

2101 4<sup>th</sup> Avenue, Suite 950 Seattle, Washington 98121 206.728.2674

April 1, 2025

Washington State Department of Ecology PO Box 47600 Olympia, Washington 98503

Attention: Josh Morman

Subject: Riparian Area Soil Sampling and Analysis Progress Report Quiet Cove Site Anacortes, Washington Agreed Order No. DE 11346 GeoEngineers File No. 5147-024-14

# Introduction

This progress report describes the results of investigation activities completed at the Quiet Cove Site (Site) situated along the shoreline of Guemes Channel at 202 O Avenue (the intersection of 2<sup>nd</sup> Street and O Avenue) in Anacortes, Washington (Figure 1). Pursuant to Agreed Order No. DE11346 (Agreed Order) and the Washington Department of Ecology (Ecology) approved Remedial Investigation/Feasibility Study (RI/FS) Work Plan Addendum No. 2 (Work Plan Addendum No. 2; GeoEngineers 2024), the Port of Anacortes (Port) completed investigation activities in the Riparian Area of the site to achieve the following objectives:

- Locate and map the extent of the remaining portion of the product pipe extending to the west of the 2020 Interim Action<sup>1</sup> excavation limit: and
- Complete soil sampling and analysis to fill data gaps in the existing soil data to refine the delineation of contamination at the Site.

Additional investigation work is required by RI/FS Work Plan Addendum No. 2, including soil sampling and analysis in the Southern Boundary Area of the Site. Completion of the Southern Boundary Area investigation is pending completion of an access agreement with the property owner. After completion of the Southern Boundary Area investigation, a technical memorandum data report describing the investigation activities completed for both the Riparian and South Boundary Areas will be prepared and submitted to Ecology for

<sup>&</sup>lt;sup>1</sup> Pursuant to the Washington Administrative Code (WAC) 173-340-430 and in coordination with Ecology, the Port completed an Interim Action between August and November 2020 (2020 Interim Action) to remediate a portion of the Site to facilitate redevelopment of the property for commercial purposes. Specific details regarding the 2020 Interim Action are presented in the Interim Action Completion Report (GeoEngineers 2021).

review to ensure that the remaining data gaps have been addressed and that there is sufficient information to prepare the RI/FS.

# **Summary of Riparian Area Field Investigation Activities**

## ABANDONED PIPE LOCATE

During the 2020 Interim Action, multiple abandoned product pipes were encountered at depths of approximately 2.5 feet below ground surface (bgs) within the remedial excavation area (Figure 2). At the northwest limit of the remedial excavation, an approximate 4-inch diameter product pipe extending to the west was identified. Subsequently, a trench excavation was completed to expose and remove the observed product pipe. However, at the western edge of the trench excavation, the product pipe was observed to change direction with a new orientation extending to the northeast and could not be extracted at the time of construction.

In accordance with Work Plan Addendum No. 2, an underground utility locate was completed on November 11, 2024 to identify and map the extent of the previously identified product pipe remaining inplace. Using electromagnetic methods, APS Locates (APS) successfully located the remaining length and alignment of the buried product pipe. The position of the located pipe was surveyed referencing existing physical features at the Site and surrounding area (i.e., chain-link fence and building corners) to ensure accuracy of the pipe alignment and facilitate ease in future relocation. The location of the product pipe is shown in Figure 2.

### SOIL INVESTIGATION

Soil sampling and analysis was completed on November 13, 2024, to further characterize contaminated soil in the Riparian Area using direct-push drilling methods. Within the Riparian Area, a total of seven (7) soil borings (GEI-54 through GEI-60; Figure 3) were completed to depths ranging from 14 to 20 feet bgs. During drilling activities, representatives from GeoEngineers' staff were present to examine, field screen and classify the soils encountered. Field screening results and a description of the material encountered in each exploration are presented in the attached exploration logs. Sampling activities and a summary of chemical analytical results are presented below.

### **Utility Locate**

Prior to drilling, a public one-call utility locate was completed. Additionally, a private utility locate was completed to clear potential utilities and/or underground physical hazards within an approximate 15-foot radius of each exploration location. The results of the public and private utility locate did not identify potential utilities and/or underground physical hazards in the vicinity of the planned explorations requiring their relocation.

## Soil Sample Collection and Processing

Soil samples from each exploration were collected continuously on 2-foot intervals for chemical analysis of different material types, including:

Non-saturated fill material.



- Saturated fill material at the water table level observed at the time of drilling.
- Native material without evidence of petroleum contamination and at least 1-foot below the fill/native soil interface.

Collected sample intervals were individually homogenized and placed into the appropriate laboratorysupplied sample containers. Samples for volatile chemical analysis (i.e., gasoline and/or volatile organic compounds [VOCs]) were collected from the approximate center of the sampling interval from undisturbed soil sample prior to homogenization using United States Environmental Protection Agency (EPA) Method 5035A sampling procedures and consistent with Ecology guidance to reduce volatilization and biodegradation of the sample constituents. Upon collection, the samples were placed into a cooler with ice for transport to the testing laboratory.

### **Chemical Analysis**

The collected soil samples were submitted to OnSite Environmental, Inc. (OnSite) located in Redmond, Washington for analysis of the following chemical parameters:

- Metals (arsenic, cadmium, chromium, lead and mercury) by EPA 6000/7000 Method Series.
- Gasoline-range petroleum hydrocarbons by NWTPH-Gx.
- Heavy oil- and diesel-range petroleum hydrocarbons by NWTPH-Dx.
- Volatile Organic Compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX), ethylene dibromide (EDB), ethylene dichloride (EDC), methyl tert-butyl ether (MTBE) and n-hexane by EPA Method 8260.
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270-SIM.

In accordance with RI/FS Work Plan Addendum No. 2, a minimum of three soil samples were submitted from each completed boring. Samples collected from the borings that were not submitted for initial chemical analysis were archived for potential follow-up testing based on a review of the initial sample data results. Initial samples were analyzed on an expedited turnaround time to ensure that samples for potential follow up analysis could be completed within the method hold times.

A total of twenty-three (23) soil samples from borings GEI-54 through GEI-60 (including duplicate samples) were initially submitted for chemical analysis. Nine (9) soil samples from borings GEI-56, GEI-57, GEI-58, GEI-59 and GEI-60 were submitted for follow up chemical analysis based on review of initial analytical results.

### **Analytical Results**

Analytical results for the Riparian Zone soil investigation are summarized in Table 1 and shown in Figures 4 through 7. Based on a review of the chemical analytical data, the following exceedances of the preliminary screening levels (PSLs) were identified:

Metals including chromium, lead and mercury exceeded the PSL in soil samples collected at depths ranging from approximately 2 and 8 feet bgs in borings GEI-56 through GEI-59.



- Gasoline-range petroleum hydrocarbons exceeded the PSL in soil samples collected at depths ranging from approximately 6 to 8 feet bgs in boring GEI-56 and at depths ranging from approximately 4 to 6 feet bgs in boring GEI-59.
- PAHs including acenaphthylene, fluoranthene, naphthalene and phenanthrene exceeded the PSL in soil samples collected at depths ranging from approximately 2 and 8 feet bgs in borings GEI-56, GEI-58 and GEI-59. Additionally, total carcinogenic PAHs (cPAHs) calculated using the toxicity equivalency quotient (TEQ) methodology exceeded the PSL in soil samples collected at depths ranging from approximately 2 and 8 feet bgs in borings GEI-56, PSL exceedances of total cPAH in soil extend to a depth of approximately 14 feet bgs. At boring GEI-57, PSL exceedances of total cPAH in soil extend to a depth of approximately 12 feet bgs.

