


Remedial Investigation/Feasibility Study  
Report Version: Final for Agency Review


Site Name: Midas Muffler  
Site Address: 7055 – 15th Avenue Northwest  
Seattle, Washington 98117  
Tax Parcel ID: 1498303056  
ERTS number TBD  
Latitude/Longitude: 47.680988, -122.377189  
  
PLSS: SE 1/4 S 2, T 25, R 3E  
  
Charles R Lie, LHG,  
Project Manager  
  
Nicolas R. Hoffman, L.G.  
Senior Project Geologist  
  
Terra Associates, Inc.  
12220 – 113th Avenue Northeast, Suite  
130 Kirkland, Washington 98034

Terra Project No. T-8336-5

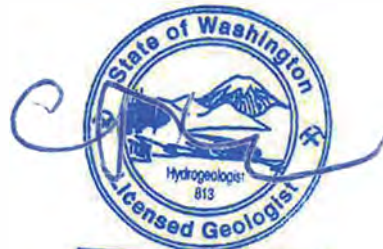
Signature:




6-3-2022



Nicolas R Hoffman



6-3-2022



CHARLES R. LIE

June 3, 2022

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## **ACRONYMS AND ABBREVIATIONS**

ARAR	Applicable or Relevant and Appropriate Requirements
BTEX	Benzene, Ethylbenzene, Toluene, and Xylenes
COC	Contaminant/Chemical of Concern
CSID	Cleanup Site Identification Number
CSM	Conceptual Site Model
CUL	Clean-Up Levels
Ecology	Washington State Department of Ecology
FSID	Facility Site Identification Number
Mg/kg	Milligram per Kilogram, parts per million equivalence
MTCA	Model Toxics Control Act
NFA	No Further Action
ORH	Oil Range Hydrocarbons
PCS	Petroleum Contaminated Soil
PID	Photo Ionization Detector
PLSS	Public Land Survey System
RCW	Revised Code of Washington
REC	Recognized Environmental Condition
TEE	Terrestrial Ecological Evaluation
TPH	Total Petroleum Hydrocarbons
ug/l	Micrograms per Liter, parts per billion equivalence
VCP	Voluntary Cleanup Program
WAC	Washington State Administrative Code

## 1.0 INTRODUCTION

Terra Associates, Inc. (TAI), is pleased to present this *Remedial Investigation and Feasibility Study Report* (RI/FS Report) for the Midas Muffler property located at 7055 15th Avenue Northwest in Seattle, Washington. The location of the subject property is shown on Figures 1 and 2. The existing site conditions are shown on Figure 3. This report is intended to document recent remedial actions performed, summarize remaining contaminant impacts on the site, and provide an evaluation of remedial alternatives to address the residual soil impacts.

The subject parcel was historically developed with residential structures since as early as 1906. Subsequently, the site was redeveloped with a Midas Muffler auto repair shop in 1976. This RI/FS report summarizes recent environmental activities conducted to address impacts to site soil from the historic site use as a lube/auto repair shop. TAI conducted several phases of Phase II site investigations beginning in the fall of 2020 through February of this year. The investigations were conducted as an Independent Remedial Action in accordance with MTCA requirements. Elevated oil range hydrocarbons (ORH) above applicable MTCA Method A cleanup levels were identified beneath the former shop area of the existing building. No impacts to site groundwater above cleanup levels were identified.

To address the elevated levels of oil range hydrocarbons in site soil, a remedial excavation occurred in February of 2022. All site soil impacted with ORH was removed except for an approximately 100 cubic yard wedge along the east margin of the shop portion of the building. The wedge was left in place to provide support for column footings present along the east side of the building. A total of 596.35 tons of ORH impacted soil was removed from the site and routed to appropriate waste facilities.

This RI/FS Report was prepared in general accordance with MTCA (WAC 173-340-350). As discussed in this report, based on our field observations and analytical testing of representative samples, it is our opinion that the site is suitable for a No Further Action Determination. This is discussed in more detail in the following sections of this report.

### **1.1 General Site Information**

The purpose of this report is to document the activities in February 2022 regarding removal of ORH impacted soil related to historic releases onsite. The existing building on the parcel is currently being remodeled for a new tenant.

Consultant: Terra Associates, Inc.  
12220 – 113th Avenue Northeast, Suite 130  
Kirkland, Washington 98034  
  
Charles R Lie, LHG, Project Manager  
Nicolas R. Hoffman, L.G. Senior Project Geologist  
  
(425) 821-7777  
  
[clie@terra-associates.com](mailto:clie@terra-associates.com)  
[nhoffman@terra-associates.com](mailto:nhoffman@terra-associates.com)



Owner/Operator: MBA NW 73<sup>rd</sup>, LLC  
7420– Southeast 24th Street, Suite 4  
Mercer Island, Washington 98040  
  
Mr. Bruce Anderson  
  
(206) 397-3579  
  
[bruce@mbanderson.net](mailto:bruce@mbanderson.net)

ERTS number TBD

Location: 7055 – 15th Avenue Northwest  
Seattle, Washington 98117  
King County Tax Parcel 751850-0690  
  
SE 1/4 S2, T 25, R 3E

This location is shown on Figures 1 and 2 attached to this report.

Zoning: Current Zoning- C-Commercial

The C designation indicates that the subject parcel is within a zoned for commercial use.

Current Parcel Use: The building on the parcel is currently being remodeled for a future tenant. A vacant commercial building and associated parking currently occupy the site.

## **1.2 Site History**

Prior to the current site development which took place in 1976, the parcel was an assemblage of seven individual tax lots. The assemblage was described as lots 7 through 12 of Division 12 of the Salmon Bay Addition. Each of the parcels were originally developed with single-family residences. Archived tax records indicate that two residences were constructed on lots in 1906 and 1917 respectively. The heat source for the 1906 era residence is listed as oil heat. The records did not indicate if the heating oil fuel was stored in above ground or below ground storage tanks.

From at least 1980, until it recently closed in 2021, an auto repair shop operated out of the existing commercial building onsite. When we visited the site for our Phase I ESA site observations in 2018 and 2020, there was one active below ground hoist present in the shop area. There were four patches in the shop floor slab that indicated four more below ground hoist's bays have been present in the past. There were no records available documenting the status or removal of the below ground hoists. A diagnostic pit was also present in the southern portion of the shop area. The pit had approximately six inches of accumulated oily water in it at the time of our Phase I ESA site visits.

In 2021 the property was purchased by a new owner and the building was vacated in preparations for the current remodel of the building.

### **1.3 Site Use**

The site is within an area that has been developed predominantly with residential buildings for the last 100 years. There is no indication that any commercial land uses occurred on the subject parcels other than noted above in Section 1.2. The parcel directly north of 73rd Avenue to the north of the site was historically occupied by a gasoline station originally constructed in 1948. Available records indicate the UST's associated with the gasoline station were removed in 1996. The gasoline station parcel is in a cross-gradient position relative to the subject site. The subject parcel is within the city limits of Seattle and is currently being remodeled for a new retail tenant. The site and surroundings are shown on Figures 1 and 2 attached to this report.

## **2.0 FIELD INVESTIGATIONS**

### **2.1 Previous Environmental Investigations**

*Terra Associates, Inc., Phase I Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle, Washington, dated April 27, 2020.*

The report identified two REC's associated with the subject site.

- The active and historic use of below ground hydraulic lifts on the site.
- The suspected presence of former underground storage tanks (USTs) for heating oil associated with the two prior houses onsite.

*Terra Associates, Inc., Draft Limited Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle, Washington, dated November 2, 2020.*

This report documents the initial phase of site investigation to verify if the REC's documented in the above noted Phase I ESA had impacted the site. A total of eight soil borings were advanced using a Direct-Push Technology (DPT) rig, operated by Cascade Environmental, to allow for observation and collection of soil samples for lab analysis. The auto repair shop was still active during this phase of work limiting access to portions of the building. The borings were placed as close as possible to the active hoist and patches in the floor slab. The report concludes that elevated levels of oil range hydrocarbons above cleanup levels were encountered in Borings B-5, B-6, and B-8 at depths ranging from 0-10 feet. The report further concludes that none of the secondary analysis required by Table 830-1 exceeded their respective cleanup values.

*Terra Associates Inc., Draft Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle Washington, dated April 26, 2021, revised May 13, 2021.*

This report documents additional site investigation to further define the vertical and lateral extent of ORH impacted soil and assess whether site groundwater had been impacted. A total of six borings were advanced using a hollow-stem auger rig operated by Boretac 1. Five of the borings were located inside of the shop area, and one on the exterior of the building adjacent to the southeast corner of the building. Three of the borings were completed as permanent groundwater monitoring wells. ORH were detected in soil samples collected from four of the six borings. The concentrations of ORH in soils were above cleanup levels in two of the six borings, B-102 and MW-101. None of the secondary analysis required by Table 830-1 exceeded their respective cleanup values.

Site groundwater was present in the monitoring wells at depths ranging from 45-50 feet below existing site grades. Initial static water level measurements from the wells indicated that site groundwater flows to the west. A monitoring well was initially installed in Test Boring MW-1 when wet soil conditions were encountered approximately 30 feet below the top of the floor slab during drilling. The following day the well was dry. MW-1 was then decommissioned and replaced with MW-101, a deeper well, approximately five feet to the southwest. Groundwater samples were collected from all three wells for lab analysis. The samples were analyzed for hydrocarbons in the gasoline through oil range, volatiles, and metals. ORH was detected below cleanup levels in the initial water sample collected from MW-3. No concentrations of the compounds analyzed exceeding MTCA Method A cleanup levels were found in the three groundwater samples.

*Terra Associates Inc., Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle Washington, dated November 24, 2021.*

This report summarizes the prior findings of site assessments along with results of samples collected from two new additional borings advanced along the west margin of the site. The southern of the two borings was completed as monitoring well MW-201. The two new borings were advanced using a limited access sonic drill rig operated by Anderson Environmental. No elevated levels of ORH were found in soil samples analyzed from the borings.

All four wells onsite were sampled for this phase of assessment. The samples were analyzed for hydrocarbons in the gasoline through oil range, volatiles, and metals. Except for MW-201, none of the analytes were detected in any of the four groundwater samples. Low levels of benzene and sec-Butylbenzene were detected in the sample collected from MW-201. The concentrations were well below applicable Method A cleanup levels. The report concluded that based on the soils encountered in the borings, the apparent limited lateral extent, and the lack of impacts to groundwater, the excavation and removal of PCS appeared to be feasible. The report recommended the two interior wells be lawfully decommissioned prior to demolishing the floor slab.

All of the prior reports discussed above are included in Appendix A-Supporting Documentation.

### **2.1.1 Remedial Excavation**

In February of 2022, TAI oversaw a remedial excavation conducted by Wyser Construction to remove all impacted ORH from the site. During the remedial excavations, the soils were screened using standard field techniques consisting of visible staining, odor, sheen testing and PID headspace readings. All soil displaying field indications of ORH was removed from the site except for a small approximately 100-cubic yard wedge of soil along the east margin of the building. A sidewall sample collected from this area (8336-11-2) contained 3,000 mg/kg ORH. It was not possible to remove the wedge without affecting the structural support of column footings located along the east side of the building. Analytical results of confirmation soil sampling indicate no impacted soil above applicable MTCA Method A cleanup levels remained in the excavation to the north, west, south, and vertically below a depth of 10-11 feet below the top of floor slab.

Only a short area of the eastern side wall below two column footings had final confirmation tests above the cleanup level. EPH/VPH testing was conducted on the characterization sample with the highest ORH concentration to determine a Method B cleanup protective of human health through direct contact. A concentration of 12,218.39 mg/kg was calculated using Ecology's MTCATPH11.1 excel workbook. A copy of the workbook sheet is provided in Appendix A - Supporting Documentation. A total of 596.35 tons of soil impacted with ORH was removed from the site and routed to Waste Management and Republic Services for disposal.

A total of four below ground hydraulic hoists were encountered during excavation and removed from the site. An approximately 40-gallon hydraulic fluid reservoir was encountered adjacent to one of the hoists. The bottom of the reservoir displayed several small holes and pit marks. Additionally, three CMU block diagnostic pits were encountered and removed from the excavation. The pits extended to approximately six feet below the top of the existing floor slab.

### ***2.1.2 Soil Vapor Screening***

On April 11, 2022 TAI observed the advancement of two temporary vapor wells adjacent to the east side of the building to allow for collection of soil vapor samples. The purpose of the samples was to assess for possible vapor migration impacts to the existing building from the wedge of soil left in place impacted by ORH. In the course of our field sampling, we followed guidelines from Ecology Publication No. 09-09-047 *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*, dated October 2009, revised March 2022, and the OSWER Technical Guidance for Assessing and Mitigating The Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, Publication 9200.0-154, June 2015.

The wells were installed using a track mounted Geoprobe rig operated by Cascade Environmental of Woodinville, Washington. The wells were a total of six feet in depth and had a six-inch stainless steel implant screen placed at the base of the hole bedded in clean sand. A hydrated bentonite seal isolated the screens from the ground surface. The bentonite was hydrated with distilled water. A 0.25-inch dedicated tubing connected the screens to surface attachments for sampling. Each well was given approximately two hours to equilibrate prior to sampling. Sampling of each well consisted of attaching the laboratory provided sample manifold at the surface and then purging approximately three volumes of air from the sample train and well tubing. Shut-in tests were performed at each well prior to sampling to ensure no leakage was occurring. Purging was accomplished by utilizing a small rotary pump at a rate of approximately 150 ml per minute. Once the wells were purged, soil gas samples were collected in Summa cannisters attached to the sample manifold. The Summa cannisters were transported under chain of custody to the lab of Friedman & Bruya in Seattle. The samples were analyzed for APH and naphthalene's. No exceedances of generic Method B screening levels for soil gas were identified in the samples.

## **2.2 Site Characterization**

The location of the area of concern and all exploration locations are shown on Figure 4. The prior site investigations discussed in Section 2.1 above document and define the vertical and lateral extent of ORH impacts to site soils. Follow-up lab analysis was performed on the initial characterization of the soil samples once a release was verified. The follow-up analysis followed the requirements spelled out in Table 830-1. Follow-up compounds consisted of TPG-G, volatiles, PCB's, cPAHs, and metals. None of the compounds analyzed as part of this study have exceeded their respective MTCA Method A cleanup values except for Oil Range Hydrocarbons (ORH) in soil.

Groundwater samples were analyzed for hydrocarbons in the gasoline through oil range, volatiles, and metals. No groundwater seepage was encountered in the excavation. No impacts to site groundwater above MTCA Method A cleanup were encountered in monitoring wells constructed during the site assessments. No other releases were found during the remedial excavation for the project.

No contaminants of concern (COCs) were detected above applicable generic Method B screening levels in the 2 soil gas samples collected adjacent to the area of the wedge of soil left in place impacted by ORH.

### ***2.2.1 Sampling and Monitoring***

Sampling and monitoring are discussed in Appendix B. Locally accepted environmental techniques were followed. Field sampling occurred within the general guidelines of Ecology Publication No. 10-09-057.

### ***2.2.2 Site Geology***

We reviewed the *Geologic Map of Seattle- a Progress Report* by Kathy Goetz Troost, Derek B. Booth, Aaron P. Wisher, and Scott A Shimel, dated 2005. The map indicates that the site is underlain by Vashon till (Qvt). The till is comprised of a dense to very dense mix of silt, sand, and gravel.

These soils are consistent with soils logged in the sixteen borings advanced by TAI as part of the prior Phase II ESA work. Copies of all boring logs documented in our Phase II work are attached to the investigative reports attached in Appendix A Supporting Documentation. Soils encountered in the remedial excavation were consistent with the maps and the explorations.

### ***2.2.3 Site Hydrogeology***

No ground water seepage was encountered in the remedial excavation. The deepest portion of the remedial excavation was roughly twelve feet below the top of the existing floor slab in the shop area of the building. Static water levels have consistently ranged between 44.5-49 feet below the ground surface. Based on available topographic information, review of reports prepared by others for nearby sites, and our field observations of the vicinity, it appears that the direction of onsite shallow groundwater flow beneath the subject site is generally to the west. Static water level measurements collected from onsite monitoring wells are presented in Table 1.

#### **2.2.4 Other Site Information**

The remedial excavation did not disturb any designated critical areas such as wetlands, steep slopes, or archeological zones.

### **2.3 Sampling/Analytical Results**

#### **2.3.1 Quality Analyses**

All analytical testing for the initial site investigations was performed by On Site Laboratories in Redmond, Washington. All analytical testing for the remedial excavation phase of the project was performed by Freidman & Bruya, Inc. The lab reports are appended in Appendix C. Based on our review of the lab reports, all testing was done within the standard holding time. The lab's standard QA/QC was met for all testing on the project.

#### **2.3.2 Results-Soil**

All soil analytical testing is summarized on Tables 2 through 8 appended to this report and on Figures 4 and 5. The current Method A cleanup level for ORH in soil is 2,000 mg/kg. All final soil testing done to this date has been below the Method A cleanup value for the constituents of concern. The only exception to this is sample 8336-11-2 collected from the east sidewall of the excavation. A small wedge of soil impacted with ORH was left in place along the east margin of the excavation to maintain support for the column footings located along the east side of the building.

#### **2.3.3 Results-Groundwater**

All groundwater analytical testing is summarized on Tables 9 through 11. No MTCA Method A exceedances have been identified in any of the site groundwater samples collected from the site wells to date. The current Method A cleanup level for ORH in groundwater is 500 ug/l. The initial groundwater sample collected in March of 2021 from MW-3 contained 340 ug/l ORH. Lab analysis of groundwater collected from MW-3 in October of 2021 was deemed non-detect for ORH at the laboratory PQL of 220 ug/l.

#### **2.3.4 Results-Soil Vapor**

All soil vapor analytical testing is summarized on Table 12. No exceedances of generic Method B screening levels were identified in the two soil vapor samples collected adjacent to the wedge of ORH impacted soil left in place along the eastern margin of the existing building.

### **3.0 CONCEPTUAL SITE MODEL**

The mode of release of oil range hydrocarbons to site soil is historic surface spills and leaking below ground hydraulic lifts within the interior of the former auto repair shop. The release impacted a localized area of near surface soils.

The contaminants of concern consisted of:

- Lube Oil (Oil Range Hydrocarbons)
- Naphthalene

The exposure pathway has been broken through the remedial action outlined in this report. There was a risk of direct contact for workers that would have been grading and installing utilities inside the shop portion of the building interior. No remaining pathways are known or believed to be present on this site.

For offsite disposal, two separate characterization samples were also analyzed for TPH-G, PCB's, PAH's, and metals. An additional sample was analyzed for EPH/VPH.

### **4.0 PROPOSED CLEANUP STANDARDS**

#### **4.1 Contaminant-Specific Standards**

Due to the limited nature of the cleanup, no indicator compounds were chosen for this remedial action.

#### **4.2 Soil Cleanup Standards**

For this project, standard Method A Cleanup standards were chosen for the soils. The standard levels for the contaminants of concern are:

- TPH Oil Range is 2,000 mg/kg.
- Total naphthalene is 5.0 mg/kg.

#### **4.3 Groundwater Cleanup Standards**

No groundwater was encountered in the remedial excavation. Site groundwater has not come in contact with the impacted soils and therefore, no standards have been selected beyond MTCA Method A cleanup values.

#### **4.4 Soil Vapor Screening Level**

For this project, the generic Method B Screening levels for ORH and naphthalene's was chosen for soil vapor. The generic levels are:

- TPH Oil Range is 4,700 ug/m3
- Total naphthalene's is 2.5 ug/m3

#### **4.5 Terrestrial Ecological Evaluation**

Based on WAC 173-340-7491 (1)(b), no further evaluation is necessary. All soil contaminated with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination. This meets the exposure pathway criteria for no further evaluation. The TEE form is attached as Appendix E.

#### **4.6 Cleanup Standards for Other Media**

The final testing showed that all ORH was removed from the site except for a small approximately 100 cubic yard lens along the east margin of the existing building on site. Laboratory analysis of soil vapor samples collected from the lens, demonstrate that the vapor migration pathway has been broken.

### **5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Summary**

This project involved the removal of roughly 596.35 tons of PCS from a localized area related to historic surface spills and leaking below ground hoists related to a former auto repair shop. PCS was encountered beneath the former auto repair area of the existing building on site. We have concluded that the release occurred from spills to the former diagnostic pits and leaking below ground hydraulic hoists.

All soil displaying any field indicator of hydrocarbon impacts was removed from the site regardless of hydrocarbon concentration in relation to applicable MTCA cleanup levels. 596.35 tons of Class 3 soils were removed from the localized area of PCS and were disposed of at Waste Management in Seattle, Washington. The documentation of this offsite waste management is included in Appendix A.

#### **5.2 Conclusions**

Based on the testing documented in this report and our site observations, it is our opinion that the site qualifies for a No Further Action Determination with a deed restriction to disclose the local pocket of residual ORH beneath the eastern foundation of the building. A disproportional cost analysis is attached to this report in Appendix E .



## 6.0 REFERENCES

Ecology, revised 2013. Model Toxics Control Act Regulation and Statute. Washington State Department of Ecology, Olympia, Washington. 324 pages. Publication No. 94-06. <http://www.ecy.wa.gov/biblio/9406.html>

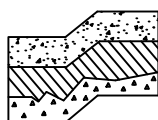
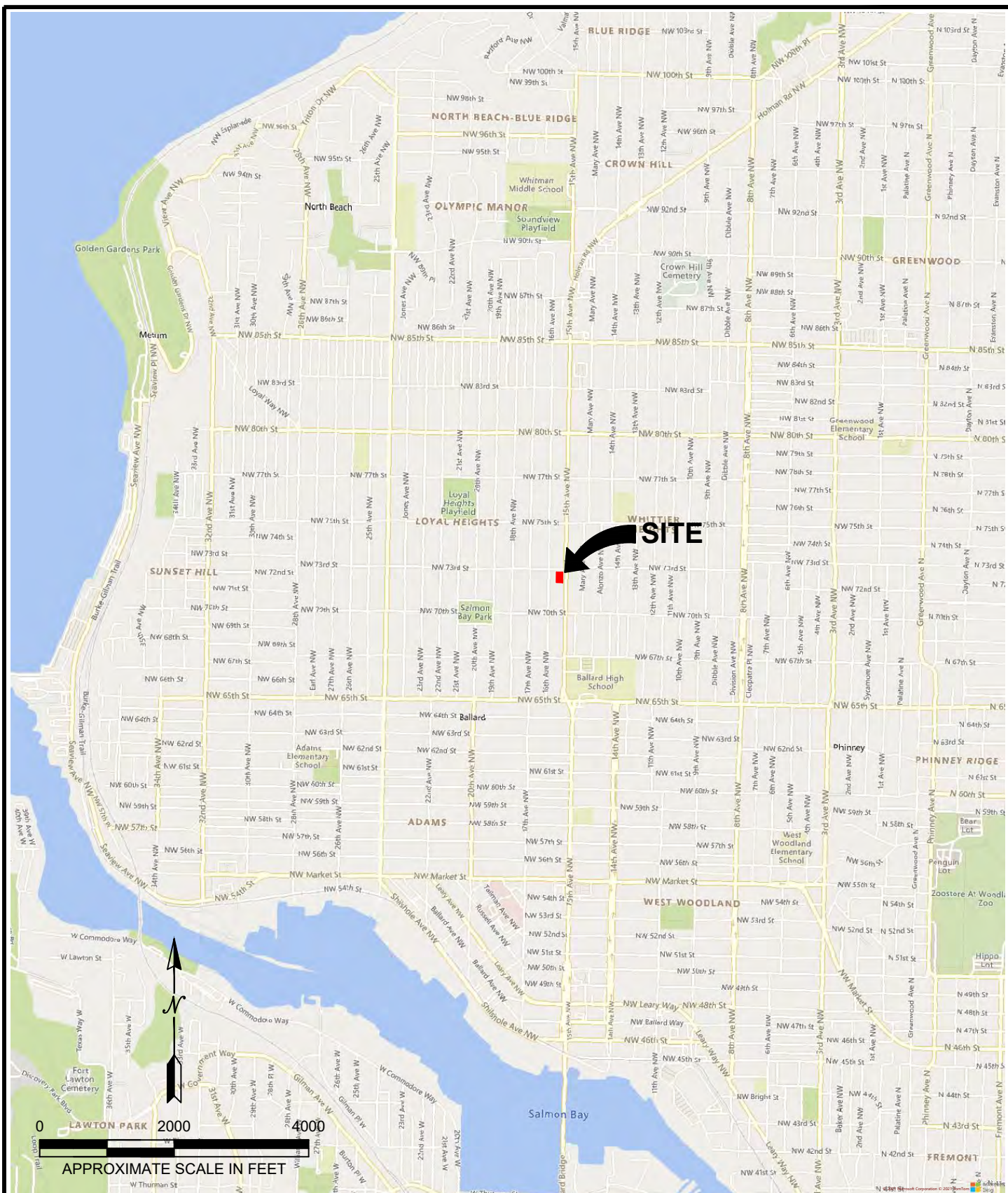
Ecology, revised 2016. Guidance for Remediation of Petroleum Contaminated Sites. Washington State Department of Ecology, Olympia, Washington. 197 pages. Publication No. 10-09-057. <https://fortress.wa.gov/ecy/publications/Summary Pages/1009057.html>

*Terra Associates, Inc., Draft Limited Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle, Washington, dated November 2, 2020.*

*Terra Associates Inc., Draft Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle Washington, dated April 26, 2021, revised May 13, 2021.*

*Terra Associates Inc., Phase II Environmental Site Assessment, Midas Muffler, 7055-15th Avenue Northwest, Seattle Washington, dated November 24, 2021.*

*Terra Associates Inc., Summary Memo-Shallow Soil Vapor Sampling, dated June 1, 2022.*



**Terra  
Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

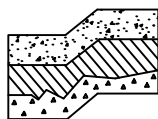
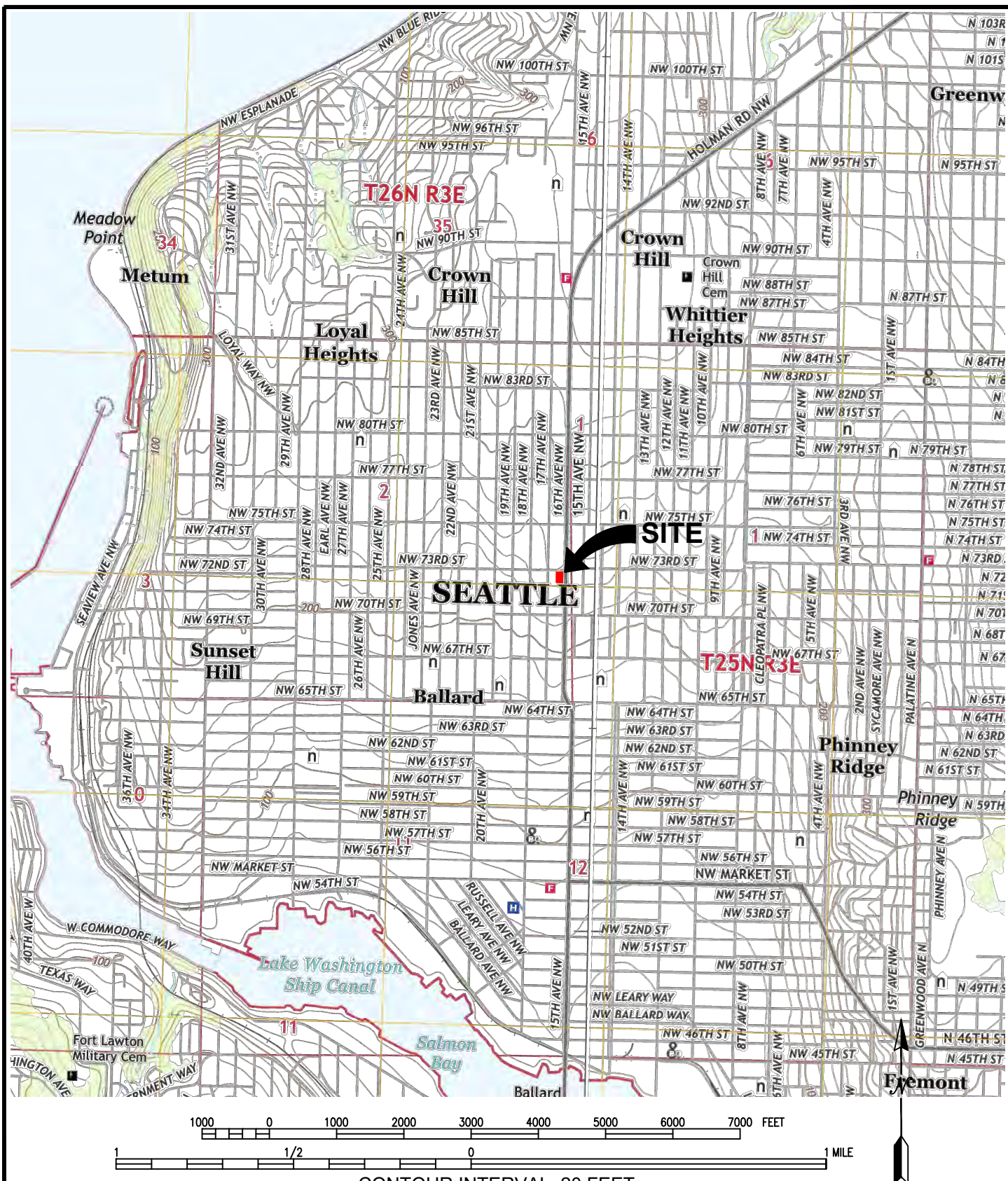
**VICINITY MAP  
MIDAS MUFFLER  
SEATTLE, WASHINGTON**

Proj.No.T-8336-5

Date: JUNE 2022

Figure 1





**Terra  
Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

**TOPOGRAPHIC VICINITY MAP  
MIDAS MUFFLER  
SEATTLE, WASHINGTON**

Proj.No.T-8336-5

Date: JUNE 2022

Figure 2



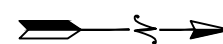


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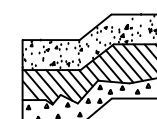
OBLIQUE AERIAL PHOTO LOOKING WEST  
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(IMAGE DATE 5/2019)

**LEGEND:**

— APPROXIMATE PARCEL BOUNDARY



NOT TO SCALE



**Terra  
Associates, Inc.**  
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Geology and  
Environmental Earth Sciences

OBLIQUE AERIAL PHOTO  
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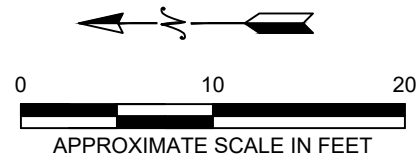
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Figure 3

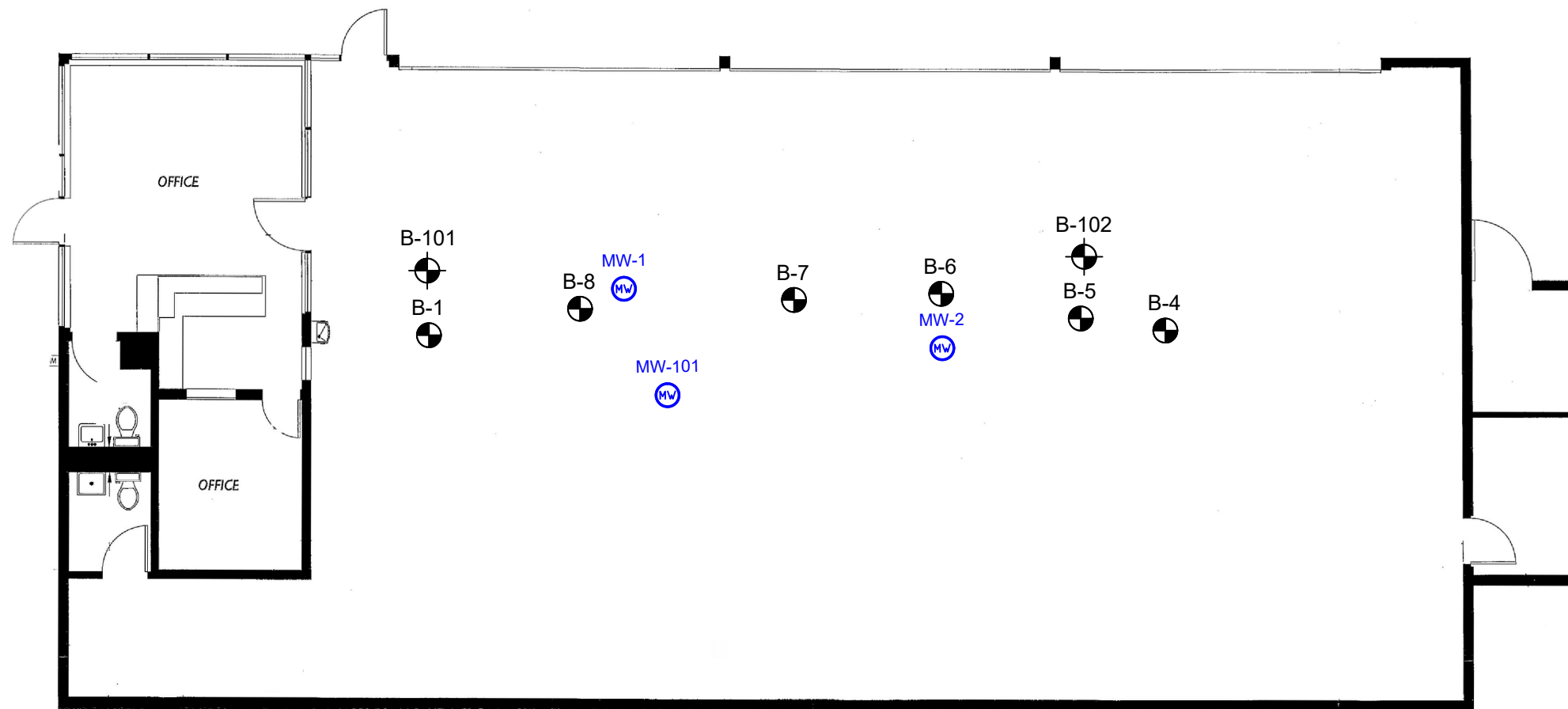




B-3

B-2

MW-3



PROPERTY LINE (TYP.)

SB-1




MW-201

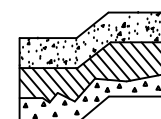
**NOTE:**

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

**REFERENCE:** SITE PLAN PROVIDED BY CLIENT.

**LEGEND:**

-  APPROXIMATE BORING LOCATION
-  APPROXIMATE SOIL BORING LOCATION
-  APPROXIMATE MONITORING WELL LOCATION (ONLY MW-101, MW-3 AND MW-201 WERE SURVEYED)



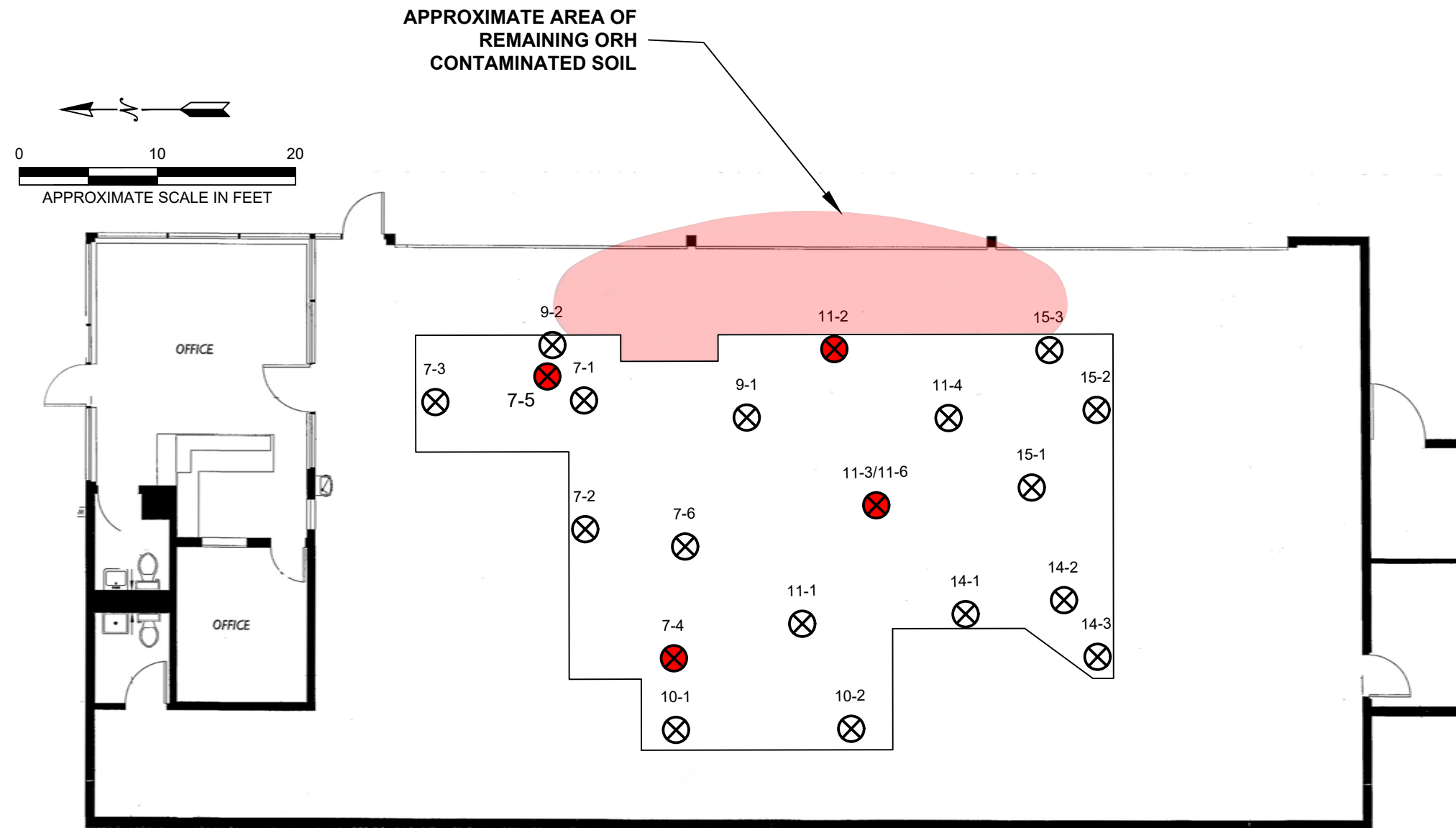
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Environmental Earth Sciences

EXPLORATION LOCATION PLAN  
MIDAS MUFFLER  
SEATTLE, WASHINGTON

Proj.No.T-8336-5

Date: JUNE 2022

Figure 4



Sample Location	Depth	TPH-Gasoline Range	TPH-Diesel Range	TPH-Oil Range	Sample Type
8336-7-1	10.5	NT	50U	250U	Confirmation Base
8336-7-2	7.5	NT	50U	250U	Confirmation Sidewall
8336-7-3	8	NT	50U	250U	Confirmation Sidewall
8336-7-4	8	NT	5,900x	8,700	Characterization (removed)
8336-7-5	8	NT	5,800x	5,900	Characterization (removed)
8336-7-6	10.5	NT	50U	250U	Confirmation Base
8336-9-1	10.5	NT	50U	250U	Confirmation Base
8336-9-2	8	NT	840	780	Confirmation Sidewall
8336-10-1	8	NT	50U	250U	Confirmation Sidewall
8336-10-2	8	NT	50U	250U	Confirmation Sidewall
8336-11-1	10.5	NT	50U	250U	Confirmation Base
8336-11-2	8	NT	1,300x	1,700	Confirmation Sidewall
8336-11-3	10	NT	5,500x	12,000	Confirmation Base (removed)
8336-11-4	11	NT	50U	250U	Confirmation Base
8336-11-5	8	NT	50U	250U	Confirmation Sidewall
8336-11-6	11	NT	50U	250U	Confirmation Base
14-1	8	NT	50U	250U	Confirmation Sidewall
14-2	10.5	NT	50U	250U	Confirmation Base
14-3	8	NT	50U	250U	Confirmation Sidewall
15-1	11	NT	130x	370	Confirmation Base
15-2	8	NT	50U	250U	Confirmation Sidewall
15-3	8	NT	50U	250U	Confirmation Sidewall

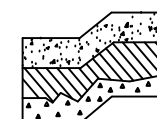
NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY CLIENT.

LEGEND:

- ⊗ APPROXIMATE LOCATION OF CONFORMATION SAMPLES
- ⊗ APPROXIMATE LOCATION OF SOIL SAMPLES WITH MTCA METHOD EXCEEDANCES



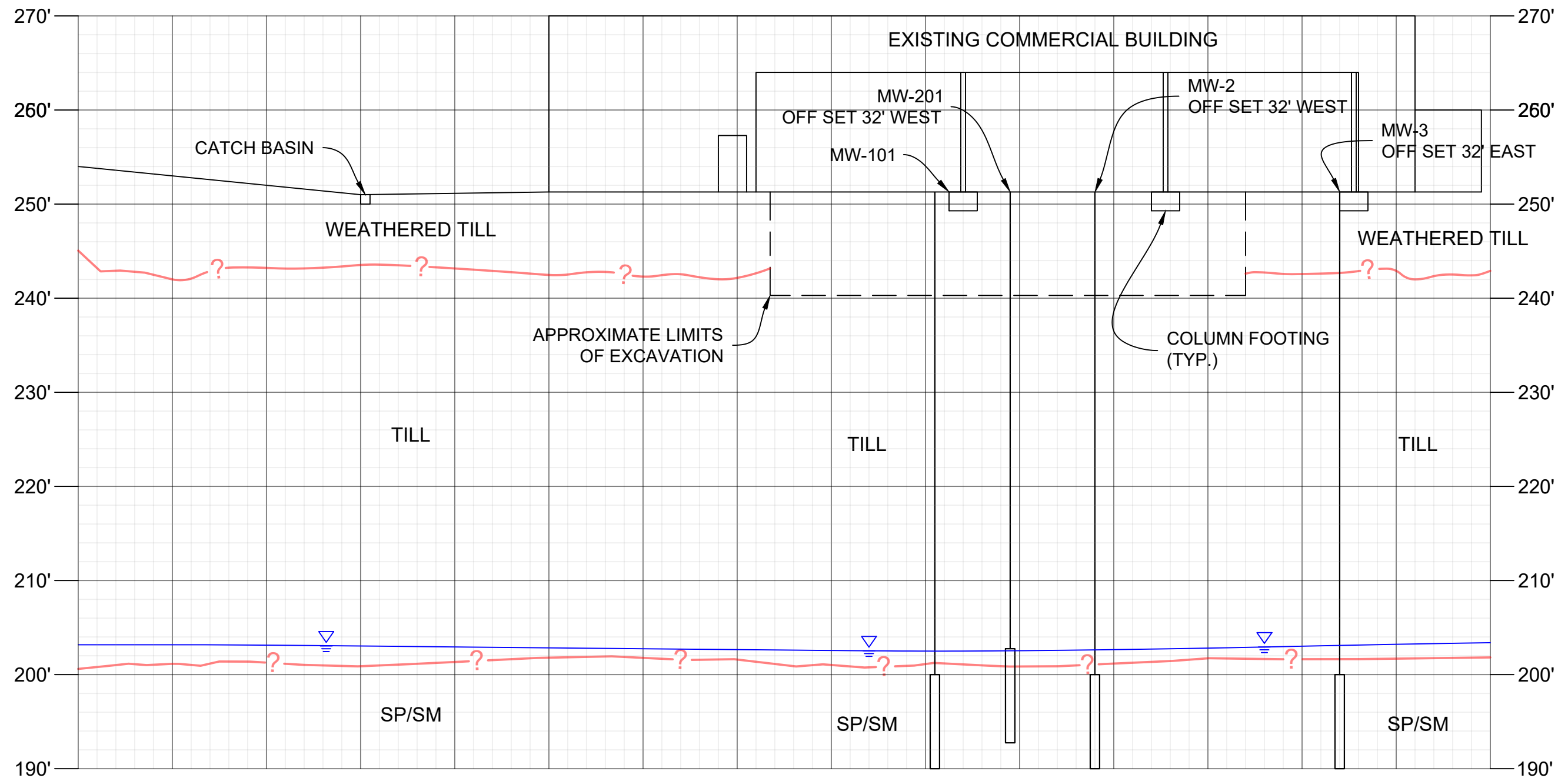
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REMEDIATION SAMPLE LOCATION PLAN  
MIDAS MUFFLER  
SEATTLE, WASHINGTON

Proj.No.T-8336-5

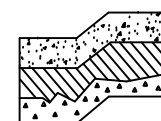
Date: JUNE 2022

Figure 5



NOTE:  
THE SUBSURFACE CONDITIONS SHOWN ARE BASED ON INTERPOLATION  
BETWEEN WIDELY SPACED TEST BORINGS AND SHOULD BE CONSIDERED  
APPROXIMATE. ACTUAL SUBSURFACE CONDITIONS MAY VARY FROM  
THOSE SHOWN.

