**	3.0	6020A	11-10-16	11-11-16	
Mercury	**ND**	0.30	7471B	11-10-16	11-10-16	
Selenium	**ND**	12	6010C	11-10-16	11-10-16	
Silver	**ND**	1.2	6010C	11-10-16	11-10-16	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-054-03					
Client ID:	**DP6-2-2.5**					
Arsenic	**5.2**	3.1	6020A	11-10-16	11-11-16	
Barium	**180**	3.1	6010C	11-10-16	11-10-16	
Cadmium	**ND**	0.62	6010C	11-10-16	11-10-16	
Chromium	**40**	0.62	6010C	11-10-16	11-10-16	
Lead	**4.6**	3.1	6020A	11-10-16	11-11-16	
Mercury	**ND**	0.31	7471B	11-10-16	11-10-16	
Selenium	**ND**	12	6010C	11-10-16	11-10-16	
Silver	**ND**	1.2	6010C	11-10-16	11-10-16	
Lab ID:	11-054-04					
Client ID:	**DP21-2-2.5**					
Arsenic	**9.4**	3.0	6020A	11-10-16	11-11-16	
Barium	**130**	3.0	6010C	11-10-16	11-10-16	
Cadmium	**ND**	0.60	6010C	11-10-16	11-10-16	
Chromium	**53**	0.60	6010C	11-10-16	11-10-16	
Lead	**5.7**	3.0	6020A	11-10-16	11-11-16	
Mercury	**ND**	0.30	7471B	11-10-16	11-10-16	
Selenium	**ND**	12	6010C	11-10-16	11-10-16	
Silver	**ND**	1.2	6010C	11-10-16	11-10-16	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

NWTPH-HCID
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1104S2					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	50	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1110S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*32 - 122*				
Pyrene-d10	*88*	*33 - 125*				
Terphenyl-d14	*87*	*36 - 118*				

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Re4ference: 1611-054
Project: 10068-002-00

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1110S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0752**	**0.0784**	0.0833	0.0833	90	94	58 - 114	4	18	
Acenaphthylene	**0.0819**	**0.0838**	0.0833	0.0833	98	101	54 - 127	2	15	
Acenaphthene	**0.0813**	**0.0813**	0.0833	0.0833	98	98	58 - 119	0	15	
Fluorene	**0.0815**	**0.0827**	0.0833	0.0833	98	99	60 - 123	1	15	
Phenanthrene	**0.0800**	**0.0799**	0.0833	0.0833	96	96	54 - 120	0	15	
Anthracene	**0.118**	**0.119**	0.0833	0.0833	142	143	55 - 152	1	15	
Fluoranthene	**0.0819**	**0.0836**	0.0833	0.0833	98	100	56 - 129	2	15	
Pyrene	**0.0824**	**0.0830**	0.0833	0.0833	99	100	60 - 126	1	15	
Benzo[a]anthracene	**0.0886**	**0.0897**	0.0833	0.0833	106	108	56 - 137	1	15	
Chrysene	**0.0849**	**0.0855**	0.0833	0.0833	102	103	59 - 122	1	15	
Benzo[b]fluoranthene	**0.0847**	**0.0823**	0.0833	0.0833	102	99	46 - 133	3	21	
Benzo(j,k)fluoranthene	**0.0823**	**0.0850**	0.0833	0.0833	99	102	47 - 129	3	21	
Benzo[a]pyrene	**0.0832**	**0.0837**	0.0833	0.0833	100	100	54 - 132	1	15	
Indeno(1,2,3-c,d)pyrene	**0.0807**	**0.0800**	0.0833	0.0833	97	96	54 - 129	1	15	
Dibenz[a,h]anthracene	**0.0809**	**0.0811**	0.0833	0.0833	97	97	59 - 122	0	15	
Benzo[g,h,i]perylene	**0.0827**	**0.0827**	0.0833	0.0833	99	99	57 - 125	0	16	
Surrogate:										
2-Fluorobiphenyl					*90*	*89*	*32 - 122*			
Pyrene-d10					*90*	*89*	*33 - 125*			
Terphenyl-d14					*88*	*87*	*36 - 118*			

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1110SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6020A	**ND**	2.5
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-10-16
Date Analyzed:	11-10&11-16
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1110S1

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-054-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	2.5	
Barium	**48.7**	**49.7**	2	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**28.7**	**30.5**	6	0.50	
Lead	**ND**	**ND**	NA	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-046-42

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-054-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**93.1**	93	**93.6**	94	1	
Barium	100	**151**	102	**151**	103	0	
Cadmium	50.0	**49.0**	98	**49.9**	100	2	
Chromium	100	**131**	102	**131**	102	0	
Lead	250	**228**	91	**231**	92	1	
Selenium	100	**92.6**	93	**97.0**	97	5	
Silver	25.0	**22.9**	91	**23.4**	94	2	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-046-42

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.530**	106	**0.555**	111	5	

Date of Report: November 11, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-054
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-4-16

Client ID	Lab ID	% Moisture
DP1-2-2.5	11-054-01	14
DP4-2-2.5	11-054-02	17
DP6-2-2.5	11-054-03	19
DP21-2-2.5	11-054-04	16

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: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones
Project Manager: Tricia DeOme
Sampled by: HLM

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: 11-054

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	DP1-2-2.5	11/1	842	Soil	1	X								X					X								X
2	DP4-2-2.5	11/1	1055	↓	1	X								X					X								X
3	DP6-2-2.5	11/1	1026	↓	1	X								X					X								X
4	DP21-2-2.5	11/2	1254	↓	1	X								X					X								X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	11/3/16	1240	Arsenic + lead detection limit - 5ppm
Received		Alpha	11/3/16	1240	
Relinquished		Alpha	4/3/13	200pm	
Received		OSE	11/3/16	2:00pm	
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

November 29, 2016

Tricia DeOme
GeoEngineers, Inc.
1101 Fawcett Avenue South, Suite 200
Tacoma, WA 98402

Re: Analytical Data for Project 10068-002-00
Laboratory Reference No. 1611-055

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on November 3, 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: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

Case Narrative

Samples were collected on November 2, 2016 and received by the laboratory on November 3, 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.

Volatiles EPA 8260C 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.

All four internal standards did not meet acceptance criteria for sample DP16-8.5-9F. The sample was re-analyzed with similar results. Leaks within the sealed VOA environment caused by grit between the VOA lip and VOA cap septum have been shown to cause low internal standard recovery. The sample was consequently extracted from an 8-ounce jar and analyzed. Some loss of volatiles may have occurred.

The value reported for Acetone in sample DP16-8.5-9F exceeded the calibration range of the instrument and is therefore an estimate. The sample was re-analyzed at the lowest possible dilution allowed by Method 5035A with non-detect results for Acetone.

NWTPH-Dx and PAHs EPA 8270D/SIM Analysis

Sample DP16-9-9.5F was extracted and analyzed out of holding time at client's request.

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: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DP25-8-8.5F	11-055-02	Soil	11-2-16	11-3-16	
DP13-6-6.5F	11-055-05	Soil	11-2-16	11-3-16	
DP13-6.5-7F	11-055-06	Soil	11-2-16	11-3-16	
DP16-8.5-9F	11-055-08	Soil	11-2-16	11-3-16	
DP16-9-9.5F	11-055-09	Soil	11-2-16	11-3-16	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-HCID

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP25-8-8.5F**					
Laboratory ID:	11-055-02					
Gasoline Range Organics	**ND**	24	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	60	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	120	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				
Client ID:	**DP13-6-6.5F**					
Laboratory ID:	11-055-05					
Gasoline Range Organics	**ND**	28	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	69	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	140	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*109*	*50-150*				
Client ID:	**DP16-8.5-9F**					
Laboratory ID:	11-055-08					
Gasoline Range Organics	**ND**	26	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	64	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**Detected**	130	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				

Date of Report: November 29, 2016
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Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-8.5-9F**					
Laboratory ID:	11-055-08					
Diesel Range Organics	**90**	32	NWTPH-Dx	11-11-16	11-11-16	
Lube Oil Range Organics	**700**	64	NWTPH-Dx	11-11-16	11-11-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-9-9.5F**					
Laboratory ID:	11-055-09					
Diesel Range Organics	**ND**	35	NWTPH-Dx	11-23-16	11-23-16	
Lube Oil Range Organics	**160**	69	NWTPH-Dx	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP25-8-8.5F**					
Laboratory ID:	11-055-02					
Dichlorodifluoromethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Chloromethane	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Vinyl Chloride	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Bromomethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Chloroethane	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Trichlorofluoromethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Acetone	0.064	0.0043	EPA 8260C	11-9-16	11-9-16	Y
Iodomethane	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Carbon Disulfide	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Methylene Chloride	ND	0.0087	EPA 8260C	11-9-16	11-9-16	
(trans) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Methyl t-Butyl Ether	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Vinyl Acetate	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
2,2-Dichloropropane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
(cis) 1,2-Dichloroethene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
2-Butanone	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Bromochloromethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Chloroform	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1,1-Trichloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Carbon Tetrachloride	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloropropene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Benzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Trichloroethene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloropropane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Dibromomethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Bromodichloromethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
2-Chloroethyl Vinyl Ether	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
(cis) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Methyl Isobutyl Ketone	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Toluene	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
(trans) 1,3-Dichloropropene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	

Date of Report: November 29, 2016
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Project: 10068-002-00

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP25-8-8.5F**					
Laboratory ID:	11-055-02					
1,1,2-Trichloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Tetrachloroethene	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
1,3-Dichloropropane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
2-Hexanone	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Dibromochloromethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromoethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Chlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1,1,2-Tetrachloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Ethylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
m,p-Xylene	ND	0.0017	EPA 8260C	11-9-16	11-9-16	
o-Xylene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Styrene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Bromoform	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Isopropylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Bromobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,1,2,2-Tetrachloroethane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichloropropane	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
n-Propylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
2-Chlorotoluene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
4-Chlorotoluene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,3,5-Trimethylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
tert-Butylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trimethylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
sec-Butylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,3-Dichlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
p-Isopropyltoluene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,4-Dichlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2-Dichlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
n-Butylbenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromo-3-chloropropane	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trichlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Hexachlorobutadiene	ND	0.0043	EPA 8260C	11-9-16	11-9-16	
Naphthalene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichlorobenzene	ND	0.00087	EPA 8260C	11-9-16	11-9-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*107*	*73-134*				
Toluene-d8	*106*	*81-124*				
4-Bromofluorobenzene	*104*	*80-131*				

Date of Report: November 29, 2016
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Laboratory Reference: 1611-055
Project: 10068-002-00

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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP13-6-6.5F**					
Laboratory ID:	11-055-05					
Dichlorodifluoromethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Chloromethane	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Vinyl Chloride	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Bromomethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Chloroethane	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Trichlorofluoromethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Acetone	0.99	0.45	EPA 8260C	11-10-16	11-10-16	
Iodomethane	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Carbon Disulfide	0.0045	0.0013	EPA 8260C	11-9-16	11-9-16	
Methylene Chloride	ND	0.013	EPA 8260C	11-9-16	11-9-16	
(trans) 1,2-Dichloroethene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Methyl t-Butyl Ether	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Vinyl Acetate	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
2,2-Dichloropropane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
(cis) 1,2-Dichloroethene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
2-Butanone	0.078	0.0066	EPA 8260C	11-9-16	11-9-16	
Bromochloromethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Chloroform	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1,1-Trichloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Carbon Tetrachloride	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloropropene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Benzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Trichloroethene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloropropane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Dibromomethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Bromodichloromethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
2-Chloroethyl Vinyl Ether	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
(cis) 1,3-Dichloropropene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Methyl Isobutyl Ketone	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Toluene	0.0097	0.0066	EPA 8260C	11-9-16	11-9-16	
(trans) 1,3-Dichloropropene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP13-6-6.5F**					
Laboratory ID:	11-055-05					
1,1,2-Trichloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Tetrachloroethene	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
1,3-Dichloropropane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
2-Hexanone	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Dibromochloromethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromoethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Chlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1,1,2-Tetrachloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Ethylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
m,p-Xylene	ND	0.0026	EPA 8260C	11-9-16	11-9-16	
o-Xylene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Styrene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Bromoform	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Isopropylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Bromobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,1,2,2-Tetrachloroethane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichloropropane	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
n-Propylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
2-Chlorotoluene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
4-Chlorotoluene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,3,5-Trimethylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
tert-Butylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trimethylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
sec-Butylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,3-Dichlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
p-Isopropyltoluene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,4-Dichlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2-Dichlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
n-Butylbenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromo-3-chloropropane	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trichlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Hexachlorobutadiene	ND	0.0066	EPA 8260C	11-9-16	11-9-16	
Naphthalene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichlorobenzene	ND	0.0013	EPA 8260C	11-9-16	11-9-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*96*	*73-134*				
Toluene-d8	*101*	*81-124*				
4-Bromofluorobenzene	*90*	*80-131*				

Date of Report: November 29, 2016
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-8.5-9F**					
Laboratory ID:	11-055-08					
Dichlorodifluoromethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Chloromethane	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
Vinyl Chloride	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Bromomethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Chloroethane	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
Trichlorofluoromethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloroethene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Acetone	0.58	0.0062	EPA 8260C	11-11-16	11-11-16	E
Iodomethane	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
Carbon Disulfide	0.0015	0.0012	EPA 8260C	11-11-16	11-11-16	
Methylene Chloride	0.085	0.012	EPA 8260C	11-11-16	11-11-16	H
(trans) 1,2-Dichloroethene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Methyl t-Butyl Ether	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloroethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Vinyl Acetate	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
2,2-Dichloropropane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
(cis) 1,2-Dichloroethene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
2-Butanone	0.13	0.0062	EPA 8260C	11-11-16	11-11-16	
Bromochloromethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Chloroform	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,1,1-Trichloroethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Carbon Tetrachloride	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloropropene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Benzene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,2-Dichloroethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Trichloroethene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,2-Dichloropropane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Dibromomethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Bromodichloromethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
2-Chloroethyl Vinyl Ether	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
(cis) 1,3-Dichloropropene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Methyl Isobutyl Ketone	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
Toluene	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
(trans) 1,3-Dichloropropene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-8.5-9F**					
Laboratory ID:	11-055-08					
1,1,2-Trichloroethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Tetrachloroethene	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
1,3-Dichloropropane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
2-Hexanone	ND	0.0062	EPA 8260C	11-11-16	11-11-16	
Dibromochloromethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,2-Dibromoethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Chlorobenzene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
1,1,1,2-Tetrachloroethane	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Ethylbenzene	0.0051	0.0012	EPA 8260C	11-11-16	11-11-16	
m,p-Xylene	ND	0.0025	EPA 8260C	11-11-16	11-11-16	
o-Xylene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Styrene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Bromoform	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Isopropylbenzene	ND	0.0012	EPA 8260C	11-11-16	11-11-16	
Bromobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,1,2,2-Tetrachloroethane	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,2,3-Trichloropropane	ND	0.075	EPA 8260C	11-11-16	11-11-16	
n-Propylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
2-Chlorotoluene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
4-Chlorotoluene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,3,5-Trimethylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
tert-Butylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,2,4-Trimethylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
sec-Butylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,3-Dichlorobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
p-Isopropyltoluene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,4-Dichlorobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,2-Dichlorobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
n-Butylbenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,2-Dibromo-3-chloropropane	ND	0.37	EPA 8260C	11-11-16	11-11-16	
1,2,4-Trichlorobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
Hexachlorobutadiene	ND	0.37	EPA 8260C	11-11-16	11-11-16	
Naphthalene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
1,2,3-Trichlorobenzene	ND	0.075	EPA 8260C	11-11-16	11-11-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*106*	*73-134*				
Toluene-d8	*95*	*81-124*				
4-Bromofluorobenzene	*81*	*80-131*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP25-8-8.5F**					
Laboratory ID:	11-055-02					
Naphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*32 - 122*				
Pyrene-d10	*62*	*33 - 125*				
Terphenyl-d14	*60*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP13-6-6.5F**					
Laboratory ID:	11-055-05					
Naphthalene	**0.017**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**0.018**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**0.010**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**0.010**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**0.018**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**0.017**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**0.016**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**0.022**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**0.015**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**0.013**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**0.013**	0.0092	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*66*	*32 - 122*				
Pyrene-d10	*69*	*33 - 125*				
Terphenyl-d14	*76*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-8.5-9F**					
Laboratory ID:	11-055-08					
Naphthalene	**0.013**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**0.011**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**0.013**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**0.012**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**0.015**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**0.018**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**0.0086**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*32 - 122*				
Pyrene-d10	*76*	*33 - 125*				
Terphenyl-d14	*91*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DP16-9-9.5F**					
Laboratory ID:	11-055-09					
Naphthalene	**0.016**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
2-Methylnaphthalene	**0.011**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
1-Methylnaphthalene	**0.0094**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Acenaphthylene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Acenaphthene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Fluorene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Phenanthrene	**0.016**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Anthracene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Fluoranthene	**0.016**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Pyrene	**0.0093**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[a]anthracene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Chrysene	**0.010**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[b]fluoranthene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo(j,k)fluoranthene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[a]pyrene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Dibenz[a,h]anthracene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[g,h,i]perylene	**ND**	0.0092	EPA 8270D/SIM	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*44*	*32 - 122*				
Pyrene-d10	*43*	*33 - 125*				
Terphenyl-d14	*46*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-055-02					
Client ID:	**DP25-8-8.5F**					
Arsenic	**9.1**	3.0	6020A	11-10-16	11-11-16	
Barium	**150**	3.0	6010C	11-10-16	11-10-16	
Cadmium	**ND**	0.60	6010C	11-10-16	11-10-16	
Chromium	**46**	0.60	6010C	11-10-16	11-10-16	
Lead	**14**	3.0	6020A	11-10-16	11-11-16	
Mercury	**ND**	0.30	7471B	11-10-16	11-10-16	
Selenium	**ND**	12	6010C	11-10-16	11-10-16	
Silver	**ND**	1.2	6010C	11-10-16	11-10-16	
Lab ID:	11-055-05					
Client ID:	**DP13-6-6.5F**					
Arsenic	**53**	3.4	6020A	11-10-16	11-11-16	
Barium	**130**	3.4	6010C	11-10-16	11-10-16	
Cadmium	**1.6**	0.69	6010C	11-10-16	11-10-16	
Chromium	**71**	0.69	6010C	11-10-16	11-10-16	
Lead	**88**	3.4	6020A	11-10-16	11-11-16	
Mercury	**1.1**	0.34	7471B	11-10-16	11-10-16	
Selenium	**ND**	14	6010C	11-10-16	11-10-16	
Silver	**ND**	1.4	6010C	11-10-16	11-10-16	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6010C/6020A/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-055-08					
Client ID:	**DP16-8.5-9F**					
Arsenic	**58**	3.2	6020A	11-10-16	11-11-16	
Barium	**110**	3.2	6010C	11-10-16	11-10-16	
Cadmium	**1.0**	0.64	6010C	11-10-16	11-10-16	
Chromium	**40**	0.64	6010C	11-10-16	11-10-16	
Lead	**67**	3.2	6020A	11-10-16	11-11-16	
Mercury	**0.43**	0.32	7471B	11-10-16	11-10-16	
Selenium	**ND**	13	6010C	11-10-16	11-10-16	
Silver	**ND**	1.3	6010C	11-10-16	11-10-16	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-055-06					
Client ID:	**DP13-6.5-7F**					
Arsenic	**24**	3.1	6020A	11-10-16	11-11-16	
Lead	**20**	6.2	6020A	11-10-16	11-11-16	
Lab ID:	11-055-09					
Client ID:	**DP16-9-9.5F**					
Arsenic	**110**	3.5	6020A	11-10-16	11-11-16	
Lead	**280**	6.9	6020A	11-10-16	11-11-16	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-HCID
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1104S2					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	11-4-16	11-4-16	
Diesel Range Organics	**ND**	50	NWTPH-HCID	11-4-16	11-4-16	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	11-4-16	11-4-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1111S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-11-16	11-11-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-11-16	11-11-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*122*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-042-12										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range Organics	**50.6**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*93*	*88*	*50-150*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1123S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-23-16	11-23-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-158-15										
	ORIG	DUP									
Diesel Range Organics	**6380**	**4630**	NA	NA		NA		NA	32	NA	M,N
Lube Oil	**7030**	**5300**	NA	NA		NA		NA	28	NA	
Surrogate:											
o-Terphenyl						---	---	*50-150*			S,S