Analytical results for previous soil investigation results are presented in the 2nd Street Right-of-Way Soil Investigation Data Report (GeoEngineers 2022) and Interim Action Construction Completion Report. Analytical results for previous groundwater monitoring events are presented in Quiet Cove Data Report (GeoEngineers 2019) and October 2024 Groundwater Monitoring Progress Report (GeoEngineers 2025). A copy of the chemical analytical data report for the Riparian Area soil samples is attached.

## **DEVIATIONS FROM THE WORK PLAN**

No deviations from Work Plan Addendum No. 2 were made in completing the Riparian Zone investigation.

# Limitations

This progress report has been prepared for the exclusive use of the Port of Anacortes and the Washington State Department of Ecology. No other party may rely on the product of our services unless we agree in advance and in writing to such reliance. Any use of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and written authorization by GeoEngineers, Inc., shall be at the user's sole risk. Any unauthorized use of (or reliance on) this report shall release GeoEngineers from any liability resulting from such use (or reliance). Within the limitations of scope, schedule, and budget, GeoEngineers, Inc.'s respective services have been provided in a manner consistent with that level of care and skill exercised by members of the profession currently practicing in the same locality under similar conditions as this project. No warranty or other conditions, expressed or implied, should be understood. GeoEngineers, Inc. assumes no responsibility for any consequence arising from any information or condition that was concealed, withheld, misrepresented, or otherwise not fully disclosed or available.

Any electronic form, facsimile, or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

# References

GeoEngineers Inc. (GeoEngineers) 2020. Interim Action Work Plan; Quiet Cove Site; Anacortes, Washington; Ecology Agreed Order No. DE 11346, GeoEngineers File No. 5147-024-07, dated January 9, 2020.



- GeoEngineers, Inc. (GeoEngineers) 2021. Interim Action Construction Completion Report; Quiet Cove Interim Action; Anacortes, Washington; Ecology Agreed Order No. DE 11346. GeoEngineers File No. 5147-024-10. June 22, 2021.
- GeoEngineers, Inc. (GeoEngineers) 2022. Supplemental 2nd Street Right-of-Way Soil Investigation Data Report for the Quiet Cove Site, Anacortes, Washington Ecology Agreed Order No. 11346. GeoEngineers File No. 5147-024-13. October 3, 2022.
- GeoEngineers, Inc. (GeoEngineers) 2024. Remedial Investigation/Feasibility Study Work Plan Addendum No. 2 for Supplemental Soil and Groundwater Characterization in the Riparian and Southern Boundary Areas of the Quiet Cove Site, Anacortes, Washington; Ecology Agreed Order No. DE 11346. GeoEngineers File No. 5147-024-12. March 8, 2024.
- GeoEngineers, Inc. (GeoEngineers) 2025. Groundwater Monitoring Progress Report October 2024 Monitoring Event, Quiet Cove Site, Anacortes, Washington; Ecology Agreed Order No. DE 11346. GeoEngineers File No. 5147-024-14. February 18, 2025.

Further soil investigation activities will be completed for the Southern Boundary Area when an access agreement is completed.

Sincerely, GeoEngineers, Inc.,

Brian J. Tracy, PE

Senior Environmental Engineer

DK:BJT:RST:JMH:ch:seh

Attachments:

Table 1. Riparian Zone Soil Analytical Results Figure 1. Vicinity Map Figure 2. Abandoned Product Pipe Survey Figure 3. Remedial Investigation Sampling Locations Figure 4. Metals Soil Analytical Results Figure 5. TPH Soil Analytical Results Figure 6. VOCs Soil Analytical Results Figure 7. PAHs Soil Analytical Results Attachment A. Explorations Logs

Attachment B. Laboratory Data Report

Brad Tesch, Port of Anacortes Tim Bishop, Chevron Environmental Management and Real Estate Co. (CEMREC)

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

John M. Herzog, PhD, LG Senior Principal



cc:

Tables

# Table 1

# Riparian Zone Soil Analytical Results

Quiet Cove Site

Anacortes, Washington

Sample Location <sup>1</sup>				GEI-54			GEI-55				GEI-	56					GEI	-57		
Sample Identification	Preli Scre	minary eening	GEI-54_ 2.0-4.0	GEI-54_ 6.0-8.0	GEI-54_ 12.0-14.0	GEI-55_ 2.0-4.0	GEI-55_ 6.0-8.0	GEI-55_ 10.0-12.0	GEI-56_ 2.0-4.0	GEI-56_ 6.0-8.0	GEI-56_ 8.0-10.0	GEI-56_ 12.0-14.0	GEI-56_ 14.0-16.0	GEI-56_ 18.0-20.0	GEI-57_ 2.0-4.0	GEI-57_ 4.0-6.0	GEI-57_ 8.0-10.0	GEI-57_ 10.0-12.0	GEI-57_ 12.0-14.0	GEI-57_ 16.0-18.0
Sample Date	Le	evel <sup>2</sup>	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24
Sample Interval (feet bgs)	Vadose	Saturated	2-4 ft	6-8 ft	12-14 ft	2-4 ft	6-8 ft	10-12 ft	2-4 ft	6-8 ft	8-10 ft	12-14 ft	14-16 ft	18-20 ft	2-4 ft	4-6 ft	8-10 ft	10-12 ft	12-14 ft	16-18 ft
Sample Type	Zone	Zone	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Saturated	Saturated	Saturated	Vadose	Vadose	Saturated	Saturated	Saturated	Saturated
Field Measured Parameters																				
Sheen	NE	NE	NS	NS	NS	NS	NS	SS	NS	NS	NS	NS	NS	NS	SS	NS	NS	NS	NS	NS
Headspace Vapors (ppm)	NE	NE	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Metals by EPA 6000/7000 Series (mg/kg)																				
Arsenic	20	20	11 U	12 U	11 U	12 U	12 U	12 U	11 U	12 U		11 U			11 U	12 U		11 U		
Cadmium	1.2	1	0.55 U	0.58 U	0.53 U	0.59 U	0.59 U	0.59 U	0.57 U	0.60 U		0.54 U			0.53 U	0.59 U		0.57 U		
Chromium	1,000	50	18	13	23	18	9.1	29	25	52	32	23			21	11		22		
Lead	250	24	5.5 U	5.8 U	5.3 U	7.5	5.9 U	5.9 U	47	46	6.0 U	19			190	130		6.2		
Mercury	0.07	0.07	0.055 U	0.058 U	0.053 U	0.059 U	0.059 U	0.059 U	0.093	0.073	0.06 U	0.054 U			0.057	0.14	0.056 U	0.057 U		
Petroleum Hydrocarbons by NWTPH-G/Dx (mg/kg)	-	-				-	_	-	-			-	-		-	-	_	-	-	-
Gasoline-Range	30 <sup>3</sup>	30 <sup>3</sup>	6.1 U	6.7 U	4.4 U	5.7 U	6.7 U	5.6 U	10	74		4.7 U			5.5 U	6.5 U		5.3 U		
Diesel-Range	2,000	2,000	28 U	44	26 U	30 U	30 U	30 U	29 U	55		27 U			26 U	29 U		29 U		
Heavy Oil-Range	2,000	2,000	55 U	58 U	53 U	59 U	59 U	59 U	82	99		54 U			53 U	84		57 U		
Total Diesel and Heavy Oil-Range	2,000	2,000	80 U	102	79 U	89 U	89 U	89 U	111	154		81 U			79 U	113		116 U		
Volatile Organic Compounds (VOCs) by EPA 8260 (m	g/kg)	1	T	T	-	-	1	T		T	T	T	1	T		T	1	-		1
Benzene	0.05	0.05	0.0010 U	0.0011 U	0.00088 U	0.0010 U	0.0012 U	0.0011 U	0.00098 U	0.0019		0.0016			0.0011 U	0.0011 U		0.00099 U		
Toluene	3.8	0.22	0.0010 U	0.0011 U	0.00088 U	0.0010 U	0.0012 U	0.0011 U	0.00098 U	0.0010 U		0.0010 U			0.0011 U	0.0011 U		0.00099 U		
Ethylbenzene	1.1	1.1	0.0010 U	0.0011 U	0.00088 U	0.0010 U	0.0012 U	0.0011 U	0.00098 U	0.0010 U		0.0010 U			0.0011 U	0.0011 U		0.00099 U		
Total Xylenes	2.8	0.16	0.003 U	0.0034 U	0.00268 U	0.003 U	0.0035 U	0.0034 U	0.00298 U	0.0562		0.003 U			0.0033 U	0.0032 U		0.00299 U		
1,2-Dibromoethane (EDB)	0.002	0.001	0.00050 U	0.00057 U	0.00044 U	0.00050 U	0.00059 U	0.00057 U	0.00049 U	0.00051 U		0.00051 U			0.00055 U	0.00053 U		0.00049 U		
1,2-Dichloroethane (EDC)	0.02	0.001	0.00050 U	0.00057 U	0.00044 U	0.00050 U	0.00059 U	0.00057 U	0.00049 U	0.00051 U		0.00051 U			0.00055 U	0.00053 U		0.00049 U		
Methyl t-butyl ether (MTBE)	2.6	0.18	0.0010 U	0.0011 U	0.00088 U	0.0010 U	0.0012 U	0.0011 U	0.00098 U	0.0010 U		0.0010 U			0.0011 U	0.0011 U		0.00099 U		
n-Hexane	0.27	0.01	0.0050 U	0.0057 U	0.0044 U	0.0050 U	0.0059 U	0.0057 U	0.0049 U	0.0051 U		0.0051 U			0.0055 U	0.0053 U		0.0049 U		
Non-Carcinogenic Polycyclic Aromatic Hydrocarbons	(PAHs) by E	PA 8270-SIN	/I (mg/kg)	T	-	-	1	T	-	T	T	T	1	T		T	1	-		1
1-Methylnaphthalene	35	35	0.0037 U	0.0038 U	0.0035 U	0.0039 U	0.0040 U	0.0039 U	0.011	0.033		0.0042	0.0040 U	0.0037 U	0.0035 U	0.011		0.0038 U	0.0036 U	0.0040 U
2-Methylnaphthalene	0.77	0.04	0.0047	0.0038 U	0.0035 U	0.0058	0.0040 U	0.0039 U	0.019	0.025		0.0070	0.0040 U	0.0037 U	0.0035 U	0.017		0.0038 U	0.0036 U	0.0040 U
Acenaphthene	0.32	0.02	0.0037 U	0.0038 U	0.0035 U	0.0039 U	0.0040 U	0.0039 U	0.0038 U	0.010 U		0.0036 U	0.0040 U	0.0037 U	0.0035 U	0.0053		0.0038 U	0.0036 U	0.0040 U
Acenaphthylene	NE	0.068	0.0047	0.0038 U	0.0035 U	0.030	0.0040 U	0.0039 U	0.055	0.074		0.0044	0.0040 U	0.0037 U	0.0070	0.051		0.0038 U	0.0036 U	0.0040 U
Anthracene	4.4	0.2	0.0037 U	0.0038 U	0.0035 U	0.038	0.0040 U	0.0039 U	0.049	0.039		0.0042	0.0040 U	0.0037 U	0.0083	0.049		0.0043	0.0036 U	0.0040 U
Benzo(g,h,i)perylene	NE	2	0.0089	0.0038 U	0.0035 U	0.14	0.0040 U	0.0039 U	0.14	0.094		0.012	0.0040 U	0.0037 U	0.025	0.16		0.0060	0.0036 U	0.0040 U
Fluoranthene	0.5	0.16	0.0060	0.0038 U	0.0035 U	0.36	0.0040 U	0.0039 U	0.27	0.22		0.027	0.0040 U	0.0037 U	0.040	0.32		0.017	0.0036 U	0.0040 U
Fluorene	0.5	0.16	0.0037 U	0.0038 U	0.0035 U	0.0068	0.0040 U	0.0039 U	0.011	0.022		0.0036 U	0.0040 U	0.0037 U	0.0035 U	0.014		0.0038 U	0.0036 U	0.0040 U
Naphthalene	0.25	0.013	0.0037 U	0.0038 U	0.0035 U	0.012	0.0040 U	0.0039 U	0.021	0.030		0.0036 U	0.0040 U	0.0037 U	0.0035 U	0.026		0.0038 U	0.0036 U	0.0040 U
Phenanthrene	NE	0.1	0.0056	0.0038 U	0.0035 U	0.13	0.0040 U	0.0039 U	0.14	0.14		0.0086	0.0040 U	0.0037 U	0.016	0.13		0.011	0.0036 U	0.0040 U
Pyrene	20	1	0.0074	0.0038 U	0.0035 U	0.41	0.0040 U	0.0039 U	0.32	0.24		0.028	0.0040 U	0.0037 U	0.042	0.37		0.018	0.0036 U	0.0040 U
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPA	Hs) by EPA	8270-SIM (m	ng/kg)																	