SCALE:  
VERTICAL 1" = 1'  
HORIZONTAL 1" = 1'



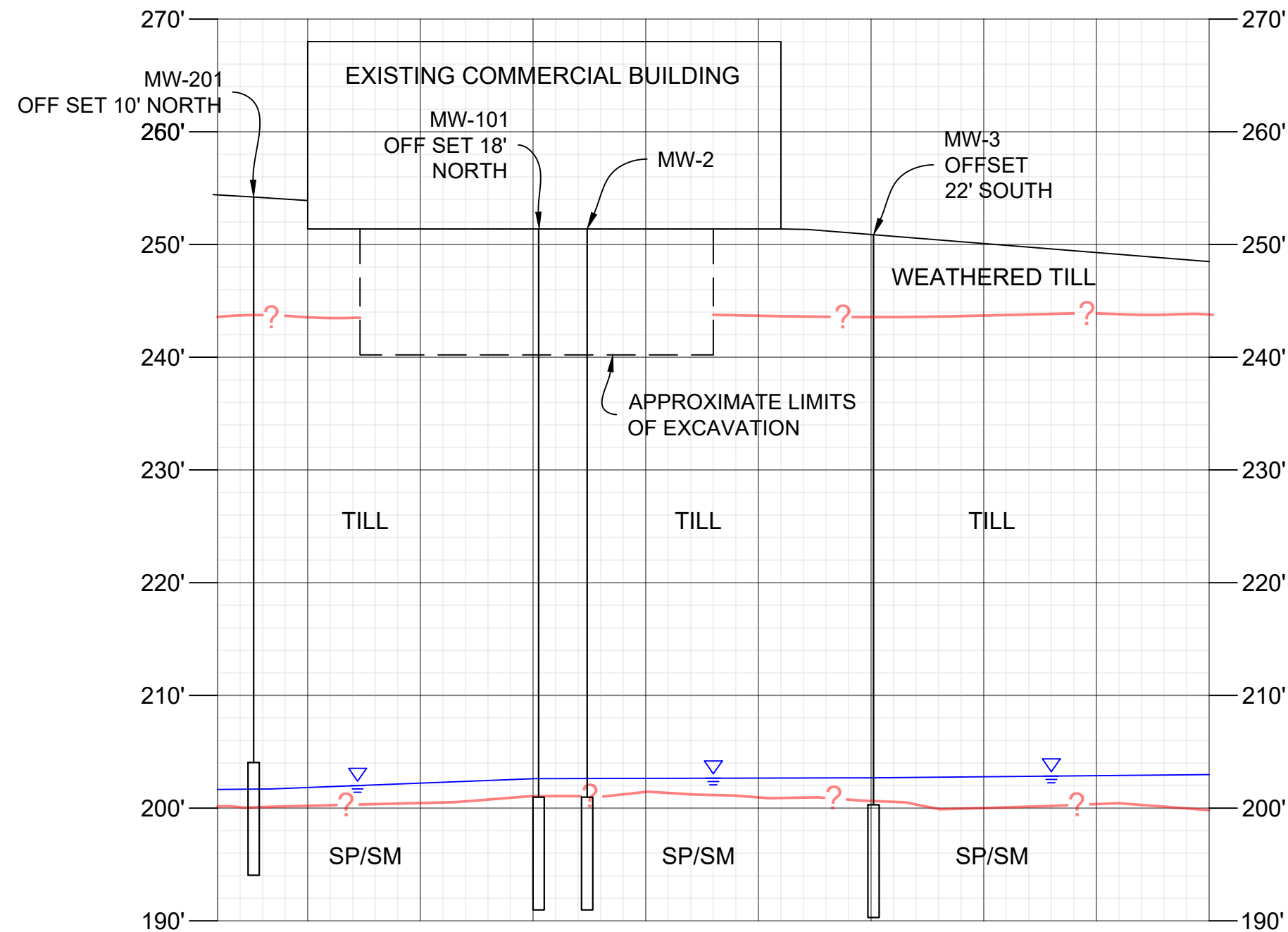
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CROSS SECTION A-A  
MIDAS MUFFLER  
SEATTLE, WASHINGTON

Proj.No.T-8336-5

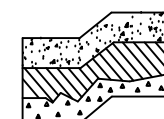
Date: JUNE 2022

Figure 6



NOTE:  
THE SUBSURFACE CONDITIONS SHOWN ARE BASED ON INTERPOLATION  
BETWEEN WIDELY SPACED TEST BORINGS AND SHOULD BE CONSIDERED  
APPROXIMATE. ACTUAL SUBSURFACE CONDITIONS MAY VARY FROM  
THOSE SHOWN.

SCALE:  
VERTICAL 1" = 1'  
HORIZONTAL 1" = 1'



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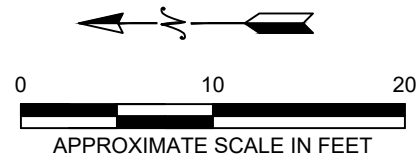
CROSS SECTION B-B  
MIDAS MUFFLER  
SEATTLE, WASHINGTON

Proj.No.T-8336-5

Date: JUNE 2022

Figure 7





B-3

B-2

MW-3

202.4

202.3

202.2

B-102

B-6

MW-2

B-7

B-8

MW-1

B-101

B-1

MW-101

B-5

B-4

202.1

202

201.9

201.8

201.7

MW-201

SB-1

PROPERTY LINE (TYP.)

NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY CLIENT.

LEGEND:



APPROXIMATE BORING LOCATION



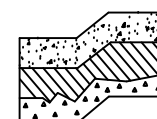
APPROXIMATE SOIL BORING LOCATION



APPROXIMATE MONITORING WELL LOCATION  
(NOTE: MW-1 DID NOT REACH GROUNDWATER AND WAS ABANDONED)



GROUND WATER CONTOURS OCTOBER 6, 2021



**Terra  
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GROUNDWATER CONTOURS  
MIDAS MUFFLER  
SEATTLE, WASHINGTON

Proj.No.T-8336-5

Date: JUNE 2022

Figure 8

**Table 1**  
**Static Groundwater Level Summary**

Monitoring Well	Top of Casing	3/29/2021		4/7/2021		10-6-2021	
		Depth	Elevation	Depth	Elevation	Depth	Elevation
MW-101	251.00	47.33	203.67	47.29	203.71	48.79	202.21
MW-2	250.54	46.98	203.56	46.84	203.70	48.24	202.30
MW-3	250.06	45.94	204.12	45.69	204.37	47.57	202.49
MW-201	253.95					51.73	201.61

**Notes:** All measurements are in feet.

**Table 2**  
**Analytical Testing Summary-Soils**  
**Hydrocarbons Remedial Excavation**

Sample Location	Depth	TPH-Gasoline Range	TPH-Diesel Range	TPH-Oil Range	Sample Type
8336-7-1	10.5	NT	50U	250U	Confirmation Base
8336-7-2	7.5	NT	50U	250U	Confirmation Sidewall
8336-7-3	8	NT	50U	250U	Confirmation Sidewall
8336-7-4	8	NT	5,900x	8,700	Characterization (removed)
8336-7-5	8	NT	5,800x	5,900	Characterization (removed)
8336-7-6	10.5	NT	50U	250U	Confirmation Base
8336-9-1	10.5	NT	50U	250U	Confirmation Base
8336-9-2	8	NT	840	780	Confirmation Sidewall
8336-10-1	8	NT	50U	250U	Confirmation Sidewall
8336-10-2	8	NT	50U	250U	Confirmation Sidewall
8336-11-1	10.5	NT	50U	250U	Confirmation Base
8336-11-2	8	NT	1,300x	1,700	Confirmation Sidewall
8336-11-3	10	NT	5,500x	12,000	Confirmation Base (removed)
8336-11-4	11	NT	50U	250U	Confirmation Base
8336-11-5	8	NT	50U	250U	Confirmation Sidewall
8336-11-6	11	NT	50U	250U	Confirmation Base
14-1	8	NT	50U	250U	Confirmation Sidewall
14-2	10.5	NT	50U	250U	Confirmation Base
14-3	8	NT	50U	250U	Confirmation Sidewall
15-1	11	NT	130x	370	Confirmation Base
15-2	8	NT	50U	250U	Confirmation Sidewall
15-3	8	NT	50U	250U	Confirmation Sidewall
B-2	15	NT	28U	350	Characterization
B-3	7	NT	26U	55	Characterization
B-4	11	NT	27U	54U	Characterization
B-5	7	NT	1300	9200	Characterization (removed)

Sample Location	Depth	TPH-Gasoline Range	TPH-Diesel Range	TPH-Oil Range	Sample Type
B-6	6	NT	160	1200	Characterization
	7.5	NT	1300	7100	Characterization (removed)
	9	NT	3700	9000	Characterization (removed)
B-7	7	NT	28U	56U	Characterization
B-8	2.5	9.9U	8500	24,000	Characterization (removed)
	7.5	NT	28U	55U	Characterization
B-101	2.5	22U	55U	110U	Characterization
	7.5	22U	55U	110U	Characterization
B-102	10	23U	1800	14,000	Characterization (removed)
	15	23U	100	840	Characterization
	20	NT	59	300	Characterization
MW-1	10	21U	220	940	Characterization
	15	NT	27U	55U	Characterization
MW-101	10	22U	980	7,000	Characterization (removed)
	15	22U	150	1,000	Characterization
	20	NT	89	610	Characterization
MW-2	10	23U	230	1400	Characterization
	15	21U	53U	110U	Characterization
MW-3	5	NT	27U	54U	Characterization
	10	NT	28U	54U	Characterization
MW-201	5	22U	54U	100U	Characterization
	50	21U	52U	100U	Characterization
MW-201	5	21U	53U	110U	Characterization
	10	22U	56U	110U	Characterization
	15	22U	54U	110U	Characterization
	20	21U	54U	110U	Characterization
MTCA Method A		30 (100)	2,000		

Notes: All depths are in feet below existing top of floor slab

All units are mg/kg based on dry weight

U modifier indicates that the compound was not present at the numerical practical quantitation limit (PQL).

Shaded cells indicate analyte value exceeds current MTCA Method A cleanup value.

PQL varies based on soil moisture content.

**Table 3**  
**Analytical Test Summary**  
**Soils - Metals**

Test Boring	Depth	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
B-8	2.5	11U	NT	0.54U	37	18	0.27U	NT	NT
B-102	10	12U	37	0.58U	19	5.8U	0.29U	12U	1.2U
MTCA Method A		20	16,000	2	2,000 (19)	250	2.0	400	400

**Notes:** Depths are in feet below existing grade.

All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical PQL.

Values for chromium are for total chromium. Hexavalent chromium are values in parenthesis.

**Table 4**  
**Analytical Testing Summary**  
**Soil - Volatile Organics**

Test Boring	Depth	Acetone	Methylene Chloride	2-Butanone (MEK)	Ethyl Benzene	Xylenes	Isopropyl benzene (cumene)	PCE
B-8	2.5	0.24E	0.061H	0.043	0.00092U	0.0118U	0.00092U	0.0074
B-10	10	0.029	0.0047U	0.0047U	0.0045	0.0118	0.0024	0.041
MTCA Method A (B)		(7,200)	0.02	400	6.0	9.0	8,000	0.05

**Notes:** All units mg/kg.  
U indicates the compound was not present at the stated numerical PQL.  
Refer to lab report for all of the compounds analyzed for volatile compounds.  
H indicates the results are likely due to lab contamination as discussed in the lab report.  
E indicates the results exceed the quantitation limits and are an estimate.  
Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 5**  
**Analytical Testing Summary**  
**Soil PCBs**

<b>Test Boring</b>	<b>Depth</b>	<b>Aroclor 1016</b>	<b>Aroclor 1221</b>	<b>Aroclor 1232</b>	<b>Aroclor 1242</b>	<b>Aroclor 1248</b>	<b>Aroclor 1254</b>	<b>Aroclor 1260</b>
B-8	2.5	0.054U	0.054U	0.054U	0.054U	0.054U	0.27U	0.27U
B-102	10	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U
MTCA Method A (B)		1.0						

**Notes:** All units mg/kg.

U indicates the compound was not present at the stated PQL.

Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 6**  
**Analytical Testing Summary**  
**Soil CPAHs**

**B-8 at 2.5**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.14U	1	0.07
benzo(a)anthracene	0.14U	0.1	0.007
benzo(b)fluoranthene	0.14U	0.1	0.007
benzo(k)fluoranthene	0.14U	0.1	0.007
chrysene	0.14U	0.01	0.0007
Dibenz(a,h)anthracene	0.14U	0.1	0.007
indeno(1,2,3-cd)pyrene	0.14U	0.1	0.007
TOTAL CPAH		N/A	0.1
MTCA			0.1

**B-102 at 10**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.015U	1	0.075
benzo(a)anthracene	0.015U	0.1	0.0075
benzo(b)fluoranthene	0.015U	0.1	0.0075
benzo(k)fluoranthene	0.015U	0.1	0.0075
chrysene	0.015U	0.01	0.00075
Dibenz(a,h)anthracene	0.015U	0.1	0.0075
indeno(1,2,3-cd)pyrene	0.015U	0.1	0.0075
TOTAL CPAH		N/A	0.11
MTCA			0.1

**Notes:** All units are mg/kg based on dry weight.

U indicates the compound was not present at the stated PQL.

TEF values are from Chapter 173-340 WAC-Table 708-2.

TEF corrected values are based on 50 percent of the PQL.



**Table 7**  
**Analytical Testing Summary**  
**Soils-PAHs**

<b>Test Boring</b>	<b>Depth</b>	<b>Naphthalene</b>	<b>2-Methyl naphthalene</b>	<b>1-methyl Naphthalene</b>	<b>Fluorene</b>	<b>Fluoranthene</b>	<b>Phenanthrene</b>	<b>Pyrene</b>
B-8	2.5	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U
B-102	10	0.0077U	0.0077U	0.0077U	0.015U	0.016	0.051	0.03
MTCA Method A (B)		5.0			3,200	3,200	--	2,400

**Notes:** All units mg/kg.

Refer to lab report for full results. Only compounds with detections are listed above.

Cleanup levels shown are for reference purposed only. Site-specific cleanup levels have not been determined.

**Table 8**  
**Analytical Test Summary**  
**Soil - EPH/VPH**

<b>Sample Number</b>	<b>8336-7-4</b>
<b>Sample Date</b>	<b>2-7-2022</b>
<b>Hydrocarbon Fraction</b>	
C5-C6 Aliphatics	1.26
C6-C8 Aliphatics	0.76
C8-C10 Aliphatics	10.35
C10-C12 Aliphatics	5.15
C8-C10 Aromatics	10.35
C10-C12 Aromatics	5.15
C12-C16 Aliphatics	136
C16-C21 Aliphatics	1,640
C21-C34 Aliphatics	12,400
C12-C16 Aromatics	16.2
C16-C21 Aromatics	717
C21-C34 Aromatics	1,540

Notes: All unites are mg/kg

U modifier indicates that the analyte was not present at the numerical value of the practical quantitation limit (PQL)

**Table 9**  
**Analytical Test Summary**  
**Groundwater - Hydrocarbons**

<b>Test Boring</b>	<b>Date</b>	<b>TPH- Gasoline Range</b>	<b>TPH Diesel Range</b>	<b>TPH Oil Range</b>
MW-1	3/30/21	100U	220U	220U
	10/12/21	100U	210U	210U
MW-2	3/30/21	100U	220U	220U
	10/12/21	100U	210U	210U
MW-3	3/30/21	100U	220U	340
	10/12/21	100U	220U	220U
MW-201	10/12/21	100U	220U	220U
MTCA Method A		800	500	

**Table 10**  
**Analytical Test Summary**  
**Groundwater - Volatile Organic**  
**Compounds**

Well Monitoring	Date	Benzene	Ethylbenzene	Toluene	Xylenes	sec-Butylbenzene	Perchloroethylene	Methylene Chloride	2-Butanone (MEK)	Acetone
MW-101	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-2	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-3	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-201	10/12/21	0.39	0.2U	1.0U	0.6U	0.22	0.2U	1.0U	5.0U	5.0U
MTCA Method A		5.0	700	1,000	300	800	5.0	5.0	(4,800)	(7,200)

**Notes:** All units are mg/kg..

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.

Only common volatiles and volatiles found in soil samples are summarized above. Refer to lab report for additional compounds.

Values in parenthesis are Method B.

NP indicates there is no MTCA or EPA cleanup level or drinking water MCL for Isopropyl Benzene.

**Table 11**  
**Analytical Test Summary**  
**Groundwater – Metals**

Well Monitoring	Date	Total cadmium	Dissolved Cadmium	Total Chromium	Dissolved Chromium	Total Lead	Dissolved Lead	Total Nickel	Dissolved Nickel	Total Zinc	Dissolved Zinc
MW-101	3/29/21	4.4 U	4.0U	46	10U	3.0	1.0U	46	20U	28U	25U
MW-2	3/29/21	4.4 U	4.0U	15	10U	1.1U	1.0U	22U	20U	28U	25U
MW-3	3/29/21	4.4 U	4.0U	15	10U	3.7	1.0U	55	20U	33	25U
MW-201	10/12/21	4.4 U	4.0U	46	10U	2.4	1.0U	40	20U	46	25U
MTCA Method A		5.0		50		15		320		4800	

**Notes:** All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.

The value for nickel is for soluble salts of nickel.

**Table 12**  
**Groundwater - Sampling Parameters**

<b>Well Monitoring</b>	<b>Date</b>	<b>Temperature</b>	<b>Dissolved Oxygen</b>	<b>Conductivity</b>	<b>pH</b>	<b>ORP</b>	<b>Turbidity</b>	<b>Ferrous Iron</b>	<b>Purge Rate</b>	<b>Purge Volume</b>
MW-101	3/29/2021	16.02	0.33	1027	7.07	-300.1	22	0.0	0.05	9
	10/12/2021	14.84	0.24	373	6.55	78.2	NM	NM	0.17	7
MW-2	3/29/2021	15.30	0.38	808	8.48	-116.3	12	0.0	0.05	6
	10/12/2021	15.21	0.32	312	6.41	84.8	NM	NM	0.17	7
MW-3	3/29/2021	14.81	0.45	1425	8.80	-343.7	18	0.0	0.05	6
	10/12/2021	15.18	0.13	496	6.49	17	NM	NM	0.17	7
MW-201	10/12/2021	14.8	0.15	457	6.73	-482	NM	NM	0.17	6

**Notes:** Temperature is in degrees Celsius.  
 Conductivity is in  $\mu\text{S}/\text{cm}$ .  
 Dissolved Oxygen is in  $\text{mg}/\text{l}$ .  
 pH is in standard units.  
 ORP is in millivolts.  
 Turbidity is in NTUs.  
 Ferrous Iron in in PPM based on Hatch field test.  
 Purge Rate is in gallon per minute.  
 Purge volume is in gallons.  
 No sheen was observed on any purge water.  
 NM indicates that the parameter was not measured.

**Table 13**  
**Analytical Test Summary**  
**Soil Vapor – APH and Naphthalenes**

<b>Test Boring</b>	<b>Date</b>	<b>Naphthalene</b>	<b>APH EC5-8 aliphatics</b>	<b>APH EC9-12 aliphatics</b>	<b>APH EC9-10 aromatics</b>
SVP-1	4/11/2022	1.6U	1,200	300	150U
SVP-2	4/11/2022	2.1U	3,800	470	250U
MTCA Generic Method B		46	4,700		

Notes: All units are in micrograms per cubic meter.

U modifier indicates that the compound was not present at the numerical method detection limit (MDL).

**APPENDIX A**  
**SUPPORTING DOCUMENTATION**



# LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT

**Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690**

**DRAFT**

**Project No. T-8336-2**

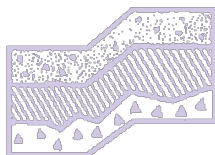


**Terra Associates, Inc.**

**Prepared for:**

**Jubilee 95, LLC  
Mukilteo, Washington**

**November 2, 2020**



# TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

November 2, 2020  
Project No. T-8336-2

Mr. Tim Grout  
Jubilee 95, LLC  
6652 Waterton Circle  
Mukilteo, Washington 98275

Subject: Limited Phase II Environmental Site Assessment  
Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690

Dear Mr. Grout:

We have completed a Limited Phase II Environmental Site Assessment for King County Tax Parcel 751850-0690 located at 7055 – 15th Avenue NW in Seattle, Washington. Our prior Phase I ESA study prepared for a potential purchaser in 2018 found 2 recognized environmental conditions (RECs) associated with the site. As discussed in the attached report, site specific sampling has focused on the RECs.

The attached report describes our study in detail. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,  
**TERRA ASSOCIATES, INC.**

**DRAFT**

Charles R. Lie, L.E.G., L.H.G.  
Project Manager

**Limited Phase II Environmental Site Assessment  
Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690**

**SUMMARY**

This report summarizes recent environmental sampling and analytical testing on soils, sub slab soil vapors, and groundwater at King County Tax Parcel 751850-0690 located in the SODO area of Seattle, Washington. We have submitted a Phase I ESA, dated August 17, 2020 to you for this project.

The site consists of 1 tax parcel totaling 0.3 acres. The subject site is currently developed with a Midas Muffler auto repair shop. Prior to the existing building, two single-family residences were on-site.

Our Phase I Assessment revealed evidence of two recognized environmental conditions (RECs) in connection with the parcel. These RECs consist of:

1. The suspected former presence of residential heating oil USTs.
2. The use of the site as an auto shop including subsurface hydraulic lifts.

To evaluate the RECs, Terra Associates, Inc. has done site sampling of near-surface soils. As discussed in this report, one constituent of concern, total petroleum hydrocarbons in the diesel to oil range were found to exceed current MTCA Method A cleanup values for unrestricted land use.

The following sections of this memo present more information.

**SCOPE OF WORK**

Our scope of work for the initial site assessment consisted of the following:

- One-call utility notification required by state law and private locating service prior to drilling test holes.
- Drilling eight soil test borings.
- Sampling soils from all borings. All soil samples were field screened for hydrocarbons.
- Transfer of samples from the site to the analytical laboratory of Onsite Environmental for soil and groundwater samples.
- Preparation of this report.

## **FINDINGS**

### ***Site Conditions***

The site is located in the Ballard Neighborhood of Seattle, Washington. Most of the surrounding area is and has been single-family residential. 15th Avenue NW is an arterial developed with retail and single-story commercial buildings. Figures 1 and 2 show the site location. Figure 3 is an oblique aerial photo that shows the site conditions.

The exploration locations for this report are shown on Figure 4.

The site slopes gently down towards the south and corresponds with adjacent streets and other properties.

The soils found in the borings consist of dense till soils.

No groundwater was encountered in the borings completed for this project.

## **ANALYTICAL TESTING SUMMARY/DISCUSSION**

The lab results are summarized on Tables 1 through 6 attached to this memo. The full laboratory test reports are attached in Appendix B.

The results of the analysis show that there are elevated oil range hydrocarbons that exceed the cleanup values in Borings B-5, B-6, and B-8. None of the secondary analysis required by Table 830-1 exceeded their respective cleanup values.

## **LIMITATIONS**

We prepared our conclusions and recommendations are our professional opinions derived in accordance with generally accepted professional engineering practices. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the Ballard Midas Muffler in Seattle, Washington. This report is for the exclusive use of Jubilee 95, LLC and their authorized representatives.

The test results summarized in this report represent the sample locations shown on the attached figures and the sample date that the samples were taken. None of the data should be extrapolated to other locations on the site or off-site.

Attachments: Tables 1 through 6 – Analytical Testing Summary

Figure 1 – Vicinity Map

Figure 2 – Topographic Vicinity Map

Figure 3 – Oblique Aerial Photo

Figure 4 – Exploration Location Sketch

Appendix A – Subsurface Exploration

Appendix B – Analytical Test Reports Soils

**Table 1**  
**Analytical Test Results**  
**Soils-Hydrocarbons**

Boring	Depth	TPH-Gasoline Range	TPH Diesel Range	TPH Oil Range
B-2	15	NT	28U	350
B-3	7	NT	26U	55
B-4	11	NT	27U	54U
B-5	7	NT	1300	9200
B-6	6	NT	160	1200
	7.5	NT	1300	7100
	9	NT	3700	9000
B-7	7	NT	28U	56U
B-8	2.5	9.9U	8500	24,000
	7.5	NT	28U	55U
MTCA Method A		30	2,000	

**Notes:** Depths are in feet below existing grade.  
All units are mg/kg.  
U modifier signifies that the compound was not present at the stated numerical practical quantitation limit.  
Shaded cells exceed the MTCA Method A Cleanup Level.

**Table 2**  
**Analytical Test Results**  
**Soils-Metals**

Boring	Depth	Arsenic	Cadmium	Chromium	Lead	Mercury
B-8	2.5	11U	0.54U	37	18	0.27U
MTCA Method A		20	2	2,000 (19)	250	2.0

**Notes:** Depths are in feet below existing grade.  
All units are mg/kg.  
U modifier signifies that the compound was not present at the stated numerical practical quantitation limit.  
Values for chromium are for total chromium and in parenthesis, for hexavalent chromium.

**Table 3**  
**Analytical Testing Summary**  
**Soil-Volatile Organics**

<b>Boring</b>	<b>Depth</b>	<b>Acetone</b>	<b>Methylene Chloride</b>	<b>2-Butanone (MEK)</b>	<b>Benzene</b>	<b>TCE</b>	<b>PCE</b>
B-8	2.5	0.24E	0.061H	0.043	0.00092U	0.00092U	0.0074
MTCA Method A (B)		(7,200)	0.02	400	0.03	0.05	0.05

**Notes:** All units mg/kg.

U indicates that the compound was not present at the stated numerical PQL.

Refer to lab report for all of the compounds analyzed for volatile compounds.

H indicates that the results are likely due to lab contamination as discussed in the lab report.

E indicates that the results exceed the quantitation limits and are an estimate.

**Table 4**  
**Analytical Testing Summary**  
**Soil PCBs**

<b>Boring</b>	<b>Depth</b>	<b>Aroclor 1016</b>	<b>Aroclor 1221</b>	<b>Aroclor 1232</b>	<b>Aroclor 1242</b>	<b>Aroclor 1248</b>	<b>Aroclor 1254</b>	<b>Aroclor 1260</b>
B-8	2.5	0.054U	0.054U	0.054U	0.054U	0.054U	0.27U	0.27U
MTCA Method A (B)		1.0						

**Notes:** All units mg/kg.

U indicates that the compound was not present at the stated numerical PQL.

**Table 5**  
**Analytical Testing Summary**  
**Soil CPAHs**

**B-8 at 2.5**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.14U	1	0.07
benzo(a)anthracene	0.14U	0.1	0.007
benzo(b)fluoranthene	0.14U	0.1	0.007
benzo(k)fluoranthene	0.14U	0.1	0.007
chrysene	0.14U	0.01	0.0007
Dibenz(a,h)anthracene	0.14U	0.1	0.007
indeno(1,2,3-cd)pyrene	0.14U	0.1	0.007
TOTAL CPAH	0.14U	N/A	0.1
MTCA			0.1

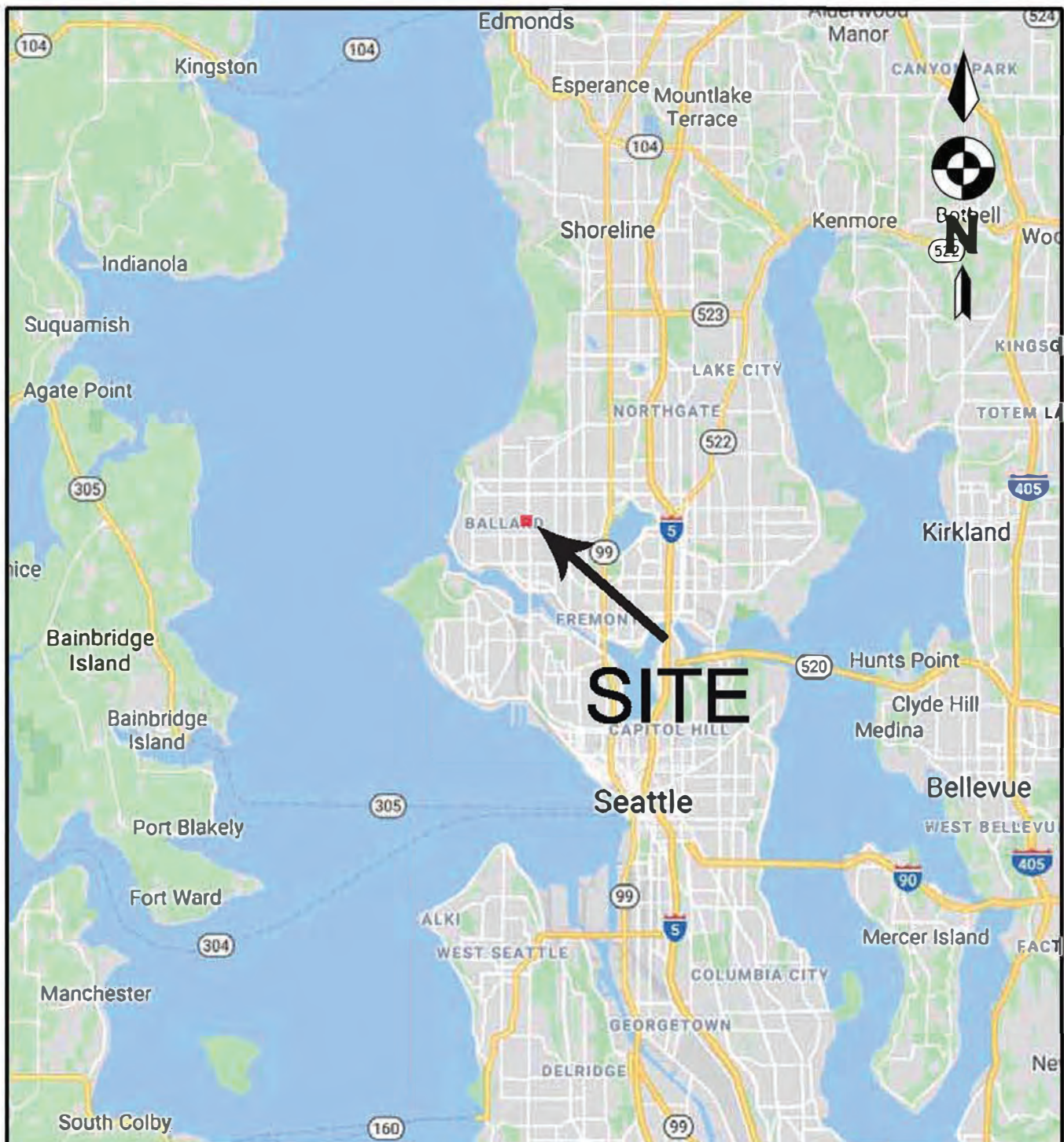
**Notes:** All units are mg/kg based on dry weight.  
U indicates that the compound was not present at the stated PQL  
TEF values are from Chapter 173-340 WAC-Table 708-2.  
TEF corrected values are based on 50 percent of the PQL.

**Table 6**  
**Analytical Testing Summary**  
**PAHs-Soils**

Boring	Depth	Naphthalene	2-Methyl naphthalene	1-methyl Naphthalene	Ace naphthalene	Anthracene	Acenaphthene	Fluorene	Fluoranthene	Phenanthrene	Pyrene	Benzo(g,h,i)perylene
B-8	2.5	0.00	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
MTCA Method A (B)		5.0			--	2,400	4,800	3,200	3,200	--	2,400	--

**Notes:** All units mg/kg.





2 mi   
Approximate Scale

Base Image: Google Maps 2020



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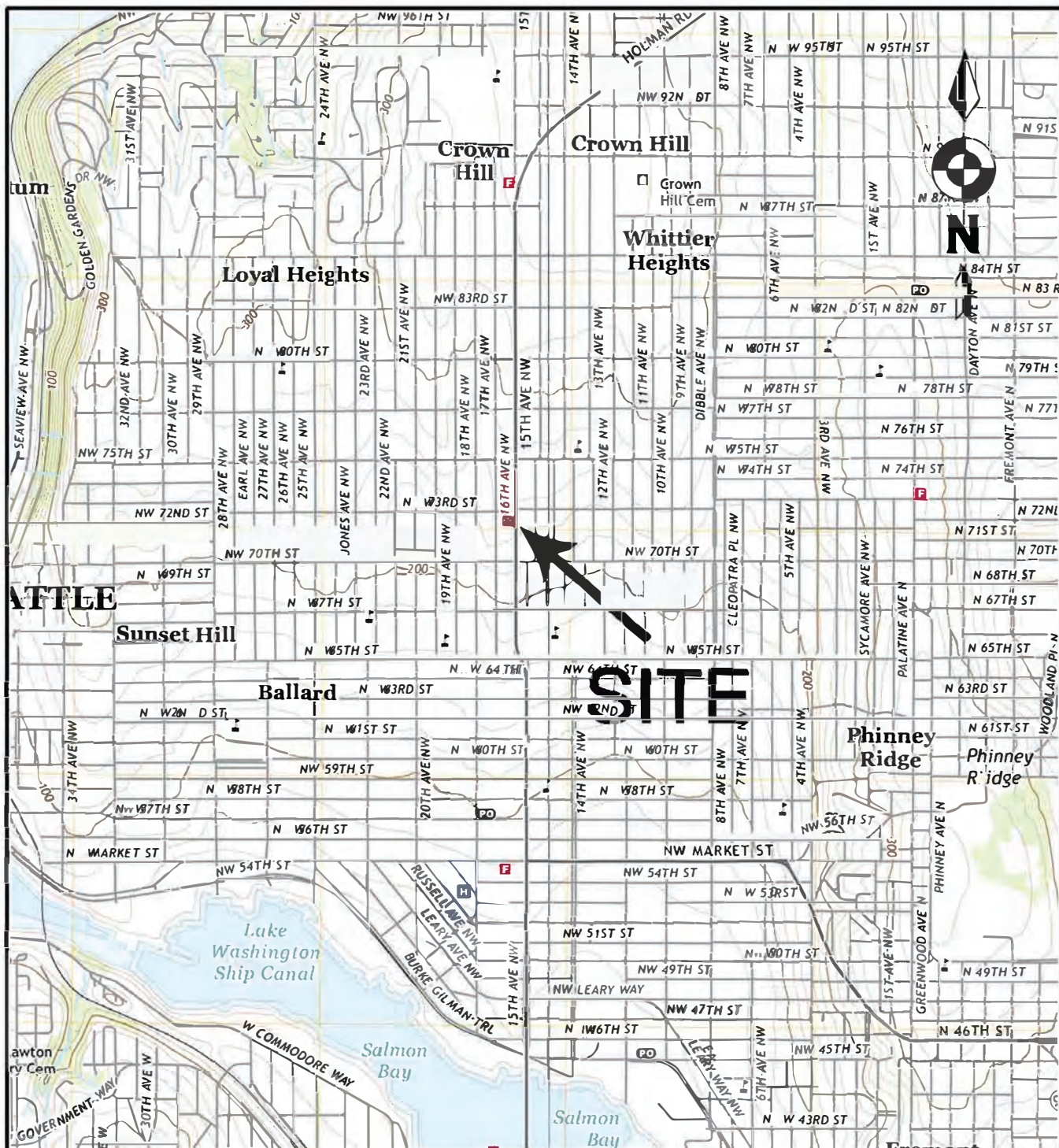
**Site Vicinity Map  
Midas Muffler  
Seattle, Washington**

Proj. No T-8336-2

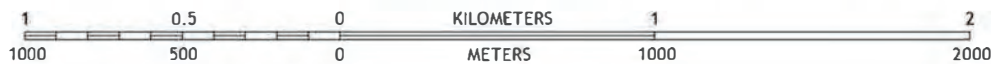
Date Nov 2020

Figure 1

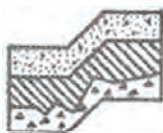




SCALE 1:24 000



Base Image: 2020 7.5-Minute Series Topographic Maps of the Shilshole Bay and Seattle North Quadrangles



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**Topographic Vicinity Map  
Midas Muffler  
Seattle, Washington**

Proj. No T-8336-2

Date Nov 2020

Figure 2





Base Image: Pictometry Online Photograph dated May 2019.



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**Oblique Aerial Photograph  
Midas Muffler  
Seattle, Washington**

Proj. No T-8336-2

Date Nov 2020

Figure 3





**APPENDIX A**  
**SUBSURFACE EXPLORATION**

**Midas Muffler**  
**Seattle, Washington**

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross contamination.

A drill rig owned and operated by Cascade Drilling was used on August 21, 2020 to advance the borings. The drill rig uses direct push technology (DPT) to advance the borings. Samples were taken at selected locations from the DPT core tubing.

Boring B-1 was terminated due to refusal drilling. It appears that a large cobble or a boulder was present that prevented this boring from being advanced. The sampler became hot due to refusal drilling conditions and no sample was chosen for analysis from Boring B-1.

A representative of our firm continuously monitored the drilling and kept a detailed log of each exploration. Samples recovered during the site explorations were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to Onsite Environmental Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.

Samples were screened in the field using the headspace and sheen methods. For the headspace screening, a sub sample of the soil is placed in a plastic bag and allowed to reach ambient temperatures. The probe from a handheld Photo Ionization Device is then inserted to measure the air in the headspace of the bag. The sheen test consists of placing a subsample into a pan with clean water to see if sheen develops.

.

# LOG OF DPT NO. DPT-1

Figure No.

**Project:** Ballard Midas **Project No:** T-8336-2 **Date Drilled:** September 18, 2020

**Client:** Jubilee 95, LLC **Driller:** Cascade Drilling **Logged By:** EE

**Location:** Seattle, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) Gray-brown silty SAND.	None				0	
		Boring terminated at 2.5 feet on cobble or boulder.						
5								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-2

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT CONCRETE)						
		Gray-brown silty SAND with gravel, moist.	None				0.26	
5			None				2.7	
10			None				7.7	
15			None					
20		Boring terminated at 17 feet due to refusal drilling. No seepage observed.						

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-3

Figure No.

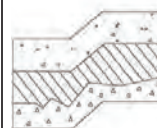
**Project:** Ballard Midas **Project No:** T-8336-2 **Date Drilled:** September 18, 2020

**Client:** Jubilee 95, LLC **Driller:** Cascade Drilling **Logged By:** EE

**Location:** Seattle, Washington **Depth to Groundwater:** N/A **Approx. Elev:** N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT)						
		Gray-brown silty SAND with gravel, moist.					5	
5							36	
		Boring terminated at 8.5 feet due to refusal drilling. No seepage observed.						
10								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-4

Figure No.

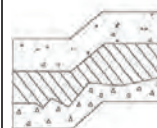
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches CONCRETE)						
		Gray-brown silty SAND with gravel, moist. (Till)						
			None				7.2	
5			None				14.9	
10			Strong Odor				186	
		Boring terminated at 12.5 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-5

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE over 12-inch VOID) Brown-gray silty SAND with gravel, moist.	None				10.1	
5								
			Moderate Odor				58.4	
10		Boring terminated at 9.5 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-6

Figure No.

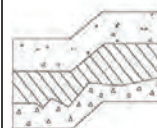
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(4 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel.						
			None					
5			None				61	
10			None				59	
		Boring terminated at 12 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-7

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel, moist.	None				53	
5								
			Light Odor				62	
10		Boring terminated at 9 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-8

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE)						
5							85	
10		Boring terminated at 10 feet due to refusal drilling. No seepage observed.					104	
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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## **APPENDIX B**

### **ANALYTICAL TEST REPORTS-SOIL**



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

October 12, 2020

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-2  
Laboratory Reference No. 2009-199B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 21, 2020.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: October 12, 2020  
Samples Submitted: September 21, 2020  
Laboratory Reference: 2009-199B  
Project: 8336-2

### Case Narrative

Samples were collected on September 18, 2020 and received by the laboratory on September 21, 2020. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

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

#### NWTPH-Gx/Volatiles EPA 8260D Analysis

Method 5035A VOA vials were not provided for sample B8 0'-5'U. The sample was therefore extracted from a 4-ounce jar for analysis. Some loss of volatiles may have occurred.

#### Volatiles EPA 8260D Analysis

The value reported for Acetone in sample B8 0'-5'U exceeds the calibration range and is therefore an estimate. The sample was re-analyzed at a dilution with non-detect results for Acetone.