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
page 1 of 2

Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1109S2					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Chloromethane	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Vinyl Chloride	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Bromomethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Chloroethane	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Acetone	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Iodomethane	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Carbon Disulfide	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Methylene Chloride	ND	0.010	EPA 8260C	11-9-16	11-9-16	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Vinyl Acetate	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
2-Butanone	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Bromochloromethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Chloroform	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Benzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Trichloroethene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Dibromomethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Bromodichloromethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Toluene	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1109S2					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Tetrachloroethene	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
2-Hexanone	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Dibromochloromethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Chlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Ethylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
m,p-Xylene	ND	0.0020	EPA 8260C	11-9-16	11-9-16	
o-Xylene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Styrene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Bromoform	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Isopropylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Bromobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
n-Propylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
2-Chlorotoluene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
4-Chlorotoluene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
tert-Butylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
sec-Butylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
n-Butylbenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	11-9-16	11-9-16	
Naphthalene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	11-9-16	11-9-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*112*	*73-134*				
Toluene-d8	*114*	*81-124*				
4-Bromofluorobenzene	*117*	*80-131*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1110S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Chloromethane	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Vinyl Chloride	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Bromomethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Chloroethane	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Acetone	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Iodomethane	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Carbon Disulfide	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Methylene Chloride	ND	0.010	EPA 8260C	11-10-16	11-10-16	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Vinyl Acetate	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
2-Butanone	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Bromochloromethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Chloroform	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Benzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Trichloroethene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Dibromomethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Bromodichloromethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Toluene	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1110S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Tetrachloroethene	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
2-Hexanone	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Dibromochloromethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Chlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Ethylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
m,p-Xylene	ND	0.0020	EPA 8260C	11-10-16	11-10-16	
o-Xylene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Styrene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Bromoform	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Isopropylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Bromobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
n-Propylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
2-Chlorotoluene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
4-Chlorotoluene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
tert-Butylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
sec-Butylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
n-Butylbenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	11-10-16	11-10-16	
Naphthalene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*111*	*73-134*				
Toluene-d8	*115*	*81-124*				
4-Bromofluorobenzene	*115*	*80-131*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Matrix: Soil
Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1111S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Chloromethane	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Vinyl Chloride	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Bromomethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Chloroethane	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Trichlorofluoromethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloroethene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Acetone	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Iodomethane	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Carbon Disulfide	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Methylene Chloride	ND	0.010	EPA 8260C	11-11-16	11-11-16	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Vinyl Acetate	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
2,2-Dichloropropane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
2-Butanone	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Bromochloromethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Chloroform	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Carbon Tetrachloride	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1-Dichloropropene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Benzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2-Dichloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Trichloroethene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2-Dichloropropane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Dibromomethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Bromodichloromethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Toluene	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	

Date of Report: November 29, 2016
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VOLATILES by EPA 8260C
METHOD BLANK QUALITY CONTROL
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1111S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Tetrachloroethene	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
1,3-Dichloropropane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
2-Hexanone	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Dibromochloromethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2-Dibromoethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Chlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Ethylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
m,p-Xylene	ND	0.0020	EPA 8260C	11-11-16	11-11-16	
o-Xylene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Styrene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Bromoform	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Isopropylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Bromobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
n-Propylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
2-Chlorotoluene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
4-Chlorotoluene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
tert-Butylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
sec-Butylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
p-Isopropyltoluene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
n-Butylbenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Hexachlorobutadiene	ND	0.0050	EPA 8260C	11-11-16	11-11-16	
Naphthalene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260C	11-11-16	11-11-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
Dibromofluoromethane	*112*	*73-134*				
Toluene-d8	*111*	*81-124*				
4-Bromofluorobenzene	*114*	*80-131*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1109S2									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0522**	**0.0587**	0.0500	0.0500	104	117	66-127	12	15	
Benzene	**0.0476**	**0.0534**	0.0500	0.0500	95	107	76-122	11	15	
Trichloroethene	**0.0446**	**0.0492**	0.0500	0.0500	89	98	78-120	10	15	
Toluene	**0.0499**	**0.0552**	0.0500	0.0500	100	110	83-120	10	15	
Chlorobenzene	**0.0455**	**0.0501**	0.0500	0.0500	91	100	81-120	10	15	
Surrogate:										
Dibromofluoromethane					*101*	*102*	*73-134*			
Toluene-d8					*105*	*103*	*81-124*			
4-Bromofluorobenzene					*102*	*106*	*80-131*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1110S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0545**	**0.0585**	0.0500	0.0500	109	117	66-127	7	15	
Benzene	**0.0494**	**0.0542**	0.0500	0.0500	99	108	76-122	9	15	
Trichloroethene	**0.0456**	**0.0506**	0.0500	0.0500	91	101	78-120	10	15	
Toluene	**0.0504**	**0.0578**	0.0500	0.0500	101	116	83-120	14	15	
Chlorobenzene	**0.0455**	**0.0510**	0.0500	0.0500	91	102	81-120	11	15	
Surrogate:										
Dibromofluoromethane					*106*	*102*	*73-134*			
Toluene-d8					*106*	*108*	*81-124*			
4-Bromofluorobenzene					*106*	*110*	*80-131*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

VOLATILES by EPA 8260C
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1111S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	**0.0544**	**0.0574**	0.0500	0.0500	109	115	66-127	5	15	
Benzene	**0.0523**	**0.0526**	0.0500	0.0500	105	105	76-122	1	15	
Trichloroethene	**0.0463**	**0.0499**	0.0500	0.0500	93	100	78-120	7	15	
Toluene	**0.0529**	**0.0577**	0.0500	0.0500	106	115	83-120	9	15	
Chlorobenzene	**0.0469**	**0.0498**	0.0500	0.0500	94	100	81-120	6	15	
Surrogate:										
Dibromofluoromethane					*104*	*100*	*73-134*			
Toluene-d8					*101*	*108*	*81-124*			
4-Bromofluorobenzene					*105*	*108*	*80-131*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1110S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	11-10-16	11-10-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*32 - 122*				
Pyrene-d10	*88*	*33 - 125*				
Terphenyl-d14	*87*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1110S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0752**	**0.0784**	0.0833	0.0833	90	94	58 - 114	4	18	
Acenaphthylene	**0.0819**	**0.0838**	0.0833	0.0833	98	101	54 - 127	2	15	
Acenaphthene	**0.0813**	**0.0813**	0.0833	0.0833	98	98	58 - 119	0	15	
Fluorene	**0.0815**	**0.0827**	0.0833	0.0833	98	99	60 - 123	1	15	
Phenanthrene	**0.0800**	**0.0799**	0.0833	0.0833	96	96	54 - 120	0	15	
Anthracene	**0.118**	**0.119**	0.0833	0.0833	142	143	55 - 152	1	15	
Fluoranthene	**0.0819**	**0.0836**	0.0833	0.0833	98	100	56 - 129	2	15	
Pyrene	**0.0824**	**0.0830**	0.0833	0.0833	99	100	60 - 126	1	15	
Benzo[a]anthracene	**0.0886**	**0.0897**	0.0833	0.0833	106	108	56 - 137	1	15	
Chrysene	**0.0849**	**0.0855**	0.0833	0.0833	102	103	59 - 122	1	15	
Benzo[b]fluoranthene	**0.0847**	**0.0823**	0.0833	0.0833	102	99	46 - 133	3	21	
Benzo(j,k)fluoranthene	**0.0823**	**0.0850**	0.0833	0.0833	99	102	47 - 129	3	21	
Benzo[a]pyrene	**0.0832**	**0.0837**	0.0833	0.0833	100	100	54 - 132	1	15	
Indeno(1,2,3-c,d)pyrene	**0.0807**	**0.0800**	0.0833	0.0833	97	96	54 - 129	1	15	
Dibenz[a,h]anthracene	**0.0809**	**0.0811**	0.0833	0.0833	97	97	59 - 122	0	15	
Benzo[g,h,i]perylene	**0.0827**	**0.0827**	0.0833	0.0833	99	99	57 - 125	0	16	
Surrogate:										
2-Fluorobiphenyl					*90*	*89*	*32 - 122*			
Pyrene-d10					*90*	*89*	*33 - 125*			
Terphenyl-d14					*88*	*87*	*36 - 118*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1123S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*32 - 122*				
Pyrene-d10	*85*	*33 - 125*				
Terphenyl-d14	*90*	*36 - 118*				

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

PAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	11-211-03										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0564**	**0.0594**	0.0833	0.0833	ND	68	71	39 - 112	5	27	
Acenaphthylene	**0.0618**	**0.0638**	0.0833	0.0833	ND	74	77	40 - 121	3	34	
Acenaphthene	**0.0600**	**0.0637**	0.0833	0.0833	0.0233	44	48	44 - 113	6	28	
Fluorene	**0.0627**	**0.0660**	0.0833	0.0833	ND	75	79	43 - 119	5	27	
Phenanthrene	**0.0597**	**0.0637**	0.0833	0.0833	ND	72	76	35 - 124	6	30	
Anthracene	**0.100**	**0.109**	0.0833	0.0833	ND	120	131	30 - 140	9	26	
Fluoranthene	**0.0625**	**0.0665**	0.0833	0.0833	ND	75	80	29 - 136	6	32	
Pyrene	**0.0632**	**0.0670**	0.0833	0.0833	0.0151	58	62	35 - 128	6	33	
Benzo[a]anthracene	**0.0706**	**0.0744**	0.0833	0.0833	ND	85	89	30 - 143	5	31	
Chrysene	**0.0617**	**0.0684**	0.0833	0.0833	ND	74	82	32 - 129	10	33	
Benzo[b]fluoranthene	**0.0640**	**0.0701**	0.0833	0.0833	ND	77	84	23 - 140	9	29	
Benzo(j,k)fluoranthene	**0.0607**	**0.0644**	0.0833	0.0833	ND	73	77	32 - 119	6	30	
Benzo[a]pyrene	**0.0624**	**0.0685**	0.0833	0.0833	ND	75	82	31 - 131	9	32	
Indeno(1,2,3-c,d)pyrene	**0.0616**	**0.0642**	0.0833	0.0833	ND	74	77	31 - 130	4	28	
Dibenz[a,h]anthracene	**0.0617**	**0.0637**	0.0833	0.0833	ND	74	76	40 - 119	3	27	
Benzo[g,h,i]perylene	**0.0604**	**0.0594**	0.0833	0.0833	ND	73	71	39 - 119	2	29	
Surrogate:											
2-Fluorobiphenyl						*58*	*61*	*32 - 122*			
Pyrene-d10						*66*	*71*	*33 - 125*			
Terphenyl-d14						*63*	*68*	*36 - 118*			

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6010C/6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1110SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6020A	**ND**	2.5
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-10-16
Date Analyzed:	11-10-16
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1110S2

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6010C/6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-054-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	2.5	
Barium	**48.7**	**49.7**	2	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**28.7**	**30.5**	6	0.50	
Lead	**ND**	**ND**	NA	2.5	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-094-02

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6010C/6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10&11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-054-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**93.1**	93	**93.6**	94	1	
Barium	100	**151**	102	**151**	103	0	
Cadmium	50.0	**49.0**	98	**49.9**	100	2	
Chromium	100	**131**	102	**131**	102	0	
Lead	250	**228**	91	**231**	92	1	
Selenium	100	**92.6**	93	**97.0**	97	5	
Silver	25.0	**22.9**	91	**23.4**	94	2	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-10-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-094-02

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.527**	105	**0.514**	103	3	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1110SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	5.0

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-153-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**12.4**	**11.7**	6	2.5	
Lead	**13.6**	**13.5**	1	5.0	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-10-16
Date Analyzed: 11-11-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-153-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**90.7**	78	**91.5**	79	1	
Lead	250	**225**	85	**228**	86	1	

Date of Report: November 29, 2016
Samples Submitted: November 3, 2016
Laboratory Reference: 1611-055
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-4&15-16

Client ID	Lab ID	% Moisture
DP25-8-8.5F	11-055-02	17
DP13-6-6.5F	11-055-05	27
DP13-6.5-7F	11-055-06	19
DP16-8.5-9F	11-055-08	22
DP16-9-9.5F	11-055-09	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 1

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

Company: GeoEngineers
Project Number: 10068-002-00
Project Name: Frank Tobey Jones
Project Manager: Tricia DeOme
Sampled by: HLM/RC

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: 11-055

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	Hold		Total As, Pb		% Moisture
1	DP25-7.5-8F	11/2/16	1455	Soil	5																		X				
2	DP25-8-8.5F		1457			X				X				X					X								X
3	DP25-7-7.5 F		1451																				X				
4	DP13-5.5-6F		1130																				X				
5	DP13-6-6.5F		1121			X				X				X					X								X
6	DP13-6.5-7F		1135																				X		⊗		⊗
7	DP16-8-8.5F		1200																				X				
8	DP16-8.5-9 F		1202			X			●	X				X					X								X
9	DP16-9-9.5F	↓	1206	↓	↓				■					■											⊗		⊗

	Signature	Company	Date	Time
Relinquished		GEI	11/2/16	1800
Received		GEI	11/2/16	1800
Relinquished		GEI	11/3/16	12:30p
Received		Alpha	11/3/16	12:30p
Relinquished		Alpha	11/3/16	1:00pm
Received		SSE	11/3/16	2:00pm
Reviewed/Date		Reviewed/Date		

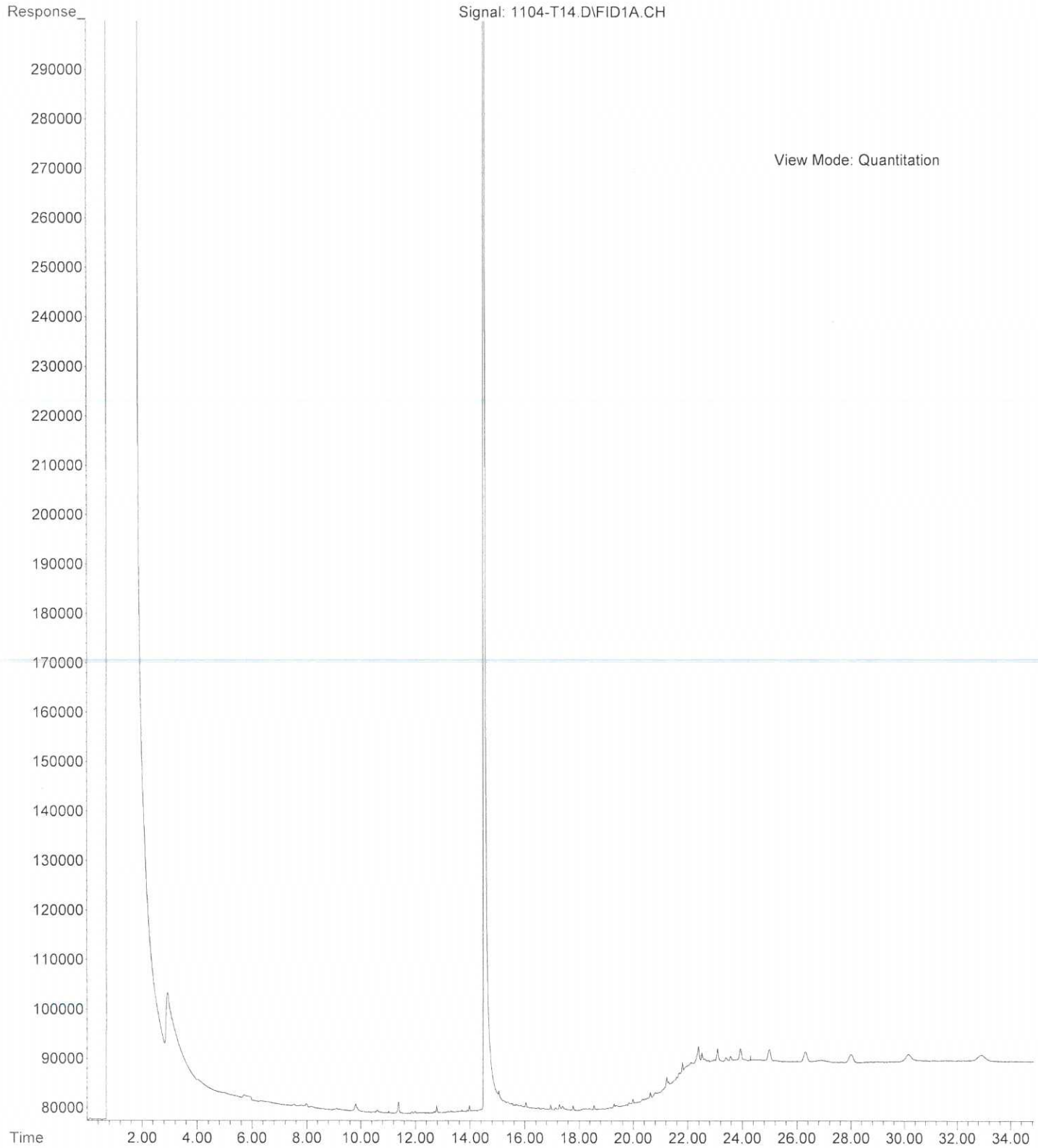
Comments/Special Instructions

Arsenic detection limit 5ppm
Lead detection limit 5ppm
● Added 11/8/16.DB(STA)
⊗ Added 11/14/16.DB(STA)
■ Added 11/21/16.DB(STA)