Sample Location <sup>1</sup>				GEI-54			GEI-55				GEI-	56					GEI	-57		
Sample Identification	Preli Scre	minary eening	GEI-54_ 2.0-4.0	GEI-54_ 6.0-8.0	GEI-54_ 12.0-14.0	GEI-55_ 2.0-4.0	GEI-55_ 6.0-8.0	GEI-55_ 10.0-12.0	GEI-56_ 2.0-4.0	GEI-56_ 6.0-8.0	GEI-56_ 8.0-10.0	GEI-56_ 12.0-14.0	GEI-56_ 14.0-16.0	GEI-56_ 18.0-20.0	GEI-57_ 2.0-4.0	GEI-57_ 4.0-6.0	GEI-57_ 8.0-10.0	GEI-57_ 10.0-12.0	GEI-57_ 12.0-14.0	GEI-57_ 16.0-18.0
Sample Date	Le	vel <sup>2</sup>	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24
Sample Interval (feet bgs)	Vadose	Saturated	2-4 ft	6-8 ft	12-14 ft	2-4 ft	6-8 ft	10-12 ft	2-4 ft	6-8 ft	8-10 ft	12-14 ft	14-16 ft	18-20 ft	2-4 ft	4-6 ft	8-10 ft	10-12 ft	12-14 ft	16-18 ft
Sample Type	Zone	Zone	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Saturated	Saturated	Saturated	Vadose	Vadose	Saturated	Saturated	Saturated	Saturated
Field Measured Parameters	_	-	_	-	-	-	-	-		-	_			-	-	-		-	-	_
Benzo(a)anthracene			0.0047	0.0038 U	0.0035 U	0.23	0.0040 U	0.0039 U	0.17	0.12		0.015	0.0040 U	0.0037 U	0.028	0.21		0.0089	0.0036 U	0.0040 U
Benzo(a)pyrene			0.0089	0.0038 U	0.0035 U	0.23	0.0040 U	0.0039 U	0.19	0.14		0.018	0.0040 U	0.0037 U	0.036	0.22		0.0093	0.0036 U	0.0040 U
Benzo(b)fluoranthene	Colo Total	Coo Total	0.0085	0.0038 U	0.0035 U	0.23	0.0040 U	0.0039 U	0.20	0.15		0.021	0.0040 U	0.0037 U	0.037	0.21		0.0092	0.0036 U	0.0040 U
Benzo(k)fluoranthene	CPAH TEO	CPAH TEO	0.0037 U	0.0038 U	0.0035 U	0.069	0.0040 U	0.0039 U	0.071	0.048		0.0069	0.0040 U	0.0037 U	0.011	0.083		0.0038 U	0.0036 U	0.0040 U
Chrysene	01711120	01711120	0.0059	0.0038 U	0.0035 U	0.22	0.0040 U	0.0039 U	0.19	0.13		0.019	0.0040 U	0.0037 U	0.028	0.18		0.0081	0.0036 U	0.0040 U
Dibenzo(a,h)anthracene			0.0037 U	0.0038 U	0.0035 U	0.035	0.0040 U	0.0039 U	0.025	0.027		0.0036 U	0.0040 U	0.0037 U	0.0045	0.027		0.0038 U	0.0036 U	0.0040 U
Indeno(1,2,3-c,d)pyrene			0.0082	0.0038 U	0.0035 U	0.15	0.0040 U	0.0039 U	0.15	0.10		0.014	0.0040 U	0.0037 U	0.025	0.16		0.0065	0.0036 U	0.0040 U
Total cPAH TEQ <sup>4</sup> (ND=0.5RL)	0.19 <sup>5</sup>	0.01 <sup>5</sup>	0.012	0.006	0.0053	0.304	0.006	0.006	0.254	0.186		0.024	0.006	0.0056	0.047	0.29		0.013	0.0054	0.006

#### Notes:

<sup>1</sup> Sample locations and summary of remedial investigation results are shown on Figure 3 through 7.

 $^{2}$  Preliminary screening levels are from the RI/FS Work Plan (GeoEngineers, 2017).

<sup>3</sup> Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

<sup>4</sup> Total cPAH Toxic Equivalency Quotients (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) values referenced from MTCA Table 708.2 (WAC 173-340-900).

<sup>6</sup> Value for vadose and saturated soil based on Ecology's Revised July 2021 cPAH guidance for protection of surface water.

 $^{\rm 6}$  Samples analyzed beyond hold time for PAHs as requested by Ecology and estimated (J) qualifier added.

ppm = parts per million

mg/kg = milligrams per kilogram

-- = not analyzed

NE = Not Established

ND = Not Detected

NS- No Sheen; MS- Medium Sheen; HS- High Sheen

U = The analyte was not detected at a concentration greater than the value identified.

J = The analyte was detected and the detected concentration is considered an estimate.

Blue shading indicates that the practical quantitation limit (PQL) is above screening level.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.

Bold font type indicates the analyte was detected at the reported concentration.



# Table 1

## Riparian Zone Soil Analytical Results Quiet Cove Site Anacortes, Washington

Sample Location <sup>1</sup>				GEI	-58				GEI-59					GEI-60		
Sample Identification	Preli	minary eening	GEI-58_ 2.0-4.0	GEI-58_ 4.0-6.0	GEI-58_ 8.0-10.0	GEI-58_ 10.0-12.0	GEI-59_ 2.0-4.0	GEI-59_ 4.0-6.0	GEI-DUP1	GEI-59_ 6.0-8.0	GEI-59_ 10.0-12.0	GEI-60_ 2.0-4.0	GEI-60_ 6.0-8.0	GEI-60_ 8.0-10.0	GEI-60_ 10.0-12.0	GEI-DUP2
Sample Date	Le	vel <sup>2</sup>	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24
Sample Interval (feet bgs)	Vadose	Saturated	2-4 ft	4-6 ft	8-10 ft	10-12 ft	2-4 ft	4-6 ft	4-6 ft	6-8 ft	10-12 ft	2-4 ft	6-8 ft	8-10 ft	10-12 ft	10-12 ft
Sample Type	Zone	Zone	Vadose	Vadose	Saturated	Saturated	Vadose	Vadose	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Saturated	Saturated
Field Measured Parameters																
Sheen	NE	NE	NS	NS	NS	NS	NS	HS	HS	NS	NS	NS	NS	NS	NS	NS
Headspace Vapors (ppm)	NE	NE	<1	<1	<1	<1	<1	179.3	179.3	<1	<1	<1	<1	<1	<1	<1
Metals by EPA 6000/7000 Series (mg/kg)																
Arsenic	20	20	10 U	12 U		11 U	11 U	12 U	12 U		12 U	12 U	12 U		11 U	12 U
Cadmium	1.2	1	0.51 U	0.58 U		0.56 U	0.54 U	0.62 U	0.62 U		0.59 U	0.59 U	0.60 U		0.57 U	0.58 U
Chromium	1,000	50	21	15		15	13	12	11		25	20	19		25	24
Lead	250	24	240	150		5.6 U	160	10	10		5.9 U	5.9 U	6.0 U		5.7 U	5.8 U
Mercury	0.07	0.07	0.051 U	0.15	0.051 U	0.056 U	0.075	0.062 U	0.062 U		0.059 U	0.059 U	0.060 U	-	0.057 U	0.058 U
Petroleum Hydrocarbons by NWTPH-G/Dx (mg	g/kg)															
Gasoline-range hydrocarbons	30 <sup>3</sup>	30 <sup>3</sup>	5.3 U	6.1 U		5.1 U	6.5 U	65	65	6.4 U	5.0 U	6.2 U	6.8 U	6.9 U	6.3 U	6.1 U
Diesel-range hydrocarbons	2,000	2,000	26 U	29 U		28 U	84	44	70		29 U	30 U	30 U		28 U	29 U
Lube Oil-range hydrocarbons	2,000	2,000	77	58 U		56 U	180	62 U	63 U		59 U	59 U	60 U		57 U	58 U
Lube Oil-range hydrocarbons	2,000	2,000	103	87 U		84 U	264	106	133		88 U	89 U	90 U		85 U	57 U
Volatile Organic Compounds (VOCs) by EPA 82	260 (mg/kg)															
Benzene	0.05	0.05	0.0011 U	0.0010 U	-	0.00073 U	0.0011 U	0.0011 U	0.0012 U		0.00094 U	0.0011 U	0.0010 U	-	0.00079 U	0.0010 U
Toluene	3.8	0.22	0.0011 U	0.0010 U		0.00073 U	0.0011 U	0.0011 U	0.0012 U		0.00094 U	0.0011 U	0.0010 U	-	0.00079 U	0.0010 U
Ethylbenzene	1.1	1.1	0.0011 U	0.0010 U		0.00073 U	0.0011 U	0.0011 U	0.0012 U		0.00094 U	0.0011 U	0.0010 U		0.00079 U	0.0012 U
Total Xylenes	2.8	0.16	0.0032 U	0.0031 U		0.00223 U	0.0034 U	0.0042 U	0.0035 U	-	0.00284 U	0.0032 U	0.0031 U		0.00239 U	0.003 U
1,2-Dibromoethane (EDB)	0.002	0.001	0.00053 U	0.00052 U		0.00037 U	0.00057 U	0.00057 U	0.00058 U	-	0.00047 U	0.00053 U	0.00052 U		0.00039 U	0.00051 U
1,2-Dichloroethane (EDC)	0.02	0.001	0.00053 U	0.00052 U	-	0.00037 U	0.00057 U	0.00057 U	0.00058 U	-	0.00047 U	0.00053 U	0.00052 U		0.00039 U	0.00051 U
Methyl t-butyl ether (MTBE)	2.6	0.18	0.0011 U	0.0010 U		0.00073 U	0.0011 U	0.0011 U	0.0012 U	-	0.00094 U	0.0011 U	0.0010 U		0.00079 U	0.0010 U
n-Hexane	0.27	0.01	0.0053 U	0.0052 U		0.0037 U	0.0057 U	0.0057 U	0.0058 U		0.0047 U	0.0053 U	0.0052 U		0.0039 U	0.0051 U
Non-Carcinogenic Polycyclic Aromatic Hydroca	arbons (PAHs	) by EPA 8270	)-SIM (mg/kg)													
1-Methylnaphthalene	35	35	0.0086 U	0.0038 U		0.0037 U	0.10	0.0042 U	0.0042 U		0.0039 U	0.0040 U	0.0040 U		0.0038 U	0.0039 U
2-Methylnaphthalene	0.77	0.04	0.0086 U	0.0038 U		0.0037 U	0.18	0.0065	0.0081		0.0039 U	0.0040 U	0.0053		0.0038 U	0.0039 U
Acenaphthene	0.32	0.02	0.0086 U	0.0038 U		0.0037 U	0.010	0.0042 U	0.0042 U		0.0039 U	0.0040 U	0.0040 U		0.0038 U	0.0039 U
Acenaphthylene	NE	0.068	0.024	0.017		0.0037 U	0.55	0.0067	0.011		0.0039 U	0.0040 U	0.0040 U		0.0038 U	0.0039 U
Anthracene	4.4	0.2	0.018	0.069		0.0037 U	0.39	0.0042 U	0.0055		0.0039 U	0.0040 U	0.0040 U	-	0.0038 U	0.0039 U
Benzo(g,h,i)perylene	NE	2	0.045	0.11		0.0037 U	0.89	0.018	0.028		0.0039 U	0.0040 U	0.0044		0.0038 U	0.0039 U
Fluoranthene	0.5	0.16	0.056	0.32		0.0037 U	0.98	0.028	0.042		0.0039 U	0.0040 U	0.012		0.0038 U	0.0039 U
Fluorene	0.5	0.16	0.0086 U	0.0061		0.0037 U	0.045	0.0042 U	0.0042 U		0.0039 U	0.0040 U	0.0040 U		0.0038 U	0.0039 U
Naphthalene	0.25	0.013	0.0086 U	0.010		0.0037 U	0.22	0.0059	0.012		0.0039 U	0.0040 U	0.0040 U		0.0038 U	0.0039 U
Phenanthrene	NE	0.1	0.028	0.12		0.0037 U	0.22	0.0068	0.011		0.0039 U	0.0040 U	0.0041		0.0038 U	0.0038 U
Pyrene	20	1	0.079	0.37		0.0037 U	1.4	0.034	0.054		0.0039 U	0.0040 U	0.012		0.0038 U	0.0039 U
Carcinogenic Polycyclic Aromatic Hydrocarbon	s (cPAHs) by	EPA 8270-SI	M (mg/kg)	-	-	-	-	-	-	-	-	-	-		-	-