**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: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B6 5'-10'U</b>					
Laboratory ID:	09-199-36					
Diesel Range Organics	<b>160</b>	28	NWTPH-Dx	10-2-20	10-2-20	N
Lube Oil	<b>1200</b>	57	NWTPH-Dx	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	93	50-150				
<b>Client ID:</b>	<b>B6 5'-10'L</b>					
Laboratory ID:	09-199-38					
Diesel Range Organics	<b>3700</b>	270	NWTPH-Dx	10-2-20	10-5-20	N
Lube Oil	<b>9000</b>	550	NWTPH-Dx	10-2-20	10-5-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	---	50-150				S





Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Diesel Range Organics	<b>ND</b>	25	NWTPH-Dx	10-2-20	10-2-20	
Lube Oil Range Organics	<b>ND</b>	50	NWTPH-Dx	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	79	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	10-002-01									
	ORIG	DUP								
Diesel Range	ND	ND	NA	NA		NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						77	92	50-150		



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**GASOLINE RANGE ORGANICS**  
**NWTPH-Gx**

Matrix: Soil  
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Gasoline	<b>ND</b>	9.9	NWTPH-Gx	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	100	58-129				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**GASOLINE RANGE ORGANICS  
 NWTPH-Gx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Gasoline	<b>ND</b>	5.0	NWTPH-Gx	10-2-20	10-2-20	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	101	58-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-017-04							
	ORIG	DUP						
Gasoline	<b>ND</b>	<b>ND</b>	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene				107	104	58-129		



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D**  
 page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
<b>Laboratory ID:</b>	<b>09-199-48</b>					
Dichlorodifluoromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloromethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Vinyl Chloride	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromomethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloroethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Trichlorofluoromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Acetone	0.24	0.0092	EPA 8260D	10-2-20	10-2-20	E
Iodomethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Carbon Disulfide	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methylene Chloride	0.061	0.0046	EPA 8260D	10-2-20	10-2-20	H
(trans) 1,2-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methyl t-Butyl Ether	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Vinyl Acetate	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
2,2-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
(cis) 1,2-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Butanone	0.043	0.0046	EPA 8260D	10-2-20	10-2-20	
Bromochloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloroform	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1,1-Trichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Carbon Tetrachloride	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Benzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Trichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Dibromomethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromodichloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Chloroethyl Vinyl Ether	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
(cis) 1,3-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methyl Isobutyl Ketone	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Toluene	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
(trans) 1,3-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D**  
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
1,1,2-Trichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Tetrachloroethene	0.0074	0.00092	EPA 8260D	10-2-20	10-2-20	
1,3-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Hexanone	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Dibromochloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromoethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chlorobenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1,1,2-Tetrachloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Ethylbenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
m,p-Xylene	ND	0.0018	EPA 8260D	10-2-20	10-2-20	
o-Xylene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Styrene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromoform	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Isopropylbenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,1,2,2-Tetrachloroethane	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichloropropane	ND	0.048	EPA 8260D	10-2-20	10-2-20	
n-Propylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
2-Chlorotoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
4-Chlorotoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,3,5-Trimethylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
tert-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trimethylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
sec-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,3-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
p-Isopropyltoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,4-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
n-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromo-3-chloropropane	ND	0.24	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
Hexachlorobutadiene	ND	0.24	EPA 8260D	10-2-20	10-2-20	
Naphthalene	ND	0.24	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>107</i>	<i>74-131</i>				
<i>Toluene-d8</i>	<i>83</i>	<i>78-128</i>				
<i>4-Bromofluorobenzene</i>	<i>75</i>	<i>71-130</i>				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S2					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloromethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromomethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloroethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Acetone	ND	0.010	EPA 8260D	10-2-20	10-2-20	E
Iodomethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Carbon Disulfide	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methylene Chloride	ND	0.0050	EPA 8260D	10-2-20	10-2-20	H
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Vinyl Acetate	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Butanone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Bromochloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloroform	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Benzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Trichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Dibromomethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Toluene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	



Date of Report: October 12, 2020  
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 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S2					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Hexanone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Ethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
m,p-Xylene	ND	0.0020	EPA 8260D	10-2-20	10-2-20	
o-Xylene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Styrene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromoform	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Isopropylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
n-Propylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
tert-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
sec-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
p-Isopropyltoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
n-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Naphthalene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	74-131				
Toluene-d8	100	78-128				
4-Bromofluorobenzene	95	71-130				



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S2									
	SB	SBD	SB	SBD		SB	SBD			
1,1-Dichloroethene	0.0469	0.0469	0.0500	0.0500		94	94	55-126	0	17
Benzene	0.0474	0.0487	0.0500	0.0500		95	97	65-121	3	16
Trichloroethene	0.0487	0.0476	0.0500	0.0500		97	95	74-126	2	16
Toluene	0.0470	0.0476	0.0500	0.0500	E	94	95	71-121	1	16
Chlorobenzene	0.0467	0.0462	0.0500	0.0500		93	92	72-123	1	16
Surrogate:										
Dibromofluoromethane					H	96	100	74-131		
Toluene-d8						103	100	78-128		
4-Bromofluorobenzene						102	106	71-130		





Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

# PAHs EPA 8270E/SIM

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
<b>Laboratory ID:</b>	<b>09-199-48</b>					
Naphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
2-Methylnaphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
1-Methylnaphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthylene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Fluorene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Phenanthrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Chrysene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[b]fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo(j,k)fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Indeno(1,2,3-c,d)pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Dibenz[a,h]anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[g,h,i]perylene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	48	46 - 113				
Pyrene-d10	58	45 - 114				
Terphenyl-d14	79	49 - 121				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**PAHs EPA 8270E/SIM  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Naphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
2-Methylnaphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
1-Methylnaphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthylene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Fluorene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Phenanthrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Chrysene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[b]fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo(j,k)fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Indeno(1,2,3-c,d)pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Dibenz[a,h]anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[g,h,i]perylene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	75	46 - 113				
Pyrene-d10	88	45 - 114				
Terphenyl-d14	86	49 - 121				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**PAHs EPA 8270E/SIM  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	0.0758	0.0672	0.0833	0.0833	91	81	60 - 116	12	16	
Acenaphthylene	0.0689	0.0679	0.0833	0.0833	83	82	60 - 125	1	15	
Acenaphthene	0.0737	0.0688	0.0833	0.0833	88	83	60 - 121	7	15	
Fluorene	0.0711	0.0650	0.0833	0.0833	85	78	65 - 126	9	15	
Phenanthrene	0.0665	0.0668	0.0833	0.0833	80	80	65 - 120	0	15	
Anthracene	0.0779	0.0731	0.0833	0.0833	94	88	67 - 125	6	15	
Fluoranthene	0.0758	0.0793	0.0833	0.0833	91	95	66 - 125	5	15	
Pyrene	0.0780	0.0795	0.0833	0.0833	94	95	62 - 125	2	15	
Benzo[a]anthracene	0.0716	0.0705	0.0833	0.0833	86	85	72 - 129	2	15	
Chrysene	0.0764	0.0770	0.0833	0.0833	92	92	66 - 123	1	15	
Benzo[b]fluoranthene	0.0698	0.0780	0.0833	0.0833	84	94	68 - 128	11	15	
Benzo(j,k)fluoranthene	0.0793	0.0793	0.0833	0.0833	95	95	63 - 128	0	16	
Benzo[a]pyrene	0.0799	0.0791	0.0833	0.0833	96	95	66 - 130	1	15	
Indeno(1,2,3-c,d)pyrene	0.0700	0.0763	0.0833	0.0833	84	92	63 - 135	9	15	
Dibenz[a,h]anthracene	0.0691	0.0779	0.0833	0.0833	83	94	65 - 130	12	15	
Benzo(g,h,i)perylene	0.0663	0.0733	0.0833	0.0833	80	88	66 - 127	10	15	
Surrogate:										
2-Fluorobiphenyl					72	75	46 - 113			
Pyrene-d10					88	93	45 - 114			
Terphenyl-d14					86	90	49 - 121			



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Arsenic	<b>ND</b>	11	EPA 6010D	10-8-20	10-8-20	
Cadmium	<b>ND</b>	0.54	EPA 6010D	10-8-20	10-8-20	
Chromium	<b>37</b>	0.54	EPA 6010D	10-8-20	10-8-20	
Lead	<b>18</b>	5.4	EPA 6010D	10-8-20	10-8-20	
Mercury	<b>ND</b>	0.27	EPA 7471B	10-8-20	10-8-20	



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1008SM2					
Arsenic	ND	10	EPA 6010D	10-8-20	10-8-20	
Cadmium	ND	0.50	EPA 6010D	10-8-20	10-8-20	
Chromium	ND	0.50	EPA 6010D	10-8-20	10-8-20	
Lead	ND	5.0	EPA 6010D	10-8-20	10-8-20	

Laboratory ID:	MB1008S1					
Mercury	ND	0.25	EPA 7471B	10-8-20	10-8-20	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-083-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	22.6	22.3	NA	NA	NA	2	20	
Lead	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	10-083-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	10-083-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	96.4	95.7	100	100	ND	96	96	75-125	1	20
Cadmium	48.0	47.8	50.0	50.0	ND	96	96	75-125	1	20
Chromium	123	114	100	100	22.6	100	91	75-125	7	20
Lead	237	237	250	250	ND	95	95	75-125	0	20

Laboratory ID:	10-083-01									
Mercury	0.540	0.527	0.500	0.500	0.00740	107	104	80-120	2	20



Date of Report: October 12, 2020  
Samples Submitted: September 21, 2020  
Laboratory Reference: 2009-199B  
Project: 8336-2

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
<b>B6 5'-10'U</b>	09-199-36	<b>12</b>	10-2-20
<b>B6 5'-10'L</b>	09-199-38	<b>8</b>	10-2-20
<b>B8 0'-5'U</b>	09-199-48	<b>8</b>	9-24-20





### 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-naphthalene) 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 methods 8260 & 8270, 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





# 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

Page 1 of 6

Company: TAI

Project Number: 8330-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HClD	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> 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	B1 2"-4"	9-16	9:05	S	1				X														X	X
2	B1 4"-30"		9:25		1				X														X	X
3	B2 0'-5'U		10:10		1				X														X	X
4	B2 0'-5'M		10:10		1				X														X	X
5	B2 0'-5'L		10:10		1				X														X	X
6	B2 5'-10'U		10:15		1				X														X	X
7	B2 5'-10'M		10:15		1				X														X	X
8	B2 5'-10'L		10:15		1				X														X	X
9	B2 10'-15'U		10:25		1				X														X	X
10	B2 10'-15'M		10:25		1				X														X	X

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-17-20	10:00	X - HOLD
	TAI	9/21/20	10:00	Added 6/22/2020 DB (STA)
				Added 9/29/2020 DB (3 day TAT)
				Added 10/1/2020 DB (STA)
				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



# Chain of Custody

Company: TAI  
Project Number: 8336-2  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Evan H. Edwards

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day  
☐ 2 Days ☐ 3 Days  
☒ Standard (7 Days)  
☐ (other) \_\_\_\_\_

**Laboratory Number: 09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HClD	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 RCHA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1864A				% Moisture
11	B2 10'-15'L	9-18	10:25	S	1				X															X		X
12	B2 14'-17'U		10:40		1																					
13	B2 14'-17'M		10:40		1																			X		
14	B2 14'-17'L		10:40		1																			X		
15	B3 0'-5'U		11:15		1																			X		
16	B3 0'-5'M		11:15		1																			X		
17	B3 0'-5'L		11:15		1																			X		
18	B3 5'-4.5'U		11:25		1																			X		
19	B3 5'-4.5'M		11:25		1																					
20	B3 5'-4.5'L	✓	11:25	↓	1				↓															X		↓

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	CLE	9/24/20	1000	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



# OnSite Environmental Inc.

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Phone: (425) 883-3881 • www.onsite-env.com

## Chain of Custody

Page 3 of 6

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

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 801.1 (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) 16 61A				% Moisture
21	B4 0'-5' U	9-18	12:00	S	1				X															X		X
22	B4 0'-5' M		12:00		1																			X		
23	B4 0'-5' L		12:00		1																			X		
24	B4 5'-9.5' U		12:15		1																			X		
25	B4 5'-9.5' M		12:15		1																			X		
26	B4 5'-9.5' L		12:15		1																			X		
27	B4 9.5'-12.5' U		12:25		1																			X		
28	B4 9.5'-12.5' M		12:25		1																					
29	B4 9.5'-12.5' L		12:25		1																			X		
30	B5 1'-5' U	9-18	13:00	U	1																			X		U

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	9-18-20	10:00	
Received		TAI	9/21/20	10:00	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
					Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

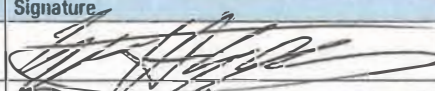
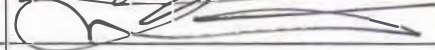


# Chain of Custody

Company: TAI  
Project Number: 8336-2  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Evan H. Eckles
**Turnaround Request**  
(in working days)  
  
(Select One)  
☐ Same Day    ☐ 1 Day  
☐ 2 Days    ☐ 3 Days  
☒ Standard (7 Days)  
☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**  

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx ( <input type="checkbox"/> 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
						31	B5 1-5'M	9-14	13:00	S	1				X									
32	B5 1-5'L		13:00		1																		X	
33	B5 5'-9.5'U		13:15		1																		X	
34	B5 5'-9.5'M		13:15		1																			
35	B5 5'-9.5'L		13:15		1																		X	
36	B6 5'-10'U		14:20		1																		X	
37	B6 5'-10'M		14:20		1																		X	
38	B6 5'-10'L		14:20		1																		X	
39	B6 10'-12'U		14:30		1																		X	
40	B6 10'-12'M	↓	14:30	↓	1				↓														X	↓

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	CJE	9/24/20	1000	
Reviewed/Date		Reviewed/Date		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Company: TAI  
Project Number: 8336-2  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day  
☐ 2 Days ☐ 3 Days  
☒ Standard (7 Days)  
☐ (other) \_\_\_\_\_

**Laboratory Number:** 09-199

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
41	B6 10'-12' L	9-18	14:30	S	1				X															X		X
42	B7 0'-5' U		15:00		1																			X		
43	B7 0'-5' M		15:00		1																			X		
44	B7 0'-5' L		15:00		1																			X		
45	B7 5'-9' U		15:15		1																			X		
46	B7 5'-9' M		15:15		1																					
47	B7 5'-9' L		15:15		1																			X		
48	B8 0'-5' U		15:40		1																					
49	B8 0'-5' M		15:40		1																			X		
50	B8 0'-5' L		15:40		1																			X		

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	TAI	9/21/20	10:00	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		





Company:	TAFI
Project Number:	8336-2
Project Name:	
Project Manager:	Chuck Lir
Sampled by:	Evan H. Eckles

Page 6 of 6[illegible]

***DRAFT***

**PHASE II ENVIRONMENTAL  
SITE ASSESSMENT**

**Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690**

**Project No. T-8336-3**

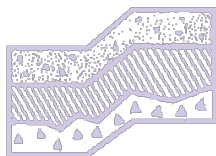


**Terra Associates, Inc.**

**Prepared for:**

**Jubilee 95, LLC  
Mukilteo, Washington**

**April 26, 2021  
Revised May 13, 2021**



# TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

April 26, 2021  
revised May 13, 2021  
Project No. T-8336-3

Mr. Tim Grout  
Jubilee 95, LLC  
6652 Waterton Circle  
Mukilteo, Washington 98275

Subject: Phase II Environmental Site Assessment  
Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690

**DRAFT**

Dear Mr. Grout:

We have completed a Phase II Environmental Site Assessment (ESA) for King County Tax Parcel 751850-0690, located at 7055 – 15th Avenue NW in Seattle, Washington. This draft report is a revision of our report dated April 26, 2021, to correct an error in Table 8. Our prior Phase I Environmental Site Assessment study prepared for a potential purchaser in 2018 found two Recognized Environmental Conditions (RECs) associated with the site. As discussed in the attached report, site-specific sampling was focused on the RECs.

The attached report describes our study in detail. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,  
**TERRA ASSOCIATES, INC.**

**DRAFT**

Charles R. Lie, L.E.G., L.H.G.  
Project Manager

**Phase II Environmental Site Assessment  
Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690  
WAD988494720**

## **SUMMARY**

This report summarizes recent environmental sampling and analytical testing on soils and groundwater at King County Tax Parcel 751850-0690, located in the Ballard area of Seattle, Washington. We have submitted a Phase I Environmental Site Assessment (ESA), dated April 27, 2020, to a prospective buyer for this project. We have followed up and completed work directly for you.

The site consists of 1 tax parcel totaling 0.3 acres. Currently the subject site is developed with a Midas Muffler auto repair shop. Prior to the existing building, two single-family residences were onsite.

Our Phase I ESA revealed evidence of two Recognized Environmental Conditions (RECs) in connection with the parcel. These consist of:

1. The suspected former presence of residential heating oil USTs.
2. The use of the site as an auto shop including subsurface hydraulic lifts.

To evaluate the RECs, Terra Associates, Inc. has completed two episodes of site sampling testing of near-surface soils, followed by supplemental soil sampling and the construction of three monitoring wells onsite. As discussed in this report, the constituent of concern was the total petroleum hydrocarbons in the diesel-to-oil range found to exceed current MTCA Method A cleanup values for unrestricted land use.

The following sections of this memo present more information.

## **SCOPE OF WORK**

Our scope of work for the initial site assessment consisted of the following:

- One-call utility notification required by state law, as well as contacting the private locating service prior to drilling test holes.
- Drilling 11 soil test borings to depths of 20 to 40 feet below site grades.
- Drilling 3 test borings to depths of about 60 feet to allow permanent monitoring wells to be established and allow direct sampling of groundwater.
- Sampling soils from all test borings. All soil samples were field screened for hydrocarbons.
- Transfer of soil and groundwater samples from the site to Onsite Environmental, Inc.'s analytical laboratory.
- Preparation of this report.



## **FINDINGS**

### ***Site Conditions***

The site is located in the Ballard neighborhood of Seattle, Washington. Most of the surrounding area is and has been single-family residential. 15th Avenue NW is an artery developed with retail and single-story commercial buildings. Figures 1 and 2 show the site location and Figure 3 is an oblique aerial photo showing site conditions.

The exploration locations for this report are shown on Figure 4.

The site slopes gently down toward the south and corresponds with adjacent streets and other properties. The soils found in the borings consist of dense till soils. The deeper test borings with monitoring wells encountered advance outwash.

No groundwater was encountered in the test borings completed for this project.

## **ANALYTICAL TESTING SUMMARY/DISCUSSION**

The lab results are summarized on Tables 1 through 10 attached to this memo. The full laboratory test reports are attached in Appendix B.

The results of the analysis show there are elevated oil-range hydrocarbons exceeding the cleanup values in Test Borings B-5, B-6, and B-8. None of the secondary analysis required by Table 830-1 exceeded their respective cleanup values.

## **LIMITATIONS**

Our conclusions and recommendations are our professional opinion and were reached in accordance with generally accepted professional engineering practices. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for the specific application to the Ballard Midas Muffler project in Seattle, Washington. This report is for the exclusive use of Jubilee 95, LLC and their authorized representatives.

The test results summarized in this report represent the sample locations shown on the attached figures and the sample date the samples were taken. None of the data should be extrapolated to other locations either on or offsite.

Attachments: Tables 1 through 11 – Analytical Testing Summary  
Figure 1 – Vicinity Map  
Figure 2 – Topographic Vicinity Map  
Figure 3 – Oblique Aerial Photo  
Figure 4 – Exploration Location Sketch  
Appendix A – Subsurface Exploration  
Appendix B – Analytical Test Report - Soils  
Appendix C – Analytical Test Report - Groundwater

## **APPENDIX A SUBSURFACE EXPLORATION**

### **Midas Muffler Seattle, Washington**

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross-contamination.

For the initial drilling on August 21, 2020, a drill rig owned and operated by Cascade Drilling was used to advance the test borings. The drill rig uses Direct Push Technology (DPT) to advance the test borings. Samples were taken at selected locations from the DPT core tubing.

Test Boring B-1 was terminated due to refusal drilling. It appears a large cobble or a boulder was present that prevented the test boring from being advanced. The sampler became hot due to refusal drilling conditions and no sample was taken for analysis from Test Boring B-1.

Subsequent drilling was completed using limited access drill rigs owned and operated by Boretec. The Boretec drill rigs were equipped with hollow stem augers. Samples were taken at selected intervals using standard split spoon samplers driven by a 140-pound hammer falling 30 inches. Test Boring MW-1 was intended to be a monitoring well. At a depth of 40 feet, wet soil conditions were noted in Boring MW-1 that indicated groundwater was reached. The next day, no groundwater was present in the test boring. Monitoring well MW-101 was then built approximately 5 feet west of Test Boring MW-1. This well extended to 60 feet below site grades.

The wells were built using standard resource protection well procedures in accordance with state well regulations, Chapter 173-160 WAC. The wells consist of a 10-foot long screen with 0.01 inch factory screen segments. The casing and screens consist of 2-inch diameter PVC materials and the wells were completed with flush-mount monument covers.

A representative from our firm continuously monitored the drilling and kept a detailed log of each exploration. Samples recovered during the site explorations were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to Onsite Environmental, Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.

Samples were screened in the field using the headspace and sheen methods. For the headspace screening, a sub-sample of the soil is placed in a plastic bag and allowed to reach ambient temperatures. The probe from a handheld Photo Ionization Device is then inserted to measure the air in the headspace of the bag. The sheen test consists of placing a sub-sample into a pan with clean water to see if sheen develops.

Prior to sampling the wells for groundwater, they were developed by surging the screen segment and bailing about three casing volumes. The wells were left for about five days prior to sampling. Sampling was completed with a downhole submersible pump using low-flow purge techniques. Standard groundwater parameters were monitored during purging. Samples were taken after a minimum of three casing volumes was removed and groundwater parameters, including turbidity, had stabilized.

A reconnaissance-level survey was performed to obtain relative elevations of the top of the casing in the monitoring wells. The slab elevation at the exterior of the building's southeastern corner was assumed to be Elev. 100. This reconnaissance-level survey will need to be replaced with a survey by a licensed surveyor prior to agency review.

# LOG OF DPT NO. DPT-1

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) Gray-brown silty SAND.	None				0	
		Boring terminated at 2.5 feet on cobble or boulder.						
5								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-2

Figure No.

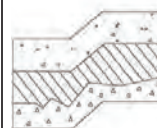
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT CONCRETE)						
		Gray-brown silty SAND with gravel, moist.	None				0.26	
5			None				2.7	
10			None				7.7	
15			None					
20		Boring terminated at 17 feet due to refusal drilling. No seepage observed.						

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-3

Figure No.

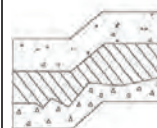
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT) Gray-brown silty SAND with gravel, moist.					5	
5							36	
10		Boring terminated at 8.5 feet due to refusal drilling. No seepage observed.						

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-4

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches CONCRETE)						
		Gray-brown silty SAND with gravel, moist. (Till)						
			None				7.2	
5			None				14.9	
10			Strong Odor				186	
		Boring terminated at 12.5 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-5

Figure No.

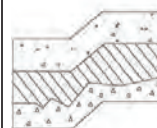
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE over 12-inch VOID) Brown-gray silty SAND with gravel, moist.	None				10.1	
5								
			Moderate Odor				58.4	
10		Boring terminated at 9.5 feet due to refusal drilling. No seepage observed.						
15								

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# LOG OF DPT NO. DPT-6

Figure No.

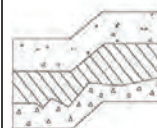
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(4 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel.						
			None					
5			None				61	
10			None				59	
		Boring terminated at 12 feet due to refusal drilling. No seepage observed.						
15								

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# LOG OF DPT NO. DPT-7

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel, moist.	None				53	
5								
			Light Odor				62	
10		Boring terminated at 9 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-8

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE)						
							85	
5								
							104	
10		Boring terminated at 10 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF BORING B-101

Figure No.

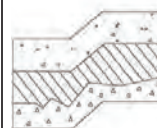
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		4.5 inch concrete slab at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0	.		66				52
5			No/No/NA	.		25		.		27/50 for 2
			No/No/1.0	.		100		.		27/50 for 5
10		Cuttings steaming from heavy drilling action.	No/No/NA							50 for 4
15			No/No/NA	.		100				50 for 4
20		Moist to wet at 20 feet.	No/No/NA	.		100				50 for 2
		Boring terminated at 21.5 feet. Hole backfilled with bentonite chips and patched at surface with concrete.								

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# LOG OF BORING B-102

Figure No.

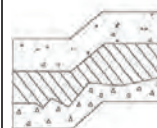
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6.5 inch concrete slab at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM)	No/No/NA	.			30	.		10
5			No/No/0.0	.			30	.		5
			Light/Light/3.9	.			50	.		38
		Gray silty SAND with gravel, fine to medium grained, moist. (SM) (till)	No/No/0.0	.			100			50 for 3
10										
15			Moderate/Moderate/0.9	.			100			50 for 3
20			No/No/0.0	.			100			50 for 3
		Boring terminated at 21.5 feet. Hole backfilled with bentonite chips and patched at surface with concrete.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-1

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		7 inch concrete slab at surface.	No/No/0NA	.			16		.	43
2.5		Rock in sampler tip at 2.5 feet.	No/No/0.2	.			100		.	50
5		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0	.			100		.	41
8.5		4 inch wet lense at 8.5 feet.	No/No/NA	.			100		.	33/50 for 4
15			No/No/0.2	.			100		.	35/50 for 5
20		Moist to wet at 20 feet.	No/No/NA	.			100		.	50 for 3
25			No/No/NA	.			100		.	50 for 2
30			No/No/NA	.			100		.	50 for 3
35			No/No/NA	.			100		.	100
40			No/No/NA	.			100		.	100
41.5		Boring terminated at 41.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-2

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6.5-inch concrete slab at surface.								
		Fill: Gray/brown silty SAND with gravel, fine grained, moist to wet. (SM)	No/No/NA	•			16	•		2
5			No/No/0.2	•			16	•		8
		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0		•		100		•	24/50 for 5
10			No/No/NA		•		80	•		12/50 for 5
15			No/No/0.2		•		100			50 for 3
20			No/No/NA		•		100		•	36/50 for 5
25			No/No/NA		•		100			50 for 3
30			No/No/NA		•		100			50 for 3

\*Continued on next page

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-2

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well	
				30	60	120	10	30	50		
35		Gray silty SAND with gravel, fine to medium grained, moist. (SM) (sandy till)	No/No/NA	.		100				50 for 3	
40			No/No/NA	.		100				50 for 2	
45			No/No/NA	.		100				50 for 3	
50		Gray SAND with gravel, fine to medium grained, wet. (SP)	No/No/NA	.		100				50 for 3	
55			No/No/NA	.		100				50 for 3	
60			No/No/NA	.		100				50 for 6	
		Boring terminated at 61.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet.									

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-3

Figure No.

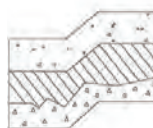
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 250 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		3 inches of asphalt pavement at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)								
5			No/No/0.0	.		100				56
										45
10			No/No/0.0	.		100				50 for 2
15			No/No/0.0	.		50				50 for 6
20		6-inch wet lense at 20 feet	No/No/0.0	.		100				50 for 4
25			No/No/0.0	.		100				50 for 5
30		1 to 2 inch thick medium-grained lenses at 30 feet.	No/No/0.0	.		100				100
		*Continued on next page								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-3

Figure No.

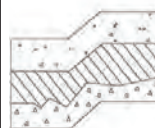
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 250 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
35		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/NA	.			100			
40			No/No/NA	.			100			
45			No/No/NA	.			100			
50		Gray gravelly SAND and silty SAND with gravel, medium grained, wet. (SP/SM)	No/No/NA	.			100			
55			No/No/NA	.						
60		Boring terminated at 60 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet below top of asphalt pavement.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-101

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6-inch concrete slab at surface.  Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)								
5			Light/No/0.0	.		100	.		44	
10			No/No/0.0	.		100			50 for 3	
15			No/No/0.0	.		100			50 for 6	
20			No/No/0.0	.		100			50 for 5	
25			No/No/0.0	.		100			50 for 3	
30			No/No/0.0	.		100			50 for 2	

\*Continued on next page

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-101

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
35		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/NA	.		100			50 for 2	
40			No/No/NA	.		100			50 for 1	
45		Becomes medium grained by 45 feet.	No/No/NA						50 for 2	
50		Gray gravelly SAND and silty SAND with gravel, fine to medium grained, wet. (SP/SM)	No/No/NA						50 for 4	
55			No/No/NA						50 for 4	
60		Boring terminated at 61.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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**APPENDIX B**  
**ANALYTICAL TEST REPORTS - SOIL**





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

September 30, 2020

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-2  
Laboratory Reference No. 2009-199

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 21, 2020.

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,

A handwritten signature in black ink, appearing to read 'D. Baumeister', with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: September 30, 2020  
Samples Submitted: September 21, 2020  
Laboratory Reference: 2009-199  
Project: 8336-2

### Case Narrative

Samples were collected on September 18, 2020 and received by the laboratory on September 21, 2020. 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: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B2 14'-17'U</b>					
Laboratory ID:	09-199-12					
Diesel Range Organics	<b>ND</b>	28	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil	<b>350</b>	55	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	87	50-150				

<b>Client ID:</b>	<b>B3 5'-8.5'M</b>					
Laboratory ID:	09-199-19					
Diesel Range Organics	<b>ND</b>	26	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil	<b>55</b>	53	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	78	50-150				

<b>Client ID:</b>	<b>B4 9.5'-12.5'M</b>					
Laboratory ID:	09-199-28					
Diesel Range Organics	<b>ND</b>	27	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil Range Organics	<b>ND</b>	54	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	74	50-150				

<b>Client ID:</b>	<b>B5 5'-9.5'M</b>					
Laboratory ID:	09-199-34					
Diesel Range Organics	<b>1300</b>	140	NWTPH-Dx	9-24-20	9-24-20	N
Lube Oil	<b>9200</b>	280	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	91	50-150				

<b>Client ID:</b>	<b>B6 5'-10'M</b>					
Laboratory ID:	09-199-37					
Diesel Range Organics	<b>1300</b>	140	NWTPH-Dx	9-24-20	9-24-20	N
Lube Oil	<b>7100</b>	290	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	99	50-150				

<b>Client ID:</b>	<b>B7 5'-9'M</b>					
Laboratory ID:	09-199-46					
Diesel Range Organics	<b>ND</b>	28	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil Range Organics	<b>ND</b>	56	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	74	50-150				



Date of Report: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Diesel Range Organics	<b>8500</b>	1400	NWTPH-Dx	9-24-20	9-25-20	N
Lube Oil	<b>24000</b>	2700	NWTPH-Dx	9-24-20	9-25-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	---	50-150				S
<b>Client ID:</b>	<b>B8 5'-10'L</b>					
Laboratory ID:	09-199-53					
Diesel Range Organics	<b>ND</b>	28	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil Range Organics	<b>ND</b>	55	NWTPH-Dx	9-24-20	9-24-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	70	50-150				



Date of Report: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0924S1					
Diesel Range Organics	ND	25	NWTPH-Dx	9-24-20	9-24-20	
Lube Oil Range Organics	ND	50	NWTPH-Dx	9-24-20	9-24-20	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	79	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	09-199-53							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	NA
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	NA
Surrogate:								
o-Terphenyl				70	68	50-150		



Date of Report: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

### PCBs EPA 8082A

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Aroclor 1016	<b>ND</b>	0.054	EPA 8082A	9-29-20	9-30-20	
Aroclor 1221	<b>ND</b>	0.054	EPA 8082A	9-29-20	9-30-20	
Aroclor 1232	<b>ND</b>	0.054	EPA 8082A	9-29-20	9-30-20	
Aroclor 1242	<b>ND</b>	0.054	EPA 8082A	9-29-20	9-30-20	
Aroclor 1248	<b>ND</b>	0.054	EPA 8082A	9-29-20	9-30-20	
Aroclor 1254	<b>ND</b>	0.27	EPA 8082A	9-29-20	9-30-20	U1
Aroclor 1260	<b>ND</b>	0.27	EPA 8082A	9-29-20	9-30-20	U1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>DCB</i>	<i>64</i>	<i>46-125</i>				



Date of Report: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

**PCBs EPA 8082A  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0929S1					
Aroclor 1016	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1221	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1232	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1242	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1248	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1254	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Aroclor 1260	ND	0.050	EPA 8082A	9-29-20	9-29-20	
Surrogate:	Percent Recovery	Control Limits				
DCB	59	46-125				

Analyte	Result				Spike Level	Source	Percent	Recovery	RPD		
						Result	Recovery	Limits			
MATRIX SPIKES											
Laboratory ID:	09-276-01										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	0.389	0.360	0.500	0.500	ND	78	72	43-125	8	15	
Surrogate:											
DCB						65	58	46-125			





Date of Report: September 30, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199  
 Project: 8336-2

### % MOISTURE

Client ID	Lab ID	% Moisture	Date Analyzed
B2 14'-17'U	09-199-12	9	9-24-20
B3 5'-8.5'M	09-199-19	5	9-24-20
B4 9.5'-12.5'M	09-199-28	8	9-24-20
B5 5'-9.5'M	09-199-34	12	9-24-20
B6 5'-10'M	09-199-37	12	9-24-20
B7 5'-9'M	09-199-46	10	9-24-20
B8 0'-5'U	09-199-48	8	9-24-20
B8 5'-10'L	09-199-53	9	9-24-20





### 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-naphthalene) 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 methods 8260 & 8270, 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





# 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

Page 1 of 6

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number:** 09-199

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HClD	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	B1 2"-8"	9-14	9:05	S	1				X														X	X
2	B1 8"-30"		9:25		1				X														X	X
3	B2 0'-5' U		10:10		1				X														X	X
4	B2 0'-5' M		10:10		1				X														X	X
5	B2 0'-5' L		10:10		1				X														X	X
6	B2 5'-10' U		10:15		1				X														X	X
7	B2 5'-10' M		10:15		1				X														X	X
8	B2 5'-10' L		10:15		1				X														X	X
9	B2 10'-15' U		10:25		1				X														X	X
10	B2 10'-15' M	↓	10:25	↓	1				X														X	X

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-14-20	10:00	X- HOLD Added 6/22/2020 - DB (STA) Added 9/29/2020 - DB (3 day TAT)
	QSE	9/21/20	10:00	
Relinquished				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Received				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date			



# Chain of Custody

Company: TAI

Project Number: 83340-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request  
(in working days)**

(Check One)

☐ Same Day ☐ 1 Day

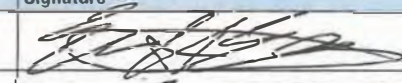
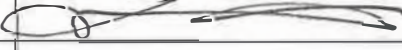
☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

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	H EM (oil and grease) 1664A				% Moisture
11	B2 10'-15'L	9-18	10:25	S	1				X															X		X
12	B2 14'-17'U		10:40		1																					
13	B2 14'-17'M		10:40		1																			X		
14	B2 14'-17'L		10:40		1																			X		
15	B3 0'-5'U		11:15		1																			X		
16	B3 0'-5'M		11:15		1																			X		
17	B3 0'-5'L		11:15		1																			X		
18	B3 5'-8.5'U		11:25		1																			X		
19	B3 5'-8.5'M		11:25		1																					
20	B3 5'-8.5'L	✓	11:25	✓	1				✓															X		✓

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	CSE	9/21/20	1000	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		

# Chain of Custody

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

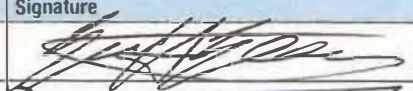
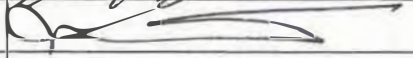
☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A				% Moisture
21	B4 0'-5' U	9-18	12:00	S	1				X															X		X
22	B4 0'-5' M		12:00		1																			X		
23	B4 0'-5' L		12:00		1																			X		
24	B4 5'-9.5' U		12:15		1																			X		
25	B4 5'-9.5' M		12:15		1																			X		
26	B4 5'-9.5' L		12:15		1																			X		
27	B4 9.5'-12.5' U		12:25		1																			X		
28	B4 9.5'-12.5' M		12:25		1																					
29	B4 9.5'-12.5' L		12:25		1																			X		
30	B5 1'-5' U	9-18	13:00		1																			X		

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	9-18-20	10:00	
Received		ØYE	9/21/20	1000	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



# Chain of Custody

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request (in working days)**

(Check One)

☐ Same Day ☐ 1 Day



☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

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
31	B5 i-5'm	9-18	13:00	S	1				X															X		X
32	B5 i-5'L		13:00		1																			X		
33	B5 5'-9.5'u		13:15		1																			X		
34	B5 5'-9.5'm		13:15		1																					
35	B5 5'-9.5'L		13:15		1																			X		
36	B6 5'-10'u		14:20		1																			X		
37	B6 5'-10'm		14:20		1																					
38	B6 5'-10'L		14:20		1																			X		
39	B6 10'-12'u		14:30		1																			X		
40	B6 10'-12'm		14:30		1																			X		

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	OSE	9/21/20	1000	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		

# Chain of Custody

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)



☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: 09-199																								
Number of Containers																								
					NWTPH-HCID																			
					NWTPH-Gx/BTEX																			
					NWTPH-Gx																			
					NWTPH-Dx ( <input type="checkbox"/> Acid / SG Clean-up)	X																		
					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																			

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	TAI	9/21/20	1000	

Reviewed/Date \_\_\_\_\_ Reviewed/Date \_\_\_\_\_

Data Package: Standard ☐ Level III ☐ Level IV ☐

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





Company:	TAI
Project Number:	8336-2
Project Name:	
Project Manager:	Chuck Lie
Sampled by:	Evan H. Eckles

Page 6 of 6

[illegible]





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

October 12, 2020

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-2  
Laboratory Reference No. 2009-199B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on September 21, 2020.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal flourish extending to the right.

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: October 12, 2020  
Samples Submitted: September 21, 2020  
Laboratory Reference: 2009-199B  
Project: 8336-2

### Case Narrative

Samples were collected on September 18, 2020 and received by the laboratory on September 21, 2020. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

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

#### NWTPH-Gx/Volatiles EPA 8260D Analysis

Method 5035A VOA vials were not provided for sample B8 0'-5'U. The sample was therefore extracted from a 4-ounce jar for analysis. Some loss of volatiles may have occurred.

#### Volatiles EPA 8260D Analysis

The value reported for Acetone in sample B8 0'-5'U exceeds the calibration range and is therefore an estimate. The sample was re-analyzed at a dilution with non-detect results for Acetone.

**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: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B6 5'-10'U</b>					
Laboratory ID:	09-199-36					
Diesel Range Organics	<b>160</b>	28	NWTPH-Dx	10-2-20	10-2-20	N
Lube Oil	<b>1200</b>	57	NWTPH-Dx	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	93	50-150				
<b>Client ID:</b>	<b>B6 5'-10'L</b>					
Laboratory ID:	09-199-38					
Diesel Range Organics	<b>3700</b>	270	NWTPH-Dx	10-2-20	10-5-20	N
Lube Oil	<b>9000</b>	550	NWTPH-Dx	10-2-20	10-5-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	---	50-150				S



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Diesel Range Organics	ND	25	NWTPH-Dx	10-2-20	10-2-20	
Lube Oil Range Organics	ND	50	NWTPH-Dx	10-2-20	10-2-20	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	79	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-002-01							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	
Surrogate:								
o-Terphenyl				77	92	50-150		



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**GASOLINE RANGE ORGANICS**  
**NWTPH-Gx**

Matrix: Soil  
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Gasoline	<b>ND</b>	9.9	NWTPH-Gx	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	100	58-129				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**GASOLINE RANGE ORGANICS  
 NWTPH-Gx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Gasoline	<b>ND</b>	5.0	NWTPH-Gx	10-2-20	10-2-20	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	101	58-129				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-017-04							
	ORIG	DUP						
Gasoline	<b>ND</b>	<b>ND</b>	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene				107	104	58-129		



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D**  
 page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
<b>Laboratory ID:</b>	<b>09-199-48</b>					
Dichlorodifluoromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloromethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Vinyl Chloride	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromomethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloroethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Trichlorofluoromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Acetone	0.24	0.0092	EPA 8260D	10-2-20	10-2-20	E
Iodomethane	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Carbon Disulfide	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methylene Chloride	0.061	0.0046	EPA 8260D	10-2-20	10-2-20	H
(trans) 1,2-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methyl t-Butyl Ether	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Vinyl Acetate	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
2,2-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
(cis) 1,2-Dichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Butanone	0.043	0.0046	EPA 8260D	10-2-20	10-2-20	
Bromochloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chloroform	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1,1-Trichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Carbon Tetrachloride	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Benzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Trichloroethene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Dibromomethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromodichloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Chloroethyl Vinyl Ether	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
(cis) 1,3-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Methyl Isobutyl Ketone	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Toluene	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
(trans) 1,3-Dichloropropene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D**  
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
1,1,2-Trichloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Tetrachloroethene	0.0074	0.00092	EPA 8260D	10-2-20	10-2-20	
1,3-Dichloropropane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
2-Hexanone	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Dibromochloromethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromoethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Chlorobenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
1,1,1,2-Tetrachloroethane	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Ethylbenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
m,p-Xylene	ND	0.0018	EPA 8260D	10-2-20	10-2-20	
o-Xylene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Styrene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromoform	ND	0.0046	EPA 8260D	10-2-20	10-2-20	
Isopropylbenzene	ND	0.00092	EPA 8260D	10-2-20	10-2-20	
Bromobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,1,2,2-Tetrachloroethane	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichloropropane	ND	0.048	EPA 8260D	10-2-20	10-2-20	
n-Propylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
2-Chlorotoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
4-Chlorotoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,3,5-Trimethylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
tert-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trimethylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
sec-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,3-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
p-Isopropyltoluene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,4-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2-Dichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
n-Butylbenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromo-3-chloropropane	ND	0.24	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
Hexachlorobutadiene	ND	0.24	EPA 8260D	10-2-20	10-2-20	
Naphthalene	ND	0.24	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichlorobenzene	ND	0.048	EPA 8260D	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>107</i>	<i>74-131</i>				
<i>Toluene-d8</i>	<i>83</i>	<i>78-128</i>				
<i>4-Bromofluorobenzene</i>	<i>75</i>	<i>71-130</i>				





Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S2					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloromethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Vinyl Chloride	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromomethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloroethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Acetone	ND	0.010	EPA 8260D	10-2-20	10-2-20	E
Iodomethane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Carbon Disulfide	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methylene Chloride	ND	0.0050	EPA 8260D	10-2-20	10-2-20	H
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Vinyl Acetate	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Butanone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Bromochloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chloroform	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Benzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Trichloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Dibromomethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromodichloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Toluene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S2					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Tetrachloroethene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Hexanone	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Dibromochloromethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Chlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Ethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
m,p-Xylene	ND	0.0020	EPA 8260D	10-2-20	10-2-20	
o-Xylene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Styrene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromoform	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Isopropylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Bromobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
n-Propylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
2-Chlorotoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
4-Chlorotoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
tert-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
sec-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
p-Isopropyltoluene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
n-Butylbenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
Naphthalene	ND	0.0050	EPA 8260D	10-2-20	10-2-20	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	10-2-20	10-2-20	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	74-131				
Toluene-d8	100	78-128				
4-Bromofluorobenzene	95	71-130				



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S2									
	SB	SBD	SB	SBD		SB	SBD			
1,1-Dichloroethene	0.0469	0.0469	0.0500	0.0500		94	94	55-126	0	17
Benzene	0.0474	0.0487	0.0500	0.0500		95	97	65-121	3	16
Trichloroethene	0.0487	0.0476	0.0500	0.0500		97	95	74-126	2	16
Toluene	0.0470	0.0476	0.0500	0.0500	E	94	95	71-121	1	16
Chlorobenzene	0.0467	0.0462	0.0500	0.0500		93	92	72-123	1	16
Surrogate:										
Dibromofluoromethane					H	96	100	74-131		
Toluene-d8						103	100	78-128		
4-Bromofluorobenzene						102	106	71-130		



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

# PAHs EPA 8270E/SIM

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
<b>Laboratory ID:</b>	<b>09-199-48</b>					
Naphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
2-Methylnaphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
1-Methylnaphthalene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthylene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Fluorene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Phenanthrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Chrysene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[b]fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo(j,k)fluoranthene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Indeno(1,2,3-c,d)pyrene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Dibenz[a,h]anthracene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[g,h,i]perylene	ND	0.14	EPA 8270E/SIM	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	48	46 - 113				
Pyrene-d10	58	45 - 114				
Terphenyl-d14	79	49 - 121				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**PAHs EPA 8270E/SIM  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1002S1					
Naphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
2-Methylnaphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
1-Methylnaphthalene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthylene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Acenaphthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Fluorene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Phenanthrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Chrysene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[b]fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo(j,k)fluoranthene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[a]pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Indeno(1,2,3-c,d)pyrene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Dibenz[a,h]anthracene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
Benzo[g,h,i]perylene	ND	0.0033	EPA 8270E/SIM	10-2-20	10-2-20	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorobiphenyl	75	46 - 113				
Pyrene-d10	88	45 - 114				
Terphenyl-d14	86	49 - 121				



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**PAHs EPA 8270E/SIM  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1002S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	0.0758	0.0672	0.0833	0.0833	91	81	60 - 116	12	16	
Acenaphthylene	0.0689	0.0679	0.0833	0.0833	83	82	60 - 125	1	15	
Acenaphthene	0.0737	0.0688	0.0833	0.0833	88	83	60 - 121	7	15	
Fluorene	0.0711	0.0650	0.0833	0.0833	85	78	65 - 126	9	15	
Phenanthrene	0.0665	0.0668	0.0833	0.0833	80	80	65 - 120	0	15	
Anthracene	0.0779	0.0731	0.0833	0.0833	94	88	67 - 125	6	15	
Fluoranthene	0.0758	0.0793	0.0833	0.0833	91	95	66 - 125	5	15	
Pyrene	0.0780	0.0795	0.0833	0.0833	94	95	62 - 125	2	15	
Benzo[a]anthracene	0.0716	0.0705	0.0833	0.0833	86	85	72 - 129	2	15	
Chrysene	0.0764	0.0770	0.0833	0.0833	92	92	66 - 123	1	15	
Benzo[b]fluoranthene	0.0698	0.0780	0.0833	0.0833	84	94	68 - 128	11	15	
Benzo(j,k)fluoranthene	0.0793	0.0793	0.0833	0.0833	95	95	63 - 128	0	16	
Benzo[a]pyrene	0.0799	0.0791	0.0833	0.0833	96	95	66 - 130	1	15	
Indeno(1,2,3-c,d)pyrene	0.0700	0.0763	0.0833	0.0833	84	92	63 - 135	9	15	
Dibenz[a,h]anthracene	0.0691	0.0779	0.0833	0.0833	83	94	65 - 130	12	15	
Benzo[g,h,i]perylene	0.0663	0.0733	0.0833	0.0833	80	88	66 - 127	10	15	
Surrogate:										
2-Fluorobiphenyl					72	75	46 - 113			
Pyrene-d10					88	93	45 - 114			
Terphenyl-d14					86	90	49 - 121			



Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**TOTAL METALS  
 EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B8 0'-5'U</b>					
Laboratory ID:	09-199-48					
Arsenic	<b>ND</b>	11	EPA 6010D	10-8-20	10-8-20	
Cadmium	<b>ND</b>	0.54	EPA 6010D	10-8-20	10-8-20	
Chromium	<b>37</b>	0.54	EPA 6010D	10-8-20	10-8-20	
Lead	<b>18</b>	5.4	EPA 6010D	10-8-20	10-8-20	
Mercury	<b>ND</b>	0.27	EPA 7471B	10-8-20	10-8-20	





Date of Report: October 12, 2020  
 Samples Submitted: September 21, 2020  
 Laboratory Reference: 2009-199B  
 Project: 8336-2

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1008SM2					
Arsenic	ND	10	EPA 6010D	10-8-20	10-8-20	
Cadmium	ND	0.50	EPA 6010D	10-8-20	10-8-20	
Chromium	ND	0.50	EPA 6010D	10-8-20	10-8-20	
Lead	ND	5.0	EPA 6010D	10-8-20	10-8-20	

Laboratory ID:	MB1008S1					
Mercury	ND	0.25	EPA 7471B	10-8-20	10-8-20	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-083-01							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	22.6	22.3	NA	NA	NA	2	20	
Lead	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	10-083-01							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	10-083-01									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	96.4	95.7	100	100	ND	96	96	75-125	1	20
Cadmium	48.0	47.8	50.0	50.0	ND	96	96	75-125	1	20
Chromium	123	114	100	100	22.6	100	91	75-125	7	20
Lead	237	237	250	250	ND	95	95	75-125	0	20

Laboratory ID:	10-083-01									
Mercury	0.540	0.527	0.500	0.500	0.00740	107	104	80-120	2	20



Date of Report: October 12, 2020  
Samples Submitted: September 21, 2020  
Laboratory Reference: 2009-199B  
Project: 8336-2

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
<b>B6 5'-10'U</b>	09-199-36	<b>12</b>	10-2-20
<b>B6 5'-10'L</b>	09-199-38	<b>8</b>	10-2-20
<b>B8 0'-5'U</b>	09-199-48	<b>8</b>	9-24-20





### 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-naphthalene) 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 methods 8260 & 8270, 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





# OnSite Environmental Inc.

Analytical Laboratory Testing Services  
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## Chain of Custody

Page 1 of 6

Company: TAI

Project Number: 8330-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: **09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HClD	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> Acid / SG Clean-up	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semi-volatiles 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	B1 2"-4"	9-16	9:05	S	1				X														X	X
2	B1 4"-30"		9:25		1				X														X	X
3	B2 0'-5'U		10:10		1				X														X	X
4	B2 0'-5'M		10:10		1				X														X	X
5	B2 0'-5'L		10:10		1				X														X	X
6	B2 5'-10'U		10:15		1				X														X	X
7	B2 5'-10'M		10:15		1				X														X	X
8	B2 5'-10'L		10:15		1				X														X	X
9	B2 10'-15'U		10:25		1				X														X	X
10	B2 10'-15'M		10:25		1				X														X	X

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-17-20	10:00	X - HOLD
	TAI	9/21/20	10:00	Added 6/22/2020 DB (STA)
				Added 9/29/2020 DB (3 day TAT)
				Added 10/1/2020 DB (STA)
				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Company: TAI  
Project Number: 8336-2  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Evan H. Edwards

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day  
☐ 2 Days ☐ 3 Days  
☒ Standard (7 Days)  
☐ (other) \_\_\_\_\_

**Laboratory Number: 09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HClD	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 RCHA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1864A			% Moisture
11	B2 10'-15'L	9-18	10:25	S	1				X															X	
12	B2 14'-17'U		10:40		1																				
13	B2 14'-17'M		10:40		1																			X	
14	B2 14'-17'L		10:40		1																			X	
15	B3 0'-5'U		11:15		1																			X	
16	B3 0'-5'M		11:15		1																			X	
17	B3 0'-5'L		11:15		1																			X	
18	B3 5'-4.5'U		11:25		1																			X	
19	B3 5'-4.5'M		11:25		1																				
20	B3 5'-4.5'L	✓	11:25	✓	1				✓															X	✓

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-19-20	10:00	
	CLE	9/24/20	1000	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		





# OnSite Environmental Inc.

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## Chain of Custody

Page 3 of 6

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 09-199**

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 801.1 (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) 16 61A				% Moisture
21	B4 0'-5' U	9-18	12:00	S	1				X															X		X
22	B4 0'-5' M		12:00		1																			X		
23	B4 0'-5' L		12:00		1																			X		
24	B4 5'-9.5' U		12:15		1																			X		
25	B4 5'-9.5' M		12:15		1																			X		
26	B4 5'-9.5' L		12:15		1																			X		
27	B4 9.5'-12.5' U		12:25		1																			X		
28	B4 9.5'-12.5' M		12:25		1																					
29	B4 9.5'-12.5' L		12:25		1																			X		
30	B5 1'-5' U	9-18	13:00	U	1																			X		U

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	9-18-20	10:00	
Received		TAI	9/21/20	10:00	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
					Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Page 4 of 6

Company: TAI

Project Number: 8336-2

Project Name:

Project Manager: Chuck Lie

Sampled by: Evan H. Eckles

**Turnaround Request**  
(in working days)

(Check One)

☐ Same Day ☐ 1 Day

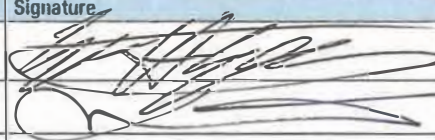

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ (other) \_\_\_\_\_

**Laboratory Number: 09-199**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number	NWTPH	NWTPH	NWTPH	NWTPH	Volatiles	Halogenated	EDB EPA	Semivolatiles (with low-level PAHs)	PCBs & Organochlorine Pesticides	Organophosphorus Pesticides	Chlorinated Acid Herbicides	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease)		HC		% Moisture
31	B5 1'-5' M	9-14	13:00	S	1				X													X		X
32	B5 1'-5' L		13:00		1																	X		
33	B5 5'-9.5' U		13:15		1																	X		
34	B5 5'-9.5' M		13:15		1				●															●
35	B5 5'-9.5' L		13:15		1																	X		
36	B6 5'-10' U		14:20		1				⊗													*		⊗
37	B6 5'-10' M		14:20		1				●															●
38	B6 5'-10' L		14:20		1				⊗													*		⊗
39	B6 10'-12' U		14:30		1																	X		
40	B6 10'-12' M	✓	14:30	✓	1				✓													X		✓

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	9-14-20	10:00	
	CHE	9/24/20	1000	
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		





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Page 5 of 60

Company:	TAI
Project Number:	8336-2
Project Name:	
Project Manager:	Chuck Lie
Sampled by:	Evan H. Eckles

Turnaround Request (in working days)	
(Check One)	
<input type="checkbox"/> Same Day	<input type="checkbox"/> 1 Day
<input type="checkbox"/> 2 Days	<input type="checkbox"/> 3 Days
<input checked="" type="checkbox"/> Standard (5 Days)	
<input type="checkbox"/>	_____ (other)

Laboratory Number: 09-199

[illegible]

Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	TAI	9-19-20	10:00	
Received	DE	9/21/20	10:00	
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



Company:	TAI
Project Number:	8336-2
Project Name:	
Project Manager:	Chuck Lise
Sampled by:	Evan H. Edkres

Page 6 of 6[illegible]



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March 11, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-3  
Laboratory Reference No. 2103-080

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 5, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: March 11, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080  
Project: 8336-3

### Case Narrative

Samples were collected on March 4 and 5, 2021 and received by the laboratory on March 5, 2021. 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: March 11, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080  
 Project: 8336-3

### HYDROCARBON IDENTIFICATION NWTPH-HCID

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-101 -2.5</b>					
Laboratory ID:	03-080-01					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>ND</b>	55	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	108	50-150				

<b>Client ID:</b>	<b>B-101 -7.5</b>					
Laboratory ID:	03-080-03					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>ND</b>	55	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	98	50-150				

<b>Client ID:</b>	<b>MW-1 -10'</b>					
Laboratory ID:	03-080-10					
Gasoline Range Organics	<b>ND</b>	21	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>Detected</b>	54	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil	<b>Detected</b>	110	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	110	50-150				

<b>Client ID:</b>	<b>B-102 -10'</b>					
Laboratory ID:	03-080-20					
Gasoline Range Organics	<b>ND</b>	23	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>Detected</b>	58	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil	<b>Detected</b>	120	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	100	50-150				

<b>Client ID:</b>	<b>B-102 -15</b>					
Laboratory ID:	03-080-21					
Gasoline Range Organics	<b>ND</b>	23	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>ND</b>	57	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil	<b>Detected</b>	110	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	99	50-150				



Date of Report: March 11, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080  
 Project: 8336-3

### HYDROCARBON IDENTIFICATION NWTPH-HCID

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-2 -10</b>					
Laboratory ID:	03-080-26					
Gasoline Range Organics	<b>ND</b>	23	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>Detected</b>	58	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil	<b>Detected</b>	120	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	99	50-150				

<b>Client ID:</b>	<b>MW-2 -15</b>					
Laboratory ID:	03-080-27					
Gasoline Range Organics	<b>ND</b>	21	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>ND</b>	53	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	103	50-150				



Date of Report: March 11, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080  
 Project: 8336-3

**HYDROCARBON IDENTIFICATION  
 NWTPH-HCID  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0309S2					
Gasoline Range Organics	<b>ND</b>	20	NWTPH-HCID	3-9-21	3-9-21	
Diesel Range Organics	<b>ND</b>	50	NWTPH-HCID	3-9-21	3-9-21	
Lube Oil Range Organics	<b>ND</b>	100	NWTPH-HCID	3-9-21	3-9-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	100	50-150				





Date of Report: March 11, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080  
Project: 8336-3

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
<b>B-101 -2.5</b>	03-080-01	<b>9</b>	3-9-21
<b>B-101 -7.5</b>	03-080-03	<b>9</b>	3-9-21
<b>MW-1 -10'</b>	03-080-10	<b>7</b>	3-9-21
<b>B-102 -10'</b>	03-080-20	<b>13</b>	3-9-21
<b>B-102 -15</b>	03-080-21	<b>12</b>	3-9-21
<b>MW-2 -10</b>	03-080-26	<b>13</b>	3-9-21
<b>MW-2 -15</b>	03-080-27	<b>6</b>	3-9-21





### 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-naphthalene) 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 methods 8260 & 8270, 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

Company: Terra Associates Inc  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

(Check One)

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

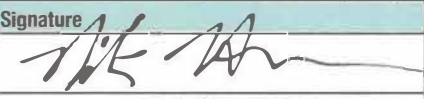
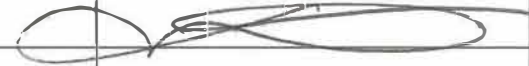
☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Number of Containers

Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix		NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx ( <input type="checkbox"/> 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	B-101 -2.5	3/4/21	9:30	Soil	5	X																					X
2	B-101 -5		9:40		1																						
3	B-101 -7.5		9:50		5	X																					X
4	B-101 -10		10:05		1																						
5	B-101 -15		10:40		1																						
6	B-101 -20		10:45		1																						
7	MW-1 -2.5'		11:05		1																						
8	MW-1 -5		11:15		5																						
9	MW-1 -7.5		11:25		5																						
10	MW-1 -10'	✓	11:35	✓	5	X																					X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	<del>TAI</del> X-Added 3/8/21. DB (STA)
Received		CSE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Reviewed/Date		Reviewed/Date			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Company: Terra Associates Inc  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

(Check One)


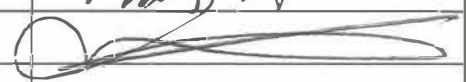
- ☐ Same Day ☐ 1 Day  
☐ 2 Days ☐ 3 Days  
☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Number of Containers

Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> Acid / SG Clean-up	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
11	MW-1 -15'	3/4/21	11:55	Soil	5																		
12	MW-1 -20		12:05		1																		
13	MW-1 -25		12:20		1																		
14	MW-1 -30		12:35		1																		
15	MW-1 -35		12:50		1																		
16	MW-1 -40		13:05		1																		
17	B-102 -2.5		14:10		3																		
18	B-102 -5		14:20		5																		
19	B-102 -7.5		14:30		5																		
20	B-102 -10'		14:40		5	X																	X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		COSE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



# Chain of Custody

Page 3 of 4

Company: Terra Associates Inc

Project Number: 8336-3

Project Name:

Project Manager: Chuck Lie

Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

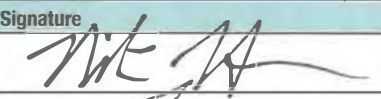

(Select One)

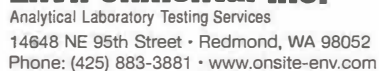
- ☐ Same Day ☐ 1 Day
- ☐ 2 Days ☐ 3 Days
- ☒ Standard (7 Days)
- ☐ \_\_\_\_\_ (other)

Number of Containers



Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx (Acid / SG Clean-up)	Volatiles 8260C	Halogenated Volatiles 8260C	EDB EPA 8011 (Waters Only)	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
21	B-102 -15	3/4/21	15:15	Soil	1	X																	X
22	B-102 -20	3/4/21	15:25		1																		
23	MW-2 -2.5	3/5/21	8:10		1																		
24	MW-2 -5		8:20		1																		
25	MW-2 -7.5		8:30		5																		
26	MW-2 -10		8:40		3	X																	X
27	MW-2 -15		8:50		1	X																	X
28	MW-2 -20		9:00		5																		
29	MW-2 -25		9:45		1																		
30	MW-2 -30	↓	10:05	↓	1																		

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		CSE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
					Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



Page 4 of 4

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		COSE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date	Reviewed/Date		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



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

March 17, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-3  
Laboratory Reference No. 2103-080B

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 5, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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



Date of Report: March 17, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080B  
Project: 8336-3

### Case Narrative

Samples were collected on March 4 and 5, 2021 and received by the laboratory on March 5, 2021. 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: March 17, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080B  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-1 -10'</b>					
Laboratory ID:	03-080-10					
Diesel Range Organics	<b>220</b>	27	NWTPH-Dx	3-12-21	3-12-21	N
Lube Oil	<b>940</b>	54	NWTPH-Dx	3-12-21	3-12-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	88	50-150				
<b>Client ID:</b>	<b>B-102 -10'</b>					
Laboratory ID:	03-080-20					
Diesel Range Organics	<b>1800</b>	720	NWTPH-Dx	3-12-21	3-17-21	N
Lube Oil	<b>14000</b>	1400	NWTPH-Dx	3-12-21	3-17-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	---	50-150				S
<b>Client ID:</b>	<b>B-102 -15</b>					
Laboratory ID:	03-080-21					
Diesel Range Organics	<b>100</b>	29	NWTPH-Dx	3-12-21	3-12-21	N
Lube Oil	<b>840</b>	57	NWTPH-Dx	3-12-21	3-12-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	99	50-150				
<b>Client ID:</b>	<b>MW-2 -10</b>					
Laboratory ID:	03-080-26					
Diesel Range Organics	<b>230</b>	29	NWTPH-Dx	3-12-21	3-12-21	N
Lube Oil	<b>1400</b>	58	NWTPH-Dx	3-12-21	3-12-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	91	50-150				



Date of Report: March 17, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080B  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0312S1					
Diesel Range Organics	<b>ND</b>	25	NWTPH-Dx	3-12-21	3-12-21	
Lube Oil Range Organics	<b>ND</b>	50	NWTPH-Dx	3-12-21	3-12-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	85	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB0312S1									
	ORIG	DUP								
Diesel Fuel #2	81.2	70.4	NA	NA		NA	NA	14	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						102	87	50-150		



Date of Report: March 17, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080B  
Project: 8336-3

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
MW-1 -10'	03-080-10	7	3-9-21
B-102 -10'	03-080-20	13	3-9-21
B-102 -15	03-080-21	12	3-9-21
MW-2 -10	03-080-26	13	3-9-21





### 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-naphthalene) 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 methods 8260 & 8270, 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

Company: Terra Associates Inc.

Project Number: 8336-3

Project Name:

Project Manager: Chuck Lio

Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

(Check One)

☐ Same Day ☐ 1 Day


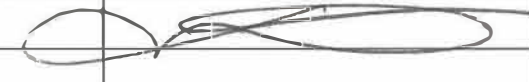
☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> 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	B-101 -2.5	3/4/21	9:30	Soil	5	X																	X
2	B-101 -5	1	9:40	1	1																		
3	B-101 -7.5	1	9:50	5	5	X																	X
4	B-101 -10	1	10:05	1	1																		
5	B-101 -15	1	10:40	1	1																		
6	B-101 -20	1	10:45	1	1																		
7	MW-1 -2.5'	1	11:05	1	1																		
8	MW-1 -5	1	11:15	5	5																		
9	MW-1 -7.5	1	11:25	5	5																		
10	MW-1 -10'	✓	11:35	✓	5	X			⊗														X

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	3/5/21	17:50	<del>TAI</del>
	OSE	3/5/21	17:50	X-Added 3/8/21. DB (STA)
				(X)-Added 3/12/21. DB (3 day TAT)
Relinquished				
Received				
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



# Chain of Custody

Company: **Terra Associates Inc**

Project Number: **8336-3**

Project Name:

Project Manager: **Chuck Lie**

Sampled by: **Nicolas R. Hoffman**

**Turnaround Request  
(in working days)**

(Select One)

- ☐ Same Day    ☐ 1 Day
- ☐ 2 Days    ☐ 3 Days
- ☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Number of Containers

Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> 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) 166.4A					% Moisture
11	MW-1 -15'	3/4/21	11:55	Soil	5																						
12	MW-1 -20		12:05		1																						
13	MW-1 -25		12:20		1																						
14	MW-1 -30		12:35		1																						
15	MW-1 -35		12:50		1																						
16	MW-1 -40		13:05		1																						
17	B-102 -2.5		14:10		3																						
18	B-102 -5		14:20		5																						
19	B-102 -7.5		14:30		5																						
20	B-102 -10'	✓	14:40	✓	5	X			⊗																		X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		CORE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
					Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

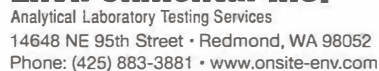
Company: Terra Associates Inc  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)	
(Check One)	
<input type="checkbox"/> Same Day	<input type="checkbox"/> 1 Day
<input type="checkbox"/> 2 Days	<input type="checkbox"/> 3 Days
<input checked="" type="checkbox"/> Standard (7 Days)	
<input type="checkbox"/> _____ (other)	

Laboratory Number: **03-080**

Lab ID	Sample Identification		Date Sampled	Time Sampled	Matrix	Number	NWTPH	NWTPH	NWTPH	NWTPH	Volatiles	Halogen	EDB EPA	Semivol (with lot	PAHs 8:	PCBs 8	Organol	Organol	Chlorina	Total RC	Total M	TCLP M	HEM (ol					% Moist
21	B-102	-15	3/4/21	15:15	Soil	1	X		(X)																			X
22	B-102	-20	3/4/21	15:25		1																						
23	MW-2	-2.5	3/5/21	8:10		1																						
24	MW-2	-5		8:20		1																						
25	MW-2	-7.5		8:30		5																						
26	MW-2	-10		8:40		3	X		(X)																			X
27	MW-2	-15		8:50		1	X																					X
28	MW-2	-20		9:00		5																						
29	MW-2	-25		9:45		1																						
30	MW-2	-30	✓	10:05	✓	1																						

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		CORE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



Page 4 of 4

**Turnaround Request  
(in working days)**

(Check One)



☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Number of Containers

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		COSE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date	Reviewed/Date		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



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

March 29, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-3  
Laboratory Reference No. 2103-080C

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 5, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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



Date of Report: March 29, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080C  
Project: 8336-3

### Case Narrative

Samples were collected on March 4 and 5, 2021 and received by the laboratory on March 5, 2021. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

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

#### NWTPH Dx Analysis

The client requested the analysis of samples MW-1-15' and B-102 -20 after the holding time had expired.

#### Volatiles EPA 8260D Analysis

The client requested the analysis of sample B-102 -10' after the holding time had expired.

#### Semivolatiles EPA 8270E/SIM Analysis

The client requested the analysis of sample B-102 -10' after the holding time had expired.

**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: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-1 -15'</b>					
Laboratory ID:	03-080-11					
Diesel Range Organics	<b>ND</b>	27	NWTPH-Dx	3-23-21	3-29-21	
Lube Oil Range Organics	<b>ND</b>	55	NWTPH-Dx	3-23-21	3-29-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	81	50-150				
<b>Client ID:</b>	<b>B-102 -20</b>					
Laboratory ID:	03-080-22					
Diesel Range Organics	<b>59</b>	28	NWTPH-Dx	3-23-21	3-23-21	
Lube Oil	<b>300</b>	56	NWTPH-Dx	3-23-21	3-23-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	91	50-150				





Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0323S1					
Diesel Range Organics	ND	25	NWTPH-Dx	3-23-21	3-23-21	
Lube Oil Range Organics	ND	50	NWTPH-Dx	3-23-21	3-23-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	95	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB0323S1									
	ORIG	DUP								
Diesel Fuel #2	90.1	80.7	NA	NA		NA	NA	11	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						106	93	50-150		



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D**  
 page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
<b>Laboratory ID:</b>	<b>03-080-20</b>					
Dichlorodifluoromethane	ND	0.0016	EPA 8260D	3-19-21	3-19-21	
Chloromethane	ND	0.0062	EPA 8260D	3-19-21	3-19-21	
Vinyl Chloride	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Bromomethane	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Chloroethane	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Trichlorofluoromethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloroethene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Acetone	0.029	0.0093	EPA 8260D	3-19-21	3-19-21	
Iodomethane	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Carbon Disulfide	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Methylene Chloride	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
(trans) 1,2-Dichloroethene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Methyl t-Butyl Ether	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloroethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Vinyl Acetate	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
2,2-Dichloropropane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
(cis) 1,2-Dichloroethene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
2-Butanone	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Bromochloromethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Chloroform	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,1,1-Trichloroethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Carbon Tetrachloride	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloropropene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Benzene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,2-Dichloroethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Trichloroethene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,2-Dichloropropane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Dibromomethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Bromodichloromethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
2-Chloroethyl Vinyl Ether	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
(cis) 1,3-Dichloropropene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Methyl Isobutyl Ketone	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Toluene	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
(trans) 1,3-Dichloropropene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D**  
 page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
Laboratory ID:	03-080-20					
1,1,2-Trichloroethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Tetrachloroethene	0.041	0.00093	EPA 8260D	3-19-21	3-19-21	
1,3-Dichloropropane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
2-Hexanone	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Dibromochloromethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,2-Dibromoethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Chlorobenzene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
1,1,1,2-Tetrachloroethane	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Ethylbenzene	0.0045	0.00093	EPA 8260D	3-19-21	3-19-21	
m,p-Xylene	0.0092	0.0019	EPA 8260D	3-19-21	3-19-21	
o-Xylene	0.0026	0.00093	EPA 8260D	3-19-21	3-19-21	
Styrene	ND	0.00093	EPA 8260D	3-19-21	3-19-21	
Bromoform	ND	0.0047	EPA 8260D	3-19-21	3-19-21	
Isopropylbenzene	0.0024	0.00093	EPA 8260D	3-19-21	3-19-21	Y
Bromobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,1,2,2-Tetrachloroethane	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,2,3-Trichloropropane	ND	0.056	EPA 8260D	3-22-21	3-22-21	
n-Propylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
2-Chlorotoluene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
4-Chlorotoluene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,3,5-Trimethylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
tert-Butylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,2,4-Trimethylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
sec-Butylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,3-Dichlorobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
p-Isopropyltoluene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,4-Dichlorobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,2-Dichlorobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
n-Butylbenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
1,2-Dibromo-3-chloropropane	ND	0.28	EPA 8260D	3-22-21	3-22-21	
1,2,4-Trichlorobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
Hexachlorobutadiene	ND	0.28	EPA 8260D	3-22-21	3-22-21	
Naphthalene	ND	0.28	EPA 8260D	3-22-21	3-22-21	
1,2,3-Trichlorobenzene	ND	0.056	EPA 8260D	3-22-21	3-22-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>115</i>	<i>74-131</i>				
<i>Toluene-d8</i>	<i>100</i>	<i>78-128</i>				
<i>4-Bromofluorobenzene</i>	<i>85</i>	<i>71-130</i>				



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0319S1					
Dichlorodifluoromethane	ND	0.0017	EPA 8260D	3-19-21	3-19-21	
Chloromethane	ND	0.0066	EPA 8260D	3-19-21	3-19-21	
Vinyl Chloride	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Bromomethane	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Chloroethane	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Acetone	ND	0.010	EPA 8260D	3-19-21	3-19-21	
Iodomethane	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Carbon Disulfide	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Methylene Chloride	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Vinyl Acetate	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
2-Butanone	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Bromochloromethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Chloroform	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Benzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Trichloroethene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Dibromomethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Bromodichloromethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Toluene	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0319S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Tetrachloroethene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
2-Hexanone	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Dibromochloromethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Chlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Ethylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
m,p-Xylene	ND	0.0020	EPA 8260D	3-19-21	3-19-21	
o-Xylene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Styrene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Bromoform	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Isopropylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Bromobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
n-Propylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
2-Chlorotoluene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
4-Chlorotoluene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
tert-Butylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
sec-Butylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
p-Isopropyltoluene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
n-Butylbenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
Naphthalene	ND	0.0050	EPA 8260D	3-19-21	3-19-21	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	3-19-21	3-19-21	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	98	74-131				
Toluene-d8	99	78-128				
4-Bromofluorobenzene	97	71-130				



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Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

page 1 of 2

Matrix: Soil  
 Units: mg/kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0322S1					
Dichlorodifluoromethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Chloromethane	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Vinyl Chloride	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Bromomethane	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Chloroethane	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Trichlorofluoromethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1-Dichloroethene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Acetone	ND	0.010	EPA 8260D	3-22-21	3-22-21	
Iodomethane	ND	0.0072	EPA 8260D	3-22-21	3-22-21	
Carbon Disulfide	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Methylene Chloride	ND	0.0071	EPA 8260D	3-22-21	3-22-21	
(trans) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1-Dichloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Vinyl Acetate	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
2,2-Dichloropropane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
(cis) 1,2-Dichloroethene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
2-Butanone	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Bromochloromethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Chloroform	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1,1-Trichloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Carbon Tetrachloride	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1-Dichloropropene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Benzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2-Dichloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Trichloroethene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2-Dichloropropane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Dibromomethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Bromodichloromethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
2-Chloroethyl Vinyl Ether	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
(cis) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Methyl Isobutyl Ketone	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Toluene	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
(trans) 1,3-Dichloropropene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	





Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0322S1					
1,1,2-Trichloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Tetrachloroethene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,3-Dichloropropane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
2-Hexanone	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Dibromochloromethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2-Dibromoethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Chlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1,1,2-Tetrachloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Ethylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
m,p-Xylene	ND	0.0020	EPA 8260D	3-22-21	3-22-21	
o-Xylene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Styrene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Bromoform	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Isopropylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Bromobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,1,2,2-Tetrachloroethane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2,3-Trichloropropane	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
n-Propylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
2-Chlorotoluene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
4-Chlorotoluene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,3,5-Trimethylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
tert-Butylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2,4-Trimethylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
sec-Butylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,3-Dichlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
p-Isopropyltoluene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,4-Dichlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2-Dichlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
n-Butylbenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
1,2-Dibromo-3-chloropropane	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
1,2,4-Trichlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Hexachlorobutadiene	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
Naphthalene	ND	0.0050	EPA 8260D	3-22-21	3-22-21	
1,2,3-Trichlorobenzene	ND	0.0010	EPA 8260D	3-22-21	3-22-21	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	115	74-131				
Toluene-d8	102	78-128				
4-Bromofluorobenzene	100	71-130				



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0319S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	0.0487	0.0541	0.0500	0.0500	97	108	55-126	11	17	
Benzene	0.0570	0.0517	0.0500	0.0500	114	103	65-121	10	16	
Trichloroethene	0.0548	0.0526	0.0500	0.0500	110	105	74-126	4	16	
Toluene	0.0573	0.0523	0.0500	0.0500	115	105	71-121	9	16	
Chlorobenzene	0.0559	0.0532	0.0500	0.0500	112	106	72-123	5	16	
Surrogate:										
Dibromofluoromethane					101	104	74-131			
Toluene-d8					100	100	78-128			
4-Bromofluorobenzene					106	101	71-130			
Laboratory ID:	SB0322S1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	0.0458	0.0494	0.0500	0.0500	92	99	55-126	8	17	
Benzene	0.0479	0.0492	0.0500	0.0500	96	98	65-121	3	16	
Trichloroethene	0.0529	0.0537	0.0500	0.0500	106	107	74-126	2	16	
Toluene	0.0477	0.0477	0.0500	0.0500	95	95	71-121	0	16	
Chlorobenzene	0.0497	0.0535	0.0500	0.0500	99	107	72-123	7	16	
Surrogate:										
Dibromofluoromethane					106	110	74-131			
Toluene-d8					98	97	78-128			
4-Bromofluorobenzene					100	101	71-130			



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**SEMIVOLATILE ORGANICS EPA 8270E/SIM**  
 page 1 of 2

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
<b>Laboratory ID:</b>	<b>03-080-20</b>					
n-Nitrosodimethylamine	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Pyridine	ND	0.39	EPA 8270E	3-22-21	3-22-21	
Phenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Aniline	ND	0.19	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroethyl)ether	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Chlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,3-Dichlorobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,4-Dichlorobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Benzyl alcohol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,2-Dichlorobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Methylphenol (o-Cresol)	ND	0.039	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroisopropyl)ether	ND	0.039	EPA 8270E	3-22-21	3-22-21	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.039	EPA 8270E	3-22-21	3-22-21	
n-Nitroso-di-n-propylamine	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Hexachloroethane	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Nitrobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Isophorone	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Nitrophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,4-Dimethylphenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroethoxy)methane	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,4-Dichlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,2,4-Trichlorobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Naphthalene	ND	0.0077	EPA 8270E/SIM	3-22-21	3-22-21	
4-Chloroaniline	ND	0.19	EPA 8270E	3-22-21	3-22-21	
Hexachlorobutadiene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
4-Chloro-3-methylphenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Methylnaphthalene	ND	0.0077	EPA 8270E/SIM	3-22-21	3-22-21	
1-Methylnaphthalene	ND	0.0077	EPA 8270E/SIM	3-22-21	3-22-21	
Hexachlorocyclopentadiene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,4,6-Trichlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,3-Dichloroaniline	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,4,5-Trichlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Chloronaphthalene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2-Nitroaniline	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,4-Dinitrobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Dimethylphthalate	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,3-Dinitrobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,6-Dinitrotoluene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,2-Dinitrobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Acenaphthylene	ND	0.0077	EPA 8270E/SIM	3-22-21	3-22-21	
3-Nitroaniline	ND	0.039	EPA 8270E	3-22-21	3-22-21	



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**SEMIVOLATILE ORGANICS EPA 8270E/SIM**  
 page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
<b>Laboratory ID:</b>	<b>03-080-20</b>					
2,4-Dinitrophenol	ND	0.19	EPA 8270E	3-22-21	3-22-21	
Acenaphthene	ND	0.0077	EPA 8270E/SIM	3-22-21	3-22-21	
4-Nitrophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,4-Dinitrotoluene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Dibenzofuran	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,3,5,6-Tetrachlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
2,3,4,6-Tetrachlorophenol	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Diethylphthalate	ND	0.19	EPA 8270E	3-22-21	3-22-21	
4-Chlorophenyl-phenylether	ND	0.039	EPA 8270E	3-22-21	3-22-21	
4-Nitroaniline	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Fluorene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
4,6-Dinitro-2-methylphenol	ND	0.19	EPA 8270E	3-22-21	3-22-21	
n-Nitrosodiphenylamine	ND	0.039	EPA 8270E	3-22-21	3-22-21	
1,2-Diphenylhydrazine	ND	0.039	EPA 8270E	3-22-21	3-22-21	
4-Bromophenyl-phenylether	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Hexachlorobenzene	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Pentachlorophenol	ND	0.19	EPA 8270E	3-22-21	3-22-21	
Phenanthrene	0.051	0.039	EPA 8270E	3-22-21	3-22-21	
Anthracene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Carbazole	ND	0.039	EPA 8270E	3-22-21	3-22-21	
Di-n-butylphthalate	ND	0.19	EPA 8270E	3-22-21	3-22-21	
Fluoranthene	0.016	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Pyrene	0.030	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Butylbenzylphthalate	ND	0.96	EPA 8270E	3-22-21	3-25-21	
bis-2-Ethylhexyladipate	ND	0.96	EPA 8270E	3-22-21	3-25-21	
3,3'-Dichlorobenzidine	ND	0.96	EPA 8270E	3-22-21	3-25-21	
Benzo[a]anthracene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Chrysene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
bis(2-Ethylhexyl)phthalate	ND	0.96	EPA 8270E	3-22-21	3-25-21	
Di-n-octylphthalate	ND	0.96	EPA 8270E	3-22-21	3-25-21	
Benzo[b]fluoranthene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Benzo(j,k)fluoranthene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Benzo[a]pyrene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Indeno[1,2,3-cd]pyrene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Dibenz[a,h]anthracene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
Benzo[g,h,i]perylene	ND	0.015	EPA 8270E/SIM	3-22-21	3-23-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
2-Fluorophenol	68	22 - 109				
Phenol-d6	73	36 - 110				
Nitrobenzene-d5	70	31 - 109				
2-Fluorobiphenyl	74	45 - 107				
2,4,6-Tribromophenol	91	43 - 124				
Terphenyl-d14	77	52 - 118				



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**SEMIVOLATILE ORGANICS EPA 8270E/SIM  
 QUALITY CONTROL**

page 1 of 2

Matrix: Soil  
 Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0322S1					
n-Nitrosodimethylamine	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Pyridine	ND	0.33	EPA 8270E	3-22-21	3-22-21	
Phenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Aniline	ND	0.17	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroethyl)ether	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Chlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,3-Dichlorobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,4-Dichlorobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Benzyl alcohol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,2-Dichlorobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Methylphenol (o-Cresol)	ND	0.033	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroisopropyl)ether	ND	0.033	EPA 8270E	3-22-21	3-22-21	
(3+4)-Methylphenol (m,p-Cresol)	ND	0.033	EPA 8270E	3-22-21	3-22-21	
n-Nitroso-di-n-propylamine	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Hexachloroethane	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Nitrobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Isophorone	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Nitrophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,4-Dimethylphenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
bis(2-Chloroethoxy)methane	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,4-Dichlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,2,4-Trichlorobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Naphthalene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
4-Chloroaniline	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Hexachlorobutadiene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
4-Chloro-3-methylphenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Methylnaphthalene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
1-Methylnaphthalene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Hexachlorocyclopentadiene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,4,6-Trichlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,3-Dichloroaniline	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,4,5-Trichlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Chloronaphthalene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2-Nitroaniline	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,4-Dinitrobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Dimethylphthalate	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,3-Dinitrobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,6-Dinitrotoluene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,2-Dinitrobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Acenaphthylene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
3-Nitroaniline	ND	0.033	EPA 8270E	3-22-21	3-22-21	



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**SEMIVOLATILE ORGANICS EPA 8270E/SIM  
 QUALITY CONTROL**

page 2 of 2

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0322S1					
2,4-Dinitrophenol	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Acenaphthene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
4-Nitrophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,4-Dinitrotoluene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Dibenzofuran	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,3,5,6-Tetrachlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
2,3,4,6-Tetrachlorophenol	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Diethylphthalate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
4-Chlorophenyl-phenylether	ND	0.033	EPA 8270E	3-22-21	3-22-21	
4-Nitroaniline	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Fluorene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
4,6-Dinitro-2-methylphenol	ND	0.17	EPA 8270E	3-22-21	3-22-21	
n-Nitrosodiphenylamine	ND	0.033	EPA 8270E	3-22-21	3-22-21	
1,2-Diphenylhydrazine	ND	0.033	EPA 8270E	3-22-21	3-22-21	
4-Bromophenyl-phenylether	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Hexachlorobenzene	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Pentachlorophenol	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Phenanthrene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Anthracene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Carbazole	ND	0.033	EPA 8270E	3-22-21	3-22-21	
Di-n-butylphthalate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Fluoranthene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Pyrene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Butylbenzylphthalate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
bis-2-Ethylhexyladipate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
3,3'-Dichlorobenzidine	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Benzo[a]anthracene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Chrysene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
bis(2-Ethylhexyl)phthalate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Di-n-octylphthalate	ND	0.17	EPA 8270E	3-22-21	3-22-21	
Benzo[b]fluoranthene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Benzo(j,k)fluoranthene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Benzo[a]pyrene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Indeno[1,2,3-cd]pyrene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Dibenz[a,h]anthracene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Benzo[g,h,i]perylene	ND	0.0067	EPA 8270E/SIM	3-22-21	3-22-21	
Surrogate:	Percent Recovery	Control Limits				
2-Fluorophenol	88	22 - 109				
Phenol-d6	93	36 - 110				
Nitrobenzene-d5	87	31 - 109				
2-Fluorobiphenyl	86	45 - 107				
2,4,6-Tribromophenol	91	43 - 124				
Terphenyl-d14	83	52 - 118				



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**SEMIVOLATILE ORGANICS EPA 8270E/SIM  
 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:	03-177-08									
	MS	MSD	MS	MSD		MS	MSD			
Phenol	1.14	1.05	1.33	1.33	ND	86	79	30 - 108	8	37
2-Chlorophenol	1.13	1.02	1.33	1.33	ND	85	77	30 - 113	10	39
1,4-Dichlorobenzene	0.555	0.478	0.667	0.667	ND	83	72	24 - 116	15	35
n-Nitroso-di-n-propylamine	0.578	0.516	0.667	0.667	ND	87	77	34 - 112	11	34
1,2,4-Trichlorobenzene	0.568	0.487	0.667	0.667	ND	85	73	34 - 115	15	38
4-Chloro-3-methylphenol	1.20	1.05	1.33	1.33	ND	90	79	41 - 117	13	26
Acenaphthene	0.537	0.493	0.667	0.667	ND	81	74	41 - 111	9	21
4-Nitrophenol	0.961	0.948	1.33	1.33	ND	72	71	30 - 127	1	32
2,4-Dinitrotoluene	0.603	0.499	0.667	0.667	ND	90	75	32 - 114	19	30
Pentachlorophenol	0.886	0.768	1.33	1.33	ND	67	58	36 - 147	14	37
Pyrene	0.658	0.610	0.667	0.667	0.0849	86	79	33 - 127	8	33
Surrogate:										
2-Fluorophenol						86	77	22 - 109		
Phenol-d6						91	83	36 - 110		
Nitrobenzene-d5						88	77	31 - 109		
2-Fluorobiphenyl						86	80	45 - 107		
2,4,6-Tribromophenol						93	76	43 - 124		
Terphenyl-d14						89	78	52 - 118		



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

### PCBs EPA 8082A

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
Laboratory ID:	03-080-20					
Aroclor 1016	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1221	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1232	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1242	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1248	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1254	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
Aroclor 1260	<b>ND</b>	0.058	EPA 8082A	3-23-21	3-23-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>DCB</i>	<i>93</i>	<i>46-125</i>				



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**PCBs EPA 8082A  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0323S1					
Aroclor 1016	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1221	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1232	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1242	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1248	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1254	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Aroclor 1260	ND	0.050	EPA 8082A	3-23-21	3-23-21	
Surrogate:	Percent Recovery	Control Limits				
DCB	99	46-125				

Analyte	Result				Spike Level	Source	Percent	Recovery	RPD		
						Result	Recovery	Limits			
MATRIX SPIKES											
Laboratory ID:	03-080-20										
	MS	MSD	MS	MSD		MS	MSD				
Aroclor 1260	0.391	0.400	0.500	0.500	ND	78	80	43-125	2	15	
Surrogate:											
DCB						88	88	46-125			



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**TOTAL METALS**  
**EPA 6010D/7471B**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>B-102 -10'</b>					
Laboratory ID:	03-080-20					
Arsenic	<b>ND</b>	12	EPA 6010D	3-23-21	3-23-21	
Barium	<b>37</b>	2.9	EPA 6010D	3-23-21	3-23-21	
Cadmium	<b>ND</b>	0.58	EPA 6010D	3-23-21	3-23-21	
Chromium	<b>19</b>	0.58	EPA 6010D	3-23-21	3-23-21	
Lead	<b>ND</b>	5.8	EPA 6010D	3-23-21	3-23-21	
Mercury	<b>ND</b>	0.29	EPA 7471B	3-24-21	3-24-21	
Selenium	<b>ND</b>	12	EPA 6010D	3-23-21	3-23-21	
Silver	<b>ND</b>	1.2	EPA 6010D	3-23-21	3-23-21	



Date of Report: March 29, 2021  
 Samples Submitted: March 5, 2021  
 Laboratory Reference: 2103-080C  
 Project: 8336-3

**TOTAL METALS  
 EPA 6010D/7471B  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0323SM1					
Arsenic	ND	10	EPA 6010D	3-23-21	3-23-21	
Barium	ND	2.5	EPA 6010D	3-23-21	3-23-21	
Cadmium	ND	0.50	EPA 6010D	3-23-21	3-23-21	
Chromium	ND	0.50	EPA 6010D	3-23-21	3-23-21	
Lead	ND	5.0	EPA 6010D	3-23-21	3-23-21	
Selenium	ND	10	EPA 6010D	3-23-21	3-23-21	
Silver	ND	1.0	EPA 6010D	3-23-21	3-23-21	

Laboratory ID:	MB0324S1					
Mercury	ND	0.25	EPA 7471B	3-24-21	3-24-21	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	03-080-20							
	ORIG	DUP						
Arsenic	ND	ND	NA	NA	NA	NA	20	
Barium	31.7	30.7	NA	NA	NA	3	20	
Cadmium	ND	ND	NA	NA	NA	NA	20	
Chromium	16.6	16.9	NA	NA	NA	1	20	
Lead	ND	ND	NA	NA	NA	NA	20	
Selenium	ND	ND	NA	NA	NA	NA	20	
Silver	ND	ND	NA	NA	NA	NA	20	

Laboratory ID:	03-080-20							
Mercury	ND	ND	NA	NA	NA	NA	20	

**MATRIX SPIKES**

Laboratory ID:	03-080-20									
	MS	MSD	MS	MSD		MS	MSD			
Arsenic	103	100	100	100	ND	103	100	75-125	3	20
Barium	143	144	100	100	31.7	111	113	75-125	1	20
Cadmium	46.5	44.6	50.0	50.0	ND	93	89	75-125	4	20
Chromium	117	112	100	100	16.6	101	96	75-125	4	20
Lead	259	249	250	250	ND	104	100	75-125	4	20
Selenium	103	100	100	100	ND	103	100	75-125	3	20
Silver	23.8	22.2	25.0	25.0	ND	95	89	75-125	7	20

Laboratory ID:	03-080-20									
Mercury	0.497	0.496	0.500	0.500	0.0118	97	97	80-120	0	20