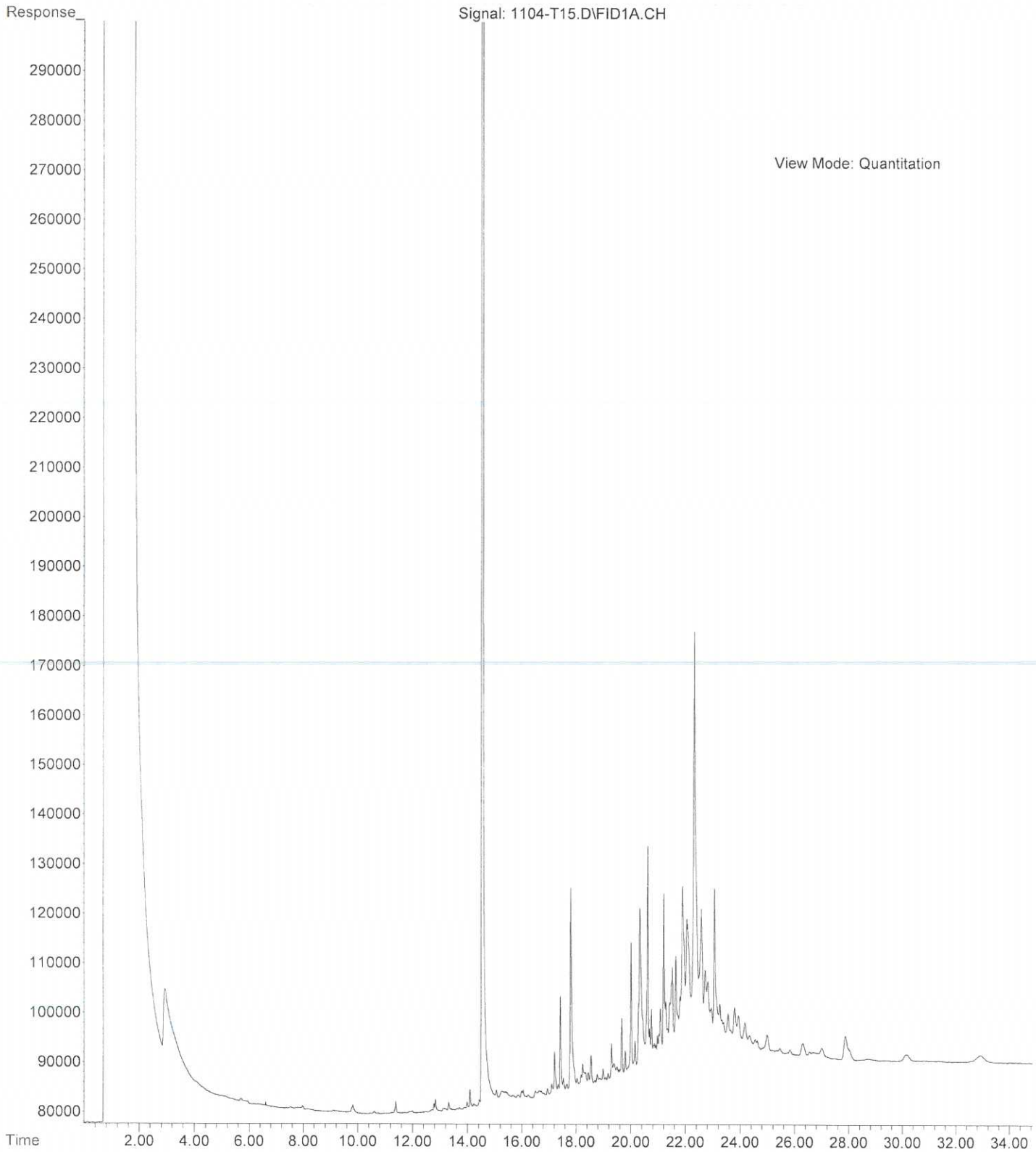
Data Package: Standard ☐ Level III ☐ Level IV ☐

Chromatograms with final report ☐ Electronic Data Deliverables (EDDs) ☐

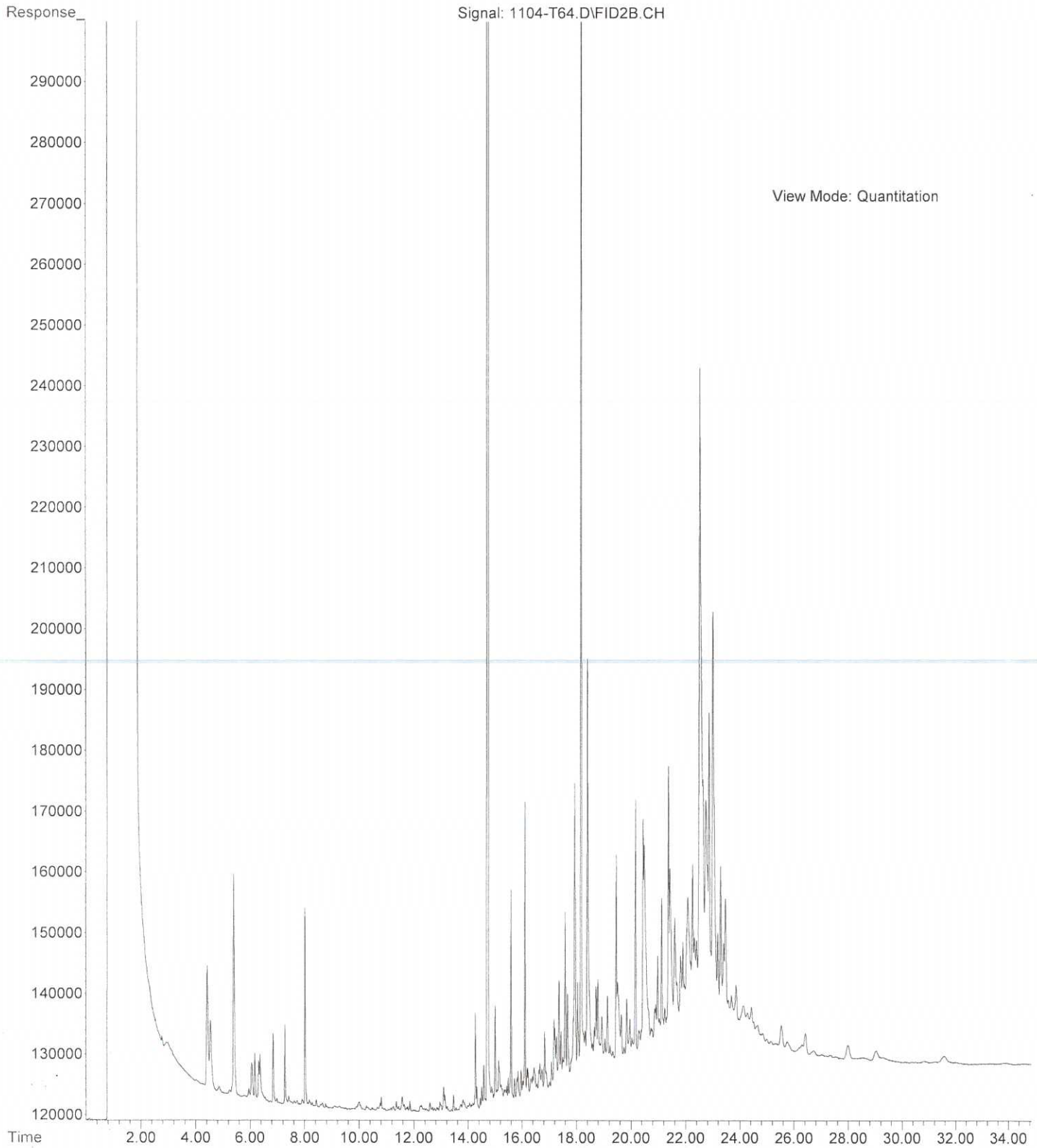
File :X:\DIESELS\TERI\DATA\T161104\1104-T14.D
Operator : ZT
Acquired : 04 Nov 2016 19:40 using AcqMethod T160812F.M
Instrument : Teri
Sample Name: 11-055-02 HC
Misc Info :
Vial Number: 14



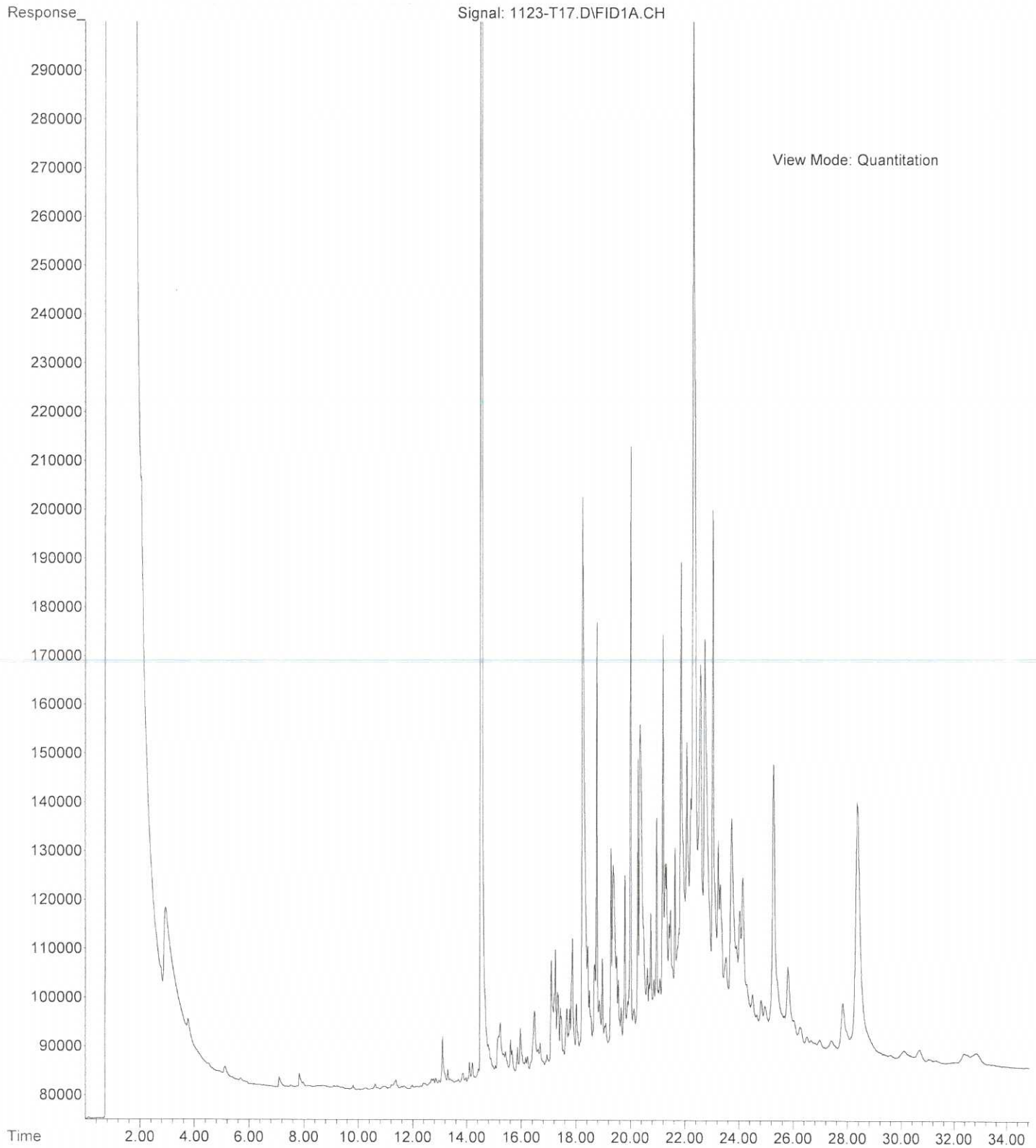
File :X:\DIESELS\TERI\DATA\T161104\1104-T15.D
Operator : ZT
Acquired : 04 Nov 2016 20:22 using AcqMethod T160812F.M
Instrument : Teri
Sample Name: 11-055-05 HC
Misc Info :
Vial Number: 15



File :X:\DIESELS\TERI\DATA\T161104.SEC\1104-T64.D
Operator : ZT
Acquired : 04 Nov 2016 19:40 using AcqMethod T160812F.M
Instrument : Teri
Sample Name: 11-055-08 HC
Misc Info :
Vial Number: 64



File : X:\DIESELS\TERI\DATA\T161123\1123-T17.D
Operator : ZT
Acquired : 23 Nov 2016 23:59 using AcqMethod T160812F.M
Instrument : Teri
Sample Name: 11-055-09
Misc Info :
Vial Number: 17



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

November 30, 2016

Tricia DeOme
GeoEngineers, Inc.
1101 Fawcett Avenue South, Suite 200
Tacoma, WA 98402

Re: Analytical Data for Project 10068-002-00
Laboratory Reference No. 1611-124

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on November 10, 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: November 30, 2016
Samples Submitted: November 10, 2016
Laboratory Reference: 1611-124
Project: 10068-002-00

Case Narrative

Samples were collected on November 9, 2016 and received by the laboratory on November 10, 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: November 30, 2016
Samples Submitted: November 10, 2016
Laboratory Reference: 1611-124
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
TP2-2.5-3-F	11-124-04	Soil	11-9-16	11-10-16	

Date of Report: November 30, 2016
Samples Submitted: November 10, 2016
Laboratory Reference: 1611-124
Project: 10068-002-00

NWTPH-HCID

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP2-2.5-3-F**					
Laboratory ID:	11-124-04					
Gasoline Range Organics	**ND**	27	NWTPH-HCID	11-17-16	11-17-16	U1
Diesel Range Organics	**ND**	65	NWTPH-HCID	11-17-16	11-17-16	
Lube Oil	**Detected**	130	NWTPH-HCID	11-17-16	11-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*109*	*50-150*				

Date of Report: November 30, 2016
Samples Submitted: November 10, 2016
Laboratory Reference: 1611-124
Project: 10068-002-00

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP2-2.5-3-F**					
Laboratory ID:	11-124-04					
Naphthalene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
2-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
1-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Acenaphthylene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Acenaphthene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Fluorene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Phenanthrene	**0.016**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Anthracene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Fluoranthene	**0.020**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Pyrene	**0.016**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[a]anthracene	**0.0088**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Chrysene	**0.012**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[b]fluoranthene	**0.015**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[a]pyrene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[g,h,i]perylene	**ND**	0.0086	EPA 8270D/SIM	11-15-16	11-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*84*	*32 - 122*				
Pyrene-d10	*80*	*33 - 125*				
Terphenyl-d14	*82*	*36 - 118*				

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TOTAL METALS
EPA 6010C/7471B

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-124-04					
Client ID:	**TP2-2.5-3-F**					
Arsenic	**54**	13	6010C	11-15-16	11-15-16	
Barium	**100**	3.2	6010C	11-15-16	11-15-16	
Cadmium	**1.0**	0.65	6010C	11-15-16	11-15-16	
Chromium	**49**	0.65	6010C	11-15-16	11-15-16	
Lead	**73**	6.5	6010C	11-15-16	11-15-16	
Mercury	**0.35**	0.32	7471B	11-17-16	11-17-16	
Selenium	**ND**	13	6010C	11-15-16	11-15-16	
Silver	**ND**	1.3	6010C	11-15-16	11-15-16	

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NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**TP2-2.5-3-F**					
Laboratory ID:	11-124-04					
Diesel Range Organics	**ND**	32	NWTPH-Dx	11-23-16	11-23-16	
Lube Oil Range Organics	**220**	65	NWTPH-Dx	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				

Date of Report: November 30, 2016
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NWTPH-HCID
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1117S1					
Gasoline Range Organics	**ND**	20	NWTPH-HCID	11-17-16	11-17-16	
Diesel Range Organics	**ND**	50	NWTPH-HCID	11-17-16	11-17-16	
Lube Oil Range Organics	**ND**	100	NWTPH-HCID	11-17-16	11-17-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*104*	*50-150*				

Date of Report: November 30, 2016
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PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB1115S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	11-15-16	11-16-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*98*	*32 - 122*				
Pyrene-d10	*83*	*33 - 125*				
Terphenyl-d14	*85*	*36 - 118*				