GEOENGINEERS

Sample Location <sup>1</sup>				GE	-58				GEI-59					GEI-60		
Sample Identification	Preli Scre	minary eening	GEI-58_ 2.0-4.0	GEI-58_ 4.0-6.0	GEI-58_ 8.0-10.0	GEI-58_ 10.0-12.0	GEI-59_ 2.0-4.0	GEI-59_ 4.0-6.0	GEI-DUP1	GEI-59_ 6.0-8.0	GEI-59_ 10.0-12.0	GEI-60_ 2.0-4.0	GEI-60_ 6.0-8.0	GEI-60_ 8.0-10.0	GEI-60_ 10.0-12.0	GEI-DUP2
Sample Date	Le	vel <sup>2</sup>	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24	11/13/24
Sample Interval (feet bgs)	Vadose	Saturated	2-4 ft	4-6 ft	8-10 ft	10-12 ft	2-4 ft	4-6 ft	4-6 ft	6-8 ft	10-12 ft	2-4 ft	6-8 ft	8-10 ft	10-12 ft	10-12 ft
Sample Type	Zone	Zone	Vadose	Vadose	Saturated	Saturated	Vadose	Vadose	Vadose	Saturated	Saturated	Vadose	Saturated	Saturated	Saturated	Saturated
Field Measured Parameters																
Benzo(a)anthracene			0.051	0.18		0.0037 U	0.98	0.018	0.028		0.0039 U	0.0040 U	0.0076		0.0038 U	0.0039 U
Benzo(a)pyrene			0.060	0.17		0.0037 U	1.2	0.024	0.037		0.0039 U	0.0040 U	0.0043		0.0038 U	0.0039 U
Benzo(b)fluoranthene	Os a Tatal	O Tatal	0.059	0.17		0.0037 U	1.0	0.021	0.035		0.0039 U	0.0040 U	0.0080		0.0038 U	0.0039 U
Benzo(k)fluoranthene	CPAH TEO	CPAH TEO	0.021	0.047		0.0037 U	0.40	0.0090	0.010		0.0039 U	0.0040 U	0.0040 U	-	0.0038 U	0.0039 U
Chrysene	01711122	01711120	0.048	0.15		0.0037 U	0.89	0.019	0.029		0.0039 U	0.0040 U	0.0083		0.0038 U	0.0039 U
Dibenzo(a,h)anthracene			0.010	0.019		0.0037 U	0.19	0.0043	0.0054		0.0039 U	0.0040 U	0.0040 U	-	0.0038 U	0.0039 U
Indeno(1,2,3-c,d)pyrene			0.044	0.12		0.0037 U	0.90	0.018	0.028		0.0039 U	0.0040 U	0.0047		0.0038 U	0.0039 U
Total cPAH TEQ <sup>4</sup> (ND=0.5RL)	0.19 <sup>5</sup>	0.015	0.079	0.225		0.0056	1.56	0.031	0.048		0.0059	0.007	0.0112		0.0057	0.0059

Notes:

<sup>1</sup> Sample locations and summary of remedial investigation results are shown on Figure 3 through 7.

<sup>2</sup> Preliminary screening levels are from the RI/FS Work Plan (GeoEngineers, 2017).

<sup>3</sup>Value for gasoline-range petroleum hydrocarbons if benzene is present. If benzene is not present, screening level is 100 mg/kg.

<sup>4</sup> Total cPAH Toxic Equivalency Quotients (TEQs) were calculated using Toxicity Equivalency Factors (TEFs) values referenced from MTCA Table 708.2 (WAC 173-340-900).

<sup>6</sup> Value for vadose and saturated soil based on Ecology's Revised July 2021 cPAH guidance for protection of surface water.

<sup>6</sup> Samples analyzed beyond hold time for PAHs as requested by Ecology and estimated (J) qualifier added.

ppm = parts per million

mg/kg = milligrams per kilogram

-- = not analyzed

NE = Not Established

ND = Not Detected

NS- No Sheen; MS- Medium Sheen; HS- High Sheen

U = The analyte was not detected at a concentration greater than the value identified.