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Date of Report: March 29, 2021  
Samples Submitted: March 5, 2021  
Laboratory Reference: 2103-080C  
Project: 8336-3

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
<b>MW-1 -15'</b>	03-080-11	<b>9</b>	3-23-21
<b>B-102 -10'</b>	03-080-20	<b>13</b>	3-9-21
<b>B-102 -20</b>	03-080-22	<b>10</b>	3-23-21







### 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-naphthalene) 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 methods 8260 & 8270, 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

Company: Terra Associates Inc.  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

Turnaround Request (in working days)	
(Check One)	
<input type="checkbox"/> Same Day	<input type="checkbox"/> 1 Day
<input type="checkbox"/> 2 Days	<input type="checkbox"/> 3 Days
<input checked="" type="checkbox"/> Standard (7 Days)	
<input type="checkbox"/> _____ (other)	

Laboratory Number: **03-080**

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	B-101 -2.5	3/4/21	9:30	Soil	5	X																	X
2	B-101 -5	1	9:40	1	1																		
3	B-101 -7.5	1	9:50	1	5	X																	X
4	B-101 -10	1	10:05	1	1																		
5	B-101 -15	1	10:40	1	1																		
6	B-101 -20	1	10:45	1	1																		
7	MW-1 -2.5'	1	11:05	1	1																		
8	MW-1 -5	1	11:15	1	5																		
9	MW-1 -7.5	1	11:25	1	5																		
10	MW-1 -10'	1	11:35	1	5	X			(X)														X

Signature	Company	Date	Time	Comments/Special Instructions
	TAJ	3/5/21	17:50	<del>TAJ</del>
	COE	3/5/21	17:50	X-Added 3/8/21. DB (STA)
				(X)-Added 3/12/21. DB (3 day TAT)
				O Added 3/19/21 <del>SCP</del> STA
				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Reviewed/Date	Reviewed/Date			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Company: Terra Associates Inc  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

(Select One)

- ☐ Same Day    ☐ 1 Day  
☐ 2 Days    ☐ 3 Days  
☒ Standard (7 Days)


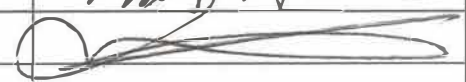
☐ \_\_\_\_\_ (other)

Number of Containers

Laboratory Number:

03-080

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number	NWTP	NWTP	NWTP	NWTP	Volatiles	Halogens	EDB	Semi (with PAHs)	PCBs	Organics	Organics	Chlorine	Total H	Total N	TCLP	HEM				% Moisture
11	MW-1 -15'	3/4/21	11:55	Soil	5				0																0
12	MW-1 -20		12:05		1																				
13	MW-1 -25		12:20		1																				
14	MW-1 -30		12:35		1																				
15	MW-1 -35		12:50		1																				
16	MW-1 -40		13:05		1																				
17	B-102 -2.5		14:10		3																				
18	B-102 -5		14:20		5																				
19	B-102 -7.5		14:30		5																				
20	B-102 -10'	✓	14:40	✓	5	X		⊗	0			0	0					0							X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		CORE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
					Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



# Chain of Custody

Company: Terra Associates Inc

Project Number: 8336-3

Project Name:

Project Manager: Chuck Lie

Sampled by: Nicolas R. Hoffman

**Turnaround Request  
(in working days)**

(Check One)

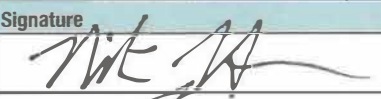

☐ Same Day ☐ 1 Day

☐ 2 Days ☐ 3 Days

☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: 03-080					
Number of Containers					
1	1	1	1	5	3
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
1	1	1	1	5	1
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1	1	1	1	5	1
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1	1	1	1	5	1

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		CORE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Reviewed/Date		Reviewed/Date			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>

# Chain of Custody

Company: **Terra Associates Inc.**  
Project Number: **8336-3**  
Project Name:  
Project Manager: **Chuck Lie**  
Sampled by: **Nicolas R. Hoffman**

**Turnaround Request  
(in working days)**

(Check One)



- ☐ Same Day    ☐ 1 Day  
☐ 2 Days    ☐ 3 Days  
☒ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Number of Containers

Laboratory Number: **03-080**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix		NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx ( <input type="checkbox"/> 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
31	MW-2 -35	3/5/21	10:20	Si:1	1																		
32	MW-2 -40'	↓	10:35	↓	1																		
33	MW-2 -45	↓	10:50	↓	1																		
34	MW-2 -50	↓	11:30	↓	1																		
35	MW-2 -55	↓	12:15	↓	1																		

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/5/21	17:50	
Received		COE	3/5/21	17:50	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>



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April 2, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-3  
Laboratory Reference No. 2103-203

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 18, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a long horizontal flourish.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: April 2, 2021  
Samples Submitted: March 18, 2021  
Laboratory Reference: 2103-203  
Project: 8336-3

### **Case Narrative**

Samples were collected on March 17, 2021 and received by the laboratory on March 18, 2021. 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: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

### HYDROCARBON IDENTIFICATION NWTPH-HCID

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101 -10'</b>					
Laboratory ID:	03-203-02					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	3-22-21	3-22-21	
Diesel Range Organics	<b>Detected</b>	55	NWTPH-HCID	3-22-21	3-22-21	
Lube Oil	<b>Detected</b>	110	NWTPH-HCID	3-22-21	3-22-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				

<b>Client ID:</b>	<b>MW-101 -15'</b>					
Laboratory ID:	03-203-03					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	3-22-21	3-22-21	
Diesel Range Organics	<b>Detected</b>	55	NWTPH-HCID	3-22-21	3-22-21	
Lube Oil	<b>Detected</b>	110	NWTPH-HCID	3-22-21	3-22-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				



Date of Report: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

**HYDROCARBON IDENTIFICATION  
 NWTPH-HCID  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0322S2					
Gasoline Range Organics	<b>ND</b>	20	NWTPH-HCID	3-22-21	3-22-21	
Diesel Range Organics	<b>ND</b>	50	NWTPH-HCID	3-22-21	3-22-21	
Lube Oil Range Organics	<b>ND</b>	100	NWTPH-HCID	3-22-21	3-22-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	96	50-150				



Date of Report: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101 -10'</b>					
Laboratory ID:	03-203-02					
Diesel Range Organics	<b>980</b>	140	NWTPH-Dx	3-25-21	3-26-21	N
Lube Oil	<b>7000</b>	270	NWTPH-Dx	3-25-21	3-26-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	87	50-150				
<b>Client ID:</b>	<b>MW-101 -15'</b>					
Laboratory ID:	03-203-03					
Diesel Range Organics	<b>150</b>	28	NWTPH-Dx	3-25-21	3-25-21	N
Lube Oil	<b>1000</b>	55	NWTPH-Dx	3-25-21	3-25-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	84	50-150				
<b>Client ID:</b>	<b>MW-101 -20'</b>					
Laboratory ID:	03-203-04					
Diesel Range Organics	<b>89</b>	27	NWTPH-Dx	3-25-21	3-25-21	N
Lube Oil	<b>610</b>	54	NWTPH-Dx	3-25-21	3-25-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	78	50-150				



Date of Report: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0325S1					
Diesel Range Organics	<b>ND</b>	25	NWTPH-Dx	3-25-21	3-25-21	
Lube Oil Range Organics	<b>ND</b>	50	NWTPH-Dx	3-25-21	3-25-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	92	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	SB0325S1							
	ORIG	DUP						
Diesel Fuel #2	<b>85.6</b>	<b>79.5</b>	NA	NA	NA	NA	7	NA
Lube Oil Range	<b>ND</b>	<b>ND</b>	NA	NA	NA	NA	NA	NA
Surrogate:								
<i>o</i> -Terphenyl				97	93	50-150		



Date of Report: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-101 -25'</b>					
Laboratory ID:	03-203-05					
Diesel Range Organics	<b>27</b>	27	NWTPH-Dx	3-31-21	4-1-21	N
Lube Oil	<b>190</b>	54	NWTPH-Dx	3-31-21	4-1-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	91	50-150				
<b>Client ID:</b>	<b>MW-101 -30'</b>					
Laboratory ID:	03-203-06					
Diesel Range Organics	<b>ND</b>	27	NWTPH-Dx	3-31-21	4-1-21	
Lube Oil Range Organics	<b>ND</b>	54	NWTPH-Dx	3-31-21	4-1-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	96	50-150				



Date of Report: April 2, 2021  
 Samples Submitted: March 18, 2021  
 Laboratory Reference: 2103-203  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0331S2					
Diesel Range Organics	<b>ND</b>	25	NWTPH-Dx	3-31-21	4-1-21	
Lube Oil Range Organics	<b>ND</b>	50	NWTPH-Dx	3-31-21	4-1-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	77	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB0331S2									
	ORIG	DUP								
Diesel Fuel #2	92.2	85.8	NA	NA		NA	NA	7	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						89	83	50-150		



Date of Report: April 2, 2021  
Samples Submitted: March 18, 2021  
Laboratory Reference: 2103-203  
Project: 8336-3

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
MW-101 -10'	03-203-02	9	3-22-21
MW-101 -15'	03-203-03	9	3-22-21
MW-101 -20'	03-203-04	7	3-25-21
MW-101 -25'	03-203-05	8	3-31-21
MW-101 -30'	03-203-06	7	3-31-21







### 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-naphthalene) 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 methods 8260 & 8270, 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





## Page 1 of 1

Company: Terra Associates Inc.  
Project Number: 8336-3  
Project Name:  
Project Manager: Chuck Lie  
Sampled by: Nicolas R. Hoffman

(Check One)

☐ Same Day      ☐ 1 Day



☐ 2 Days      ☒ 3 Days

☐ Standard (7 Days)

☐ \_\_\_\_\_  
(other)

Number of Containers

[illegible]

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	3/18/21	9:00	ⓧ Add 3/23/21. DB (STA)
Received		CSE	3/18/21	09:00	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date	Reviewed/Date		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
			Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		



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April 5, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-3  
Laboratory Reference No. 2103-263

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on March 22, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a long horizontal line.

David Baumeister  
Project Manager

Enclosures



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OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: April 5, 2021  
Samples Submitted: March 22, 2021  
Laboratory Reference: 2103-263  
Project: 8336-3

### **Case Narrative**

Samples were collected on March 22, 2021 and received by the laboratory on March 22, 2021. 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: April 5, 2021  
 Samples Submitted: March 22, 2021  
 Laboratory Reference: 2103-263  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-3 -5'</b>					
Laboratory ID:	03-263-01					
Diesel Range Organics	<b>ND</b>	27	NWTPH-Dx	4-2-21	4-2-21	
Lube Oil Range Organics	<b>ND</b>	54	NWTPH-Dx	4-2-21	4-2-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	86	50-150				
<b>Client ID:</b>	<b>MW-3 -10'</b>					
Laboratory ID:	03-263-02					
Diesel Range Organics	<b>ND</b>	28	NWTPH-Dx	4-2-21	4-2-21	
Lube Oil Range Organics	<b>ND</b>	56	NWTPH-Dx	4-2-21	4-2-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	87	50-150				



Date of Report: April 5, 2021  
 Samples Submitted: March 22, 2021  
 Laboratory Reference: 2103-263  
 Project: 8336-3

**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB0402S1					
Diesel Range Organics	<b>ND</b>	25	NWTPH-Dx	4-2-21	4-2-21	
Lube Oil Range Organics	<b>ND</b>	50	NWTPH-Dx	4-2-21	4-2-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	81	50-150				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	SB0402S1									
	ORIG	DUP								
Diesel Fuel #2	88.4	80.4	NA	NA		NA	NA	9	NA	
Lube Oil Range	ND	ND	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						90	89	50-150		



Date of Report: April 5, 2021  
Samples Submitted: March 22, 2021  
Laboratory Reference: 2103-263  
Project: 8336-3

**% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
MW-3 -5'	03-263-01	8	4-1-21
MW-3 -10'	03-263-02	11	4-1-21







### 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.
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- 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-naphthalene) 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 methods 8260 & 8270, 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

Company: Tarra Associates Inc

Project Number: 8336-3

Project Name:

Project Manager: Chuck Lio

Sampled by: Nichols R Hoffman

**Turnaround Request  
(in working days)**

(Check One)

☐ Same Day ☐ 1 Day



☒ 2 Days ☒ 3 Days

☐ Standard (7 Days)

☐ \_\_\_\_\_ (other)

**Laboratory Number: 03-263**

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx <input type="checkbox"/> 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 PCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	MW-3 -5'	3/22/21	9:00	Soil	5				(X)														(X)
2	MW-3 -10'		9:10		5				(X)														(X)
3	MW-3 -20'		9:30		5																		
4	MW-3 -25'		9:45		5																		
5	MW-3 -30'		9:55		1																		
6	MW-3 -35'		10:15		1																		
7	MW-3 -40'		10:40		1																		
8	MW-3 -45'		10:55		1																		
9	MW-3 -50'		11:15		1																		
10	MW-3 -55'		11:45		1																		

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	3/22/21		Hold for analysis (X) Added 4/1/2021. DB (2 day TAT)
	CORE	3/22/21	1545	
Relinquished				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Received				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date			

**APPENDIX C**  
**ANALYTICAL TEST REPORTS - GROUNDWATER**

**Table 1**  
**Static Groundwater Level Summary**

Monitoring Well	Top of Casing	3/29/2021		4/7/2021	
		Depth	Elevation	Depth	Elevation
MW-101	99.95	47.33	52.62	47.29	52.66
MW-2	99.45	46.98	52.47	46.84	52.61
MW-3	98.97	45.94	53.03	45.69	53.28

**Notes:** All measurements are in feet.

Slab at southeastern corner of the building is assumed to be Elev 100.

**Table 2**  
**Analytical Test Results**  
**Soils - Hydrocarbons**

Test Boring	Depth	TPH - Gasoline Range	TPH - Diesel Range	TPH - Oil Range
B-2	15	NT	28U	350
B-3	7	NT	26U	55
B-4	11	NT	27U	54U
B-5	7	NT	1300	9200
B-6	6	NT	160	1200
	7.5	NT	1300	7100
	9	NT	3700	9000
B-7	7	NT	28U	56U
B-8	2.5	9.9U	8500	24,000
	7.5	NT	28U	55U
B-101	2.5	22U	55U	110U
	7.5	22U	55U	110U
B-102	10	23U	1800	14,000
	15	23U	100	840
	20	NT	59	300
MW-1	10	21U	220	940
	15	NT	27U	55U
MW-101	10	22U	980	7,000
	15	22U	150	1,000
	20	NT	89	610
MW-2	10	23U	230	1400
	15	21U	53U	110U
MW-3	5	NT	27U	54U
	10	NT	28U	54U
MTCA Method A		30	2,000	

**Notes:** Depths are in feet below existing grade.

All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical Practical Quantitation Limit (PQL).

Shaded cells exceed the MTCA Method a cleanup level.

**Table 3**  
**Analytical Test Results**  
**Soils - Metals**

<b>Test Boring</b>	<b>Depth</b>	<b>Arsenic</b>	<b>Barium</b>	<b>Cadmium</b>	<b>Chromium</b>	<b>Lead</b>	<b>Mercury</b>	<b>Selenium</b>	<b>Silver</b>
B-8	2.5	11U	NT	0.54U	37	18	0.27U	NT	NT
B-102	10	12U	37	0.58U	19	5.8U	0.29U	12U	1.2U
MTCA Method A		20	16,000	2	2,000 (19)	250	2.0	400	400

**Notes:** Depths are in feet below existing grade.

All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical PQL.

Values for chromium are for total chromium. Hexavalent chromium are values in parenthesis.

**Table 4**  
**Analytical Testing Summary**  
**Soil - Volatile Organics**

Test Boring	Depth	Acetone	Methylene Chloride	2-Butanone (MEK)	Ethyl Benzene	Xylenes	Isopropyl benzene (cumene)	PCE
B-8	2.5	0.24E	0.061H	0.043	0.00092U	0.0118U	0.00092U	0.0074
B-10	10	0.029	0.0047U	0.0047U	0.0045	0.0118	0.0024	0.041
MTCA Method A (B)		(7,200)	0.02	400	6.0	9.0	8,000	0.05

**Notes:** All units mg/kg.

U indicates the compound was not present at the stated numerical PQL.

Refer to lab report for all of the compounds analyzed for volatile compounds.

H indicates the results are likely due to lab contamination as discussed in the lab report.

E indicates the results exceed the quantitation limits and are an estimate.

Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 5**  
**Analytical Testing Summary**  
**Soil PCBs**

Test Boring	Depth	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
B-8	2.5	0.054U	0.054U	0.054U	0.054U	0.054U	0.27U	0.27U
B-102	10	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U
MTCA Method A (B)		1.0						

**Notes:** All units mg/kg.

U indicates the compound was not present at the stated PQL.

Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 6**  
**Analytical Testing Summary**  
**Soil CPAHs**

**B-8 at 2.5**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.14U	1	0.07
benzo(a)anthracene	0.14U	0.1	0.007
benzo(b)fluoranthene	0.14U	0.1	0.007
benzo(k)fluoranthene	0.14U	0.1	0.007
chrysene	0.14U	0.01	0.0007
Dibenz(a,h)anthracene	0.14U	0.1	0.007
indeno(1,2,3-cd)pyrene	0.14U	0.1	0.007
TOTAL CPAH		N/A	0.1
MTCA			0.1

**B-102 at 10**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.015U	1	0.075
benzo(a)anthracene	0.015U	0.1	0.0075
benzo(b)fluoranthene	0.015U	0.1	0.0075
benzo(k)fluoranthene	0.015U	0.1	0.0075
chrysene	0.015U	0.01	0.00075
Dibenz(a,h)anthracene	0.015U	0.1	0.0075
indeno(1,2,3-cd)pyrene	0.015U	0.1	0.0075
TOTAL CPAH		N/A	0.11
MTCA			0.1

**Notes:** All units are mg/kg based on dry weight.  
 U indicates the compound was not present at the stated PQL.  
 TEF values are from Chapter 173-340 WAC-Table 708-2.  
 TEF corrected values are based on 50 percent of the PQL.



**Table 7**  
**Analytical Testing Summary**  
**PAHs - Soils**

Test Boring	Depth	Naphthalene	2-Methyl naphthalene	1-methyl Naphthalene	Fluorene	Fluoranthene	Phenanthrene	Pyrene
B-8	2.5	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U
B-102	10	0.0077U	0.0077U	0.0077U	0.015U	0.016	0.051	0.03
MTCA Method A (B)		5.0			3,200	3,200	--	2,400

**Notes:** All units mg/kg.

Refer to lab report for full results. Only compounds with detections are listed above.

Cleanup levels shown are for reference purposed only. Site-specific cleanup levels have not been determined.

**Table 8**  
**Analytical Test Results**  
**Groundwater - Hydrocarbons**

Test Boring	Date	TPH- Gasoline Range	TPH Diesel Range	TPH Oil Range
MW-1	3/30/21	100U	220U	220U
MW-2	3/30/21	100U	220U	220U
MW-3	3/30/21	100U	220U	340
MTCA Method A		800	500	

**Table 9**  
**Analytical Test Results**  
**Volatile Organic Compounds - Groundwater**

Well Monitoring	Date	Benzene	Ethylbenzene	Toluene	Xylenes	Isopropyl Benzene	Perchloroethylene	Methylene Chloride	2-Butanone (MEK)	Acetone
MW-101	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-2	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-3	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MTCA Method A		5.0	700	1,000	300	NP	5.0	5.0	(4,800)	(7,200)

**Notes:** All units are mg/kg..

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.

Only common volatiles and volatiles found in soil samples are summarized above. Refer to lab report for additional compounds.

Values in parenthesis are Method B.

NP indicates there is no MTCA or EPA cleanup level or drinking water MCL for Isopropyl Benzene.

**Table 10**  
**Analytical Test Results**  
**Groundwater - Metals**

Well Monitoring	Date	Total cadmium	Dissolved Cadmium	Total Chromium	Dissolved Chromium	Total Lead	Dissolved Lead	Total Nickel	Dissolved Nickel	Total Zinc	Dissolved Zinc
MW-101	3/29/21	4.4U	4.0U	46	10U	3.0	1.0U	46	20U	28U	25U
MW-2	3/29/21	4.4U	4.0U	15	10U	1.1U	1.0U	22U	20U	28U	25U
MW-3	3/29/21	4.4U	4.0U	15	10U	3.7	1.0U	55	20U	33	25U
MTCA Method A		5.0		50		15		320		4800	

**Notes:** All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.

The value for nickel is for soluble salts of nickel.

**Table 11**  
**Groundwater Parameters**

<b>Well Monitoring</b>	<b>Date</b>	<b>Temperature</b>	<b>Dissolved Oxygen</b>	<b>Conductivity</b>	<b>pH</b>	<b>ORP</b>	<b>Turbidity</b>	<b>Ferrous Iron</b>	<b>Purge Rate</b>	<b>Purge Volume</b>
MW-1	3/29/2021	16.02	0.33	1027	7.07	-300.1	22	0.0	0.05	9
MW-2	3/29/2021	15.30	0.38	808	8.48	-116.3	12	0.0	0.05	6
MW-3	3/29/2021	14.81	0.45	1425	8.80	-343.7	18	0.0	0.05	6

**Notes:** Temperature is in degrees Celsius.  
 Conductivity is in  $\mu\text{S}/\text{cm}$ .  
 Dissolved Oxygen is in  $\text{mg}/\text{l}$ .  
 pH is in standard units.  
 ORP is in millivolts.  
 Turbidity is in NTUs.  
 Ferrous Iron in in PPM based on Hatch field test.  
 Purge Rate is in gallon per minute.  
 Purge volume is in gallons.  
 No sheen was observed on any purge water.

# **PHASE II ENVIRONMENTAL SITE ASSESSMENT**

**Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690**

**Project No. T-8336-4**

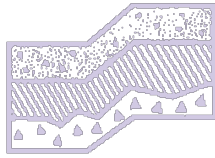


## **Terra Associates, Inc.**

**Prepared for:**

**Anderson and Associates  
Mercer Island, Washington**

**November 24, 2021**



# TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

November 24, 2021  
Project No. T-8336-4

Mr. M. Bruce Anderson  
Anderson and Associates  
7420 SE 24<sup>th</sup> street, Suite 4  
Mercer Island, Washington 98040

Subject: Phase II Environmental Site Assessment-Supplemental Explorations and Sampling  
Midas Muffler  
7055 – 15th Avenue NW  
Seattle, Washington  
King County Tax Parcel 751850-0690

Dear Mr. Anderson:

We have completed a Phase II Environmental Site Assessment (ESA) for King County Tax Parcel 751850-0690, located at 7055 – 15th Avenue NW in Seattle, Washington. Our prior Phase I Environmental Site Assessment study prepared for a potential purchaser in 2018 found two Recognized Environmental Conditions (RECs) associated with the site. As discussed in the attached report, site-specific sampling was focused on the RECs.

The attached report describes our study in detail. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,  
**TERRA ASSOCIATES, INC.**

Charles R. Lie, L.E.G., L.H.G.  
Project Manager

**Phase II Environmental Site Assessment  
Midas Muffler  
7055 – 15th Avenue Northwest  
Seattle, Washington  
King County Tax Parcel 751850-0690  
WAD988494720**

**SUMMARY**

This report summarizes recent environmental sampling and analytical testing on soils and groundwater at King County Tax Parcel 751850-0690, located in the Ballard area of Seattle, Washington.

The site consists of one tax parcel totaling 0.3 acres. Currently the subject site is developed with a Midas Muffler auto repair shop. Prior to the existing building, two single-family residences were onsite.

We prepared a Phase I ESA for an earlier prospective purchaser. The Phase I ESA revealed evidence of two Recognized Environmental Conditions (RECs) in connection with the parcel. These consist of:

1. The suspected former presence of residential heating oil USTs.
2. The use of the site as an auto shop including subsurface hydraulic lifts.

To evaluate the RECs, Terra Associates, Inc. has completed three episodes of soil sampling and the construction of four monitoring wells onsite. As discussed in this report, the constituent of concern was the total petroleum hydrocarbons in the diesel-to-oil range found to exceed current MTCA Method A cleanup values for unrestricted land use.

The following sections of this memo present more information.

**SCOPE OF WORK**

Our scope of work for this site assessment consisted of the following:

- One-call utility notification required by state law, as well as contacting the private locating service prior to drilling test holes.
- Drilling twelve soil test borings to depths of 20 to 40 feet below site grades.
- Drilling four test borings to depths of about sixty feet to allow permanent monitoring wells to be established and allow direct sampling of groundwater.
- Sampling soils from all test borings. All soil samples were field screened for hydrocarbons.
- Sampling each of the monitoring wells for analytical testing.
- Transfer of soil and groundwater samples from the site to Onsite Environmental, Inc.'s analytical laboratory.
- Appropriate review of the analytical test results.
- Preparation of this report.

## **FINDINGS**

### ***Site Conditions***

The site is located in the Ballard neighborhood of Seattle, Washington. Most of the surrounding area is and has been single-family residential. 15th Avenue NW is an arterial developed with retail and single-story commercial buildings. Figures 1 and 2 show the site location and Figure 3 is an oblique aerial photo showing site conditions.

The exploration locations for this report are shown on Figure 4.

The site slopes gently down toward the south and corresponds with adjacent streets and other properties. The soils found in the borings consist of dense till soils. The deeper test borings with monitoring wells encountered advance outwash.

No groundwater was encountered in the test borings completed for this project.

### **ANALYTICAL TESTING SUMMARY/DISCUSSION**

The lab results are summarized on Tables 1 through 10 attached to this memo. The full laboratory test reports are attached in Appendix B.

The results of the analysis show there are elevated oil-range hydrocarbons exceeding the cleanup values in Test Borings B-5, B-6, B-8, B-102, and B-101. Based on the sampling summarized in this report, the lower bounds of the elevated hydrocarbons are expected to be 12 to 15 feet below existing grades. With one exception, none of the secondary analysis required by Table 830-1 exceeded their respective cleanup values. The soils sample from boring B-102 at 10 feet had carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) that exceed the Method A cleanup value. The cPAHs were at a total of 0.11 mg/kg versus a cleanup value of 0.10 mg/kg. No naphthalene was detected in either of the follow up samples of soils that had expanded testing to address the analytical testing on Table 830-1.

### ***Site Remedial Options***

We understand that you plan to retain the building shell and remodel the interior. Based on the soils encountered in the borings, the limited lateral extent, and the lack of impacts to groundwater, excavation and removal of the PCS appears to be feasible. The high clear ceiling will allow the use of a track hoe to excavate the PCS. The contractor will need to double handle the PCS due to the limitations of entering and exiting the building. The soils are suitable for direct disposal into the municipal waste stream or could be routed to the limited purpose landfills in Snohomish County that accept PCS. The determination of the disposal site is flexible and will depend upon the anticipated costs of trucking and availability of the dump sites.

We recommend that the two monitoring wells within the building be lawfully closed prior to any slab demolition activities. MW-2 and MW-101 are both located within areas that will require excavation. We recommend the two monitoring wells outside of the building footprint be retained pending final closure of the site with Ecology.



We will provide you with a proposal to provide supplemental consultation and sampling services during the remedial excavation. We understand that it could be January of 2022 before the work will begin. We will also work with you during the submittal of the cleanup reports to the state. Given that there are not any USTs on site, we have been told by PLIA that they will not be accepting the project into their program.

## **LIMITATIONS**

Our conclusions and recommendations are our professional opinion and were reached in accordance with generally accepted professional engineering practices. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for the specific application to the Ballard Midas Muffler project in Seattle, Washington. This report is for the exclusive use of Anderson and Associates and their authorized representatives.

The test results summarized in this report represent the sample locations shown on the attached figures and the sample date the samples were taken. None of the data should be extrapolated to other locations either on or offsite.

Attachments:    Tables 1 through 11 – Analytical Testing Summary  
                      Figure 1 – Vicinity Map  
                      Figure 2 – Topographic Vicinity Map  
                      Figure 3 – Oblique Aerial Photo  
                      Figure 4 – Exploration Location Sketch  
                      Appendix A – Subsurface Exploration  
                      Appendix B – Analytical Test Report - Soils  
                      Appendix C – Analytical Test Report - Groundwater

**Table 1**  
**Static Groundwater Level Summary**

Monitoring Well	Top of Casing	3/29/2021		4/7/2021		10-6-2021	
		Depth	Elevation	Depth	Elevation	Depth	Elevation
MW-101	99.95	47.33	52.62	47.29	52.66	48.79	51.16
MW-2	99.45	46.98	52.47	46.84	52.61	48.24	51.21
MW-3	98.97	45.94	53.03	45.69	53.28	47.57	51.4
MW-201	102.15					51.73	50.42

**Notes:** All measurements are in feet.

Slab at southeastern corner of the building is assumed to be Elev 100.

Groundwater final elevations will be based on the current field survey being done by others.

**Table 2**  
**Analytical Test Results**  
**Soils - Hydrocarbons**

Test Boring	Depth	TPH - Gasoline Range	TPH - Diesel Range	TPH - Oil Range
B-2	15	NT	28U	350
B-3	7	NT	26U	55
B-4	11	NT	27U	54U
B-5	7	NT	1300	9200
B-6	6	NT	160	1200
	7.5	NT	1300	7100
	9	NT	3700	9000
B-7	7	NT	28U	56U
B-8	2.5	9.9U	8500	24,000
	7.5	NT	28U	55U
B-101	2.5	22U	55U	110U
	7.5	22U	55U	110U
B-102	10	23U	1800	14,000
	15	23U	100	840
	20	NT	59	300
MW-1	10	21U	220	940
	15	NT	27U	55U
MW-101	10	22U	980	7,000
	15	22U	150	1,000
	20	NT	89	610
MW-2	10	23U	230	1400
	15	21U	53U	110U
MW-3	5	NT	27U	54U
	10	NT	28U	54U
MW-201	5	22U	54U	100U
	50	21U	52U	100U
SB-1	5	21U	53U	110U
	10	22U	56U	110U
	15	22U	54U	110U
	20	21U	54U	110U
MTCA Method A		30	2,000	

**Notes:** Depths are in feet below existing grade.

All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical Practical Quantitation Limit (PQL).

Shaded cells exceed the MTCA Method A cleanup level.

**Table 3**  
**Analytical Test Results**  
**Soils - Metals**

<b>Test Boring</b>	<b>Depth</b>	<b>Arsenic</b>	<b>Barium</b>	<b>Cadmium</b>	<b>Chromium</b>	<b>Lead</b>	<b>Mercury</b>	<b>Selenium</b>	<b>Silver</b>
B-8	2.5	11U	NT	0.54U	37	18	0.27U	NT	NT
B-102	10	12U	37	0.58U	19	5.8U	0.29U	12U	1.2U
MTCA Method A		20	16,000	2	2,000 (19)	250	2.0	400	400

**Notes:** Depths are in feet below existing grade.

All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical PQL.

Values for chromium are for total chromium. Hexavalent chromium are values in parenthesis.

**Table 4**  
**Analytical Testing Summary**  
**Soil - Volatile Organics**

Test Boring	Depth	Acetone	Methylene Chloride	2-Butanone (MEK)	Ethyl Benzene	Xylenes	Isopropyl benzene (cumene)	PCE
B-8	2.5	0.24E	0.061H	0.043	0.00092U	0.0118U	0.00092U	0.0074
B-10	10	0.029	0.0047U	0.0047U	0.0045	0.0118	0.0024	0.041
MTCA Method A (B)		(7,200)	0.02	400	6.0	9.0	8,000	0.05

**Notes:** All units mg/kg.

U indicates the compound was not present at the stated numerical PQL.

Refer to lab report for all of the compounds analyzed for volatile compounds.

H indicates the results are likely due to lab contamination as discussed in the lab report.

E indicates the results exceed the quantitation limits and are an estimate.

Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 5**  
**Analytical Testing Summary**  
**Soil PCBs**

Test Boring	Depth	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
B-8	2.5	0.054U	0.054U	0.054U	0.054U	0.054U	0.27U	0.27U
B-102	10	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U	0.058U
MTCA Method A (B)		1.0						

**Notes:** All units mg/kg.

U indicates the compound was not present at the stated PQL.

Cleanup levels are shown for reference purposes only. No site cleanup levels have been established.

**Table 6**  
**Analytical Testing Summary**  
**Soil CPAHs**

**B-8 at 2.5**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.14U	1	0.07
benzo(a)anthracene	0.14U	0.1	0.007
benzo(b)fluoranthene	0.14U	0.1	0.007
benzo(k)fluoranthene	0.14U	0.1	0.007
chrysene	0.14U	0.01	0.0007
Dibenz(a,h)anthracene	0.14U	0.1	0.007
indeno(1,2,3-cd)pyrene	0.14U	0.1	0.007
TOTAL CPAH		N/A	0.1
MTCA			0.1

**B-102 at 10**

Compound	Test Result	TEF	Adjusted Value
benzo(a)pyrene	0.015U	1	0.075
benzo(a)anthracene	0.015U	0.1	0.0075
benzo(b)fluoranthene	0.015U	0.1	0.0075
benzo(k)fluoranthene	0.015U	0.1	0.0075
chrysene	0.015U	0.01	0.00075
Dibenz(a,h)anthracene	0.015U	0.1	0.0075
indeno(1,2,3-cd)pyrene	0.015U	0.1	0.0075
TOTAL CPAH		N/A	0.11
MTCA			0.1

**Notes:** All units are mg/kg based on dry weight.  
 U indicates the compound was not present at the stated PQL.  
 TEF values are from Chapter 173-340 WAC-Table 708-2.  
 TEF corrected values are based on 50 percent of the PQL.

**Table 7**  
**Analytical Testing Summary**  
**PAHs - Soils**

Test Boring	Depth	Naphthalene	2-Methyl naphthalene	1-methyl Naphthalene	Fluorene	Fluoranthene	Phenanthrene	Pyrene
B-8	2.5	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U
B-102	10	0.0077U	0.0077U	0.0077U	0.015U	0.016	0.051	0.03
MTCA Method A (B)		5.0			3,200	3,200	--	2,400

**Notes:** All units mg/kg.

Refer to lab report for full results. Only compounds with detections are listed above.

Cleanup levels shown are for reference purposed only. Site-specific cleanup levels have not been determined.

**Table 8**  
**Analytical Test Results**  
**Groundwater - Hydrocarbons**

Test Boring	Date	TPH- Gasoline Range	TPH Diesel Range	TPH Oil Range
MW-1	3/30/21	100U	220U	220U
	10/12/21	100U	210U	210U
MW-2	3/30/21	100U	220U	220U
	10/12/21	100U	210U	210U
MW-3	3/30/21	100U	220U	340
	10/12/21	100U	220U	220U
MW-201	10/12/21	100U	220U	220U
MTCA Method A		800	500	



**Table 9**  
**Analytical Test Results**  
**Volatile Organic Compounds - Groundwater**

Well Monitoring	Date	Benzene	Ethylbenzene	Toluene	Xylenes	sec-Butylbenzene	Perchloroethylene	Methylene Chloride	2-Butanone (MEK)	Acetone
MW-101	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-2	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-3	3/30/21	0.2U	0.2U	1.0U	0.6U	0.2U	0.2U	1.0U	7.0U	7.1U
MW-201	10/12/21	0.39	0.2U	1.0U	0.6U	0.22	0.2U	1.0U	5.0U	5.0U
MTCA Method A		5.0	700	1,000	300	800	5.0	5.0	(4,800)	(7,200)

**Notes:** All units are mg/kg..

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.  
Only common volatiles and volatiles found in soil samples are summarized above. Refer to lab report for additional compounds.

Values in parenthesis are Method B.

NP indicates there is no MTCA or EPA cleanup level or drinking water MCL for Isopropyl Benzene.

**Table 10**  
**Analytical Test Results**  
**Groundwater – Metals**

Well Monitoring	Date	Total cadmium	Dissolved Cadmium	Total Chromium	Dissolved Chromium	Total Lead	Dissolved Lead	Total Nickel	Dissolved Nickel	Total Zinc	Dissolved Zinc
MW-101	3/29/21	4.4U	4.0U	46	10U	3.0	1.0U	46	20U	28U	25U
MW-2	3/29/21	4.4U	4.0U	15	10U	1.1U	1.0U	22U	20U	28U	25U
MW-3	3/29/21	4.4U	4.0U	15	10U	3.7	1.0U	55	20U	33	25U
MW-201	10/12/21	4.4U	4.0U	46	10U	2.4	1.0U	40	20U	46	25U
MTCA Method A		5.0		50		15		320		4800	

**Notes:** All units are mg/kg.

U modifier signifies the compound was not present at the stated numerical practical quantitation limit.

The value for nickel is for soluble salts of nickel.

**Table 11**  
**Groundwater Parameters**

Well Monitoring	Date	Temperature	Dissolved Oxygen	Conductivity	pH	ORP	Turbidity	Ferrous Iron	Purge Rate	Purge Volume
MW-101	3/29/2021	16.02	0.33	1027	7.07	-300.1	22	0.0	0.05	9
	10/12/2021	14.84	0.24	373	6.55	78.2	NM	NM	0.17	7
MW-2	3/29/2021	15.30	0.38	808	8.48	-116.3	12	0.0	0.05	6
	10/12/2021	15.21	0.32	312	6.41	84.8	NM	NM	0.17	7
MW-3	3/29/2021	14.81	0.45	1425	8.80	-343.7	18	0.0	0.05	6
	10/12/2021	15.18	0.13	496	6.49	17	NM	NM	0.17	7
MW-201	10/12/2021	14.8	0.15	457	6.73	-482	NM	NM	0.17	6

**Notes:** Temperature is in degrees Celsius.  
 Conductivity is in  $\mu\text{S}/\text{cm}$ .  
 Dissolved Oxygen is in mg/l.  
 pH is in standard units.  
 ORP is in millivolts.  
 Turbidity is in NTUs.  
 Ferrous Iron in in PPM based on Hatch field test.  
 Purge Rate is in gallon per minute.  
 Purge volume is in gallons.  
 No sheen was observed on any purge water.  
 NM indicates that the parameter was not measured.

## **APPENDIX A SUBSURFACE EXPLORATION**

### **Midas Muffler Seattle, Washington**

All drilling tools were cleaned prior to starting explorations and in between explorations to reduce the potential for cross-contamination.

For the initial drilling on August 21, 2020, a drill rig owned and operated by Cascade Drilling was used to advance the test borings. The drill rig uses Direct Push Technology (DPT) to advance the test borings. Samples were taken at selected locations from the DPT core tubing.

Test Boring B-1 was terminated due to refusal drilling. It appears a large cobble or a boulder was present that prevented the test boring from being advanced. The sample tools became hot due to refusal drilling conditions and no sample was taken for analysis from Test Boring B-1.

Subsequent drilling was completed using limited access drill rigs owned and operated by Borettec. The Borettec drill rigs were equipped with hollow stem augers. Samples were taken at selected intervals using standard split spoon samplers driven by a 140-pound hammer falling thirty inches. Test Boring MW-1 was intended to be a monitoring well. At a depth of forty feet, wet soil conditions were noted in Boring MW-1 that indicated groundwater was reached. The next day, no groundwater was present in the test boring. Monitoring well MW-101 was then built approximately five feet west of Test Boring MW-1. This well extended to sixty feet below site grades.

The third episode of drilling on site was on October 5th and 6th, 2021. On these dates a fourth monitoring well and a soil boring were drilled along the west margin of the site. These two borings were drilled using a sonic drill rig owned and operated by Anderson Environmental Contracting, LLC. The sonic drill rig uses a continuous casing that is vibrated into the soil. Nearly complete core samples were recovered on a ten-foot basis. A standard 2-inch PVC monitoring well was built in one of the borings to allow direct sampling of the groundwater.

The wells were built using standard resource protection well procedures in accordance with state well regulations, Chapter 173-160 WAC. The wells consist of a 10-foot-long screen with 0.01-inch factory screen segments. The casing and screens consist of 2-inch diameter PVC materials and the wells were completed with flush-mount monument covers.

A representative from our firm continuously monitored the drilling and kept a detailed log of each exploration. Samples recovered during the site explorations were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to Onsite Environmental, Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.

Samples were screened in the field using the headspace and sheen methods. For the headspace screening, a sub-sample of the soil is placed in a plastic bag and allowed to reach ambient temperatures. The probe from a handheld Photo Ionization Device is then inserted to measure the air in the headspace of the bag. The sheen test consists of placing a sub-sample into a pan with clean water to see if sheen develops.

Prior to sampling the wells for groundwater, they were developed by surging the screen segment and bailing about three casing volumes. The wells were left for about five days prior to sampling. Sampling was completed with a downhole submersible pump using low-flow purge techniques. Standard groundwater parameters were monitored during purging. Samples were taken after a minimum of three casing volumes were removed and groundwater parameters, including turbidity, had stabilized.

The wells were surveyed by Terrene to establish their horizontal and vertical locations.

# LOG OF DPT NO. DPT-1

Figure No.

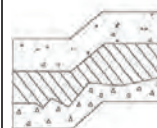
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) Gray-brown silty SAND.	None				0	
		Boring terminated at 2.5 feet on cobble or boulder.						
5								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-2

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT CONCRETE)						
		Gray-brown silty SAND with gravel, moist.	None				0.26	
5			None				2.7	
10			None				7.7	
15			None					
20		Boring terminated at 17 feet due to refusal drilling. No seepage observed.						

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-3

Figure No.

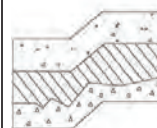
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches ASPHALT) Gray-brown silty SAND with gravel, moist.					5	
5							36	
10		Boring terminated at 8.5 feet due to refusal drilling. No seepage observed.						

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# LOG OF DPT NO. DPT-4

Figure No.

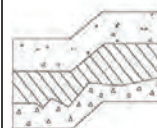
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(2 inches CONCRETE)						
		Gray-brown silty SAND with gravel, moist. (Till)						
			None				7.2	
5			None				14.9	
10			Strong Odor				186	
		Boring terminated at 12.5 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-5

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE over 12-inch VOID) Brown-gray silty SAND with gravel, moist.	None				10.1	
5								
			Moderate Odor				58.4	
10		Boring terminated at 9.5 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-6

Figure No.

Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(4 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel.						
			None					
5			None				61	
10			None				59	
		Boring terminated at 12 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-7

Figure No.

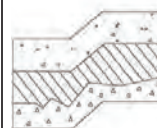
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE) (VOID)						
		Gray-brown silty SAND with gravel, moist.	None				53	
5								
			Light Odor				62	
10		Boring terminated at 9 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF DPT NO. DPT-8

Figure No.

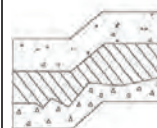
Project: Ballard Midas Project No: T-8336-2 Date Drilled: September 18, 2020

Client: Jubilee 95, LLC Driller: Cascade Drilling Logged By: EE

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: N/A

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			PID (PPM)	Observ. Well
				30	60	120		
0		(3 inches CONCRETE)					85	
5							104	
10		Boring terminated at 10 feet due to refusal drilling. No seepage observed.						
15								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site



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# LOG OF BORING B-101

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		4.5 inch concrete slab at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0	.		66				52
5			No/No/NA	.		25		.		27/50 for 2
			No/No/1.0	.		100		.		27/50 for 5
10		Cuttings steaming from heavy drilling action.	No/No/NA							50 for 4
15			No/No/NA	.		100				50 for 4
20		Moist to wet at 20 feet.	No/No/NA	.		100				50 for 2
		Boring terminated at 21.5 feet. Hole backfilled with bentonite chips and patched at surface with concrete.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF BORING B-102

Figure No.