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PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1115S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0763**	**0.0719**	0.0833	0.0833	92	86	58 - 114	6	18	
Acenaphthylene	**0.0802**	**0.0770**	0.0833	0.0833	96	92	54 - 127	4	15	
Acenaphthene	**0.0791**	**0.0750**	0.0833	0.0833	95	90	58 - 119	5	15	
Fluorene	**0.0811**	**0.0807**	0.0833	0.0833	97	97	60 - 123	0	15	
Phenanthrene	**0.0770**	**0.0751**	0.0833	0.0833	92	90	54 - 120	2	15	
Anthracene	**0.116**	**0.117**	0.0833	0.0833	139	140	55 - 152	1	15	
Fluoranthene	**0.0796**	**0.0802**	0.0833	0.0833	96	96	56 - 129	1	15	
Pyrene	**0.0798**	**0.0803**	0.0833	0.0833	96	96	60 - 126	1	15	
Benzo[a]anthracene	**0.0732**	**0.0698**	0.0833	0.0833	88	84	56 - 137	5	15	
Chrysene	**0.0884**	**0.0848**	0.0833	0.0833	106	102	59 - 122	4	15	
Benzo[b]fluoranthene	**0.0820**	**0.0789**	0.0833	0.0833	98	95	46 - 133	4	21	
Benzo(j,k)fluoranthene	**0.0814**	**0.0787**	0.0833	0.0833	98	94	47 - 129	3	21	
Benzo[a]pyrene	**0.0855**	**0.0839**	0.0833	0.0833	103	101	54 - 132	2	15	
Indeno(1,2,3-c,d)pyrene	**0.0631**	**0.0622**	0.0833	0.0833	76	75	54 - 129	1	15	
Dibenz[a,h]anthracene	**0.0809**	**0.0780**	0.0833	0.0833	97	94	59 - 122	4	15	
Benzo[g,h,i]perylene	**0.0809**	**0.0751**	0.0833	0.0833	97	90	57 - 125	7	16	
Surrogate:										
2-Fluorobiphenyl					*96*	*92*	*32 - 122*			
Pyrene-d10					*87*	*86*	*33 - 125*			
Terphenyl-d14					*89*	*84*	*36 - 118*			

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TOTAL METALS
EPA 6010C
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-15-16
Date Analyzed: 11-15-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1115SM1

Analyte	Method	Result	PQL
Arsenic	6010C	**ND**	10
Barium	6010C	**ND**	2.5
Cadmium	6010C	**ND**	0.50
Chromium	6010C	**ND**	0.50
Lead	6010C	**ND**	5.0
Selenium	6010C	**ND**	10
Silver	6010C	**ND**	1.0

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TOTAL MERCURY
EPA 7471B
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-17-16
Date Analyzed:	11-17-16
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1117S1

Analyte	Method	Result	PQL
Mercury	7471B	**ND**	0.25

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TOTAL METALS
EPA 6010C
DUPLICATE QUALITY CONTROL

Date Extracted: 11-15-16
Date Analyzed: 11-15-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-133-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	10	
Barium	**45.2**	**42.0**	7	2.5	
Cadmium	**ND**	**ND**	NA	0.50	
Chromium	**14.4**	**12.5**	15	0.50	
Lead	**ND**	**ND**	NA	5.0	
Selenium	**ND**	**ND**	NA	10	
Silver	**ND**	**ND**	NA	1.0	

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TOTAL MERCURY
EPA 7471B
DUPLICATE QUALITY CONTROL

Date Extracted: 11-17-16
Date Analyzed: 11-17-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-143-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Mercury	**ND**	**ND**	NA	0.25	

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TOTAL METALS
EPA 6010C
MS/MSD QUALITY CONTROL

Date Extracted: 11-15-16
Date Analyzed: 11-15-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-133-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**90.6**	91	**92.0**	92	2	
Barium	100	**140**	94	**140**	94	0	
Cadmium	50.0	**47.4**	95	**49.0**	98	3	
Chromium	100	**108**	94	**109**	94	1	
Lead	250	**230**	92	**236**	95	3	
Selenium	100	**91.4**	91	**94.7**	95	4	
Silver	25.0	**21.6**	86	**22.7**	91	5	

Date of Report: November 30, 2016
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TOTAL MERCURY
EPA 7471B
MS/MSD QUALITY CONTROL

Date Extracted: 11-17-16
Date Analyzed: 11-17-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-143-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Mercury	0.500	**0.529**	106	**0.513**	103	3	

Date of Report: November 30, 2016
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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:	MB1123S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	11-23-16	11-23-16	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	11-23-16	11-23-16	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	11-158-15										
	ORIG	DUP									
Diesel Range Organics	**6380**	**4630**	NA	NA		NA		NA	32	NA	M,N
Lube Oil	**7030**	**5300**	NA	NA		NA		NA	28	NA	
Surrogate:											
o-Terphenyl						---	---	*50-150*			S,S

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% MOISTURE

Date Analyzed: 11-15-16

Client ID	Lab ID	% Moisture
TP2-2.5-3-F	11-124-04	23

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: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones
Project Manager: Tricia DeOme
Sampled by: Hannah McDonough

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: 11-124

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	Hold				% Moisture
1	TP1-0-0.5-F	11/9/16	1142	S	5																		X				
2	TP6-1-1.5-F	11/9/16	842	S	5																		X				
3	TP2-1-1.5-F	11/9/16	1335	S	5																		X				
4	TP2-2.5-3-F	11/9/16	1342	S	5	X								X					X				X	NO			X
5	TP2-6.5-7-F	11/9/16	1356	S	5																		X				
6	TP2-7-7.5-F	11/9/16	1358	S	5																		X				
7	TP2-1.5-2-F	11/9/16	1340	S	5																		X				
8	TP1-2-2.5-F	11/9/16	1146	S	5																		X				
9	TP1-1-1.5-F	11/9/16	1144	S	5																		X				
10	TP6-0-0.5-F	11/9/16	840	S	5																		X				

	Signature	Company	Date	Time
Relinquished		GEI	11/10/16	1241
Received		Alpha	11/10/16	1241
Relinquished		Alpha	11/10/16	2:57
Received		QSC	11/11/16	1451
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

(X) Added 11/14/16 - DB (STA)
As - 5.0 ppm D.L.
Pb - 5.0 ppm D.L.

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: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones
Project Manager: Tricia Deame
Sampled by: Hannah McDonough

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: 11-124

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
11	TP6-2-2.5-F	11/9/16	844	S	5																	X					

	Signature	Company	Date	Time
Relinquished		GEI	11/10/16	1241
Received		Alpha	11/10/16	1241
Relinquished		Alpha	11/10/16	2:57
Received		CORE	11/11/16	1451
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

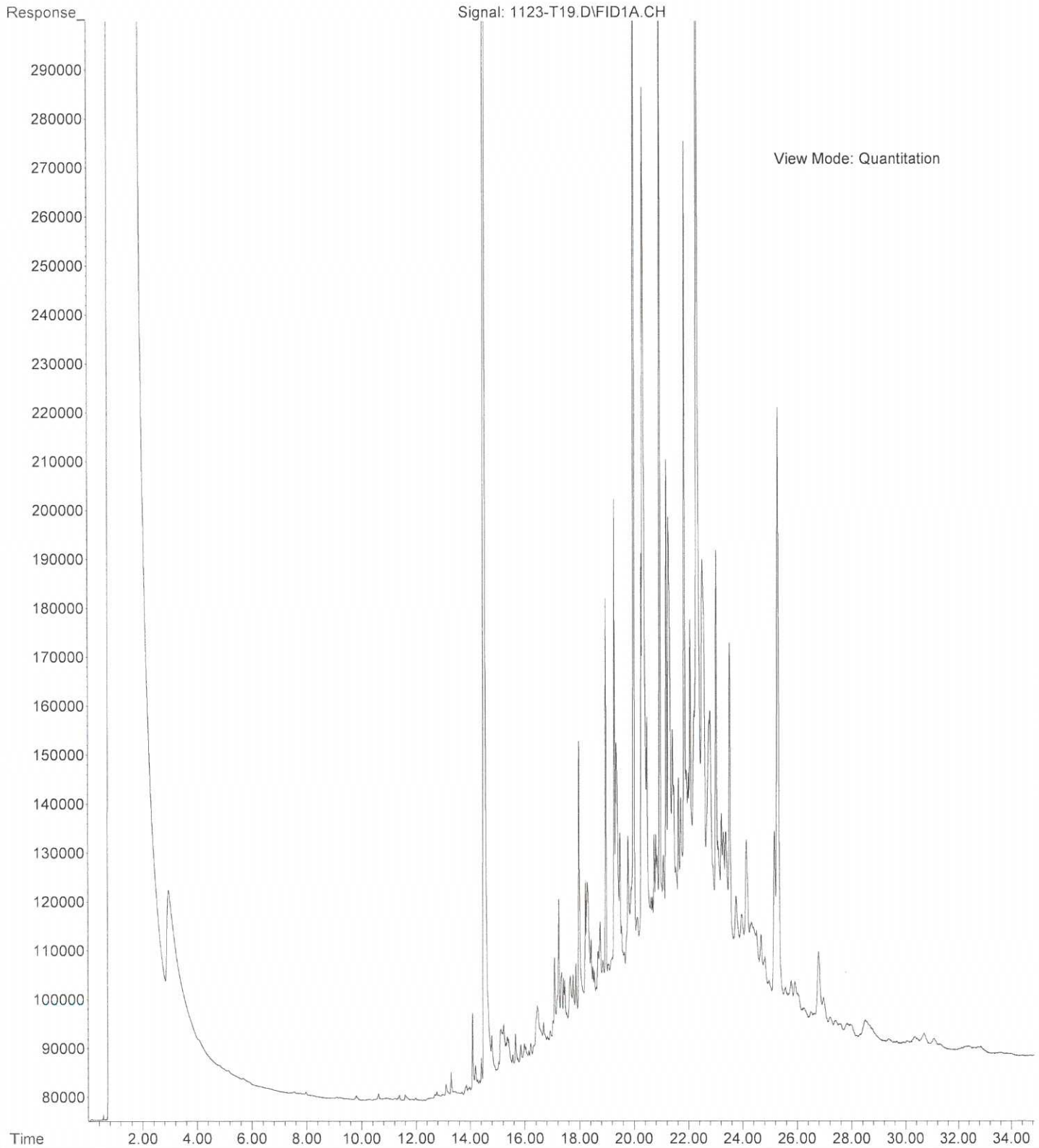
Comments/Special Instructions

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

File : X:\DIESELS\TERI\DATA\T161123\1123-T19.D
Operator : ZT
Acquired : 24 Nov 2016 1:24 using AcqMethod T160812F.M
Instrument : Teri
Sample Name: 11-124-04
Misc Info :
Vial Number: 19



OnSite Environmental Inc.
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December 2, 2016

Tricia DeOme
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Tacoma, WA 98402

Re: Analytical Data for Project 10068-002-00
Laboratory Reference No. 1611-146

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 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: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

Case Narrative

Samples were collected on November 1 and 2, 2016 and received by the laboratory on November 14, 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: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DP1-1-1.5	11-146-02	Soil	11-1-16	11-14-16	
DP1-6-6.5	11-146-06	Soil	11-1-16	11-14-16	
DP1-7-7.5	11-146-07	Soil	11-1-16	11-14-16	
DP1-8-8.5	11-146-08	Soil	11-1-16	11-14-16	
DP2-1-1.5	11-146-14	Soil	11-1-16	11-14-16	
DP3-1-1.5	11-146-25	Soil	11-1-16	11-14-16	
DP3-3-3.5	11-146-27	Soil	11-1-16	11-14-16	
DP3-4-4.5	11-146-28	Soil	11-1-16	11-14-16	
DP4-1-1.5	11-146-35	Soil	11-1-16	11-14-16	
DP5-0-0.5	11-146-43	Soil	11-1-16	11-14-16	
DP5-1-1.5	11-146-44	Soil	11-1-16	11-14-16	
DP6-0-0.5	11-146-51	Soil	11-1-16	11-14-16	
DP6-1-1.5	11-146-52	Soil	11-1-16	11-14-16	
DP7-0-0.5	11-146-60	Soil	11-1-16	11-14-16	
DP8-0-0.5	11-146-70	Soil	11-1-16	11-14-16	
DP9-1-1.5	11-146-81	Soil	11-1-16	11-14-16	
DP9-2-2.5	11-146-82	Soil	11-1-16	11-14-16	
DP9-3-3.5	11-146-83	Soil	11-1-16	11-14-16	
DP10-1-1.5	11-146-91	Soil	11-1-16	11-14-16	
DP10-3-3.5	11-146-93	Soil	11-1-16	11-14-16	
DP10-5-5.5	11-146-94	Soil	11-1-16	11-14-16	
DP11-2-2.5	11-146-101	Soil	11-2-16	11-14-16	
DP11-3-3.5	11-146-102	Soil	11-2-16	11-14-16	
DP11-5-5.5	11-146-103	Soil	11-2-16	11-14-16	
DP12-1-1.5	11-146-109	Soil	11-1-16	11-14-16	
DP12-3-3.5	11-146-111	Soil	11-1-16	11-14-16	
DP12-8-8.5	11-146-115	Soil	11-1-16	11-14-16	
DP12-9-9.5	11-146-116	Soil	11-1-16	11-14-16	
DP13-1-1.5	11-146-120	Soil	11-1-16	11-14-16	

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ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DP13-2-2.5	11-146-121	Soil	11-2-16	11-14-16	
DP137-7.5	11-146-125	Soil	11-2-16	11-14-16	
DP13-8-8.5	11-146-126	Soil	11-2-16	11-14-16	
DP14-2-2.5	11-146-130	Soil	11-1-16	11-14-16	
DP14-5-5.5	11-146-133	Soil	11-1-16	11-14-16	
DP14-7-7.5	11-146-135	Soil	11-1-16	11-14-16	
DP14-8-8.5	11-146-136	Soil	11-1-16	11-14-16	
DP15-1-1.5	11-146-141	Soil	11-2-16	11-14-16	
DP15-2-2.5	11-146-142	Soil	11-2-16	11-14-16	
DP15-5-5.5	11-146-145	Soil	11-2-16	11-14-16	
DP15-6-6.5	11-146-146	Soil	11-2-16	11-14-16	
DP16-0-0.5	11-146-150	Soil	11-2-16	11-14-16	
DP16-2-2.5	11-146-152	Soil	11-2-16	11-14-16	
DP16-10-10.5	11-146-158	Soil	11-2-16	11-14-16	
DP17-1-1.5	11-146-162	Soil	11-1-16	11-14-16	
DP17-3-3.5	11-146-164	Soil	11-1-16	11-14-16	
DP17-5-5.5	11-146-166	Soil	11-1-16	11-14-16	
DP17-8-8.5	11-146-169	Soil	11-1-16	11-14-16	
DP17-9-9.5	11-146-170	Soil	11-1-16	11-14-16	
DP18-2-2.5	11-146-175	Soil	11-2-16	11-14-16	
DP18-6-6.5	11-146-179	Soil	11-2-16	11-14-16	
DP18-7-7.5	11-146-180	Soil	11-2-16	11-14-16	
DP19-1-1.5	11-146-184	Soil	11-2-16	11-14-16	
DP19-2-2.5	11-146-185	Soil	11-2-16	11-14-16	
DP19-3-3.5	11-146-186	Soil	11-2-16	11-14-16	
DP20-1-1.5	11-146-193	Soil	11-2-16	11-14-16	
DP20-2-2.5	11-146-194	Soil	11-2-16	11-14-16	