J = The analyte was detected and the detected concentration is considered an estimate.

Blue shading indicates that the practical quantitation limit (PQL) is above screening level.

Yellow shading indicates that the identified concentration is greater than the preliminary screening level.

Bold font type indicates the analyte was detected at the reported concentration.



Figures



Fxnorted. Date Project\5147024\_Project.aprx\514702414\_F01\_VicinityMap P:\5\5147024\GIS\5147024\_





Source(s):

• Aerial from Google Earth Pro, dated 8/15/2020

• Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



Abandoned Product Pipe Survey

Quiet Cove Site Anacortes, Washington



Figure 2



Port of Anacortes Properties at Quiet Cove Site

------ 10 ------ Contour (Feet, NAVD 88)

Interim Action Remedial Excavation Horizontal Limits

Interim Action Sidewall Soil Sample with Preliminary Screening Level Exceedance

GEI-62 💓 GEI-54 🔶 GEI-51 💓 MW-1A O GEI-39 🔶

Proposed Southern Boundary Soil Boring Location

Riparian Area Soil Boring Location (GeoEngineers 2024) 2nd Street Data Gap Soil Boring Location (GeoEngineers 2022) Historical Monitoring Wells (GeoEngineers, 2017-2021)

Historical Soil Boring Borings (GeoEngineers, 2014-2017)

Inferred Groundwater Flow Direction

Source(s):

- Aerial from Google Earth Pro, dated 8/15/2020
- Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warrantly or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



Remedial Investigation Sampling Locations

Quiet Cove Site Anacortes, Washington



Figure 3



10 5 4 GEI-62 ∑ GEI-54 ∲ GEI-51 ∑ VSS-16 ∲ MW-1A 0 GEI-39 ∲

Port of Anacortes Properties at Quiet Cove Site

--10 ----- Contour (Feet, NAVD 88)

Interim Action Remedial Excavation Horizontal Limits

Excavation Major Contours (ft NAD83)

Excavation Minor Contours (ft NAD83)

Proposed Southern Boundary Soil Boring Location

Riparian Area Soil Boring Location (GeoEngineers 2024) 2nd Street Data Gap Soil Boring Location (GeoEngineers 2022) Interim Action Side Wall Confirmation Sample (GeoEngineers 2020) Historical Monitoring Wells (GeoEngineers, 2017-2021)

Historical Soil Boring Borings (GeoEngineers, 2014-2017) Inferred Groundwater Flow Direction

### Depth Interval of Soil Boring Samples

Soil Boring - Each Box Represents a 2-foot Sample Interval (Feet Below Ground Surface)



### Soil Chemical Analytical Result

One or More Metals Detected Greater than the Preliminary Screening Level (PSL)

Contaminants Either Not Detected or Detected Less than the  $\ensuremath{\mathsf{PSL}}$ 

No Soil Data

Source(s):

- Aerial from Google Earth Pro, dated 8/15/2020
- Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



# **Metals Soil Analytical Results**

Quiet Cove Site Anacortes, Washington





10 5 GEI-62 GEI-54 GEI-51 VSS-16 MW-1A GEI-39 GEI-39

Port of Anacortes Properties at Quiet Cove Site

-10 ----- Contour (Feet, NAVD 88)

Interim Action Remedial Excavation Horizontal Limits

Excavation Major Contours (ft NAD83)

Excavation Minor Contours (ft NAD83)

Proposed Southern Boundary Soil Boring Location

Riparian Area Soil Boring Location (GeoEngineers 2024) 2nd Street Data Gap Soil Boring Location (GeoEngineers 2022) Interim Action Side Wall Confirmation Sample (GeoEngineers 2020) Historical Monitoring Wells (GeoEngineers, 2017-2021)

Historical Soil Boring Borings (GeoEngineers, 2014-2017) Inferred Groundwater Flow Direction

### Depth Interval of Soil Boring Samples

Soil Boring - Each Box Represents a 2-foot Sample Interval (Feet Below Ground Surface)



#### Soil Chemical Analytical Result

Gasoline or Total Diesel/Heavy Oil-Range Hydrocarbons (TPH) Detected Greater than the Preliminary Screening Level (PSL) Contaminants Either Not Detected or Detected Less than the PSL

No Soil Data

Source(s):

- Aerial from Google Earth Pro, dated 8/15/2020
- Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



# **TPH Soil Analytical Results**

Quiet Cove Site Anacortes, Washington



Figure 5



Port of Anacortes Properties at Quiet Cove Site

-10 ----- Contour (Feet, NAVD 88)

Interim Action Remedial Excavation Horizontal Limits

Excavation Major Contours (ft NAD83)

Excavation Minor Contours (ft NAD83)

Proposed Southern Boundary Soil Boring Location

Riparian Area Soil Boring Location (GeoEngineers 2024) 2nd Street Data Gap Soil Boring Location (GeoEngineers 2022) Interim Action Side Wall Confirmation Sample (GeoEngineers 2020) Historical Monitoring Wells (GeoEngineers, 2017-2021)

Historical Soil Boring Borings (GeoEngineers, 2014-2017) Inferred Groundwater Flow Direction

## Depth Interval of Soil Boring Samples

Soil Boring - Each Box Represents a 2-foot Sample Interval (Feet Below Ground Surface)



### Soil Chemical Analytical Result

One or More Volatile Organic Compound (VOC) Analytes Detected Greater than the Preliminary Screening Level (PSL) Contaminants Either Not Detected or Detected Less than the PSL

No Soil Data

Source(s):

- Aerial from Google Earth Pro, dated 8/15/2020
- Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.



# **VOCs Soil Analytical Results**

Quiet Cove Site Anacortes, Washington





Port of Anacortes Properties at Quiet Cove Site

---10 ----- Contour (Feet, NAVD 88)

Interim Action Remedial Excavation Horizontal Limits

Excavation Major Contours (ft NAD83)

Excavation Minor Contours (ft NAD83)

Proposed Southern Boundary Soil Boring Location

Riparian Area Soil Boring Location (GeoEngineers 2024) 2nd Street Data Gap Soil Boring Location (GeoEngineers 2022) Interim Action Side Wall Confirmation Sample (GeoEngineers 2020) Historical Monitoring Wells (GeoEngineers, 2017-2021)

Historical Soil Boring Borings (GeoEngineers, 2014-2017) Inferred Groundwater Flow Direction

Depth Interval of Soil Boring Samples



Soil Boring - Each Box Represents a 2-foot Sample Interval (Feet Below Ground Surface)



### Soil Chemical Analytical Result

One or More Polycyclic Aromatic Hydrocarbons (PAHs) Analytes Detected Greater than the Preliminary Screening Level (PSL) Contaminants Either Not Detected or Detected Less than the PSL

No Soil Data

Source(s):

Aerial from Google Earth Pro, dated 8/15/2020

Survey from Sound Development Group, dated 10/11/2017

Coordinate System: WA State Plane, North Zone, NAD83, US Foot, NAVD88

**Disclaimer:** This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warrantly or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.