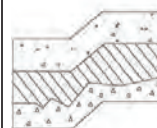
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6.5 inch concrete slab at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM)	No/No/NA	.			30	.		10
5			No/No/0.0	.			30	.		5
			Light/Light/3.9	.			50	.		38
		Gray silty SAND with gravel, fine to medium grained, moist. (SM) (till)	No/No/0.0	.			100			50 for 3
10				.						
15			Moderate/Moderate/0.9	.			100			50 for 3
20			No/No/0.0	.			100			50 for 3
		Boring terminated at 21.5 feet. Hole backfilled with bentonite chips and patched at surface with concrete.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-1

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		7 inch concrete slab at surface.	No/No/0NA	.			16		.	43
2.5		Rock in sampler tip at 2.5 feet.	No/No/0.2	.			100		.	50
5		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0	.			100		.	41
8.5		4 inch wet lense at 8.5 feet.	No/No/NA	.			100		.	33/50 for 4
15			No/No/0.2	.			100		.	35/50 for 5
20		Moist to wet at 20 feet.	No/No/NA	.			100		.	50 for 3
25			No/No/NA	.			100		.	50 for 2
30			No/No/NA	.			100		.	50 for 3
35			No/No/NA	.			100		.	100
40			No/No/NA	.			100		.	100
41.5		Boring terminated at 41.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-2

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

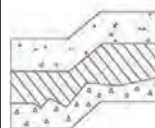
Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6.5-inch concrete slab at surface.								
		Fill: Gray/brown silty SAND with gravel, fine grained, moist to wet. (SM)	No/No/NA	•			16	•		2
5			No/No/0.2	•			16	•		8
		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/0.0		•		100		•	24/50 for 5
10			No/No/NA		•		80		•	12/50 for 5
15			No/No/0.2		•		100			50 for 3
20			No/No/NA		•		100		•	36/50 for 5
25			No/No/NA		•		100			50 for 3
30			No/No/NA		•		100			50 for 3

\*Continued on next page

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-2

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well	
				30	60	120	10	30	50		
35		Gray silty SAND with gravel, fine to medium grained, moist. (SM) (sandy till)	No/No/NA	.		100				50 for 3	
40			No/No/NA	.		100				50 for 2	
45			No/No/NA	.		100				50 for 3	
50		Gray SAND with gravel, fine to medium grained, wet. (SP)	No/No/NA	.		100				50 for 3	
55			No/No/NA	.		100				50 for 3	
60			No/No/NA	.		100				50 for 6	
		Boring terminated at 61.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet.									

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



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# LOG OF MONITORING WELL NO. MW-3

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 250 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		3 inches of asphalt pavement at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)								
5			No/No/0.0	.		100				56
										45
10			No/No/0.0	.		100				50 for 2
15			No/No/0.0	.		50				50 for 6
20		6-inch wet lense at 20 feet	No/No/0.0	.		100				50 for 4
25			No/No/0.0	.		100				50 for 5
30		1 to 2 inch thick medium-grained lenses at 30 feet.	No/No/0.0	.		100				100
		*Continued on next page								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

# LOG OF MONITORING WELL NO. MW-3

Figure No.

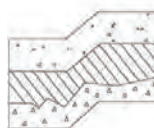
Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 250 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
35		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/NA	.			100			
40			No/No/NA	.			100			
45			No/No/NA	.			100			
50		Gray gravelly SAND and silty SAND with gravel, medium grained, wet. (SP/SM)	No/No/NA	.			100			
55			No/No/NA	.						
60		Boring terminated at 60 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet below top of asphalt pavement.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra  
Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

# LOG OF MONITORING WELL NO. MW-101

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		6-inch concrete slab at surface.								
		Light gray/brown silty SAND with gravel, fine grained, moist. (SM) (till)								
5			Light/No/0.0	.		100	.		44	
10			No/No/0.0	.		100			50 for 3	
15			No/No/0.0	.		100			50 for 6	
20			No/No/0.0	.		100			50 for 5	
25			No/No/0.0	.		100			50 for 3	
30			No/No/0.0	.		100			50 for 2	

\*Continued on next page

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences



# LOG OF MONITORING WELL NO. MW-101

Figure No.

Project: Midas Muffler Project No: T-8336-3 Date Drilled: March 4, 2021

Client: Jubilee 95, LLC Driller: Borettec Logged By: NRH

Location: Seattle, Washington Depth to Groundwater: N/A Approx. Elev: 252 Feet

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
35		Gray silty SAND with gravel, fine grained, moist. (SM) (till)	No/No/NA	.		100			50 for 2	
40			No/No/NA	.		100			50 for 1	
45		Becomes medium grained by 45 feet.	No/No/NA						50 for 2	
50		Gray gravelly SAND and silty SAND with gravel, fine to medium grained, wet. (SP/SM)	No/No/NA						50 for 4	
55			No/No/NA						50 for 4	
60		Boring terminated at 61.5 feet. 2-inch PVC monitoring well constructed with 0.010 slot screen from 47 to 57 feet.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
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Geology and  
Environmental Earth Sciences

# LOG OF BORING NO. MW-201

Figure No.

Project: Midas Muffler Project No: 8336-4 Date Drilled: October 5, 2021

Client: Anderson and Associates Driller: AEC Logged By: EHE

Location: Seattle, Washington Depth to Groundwater: 54 ft Approx. Elev: 285 ft

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		(2-inches ASPHALT)  Tan to gray silty SAND with gravel, fine to medium sand, fine to coarse gravel, dry to moist. (SM) (Glacial Till)								
5			No/No			•			100	
10			No/No			•			100	
15			No/No			•			100	
20		*Color changes to gray only* *Continued on next page*	No/No			•			100	

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
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Environmental Earth Sciences

# LOG OF BORING NO. MW-201

Figure No.

Project: Midas Muffler Project No: 8336-4 Date Drilled: October 5, 2021

Client: Anderson and Associates Driller: AEC Logged By: EHE

Location: Seattle, Washington Depth to Groundwater: 54 ft Approx. Elev: 285 ft

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
25		Gray silty SAND with gravel, fine to medium sand, fine to coarse gravel, moist. (SM) (Glacial Till)	No/No			•				
30			No/No			•				
35			No/No			•				
40			No/No			•				
		*Continued on next page*								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

# LOG OF BORING NO. MW-201

Figure No.

Project: Midas Muffler Project No: 8336-4 Date Drilled: October 5, 2021

Client: Anderson and Associates Driller: AEC Logged By: EHE

Location: Seattle, Washington Depth to Groundwater: 54 ft Approx. Elev: 285 ft

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
45		Gray silty SAND with gravel, fine to medium sand, fine to coarse gravel, moist. (SM) (Glacial Till)	No/No			•				
50			No/No			•				
55		Tan to gray SAND with silt and gravel, fine to coarse sand, fine to coarse gravel, wet. (SP-SM)	No/No			•				
60			No/No			•				
65		Test Boring terminated at approximately 60 feet. Boring drilled with sonic drill rig and grab samples were taken at 5 foot intervals.  Groundwater seepage observed at approximately 54 feet.  Boring converted to monitoring well with monument no. BMK 276								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
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# LOG OF BORING NO. SB-1

Figure No.

Project: Midas Muffler Project No: 8336-4 Date Drilled: October 6, 2021

Client: Anderson and Associates Driller: AEC Logged By: EHE

Location: Seattle, Washington Depth to Groundwater: NA Approx. Elev: 255 ft

Depth (ft)	Sample Interval	Soil Description	Odor/ Sheen	Recovery %			SPT (N) Blows/ft			Observ. Well
				30	60	120	10	30	50	
0		(2-inches ASPHALT)								
		Tan to gray silty SAND with gravel, fine to medium sand, fine to coarse gravel, dry to moist. (SM) (Glacial Till)								
5			No/No			•			100	
10			No/No			•			100	
15			No/No			•			100	
20			No/No			•			100	
25		Test Boring terminated at approximately 20 feet. Boring drilled with sonic drill rig and grab samples were taken at 5 foot intervals.  No groundwater seepage observed.								

NOTE: This borehole log has been prepared for environmental purposes. This information pertains only to this boring location and should not be interpreted as being indicative of other areas of the site.



**Terra Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

**APPENDIX B**  
**ANALYTICAL TEST REPORTS - SOIL**



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

October 11, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-4  
Laboratory Reference No. 2110-051

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 6, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', followed by a horizontal line.

David Baumeister  
Project Manager

Enclosures



---

OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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



Date of Report: October 11, 2021  
Samples Submitted: October 6, 2021  
Laboratory Reference: 2110-051  
Project: 8336-4

### Case Narrative

Samples were collected on October 5 and 6, 2021 and received by the laboratory on October 6, 2021. 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: October 11, 2021  
 Samples Submitted: October 6, 2021  
 Laboratory Reference: 2110-051  
 Project: 8336-4

### HYDROCARBON IDENTIFICATION NWTPH-HCID

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	<b>MW-201</b> <del>MW-103</del> <b>5'</b>					
Laboratory ID:	10-051-01					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	54	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	100	50-150				

Client ID:	<b>MW-201</b> <del>MW-103</del> <b>50'</b>					
Laboratory ID:	10-051-10					
Gasoline Range Organics	<b>ND</b>	21	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	52	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	100	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	96	50-150				

Client ID:	<b>SB-1 5'</b>					
Laboratory ID:	10-051-13					
Gasoline Range Organics	<b>ND</b>	21	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	53	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	95	50-150				

Client ID:	<b>SB-1 10'</b>					
Laboratory ID:	10-051-14					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	56	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	92	50-150				

Client ID:	<b>SB-1 15'</b>					
Laboratory ID:	10-051-15					
Gasoline Range Organics	<b>ND</b>	22	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	54	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	110	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
<i>o</i> -Terphenyl	94	50-150				



Date of Report: October 11, 2021  
 Samples Submitted: October 6, 2021  
 Laboratory Reference: 2110-051  
 Project: 8336-4

### HYDROCARBON IDENTIFICATION NWTPH-HCID

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	SB-1 20'					
Laboratory ID:	10-051-16					
Gasoline Range Organics	ND	21	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	ND	54	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	ND	110	NWTPH-HCID	10-7-21	10-7-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	98	50-150				



Date of Report: October 11, 2021  
 Samples Submitted: October 6, 2021  
 Laboratory Reference: 2110-051  
 Project: 8336-4

**HYDROCARBON IDENTIFICATION  
 NWTPH-HCID  
 QUALITY CONTROL**

Matrix: Soil  
 Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1007S1					
Gasoline Range Organics	<b>ND</b>	20	NWTPH-HCID	10-7-21	10-7-21	
Diesel Range Organics	<b>ND</b>	50	NWTPH-HCID	10-7-21	10-7-21	
Lube Oil Range Organics	<b>ND</b>	100	NWTPH-HCID	10-7-21	10-7-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				



Date of Report: October 11, 2021  
 Samples Submitted: October 6, 2021  
 Laboratory Reference: 2110-051  
 Project: 8336-4

# **% MOISTURE**

<b>Client ID</b>	<b>Lab ID</b>	<b>% Moisture</b>	<b>Date Analyzed</b>
MW-103 5' MW-201	10-051-01	8	10-7-21
MW-103 50' MW-201	10-051-10	4	10-7-21
SB-1 5'	10-051-13	6	10-7-21
SB-1 10'	10-051-14	10	10-7-21
SB-1 15'	10-051-15	8	10-7-21
SB-1 20'	10-051-16	7	10-7-21





### 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-naphthalene) 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 methods 8260 & 8270, 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.
- Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference





Page 1 of 2

Company:	TAI
Project Number:	8336-4
Project Name:	
Project Manager:	Chuck Lie
Sampled by:	Evan H. Eckles

**Turnaround Request  
(in working days)**

(Check One)

☐ Same Day      ☐ 1 Day



☐ 2 Days      ☒ 3 Days

☐ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: 10-051

[illegible]

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		TAI	10-6-21	14:50	Note-final designation for MW-103 is MW-201
Received		OSE	10/6/21	1450	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date		Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>	
				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>	



# Chain of Custody

Company: TAI

Project Number: 8336-4

Project Name:

Project Manager: Chuck Lie

Sampled by: Earl H. Eckles

**Turnaround Request  
(in working days)**

(Check One)


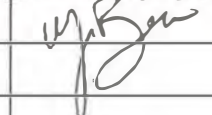
☐ Same Day ☐ 1 Day

☐ 2 Days ☒ 3 Days

☐ Standard (7 Days)

☐ \_\_\_\_\_ (other)

Laboratory Number: 10 - 051																										
Number of Containers																										
5					NWTPH-HCID																					
					NWTPH-Gx/BTEX																					
					NWTPH-Gx																					
					NWTPH-Dx ( <input type="checkbox"/> Acid / SG Clean-up)																					
					Volatiles 8260D																					
					Halogenated Volatiles 8260D																					
					EDB EPA 8011 (Waters Only)																					
					Semivolatiles 8270E/SIM (with low-level PAHs)																					
					PAHs 8270E/SIM (low-level)																					
					PCBs 8082A																					
					Organochlorine Pesticides 8081B																					
					Organophosphorus Pesticides 8270E/SIM																					
					Chlorinated Acid Herbicides 8151A																					
					Total RCRA Metals																					
					Total MTCA Metals																					
					TCLP Metals																					
					HEM (oil and grease) 1664A																					
																							</			

Signature	Company	Date	Time	Comments/Special Instructions
	TAI	10-6-21	14:50	
	JOE	10/6/21	1450	
Relinquished				Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>
Received				
Relinquished				
Received				Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>
Reviewed/Date	Reviewed/Date			

**APPENDIX C**  
**ANALYTICAL TEST REPORTS - GROUNDWATER**



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

October 18, 2021

Chuck Lie  
Terra Associates, Inc.  
12220 113th Avenue NE, Suite 130  
Kirkland, WA 98034

Re: Analytical Data for Project 8336-4  
Laboratory Reference No. 2110-101

Dear Chuck:

Enclosed are the analytical results and associated quality control data for samples submitted on October 12, 2021.

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,

A handwritten signature in black ink, appearing to read 'DB', with a long horizontal line extending to the right.

David Baumeister  
Project Manager

Enclosures



OnSite Environmental, Inc. 14648 NE 95<sup>th</sup> Street, Redmond, WA 98052 (425) 883-3881

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

Date of Report: October 18, 2021  
Samples Submitted: October 12, 2021  
Laboratory Reference: 2110-101  
Project: 8336-4

### **Case Narrative**

Samples were collected on October 12, 2021 and received by the laboratory on October 12, 2021. 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: October 18, 2021  
 Samples Submitted: October 12, 2021  
 Laboratory Reference: 2110-101  
 Project: 8336-4

**GASOLINE RANGE ORGANICS**  
**NWTPH-Gx**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-201</b>					
Laboratory ID:	10-101-01					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-13-21	10-13-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	97	66-117				
<b>Client ID:</b>	<b>MW-3</b>					
Laboratory ID:	10-101-02					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-13-21	10-13-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	86	66-117				
<b>Client ID:</b>	<b>MW-2</b>					
Laboratory ID:	10-101-03					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-13-21	10-13-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	90	66-117				
<b>Client ID:</b>	<b>MW-101</b>					
Laboratory ID:	10-101-04					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-13-21	10-13-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	86	66-117				



Date of Report: October 18, 2021  
 Samples Submitted: October 12, 2021  
 Laboratory Reference: 2110-101  
 Project: 8336-4

**GASOLINE RANGE ORGANICS  
 NWTPH-Gx  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1013W1					
Gasoline	<b>ND</b>	100	NWTPH-Gx	10-13-21	10-13-21	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	66-117				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-101-01							
	ORIG	DUP						
Gasoline	<b>ND</b>	<b>ND</b>	NA	NA	NA	NA	NA	30
Surrogate:								
Fluorobenzene				97	92	66-117		



Date of Report: October 18, 2021  
 Samples Submitted: October 12, 2021  
 Laboratory Reference: 2110-101  
 Project: 8336-4

**DIESEL AND HEAVY OIL RANGE ORGANICS**  
**NWTPH-Dx**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-201</b>					
Laboratory ID:	10-101-01					
Diesel Range Organics	<b>ND</b>	0.22	NWTPH-Dx	10-14-21	10-14-21	
Lube Oil Range Organics	<b>ND</b>	0.22	NWTPH-Dx	10-14-21	10-14-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	97	50-150				

<b>Client ID:</b>	<b>MW-3</b>					
Laboratory ID:	10-101-02					
Diesel Range Organics	<b>ND</b>	0.22	NWTPH-Dx	10-14-21	10-14-21	
Lube Oil Range Organics	<b>ND</b>	0.22	NWTPH-Dx	10-14-21	10-14-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	98	50-150				

<b>Client ID:</b>	<b>MW-2</b>					
Laboratory ID:	10-101-03					
Diesel Range Organics	<b>ND</b>	0.21	NWTPH-Dx	10-14-21	10-14-21	
Lube Oil Range Organics	<b>ND</b>	0.21	NWTPH-Dx	10-14-21	10-14-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	101	50-150				

<b>Client ID:</b>	<b>MW-101</b>					
Laboratory ID:	10-101-04					
Diesel Range Organics	<b>ND</b>	0.21	NWTPH-Dx	10-14-21	10-14-21	
Lube Oil Range Organics	<b>ND</b>	0.21	NWTPH-Dx	10-14-21	10-14-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	91	50-150				





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**DIESEL AND HEAVY OIL RANGE ORGANICS  
 NWTPH-Dx  
 QUALITY CONTROL**

Matrix: Water  
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1014W1					
Diesel Range Organics	ND	0.15	NWTPH-Dx	10-14-21	10-14-21	
Lube Oil Range Organics	ND	0.15	NWTPH-Dx	10-14-21	10-14-21	
Surrogate:	Percent Recovery	Control Limits				
o-Terphenyl	104	50-150				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-066-01							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	
Surrogate:								
o-Terphenyl				106	103	50-150		



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**VOLATILE ORGANICS EPA 8260D**  
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Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	<b>10-101-01</b>					
Dichlorodifluoromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chloromethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Vinyl Chloride	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromomethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Chloroethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Trichlorofluoromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Acetone	ND	5.0	EPA 8260D	10-13-21	10-13-21	
Iodomethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Carbon Disulfide	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methylene Chloride	ND	1.0	EPA 8260D	10-13-21	10-13-21	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methyl t-Butyl Ether	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Vinyl Acetate	ND	1.0	EPA 8260D	10-13-21	10-13-21	
2,2-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Butanone	ND	5.0	EPA 8260D	10-13-21	10-13-21	
Bromochloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chloroform	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,1-Trichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Carbon Tetrachloride	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Benzene	0.39	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Trichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Dibromomethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromodichloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260D	10-13-21	10-13-21	
Toluene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	



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**VOLATILE ORGANICS EPA 8260D**  
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	<b>10-101-01</b>					
1,1,2-Trichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Tetrachloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,3-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Hexanone	ND	2.0	EPA 8260D	10-13-21	10-13-21	
Dibromochloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dibromoethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Ethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
m,p-Xylene	ND	0.40	EPA 8260D	10-13-21	10-13-21	
o-Xylene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Styrene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromoform	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Isopropylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
n-Propylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Chlorotoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
4-Chlorotoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
tert-Butylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
sec-Butylbenzene	0.22	0.20	EPA 8260D	10-13-21	10-13-21	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
p-Isopropyltoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
n-Butylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Hexachlorobutadiene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Naphthalene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
<b>Surrogate:</b>	<b>Percent Recovery</b>	<b>Control Limits</b>				
Dibromofluoromethane	92	75-127				
Toluene-d8	103	80-127				
4-Bromofluorobenzene	101	78-125				



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**VOLATILE ORGANICS EPA 8260D**  
**QUALITY CONTROL**  
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Matrix: Water  
 Units: ug/L

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1013W1					
Dichlorodifluoromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chloromethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Vinyl Chloride	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromomethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Chloroethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Trichlorofluoromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Acetone	ND	5.0	EPA 8260D	10-13-21	10-13-21	
Iodomethane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Carbon Disulfide	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methylene Chloride	ND	1.0	EPA 8260D	10-13-21	10-13-21	
(trans) 1,2-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methyl t-Butyl Ether	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Vinyl Acetate	ND	1.0	EPA 8260D	10-13-21	10-13-21	
2,2-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
(cis) 1,2-Dichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Butanone	ND	5.0	EPA 8260D	10-13-21	10-13-21	
Bromochloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chloroform	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,1-Trichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Carbon Tetrachloride	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Benzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Trichloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Dibromomethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromodichloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
(cis) 1,3-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Methyl Isobutyl Ketone	ND	2.0	EPA 8260D	10-13-21	10-13-21	
Toluene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
(trans) 1,3-Dichloropropene	ND	0.20	EPA 8260D	10-13-21	10-13-21	



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**VOLATILE ORGANICS EPA 8260D**  
**QUALITY CONTROL**  
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Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1013W1					
1,1,2-Trichloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Tetrachloroethene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,3-Dichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Hexanone	ND	2.0	EPA 8260D	10-13-21	10-13-21	
Dibromochloromethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dibromoethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Chlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,1,2-Tetrachloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Ethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
m,p-Xylene	ND	0.40	EPA 8260D	10-13-21	10-13-21	
o-Xylene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Styrene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromoform	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Isopropylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Bromobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,1,2,2-Tetrachloroethane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2,3-Trichloropropane	ND	0.20	EPA 8260D	10-13-21	10-13-21	
n-Propylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
2-Chlorotoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
4-Chlorotoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,3,5-Trimethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
tert-Butylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2,4-Trimethylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
sec-Butylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,3-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
p-Isopropyltoluene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,4-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
n-Butylbenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
1,2-Dibromo-3-chloropropane	ND	1.0	EPA 8260D	10-13-21	10-13-21	
1,2,4-Trichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
Hexachlorobutadiene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
Naphthalene	ND	1.0	EPA 8260D	10-13-21	10-13-21	
1,2,3-Trichlorobenzene	ND	0.20	EPA 8260D	10-13-21	10-13-21	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Dibromofluoromethane</i>	<i>96</i>	<i>75-127</i>				
<i>Toluene-d8</i>	<i>102</i>	<i>80-127</i>				
<i>4-Bromofluorobenzene</i>	<i>101</i>	<i>78-125</i>				



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 Laboratory Reference: 2110-101  
 Project: 8336-4

**VOLATILE ORGANICS EPA 8260D  
 QUALITY CONTROL**

Matrix: Water

Units: ug/L

Analyte	Result		Spike Level		Percent		Recovery		RPD	
					Recovery		Limits	RPD	Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB1013W1									
	SB	SBD	SB	SBD	SB	SBD				
1,1-Dichloroethene	11.1	9.70	10.0	10.0	111	97	78-125	13	19	
Benzene	10.8	9.62	10.0	10.0	108	96	80-119	12	16	
Trichloroethene	11.1	9.92	10.0	10.0	111	99	80-121	11	18	
Toluene	11.0	9.79	10.0	10.0	110	98	80-117	12	18	
Chlorobenzene	9.98	8.83	10.0	10.0	100	88	80-117	12	17	
Surrogate:										
Dibromofluoromethane					95	96	75-127			
Toluene-d8					102	103	80-127			
4-Bromofluorobenzene					104	104	78-125			



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**TOTAL METALS**  
**EPA 200.8**

Matrix: Water

Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	<b>10-101-01</b>					
Cadmium	<b>ND</b>	4.4	EPA 200.8	10-14-21	10-14-21	
Chromium	<b>46</b>	11	EPA 200.8	10-14-21	10-14-21	
Lead	<b>2.4</b>	1.1	EPA 200.8	10-14-21	10-14-21	
Nickel	<b>40</b>	22	EPA 200.8	10-14-21	10-14-21	
Zinc	<b>46</b>	28	EPA 200.8	10-14-21	10-14-21	





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**TOTAL METALS  
 EPA 200.8  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1014WM1					
Cadmium	ND	4.4	EPA 200.8	10-14-21	10-14-21	
Chromium	ND	11	EPA 200.8	10-14-21	10-14-21	
Lead	ND	1.1	EPA 200.8	10-14-21	10-14-21	
Nickel	ND	22	EPA 200.8	10-14-21	10-14-21	
Zinc	ND	28	EPA 200.8	10-14-21	10-14-21	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-080-01							
	ORIG	DUP						
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	3.38	3.27	NA	NA	NA	NA	3	20
Nickel	ND	ND	NA	NA	NA	NA	NA	20
Zinc	ND	ND	NA	NA	NA	NA	NA	20

**MATRIX SPIKES**

Laboratory ID:	10-080-01									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	123	120	111	111	ND	111	109	75-125	2	20
Chromium	113	110	111	111	ND	102	99	75-125	2	20
Lead	114	113	111	111	3.38	100	99	75-125	1	20
Nickel	118	115	111	111	ND	106	104	75-125	3	20
Zinc	117	114	111	111	ND	105	102	75-125	3	20



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 Project: 8336-4

**DISSOLVED METALS**  
**EPA 200.8**

Matrix: Water  
 Units: ug/L (ppb)

<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>Method</b>	<b>Date Prepared</b>	<b>Date Analyzed</b>	<b>Flags</b>
<b>Client ID:</b>	<b>MW-201</b>					
<b>Laboratory ID:</b>	<b>10-101-01</b>					
Cadmium	<b>ND</b>	4.0	EPA 200.8		10-13-21	
Chromium	<b>ND</b>	10	EPA 200.8		10-13-21	
Lead	<b>ND</b>	1.0	EPA 200.8		10-13-21	
Nickel	<b>ND</b>	20	EPA 200.8		10-13-21	
Zinc	<b>ND</b>	25	EPA 200.8		10-13-21	



Date of Report: October 18, 2021  
 Samples Submitted: October 12, 2021  
 Laboratory Reference: 2110-101  
 Project: 8336-4

**DISSOLVED METALS  
 EPA 200.8  
 QUALITY CONTROL**

Matrix: Water  
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
<b>METHOD BLANK</b>						
Laboratory ID:	MB1012F1					
Cadmium	ND	4.0	EPA 200.8	10-12-21	10-13-21	
Chromium	ND	10	EPA 200.8	10-12-21	10-13-21	
Lead	ND	1.0	EPA 200.8	10-12-21	10-13-21	
Nickel	ND	20	EPA 200.8	10-12-21	10-13-21	
Zinc	ND	25	EPA 200.8	10-12-21	10-13-21	

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
<b>DUPLICATE</b>								
Laboratory ID:	10-094-01							
	ORIG	DUP						
Cadmium	ND	ND	NA	NA	NA	NA	NA	20
Chromium	ND	ND	NA	NA	NA	NA	NA	20
Lead	ND	ND	NA	NA	NA	NA	NA	20
Nickel	ND	ND	NA	NA	NA	NA	NA	20
Zinc	ND	ND	NA	NA	NA	NA	NA	20

**MATRIX SPIKES**

Laboratory ID:	10-094-01									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	82.0	81.2	80.0	80.0	ND	103	102	75-125	1	20
Chromium	76.2	76.0	80.0	80.0	ND	95	95	75-125	0	20
Lead	77.0	77.0	80.0	80.0	ND	96	96	75-125	0	20
Nickel	76.8	74.6	80.0	80.0	ND	96	93	75-125	3	20
Zinc	85.8	83.4	80.0	80.0	ND	107	104	75-125	3	20





### Data Qualifiers and Abbreviations

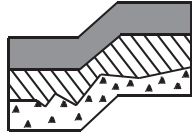
- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
- B - The analyte indicated was also found in the blank sample.
- C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five 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-naphthalene) 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 methods 8260 & 8270, 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.
- Y1 - Negative effects of the matrix from this sample on the instrument caused values for this analyte in the bracketing continuing calibration verification standard (CCVs) to be outside of 20% acceptance criteria. Because of this, quantitation limits and sample concentrations should be considered estimates.
- Z -
- ND - Not Detected at PQL
- PQL - Practical Quantitation Limit
- RPD - Relative Percent Difference



Page 1 of 1Laboratory Number: 10-101

Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	TAI	10-12-21	17:05	
Received	COGE	10/12/21	1705	
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date	Reviewed/Date	Data Package: Standard <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/>		
		Chromatograms with final report <input type="checkbox"/> Electronic Data Deliverables (EDDs) <input type="checkbox"/>		

# SUMMARY MEMO



## TERRA ASSOCIATES, Inc.

Consultants in Geotechnical Engineering, Geology  
and  
Environmental Earth Sciences

**TO:** Mr. Bruce Anderson  
MBA NW 73<sup>rd</sup> LLC

**FROM:** Nicolas R. Hoffman, Terra Associates, Inc.

**DATE:** June 1, 2022

**RE:** Shallow Soil Vapor Sampling  
Midas Cleanup  
Seattle, Washington

**Terra Associates Project T-8336-5**

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Mr. Anderson,

This memo summarizes our findings related to shallow soil vapor sampling conducted in April of 2022 at the Midas Muffler site in Seattle, Washington. The purpose of the additional work was to evaluate soil beneath the eastern margin of the building for semi-volatile organic vapors. A small wedge of soil containing elevated concentrations of oil-range hydrocarbons was left in place along the eastern margin of the existing building onsite during recent remedial excavation activities. To close out the soil vapor pathway for the impacted wedge of soil, we advanced two temporary vapor probes to allow for the collection of soil vapor samples from the impacted wedge of soil. A brief narrative of the sampling event is provided below:

On April 11, 2022 TAI observed the advancement of two temporary vapor wells adjacent to the east side of the building to allow for collection of soil vapor samples. The purpose of the samples was to assess for possible vapor migration impacts to the existing building from the wedge of soil left in place impacted by ORH. In the course of our field sampling, we followed guidelines from Ecology Publication No. 09-09-047 *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*, dated October 2009, revised March 2022, and the OSWER Technical Guidance for Assessing and Mitigating The Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, Publication 9200.0-154, June 2015.

The wells were installed using a track mounted Geoprobe rig operated by Cascade Environmental of Woodinville, Washington. The wells were a total of six feet in depth and had a six-inch stainless steel implant screen placed at the base of the hole bedded in clean sand. A hydrated bentonite seal isolated the screens from the ground surface. The bentonite was hydrated with distilled water. A 0.25-inch dedicated tubing connected the screens to surface attachments for sampling. Each well was given approximately two hours to equilibrate prior to sampling. Sampling of each well consisted of attaching

the laboratory provided sample manifold at the surface and then purging approximately three volumes of air from the sample train and well tubing. Shut-in tests were performed at each well prior to sampling to ensure no leakage was occurring. Purging was accomplished by utilizing a small rotary pump at a rate of approximately 150 ml per minute. Once the wells were purged, soil gas samples were collected in Summa cannisters attached to the sample manifold. The Summa cannisters were transported under chain of custody to the lab of Friedman & Bruya in Seattle. The samples were analyzed for APH and naphthalene's. No exceedances of generic Method B screening levels for soil gas were identified in the samples. Sample locations are shown on Figure 1. The lab results are presented in Table 1 attached to this memo. A copy of the analytical laboratory data is also attached to this memo.

### ***Closure***

Low levels of APH were detected in both the soil vapor samples. None of the detections exceeded the generic Method B screening levels for soil gas. It is our opinion that the vapor pathway has been broken. It is our opinion that no further investigation of the vapor pathway is warranted at this time.

We will work with you to enter Ecology's Voluntary Cleanup Program (VCP). The data presented in this memo will be incorporated into our Remedial Investigation/Feasibility Study for the site.

Please call if you have any questions.

**Terra Associates, Inc.**

Nicolas R. Hoffman, L.G.  
Senior Project Geologist

Attachments:	Table 1	Analytical Test Summary- Soil Vapor Semi volatile organics
	Figure 1	Sample Location Plan
	Attachment 1	Analytical Laboratory Report

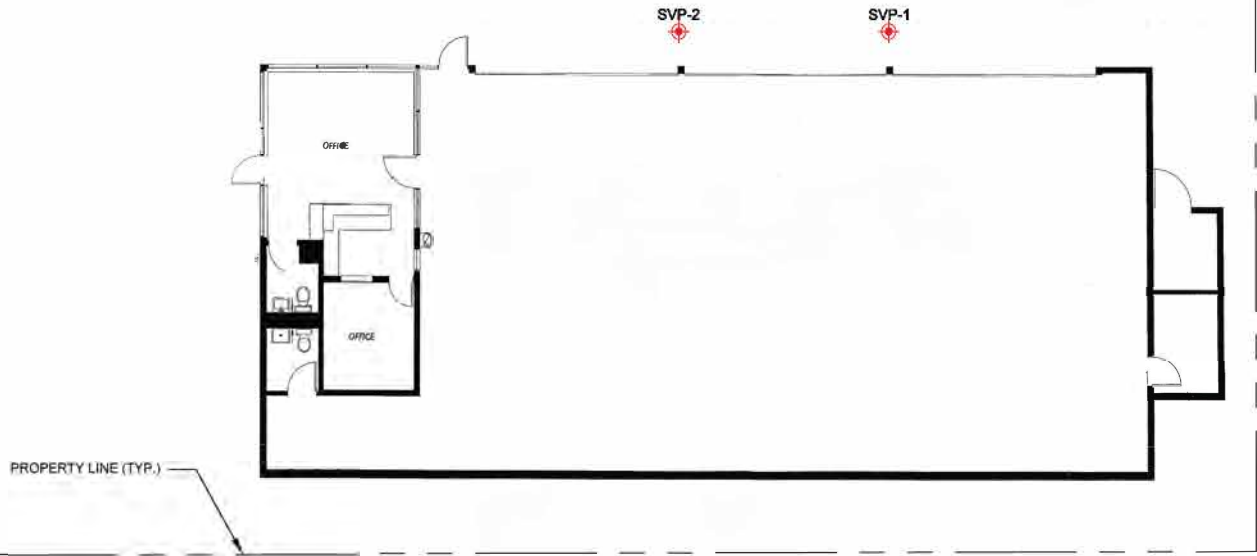
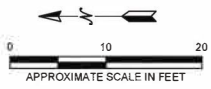


**Table 1**  
**Analytical Test Results**  
**Soil Vapor – APH and Naphthalenes**

Test Boring	Date	Naphthalene	APH EC5-8 aliphatics	APH EC9-12 aliphatics	APH EC9-10 aromatics
SVP-1	4/11/2022	1.6U	1,200	300	150U
SVP-2	4/11/2022	2.1U	3,800	470	250U
MTCA Generic Method B		46	4,700		

Notes: All units are in micrograms per cubic meter.

U modifier indicates that the compound was not present at the numerical method detection limit (MDL).



**NOTE:**

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

**REFERENCE:** SITE PLAN PROVIDED BY CLIENT.

**LEGEND:**

 Approximate Temporary Soil Vapor Well Locations



**Terra  
Associates, Inc.**  
Consultants in Geotechnical Engineering  
Geology and  
Environmental Earth Sciences

**SOIL VAPOR SAMPLE LOCATION PLAN  
MIDAS CLEANUP  
SEATTLE, WASHINGTON**

Proj No. T-8336-5	Date: JUN 2022	T-8336-5
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FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

April 25, 2022

Nicolas Hoffman,  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Hoffman:

Included are the results from the testing of material submitted on April 11, 2022 from the 8336-5, F&BI 204155 project. There are 11 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: Terra Assoc A/P  
NAA0425R.DOC

## FRIEDMAN & BRUYA, INC.

### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on April 11, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 204155 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
204155 -01	SVP-1
204155 -02	SVP-2

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

All quality control requirements were acceptable.

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-1	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-01 1/6.1
Date Analyzed:	04/20/22	Data File:	041930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	300
APH EC9-10 aromatics	<150

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-2	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-02 1/9.9
Date Analyzed:	04/20/22	Data File:	041931.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	95	70	130

	Concentration
Compounds:	ug/m3
APH EC5-8 aliphatics	3,800
APH EC9-12 aliphatics	470
APH EC9-10 aromatics	<250

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Terra Associates
Date Received:	Not Applicable	Project:	8336-5, F&BI 204155
Date Collected:	04/19/22	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-1	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-01 1/6.1
Date Analyzed:	04/20/22	Data File:	041930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	93	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<1.6	<0.3

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-2	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-02 1/9.9
Date Analyzed:	04/20/22	Data File:	041931.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	95	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<2.1	<0.4

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Terra Associates
Date Received:	Not Applicable	Project:	8336-5, F&BI 204155
Date Collected:	04/19/22	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	92	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<0.21	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD MA-APH**

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	<430	<430	nm
APH EC9-12 aliphatics	ug/m3	190	200	5
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	87	70-130
APH EC9-12 aliphatics	ug/m3	67	121	70-130
APH EC9-10 aromatics	ug/m3	67	95	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Naphthalene	ug/m3	<1.5	<1.5	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	ug/m3	71	95	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

Report To Nicolas Hoffman  
 Company Terra Associates Inc.  
 Address 12220 113th Avenue NE Suite 130  
 City, State, ZIP Kirkland, WA 98034  
 Phone 425 821-7777 Email NHoffman@terra-associates.com

SAMPLERS (signature) Nicolas Hoffman

PROJECT NAME & ADDRESS

PO #

8336-5

NOTES:

INVOICE TO

Page # 1 of 1

TURNAROUND TIME

☒ Standard

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Default: Clean after 3 days

☐ Archive (Fee may apply)

## SAMPLE INFORMATION

## ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	Notes
SVP-1	01	224		IA / (SG)	4/11/22	30	9:53	5	9:58				X	X	SN: 2301
SVP-2	02	299		IA / (SG)	4/11/22	28.5	10:12	5	10:18				X	X	SN: 3257
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Nicolas Hoffman</u>	Nicolas R. Hoffman	TAI	4/11/22	15:50
Received by: <u>Tokana Christensen</u>	Tokana Christensen	F+B	4/11/22	15:50
Relinquished by:				
Received by:				

Samples received at 16 °C



**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: 06/01/22

Site Name: Ballard Midas

Sample Name: 8336-7-4

**2. Enter Soil Concentration Measured**

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis	Ratio
	mg/kg	%
<b><u>Petroleum EC Fraction</u></b>		
AL_EC >5-6	1.26	0.01%
AL_EC >6-8	0.76	0.00%
AL_EC >8-10	10.35	0.06%
AL_EC >10-12	5.15	0.03%
AL_EC >12-16	136	0.83%
AL_EC >16-21	1640	9.95%
AL_EC >21-34	12400	75.23%
AR_EC >8-10	10.35	0.06%
AR_EC >10-12	5.15	0.03%
AR_EC >12-16	16.2	0.10%
AR_EC >16-21	717	4.35%
AR_EC >21-34	1540	9.34%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0	0.00%
Total Xylenes	0	0.00%
Naphthalene	0.025	0.00%
1-Methyl Naphthalene	0.025	0.00%
2-Methyl Naphthalene	0.025	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.025	0.00%
Benzo(b)fluoranthene	0.025	0.00%
Benzo(k)fluoranthene	0.025	0.00%
Benzo(a)pyrene	0.025	0.00%
Chrysene	0.053	0.00%
Dibenz(a,h)anthracene	0.025	0.00%
Indeno(1,2,3-cd)pyrene	0.025	0.00%
<b>Sum</b>	<b>16482.498</b>	<b>100.00%</b>

**3. Enter Site-Specific Hydrogeological Data**

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.26	Unitless
Dilution Factor:	1	Unitless

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

## A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

### Site Information

Date: 6/1/2022

Site Name: Ballard Midas

Sample Name: 8336-7-4

Measured Soil TPH Concentration, mg/kg: 16,482.498

### 1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	12,218	3.67E-07	1.35E+00	Fail
	Method C	147,132	9.11E-08	1.12E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	5.39E-10	1.46E-01	Pass
	Target TPH GW Conc. @ 500 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

### 2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	12,218.39	147,131.60
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	1.22E+04	2.72E-07	1.00E+00	YES	1.47E+05	8.13E-07	1.00E+00
Total Risk= 1E-5	NO	4.49E+05	1.00E-05	3.68E+01	NO	1.81E+06	1.00E-05	1.23E+01
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NO	4.49E+04	1.00E-06	3.68E+00				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

### 3. Results for Protection of Ground Water Quality (Leaching Pathway)

#### 3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	NA
Protective Ground Water Concentration, ug/L	NA
Protective Soil Concentration, mg/kg	Soil-to-Ground Water is not a critical pathway!

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	1.29E+02	5.41E-10	2.52E-01	100% NAPL
Total Risk = 1E-5	YES	1.29E+02	5.41E-10	2.52E-01	100% NAPL
Total Risk = 1E-6	YES	1.29E+02	5.41E-10	2.52E-01	100% NAPL
Risk of cPAHs mixture= 1E-5	YES	1.29E+02	5.41E-10	2.52E-01	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 72000 mg/kg TPH.

#### 3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	1.29E+02	5.41E-10	2.52E-01	100% NAPL



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 7, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4680/1003533	9:36 AM	14.85 ton	Regional Disposal	2/7/2022	Class 3 Soil	14.85
2	Wyser Construction	4680/1003541	10:53 AM	16.36 ton	Regional Disposal	2/7/2022	Class 3 Soil	16.36
3	Wyser Construction	4680/1003548	12:33 PM	16.39 ton	Regional Disposal	2/7/2022	Class 3 Soil	16.39
4	Wyser Construction	4680/1003559	2:08 PM	18.20 ton	Regional Disposal	2/7/2022	Class 3 Soil	18.20
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	65.80
20								
21								
22								
23								

TE

REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER

012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003533	
WEIGHMASTER		
DATE/TIME IN		DATE/TIME OUT
Karyn B.		
VEHICLE	2/7/22 9:29 am	CONTAINER
	2/7/22 9:36 am	
REFERENCE		
W-40 WYSER		
BILL OF LADING		

SCALE IN GROSS WEIGHT		58,240	NET TONS	14.85	INBOUND			
SCALE OUT TARE WEIGHT		28,540	NET WEIGHT	29,700	INVOICE			
QTY.	UNIT	DESCRIPTION			RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY						
14.85	tn	SW-CONT W/FUEL                      Origin:SEATTLE/KING 100%						
Signature								

The undersigned individual signing this document on behalf of Customer acknowledges that he or she has read and understands the terms and conditions on the reverse side and that he or she has the authority to sign this document on behalf of the customer.