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ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DP20-3-3.5	11-146-195	Soil	11-2-16	11-14-16	
DP21-1-1.5	11-146-203	Soil	11-2-16	11-14-16	
DP21-3-3.5	11-146-204	Soil	11-2-16	11-14-16	
DP22-1-1.5	11-146-212	Soil	11-2-16	11-14-16	
DP22-2-2.5	11-146-213	Soil	11-2-16	11-14-16	
DP23-1-1.5	11-146-219	Soil	11-2-16	11-14-16	
DP23-5-5.5	11-146-223	Soil	11-2-16	11-14-16	
DP23-7-7.5	11-146-225	Soil	11-2-16	11-14-16	
DP23-8-8.5	11-146-226	Soil	11-2-16	11-14-16	
DP24-0-0.5	11-146-228	Soil	11-2-16	11-14-16	
DP24-1-1.5	11-146-229	Soil	11-2-16	11-14-16	
DP24-2-2.5	11-146-230	Soil	11-2-16	11-14-16	
DP24-8-8.5	11-146-235	Soil	11-2-16	11-14-16	
DP25-1-1.5	11-146-238	Soil	11-2-16	11-14-16	
DP25-9-9.5	11-146-244	Soil	11-2-16	11-14-16	
DP26-1-1.5	11-146-246	Soil	11-2-16	11-14-16	
DP26-2-2.5	11-146-247	Soil	11-2-16	11-14-16	
DP26-3-3.5	11-146-248	Soil	11-2-16	11-14-16	
DP26-4-4.5	11-146-249	Soil	11-2-16	11-14-16	
DP26-5-5.5	11-146-250	Soil	11-2-16	11-14-16	
DP27-1-1.5	11-146-256	Soil	11-2-16	11-14-16	
DP27-2-2.5	11-146-257	Soil	11-2-16	11-14-16	
DP28-0-0.5	11-146-263	Soil	11-2-16	11-14-16	
DP28-1-1.5	11-146-264	Soil	11-2-16	11-14-16	
DP28-5-5.5	11-146-268	Soil	11-2-16	11-14-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-02					
Client ID:	**DP1-1-1.5**					
Arsenic	**7.4**	2.9	6020A	11-18-16	11-18-16	
Lead	**10**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-06					
Client ID:	**DP1-6-6.5**					
Arsenic	**90**	3.1	6020A	11-18-16	11-18-16	
Lead	**130**	3.1	6020A	11-18-16	11-18-16	
Lab ID:	11-146-07					
Client ID:	**DP1-7-7.5**					
Arsenic	**23**	3.0	6020A	11-18-16	11-18-16	
Lead	**39**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-14					
Client ID:	**DP2-1-1.5**					
Arsenic	**16**	3.0	6020A	11-18-16	11-18-16	
Lead	**34**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-25					
Client ID:	**DP3-1-1.5**					
Arsenic	**12**	2.9	6020A	11-18-16	11-18-16	
Lead	**18**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-28					
Client ID:	**DP3-4-4.5**					
Arsenic	**3.7**	2.9	6020A	11-18-16	11-18-16	
Lead	**3.8**	2.9	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-35					
Client ID:	**DP4-1-1.5**					
Arsenic	**ND**	2.9	6020A	11-18-16	11-18-16	
Lead	**ND**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-44					
Client ID:	**DP5-1-1.5**					
Arsenic	**15**	3.2	6020A	11-18-16	11-18-16	
Lead	**5.8**	3.2	6020A	11-18-16	11-18-16	
Lab ID:	11-146-51					
Client ID:	**DP6-0-0.5**					
Arsenic	**47**	3.7	6020A	11-18-16	11-18-16	
Lead	**57**	3.7	6020A	11-18-16	11-18-16	
Lab ID:	11-146-60					
Client ID:	**DP7-0-0.5**					
Arsenic	**4.5**	3.0	6020A	11-18-16	11-18-16	
Lead	**4.6**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-70					
Client ID:	**DP8-0-0.5**					
Arsenic	**17**	3.1	6020A	11-18-16	11-18-16	
Lead	**15**	3.1	6020A	11-18-16	11-18-16	
Lab ID:	11-146-81					
Client ID:	**DP9-1-1.5**					
Arsenic	**52**	3.1	6020A	11-18-16	11-18-16	
Lead	**31**	3.1	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-83					
Client ID:	**DP9-3-3.5**					
Arsenic	**12**	3.1	6020A	11-18-16	11-18-16	
Lead	**20**	3.1	6020A	11-18-16	11-18-16	
Lab ID:	11-146-91					
Client ID:	**DP10-1-1.5**					
Arsenic	**26**	3.0	6020A	11-18-16	11-18-16	
Lead	**24**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-93					
Client ID:	**DP10-3-3.5**					
Arsenic	**20**	3.0	6020A	11-18-16	11-18-16	
Lead	**42**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-101					
Client ID:	**DP11-2-2.5**					
Arsenic	**10**	3.0	6020A	11-18-16	11-18-16	
Lead	**14**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-102					
Client ID:	**DP11-3-3.5**					
Arsenic	**120**	3.2	6020A	11-18-16	11-18-16	
Lead	**110**	3.2	6020A	11-18-16	11-18-16	
Lab ID:	11-146-109					
Client ID:	**DP12-1-1.5**					
Arsenic	**14**	2.9	6020A	11-18-16	11-18-16	
Lead	**21**	2.9	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-111					
Client ID:	**DP12-3-3.5**					
Arsenic	**37**	3.0	6020A	11-18-16	11-18-16	
Lead	**75**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-115					
Client ID:	**DP12-8-8.5**					
Arsenic	**67**	3.0	6020A	11-18-16	11-18-16	
Lead	**130**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-120					
Client ID:	**DP13-1-1.5**					
Arsenic	**4.3**	2.9	6020A	11-18-16	11-18-16	
Lead	**4.2**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-121					
Client ID:	**DP13-2-2.5**					
Arsenic	**30**	3.0	6020A	11-18-16	11-18-16	
Lead	**41**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-130					
Client ID:	**DP14-2-2.5**					
Arsenic	**27**	3.0	6020A	11-18-16	11-18-16	
Lead	**36**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-133					
Client ID:	**DP14-5-5.5**					
Arsenic	**58**	3.5	6020A	11-18-16	11-18-16	
Lead	**91**	3.5	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-135					
Client ID:	**DP14-7-7.5**					
Arsenic	**120**	3.5	6020A	11-18-16	11-18-16	
Lead	**120**	3.5	6020A	11-18-16	11-18-16	
Lab ID:	11-146-141					
Client ID:	**DP15-1-1.5**					
Arsenic	**57**	3.0	6020A	11-18-16	11-18-16	
Lead	**210**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-142					
Client ID:	**DP15-2-2.5**					
Arsenic	**41**	3.1	6020A	11-18-16	11-18-16	
Lead	**48**	3.1	6020A	11-18-16	11-18-16	
Lab ID:	11-146-145					
Client ID:	**DP15-5-5.5**					
Arsenic	**81**	3.2	6020A	11-18-16	11-18-16	
Lead	**200**	3.2	6020A	11-18-16	11-18-16	
Lab ID:	11-146-150					
Client ID:	**DP16-0-0.5**					
Arsenic	**11**	3.0	6020A	11-18-16	11-18-16	
Lead	**13**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-152					
Client ID:	**DP16-2-2.5**					
Arsenic	**21**	3.0	6020A	11-18-16	11-18-16	
Lead	**44**	3.0	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-162					
Client ID:	**DP17-1-1.5**					
Arsenic	**13**	2.9	6020A	11-18-16	11-18-16	
Lead	**20**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-164					
Client ID:	**DP17-3-3.5**					
Arsenic	**25**	2.9	6020A	11-18-16	11-18-16	
Lead	**39**	2.9	6020A	11-18-16	11-18-16	
Lab ID:	11-146-166					
Client ID:	**DP17-5-5.5**					
Arsenic	**56**	3.6	6020A	11-18-16	11-18-16	
Lead	**85**	3.6	6020A	11-18-16	11-18-16	
Lab ID:	11-146-169					
Client ID:	**DP17-8-8.5**					
Arsenic	**35**	3.2	6020A	11-18-16	11-18-16	
Lead	**22**	3.2	6020A	11-18-16	11-18-16	
Lab ID:	11-146-175					
Client ID:	**DP18-2-2.5**					
Arsenic	**13**	3.0	6020A	11-18-16	11-18-16	
Lead	**19**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-179					
Client ID:	**DP18-6-6.5**					
Arsenic	**160**	3.3	6020A	11-18-16	11-18-16	
Lead	**120**	3.3	6020A	11-18-16	11-18-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-184					
Client ID:	**DP19-1-1.5**					
Arsenic	**75**	4.0	6020A	11-18-16	11-18-16	
Lead	**190**	4.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-185					
Client ID:	**DP19-2-2.5**					
Arsenic	**59**	3.2	6020A	11-18-16	11-18-16	
Lead	**14**	3.2	6020A	11-18-16	11-18-16	
Lab ID:	11-146-193					
Client ID:	**DP20-1-1.5**					
Arsenic	**28**	3.0	6020A	11-18-16	11-18-16	
Lead	**20**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-194					
Client ID:	**DP20-2-2.5**					
Arsenic	**27**	3.0	6020A	11-18-16	11-18-16	
Lead	**10**	3.0	6020A	11-18-16	11-18-16	
Lab ID:	11-146-203					
Client ID:	**DP21-1-1.5**					
Arsenic	**140**	4.3	6020A	11-21-16	11-21-16	
Lead	**280**	4.3	6020A	11-21-16	11-21-16	
Lab ID:	11-146-204					
Client ID:	**DP21-3-3.5**					
Arsenic	**6.9**	3.4	6020A	11-21-16	11-21-16	
Lead	**7.5**	3.4	6020A	11-21-16	11-21-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-212					
Client ID:	**DP22-1-1.5**					
Arsenic	**12**	2.7	6020A	11-21-16	11-21-16	
Lead	**5.9**	2.7	6020A	11-21-16	11-21-16	
Lab ID:	11-146-213					
Client ID:	**DP22-2-2.5**					
Arsenic	**3.1**	2.7	6020A	11-21-16	11-21-16	
Lead	**ND**	2.7	6020A	11-21-16	11-21-16	
Lab ID:	11-146-219					
Client ID:	**DP23-1-1.5**					
Arsenic	**38**	2.9	6020A	11-21-16	11-21-16	
Lead	**58**	2.9	6020A	11-21-16	11-21-16	
Lab ID:	11-146-223					
Client ID:	**DP23-5-5.5**					
Arsenic	**16**	2.9	6020A	11-21-16	11-21-16	
Lead	**5.0**	2.9	6020A	11-21-16	11-21-16	
Lab ID:	11-146-225					
Client ID:	**DP23-7-7.5**					
Arsenic	**16**	2.8	6020A	11-21-16	11-21-16	
Lead	**21**	2.8	6020A	11-21-16	11-21-16	
Lab ID:	11-146-226					
Client ID:	**DP23-8-8.5**					
Arsenic	**11**	3.6	6020A	11-21-16	11-21-16	
Lead	**16**	3.6	6020A	11-21-16	11-21-16	

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TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-228					
Client ID:	**DP24-0-0.5**					
Arsenic	**34**	3.1	6020A	11-21-16	11-21-16	
Lead	**21**	3.1	6020A	11-21-16	11-21-16	
Lab ID:	11-146-235					
Client ID:	**DP24-8-8.5**					
Arsenic	**ND**	2.8	6020A	11-21-16	11-21-16	
Lead	**ND**	2.8	6020A	11-21-16	11-21-16	
Lab ID:	11-146-238					
Client ID:	**DP25-1-1.5**					
Arsenic	**9.2**	2.9	6020A	11-21-16	11-21-16	
Lead	**13**	2.9	6020A	11-21-16	11-21-16	
Lab ID:	11-146-244					
Client ID:	**DP25-9-9.5**					
Arsenic	**49**	2.9	6020A	11-21-16	11-21-16	
Lead	**55**	2.9	6020A	11-21-16	11-21-16	
Lab ID:	11-146-246					
Client ID:	**DP26-1-1.5**					
Arsenic	**3.8**	3.1	6020A	11-21-16	11-21-16	
Lead	**18**	3.1	6020A	11-21-16	11-21-16	
Lab ID:	11-146-247					
Client ID:	**DP26-2-2.5**					
Arsenic	**4.4**	2.8	6020A	11-21-16	11-21-16	
Lead	**7.0**	2.8	6020A	11-21-16	11-21-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-248					
Client ID:	**DP26-3-3.5**					
Arsenic	**35**	3.2	6020A	11-21-16	11-21-16	
Lead	**59**	3.2	6020A	11-21-16	11-21-16	
Lab ID:	11-146-249					
Client ID:	**DP26-4-4.5**					
Arsenic	**74**	4.0	6020A	11-21-16	11-21-16	
Lead	**140**	4.0	6020A	11-21-16	11-21-16	
Lab ID:	11-146-256					
Client ID:	**DP27-1-1.5**					
Arsenic	**31**	3.0	6020A	11-21-16	11-21-16	
Lead	**34**	3.0	6020A	11-21-16	11-21-16	
Lab ID:	11-146-263					
Client ID:	**DP28-0-0.5**					
Arsenic	**15**	3.0	6020A	11-21-16	11-21-16	
Lead	**27**	3.0	6020A	11-21-16	11-21-16	
Lab ID:	11-146-264					
Client ID:	**DP28-1-1.5**					
Arsenic	**13**	2.8	6020A	11-21-16	11-21-16	
Lead	**17**	2.8	6020A	11-21-16	11-21-16	
Lab ID:	11-146-268					
Client ID:	**DP28-5-5.5**					
Arsenic	**13**	3.0	6020A	11-21-16	11-21-16	
Lead	**28**	3.0	6020A	11-21-16	11-21-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-08					
Client ID:	**DP1-8-8.5**					
Arsenic	**4.5**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-146-27					
Client ID:	**DP3-3-3.5**					
Arsenic	**41**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-146-43					
Client ID:	**DP5-0-0.5**					
Arsenic	**69**	3.2	6020A	11-30-16	11-30-16	
Lab ID:	11-146-52					
Client ID:	**DP6-1-1.5**					
Arsenic	**11**	3.2	6020A	11-30-16	11-30-16	
Lab ID:	11-146-82					
Client ID:	**DP9-2-2.5**					
Arsenic	**7.4**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-146-94					
Client ID:	**DP10-5-5.5**					
Arsenic	**4.7**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-146-103					
Client ID:	**DP11-5-5.5**					
Arsenic	**6.8**	3.2	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-116					
Client ID:	**DP12-9-9.5**					
Arsenic	**3.2**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-146-125					
Client ID:	**DP13-7-7.5**					
Arsenic	**22**	2.9	6020A	11-30-16	11-30-16	
Lab ID:	11-146-136					
Client ID:	**DP14-8-8.5**					
Arsenic	**5.8**	3.2	6020A	11-30-16	11-30-16	
Lab ID:	11-146-146					
Client ID:	**DP15-6-6.5**					
Arsenic	**7.1**	3.4	6020A	11-30-16	11-30-16	
Lab ID:	11-146-158					
Client ID:	**DP16-10-10.5**					
Arsenic	**7.5**	3.2	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-170					
Client ID:	**DP17-9-9.5**					
Arsenic	**6.6**	3.2	6020A	11-30-16	11-30-16	
Lab ID:	11-146-180					
Client ID:	**DP18-7-7.5**					
Arsenic	**5.5**	3.2	6020A	11-30-16	11-30-16	
Lab ID:	11-146-186					
Client ID:	**DP19-3-3.5**					
Arsenic	**15**	3.4	6020A	11-30-16	11-30-16	
Lab ID:	11-146-195					
Client ID:	**DP20-3-3.5**					
Arsenic	**ND**	2.8	6020A	11-30-16	11-30-16	
Lab ID:	11-146-229					
Client ID:	**DP24-1-1.5**					
Arsenic	**23**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-146-250					
Client ID:	**DP26-5-5.5**					
Arsenic	**ND**	2.8	6020A	11-30-16	11-30-16	
Lab ID:	11-146-257					
Client ID:	**DP27-2-2.5**					
Arsenic	**ND**	2.9	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-146-126					
Client ID:	**DP13-8-8.5**					
Arsenic	**4.0**	3.1	6020A	12-2-16	12-2-16	
Lab ID:	11-146-230					
Client ID:	**DP24-2-2.5**					
Arsenic	**3.6**	3.0	6020A	12-2-16	12-2-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1118SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1118SM2

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-21-16
Date Analyzed: 11-21-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1121SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-06

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**73.9**	**63.1**	16	2.5	
Lead	**104**	**91.6**	13	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-120

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**3.80**	**3.26**	15	2.5	
Lead	**3.65**	**3.46**	5	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-21-16
Date Analyzed: 11-21-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-235

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	2.5	
Lead	**ND**	**ND**	NA	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-06

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**154**	80	**162**	88	5	
Lead	250	**325**	89	**329**	90	1	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-18-16
Date Analyzed: 11-18-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-120

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**85.3**	81	**82.1**	78	4	
Lead	250	**217**	86	**215**	85	1	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-21-16
Date Analyzed: 11-21-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-235

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**88.8**	89	**93.4**	93	5	
Lead	250	**225**	90	**231**	92	3	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted:	11-30-16
Date Analyzed:	11-30-16
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1130SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-30-16
Date Analyzed: 11-30-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-116

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**2.63**	**ND**	NA	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-30-16
Date Analyzed: 11-30-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-116

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**86.2**	84	**83.5**	81	3	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted:	12-2-16
Date Analyzed:	12-2-16
Matrix:	Soil
Units:	mg/kg (ppm)
Lab ID:	MB1202SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 12-2-16
Date Analyzed: 12-2-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-230

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**3.02**	**ND**	NA	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

TOTAL ARSENIC
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 12-2-16
Date Analyzed: 12-2-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-146-230

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**80.8**	78	**81.9**	79	1	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-18&30&12-1-16

Client ID	Lab ID	% Moisture
DP1-1-1.5	11-146-02	13
DP1-6-6.5	11-146-06	18
DP1-7-7.5	11-146-07	15
DP1-8-8.5	11-146-08	18
DP2-1-1.5	11-146-14	15
DP3-1-1.5	11-146-25	15
DP3-3-3.5	11-146-27	17
DP3-4-4.5	11-146-28	14
DP4-1-1.5	11-146-35	14
DP5-0-0.5	11-146-43	22
DP5-1-1.5	11-146-44	23
DP6-0-0.5	11-146-51	32
DP6-1-1.5	11-146-52	21
DP7-0-0.5	11-146-60	16
DP8-0-0.5	11-146-70	18
DP9-1-1.5	11-146-81	18
DP9-2-2.5	11-146-82	18
DP9-3-3.5	11-146-83	20
DP10-1-1.5	11-146-91	17
DP10-3-3.5	11-146-93	18
DP10-5-5.5	11-146-94	19
DP11-2-2.5	11-146-101	18
DP11-3-3.5	11-146-102	22
DP11-5-5.5	11-146-103	22
DP12-1-1.5	11-146-109	15
DP12-3-3.5	11-146-111	16
DP12-8-8.5	11-146-115	18

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-18&30&12-1-16

Client ID	Lab ID	% Moisture
DP12-9-9.5	11-146-116	17
DP13-1-1.5	11-146-120	12
DP13-2-2.5	11-146-121	16
DP13-7-7.5	11-146-125	15
DP13-8-8.5	11-146-126	20
DP14-2-2.5	11-146-130	16
DP14-5-5.5	11-146-133	28
DP14-7-7.5	11-146-135	28
DP14-8-8.5	11-146-136	22
DP15-1-1.5	11-146-141	18
DP15-2-2.5	11-146-142	19
DP15-5-5.5	11-146-145	22
DP15-6-6.5	11-146-146	27
DP16-0-0.5	11-146-150	16
DP16-2-2.5	11-146-152	16
DP16-10-10.5	11-146-158	23
DP17-1-1.5	11-146-162	14
DP17-3-3.5	11-146-164	13
DP17-5-5.5	11-146-166	30
DP17-8-8.5	11-146-169	21
DP17-9-9.5	11-146-170	21
DP18-2-2.5	11-146-175	16
DP18-6-6.5	11-146-179	23
DP18-7-7.5	11-146-180	21
DP19-1-1.5	11-146-184	38
DP19-2-2.5	11-146-185	23
DP19-3-3.5	11-146-186	26

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-146
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-18&30&12-1-16

Client ID	Lab ID	% Moisture
DP20-1-1.5	11-146-193	15
DP20-2-2.5	11-146-194	17
DP20-3-3.5	11-146-195	12
DP21-1-1.5	11-146-203	41
DP21-3-3.5	11-146-204	26
DP22-1-1.5	11-146-212	7
DP22-2-2.5	11-146-213	6
DP23-1-1.5	11-146-219	14
DP23-5-5.5	11-146-223	15
DP23-7-7.5	11-146-225	11
DP23-8-8.5	11-146-226	30
DP24-0-0.5	11-146-228	20
DP24-1-1.5	11-146-229	16
DP24-2-2.5	11-146-230	15
DP24-8-8.5	11-146-235	12
DP25-1-1.5	11-146-238	13
DP25-9-9.5	11-146-244	15
DP26-1-1.5	11-146-246	19
DP26-2-2.5	11-146-247	10
DP26-3-3.5	11-146-248	21
DP26-4-4.5	11-146-249	38
DP26-5-5.5	11-146-250	11
DP27-1-1.5	11-146-256	16
DP27-2-2.5	11-146-257	15
DP28-0-0.5	11-146-263	16
DP28-1-1.5	11-146-264	12
DP28-5-5.5	11-146-268	17

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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

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

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

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

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

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

I - Compound recovery is outside of the control limits.