Quiet Cove Site Anacortes, Washington



Attachment A

**Exploration Logs** 

I	MAJOR DIVIS	IONS	SYME GRAPH	BOLS Letter	TYPICAL DESCRIPTIONS
	GRAVEL	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	GRAVELLY SOILS	(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
COARSE GRAINED SOILS	MORE THAN 50% OF COARSE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
00.20	FRACTION RETAINED ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
IORE THAN 50%	SAND	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS
RETAINED ON NO. 200 SIEVE	AND SANDY SOILS	(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
	ON NO. 4 SIEVE	(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
				ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
FINE GRAINED	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
SOILS				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
IORE THAN 50% PASSING NO. 200 SIEVE				МН	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		СН	INORGANIC CLAYS OF HIGH PLASTICITY
				ОН	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC	SOILS	·····	PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS
	Samp Modifie Standar Shelby Piston Direct-F Bulk or Continu	ler Symbol I d California Sa rd Penetration tube Push grab ous Coring	Descript mpler (6-i Test (SPT)	ions nch slee	eve) or Dames & Moore
B b S "F	lowcount is re lows required ee exploratio P" indicates s	ecorded for dri to advance sa n log for hamn ampler pushec	ven sampl impler 12 her weight l using the	ers as t inches and dro weight	ne number of (or distance noted). op. : of the drill rig.

#### DITIONAL MATERIAL SYMBOLS

SYM	BOLS	TYPICAL
GRAPH	LETTER	DESCRIPTIONS
	AC	Asphalt Concrete
	СС	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

### **Groundwater Contact** Measured groundwater level in exploration, well, or piezometer Measured free product in well or piezometer **Graphic Log Contact** Distinct contact between soil strata Approximate contact between soil strata **Material Description Contact** Contact between geologic units Contact between soil of the same geologic unit Laboratory / Field Tests Percent fines Percent gravel Atterberg limits Chemical analysis aboratory compaction test Consolidation test Dry density Direct shear Hydrometer analysis Moisture content Moisture content and dry density Nohs hardness scale Organic content Permeability or hydraulic conductivity

- Plasticity index
- Point load test
- Pocket penetrometer
- Sieve analysis
- riaxial compression
- Unconfined compression
  - Unconsolidated undrained triaxial compression
  - ane shear/

### **Sheen Classification**

- No Visible Sheen
- Slight Sheen
- Moderate Sheen
- Heavy Sheen

er understanding of subsurface conditions. were made; they are not warranted to be representative of subsurface conditions at other locations or times.



	Drilled	11/2	<u>Star</u> 13/2	<u>t</u> 1024	11/1	<u>End</u> 13/2024	Total Depth	ı (ft)	18	Log Ch	gged By ecked By	NRS BJT	Driller	Cascade	Environmen	tal		Drilling Method
;	Surfac Vertica	e Eleva al Datu	atior m	ı (ft)		N	12 AVD88			Hamm Data	ier		N	A		Drilling Equipr	g ment	Track Drill Rig
	Eastin; Northi	g (X) ng (Y)				120 559	8626.76 9690.41	5		Systen Datum	ท เ	WA	State Plan	e North Zor	ne	See "R	Remark	s" section for groundwater observed
	Notes	:																
Ì					FIE	LD DA	TA											
	Elevation (feet)	<ul> <li>Depth (feet)</li> </ul>	Interval	Recovered (in)	Blows/foot	Collected Sample	<u>Sample Name</u> Testing	Graphic Log	Group Classification			M, DES	ATERIA CRIPT	AL ION		Sheen	Headspace Vapor (ppm)	REMARKS
		0-		41		▲ GE	-54_0.0-2.0		SM	Dar	'k brown si trace orga	ilty fine to anics (moi	coarse sa st)	nd with grav	el and	NS	<1	
_	<u>.</u> 9	-				<u> </u>	- <u>54 2.0-4.0</u> CA	2	SM	Bro -	wn silty fin	ne to coars	se sand wi	ith trace gra	vel (moist)	- NS	<1	
-		-				GEI	-54_4.0-6.0		SP	Dar	k brown fi	ne to coar	rse sand w	ith trace sil	t (moist)	NS	<1	
-		5-		47			- <u>54 6.0-8.0</u> CA		SP-SM SP-SM	Bro Dar	wn fine to k gray fine	coarse sa to coarse	and with sil	lt (moist) h trace silt (	moist)	- NS	<1	
_	\$	-					U.I.			_ Bec	comes wet	t				_		6 <sup>1</sup> / <sub>2</sub> feet bgs during drilling
1 I		-					GEI-54_ 8.0-10.0			-						- NS	<1	
ENTAL_STANDARD_NO_(		10-		57			GEI-54_ 10.0-12.0									— NS	<1	
.GLB/GEI8_ENVIRONMI	a	-					<u>GEI-54</u> 1 <u>2.0-14.0</u> CA		SP	 Ligh	nt gray fine (wet)	e to coarse	e sand wit	h gravel and	d trace silt	— NS	<1	
TD_US_JUNE_2017		- 15 —		26			GEI-54_ 4.0-16.0			-						- NS	<1	
EERS_DF_5		-		30					ML	Bro	wn-gray sil	it with sar	nd and trac	ce gravel (m	ioist)	- NS	<1	
EOENGINE	\$2						GEI-54_ 16.0-18.0											
y/Library:0		-							ML	Bro	wn silt witl	h sand (m	ioist)					
024\GINT\514702414.GPJ DBLibrary	No Co	- te: See ordinat	e Fig	ure A Data S	-1 for e Source	explanat : Horizor	ion of syn	nbols. oxima	ted based	Bori	ing termin ground su dheld GPS	ated at ap urface (bgs S unit. Vert	pproximate s) due to re	ely 18 feet b efusal ximated bas	below Sed on 201	7 Sound	Develo	pment Group survey.
:P:\5\5147											Log	g of Bo	oring	GEI-54				
Date:2/21/25 Path	C	ΞEO	0	Er	١G	INE	ER	S/	D	F	Project: Project Project	: Quiet Locatio	Cove S on: Ana	ite cortes, \ 17-024-1	Washing I⊿	ton		Figure A-2