IS-F042UPR (04/19)

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NET AMOUNT
TENDERED
CHANGE
CHECK#

TE

REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER

012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003541	
WEIGHMASTER		
DATE/TIME IN		DATE/TIME OUT
IN -- Michael G.		OUT -- Karyn B.
VEHICLE	2/7/22 10:53 am	CONTAINER
	2/7/22 10:59 am	
REFERENCE		
W-40 WYSER		
BILL OF LADING		

SCALE IN GROSS WEIGHT		61,260	NET TONS	16.36	INBOUND	
SCALE OUT TARE WEIGHT		28,540	NET WEIGHT	32,720	INVOICE	
QTY.	UNIT	DESCRIPTION		RATE	EXTENSION	TAX
0.00	YD	Tracking QTY				
16.36	tn	SW-CONT W/FUEL                      Origin:SEATTLE/KING 100%				
Signature						

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IS-F042UPR (04/19)

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REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER

012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE 01	TICKET # 1003548	CELL
WEIGHMASTER		
Karyn B.		
DATE/TIME IN 2/7/22 12:30 pm	DATE/TIME OUT 2/7/22 12:33 pm	
VEHICLE W-40 WYSER	CONTAINER	
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT 61,280 NET TONS 16.39  
SCALE OUT TARE WEIGHT 28,500 NET WEIGHT 32,780

INBOUND  
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
16.39	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				
Signature						

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NET AMOUNT

TENDERED

CHANGE

CHECK#

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REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER

012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE 01	TICKET # 1003559	CELL
WEIGHMASTER		
Michael G.		
DATE/TIME IN 2/7/22 2:08 pm	DATE/TIME OUT 2/7/22 2:15 pm	
VEHICLE W-40 WYSER	CONTAINER	
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT 64,860 NET TONS 18.20  
SCALE OUT TARE WEIGHT 28,460 NET WEIGHT 36,400

INBOUND  
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
18.20	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				
Signature						

NET AMOUNT

TENDERED

CHANGE

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SIGNATURE



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 8, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4681/1003571	8:04 AM	16.59 ton	Regional Disposal	2/8/2022	Class 3 Soil	16.59
2	Wyser Construction	4681/1003579	9:26 AM	17.91 ton	Regional Disposal	2/8/2022	Class 3 Soil	17.91
3	Wyser Construction	4681/1003596	11:00 AM	18.70 ton	Regional Disposal	2/8/2022	Class 3 Soil	18.70
4	Wyser Construction	4681/1003603	12:38 PM	17.67 ton	Regional Disposal	2/8/2022	Class 3 Soil	17.67
5	Wyser Construction	4681/1003607	2:06 PM	19.10 ton	Regional Disposal	2/8/2022	Class 3 Soil	19.10
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	89.97
20								
21								
22								
23								

REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

STOMER 012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003571	
WEIGHMASTER		
Karyn-B.		
DATE/TIME IN	DATE/TIME OUT	
2/8/22 8:04 am	2/8/22 8:07 am	
VEHICLE	CONTAINER	
W-40 WYSER		
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT 61,560 NET TONS 16.59  
SCALE OUT TARE WEIGHT 28,380 NET WEIGHT 33,180

INBOUND  
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
16.59	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				
Signature						

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NET AMOUNT

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REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

STOMER 012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003579	
WEIGHMASTER		
Karyn-B.		
DATE/TIME IN	DATE/TIME OUT	
2/8/22 9:26 am	2/8/22 9:37 am	
VEHICLE	CONTAINER	
W-40 WYSER		
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT 64,240 NET TONS 17.91  
SCALE OUT TARE WEIGHT 28,420 NET WEIGHT 35,820

INBOUND  
INVOICE

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
17.91	tn	SW-CONT W/FUEL Origin:SEATTLE/KING 100%				
Signature						

NET AMOUNT

TENDERED

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RS-F042UPR (04/19)

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REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER  
012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003596	
WEIGHMASTER		
IN -- Michael C.		OUT -- Karyn B.
DATE/TIME IN	2/8/22 11:00 am	DATE/TIME OUT 2/8/22 11:33 am
VEHICLE	CONTAINER	
W-40 WYSER		
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT		65,740	NET TONS	18.70	INBOUND			
SCALE OUT TARE WEIGHT		28,340	NET WEIGHT	37,400	INVOICE			
QTY.	UNIT	DESCRIPTION			DATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY						
18.70	tn	SW-CONT W/FUEL                      Origin:SEATTLE/KING 100%						
Signature								

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RS-F042UPR (04/19) SIGNATURE

NET AMOUNT
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REGIONAL DISPOSAL INTERMODAL 425-977-4127  
3rd and lander Seattle, WA

CUSTOMER  
012878  
Wyser Construction  
19015 109th Ave SE  
Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE	TICKET #	CELL
01	1003603	
WEIGHMASTER		
IN - Michael		OUT Karyn B.
DATE/TIME IN	2/8/22 12:38 pm	DATE/TIME OUT 2/8/22 12:42 pm
VEHICLE	CONTAINER	
W-40 WYSER		
REFERENCE		
BILL OF LADING		

SCALE IN GROSS WEIGHT		63,640	NET TONS	17.67	INBOUND			
SCALE OUT TARE WEIGHT		28,300	NET WEIGHT	35,340	INVOICE			
QTY.	UNIT	DESCRIPTION			DATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY						
17.67	tn	SW-CONT W/FUEL      Origin:SEATTLE/KING 100%						
Signature								

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RS-F042UPR (04/19) SIGNATURE

NET AMOUNT
TENDERED
CHANGE
CHECK#



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REGIONAL DISPOSAL INTERMODAL 425-977-4127

3rd and lander Seattle, WA

ISTOMER

012878

Wyser Construction

19015 109th Ave SE

Snohomish, WA 98296

Contract:TB-1087 PO:Anderson and Assoc

SITE 01	TICKET # 1003607	CELL
WEIGHMASTER IN - Karyn B. OUT - Michael G.		
DATE/TIME IN 2/8/22 2:06 pm		DATE/TIME OUT 2/8/22 2:14 pm
VEHICLE W-40 WYSER		CONTAINER
REFERENCE		
BILL OF LADING		

SCALE IN		GROSS WEIGHT	66,480	NET TONS	19.10	INBOUND	
SCALE OUT		TARE WEIGHT	28,280	NET WEIGHT	38,200	INVOICE	

QTY.	UNIT	DESCRIPTION	RATE	EXTENSION	TAX	TOTAL
0.00	YD	Tracking QTY				
19.10	tn	SW-CONT W/FUEL      Origin:SEATTLE/KING 100%				
Signature						

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RS-F042UPR (04/19)

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NET AMOUNT
TENDERED
CHANGE
CHECK#



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 9, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4682/174928	8:02 AM	18.87 ton	Waste Management	2/9/2022	Class 3 Soil	18.87
2	Wyser Construction	4682/174946	9:40 AM	18.14 ton	Waste Management	2/9/2022	Class 3 Soil	18.14
3	Wyser Construction	4682/174954	11:02 AM	18.45 ton	Waste Management	2/9/2022	Class 3 Soil	18.45
4	Wyser Construction	4682/174965	12:46 PM	16.52 ton	Waste Management	2/9/2022	Class 3 Soil	16.52
5	Wyser Construction	4682/174978	2:09 PM	17.81 ton	Waste Management	2/9/2022	Class 3 Soil	17.81
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	89.79
20								
21								
22								
23								



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174928  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/09/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 66220 lb  
In 02/09/2022 08:02:23 SCALE 1 lmercer Tare 28480 lb  
Out 02/09/2022 08:02:23 lmercer Net 37740 lb  
Tons 18.87  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.87	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	18.87	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174946  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/09/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 64760 lb  
In 02/09/2022 09:40:17 SCALE 1 lmercer Tare 28480 lb  
Out 02/09/2022 09:40:17 lmercer Net 36280 lb  
Tons 18.14  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.14	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	18.14	Tons				

Total Tax  
Total Ticket

Driver's Signature





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174954  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/09/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 65380 lb  
In 02/09/2022 11:02:23 SCALE 1 lmercer Tare 28480 lb  
Out 02/09/2022 11:02:23 lmercer Net 36900 lb  
Tons 18.45  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.45	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	18.45	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174965  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/09/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 61520 lb  
In 02/09/2022 12:46:32 SCALE 1 lmercer Tare 28480 lb  
Out 02/09/2022 12:46:32 lmercer Net 33040 lb  
Tons 16.52  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	16.52	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	16.52	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174978  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/09/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA

In	Time	Scale	Operator	Inbound	Gross	
02/09/2022	14:09:20	SCALE 1	lmercer		Tare	64100 lb
02/09/2022	14:09:20		lmercer		Net	28480 lb
					Tons	35620 lb
						17.81

Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	17.81	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	17.81	Tons				

Total Tax  
Total Ticket

Driver's Signature



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 10, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4683/174989	8:00 AM	17.92 ton	Waste Management	2/10/2022	Class 3 Soil	17.92
2	Wyser Construction	4683/174998	9:49 AM	17.99 ton	Waste Management	2/10/2022	Class 3 Soil	17.99
3	Wyser Construction	4683/175034	11:25 AM	19.12 ton	Waste Management	2/10/2022	Class 3 Soil	19.12
4	Wyser Construction	4683/175039	12:50 PM	16.92 ton	Waste Management	2/10/2022	Class 3 Soil	16.92
5	Wyser Construction	4683/175045	2:26 PM	17.98 ton	Waste Management	2/10/2022	Class 3 Soil	17.98
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	89.93
20								
21								
22								
23								





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174989  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/10/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 64320 lb  
In 02/10/2022 08:00:42 SCALE 1 lmercer Tare 28480 lb  
Out 02/10/2022 08:00:42 lmercer Net 35840 lb  
Tons 17.92  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	17.92	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	17.92	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 174998  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/10/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 64460 lb  
In 02/10/2022 09:49:08 SCALE 1 lmercer Tare 28480 lb  
Out 02/10/2022 09:49:08 lmercer Net 35980 lb  
Tons 17.99  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	17.99	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	17.99	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175034  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/10/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA

	Time	Scale	Operator	Inbound	Gross	
In	02/10/2022 11:25:07	SCALE 1	lmercer		Tare	66720 lb
Out	02/10/2022 11:25:07		lmercer		Net	28480 lb
					Tons	38240 lb
						19.12

Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	19.12	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	19.12	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175039  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/10/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA

	Time	Scale	Operator	Inbound	Gross	
In	02/10/2022 12:50:36	SCALE 1	lmercer		Tare	62320 lb
Out	02/10/2022 12:50:36		lmercer		Net	28480 lb
					Tons	33840 lb
						16.92

Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	16.92	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	16.92	Tons				

Total Tax  
Total Ticket

Driver's Signature





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175045  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/10/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time Scale Operator Inbound Gross 64440 lb  
02/10/2022 14:26:23 SCALE 1 lmercer Tare 28480 lb  
Out 02/10/2022 14:26:23 lmercer Net 35960 lb  
Tons 17.98  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	17.98	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	17.98	Tons				

Total Tax  
Total Ticket

Driver's Signature



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 11, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4684/175050	7:42 AM	18.56 ton	Waste Management	2/11/2022	Class 3 Soil	18.56
2	Wyser Construction	4684/175055	8:55 AM	20.24 ton	Waste Management	2/11/2022	Class 3 Soil	20.24
3	Wyser Construction	4684/175058	10:01 AM	14.92 ton	Waste Management	2/11/2022	Class 3 Soil	14.92
4	Wyser Construction	4684/175062	11:05 AM	18.36 ton	Waste Management	2/11/2022	Class 3 Soil	18.36
5	Wyser Construction	4684/175070	12:14 PM	16.96 ton	Waste Management	2/11/2022	Class 3 Soil	16.96
6	Wyser Construction	4684/175085	1:21 PM	18.73 ton	Waste Management	2/11/2022	Class 3 Soil	18.73
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	107.77
20								
21								
22								
23								



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175050  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time 02/11/2022 07:42:08 Scale 1 Operator Inbound Gross 65600 lb  
Out 02/11/2022 07:42:08 SCALE 1 lmercer Tare 28480 lb  
lmercer Net 37120 lb  
Tons 18.56  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.56	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	18.56	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Reprint  
Ticket# 175055  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time 02/11/2022 08:55:17 Scale 1 Operator Inbound Gross 68960 lb  
Out 02/11/2022 08:55:17 SCALE 1 lmercer Tare 28480 lb  
lmercer Net 40480 lb  
Tons 20.24  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	20.24	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	20.24	Tons				

Total Tax  
Total Ticket

Driver's Signature





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175058  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time 02/11/2022 10:01:48 Scale 1 Operator Inbound Gross 58320 lb  
Out 02/11/2022 10:01:48 SCALE 1 lmercer Tare 28480 lb  
lmercer Net 29840 lb  
Tons 14.92  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	14.92	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	14.92	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175062  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time 02/11/2022 11:05:09 Scale 1 Operator Inbound Gross 65200 lb  
Out 02/11/2022 11:05:09 SCALE 1 lmercer Tare 28480 lb  
lmercer Net 36720 lb  
Tons 18.36  
Comments MYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.36	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	18.36	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175070  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 62400 lb  
In 02/11/2022 12:14:32 SCALE 1 lmercer Tare 28480 lb  
Out 02/11/2022 12:14:32 lmercer Net 33920 lb  
Tons 16.96  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	16.96	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	16.96	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175085  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/11/2022 Vehicle# W-40S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver KURTIS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 65940 lb  
In 02/11/2022 13:21:23 SCALE 1 lmercer Tare 28480 lb  
Out 02/11/2022 13:21:23 lmercer Net 37460 lb  
Tons 18.73  
Comments WYSER - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	18.73	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	18.73	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 14, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Silver Streak # 127	230327/175103	7:56 AM	13.70 ton	Waste Management	2/14/2022	Class 3 Soil	13.70
2	Silver Streak # 127	230327/175111	10:06 AM	13.75 ton	Waste Management	2/14/2022	Class 3 Soil	13.75
3	Silver Streak # 127	230327/175121	11:59 AM	13.78 ton	Waste Management	2/14/2022	Class 3 Soil	13.78
4	Silver Streak # 127	230327/175127	2:06 PM	15.56 ton	Waste Management	2/14/2022	Class 3 Soil	15.56
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19					Class 3 Soil		Total Tons	56.79
20								
21								
22								
23								



Driver's Signature

Total Tax  
Total Ticket

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	13.75	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	13.75	Tons				

Customer Name WYSER CONSTRUCTION WYSER CONS  
Ticket Date 02/14/2022  
Payment Type Credit Account  
Manual Ticket#  
Route AK  
Hauling Ticket#  
Destination  
PO# AA 22 1653/116766WA  
Scale  
In 02/14/2022 10:06:31 SCALE 1  
Out 02/14/2022 10:06:31  
Comments SLVR STRK - LM

Carrier SELF HAULER \*  
Vehicle# SS127S  
Container  
Driver NOLAN WILLIAMS  
Check#  
Billing# 0000188  
Grid  
Operator  
Inbound  
Gross  
Tare  
Net  
Tons

53680 lb  
26180 lb  
27500 lb  
13.75

Original  
Ticket# 175111  
Ph: 206 763 5025

Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134



Driver's Signature

Total Tax  
Total Ticket

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	13.70	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	13.70	Tons				

Customer Name WYSER CONSTRUCTION WYSER CONS  
Ticket Date 02/14/2022  
Payment Type Credit Account  
Manual Ticket#  
Route AK  
Hauling Ticket#  
Destination  
PO# AA 22 1653/116766WA  
Scale  
In 02/14/2022 07:56:37 SCALE 1  
Out 02/14/2022 08:05:57 SCALE 1  
Comments SS - LM

Carrier SELF HAULER \*  
Vehicle# SS127S  
Container  
Driver NOLAN WILLIAMS  
Check#  
Billing# 0000188  
Grid  
Operator  
Inbound  
Gross  
Tare  
Net  
Tons

53580 lb  
26180 lb  
27400 lb  
13.70

Original  
Ticket# 175103  
Ph: 206 763 5025

Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175121  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/14/2022 Vehicle# SS127S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver NOLAN WILLIAMS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
In Time 02/14/2022 11:59:34 Scale SCALE 1 Operator Inbound Gross 53740 lb  
Out 02/14/2022 11:59:34 lmercer Tare 26180 lb  
lmercer Net 27560 lb  
Tons 13.78  
Comments SLVR STRK - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	13.78	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	13.78	Tons				KING

Total Tax  
Total Ticket

Driver's Signature





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175127  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS  
Ticket Date 02/14/2022  
Payment Type Credit Account  
Manual Ticket#  
Route AK  
Hauling Ticket#  
Destination  
PO# AA 22 1653/116766WA

Carrier SELF HAULER \*  
Vehicle# SS127S  
Container  
Driver NOLAN WILLIAMS  
Check#  
Billing# 0000188  
Grid

Volume

Time Scale  
In 02/14/2022 14:06:32 SCALE 1  
Out 02/14/2022 14:06:32

Operator  
lmercer  
lmercer

Inbound Gross  
Tare  
Net  
Tons

57300 lb  
26180 lb  
31120 lb  
15.56

Comments SLVR STRK - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	15.56	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	15.56	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



## EXPORT MATERIALS LOG

Anderson & Associates  
Midas - Limited Clean-Up

AA-22-1653

DATE: February 15, 2022

LOAD NO.	TRUCKING COMPANY	MANIFEST #	DUMP TIME	ESTIMATED QUANTITY	LOCATION	DATE	TYPE OF MATERIALS	TONNAGE SLIPS
1	Wyser Construction	4688/39365	2:26 PM	12.0 CY	JEV Recycling	2/15/2022	Concrete	12.0 cy
2								
3	Silver Streak #127	230328/175129	7:26 AM	14.55 ton	Waste Management	2/15/2022	Class 3 Soil	14.55
4	Silver Streak #127	230328/175148	9:32 AM	14.05 ton	Waste Management	2/15/2022	Class 3 Soil	14.05
5	Silver Streak #127	230328/175160	11:11 AM	13.39 ton	Waste Management	2/15/2022	Class 3 Soil	13.39
6	Silver Streak #127	230328/175177	1:50 PM	12.46 ton	Waste Management	2/15/2022	Class 3 Soil	12.46 54.45
7	Silver Streak #167	220140/175130	7:44 AM	13.18 ton	Waste Management	2/15/2022	Class 3 Soil	13.18
8	Silver Streak #167	220140/175151	9:53 AM	14.46 ton	Waste Management	2/15/2022	Class 3 Soil	14.46
9	Silver Streak #167	220140/175167	11:48 AM	14.21 ton	Waste Management	2/15/2022	Class 3 Soil	14.21 41.85
10								
11								
12								
13								
14								
15								
16								
17								
18								
19						Concrete	Total Yards	12.0 cy
20					Class 3 Soil		Total Tons	96.30
21								
22								
23								



CONCRETE REMOVAL





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175129  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS127S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver NOLAN WILLIAMS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 55280 lb  
In 02/15/2022 07:26:23 SCALE 1 lmercer Tare 26180 lb  
Out 02/15/2022 07:26:23 lmercer Net 29100 lb  
Tons 14.55  
Comments SLVR STRK - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	14.55	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	14.55	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175148  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS127S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver NOLAN WILLIAMS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 54280 lb  
In 02/15/2022 09:32:05 SCALE 1 lmercer Tare 26180 lb  
Out 02/15/2022 09:32:05 lmercer Net 28100 lb  
Tons 14.05  
Comments SS - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	14.05	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	14.05	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175160  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS127S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver NOLAN WILLIAMS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA

	Time	Scale	Operator	Inbound	Gross	
In	02/15/2022 11:11:37	SCALE 1	lmercer		Tare	52960 lb
Out	02/15/2022 11:11:37		lmercer		Net	26180 lb
					Tons	26780 lb
						13.39

Comments SS - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	13.39	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				KING
3 GONDOLA T-GONDOLA TON	100	13.39	Tons				KING

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175177  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS127S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver NOLAN WILLIAMS  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale  
In 02/15/2022 13:50:02 SCALE 1 Operator Inbound Gross 51100 lb  
Out 02/15/2022 13:50:02 lmercer Tare 26180 lb  
lmercer Net 24920 lb  
Comments SS - LM Tons 12.46

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	12.46	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	12.46	Tons				

Total Tax  
Total Ticket

Driver's Signature





Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175130  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS167S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver CAMERON PHELAN  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 52640 lb  
In 02/15/2022 07:44:04 SCALE 1 lmercer Tare 26280 lb  
Out 02/15/2022 07:51:03 SCALE 1 lmercer Net 26360 lb  
Tons 13.18  
Comments SLVR STRK - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	13.18	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	13.18	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175151  
Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS167S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver CAMERON PHELAN  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA  
Time Scale Operator Inbound Gross 55200 lb  
In 02/15/2022 09:53:42 SCALE 1 lmercer Tare 26280 lb  
Out 02/15/2022 09:53:42 lmercer Net 28920 lb  
Tons 14.46  
Comments SS - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	14.46	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	14.46	Tons				

Total Tax  
Total Ticket

Driver's Signature



Alaska Street  
70 S Alaska Street  
Seattle, WA, 98134

Original  
Ticket# 175167

Ph: 206 763 5025

Customer Name WYSER CONSTRUCTION WYSER CONS Carrier SELF HAULER \*  
Ticket Date 02/15/2022 Vehicle# SS167S Volume  
Payment Type Credit Account Container  
Manual Ticket# Driver CAMERON PHELAN  
Route AK Check#  
Hauling Ticket# Billing# 0000188  
Destination Grid  
PO# AA 22 1653/116766WA

	Time	Scale	Operator	Inbound	Gross	
In	02/15/2022 11:48:24	SCALE 1	lmercer		Tare	54700 lb
Out	02/15/2022 11:48:24		lmercer		Net	26280 lb
					Tons	28420 lb
						14.21

Comments SS - LM

Product	LD%	Qty	UOM	Rate	Tax	Amount	Origin
1 Daily Cover-PCS-Tons-Pet	100	14.21	Tons				KING
2 EVFt-P6-Environmental Fe	100		%				
3 GONDOLA T-GONDOLA TON	100	14.21	Tons				

Total Tax  
Total Ticket

Driver's Signature



## **APPENDIX B**

### **FIELD SAMPLING**

All sampling tools were cleaned prior to and in between samples to reduce the potential for cross contamination. New nitrile gloves were donned for each individual sample. An excavator operated by Wyser Construction was used to collect samples where the excavation could not be entered and maintain OHSA safety regulations.

A representative of our firm continuously monitored the excavation and kept a detailed record of each sample location and depth. Samples recovered during the site explorations were logged by our representative and placed into laboratory-prepared glassware. All samples were refrigerated pending delivery to Onsite Environmental Inc. in Redmond, Washington. We followed chain of custody protocols for all samples.

Samples were screened in the field using PID headspace readings, visual, and odor observations. All soils with an incidental odor, were excavated and hauled offsite from the remedial excavation that took place in March of 2021.

The above methods describe sampling for the remedial excavation only. Refer to Phase II reports attached in Appendix A for sampling procedures related to initial site investigation sampling.

**APPENDIX C**  
**LABORATORY ANALYTICAL DATA**

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 16, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 7, 2022 from the 8336-5, F&BI 202101 project. There are 7 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: Carol Jones (AP)  
NAA0216R.DOC

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on February 7, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 202101 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202101 -01	8336-7-1
202101 -02	8336-7-2
202101 -03	8336-7-3
202101 -04	8336-7-4
202101 -05	8336-7-5
202101 -06	8336-7-6

Sample 8336-7-4 was sent to Fremont Analytical for EPH and VPH analysis. The report is enclosed.

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/16/22  
Date Received: 02/07/22  
Project: 8336-5, F&BI 202101  
Date Extracted: 02/07/22  
Date Analyzed: 02/07/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
8336-7-1 202101-01	<50	<250	92
8336-7-2 202101-02	<50	<250	93
8336-7-3 202101-03	<50	<250	93
8336-7-4 202101-04	5,900 x	8,700	80
8336-7-5 202101-05	5,800 x	5,900	86
8336-7-6 202101-06	<50	<250	93
Method Blank 02-377 MB	<50	<250	91

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	8336-7-4	Client:	Terra Associates
Date Received:	02/07/22	Project:	8336-5, F&BI 202101
Date Extracted:	02/08/22	Lab ID:	202101-04 1/25
Date Analyzed:	02/09/22	Data File:	020912.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	64 d	24	111
Phenol-d6	73 d	37	116
Nitrobenzene-d5	78 d	38	117
2-Fluorobiphenyl	89 d	45	117
2,4,6-Tribromophenol	75 d	11	158
Terphenyl-d14	101 d	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
2-Methylnaphthalene	<0.05
1-Methylnaphthalene	<0.05
Benz(a)anthracene	<0.05
Chrysene	0.053
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Terra Associates
Date Received:	Not Applicable	Project:	8336-5, F&BI 202101
Date Extracted:	02/08/22	Lab ID:	02-389 mb 1/5
Date Analyzed:	02/08/22	Data File:	020810.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	81	24	111
Phenol-d6	86	37	116
Nitrobenzene-d5	89	38	117
2-Fluorobiphenyl	88	45	117
2,4,6-Tribromophenol	78	11	158
Terphenyl-d14	92	50	124

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
2-Methylnaphthalene	<0.01
1-Methylnaphthalene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/16/22

Date Received: 02/07/22

Project: 8336-5, F&BI 202101

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202088-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	43,000	0 b	0 b	64-133	nm b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	58-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 02/16/22

Date Received: 02/07/22

Project: 8336-5, F&BI 202101

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 202043-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.83	<0.01	72	75	34-118	4
2-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	72	77	29-130	7
1-Methylnaphthalene	mg/kg (ppm)	0.83	<0.01	72	77	37-119	7
Benz(a)anthracene	mg/kg (ppm)	0.83	<0.01	80	82	50-150	2
Chrysene	mg/kg (ppm)	0.83	<0.01	84	85	50-150	1
Benzo(a)pyrene	mg/kg (ppm)	0.83	<0.01	80	83	50-150	4
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	<0.01	83	87	50-150	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	<0.01	82	89	50-150	8
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	<0.01	79	77	41-134	3
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	<0.01	84	78	44-130	7

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.83	84	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	86	67-108
1-Methylnaphthalene	mg/kg (ppm)	0.83	86	66-107
Benz(a)anthracene	mg/kg (ppm)	0.83	93	70-130
Chrysene	mg/kg (ppm)	0.83	96	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	91	68-120
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	91	69-125
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	95	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	94	67-129
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	98	67-128

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



3600 Fremont Ave. N.  
Seattle, WA 98103  
T: (206) 352-3790  
F: (206) 352-7178  
info@fremontanalytical.com

**Friedman & Bruya**  
Michael Erdahl  
3012 16th Ave. W.  
Seattle, WA 98119

**RE: 202101**  
**Work Order Number: 2202182**

February 15, 2022

**Attention Michael Erdahl:**

Fremont Analytical, Inc. received 1 sample(s) on 2/8/2022 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***Volatile Petroleum Hydrocarbons by NWVPH***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes  
Project Manager

**CC:**  
Chuck Lie  
Nick Hoffman

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing*  
*ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing*  
*Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

[www.fremontanalytical.com](http://www.fremontanalytical.com)



Date: 02/15/2022

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**CLIENT:** Friedman & Bruya  
**Project:** 202101  
**Work Order:** 2202182

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## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202182-001	8336-7-4	02/07/2022 12:20 PM	02/08/2022 10:37 AM

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Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

---

**CLIENT:** Friedman & Bruya**Project:** 202101

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

**Qualifiers:**

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

**Acronyms:**

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate





## Analytical Report

Work Order: 2202182  
Date Reported: 2/15/2022

Client: Friedman & Bruya

Collection Date: 2/7/2022 12:20:00 PM

Project: 202101

Lab ID: 2202182-001

Matrix: Soil

Client Sample ID: 8336-7-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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### Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35225

Analyst: MM

Aliphatic Hydrocarbon (C8-C10)	ND	20.7		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C12-C16)	136	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C16-C21)	1,640	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C21-C34)	12,400	103	D	mg/Kg-dry	10	2/14/2022 3:35:54 PM
Aromatic Hydrocarbon (C8-C10)	ND	20.7		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C12-C16)	16.2	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C16-C21)	717	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C21-C34)	1,540	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Surr: 1-Chlorooctadecane	92.2	60 - 140		%Rec	1	2/14/2022 4:29:58 PM
Surr: o-Terphenyl	68.4	60 - 140		%Rec	1	2/14/2022 7:10:03 PM

### Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35309

Analyst: SG

Aliphatic Hydrocarbon (C5-C6)	ND	2.58		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C6-C8)	ND	1.55		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	2.58		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	3.10		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C10-C12)	3.30	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C12-C13)	15.3	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Surr: 1,4-Difluorobenzene	74.9	65 - 140		%Rec	1	2/9/2022 8:13:00 AM
Surr: Bromofluorobenzene	93.2	65 - 140		%Rec	1	2/9/2022 8:13:00 AM



Date: 2/15/2022

Work Order: 2202182  
 CLIENT: Friedman & Bruya  
 Project: 202101

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-35225</b>		SampType: <b>MBLK</b>		Units: <b>mg/Kg</b>		Prep Date: <b>2/2/2022</b>		RunNo: <b>73251</b>			
Client ID: <b>MBLKS</b>		Batch ID: <b>35225</b>				Analysis Date: <b>2/14/2022</b>		SeqNo: <b>1497194</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	82.4		100.0		82.4	60	140				

Sample ID: LCS-35225		SampType: LCS			Units: mg/Kg		Prep Date: 2/2/2022		RunNo: 73251		
Client ID: LCSS		Batch ID: 35225			Analysis Date: 2/14/2022				SeqNo: 1497195		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aliphatic Hydrocarbon (C8-C10)	104	20.0	250.0	0	41.7	15.7	130				
Aliphatic Hydrocarbon (C10-C12)	88.3	10.0	125.0	0	70.7	70	130				
Aliphatic Hydrocarbon (C12-C16)	104	10.0	125.0	0	83.3	70	130				
Aliphatic Hydrocarbon (C16-C21)	106	10.0	125.0	0	85.2	70	130				
Aliphatic Hydrocarbon (C21-C34)	154	10.0	125.0	0	123	70	130				
Surr: 1-Chlorooctadecane	91.4		100.0		91.4	60	140				

Sample ID: <b>LCS-35225</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>			Prep Date: <b>2/2/2022</b>			RunNo: <b>73302</b>			
Client ID: <b>LCSS</b>	Batch ID: <b>35225</b>				Analysis Date: <b>2/14/2022</b>			SeqNo: <b>1497335</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aromatic Hydrocarbon (C8-C10)	171	20.0	250.0	0	68.3	16.9	130				
Aromatic Hydrocarbon (C10-C12)	87.6	10.0	125.0	0	70.1	70	130				
Aromatic Hydrocarbon (C12-C16)	91.0	10.0	125.0	0	72.8	70	130				
Aromatic Hydrocarbon (C16-C21)	96.2	10.0	125.0	0	76.9	70	130				
Aromatic Hydrocarbon (C21-C34)	137	10.0	125.0	0	109	70	130				
Surr: o-Terphenyl	84.1		100.0		84.1	60	140				



Date: 2/15/2022

Work Order: 2202182  
 CLIENT: Friedman & Bruya  
 Project: 202101

## QC SUMMARY REPORT

### Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: <b>MB-35225</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>			Prep Date: <b>2/2/2022</b>			RunNo: <b>73302</b>			
Client ID: <b>MBLKS</b>	Batch ID: <b>35225</b>				Analysis Date: <b>2/14/2022</b>			SeqNo: <b>1497398</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	75.5		100.0		75.5	60	140				

Sample ID: <b>2201372-004AMS</b>	SampType: <b>MS</b>		Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/2/2022</b>			RunNo: <b>73302</b>			
Client ID: <b>BATCH</b>	Batch ID: <b>35225</b>		Analysis Date: <b>2/15/2022</b>					SeqNo: <b>1497313</b>			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	148	20.9	261.3	10.00	52.7	11.8	130				
Aromatic Hydrocarbon (C10-C12)	246	10.5	130.7	139.0	81.9	70	130				
Aromatic Hydrocarbon (C12-C16)	753	10.5	130.7	609.8	109	70	130				
Aromatic Hydrocarbon (C16-C21)	1,010	10.5	130.7	852.4	117	70	130				
Aromatic Hydrocarbon (C21-C34)	251	10.5	130.7	111.9	106	70	130				
Surr: o-Terphenyl	96.2		104.5		92.0	60	140				

Sample ID: <b>2201372-004AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>				Prep Date: <b>2/2/2022</b>				RunNo: <b>73302</b>		
Client ID: <b>BATCH</b>	Batch ID: <b>35225</b>					Analysis Date: <b>2/15/2022</b>				SeqNo: <b>1497336</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aromatic Hydrocarbon (C8-C10)	208	21.3	265.8	10.00	74.6	11.8	130	147.7	34.0	30	R	
Aromatic Hydrocarbon (C10-C12)	296	10.6	132.9	139.0	118	70	130	245.9	18.5	30		
Aromatic Hydrocarbon (C12-C16)	737	10.6	132.9	609.8	95.5	70	130	752.7	2.13	30		
Aromatic Hydrocarbon (C16-C21)	958	10.6	132.9	852.4	79.4	70	130	1,006	4.86	30		
Aromatic Hydrocarbon (C21-C34)	307	10.6	132.9	111.9	147	70	130	250.8	20.3	30	S	
Surr: o-Terphenyl	96.8		106.3		91.1	60	140		0			



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: 2201372-004AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 2/2/2022		RunNo: 73302			
Client ID: BATCH		Batch ID: 35225				Analysis Date: 2/15/2022		SeqNo: 1497336			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**NOTES:**

S - Analyte concentration was too high for accurate spike recovery(ies).  
R - High RPD observed, spike recovery is within range for Aromatic (C8-C10).

Sample ID: <b>2201372-004AMS</b>		SampType: <b>MS</b>		Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/2/2022</b>			RunNo: <b>73251</b>		
Client ID: <b>BATCH</b>		Batch ID: <b>35225</b>					Analysis Date: <b>2/15/2022</b>			SeqNo: <b>1497239</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	171	20.9	261.3	71.83	38.1	10.3	130				
Aliphatic Hydrocarbon (C10-C12)	571	10.5	130.7	408.5	124	70	130				
Aliphatic Hydrocarbon (C12-C16)	1,550	10.5	130.7	1,377	134	70	130				S
Aliphatic Hydrocarbon (C16-C21)	1,050	10.5	130.7	857.5	147	70	130				S
Aliphatic Hydrocarbon (C21-C34)	333	10.5	130.7	134.3	152	70	130				S
Surr: 1-Chlorooctadecane	100		104.5		95.8	60	140				

**NOTES:**

S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: 2201372-004AMSD	SampType: MSD	Units: mg/Kg-dry				Prep Date: 2/2/2022			RunNo: 73251		
Client ID: BATCH	Batch ID: 35225					Analysis Date: 2/15/2022			SeqNo: 1497241		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	130	21.3	265.8	71.83	22.0	10.3	130	171.4	27.2	30	
Aliphatic Hydrocarbon (C10-C12)	509	10.6	132.9	408.5	75.9	70	130	571.2	11.4	30	
Aliphatic Hydrocarbon (C12-C16)	1,490	10.6	132.9	1,377	87.4	70	130	1,551	3.84	30	
Aliphatic Hydrocarbon (C16-C21)	966	10.6	132.9	857.5	82.0	70	130	1,049	8.22	30	
Aliphatic Hydrocarbon (C21-C34)	251	10.6	132.9	134.3	87.5	70	130	332.5	28.1	30	
Surr: 1-Chlorooctadecane	100		106.3		94.3	60	140		0		



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>MB-35309</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>				Prep Date: <b>2/8/2022</b>			RunNo: <b>73228</b>		
Client ID: <b>MBLKS</b>	Batch ID: <b>35309</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1495995</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	1.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	0.500		0	0						
Surr: 1,4-Difluorobenzene	1.94		2.500		77.8	65	140				
Surr: Bromofluorobenzene	2.39		2.500		95.4	65	140				

Sample ID: LCS-35309		SampType: LCS		Units: mg/Kg		Prep Date: 2/8/2022			RunNo: 73228			
Client ID: LCSS		Batch ID: 35309					Analysis Date: 2/9/2022			SeqNo: 1495937		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aliphatic Hydrocarbon (C5-C6)	33.4	2.50	30.00	0	111	70	130					
Aliphatic Hydrocarbon (C6-C8)	9.77	1.50	10.00	0	97.7	70	130					
Aliphatic Hydrocarbon (C8-C10)	24.6	2.50	10.00	0	246	70	130				S	
Aliphatic Hydrocarbon (C10-C12)	8.95	0.500	10.00	0	89.5	70	130					
Aromatic Hydrocarbon (C8-C10)	43.4	3.00	40.00	0	108	70	130					
Aromatic Hydrocarbon (C10-C12)	10.3	0.500	10.00	0	103	70	130					
Aromatic Hydrocarbon (C12-C13)	9.17	0.500	10.00	0	91.7	70	130					
Surr: 1,4-Difluorobenzene	2.30		2.500		91.9	65	140					
Surr: Bromofluorobenzene	2.45		2.500		97.9	65	140					

**NOTES:**

S - Outlying spike recovery observed (high bias). Samples are non-detect; result meets QC requirements.



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCSD-35309</b>		SampType: <b>LCSD</b>		Units: <b>mg/Kg</b>		Prep Date: <b>2/8/2022</b>			RunNo: <b>73228</b>		
Client ID: <b>LCSS02</b>		Batch ID: <b>35309</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1495938</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	31.3	2.50	30.00	0	104	70	130	33.35	6.37	20	
Aliphatic Hydrocarbon (C6-C8)	9.70	1.50	10.00	0	97.0	70	130	9.774	0.744	20	
Aliphatic Hydrocarbon (C8-C10)	24.3	2.50	10.00	0	243	70	130	24.63	1.34	20	S
Aliphatic Hydrocarbon (C10-C12)	7.12	0.500	10.00	0	71.2	70	130	8.954	22.9	20	R
Aromatic Hydrocarbon (C8-C10)	42.0	3.00	40.00	0	105	70	130	43.39	3.35	20	
Aromatic Hydrocarbon (C10-C12)	10.7	0.500	10.00	0	107	70	130	10.30	3.68	20	
Aromatic Hydrocarbon (C12-C13)	11.1	0.500	10.00	0	111	70	130	9.172	19.0	20	
Surr: 1,4-Difluorobenzene	2.23		2.500		89.1	65	140		0		
Surr: Bromofluorobenzene	2.39		2.500		95.8	65	140		0		

**NOTES:**

S - Outlying spike recovery observed (high bias). Samples are non-detect; result meets QC requirements.

R - High RPD observed, spike recovery is within range.

Client Name: **FB**  
 Logged by: **Gabrielle Coeuille**

Work Order Number: **2202182**  
 Date Received: **2/8/2022 10:37:00 AM**

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
 2. How was the sample delivered? Client

### Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐  
 4. Shipping container/cooler in good condition? Yes ☒ No ☐  
 5. Custody Seals present on shipping container/cooler?  
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒  
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
 7. Were all items received at a temperature of >2°C to 6°C \* Yes ☒ No ☐ NA ☐  
 8. Sample(s) in proper container(s)? Yes ☐ No ☒  
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
 10. Are samples properly preserved? Yes ☒ No ☐  
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒  
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐  
 14. Does paperwork match bottle labels? Yes ☒ No ☐  
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
 16. Is it clear what analyses were requested? Yes ☒ No ☐  
 17. Were all holding times able to be met? Yes ☒ No ☐

### Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

MeOH VOA extracted in house- gac

### Item Information

Item #	Temp °C
Sample 1	3.1

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



2202182  
Page # 1 of 1

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTOR Fremont	
PROJECT NAME/NO. 202101	PO # C-51
REMARKS	

TURNAROUND TIME

☐ Standard TAT

☒ RUSH 3-Day TAT

Rush charges authorized by: ME

---

SAMPLE DISPOSAL



☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

[illegible]

*Friedman & Bruya, Inc.*  
3012 16th Avenue West  
Seattle, WA 98119-2029  
Ph. (206) 285-8282  
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Michael Erdahl	Friedman & Bruya	2/8/22	0954
Received by: 	Oliver Kne	PAF	2/10/22	0627
Relinquished by:				
Received by:				



20261  
 Report To Chuck Hie  
 Company Terra Associates Inc  
 Address 12220 113<sup>th</sup> Ave NE Suite 130  
 City, State, ZIP Kirkland, WA 98034  
 Phone 425 821-7777 Email Chie@terra-associates.com

# SAMPLE CHAIN OF CUSTODY 02.07.22

B03

Page # \_\_\_\_\_ of \_\_\_\_\_

SAMPLERS (signature) <u>Nick</u>	
PROJECT NAME	PO # <u>8336-5</u>
REMARKS	INVOICE TO <u>TAI</u>
Project specific RLs? - Yes / No	

TURNAROUND TIME	
<input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH Same Day Rush charges authorized by:	
SAMPLE DISPOSAL	
<input type="checkbox"/> Archive samples <input type="checkbox"/> Other Default: Dispose after 30 days	

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED											Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EPH	VPI+	COAHs+HAPs		
8336-7-1	01	2/7/22	10:30	Soil	1	X											● 3day TAT ME 2/8/22 per NH
8336-7-2	02		11:05			X											
8336-7-3	03		11:15			X											
8336-7-4	04		12:20			X							●	●	●		
8336-7-5	05		12:30			X											
8336-7-6	06	<del>2/7/22</del>	12:35	<del>Soil</del>	<del>1</del>	X											

Friedman & Bruya, Inc.  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Nick</u>	Nicolas R. Hoffman	TAI	2/7/22	12:50
Received by: <u>Tokala C.</u>	Tokala Christensen	FRB	2/7/22	12:50
Relinquished by:				
Received by:				
Samples received at <u>3</u> °C				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 11, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 9, 2022 from the 8336-5, F&BI 202143 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Carol Jones (AP), Nick Hoffman  
NAA0211R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 9, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 202143 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202143 -01	8336-9-1
202143 -02	8336-9-2

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/11/22  
Date Received: 02/09/22  
Project: 8336-5, F&BI 202143  
Date Extracted: 02/09/22  
Date Analyzed: 02/09/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
8336-9-1 202143-01	<50	<250	91
8336-9-2 202143-02	840	780	94
Method Blank 02-408 MB	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/11/22

Date Received: 02/09/22

Project: 8336-5, F&BI 202143

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202106-16 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	86	86	64-133	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	58-147



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



202143

## SAMPLE CHAIN OF CUSTODY

02-09-22

801

Report To Chuck LieCompany Terra Associates IncAddress 12220 113<sup>th</sup> Ave NE Suite 130City, State, ZIP Kirkland, WA 98034Phone 425 821-7777 Email CLie@terraassociates.com

SAMPLERS (signature)

Nick Hoffman

PROJECT NAME

PO #

8336-5

REMARKS

cc Nick Hoffman

INVOICE TO

Project specific RLs? - Yes / No

Page # \_\_\_\_\_ of \_\_\_\_\_

## TURNAROUND TIME

☐ Standard turnaround☒ RUSH Same Day

Rush charges authorized by: \_\_\_\_\_

## SAMPLE DISPOSAL

☐ Archive samples☐ Other \_\_\_\_\_

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				
8336-9-1	01	2/9/22	7:30	Soil	1	X										
8336-9-2	02	2/9/22	8:00	Soil	1	X										

Friedman & Bruya, Inc.  
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Nick Hoffman</u>	Nickolas R. Hoffman	TAI	2/9/22	09:03
Received by: <u>Ann Bruya</u>	Ann W Bruya	F&B	2/9/22	09:03
Relinquished by:				
Received by:		Samples received at <u>10°C</u>		

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 11, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 10, 2022 from the 8336-5, F&BI 202190 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: Carol Jones (AP)  
NAA0211R.DOC

# FRIEDMAN & BRUYA, INC.

---

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on February 10, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202190 -01	8336-10-1
202190 -02	8336-10-2

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/11/22  
Date Received: 02/10/22  
Project: 8336-5, F&BI 202190  
Date Extracted: 02/10/22  
Date Analyzed: 02/10/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
8336-10-1 202190-01	<50	<250	92
8336-10-2 202190-02	<50	<250	91
Method Blank 02-414 MB	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/11/22

Date Received: 02/10/22

Project: 8336-5, F&BI 202190

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202016-22 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	86	86	64-133	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	86	58-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



202190

## SAMPLE CHAIN OF CUSTODY

02-10-22

Report To Chuck LieCompany Terra Associates IncAddress 12220 113<sup>th</sup> Ave NE Suite 130City, State, ZIP Kirkland, WA 98034Phone 425 821-7777 Email \_\_\_\_\_

SAMPLERS (signature)

Nick Hoffman

PROJECT NAME

PO #

8336-S

REMARKS

CR Nick Hoffman

INVOICE TO

Project specific RLs? - Yes / No

Page # \_\_\_\_\_ of \_\_\_\_\_

801

## TURNAROUND TIME

☐ Standard turnaround☒ RUSH Same Day

Rush charges authorized by: \_\_\_\_\_

## SAMPLE DISPOSAL

☐ Archive samples☐ Other \_\_\_\_\_

Default: Dispose after 30 days

						ANALYSES REQUESTED												Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Cx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
<del>8336-10-1</del>		<del>2/1</del>																
<del>8336-10-2</del>																		
8336-10-1	01	2/10/22	12:00	Soil	1	X												
8336-10-2	02	2/10/22	12:15	Soil	1	X												

Friedman & Bruya, Inc.  
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Nick Hoffman</u>	Nick R. Hoffman	TAI	2/10/22	12:50
Received by: <u>Tokala C.</u>	Tokala Christina	F+R	2/10/22	12:50
Relinquished by:				
Received by:		Samples received at <u>15:00</u>		



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 15, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 11, 2022 from the 8336-5, F&BI 202218 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Carol Jones (AP), Nick Hoffman  
NAA0215R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 11, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 202218 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202218 -01	8336-11-1
202218 -02	8336-11-2
202218 -03	8336-11-3
202218 -04	8336-11-4
202218 -05	8336-11-5
202218 -06	8336-11-6