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

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

L - The RPD is outside of the control limits.

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

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

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

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

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

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

Q - Surrogate recovery is outside of the control limits.

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

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

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

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

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

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

X - Sample extract treated with a mercury cleanup procedure.

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

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

Z -

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

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OnSite Environmental, Inc.

Analytical Laboratory Testing Services
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Chain of Custody

Company: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones Phase II
Project Manager: Tricia DeOme
Sampled by: HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☒ STANDARD

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number: 11-146

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	ARSENIC ONLY	TO MOISTURE
1 DP1-0-0.5	11/1/2016	835	S	1			
2 DP1-1-1.5	11/1/2016	838	S	1	X		X
3 DP1-~~3.5~~ 3-3.5 DB.	11/1/2016	843	S	1			
4 DP1-4-4.5	11/1/2016	844	S	1			
5 DP1-5-5.5	11/1/2016	845	S	1			
6 DP1-6-6.5	11/1/2016	855	S	1	X		X
7 DP1-7-7.5	11/1/2016	856	S	1	X		X
8 DP1-8-8.5	11/1/2016	857	S	1	(X) - As only		(X)
9 DP1-9-9.5	11/1/2016	858	S	1			
10 DP1-10-10.5	11/1/2016	901	S	1			
11 DP1-11-11.5	11/1/2016	902	S	1			
12 DP1-12-12.5	11/1/2016	903	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

(X) Added 11/22/16. DB (5 DAY TAT)
ARSENIC ONLY
O Added 12/1/16. DB (SAME day TAT)

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Geo	11/14/16		Alpha	11/14/16 1:05p
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
CA	Alpha	11/14 1504		OES	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-146

OnSite Environmental, Inc.

Analytical Laboratory Testing Services
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Phone: (425) 883-3881
www.onsite-env.com

Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number: 11-146

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
13 DP2-0-0.5	11/1/2016	1120	S	1		
14 DP2-1-1.5	11/1/2016	1121	S	1	X	10
15 DP2-2-2.5	11/1/2016	1122	S	1		
16 DP2-~~3.5~~ 3-3.5 DB	11/1/2016	1123	S	1		
17 DP2-5-5.5	11/1/2016	1130	S	1		
18 DP2-6-6.5	11/1/2016	1131	S	1		
19 DP2-7-7.5	11/1/2016	1132	S	1		
20 DP2-8-8.5	11/1/2016	1133	S	1		
21 DP2-9-9.5	11/1/2016	1140	S	1		
22 DP2-10-10.5	11/1/2016	1141	S	1		
23 DP2-11-11.5	11/1/2016	1142	S	1		
24 DP3-0-0.5	11/1/2016	915	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodie Sleeden	GEI	1:05p 11/14/16		Alpha	1:05p 11/14/16
~~Alpha~~	~~Alpha~~	11/14 1509			11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-146

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	90 MDL STATE	Comments
25 DP3-1-1.5	11/1/2016	916	S	1	X	X	
26 DP3-2-2.5	11/1/2016	920	S	1			
27 DP3-~~3.8.5~~ 3-3.5 DP	11/1/2016	921	S	1	X - As only	X	
28 DP3-4.4.5	11/1/2016	922	S	1	X		
29 DP3-5-5.5	11/1/2016	926	S	1			
30 DP3-6-6.5	11/1/2016	929	S	1			
31 ~~DP3-7-7.5~~ DP3-7-7.5 DUP	11/1/2016	930	S	1			
32 DP3-8-8.5	11/1/2016	931	S	1			
33 DP3-9-9.5	11/1/2016	932	S	1			
34 DP4-0-0.5	11/1/2016	1053	S	1			
35 DP4-1-1.5	11/1/2016	1054	S	1	X	X	
36 DR4-~~3.9.5~~ 3-3.5 DP	11/1/2016	1056	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GEI	1305 11/14/16	[signature]	Alpha	11/14/16 1305
[signature]	Alpha	11/14 1509	[signature]	OSE	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% MOISTURE	Comments
37	DP4-4-4.5	11/1/2016	1057	S	1			
38	DP4-5-5.5	11/1/2016	1106	S	1			
39	DP4-6-6.5	11/1/2016	1107	S	1			
40	DP4-7-7.5	11/1/2016	1108	S	1			
41	DP4-8-8.5	11/1/2016	1109	S	1			
42	DP4-9-9.5	11/1/2016	1110	S	1			
43	DP5-0-0.5	11/1/2016	1000	S	1	⊗ - As only	⊗	
44	DP5-1-1.5	11/1/2016	1001	S	1	X	D	
45	DP5-2-2.5	11/1/2016	1002	S	1			
46	DP5-5-5.5	11/1/2016	1007	S	1			
47	DP5-6-6.5	11/1/2016	1010	S	1			
48	DP5-7-7.5	11/1/2016	1011	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jackie Shebler	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		CDE	11/14/16 1305

 11-146

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% MOISTURE
49 DP5-8-8.5	11/1/2016	1012	S	1		
50 DP5-9-9.5	11/1/2016	1013	S	1		
51 DP6-0-0.5	11/1/2016	1024	S	1	X	⊗
52 DP6-1-1.5	11/1/2016	1025	S	1	⊗ -As only	⊗
53 DP6-~~3.0.5~~ 3-3.5 DB	11/1/2016	1027	S	1		
54 DP6-4-4.5	11/1/2016	1028	S	1		
55 DP6-5-5.5	11/1/2016	1032	S	1		
56 DP6-6-6.5	11/1/2016	1033	S	1		
57 DP6-7-7.5	11/1/2016	1034	S	1		
58 DP6-8-8.5	11/1/2016	1035	S	1		
59 DP6-9-9.5	11/1/2016	1036	S	1		
60 DP7-0-0.5	11/1/2016	1240	S	1	X	⊗

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
JoAnne Slebber	GEE	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14/16 1504		GEE	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

 11-146

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Chain of Custody

Laboratory Number:

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)
(Check One)
TAT if different from Below ______
- ☐ 2 weeks
- ☐ 1 week
- ☐ 2 days
- ☐ 1 day

Lab ID	Sample ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% MOISTURE	Comments
61	DP7-1-1.5	11/1/2016	1241	S	1			
62	DP7-2-2.5	11/1/2016	1242	S	1			
63	DP7-~~3-3.5~~ 3-3.5 DB	11/1/2016	1243	S	1			
64	DP7-4-4.5	11/1/2016	1244	S	1			
65	DP7-5-5.5	11/1/2016	1245	S	1			
66	DP7-6-6.5	11/1/2016	1246	S	1			
67	DP7-7-7.5	11/1/2016	1247	S	1			
68	DP7-8-8.5	11/1/2016	1248	S	1			
69	DP7-9-9.5	11/1/2016	1249	S	1			
20	DP8-0-0.5	11/1/2016	1210	S	1	X	X	
21	DP8-1-1.5	11/1/2016	1211	S	1			
72	DP8-2-2.5	11/1/2016	1212	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GE&E	11/14/16 1305	[signature]	Alpha	11/14/16 1305
[signature]	Alpha	11/14 1509	[signature]	OSE	11/14/16 1305

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number: 11-146

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	SUBCONTRACT
73 DP8-~~3.0.5~~ 3-3.5 DB	11/1/2016	1213	S	1		
74 DP8-4-4.5	11/1/2016	1214	S	1		
75 DP8-5-5.5	11/1/2016	1218	S	1		
76 DP8-6-6.5	11/1/2016	1219	S	1		
77 DP8-7-7.5	11/1/2016	1220	S	1		
78 DP8-8-8.5	11/1/2016	1221	S	1		
79 DP8-9-9.5	11/1/2016	1222	S	1		
80 DP9-0-0.5	11/1/2016	1324	S	1		
81 DP9-1-1.5	11/1/2016	1325	S	1	X	X
82 DP9-2-2.5	11/1/2016	1326	S	1	⊗ - As only	⊗
83 DP9-~~3.0.5~~ 3-3.5 DB	11/1/2016	1327	S	1	X	X
84 DP9-4-4.5	11/1/2016	1328	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jaylee Stedman	GRE	11/14/16 1305		Alpha	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1509		GRE	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-146

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	8MDISPOSE
85 DP9-5-5.5	11/1/2016	1330	S	1		
86 DP9-6-6.5	11/1/2016	1331	S	1		
87 DP9-7-7.5	11/1/2016	1332	S	1		
88 DP9-8-8.5	11/1/2016	1333	S	1		
89 DP9-9-9.5	11/1/2016	1334	S	1		
90 DP10-0-0.5	11/1/2016	1352	S	1		
91 DP10-1-1.5	11/1/2016	1353	S	1	X	⊗
92 DP10-2-2.5	11/1/2016	1354	S	1		
93 DP10-~~3.5~~ 3-3.5 DB.	11/1/2016	1355	S	1	X	⊗
94 DP10-5-5.5	11/1/2016	1402	S	1	⊗ - As only	⊗
95 DP10-6-6.5	11/1/2016	1403	S	1		
96 DP10-7-7.5	11/1/2016	1404	S	1		

Comments

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jackie Sletten	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1504		ONE	11/14/16 1305

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11-146

Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
97 DP10-8-8.5	11/1/2016	1405	S	1		
98 DP10-9-9.5	11/1/2016	1406	S	1		
99 DP11-0-0.5	11/2/2016	1031	S	1		
100 DP11-1-1.5	11/2/2016	1032	S	1		
101 DP11-2-2.5	11/2/2016	1033	S	1	X	
102 DP11-~~3.5~~ 3-3.5 DP	11/2/2016	1034	S	1	X	
103 DP11-5-5.5	11/2/2016	1057	S	1	⊗ - AS only	
104 DP11-6-6.5	11/2/2016	1058	S	1		
105 DP11-7-7.5	11/2/2016	1059	S	1		
106 DP11-8-8.5	11/2/2016	1100	S	1		
107 DP11-9-9.5	11/2/2016	1101	S	1		
108 DP12-0-0.5	11/1/2016	1425	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jackie Hebden	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		ORE	11/14/16 1305

Page 10 of 24 | 11-146

OnSite Environmental, Inc.

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	90 DAY STORAGE
109 DP12-1-1.5	11/1/2016	1426	S	1	X	X
110 DP12-2-2.5	11/1/2016	1427	S	1		
111 DP12-~~3.0.5~~ 3-3.5 DB	11/1/2016	1428	S	1	X	X
112 DP12-5-5.5	11/1/2016	1433	S	1		
113 DP12-6-6.5	11/1/2016	1434	S	1		
114 DP12-7-7.5	11/1/2016	1435	S	1		
115 DP12-8-8.5	11/1/2016	1436	S	1	X	X
116 DP12-9-9.5	11/1/2016	1437	S	1	(X) - As only	(X)
117 DP12-10-10.5	11/1/2016	1438	S	1		
118 DP12-11-11.5	11/1/2016	1439	S	1		
119 DP13-0-0.5	11/2/2016	1108	S	1		
120 DP13-1-1.5	11/2/2016	1109	S	1	X	X

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jackie Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1505		ESE	11/14/16 1305

Page 11 of 24 11-146

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Arsenic only	90 MOISTURE
121 DP13-2-2.5	11/2/2016	1110	S	1	X		O
122 DP13-~~3.5~~ 3-3.5 DB	11/2/2016	1111	S	1			
123 DP13-4-4.5	11/2/2016	1112	S	1			
124 DP13-5-5.5	11/2/2016	1120	S	1			
			S	1			
			S	1			
			S	1			
125 DP13-7-7.5	11/2/2016	1122	S	1	⊗ -As only		⊗
126 DP13-8-8.5	11/2/2016	1123	S	1		O	O
127 DP13-9-9.5	11/2/2016	1138	S	1			
128 DP14-0-0.5	11/1/2016	1500	S	1			
129 DP14-1-1.5	11/1/2016	1501	S	1			

Comments

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GE	11/14/16 1305	[signature]	Alpha	11/14/16 1305
Relinquished by: [signature]	Company: Alpha	Date/Time: 11/14 1509	Received by: [signature]	Company: GE	Date/Time: 11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

11-146

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below ______

- ☐ 2 weeks
- ☐ 1 week
- ☐ 2 days
- ☐ 1 day

Laboratory Number:

Lab ID	Sample ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% Moisture	Comments
130	DP14-2-2.5	11/1/2016	1502	S	1	X	X	
131	DP14-~~3-3.5~~ 3-3.5 DB	11/1/2016	1503	S	1			
132	DP14-4-4.5	11/1/2016	1504	S	1			
133	DP14-5-5.5	11/1/2016	1516	S	1	X	X	
134	DP14-6-6.5	11/1/2016	1517	S	1			
135	DP14-7-7.5	11/1/2016	1518	S	1	X	X	
136	DP14-8-8.5	11/1/2016	1519	S	1	⊗ - As only	⊗	
137	DP14-9-9.5	11/1/2016	1520	S	1			
138	DP14-10-10.5	11/1/2016	1521	S	1			
139	DP14-11-11.5	11/1/2016	1522	S	1			
140	DP15-0-0.5	11/2/2016	1003	S	1			
141	DP15-1-1.5	11/2/2016	1004	S	1	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GEI	11/14/16 1305	[signature]	Alpha	11/14/16 1305
[signature]	Alpha	11/14 1509	[signature]	OSE	11/14/16 1305

11-146

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	90 MOISTURE	Comments
142 DP15-2-2.5	11/2/2016	1005	S	1	X	X	
143 DP15-~~3.5~~ 3-3.5 DP3	11/2/2016	1006	S	1			
144 DP15-4-4.5	11/2/2016	1007	S	1			
145 DP15-5-5.5	11/2/2016	1013	S	1	X	X	
146 DP15-6-6.5	11/2/2016	1014	S	1	X - AS only	X	
147 DP15-7-7.5	11/2/2016	1015	S	1			
148 DP15-8-8.5	11/2/2016	1016	S	1			
149 DP15-9-9.5	11/2/2016	1017	S	1			
150 DP16-0-0.5	11/2/2016	1153	S	1	X	X	
151 DP16-1-1.5	11/2/2016	1154	S	1			
152 DP16-2-2.5	11/2/2016	1155	S	1	X	X	
153 DP16-~~3.5~~ 3-3.5 DP3	11/2/2016	1156	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Debbie Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1509		GEI	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

 11-146

OnSite Environmental, Inc.
Analytical Laboratory Testing Services
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Phone: (425) 883-3881
www.onsite-env.com

Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)
(Check One)
TAT if different from Below _____
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Archive Storage	Comments
154	DP16-4-4.5	11/2/2016	1157	S	1			
155	DP16-5-5.5	11/2/2016	1208	S	1			
156	DP16-6-6.5	11/2/2016	1209	S	1			
157	DP16-7-7.5	11/2/2016	1210	S	1			
				S	1			
				S	1			
				S	1			
158	DP16-10-10.5	11/2/2016	1211	S	1	X - As only	X	
159	DP16-11-11.5	11/2/2016	1212	S	1			
160	DP16-12-12.5	11/2/2016	1213	S	1			
161	DP17-0-0.5	11/1/2016	1538	S	1			
162	DP17-1-1.5	11/1/2016	1539	S	1	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jackie Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1504		GSE	11/14/16 1305

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% MOISTURE
163 DP17-2-2.5	11/1/2016	1540	S	1		
164 DP17-~~3.5~~ 3-3.5 DB.	11/1/2016	1541	S	1	X	X
165 DP17-4-4.5	11/1/2016	1542	S	1		
166 DP17-5-5.5	11/1/2016	1550	S	1	X	X
167 DP17-6-6.5	11/1/2016	1551	S	1		
168 DP17-7-7.5	11/1/2016	1552	S	1		
169 DP17-8-8.5	11/1/2016	1553	S	1	X	X
170 DP17-9-9.5	11/1/2016	1554	S	1	(X) - As only	(X)
171 DP17-10-10.5	11/1/2016	1555	S	1		
172 DP17-11-11.5	11/1/2016	1556	S	1		
173 DP18-0-0.5	11/2/2016	1231	S	1		
174 DP18-1-1.5	11/2/2016	1232	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jolee Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1505		GEE	11/14/16 1305

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Chain of Custody

Company: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones Phase II
Project Manager: Tricia DeOme
Sampled by: HLM

Turnaround Request (in working days)
(Check One)
TAT if different from Below _____
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	90 MOISTURE
175 DP18-2-2.5	11/2/2016	1233	S	1	X	X
176 DP18-~~3.5~~ 3-3.5 DD	11/2/2016	1234	S	1		
177 DP18-4-4.5	11/2/2016	1235	S	1		
178 DP18-5-5.5	11/2/2016	1236	S	1		
179 DP18-6-6.5	11/2/2016	1237	S	1	X	X
180 DP18-7-7.5	11/2/2016	1238	S	1	⊗ - As only	⊗
181 DP18-8-8.5	11/2/2016	1239	S	1		
182 DP18-9-9.5	11/2/2016	1240	S	1		
183 DP19-0-0.5	11/2/2016	856	S	1		
184 DP19-1-1.5	11/2/2016	857	S	1	X	X
185 DP19-2-2.5	11/2/2016	858	S	1	X	X
186 DP19-~~3.5~~ 3-3.5 DD	11/2/2016	859	S	1	⊗ - As only	⊗