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/15/22  
Date Received: 02/11/22  
Project: 8336-5, F&BI 202218  
Date Extracted: 02/11/22  
Date Analyzed: 02/11/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 53-144)
8336-11-1 202218-01	<50	<250	92
8336-11-2 202218-02	1,300 x	1,700	80
8336-11-3 202218-03	5,500 x	12,000	62
8336-11-4 202218-04	<50	<250	91
8336-11-5 202218-05	<50	<250	92
8336-11-6 202218-06	<50	<250	91
Method Blank 02-421 MB	<50	<250	93

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/15/22

Date Received: 02/11/22

Project: 8336-5, F&BI 202218

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202199-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	90	86	64-133	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	90	58-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

02.11.22

Bo4

Report To Chuck Lie  
 Company Terra Associates Inc  
 Address 1220 713th Ave NE Suite 130  
 City, State, ZIP Kirkland, WA 98034  
 Phone 425 821-7777 Email CLie@terra-associates.com

SAMPLERS (signature) <u>Nick Hoffman</u>	
PROJECT NAME	PO # <u>8336-5</u>
REMARKS <u>cc: Nick Hoffman</u>	INVOICE TO
Project specific RLs? - Yes / No	

Page # \_\_\_\_\_ of \_\_\_\_\_

**TURNAROUND TIME**  
☐ Standard turnaround  
☒ RUSH Same day  
 Rush charges authorized by: \_\_\_\_\_

**SAMPLE DISPOSAL**  
☐ Archive samples  
☐ Other \_\_\_\_\_  
 Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				
8336-11-1	01	2/11/22	8:30	Soil	1	X										
8336-11-2	02		9:00		1	X										
8336-11-3	03		9:30		1	X										
8336-11-4	04		10:00		1	X										
8336-11-5	05		10:30		1	X										
8336-11-6	06		11:00		1	X										

Friedman & Bruya, Inc.  
 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Nick Hoffman</u>	<u>Nick Hoffman</u>	<u>TAI</u>	<u>2/11/22</u>	<u>12:35</u>
Received by: <u>Chuck Lie</u>	<u>Chuck Lie</u>	<u>F+B</u>	<u>2/11/22</u>	<u>12:35</u>
Relinquished by:				
Received by:		Samples received at <u>6</u> °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 16, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 14, 2022 from the 8336-5, F&BI 202234 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Carol Jones (AP), Nick Hoffman  
NAA0216R.DOC



FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 14, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 202234 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202234 -01	14-1
202234 -02	14-2
202234 -03	14-3

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/16/22  
Date Received: 02/14/22  
Project: 8336-5, F&BI 202234  
Date Extracted: 02/14/22  
Date Analyzed: 02/14/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
14-1 202234-01	<50	<250	97
14-2 202234-02	<50	<250	95
14-3 202234-03	<50	<250	96
Method Blank 02-429 MB	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/16/22

Date Received: 02/14/22

Project: 8336-5, F&BI 202234

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202231-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	88	88	64-133	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	88	58-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

202234

## SAMPLE CHAIN OF CUSTODY

0214.22

B01

Report To CHUCK LIECompany Terra Associates

Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

SAMPLERS (signature) \_\_\_\_\_

PROJECT NAME

8336-5

PO #

8336-5

REMARKS

INVOICE TO

Project specific RLs? - Yes / No

Page # \_\_\_\_\_ of \_\_\_\_\_

## TURNAROUND TIME

☐ Standard turnaround☒ RUSH Same DayRush charges authorized by: all

## SAMPLE DISPOSAL

☐ Archive samples☐ Other \_\_\_\_\_

Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082				
14-1	01	2-14	9 <sup>20</sup>	S	1	X										
14-2	02	↓	10 <sup>00</sup>	S	1	X										
14-3	03	↓	10 <sup>30</sup>	S	1	X										

Friedman & Bruya, Inc.  
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>CM</u>	<u>CHUCK LIE</u>	<u>TAH</u>	<u>2-14-22</u>	<u>11:00</u>
Received by: <u>Tokale C.</u>	<u>Tokale Christensen</u>	<u>F+B</u>	<u>2-14-22</u>	<u>11:00</u>
Relinquished by:				
Received by:				
Samples received at <u>6</u> °C				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 17, 2022

Chuck Lie, Project Manager  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Lie:

Included are the results from the testing of material submitted on February 15, 2022 from the 8336-3, F&BI 202266 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures

c: Carol Jones (AP), Nick Hoffman  
NAA0217R.DOC

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on February 15, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-3, F&BI 202266 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
202266 -01	15-1
202266 -02	15-2
202266 -03	15-3

All quality control requirements were acceptable.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/17/22  
Date Received: 02/15/22  
Project: 8336-3, F&BI 202266  
Date Extracted: 02/15/22  
Date Analyzed: 02/15/22

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL AND MOTOR OIL  
USING METHOD NWTPH-Dx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 53-144)
15-1 202266-01	130 x	370	95
15-2 202266-02	<50	<250	92
15-3 202266-03	<50	<250	92
Method Blank 02-432 MB	<50	<250	94

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/17/22

Date Received: 02/15/22

Project: 8336-3, F&BI 202266

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS  
DIESEL EXTENDED USING METHOD NWTPH-D<sub>x</sub>**

Laboratory Code: 202241-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	9400	67 b	48 b	64-133	33 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	88	58-147

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

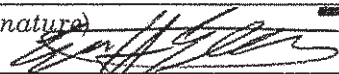
x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

# SAMPLE CHAIN OF CUSTODY

02-15-22

B01

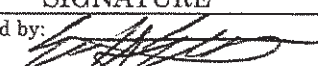
202266  
Report To Chuck Lie  
Company TAI (Terra) Inc  
Address 12220 113th Ave NE, Ste. 130  
City, State, ZIP Kirkland, WA #98034  
Phone 425-421-7777 Email clie@terra-associates.com

SAMPLERS (signature) 	
PROJECT NAME	PO # <u>4330-3</u>
REMARKS	INVOICE TO <u>Chuck Lie</u>
Project specific RLs? - Yes / No	

Page # <u>1</u> of <u>1</u>
TURNAROUND TIME <input type="checkbox"/> Standard turnaround <input checked="" type="checkbox"/> RUSH <u>same day</u> Rush charges authorized by: <u>Chuck Lie</u>
SAMPLE DISPOSAL <input type="checkbox"/> Archive samples <input type="checkbox"/> Other _____ Default: Dispose after 30 days

						ANALYSES REQUESTED												Notes
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
15-1	01	2-15-22	9:00	S	1	X												
15-2	02	↓	9:15	↓	1	X												
15-3	03	↓	9:45	↓	1	X												

Friedman & Bruya, Inc.  
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Evan H. Eckles	TAI	2-15-22	10:15
Received by: <u>Tokala C.</u>	Tokala Christanta	F+B	2-15-22	10:15
Relinquished by:				
Received by:		Samples received at	<u>6</u>	<u>00</u>



3600 Fremont Ave. N.  
Seattle, WA 98103  
T: (206) 352-3790  
F: (206) 352-7178  
info@fremontanalytical.com

**Friedman & Bruya**  
Michael Erdahl  
3012 16th Ave. W.  
Seattle, WA 98119

**RE: 202101**  
**Work Order Number: 2202182**

February 15, 2022

**Attention Michael Erdahl:**

Fremont Analytical, Inc. received 1 sample(s) on 2/8/2022 for the analyses presented in the following report.

***Extractable Petroleum Hydrocarbons by NWEPH***  
***Volatile Petroleum Hydrocarbons by NWVPH***

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes  
Project Manager

**CC:**  
Chuck Lie  
Nick Hoffman

*DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing*  
*ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing*  
*Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910*

Original

[www.fremontanalytical.com](http://www.fremontanalytical.com)



Date: 02/15/2022

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**CLIENT:** Friedman & Bruya  
**Project:** 202101  
**Work Order:** 2202182

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## Work Order Sample Summary

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Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2202182-001	8336-7-4	02/07/2022 12:20 PM	02/08/2022 10:37 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

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**CLIENT:** Friedman & Bruya**Project:** 202101

---

**I. SAMPLE RECEIPT:**

Samples receipt information is recorded on the attached Sample Receipt Checklist.

**II. GENERAL REPORTING COMMENTS:**

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

**III. ANALYSES AND EXCEPTIONS:**

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



**Qualifiers:**

- \* - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

**Acronyms:**

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



## Analytical Report

Work Order: 2202182  
Date Reported: 2/15/2022

Client: Friedman & Bruya

Collection Date: 2/7/2022 12:20:00 PM

Project: 202101

Lab ID: 2202182-001

Matrix: Soil

Client Sample ID: 8336-7-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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### Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 35225

Analyst: MM

Aliphatic Hydrocarbon (C8-C10)	ND	20.7		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C12-C16)	136	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C16-C21)	1,640	10.3		mg/Kg-dry	1	2/14/2022 4:29:58 PM
Aliphatic Hydrocarbon (C21-C34)	12,400	103	D	mg/Kg-dry	10	2/14/2022 3:35:54 PM
Aromatic Hydrocarbon (C8-C10)	ND	20.7		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C10-C12)	ND	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C12-C16)	16.2	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C16-C21)	717	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Aromatic Hydrocarbon (C21-C34)	1,540	10.3		mg/Kg-dry	1	2/14/2022 7:10:03 PM
Surr: 1-Chlorooctadecane	92.2	60 - 140		%Rec	1	2/14/2022 4:29:58 PM
Surr: o-Terphenyl	68.4	60 - 140		%Rec	1	2/14/2022 7:10:03 PM

### Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 35309

Analyst: SG

Aliphatic Hydrocarbon (C5-C6)	ND	2.58		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C6-C8)	ND	1.55		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C8-C10)	ND	2.58		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	3.10		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C10-C12)	3.30	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Aromatic Hydrocarbon (C12-C13)	15.3	0.516		mg/Kg-dry	1	2/9/2022 8:13:00 AM
Surr: 1,4-Difluorobenzene	74.9	65 - 140		%Rec	1	2/9/2022 8:13:00 AM
Surr: Bromofluorobenzene	93.2	65 - 140		%Rec	1	2/9/2022 8:13:00 AM



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-35225</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73251</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/14/2022</b>		SeqNo: <b>1497194</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aliphatic Hydrocarbon (C8-C10)	ND	20.0									
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	82.4		100.0		82.4	60	140				

Sample ID: <b>LCS-35225</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73251</b>
Client ID: <b>LCSS</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/14/2022</b>		SeqNo: <b>1497195</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aliphatic Hydrocarbon (C8-C10)	104	20.0	250.0	0	41.7	15.7	130				
Aliphatic Hydrocarbon (C10-C12)	88.3	10.0	125.0	0	70.7	70	130				
Aliphatic Hydrocarbon (C12-C16)	104	10.0	125.0	0	83.3	70	130				
Aliphatic Hydrocarbon (C16-C21)	106	10.0	125.0	0	85.2	70	130				
Aliphatic Hydrocarbon (C21-C34)	154	10.0	125.0	0	123	70	130				
Surr: 1-Chlorooctadecane	91.4		100.0		91.4	60	140				

Sample ID: <b>LCS-35225</b>	SampType: <b>LCS</b>	Units: <b>mg/Kg</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73302</b>
Client ID: <b>LCSS</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/14/2022</b>		SeqNo: <b>1497335</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aromatic Hydrocarbon (C8-C10)	171	20.0	250.0	0	68.3	16.9	130				
Aromatic Hydrocarbon (C10-C12)	87.6	10.0	125.0	0	70.1	70	130				
Aromatic Hydrocarbon (C12-C16)	91.0	10.0	125.0	0	72.8	70	130				
Aromatic Hydrocarbon (C16-C21)	96.2	10.0	125.0	0	76.9	70	130				
Aromatic Hydrocarbon (C21-C34)	137	10.0	125.0	0	109	70	130				
Surr: o-Terphenyl	84.1		100.0		84.1	60	140				



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: <b>MB-35225</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73302</b>
Client ID: <b>MBLKS</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/14/2022</b>		SeqNo: <b>1497398</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aromatic Hydrocarbon (C8-C10)	ND	20.0									
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	75.5		100.0		75.5	60	140				

Sample ID: <b>2201372-004AMS</b>	SampType: <b>MS</b>	Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73302</b>
Client ID: <b>BATCH</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/15/2022</b>		SeqNo: <b>1497313</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aromatic Hydrocarbon (C8-C10)	148	20.9	261.3	10.00	52.7	11.8	130				
Aromatic Hydrocarbon (C10-C12)	246	10.5	130.7	139.0	81.9	70	130				
Aromatic Hydrocarbon (C12-C16)	753	10.5	130.7	609.8	109	70	130				
Aromatic Hydrocarbon (C16-C21)	1,010	10.5	130.7	852.4	117	70	130				
Aromatic Hydrocarbon (C21-C34)	251	10.5	130.7	111.9	106	70	130				
Surr: o-Terphenyl	96.2		104.5		92.0	60	140				

Sample ID: <b>2201372-004AMSD</b>	SampType: <b>MSD</b>	Units: <b>mg/Kg-dry</b>		Prep Date: <b>2/2/2022</b>	RunNo: <b>73302</b>
Client ID: <b>BATCH</b>	Batch ID: <b>35225</b>	Analysis Date: <b>2/15/2022</b>		SeqNo: <b>1497336</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Aromatic Hydrocarbon (C8-C10)	208	21.3	265.8	10.00	74.6	11.8	130	147.7	34.0	30	R
Aromatic Hydrocarbon (C10-C12)	296	10.6	132.9	139.0	118	70	130	245.9	18.5	30	
Aromatic Hydrocarbon (C12-C16)	737	10.6	132.9	609.8	95.5	70	130	752.7	2.13	30	
Aromatic Hydrocarbon (C16-C21)	958	10.6	132.9	852.4	79.4	70	130	1,006	4.86	30	
Aromatic Hydrocarbon (C21-C34)	307	10.6	132.9	111.9	147	70	130	250.8	20.3	30	S
Surr: o-Terphenyl	96.8		106.3		91.1	60	140		0		



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Extractable Petroleum Hydrocarbons by NWEPH**

Sample ID: 2201372-004AMSD	SampType: MSD	Units: mg/Kg-dry	Prep Date: 2/2/2022	RunNo: 73302							
Client ID: BATCH	Batch ID: 35225		Analysis Date: 2/15/2022	SeqNo: 1497336							
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**NOTES:**

S - Analyte concentration was too high for accurate spike recovery(ies).  
R - High RPD observed, spike recovery is within range for Aromatic (C8-C10).

Sample ID: 2201372-004AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 2/2/2022		RunNo: 73251			
Client ID: BATCH		Batch ID: 35225		Analysis Date: 2/15/2022						SeqNo: 1497239	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	171	20.9	261.3	71.83	38.1	10.3	130				
Aliphatic Hydrocarbon (C10-C12)	571	10.5	130.7	408.5	124	70	130				
Aliphatic Hydrocarbon (C12-C16)	1,550	10.5	130.7	1,377	134	70	130				S
Aliphatic Hydrocarbon (C16-C21)	1,050	10.5	130.7	857.5	147	70	130				S
Aliphatic Hydrocarbon (C21-C34)	333	10.5	130.7	134.3	152	70	130				S
Surr: 1-Chlorooctadecane	100		104.5		95.8	60	140				

**NOTES:**

S - Analyte concentration was too high for accurate spike recovery(ies).

Sample ID: 2201372-004AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 2/2/2022		RunNo: 73251			
Client ID: BATCH		Batch ID: 35225				Analysis Date: 2/15/2022		SeqNo: 1497241			
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	130	21.3	265.8	71.83	22.0	10.3	130	171.4	27.2	30	
Aliphatic Hydrocarbon (C10-C12)	509	10.6	132.9	408.5	75.9	70	130	571.2	11.4	30	
Aliphatic Hydrocarbon (C12-C16)	1,490	10.6	132.9	1,377	87.4	70	130	1,551	3.84	30	
Aliphatic Hydrocarbon (C16-C21)	966	10.6	132.9	857.5	82.0	70	130	1,049	8.22	30	
Aliphatic Hydrocarbon (C21-C34)	251	10.6	132.9	134.3	87.5	70	130	332.5	28.1	30	
Surr: 1-Chlorooctadecane	100		106.3		94.3	60	140		0		



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>MB-35309</b>	SampType: <b>MBLK</b>	Units: <b>mg/Kg</b>				Prep Date: <b>2/8/2022</b>			RunNo: <b>73228</b>		
Client ID: <b>MBLKS</b>	Batch ID: <b>35309</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1495995</b>		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	1.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.500		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	0.500		0	0						
Surr: 1,4-Difluorobenzene	1.94		2.500		77.8	65	140				
Surr: Bromofluorobenzene	2.39		2.500		95.4	65	140				

Sample ID: LCS-35309		SampType: LCS		Units: mg/Kg		Prep Date: 2/8/2022			RunNo: 73228		
Client ID: LCSS		Batch ID: 35309					Analysis Date: 2/9/2022			SeqNo: 1495937	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	33.4	2.50	30.00	0	111	70	130				
Aliphatic Hydrocarbon (C6-C8)	9.77	1.50	10.00	0	97.7	70	130				
Aliphatic Hydrocarbon (C8-C10)	24.6	2.50	10.00	0	246	70	130				S
Aliphatic Hydrocarbon (C10-C12)	8.95	0.500	10.00	0	89.5	70	130				
Aromatic Hydrocarbon (C8-C10)	43.4	3.00	40.00	0	108	70	130				
Aromatic Hydrocarbon (C10-C12)	10.3	0.500	10.00	0	103	70	130				
Aromatic Hydrocarbon (C12-C13)	9.17	0.500	10.00	0	91.7	70	130				
Surr: 1,4-Difluorobenzene	2.30		2.500		91.9	65	140				
Surr: Bromofluorobenzene	2.45		2.500		97.9	65	140				

**NOTES:**  
S - Outlying spike recovery observed (high bias). Samples are non-detect; result meets QC requirements.



Date: 2/15/2022

Work Order: 2202182  
CLIENT: Friedman & Bruya  
Project: 202101

**QC SUMMARY REPORT**  
**Volatile Petroleum Hydrocarbons by NWVPH**

Sample ID: <b>LCSD-35309</b>		SampType: <b>LCSD</b>		Units: <b>mg/Kg</b>		Prep Date: <b>2/8/2022</b>			RunNo: <b>73228</b>		
Client ID: <b>LCSS02</b>		Batch ID: <b>35309</b>					Analysis Date: <b>2/9/2022</b>			SeqNo: <b>1495938</b>	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	31.3	2.50	30.00	0	104	70	130	33.35	6.37	20	
Aliphatic Hydrocarbon (C6-C8)	9.70	1.50	10.00	0	97.0	70	130	9.774	0.744	20	
Aliphatic Hydrocarbon (C8-C10)	24.3	2.50	10.00	0	243	70	130	24.63	1.34	20	S
Aliphatic Hydrocarbon (C10-C12)	7.12	0.500	10.00	0	71.2	70	130	8.954	22.9	20	R
Aromatic Hydrocarbon (C8-C10)	42.0	3.00	40.00	0	105	70	130	43.39	3.35	20	
Aromatic Hydrocarbon (C10-C12)	10.7	0.500	10.00	0	107	70	130	10.30	3.68	20	
Aromatic Hydrocarbon (C12-C13)	11.1	0.500	10.00	0	111	70	130	9.172	19.0	20	
Surr: 1,4-Difluorobenzene	2.23		2.500		89.1	65	140		0		
Surr: Bromofluorobenzene	2.39		2.500		95.8	65	140		0		

**NOTES:**

S - Outlying spike recovery observed (high bias). Samples are non-detect; result meets QC requirements.

R - High RPD observed, spike recovery is within range.



Client Name: **FB**  
 Logged by: **Gabrielle Coeuille**

Work Order Number: **2202182**  
 Date Received: **2/8/2022 10:37:00 AM**

## Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
 2. How was the sample delivered? Client

## Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐  
 4. Shipping container/cooler in good condition? Yes ☒ No ☐  
 5. Custody Seals present on shipping container/cooler?  
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒  
 6. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
 7. Were all items received at a temperature of >2°C to 6°C \* Yes ☒ No ☐ NA ☐  
 8. Sample(s) in proper container(s)? Yes ☐ No ☒  
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
 10. Are samples properly preserved? Yes ☒ No ☐  
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒  
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐  
 14. Does paperwork match bottle labels? Yes ☒ No ☐  
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
 16. Is it clear what analyses were requested? Yes ☒ No ☐  
 17. Were all holding times able to be met? Yes ☒ No ☐

## Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:  Date:   
 By Whom:  Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person  
 Regarding:   
 Client Instructions:

19. Additional remarks:

MeOH VOA extracted in house- gac

## Item Information

Item #	Temp °C
Sample 1	3.1

\* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

2202182  
Page # 1 of 1

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTOR Fremont	
PROJECT NAME/NO. 202101	PO # C-51
REMARKS	

TURNAROUND TIME

☐ Standard TAT

☒ RUSH 3-Day TAT

Rush charges authorized by: ME

SAMPLE DISPOSAL



☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

[illegible]

*Friedman & Bruya, Inc.*  
3012 16th Avenue West  
Seattle, WA 98119-2029  
Ph. (206) 285-8282  
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Michael Erdahl	Friedman & Bruya	2/8/22	0954
Received by: 	Oliver Kne	PAF	2/10/22	0627
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

---

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Vineta Mills, M.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

April 25, 2022

Nicolas Hoffman,  
Terra Associates  
12220 113<sup>th</sup> Ave NE Suite 130  
Kirkland, WA 98034

Dear Mr Hoffman:

Included are the results from the testing of material submitted on April 11, 2022 from the 8336-5, F&BI 204155 project. There are 11 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
c: Terra Assoc A/P  
NAA0425R.DOC

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on April 11, 2022 by Friedman & Bruya, Inc. from the Terra Associates 8336-5, F&BI 204155 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Terra Associates</u>
204155 -01	SVP-1
204155 -02	SVP-2

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

All quality control requirements were acceptable.

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-1	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-01 1/6.1
Date Analyzed:	04/20/22	Data File:	041930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	93	70	130

	Concentration
Compounds:	ug/m3
APH EC5-8 aliphatics	1,200
APH EC9-12 aliphatics	300
APH EC9-10 aromatics	<150

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-2	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-02 1/9.9
Date Analyzed:	04/20/22	Data File:	041931.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	95	70	130

	Concentration
Compounds:	ug/m3
APH EC5-8 aliphatics	3,800
APH EC9-12 aliphatics	470
APH EC9-10 aromatics	<250

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Terra Associates
Date Received:	Not Applicable	Project:	8336-5, F&BI 204155
Date Collected:	04/19/22	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-1	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-01 1/6.1
Date Analyzed:	04/20/22	Data File:	041930.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	93	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<1.6	<0.3

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-2	Client:	Terra Associates
Date Received:	04/11/22	Project:	8336-5, F&BI 204155
Date Collected:	04/11/22	Lab ID:	204155-02 1/9.9
Date Analyzed:	04/20/22	Data File:	041931.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	95	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<2.1	<0.4

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Terra Associates
Date Received:	Not Applicable	Project:	8336-5, F&BI 204155
Date Collected:	04/19/22	Lab ID:	02-0936 MB
Date Analyzed:	04/19/22	Data File:	041913.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	92	70	130

	Concentration	
Compounds:	ug/m3	ppbv
Naphthalene	<0.21	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD MA-APH**

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	<430	<430	nm
APH EC9-12 aliphatics	ug/m3	190	200	5
APH EC9-10 aromatics	ug/m3	<140	<140	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	87	70-130
APH EC9-12 aliphatics	ug/m3	67	121	70-130
APH EC9-10 aromatics	ug/m3	67	95	70-130

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: 204096-01 1/5.7 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Naphthalene	ug/m3	<1.5	<1.5	nm

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/25/22

Date Received: 04/11/22

Project: 8336-5, F&BI 204155

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD TO-15**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Naphthalene	ug/m3	71	95	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



# SAMPLE CHAIN OF CUSTODY

Report To Nicolas Hoffman  
 Company Terra Associates Inc.  
 Address 12220 113<sup>th</sup> Avenue SW 130  
 City, State, ZIP Kirkland, WA 98034  
 Phone 425 821-7777 Email NHoffman@terra-associates.com

04.11.22

SAMPLERS (signature) <u>NH</u>	
PROJECT NAME & ADDRESS	PO # <u>8336-5</u>
NOTES:	INVOICE TO

Page # 1 of 1

TURNAROUND TIME  
☒ Standard  
☐ RUSH  
 Rush charges authorized by: \_\_\_\_\_

SAMPLE DISPOSAL  
☐ Default: Clean after 3 days  
☐ Archive (Fee may apply)

## SAMPLE INFORMATION

SAMPLE INFORMATION										ANALYSIS REQUESTED						Notes
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	Na Phthalates	
SVP-1	01	224		IA / (SG)	4/11/22	30	9:53	5	9:58				X	X	SN: 2301	
SVP-2	02	299		IA / (SG)	4/11/22	28.5	10:12	5	10:18				X	X	SN: 3257	
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE		PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	<u>NH</u>	<u>Nicolas R. Hoffman</u>	<u>TAI</u>	<u>4/11/22</u>	<u>15:50</u>
Received by:	<u>Tokuh</u>	<u>Tokuh</u>	<u>F+B</u>	<u>4/11/22</u>	<u>15:50</u>
Relinquished by:					
Received by:					

Samples received at 16:00

## **APPENDIX D**

### **TEE FORM**



# Voluntary Cleanup Program

## Washington State Department of Ecology Toxics Cleanup Program

### TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

***Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.***

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation>.

#### Step 1: IDENTIFY HAZARDOUS WASTE SITE

Please identify below the hazardous waste site for which you are documenting an evaluation.

Facility/Site Name: Midas Muffler

Facility/Site Address: 7055 15<sup>th</sup> Avenue Northwest

Facility/Site No:

VCP Project No.:

#### Step 2: IDENTIFY EVALUATOR

Please identify below the person who conducted the evaluation and their contact information.

Name: Nicolas R. Hoffman

Title: Senior Project Geologist

Organization: Terra Associates, Inc.

Mailing address: 12220 113<sup>th</sup> Avenue Northeast, Suite 130

City: Kirkland

State: WA

Zip code: 98034

Phone: 425 821-7777

Fax:

E-mail: NHoffman@terra-associates.com

### Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

#### A. Exclusion from further evaluation.

##### 1. Does the Site qualify for an exclusion from further evaluation?

- ☒ Yes    *If you answered "YES," then answer **Question 2**.*
- ☐ No or Unknown    *If you answered "NO" or "UNKNOWN," then skip to **Step 3B** of this form.*

##### 2. What is the basis for the exclusion? Check all that apply. Then skip to **Step 4** of this form.

Point of Compliance: WAC 173-340-7491(1)(a)

- ☐ All soil contamination is, or will be,\* at least 15 feet below the surface.
- ☐ All soil contamination is, or will be,\* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

- ☒ All contaminated soil, is or will be,\* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

- ☐ There is less than 0.25 acres of contiguous<sup>#</sup> undeveloped<sup>±</sup> land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.
- ☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous<sup>#</sup> undeveloped<sup>±</sup> land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

- ☐ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

\* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

± "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

# "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

## B. Simplified evaluation.

### 1. Does the Site qualify for a simplified evaluation?

- ☐ Yes    *If you answered "YES," then answer **Question 2** below.*
- ☐ No or Unknown    *If you answered "NO" or "UNKNOWN," then skip to **Step 3C** of this form.*

### 2. Did you conduct a simplified evaluation?

- ☐ Yes    *If you answered "YES," then answer **Question 3** below.*
- ☐ No    *If you answered "NO," then skip to **Step 3C** of this form.*

### 3. Was further evaluation necessary?

- ☐ Yes    *If you answered "YES," then answer **Question 4** below.*
- ☐ No    *If you answered "NO," then answer **Question 5** below.*

### 4. If further evaluation was necessary, what did you do?

- ☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*
- ☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

### 5. If no further evaluation was necessary, what was the reason? Check all that apply. Then skip to **Step 4** of this form.

Exposure Analysis: WAC 173-340-7492(2)(a)

- ☐ Area of soil contamination at the Site is not more than 350 square feet.
- ☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

- ☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.
- ☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

**C. Site-specific evaluation.** A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. See WAC 173-340-7493(1)(c).

**1. Was there a problem?** See WAC 173-340-7493(2).

- ☐ Yes    *If you answered “YES,” then answer **Question 2** below.*
- ☐ No    *If you answered “NO,” then identify the reason here and then skip to **Question 5** below:*
- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

**2. What did you do to resolve the problem?** See WAC 173-340-7493(3).

- ☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*
- ☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

**3. If you conducted further site-specific evaluations, what methods did you use?**  
*Check all that apply. See WAC 173-340-7493(3).*

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

**4. What was the result of those evaluations?**

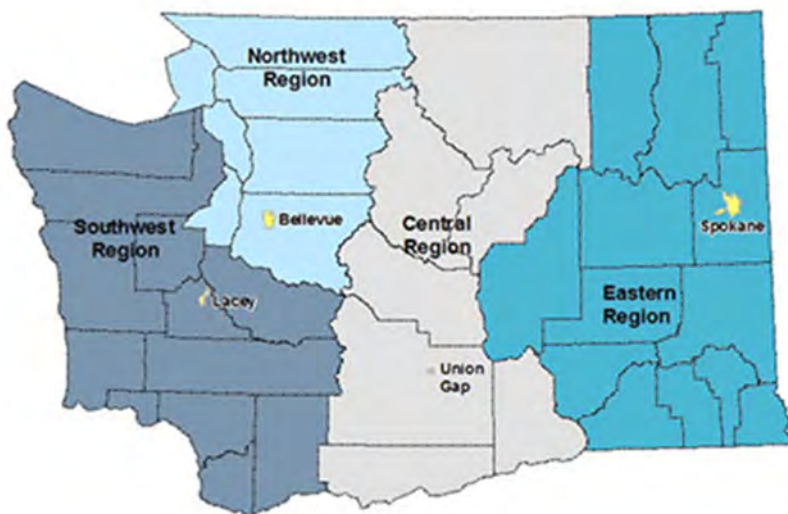
- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

**5. Have you already obtained Ecology’s approval of both your problem formulation and problem resolution steps?**

- ☐ Yes    If so, please identify the Ecology staff who approved those steps:
- ☐ No

## Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.



<b>Northwest Region:</b> Attn: VCP Coordinator 3190 160 <sup>th</sup> Ave. SE Bellevue, WA 98008-5452	<b>Central Region:</b> Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
<b>Southwest Region:</b> Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	<b>Eastern Region:</b> Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295

If you need this publication in an alternate format, please call the Toxics Cleanup Program at 360-407-7170. People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call 877-833-6341.



**APPENDIX E**  
**DISPROPORTIONATE COST ANALYSIS (DCA)**

Disproportionate Cost Analysis

Prepared for:

Anderson & Associates  
7420 Southeast 24th Street, Suite 4  
Mercer Island, WA 98040

Midas Muffler Building  
7055 15th Avenue Northwest  
Seattle, Washington 98117

Project No. T-8336-5

Prepared by:

A handwritten signature in blue ink, appearing to read "N. Hoffman", with a long horizontal flourish extending to the right.

Nicolas R. Hoffman, L.G.  
Senior Project Geologist

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## ACRONYMS

bgs	below ground surface
CAO	Cleanup Action Objective
CAP	Cleanup Action Plan
COCs	Chemicals of Concern
cPAHs	carcinogenic Polycyclic Aromatic Hydrocarbons
DCA	Disproportionate Cost Analysis
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbon
MTCA	Model Toxics Control Act
NFA	No Further Action
O & M	Operations and Maintenance
ORH	Oil Range Hydrocarbons
PAHs	Polycyclic Aromatic Hydrocarbons
PCB's	Polychlorinated Biphenyls
Site	Midas Muffler Property
TAI	Terra Associates, Inc.
TPH-Dx	Total Petroleum Hydrocarbons in the Diesel range
VCP	Voluntary Cleanup Program
VPH	Volatile Petroleum Hydrocarbon
WAC	Washington Administrative Code

## 1.0 INTRODUCTION

Terra Associates, Inc., has prepared this Disproportionate Cost Analysis (DCA) on behalf of MBA NW 73rd, LLC, for the Midas Muffler property (Site), located at 7055 15th Avenue Northwest in Seattle, Washington. The Site and vicinity are shown on Figure 1. This DCA was prepared for submittal to the Washington State Department of Ecology (Ecology), and developed to select a cleanup action based on the remedy selection criteria and requirements as defined by the Washington State Model Toxics Control Act (MTCA) Regulation in Chapters 173-340-350 through 173-340-390 of the Washington Administrative Code (WAC).

Per WAC 173-340-200, the Site is defined by the full lateral and vertical extent of contamination in soil that has resulted from the historic operation of an auto repair shop on the property. Based on the information gathered to date, the Site contains oil-range hydrocarbon-contaminated soil within and immediately adjacent to the eastern margin of the existing building footprint on the property.

The purpose of this DCA is to address the soil contamination underlying the property.

## 2.0 SELECTION AND DESCRIPTION OF CLEANUP ALTERNATIVES

The purpose of this DCA is to recommend a cleanup action that meets the requirements of MTCA, specifically WAC 173-340-350(8). Typical DCAs include extensive development, screening, and evaluation for several remedial alternatives. Due to the relatively simple site-specific conditions, this evaluation focused on a limited number of feasible remedial options and alternatives, capable of meeting the remedial objectives.

Remedial components were evaluated with respect to the degree which they comply with MTCA. Components were evaluated with respect to the following criteria:

- Evaluation of alternatives that protect human health and the environment by eliminating, reducing, or controlling risks.
- Evaluation of a reasonable number of alternatives, taking into account the current site conditions, characteristics, and physical properties.
- Evaluation of alternatives that have the standard point of compliance for all affected media, unless the alternatives are not technically possible or are disproportionately costly for the benefit obtained.
- Evaluation of at least one permanent cleanup alternative, unless it is not technically possible or is disproportionately costly for the benefit obtained.

Using these criteria, we identified the following three options:

- Excavation and land disposal of accessible soil with Oil Range Hydrocarbons (ORH), leaving in place a small wedge of ORH impacted soil beneath the southeast footings of the existing building on the Site.
- Excavation and land disposal of all soil impacted with ORH with foundation underpinning.
- Leave all contaminated soil in place and remodel the existing building for a new tenant.

## **2.1 Cleanup Action Objectives**

WAC (173-340) identifies several Cleanup Action Objectives (CAOs) to consider when preparing a DCA. The purpose of the CAOs is to provide remedial alternatives for the site that protect human health and environment. A list of applicable CAOs for the site is provided below:

- Protect human health and environment.
- Comply with cleanup levels.
- Provide for compliance monitoring.
- Provide a reasonable restoration time frame.
- Comply with applicable state and federal laws.
- Consideration of public concerns.
- Use permanent solutions to the extent practical.

The objectives are to mitigate the risk to human health and environment and obtain a No Further Action (NFA) determination with environmental covenant from Ecology. The NFA will facilitate the remodeling of the existing building onsite.

The cleanup standards for the site are defined in the RI/FS study prepared for the site.

## **2.2 Cleanup Action Alternatives**

This evaluation of technically feasible alternatives considered the practical remediation components confirmed to be effective at treating the Chemicals of Concern (COC's) in the affected media of concern (soil). We also considered whether site constraints would result in substantial costs without proportional benefits for both alternatives.

***2.2.1 Cleanup Action Alternative #1, Excavation and Land Disposal of Accessible Soil with ORH, Leaving in Place a Small Wedge of ORH Impacted Soil beneath the Southeast Footings of the Existing Building on the Site. (This alternative was completed in the winter and spring of 2022)***

Excavation and removal of the contaminated soils located beneath the building is the most definitive way to ensure all contaminated soil exceeding applicable MTCA concentrations is adequately removed from the site. Approximately 425 cubic yards of contaminated soil was removed and hauled offsite for disposal. The eastern margin of contaminated soil extends beneath two column footings providing foundation support for the existing building. We have estimated roughly 100 yards of ORH contaminated soil is present beneath and adjacent to the column footings. All soil that could safely be removed from beneath the building without jeopardizing the structural integrity of the eastern column footings was removed and hauled offsite to an appropriate waste facility. Confirmation sidewall samples were collected approximately every 20 linear feet and confirmation base samples were collected approximately every 400 square feet per Ecology Publication No. 10-09-057 *Guidance for Remediation of Petroleum Contaminated Sites (2016)*. Shallow soil gas samples were collected above to the wedge of ORH contaminated soil to assess the vapor migration pathway. The vapor samples were collected to assess whether vapor concentrations in the remaining ORH contaminated soil exceed generic Method B cleanup values for shallow soil vapor screening.

This alternative will likely result in an NFA from Ecology. A restrictive environmental covenant will likely need to be created to address the small wedge of contaminated soil left in place. The costs to complete Alternative #1 are presented in Attachment A. This alternative was completed in the winter and spring of 2022.

### ***2.2.2 Cleanup Action Alternative #2, Excavation and Land Disposal of all ORH Contaminated Soil Onsite with Foundation Underpinning.***

To access all the ORH contaminated soil on site, the southeastern portion of the existing building would need to be partially demolished or temporarily underpinned. Approximately 100 additional cubic yards of contaminated soil would be hauled offsite for disposal. This alternative is similar to Alternative #1 but would remove all ORH from the site. The current plan for future site use is to remodel the existing building for a new tenant. Although this alternative is the most protective of human health and environment, the cost is roughly twice that of Alternative #1. This alternative would also likely result in an NFA from Ecology with no need for a restrictive covenant. The additional costs consist of permits, installing pin piles to support the existing building foundations, and additional consultant costs for soil sampling and report preparation. The City of Seattle DCI is currently backlogged on permit applications. This would lead to additional down time before the remodel for a new tenant could occur. The costs to complete Alternative #2 are presented in Attachment A.

### ***2.2.3 Cleanup Action Alternative #3, Remodel the Existing Building with No Cleanup Action to Address the ORH Contaminated Soil.***

For this option, the building would be remodeled and occupied by a new tenant without addressing the contaminated soil beneath the building. This option would be out of compliance with MTCA regulations and likely not protective of human health and environment. The property would be available to lease and generate revenue in the short term. This alternative was not feasible for the property owner and was not pursued further.

## **3.0 DETAILED ALTERNATIVE EVALUATIONS**

The following section provides a detailed evaluation of the 3 alternatives presented for this analysis using the following criteria established in MTCA:

- Protect human health and environment.
- Comply with MTCA cleanup standards.
- Comply with state and federal laws.
- Provide for compliance monitoring.
- The use of permanent solutions to the maximum possible extent.
- Provide a reasonable restoration time frame.

### **3.1 Alternative Comparison with Threshold Criteria**

**Protection:** Alternative #2 provides complete protection of human health and environment. Alternative #1 provides a high degree of protection of human health and environment. Alternative #3 does not provide any protection regarding human health and environment. Alternative #2 scores higher than Alternative #1 because it completely removes all ORH contaminated soil from the Site. Alternative #3 provides no protection, is screened out as a viable alternative, and is not discussed further in this analysis.



**Permanence:** Both alternatives #1 and #2 provide a great deal of permanence for the Site. Alternative #2 provides slightly greater permanence by removing all soil contaminated with ORH. Alternative # 1 also provided permanence by closing out both soil and vapor exposure pathways. Roughly 30 vertical feet of clean till soil separates the ORH contaminated soil from the groundwater table making recontamination from the small wedge of soil left in place unlikely. Alternative #2 ranks slightly higher than Alternative #1.

**Cost:** We estimate the approximate cost of Cleanup Action Alternative #1 was about \$213,000 and the cost of Cleanup Alternative #2 to be about \$430,000. Alternative #1 cost about one half as much as alternative #2 and because of this, ranks significantly higher.

**Long Term Effectiveness:** Both options #1 and # 2 rank high for long-term effectiveness for the site. Alternative # 1 was slightly less effective by leaving a small amount of ORH contaminated soil in place. Alternative # 2 would require building permits and take longer to complete remediation. The two options score the same for long term effectiveness. Both alternatives are protective of human health and environment.

**Short-term risk management:** The short-term risks for alternative #2 are much higher than alternative #1 because it involves underpinning and shoring beneath the foundation of the existing building.

**Administrative implementation:** The administrative obstacles to Alternative # 1 are low. A restrictive covenant on the ORH contaminated soil will likely be necessary, but can be achieved with relative ease.

**Public Concern:** Both options rank relatively high with respect to public concern. Alternative #2 ranks slightly lower due to an increase in truck traffic and emissions related to the additional export necessary to remove all the ORH contaminated soil.

### **3.2 Disproportionate Cost Analysis**

Our analysis indicated Alternative #1 costs significantly less to complete than Alternative #2. Approximate cost breakdowns for each alternative are provided in Attachment A. The degree of incremental benefit provided by alternative #2 is minimal compared to Alternative #1. A chart showing both the cost and MTCA benefit ranking is attached as Attachment B. Both alternatives are protective to human health and environment. There is no current plan to redevelop the site in the near future. If the current plan changes, the remaining small wedge of ORH contaminated soil could be addressed concurrently with site redevelopment. Alternative #1 was completed in the winter and spring of 2022. The soil pathway is broken with a permanent asphalt and concrete cap. A restrictive covenant will be drafted to address the small remaining pocket of ORH contaminated soil. The groundwater pathway is broken by a relatively impermeable 30-foot- thick layer of till soils separating the remaining ORH contaminated soil from the groundwater table. To date, no MTCA exceedances have been identified in site groundwater. The vapor pathway was demonstrated to be broken by results of shallow soil vapor samples collected above the remaining pocket of ORH contaminated soil.

### **3.3 Recommended Cleanup Action Alternative**

Cleanup Alternative #1 ranks highest using MTCA evaluation criteria. The cost of alternative is roughly one-half the cost of Alternative #2. Alternative #1 was selected as the cleanup alternative based on the combination of the ranking and disproportionate cost.

**ATTACHMENT A**  
**Disproportionate Cost Analysis Data**

**Cleanup Action Alternative #1:****Excavation and Land Disposal with Contaminated Wedge Left in Place**

<b><u>Capital Costs</u></b>	<b>Cost</b>
Well Decommissioning	\$2,400.00
Slab Demo and Concrete Export	\$21,900.00
Observation/Sampling/Lab Fees	\$42,200.00
Soil Disposal and Import Fill	\$139,182.36
<u>Agency Review</u>	<u>\$7,000.00</u>
<b>Total</b>	<b>\$ 212,682.36</b>

**Cleanup Action Alternative #2:****Excavation and Removal of All ORH Contaminated Soil  
With Underpinning of Building Foundation**

<b><u>Capital Costs</u></b>	<b>Cost</b>
Well Decommissioning	\$2,400.00
Slab Demo and Concrete Export	\$29,200.00
Observation/Sampling/Lab Fees	\$57,200.00
Soil Disposal, Import Fill, Foundation Underpinning	\$294,456.36
<u>Agency Review</u>	<u>\$7,000.00</u>
10% Contingency	\$39,025.64
<b>Total</b>	<b>\$429,282.00</b>

## **APPENDIX F**

### **LIMITATIONS**

We conducted limited testing for this report. Testing was based on documented environmental information for the site. The findings, conclusions, and recommendations presented in this report are our professional opinions based on our documented site observations, review of historical and regulatory information, interviews, and review of the referenced historical resources. Other information related to past site uses or current site conditions may exist. Our conclusions in part are based on information provided or prepared by others.

If further information on the site becomes available, Terra Associates, Inc. should review the information, as it may affect our conclusions.

We prepared our conclusions and recommendations in accordance with generally accepted professional engineering practices. We make no other warranty, either expressed, or implied. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the Midas Muffler project in Seattle, Washington. This report is for the exclusive use of MBA NW 73<sup>rd</sup>, LLC, and their authorized representatives.