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodie Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1504		CORE	11/14/16 1305

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number: 11-146

Comments

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Soil Sample
187	DP19-5-5.5	11/2/2016	901	S	1		
188	DP19-6-6.5	11/2/2016	902	S	1		
189	DP19-7-7.5	11/2/2016	903	S	1		
190	DP19-8-8.5	11/2/2016	904	S	1		
191	DP19-9-9.5	11/2/2016	905	S	1		
192	DP20-0-0.5	11/2/2016	946	S	1		
193	DP20-1-1.5	11/2/2016	947	S	1	X	X
194	DP20-2-2.5	11/2/2016	948	S	1	X	X
195	DP20-~~3.5~~ 3-3.5 DB	11/2/2016	949	S	1	⊗ - As only	⊗
196	DP20-4-4.5	11/2/2016	950	S	1		
197	DP20-5-5.5	11/2/2016	953	S	1		
198	DP20-6-6.5	11/2/2016	954	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jody Sheldon	GeoE	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		GeoE	11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-146

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

Special Instructions/QC Requirements & Comments: Arsenic and Lead detection limits 5 milligram per kilogram

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
199 DP20-7-7.5	11/2/2016	955	S	1		
200 DP20-8-8.5	11/2/2016	956	S	1		
201 DP20-9-9.5	11/2/2016	957	S	1		
202 DP21-0-0.5	11/2/2016	1257	S	1		
203 DP21-1-1.5	11/2/2016	1258	S	1	X	
204 DP21-~~3.5~~ 3-3.5 DB	11/2/2016	1300	S	1	X	
205 DP21-4-4.5	11/2/2016	1301	S	1		
206 DP21-5-5.5	11/2/2016	1306	S	1		
207 DP21-6-6.5	11/2/2016	1307	S	1		
208 DP21-7-7.5	11/2/2016	1308	S	1		
209 DP21-8-8.5	11/2/2016	1309	S	1		
210 DP21-9-9.5	11/2/2016	1310	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodie Sheldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14/16 1507		QAE	11/14/16 1305

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
211	DP22-0-0.5	11/2/2016	917	S	1		
212	DP22-1-1.5	11/2/2016	918	S	1	X	
213	DP22-2-2.5	11/2/2016	919	S	1	X	
214	DP22-5-5.5	11/2/2016	930	S	1		
215	DP22-6-6.5	11/2/2016	931	S	1		
216	DP22-7-7.5	11/2/2016	932	S	1		
217				S	1		
218	DP23-0-0.5	11/2/2016	1354	S	1		
219	DP23-1-1.5	11/2/2016	1355	S	1	X	
220	DP23-2-2.5	11/2/2016	1356	S	1		
221	DP23-~~3.3.5~~ 3-3.5 DUP	11/2/2016	1357	S	1		
222	DP23-4-4.5	11/2/2016	1358	S	1		

Arsenics

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GEI	11/14/16 1305	[signature]	Alpha	11/14/16 1305
Relinquished by: [signature]	Company: Alpha	Date/Time: 11/14 1509	Received by: [signature]	Company: OSE	Date/Time: 11/14/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

Laboratory Number:

Company: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones Phase II
Project Manager: Tricia DeOme
Sampled by: HLM

Turnaround Request (in working days)
(Check One)
TAT if different from Below ______
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Arsenic only	% Moisture	Comments
223	DP23-5-5.5	11/2/2016	1359	S	1	X		X	
224	DP23-6-6.5	11/2/2016	1400	S	1				
225	DP23-7-7.5	11/2/2016	1401	S	1	X		X	
226	DP23-8-8.5	11/2/2016	1402	S	1	X		X	
227	DP23-9-9.5	11/2/2016	1403	S	1				
228	DP24-0-0.5	11/2/2016	1329	S	1	X		X	
229	DP24-1-1.5	11/2/2016	1330	S	1	⊗ -As only		⊗	
230 ~~280~~	DP24-2-2.5	11/2/2016	1331	S	1		O	O	
231 ~~281~~	DP24-~~3-3.5~~ 3-3.5 D3	11/2/2016	1332	S	1				
232 ~~282~~	DP24-5-5.5	11/2/2016	1341	S	1				
233 ~~283~~	DP24-6-6.5	11/2/2016	1342	S	1				
234 ~~284~~	DP24-7-7.5	11/2/2016	1343	S	1				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

	Company:	Date/Time:		Company:	Date/Time:
Relinquished by: Jodie Shelden	GEI	11/14/16 1305	Received by: [signature]	Alpha	11/14/16 1305
Relinquished by: [signature]	Alpha	11/14 1509	Received by: [signature]	OSE	11/14/16 1305
Relinquished by:			Received by:		

11-146

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	% Moisture
235 DP24-8-8.5	11/2/2016	1344	S	1	X	X
236 DP24-9-9.5	11/2/2016	1345	S	1		
237 DP25-0-0.5	11/2/2016	1438	S	1		
238 DP25-1-1.5	11/2/2016	1439	S	1	X	X
239 DP25-2-2.5	11/2/2016	1440	S	1		
240 DP25-~~3.5~~ 3-3.5 DB	11/2/2016	1441	S	1		
241 DP25-4-4.5	11/2/2016	1442	S	1		
242 DP25-5-5.5	11/2/2016	1503	S	1		
243 DP25-6-6.5	11/2/2016	1504	S	1		

Comments

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodie Sleldon	GEI	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		ONE	11/14/16 1305

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
244 ~~244~~ DP25-9-9.5	11/2/2016	1506	S	1	X	
245 ~~245~~ DP26-0-0.5	11/2/2016	1507	S	1		
246 ~~246~~ DP26-1-1.5	11/2/2016	1508	S	1	X	
247 ~~247~~ DP26-2-2.5	11/2/2016	1509	S	1	X	
248 ~~248~~ DP26-~~3.0-5~~ 3-3.5 DB	11/2/2016	1510	S	1	X	
249 ~~249~~ DP26-4-4.5	11/2/2016	1511	S	1	X	
250 ~~300~~ DP26-5-5.5	11/2/2016	1512	S	1	⊗ - As only	
251 ~~301~~ DP26-6-6.5	11/2/2016	1513	S	1		
252 ~~302~~ DP26-7-7.5	11/2/2016	1514	S	1		
253 ~~303~~ DP26-8-8.5	11/2/2016	1515	S	1		
254 ~~304~~ DP26-9-9.5	11/2/2016	1516	S	1		
255 ~~305~~ DP27-0-0.5	11/2/2016	1542	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodey Sheldon	GEI	11/4/16 1305		Alpha	11/4/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/4 1509		ORE	11/4/16 1305
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-146

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)
(Check One)
TAT if different from Below _____
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Comments
256 ~~306~~ DP27-1-1.5	11/2/2016	1543	S	1	X	
257 ~~307~~ DP27-2-2.5	11/2/2016	1544	S	1	⊗ - AS only	
258 ~~308~~ DP27-~~3.0-3.5~~ 3-3.5 DB	11/2/2016	1545	S	1		
259 ~~309~~ DP27-5-5.5	11/2/2016	1550	S	1		
260 ~~310~~ DP27-6-6.5	11/2/2016	1551	S	1		
261 ~~311~~ DP27-7-7.5	11/2/2016	1552	S	1		
262 ~~312~~ DP27-8-8.5	11/2/2016	1553	S	1		
263 ~~313~~ DP28-0-0.5	11/2/2016	1600	S	1	X	
264 ~~314~~ DP28-1-1.5	11/2/2016	1601	S	1	X	
265 ~~315~~ DP28-2-2.5	11/2/2016	1602	S	1		
266 ~~316~~ DP28-~~3.0-3.5~~ 3-3.5 DB	11/2/2016	1603	S	1		
267 ~~317~~ DP28-4-4.5	11/2/2016	1604	S	1		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Andrea Shelden	CoE	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		CoE	11/14/16 1305

11-146

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☐ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Moisture	Comments
268 ~~318~~ DP28-5-5.5	11/2/2016	1605	S	1	X	☐	
269 ~~319~~ DP28-6-6.5	11/2/2016	1606	S	1			
270 ~~320~~ DP28-7-7.5	11/2/2016	1607	S	1			
271 ~~321~~ DP28-8-8.5	11/2/2016	1608	S	1			
272 ~~322~~ DP28-9-9.5	11/2/2016	1618	S	1			
273 DP27-4-4.5		1547	S	1			
274 DP27-9-9.5		1554	S	1			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jodie Shelden	GEE	11/14/16 1305		Alpha	11/14/16 1305
	Alpha	11/14 1509		ORE	11/14/16 1305

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

December 2, 2016

Tricia DeOme
GeoEngineers, Inc.
1101 Fawcett Avenue South, Suite 200
Tacoma, WA 98402

Re: Analytical Data for Project 10068-002-00
Laboratory Reference No. 1611-147

Dear Tricia:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 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: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

Case Narrative

Samples were collected on November 8 and 9, 2016 and received by the laboratory on November 14, 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: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
TP1-0-0.5	11-147-01	Soil	11-9-16	11-14-16	
TP1-1-1.5	11-147-02	Soil	11-9-16	11-14-16	
TP1-2-2.5	11-147-03	Soil	11-9-16	11-14-16	
TP1-3-3.5	11-147-04	Soil	11-9-16	11-14-16	
TP2-1-1.5	11-147-13	Soil	11-9-16	11-14-16	
TP2-3-3.5	11-147-15	Soil	11-9-16	11-14-16	
TP2-5-5.5	11-147-17	Soil	11-9-16	11-14-16	
TP2-6-6.5	11-147-18	Soil	11-9-16	11-14-16	
TP3-0-0.5	11-147-23	Soil	11-9-16	11-14-16	
TP4-0-0.5	11-147-31	Soil	11-9-16	11-14-16	
TP5-1-1.5	11-147-40	Soil	11-9-16	11-14-16	
TP5-2-2.5	11-147-41	Soil	11-9-16	11-14-16	
TP6-0-0.5	11-147-51	Soil	11-9-16	11-14-16	
TP6-1-1.5	11-147-52	Soil	11-9-16	11-14-16	
TP7-1-1.5	11-147-64	Soil	11-8-16	11-14-16	
TP7-2-2..5	11-147-65	Soil	11-8-16	11-14-16	
TP7-3-3.5	11-147-66	Soil	11-8-16	11-14-16	
TP8-1-1.5	11-147-75	Soil	11-8-16	11-14-16	
TP8-2-2.5	11-147-76	Soil	11-8-16	11-14-16	
TP8-3-3.5	11-147-77	Soil	11-8-16	11-14-16	
TP9-0-0.5	11-147-84	Soil	11-8-16	11-14-16	
TP9-1-1.5	11-147-85	Soil	11-8-16	11-14-16	
TP9-2-2.5	11-147-86	Soil	11-8-16	11-14-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
TP9-8-8.5	11-147-92	Soil	11-8-16	11-14-16	
TP10-0-0.5	11-147-96	Soil	11-8-16	11-14-16	
TP10-1-1.5	11-147-97	Soil	11-8-16	11-14-16	
TP10-2-2.5	11-147-98	Soil	11-8-16	11-14-16	
TP11-0-0.5	11-147-110	Soil	11-8-16	11-14-16	
TP11-1-1.5	11-147-111	Soil	11-8-16	11-14-16	
TP11-2-2.5	11-147-112	Soil	11-8-16	11-14-16	
TP11-3-3.5	11-147-113	Soil	11-8-16	11-14-16	
TP12-1-1.5	11-147-120	Soil	11-8-16	11-14-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-02					
Client ID:	**TP1-1-1.5**					
Arsenic	**180**	6.2	6020A	11-22-16	11-22-16	
Lead	**310**	6.2	6020A	11-22-16	11-22-16	
Lab ID:	11-147-13					
Client ID:	**TP2-1-1.5**					
Arsenic	**13**	2.9	6020A	11-22-16	11-22-16	
Lead	**12**	2.9	6020A	11-22-16	11-22-16	
Lab ID:	11-147-17					
Client ID:	**TP2-5-5.5**					
Arsenic	**26**	3.1	6020A	11-22-16	11-22-16	
Lead	**38**	3.1	6020A	11-22-16	11-22-16	
Lab ID:	11-147-23					
Client ID:	**TP3-0-0.5**					
Arsenic	**6.0**	3.7	6020A	11-22-16	11-22-16	
Lead	**14**	3.7	6020A	11-22-16	11-22-16	
Lab ID:	11-147-31					
Client ID:	**TP4-0-0.5**					
Arsenic	**3.3**	3.2	6020A	11-22-16	11-22-16	
Lead	**8.1**	3.2	6020A	11-22-16	11-22-16	
Lab ID:	11-147-40					
Client ID:	**TP5-1-1.5**					
Arsenic	**49**	3.0	6020A	11-22-16	11-22-16	
Lead	**60**	3.0	6020A	11-22-16	11-22-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-51					
Client ID:	**TP6-0-0.5**					
Arsenic	**69**	3.0	6020A	11-22-16	11-22-16	
Lead	**44**	3.0	6020A	11-22-16	11-22-16	
Lab ID:	11-147-64					
Client ID:	**TP7-1-1.5**					
Arsenic	**12**	2.9	6020A	11-22-16	11-22-16	
Lead	**13**	2.9	6020A	11-22-16	11-22-16	
Lab ID:	11-147-65					
Client ID:	**TP7-2-2..5**					
Arsenic	**55**	3.0	6020A	11-22-16	11-22-16	
Lead	**29**	3.0	6020A	11-22-16	11-22-16	
Lab ID:	11-147-75					
Client ID:	**TP8-1-1.5**					
Arsenic	**6.6**	3.0	6020A	11-22-16	11-22-16	
Lead	**7.4**	3.0	6020A	11-22-16	11-22-16	
Lab ID:	11-147-76					
Client ID:	**TP8-2-2.5**					
Arsenic	**92**	3.1	6020A	11-22-16	11-22-16	
Lead	**35**	3.1	6020A	11-22-16	11-22-16	
Lab ID:	11-147-85					
Client ID:	**TP9-1-1.5**					
Arsenic	**19**	2.8	6020A	11-22-16	11-22-16	
Lead	**3.5**	2.8	6020A	11-22-16	11-22-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-97					
Client ID:	**TP10-1-1.5**					
Arsenic	**19**	2.9	6020A	11-22-16	11-22-16	
Lead	**ND**	2.9	6020A	11-22-16	11-22-16	
Lab ID:	11-147-110					
Client ID:	**TP11-0-0.5**					
Arsenic	**130**	3.1	6020A	11-22-16	11-22-16	
Lead	**89**	3.1	6020A	11-22-16	11-22-16	
Lab ID:	11-147-112					
Client ID:	**TP11-2-2.5**					
Arsenic	**71**	3.1	6020A	11-22-16	11-22-16	
Lead	**92**	3.1	6020A	11-22-16	11-22-16	
Lab ID:	11-147-120					
Client ID:	**TP12-1-1.5**					
Arsenic	**14**	2.9	6020A	11-22-16	11-22-16	
Lead	**9.0**	2.9	6020A	11-22-16	11-22-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-01					
Client ID:	**TP1-0-0.5**					
Arsenic	**17**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-147-03					
Client ID:	**TP1-2-2.5**					
Arsenic	**3.5**	3.0	6020A	11-30-16	11-30-16	
Lead	**4.1**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-147-04					
Client ID:	**TP1-3-3.5**					
Arsenic	**3.0**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-147-15					
Client ID:	**TP2-3-3.5**					
Arsenic	**14**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-147-18					
Client ID:	**TP2-6-6.5**					
Arsenic	**ND**	2.8	6020A	11-30-16	11-30-16	
Lab ID:	11-147-41					
Client ID:	**TP5-2-2.5**					
Arsenic	**ND**	3.1	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-52					
Client ID:	**TP6-1-1.5**					
Arsenic	**8.9**	3.0	6020A	11-30-16	11-30-16	
Lab ID:	11-147-66					
Client ID:	**TP7-3-3.5**					
Arsenic	**11**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-147-77					
Client ID:	**TP8-3-3.5**					
Arsenic	**ND**	3.1	6020A	11-30-16	11-30-16	
Lab ID:	11-147-84					
Client ID:	**TP9-0-0.5**					
Arsenic	**130**	3.8	6020A	11-30-16	11-30-16	
Lab ID:	11-147-86					
Client ID:	**TP9-2-2.5**					
Arsenic	**6.6**	2.7	6020A	11-30-16	11-30-16	
Lab ID:	11-147-92					
Client ID:	**TP9-8-8.5**					
Arsenic	**ND**	2.9	6020A	11-30-16	11-30-16	
Lead	**ND**	2.9	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	11-147-96					
Client ID:	**TP10-0-0.5**					
Arsenic	**26**	4.6	6020A	11-30-16	11-30-16	
Lab ID:	11-147-98					
Client ID:	**TP10-2-2.5**					
Arsenic	**ND**	2.9	6020A	11-30-16	11-30-16	
Lab ID:	11-147-111					
Client ID:	**TP11-1-1.5**					
Arsenic	**6.9**	2.9	6020A	11-30-16	11-30-16	
Lab ID:	11-147-113					
Client ID:	**TP11-3-3.5**					
Arsenic	**ND**	2.9	6020A	11-30-16	11-30-16	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-22-16
Date Analyzed: 11-22-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1122SM1

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-22-16
Date Analyzed: 11-22-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-147-64

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**10.4**	**11.8**	13	2.5	
Lead	**11.0**	**11.5**	5	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-22-16
Date Analyzed: 11-22-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-147-64

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**98.8**	88	**101**	91	2	
Lead	250	**230**	88	**237**	90	3	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
METHOD BLANK QUALITY CONTROL

Date Extracted: 11-30-16
Date Analyzed: 11-30-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: MB1130SM2

Analyte	Method	Result	PQL
Arsenic	6020A	**ND**	2.5
Lead	6020A	**ND**	2.5

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
DUPLICATE QUALITY CONTROL

Date Extracted: 11-30-16
Date Analyzed: 11-30-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-147-41

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Arsenic	**ND**	**ND**	NA	2.5	
Lead	**ND**	**ND**	NA	2.5	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

TOTAL METALS
EPA 6020A
MS/MSD QUALITY CONTROL

Date Extracted: 11-30-16
Date Analyzed: 11-30-16

Matrix: Soil
Units: mg/kg (ppm)

Lab ID: 11-147-41

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	**94.2**	94	**96.1**	96	2	
Lead	250	**240**	96	**249**	100	4	

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-22&30-16

Client ID	Lab ID	% Moisture
TP1-0-0.5	11-147-01	17
TP1-1-1.5	11-147-02	20
TP1-2-2.5	11-147-03	17
TP1-3-3.5	11-147-04	16
TP2-1-1.5	11-147-13	14
TP2-3-3.5	11-147-15	21
TP2-5-5.5	11-147-17	19
TP2-6-6.5	11-147-18	12
TP3-0-0.5	11-147-23	32
TP4-0-0.5	11-147-31	21
TP5-1-1.5	11-147-40	16
TP5-2-2.5	11-147-41	19
TP6-0-0.5	11-147-51	16
TP6-1-1.5	11-147-52	17
TP7-1-1.5	11-147-64	13
TP7-2-2..5	11-147-65	16
TP7-3-3.5	11-147-66	18
TP8-1-1.5	11-147-75	16
TP8-2-2.5	11-147-76	19
TP8-3-3.5	11-147-77	18
TP9-0-0.5	11-147-84	34
TP9-1-1.5	11-147-85	10
TP9-2-2.5	11-147-86	7
TP9-8-8.5	11-147-92	12
TP10-0-0.5	11-147-96	46
TP10-1-1.5	11-147-97	15
TP10-2-2.5	11-147-98	14

Date of Report: December 2, 2016
Samples Submitted: November 14, 2016
Laboratory Reference: 1611-147
Project: 10068-002-00

% MOISTURE

Date Analyzed: 11-22&30-16

Client ID	Lab ID	% Moisture
TP11-0-0.5	11-147-110	20
TP11-1-1.5	11-147-111	14
TP11-2-2.5	11-147-112	18
TP11-3-3.5	11-147-113	13
TP12-1-1.5	11-147-120	15

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

 11-147

OnSite Environmental, Inc.

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

Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [X] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	1614	ARSENIC - TOTAL	LEAD - TOTAL	% MOISTURE	Comments
1	TP1-0-0.5	11/9/2016	1140	S	1		X	⊗		⊗	
2	TP1-1-1.5	11/9/2016	1141	S	1	X				⊗	
3	TP1-2-2.5	11/9/2016	1142	S	1		X	⊗	X	⊗	
4	TP1-3-3.5	11/9/2016	1143	S	1		X	⊗		⊗	
5	TP1-4-4.5	11/9/2016	1144	S	1		X				
6	TP1-5-5.5	11/9/2016	1151	S	1		X				
7	TP1-6-6.5	11/9/2016	1156	S	1		X				
8	TP1-7-7.5	11/9/2016	1202	S	1		X				⊗ Added 11/29/16. DB (3 day TAT)
9	TP1-8-8.5	11/9/2016	1215	S	1		X				
10	TP1-9.9.5	11/9/2016	1218	S	1		X				
11	TP1-10-10.5	11/9/2016	1223	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GE	11/14 330pm	James Bash	Alpha	11/14/16 330pm
	Alpha	11/14 443		GEL	11/14/16 1530

11-147

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Phone: (425) 883-3881
www.onsite-env.com

Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [X] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Hold	ARSENIC - TOTAL	LEAD - TOTAL	MOISTURE	Comments
12 TP2-0-0.5	11/9/2016	1328	S	1		X				
13 TP2-1-1.5	11/9/2016	1329	S	1	X				X	
14 TP2-2-2.5	11/9/2016	1330	S	1		X			X	
15 TP2-3-3.5	11/9/2016	1331	S	1		X	X		X	
16 TP2-4-4.5	11/9/2016	1332	S	1		X				
17 TP2-5-5.5	11/9/2016	1344	S	1	X				X	
18 TP2-6-6.5	11/9/2016	1350	S	1		X	X		X	
19 TP2-7-7.5	11/9/2016	1400	S	1		X				
20 TP2-8-8.5	11/9/2016	1402	S	1		X				
21 TP2-9-9.5	11/9/2016	1405	S	1		X				
22 TP2-10-10.5	11/9/2016	1410	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/14 1530		Alpha	11/14 / 330 pm
	Alpha	11/14 443		GeoE	11/14/16 1530

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11-147

Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	1601	ARSENIC	LEAD	MOISTURE	Comments
23 TP3-0-0.5	11/9/2016	1450	S	1	X					
24 TP3-1-1.5	11/9/2016	1451	S	1		X				
25 TP3-2-2.5	11/9/2016	1452	S	1		X				
26 TP3-3-3.5	11/9/2016	1453	S	1		X				
27 TP3-4-4.5	11/9/2016	1454	S	1		X				
28 TP3-5-5.5	11/9/2016	1500	S	1		X				
29 TP3-5.5-6	11/9/2016	1505	S	1		X				
30 TP3-6-6.5	11/9/2016	1511	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/9 1535		Alpha	11/14 330 pm
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 940		GeoE	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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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

Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Hold	ARSENIC	LEAD	Dup/MS/MSD
31 TP4-0-0.5	11/9/2016	1605	S	1	X				2
32 TP4-1-1.5	11/9/2016	1606	S	1		X			
33 TP4-2-2.5	11/9/2016	1607	S	1		X			
34 TP4-3-3.5	11/9/2016	1608	S	1		X			
35 TP4-4-4.5	11/9/2016	1609	S	1		X			
36 TP4-5-5.5	11/9/2016	1612	S	1		X			
37 TP4-6-6.5	11/9/2016	1618	S	1		X			
38 TP4-6.5-7	11/9/2016	1620	S	1		X			

Comments

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GEO	11/14 1536		Alpha	11/14 330pm
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1645		ONSITE	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	1614	ARSENIC	LEAD	COMPOSITE
39 TP5-0-0.5	11/9/2016	954	S	1		X			
40 TP5-1-1.5	11/9/2016	955	S	1	X				X
41 TP5-2-2.5	11/9/2016	956	S	1		X	X		X
42 TP5-3-3.5	11/9/2016	957	S	1		X			
43 TP5-4-4.5	11/9/2016	1000	S	1		X			
44 TP5-5-5.5	11/9/2016	1007	S	1		X			
45 TP5-6-6.5	11/9/2016	1012	S	1		X			
46 TP5-7-7.5	11/9/2016	1016	S	1		X			
47 TP5-8-8.5	11/9/2016	1020	S	1		X			
48 TP5-9-9.5	11/9/2016	1022	S	1		X			
49 TP5-10-10.5	11/9/2016	1024	S	1		X			
50 TP5-13-13.5	11/9/2016	1030	S	1		X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Comments

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/15 1530		Alpha	11/14 330pm
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1646		GeoE	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

☒ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Laboratory Number:

Comments

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Hold	ARSENIC	LEAD	% MOISTURE
S1	TP6-0-0.5	11/9/2016	832	S	1	X				
S2	TP6-1-1.5	11/9/2016	833	S	1		X	⊗		⊗
S3	TP6-2-2.5	11/9/2016	834	S	1		X			
S4	TP6-3-3.5	11/9/2016	835	S	1		X			
S5	TP6-4-4.5	11/9/2016	850	S	1		X			
S6	TP6-5-~~5.6~~ 5.5 DB	11/9/2016	854	S	1		X			
S7	TP6-6-~~6.8~~ 6.5 DB	11/9/2016	859	S	1		X			
S8	TP6-7-7.5	11/9/2016	907	S	1		X			
S9	TP6-8-8.5	11/9/2016	910	S	1		X			
60	TP6-9-9.5	11/9/2016	915	S	1		X			
61	TP6-10-10.5	11/9/2016	919	S	1		X			
62	TP6-~~12-12.5~~ 12.5-13 DB	11/9/2016	928	S	1		X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/14 1330		Alpha	11/14 330pm
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1640		GeoE	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Hold	Arsenic	Lead	Moisture	Comments
63 TP7-0-0.5	11/8/2016	1410	S	1		X				
64 TP7-1-1.5	11/8/2016	1411	S	1	X				X	
65 TP7-2-2.5	11/8/2016	1412	S	1	X				X	
66 TP7-3-3.5	11/8/2016	1413	S	1		X	(X)		(X)	
67 TP7-4.5-5	11/8/2016	1422	S	1		X				
68 TP7-5-5.5	11/8/2016	1430	S	1		X				
69 TP7-6-6.5	11/8/2016	1435	S	1		X				
70 TP7-7-7.5	11/8/2016	1440	S	1		X				
71 TP7-8.5-9	11/8/2016	1444	S	1		X				
72 TP7-9-9.5	11/8/2016	1451	S	1		X				
73 TP7-12-12.5	11/8/2016	1500	S	1		X				
						X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoEngineers	11/14 1535		Alpha	11/14 3:30pm
	Alpha	11/14/16		CORE	11/14/16 1530

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	1bdl	ARSENIC	LEAD	%MOISTURE	Comments
74 TP8-0-0.5	11/8/2016	1230	S	1		X				
75 TP8-1-1.5	11/8/2016	1231	S	1	X				X	
76 TP8-2-2.5	11/8/2016	1232	S	1	X				X	
77 TP8-3-3.5	11/8/2016	1233	S	1		X	(X)		(X)	
78 TP8-4.5-5	11/8/2016	1250	S	1		X				
79 TP8-5-5.5	11/8/2016	1251	S	1		X				
80 TP8-6-6.5	11/8/2016	1259	S	1		X				
81 TP8-7-7.5	11/8/2016	1307	S	1		X				
82 TP8-8-8.5	11/8/2016	1311	S	1		X				
83 TP8-10-10.5	11/8/2016	1318	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoEngineers	11/14 1530		Alpha	11/14 3:20pm
	Alpha	11/14/1640		ORE	11/14/16 1530

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Analytical Laboratory Testing Services
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Chain of Custody

Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	HCID	ARSENIC	LEAD	SAMPLE ID
84 TP9-0-0.5	11/8/2016	1050	S	1		X	X		X
85 TP9-1-1.5	11/8/2016	1051	S	1	X				X
86 TP9-2-2.5	11/8/2016	1052	S	1		X	X		X
87 TP9-3-3.5	11/8/2016	1053	S	1		X			
88 TP9-4-4.5	11/8/2016	1105	S	1		X			
89 TP9-5-5.5	11/8/2016	1108	S	1		X			
90 TP9-6-6.5	11/8/2016	1113	S	1		X			
91 TP9-7-7.5	11/8/2016	1117	S	1		X			
92 TP9-8-8.5	11/8/2016	1120	S	1		X	X	X	X
93 TP9-9-9.5	11/8/2016	1128	S	1		X			
94 TP9-10-10.5	11/8/2016	1138	S	1		X			
95 TP9-11-11.5	11/8/2016	1145	S	1		X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoEng	11/14 1530		Alpha	11/14 330pm
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1645		GeoEng	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

11-147

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [X] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Comments

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	HLM	ARSENIC	LEAD	8260 MOISTURE
96 TP10-0-0.5	11/8/2016	835	S	1		X	X		X
97 TP10-1-1.5	11/8/2016	836	S	1	X				
98 TP10-2-2.5	11/8/2016	837	S	1		X	X		X
99 TP10-3-3.5	11/8/2016	838	S	1		X			
100 TP10-4.5-5	11/8/2016	850	S	1		X			
101 TP10-5-5.5	11/8/2016	858	S	1		X			
102 TP10-6-6.5	11/8/2016	854	S	1		X			
103 TP10-7.5-8	11/8/2016	901	S	1		X			
104 TP10-9-9.5	11/8/2016	906	S	1		X			
105 TP10-9.5-10	11/8/2016	915	S	1		X			
106 TP10-10-10.5	11/8/2016	924	S	1		X			
107 TP10-11-11.5	11/8/2016	937	S	1		X			

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/14 1530		Alpha	11/14 330p
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Alpha	11/14 1600		ORC	11/14/16 1530
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Company: GeoEngineers	
Project Number: 10068-002-00	
Project Name: Franke Tobey Jones Phase II	
Project Manager: Tricia DeOme	
Sampled by: HLM	

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series
108 TP10-12-12.5	11/8/2016	946	S	1	X
109 TP10-13-13.5	11/8/2016	950	S	1	X

ARSENIC
LEAD

Comments

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/14 1530		Alpha	11/14 330pm
	Alpha	11/14 1640		GeoE	11/14/16 1530

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Chain of Custody

Laboratory Number:

Company: GeoEngineers
Project Number: 10068-002-00
Project Name: Franke Tobey Jones Phase II
Project Manager: Tricia DeOme
Sampled by: HLM

Turnaround Request (in working days)
(Check One)
TAT if different from Below ______
[X] 2 weeks
[ ] 1 week
[ ] 2 days
[ ] 1 day

Lab ID		Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	Hold	Arsenic	Lead	% Moisture	Comments
110	TP11-0-0.5	11/8/2016	1544	S	1	X					
111	TP11-1-1.5	11/8/2016	1545	S	1		X (crossed out)	(X)		(X)	
112	TP11-2-2.5	11/8/2016	1546	S	1	X					
113	TP11-3-3.5	11/8/2016	1547	S	1		X (crossed out)	(X)		(X)	
114	TP11-5-5.5	11/8/2016	1610	S	1		X				
115	TP11-6-6.5	11/8/2016	1613	S	1		X				
116	TP11-7-7.5	11/8/2016	1616	S	1		X				
117	TP11-9-9.5	11/8/2016	1619	S	1		X				
118	TP11-10.5-11	11/8/2016	1622	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GEO	11/14 1530	[signature]	Alpha	11/14 330 pm
[signature]	Alpha	11/14 1640	[signature]	OSE	11/14/16 1530

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Chain of Custody

Company:	GeoEngineers
Project Number:	10068-002-00
Project Name:	Franke Tobey Jones Phase II
Project Manager:	Tricia DeOme
Sampled by:	HLM

Turnaround Request (in working days)

(Check One)

TAT if different from Below _____

- [x] 2 weeks
- [ ] 1 week
- [ ] 2 days
- [ ] 1 day

Laboratory Number:

Lab ID	Sample Date	Sample Time	Matrix	# of Cont.	Lead and Arsenic EPA 6000 series	1010	ARSENIC	LEAD	6010 STORE	Comments
119 TP12-0-0.5	11/9/2016	1700	S	1		X				
120 TP12-1-1.5	11/9/2016	1701	S	1	X				6	
121 TP12-2-2.5	11/9/2016	1702	S	1		X				
122 TP12-3-3.5	11/9/2016	1703	S	1		X				
123 TP12-4-4.5	11/9/2016	1704	S	1		X				
124 TP12-5-5.5	11/9/2016	1705	S	1		X				
125 TP12-6-6.5	11/9/2016	1710	S	1		X				
126 TP12-7-7.5	11/9/2016	1713	S	1		X				
127 TP10-8.5-9	11/8	908	S	1		X				

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Special Instructions/QC Requirements & Comments:
Arsenic and Lead detection limits 5 milligram per kilogram.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GeoE	11/14 1530		Alpha	11/14 330pm
	Alpha	11/14 1640		GeoE	11/14/16 1530

APPENDIX D
Report Limitations and Guidelines for Use

APPENDIX D
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report. Please confer with GeoEngineers if you need to know more about how these "Report Limitations and Guidelines for Use" apply to your project or property.

Read These Provisions Closely

It is important to recognize that environmental engineering and geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce the risk of misunderstandings or unrealistic expectations that lead to disappointments, claims and disputes.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

GeoEngineers has performed this remedial investigation of the proposed expansion of the existing Franke Tobey Jones (FTJ) facility located at 5340 North Bristol Street in Tacoma, Washington in general accordance with the scope and limitations of our proposal, dated October 12, 2016. This report has been prepared for the exclusive use of Franke Tobey Jones. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

GeoEngineers structures its services to meet the specific needs of its clients. For example, an ESA study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and property. Use of this report is not recommended for any purpose or project other than as expressly stated in this report.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the proposed expansion of the existing Franke Tobey Jones (FTJ) facility located at 5340 North Bristol Street in Tacoma, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this Project. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your Project,
- not prepared for the specific site explored, or
- completed before Project changes were made.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity

1 Developed based on material provided by GBA, GeoProfessional Business Association; www.geoprofessional.org.

to review our interpretations and recommendations in the context of such changes. Based on that review, we can provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of the party(ies) to whom this report is addressed. No other party may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed Project scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in our scope of service, this report does not provide any geotechnical findings, conclusions, or recommendations, including but not limited to, the suitability of subsurface materials for construction purposes.

Do Not Separate Documentation from the Report

Environmental reports often include supplemental documentation, such as maps, figures and table. Do not separate such documentation from the report. Further, do not, and do not permit any other party to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.

Environmental Regulations Change and Evolve

Some substances may be present in the vicinity of the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substances, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

Performance of a Phase II ESA is intended to reduce uncertainty regarding the potential for contamination in connection with a property, but no ESA can wholly eliminate that uncertainty. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the subject property, by new releases of hazardous substances, new information or technology that become available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Please contact GeoEngineers before applying this report for its intended purpose so that GeoEngineers may evaluate whether changed conditions affect the continued applicability of the report.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other properties or for other on-site uses of the affected soil and/or groundwater. Note that hazardous substances may be present in some of the on-site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject property or reuse of the affected soil or groundwater on-site to evaluate the potential for associated environmental liabilities. GeoEngineers will not assume responsibility for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject property to another location, or the reuse of such soil and/or groundwater on-site in any instances that we did not recommend, know of, or control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the subject property. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions throughout the property. Actual subsurface conditions may differ significantly from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design documents. Only photographic or electronic reproduction that preserves the entire original boring log is acceptable, but separating logs from the report can create increase the risk of potential misinterpretation.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.