Project Number: 5147-024-14

Figure A-2 Sheet 1 of 1

	Drilled	<u>9</u>   11/1	<u>Star</u> .3/2	<u>t</u> 024	<u> </u> 11/1	<u>End</u> 3/2024	Total Depth	(ft)	14	Logged By Checked By	NRS / BJT	Driller	Cascade Environmen	tal		Drilling Method Direct Push
	Surfac /ertica	e Eleva al Datur	tion n	(ft)		NA	12 \VD88			Hammer Data		NA		Drilling Equipn	nent	Track Drill Rig
i I	Eastin Northi	g (X) ng (Y)				1208 559	8574.62 1648.06			System Datum	WAS	State Plane	North Zone	See "R	emark	s" section for groundwater observed
l	Notes	:														
ſ					FIEI	_D DA	TA									
	Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	<u>Sample Name</u> Testing	Graphic Log	Group Classification		M/ DES	ATERIAI CRIPTI(	ŌN	Sheen	Headspace Vapor (ppm)	REMARKS
		0-		40		GEI-	55_0.0-2.0		SM	Brown silty fi (wet)	ine to medi	um sand w	th trace organics	NS	<1	
	~	-								-				-		
ŀ	Ş	_					<u>55_2.0-4.0</u> CA		SM	Light brown	silty fine to	coarse san	d (moist)	NS	<1	
-		-								-				-		
-		-				GEI-	55_4.0-6.0		SM	Black-dark b organics	rown silty fi (moist)	ne to medi	um sand with trace	NS	<1	
ŀ		5 —		50					SP-SM	Dark gray fin gravel (w	ie to mediu /et)	m sand wit	n silt and occasional			Groundwater observed at approximately 5 feet bgs during drilling
-		_					<u>55_6.0-8.0</u> CA			-				- NS	<1	
	ò	_								-				-		
-		_					GEI-55_			-				- NS	<1	
~ -		_					5.0-10.0		SP-SM	Dark brown 1	fine to med	ium sand w	<i>i</i> th silt and	_		
RD_NO_G		10		40			CEI 55		-	occasion	nal gravel (w	et)		- ss	<1	
L_STAND/		_		40			0.0-12.0 CA			_						
ONMENT <sup>A</sup>									CR	Light brown	crushed roo	k (wet) (rai	road ballast?)	_		
EI8_ENVIE	0	_					GEI-55_ 2.0-14.0		ML	Gray silt with	n fine sand (	moist)		NS	<1	
017.GLB/G		_								-				-		
- IUNE_20		_								Boring termi	nated at ap	proximatel	/ 14 feet bgs due to			
F_STD_US										Terusar						
INEERS_D																
y:GEOENG																
'ary/Librai																
sPJ DBLib																
1702414.0																
t/GINT/51	No	ote: See	Figi	ure A	-1 for e	xplanatio	on of syn	nbols.	ed haco	d on handheld CD	Sunit Varti	cal annrovi	mated based on 2017	7 Sound	Develo	nment Group survey
) 5/5147024		or an iat	L				.un uppit							Cound		prinsing an outploter roy.
5 Path:P:\{									-	LO: Proiect	g ot BC	Cove Sit	e			
e:2/21/2!	(	<b>BE</b>	b	Er	IG	INE	ER	5 /	$\mathcal{T}$	Project	Locatio	on: Anac	.~ ortes, Washing	ton		Figure A 2
Dat								-		Project	Numbe	r: 5147	7-024-14			Sheet 1 of 1

Figure A-3 Sheet 1 of 1

Drille	ed 11/1	<u>Star</u> 13/2	<u>t</u> 024	<u> </u> 11/1	<u>End</u> 3/2024	Total Depth	(ft)	20	Logged By Checked E	/ NRS By BJT	Driller	Cascade Envi	ironmenta	al		Drilling Method Direct Push
Surf Verti	face Eleva ical Datu	ation m	(ft)		1: NA	3.01 VD88			Hammer Data		N	A		Drilling Equipn	nent	Track Drill Rig
East Nort	ting (X) thing (Y)				1208 5595	510.81 595.08	-		System Datum	WA	A State Plar	ne North Zone		See "R	emark	s" section for groundwater observed
Not	es:															
Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Graphic Log	Group Classification		N DES	1ATERI/ SCRIPT	AL ION		Sheen	Headspace Vapor (ppm)	REMARKS
-	0-		30		GEI-5	6_0.0-2.0		SM	Dark browr (wet)	n silty fine to	o coarse sa	nd with trace or	rganics	NS	<1	
- - 	-				GEI-5	5 <u>6 2.0-4.0</u> CA		 SM	Brown silty	 fine to coa	rse sand w	ith gravel (moist	 t)	- NS	<1	
-	-				GEI-5	6_4.0-6.0		ML	Gray silt wi	th sand, gra	avel and or	ganic matter (me	oist)	- NS	<1	
-	5 —	-	50		GEI-S	5 <u>6_6.0-8.0</u> CA		SM	Dark gray s gravel ( -	silty fine to r (wet)	nedium sa	nd with occasion	nal	- NS	<1	Groundwater observed at approximately 5 feet bgs during drilling
	-				<u> </u>	i <u>EI-56</u> 0-10.0 CA			-					- SS	5.1	
L_STANDAKD_NU_u	10-		24		<b>.</b>			NR	No recover	у				NS	<1	
	-					<del>EI-56_</del> 2.0-14.0 CA		SP	Dark gray f (wet) -	ine to coars	se sand wit	h gravel and trac	ce silt	- NS	<1	
	-					<u>iEI-56</u> 1.0-16.0 CA			_					- NS	<1	
9:GEOENGINEERS_DF_S IU_	15 —		48		G 16	EI-56_ 3.0-18.0		SM	Light brown	n silty fine to	o medium :	sand (wet)		- NS	<1	
	-					i <u>EI-56</u> 3.0-20.0 CA			-					- NS	<1	
	20 — Note: See Coordinat	e Figi	ure A Data S	1 -1 for e Source:	xplanatic Horizont	on of syn	nbols.	ed based	d on handheld G	iPS unit. Ve	rtical appro	ximated based	on 2017	Sound I	L Develo	pment Group survey.
CP:/5/914/									Lo	og of B	oring	GEI-56				
Date:2/21/25 Patn	Geo	ol	En	١G	INE	ER!	S/	D	Projec Projec	ct: Quiet ct Locati	Cove S	ite Icortes, Wa	shingt	on		Figure A-4

ies, J Project Number: 5147-024-14

	Drilled	11/2	<u>Star</u> 13/2	<u>t</u> 024	<u>E</u> 11/1:	<u>End</u> 3/2024	Total Depth	(ft)	20	L	.ogged By Checked By	NRS BJT	Driller	Cascade	e Environment	tal		Drilling Method	Direct Push	
;	Surfac /ertica	e Eleva I Datu	ation m	(ft)		1: NA	1.19 VD88			Hamı Data	mer		N	IA		Drilling Equipn	nent		Track Drill	Rig
I	Easting Northir	g (X) ng (Y)				1208 5597	610.61 716.81	-		Syste Datu	em m	WA	State Plar	ne North Zo	one	See "R	emark	s" section	for groundwater	observed
l	Notes																			
	Elevation (feet)	b Depth (feet)	Interval	Recovered (in)	Blows/foot H	Collected Sample	Testing	Graphic Log	Group Classification			M DES	ATERI <i>I</i> SCRIPT	AL ION		Sheen	Headspace Vapor (ppm)		REMAF	rks
	\$	- - - 5- - -		34			67_0.0-2.0 67_2.0-4.0 67_4.0-6.0 67_6.0-8.0 67_6.0-8.0 FI-57		SP Rock SP SM	Br 	rown fine to ock rown fine to (moist) ark brown s	o medium : o coarse sa olack silty fi silty fine to	and with and with si ine to coa coarse sa	silt (moist) ilt (moist) irse sand v and with gr	) vith gravel avel (wet)	24         -	<1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <	Grour	idwater observed 6 feet bgs durir	at approximately ag drilling
GLB/GEI8_ENVIRONMENTAL_STANDARD_NO_GW	0	- 10		46			EI-57 CA EI-57 CA EI-57 CA EI-57 CA		SM	- Br -	rown silty fi (wet)	ne to coar	se sand w	ith occasic	onal gravel	- NS - SS	<1			
ary/Library:GEOENGINEERS_DF_STD_US_JUNE_2017.0	Ś	- 15 — -		60		G 14 • G 16	EI-57_ .0-16.0 <u>EI-57_</u> .0-18.0 CA		ML 	- Li; Br 	ght gray si 	ilt with sa	nd (wet) ce sand (n	 noist)		- NS - NS - NS	<1			
147024/GINT/514702414.GPJ DBLibra	No Coo	- 20 — te: See ordinat	e Figu	ure A- Data S	1 for ex Source:	¢planatic Horizont	EI-57_ 3.0-20.0 on of syn cal appro	nbols.	ted based	d on ha	ndheld GP	S unit. Ver	tical appro	iximated b	ased on 2017	7 Sound I	Develo	pment Gro	oup survey.	
ath:P:\5\5											Log	g of B	oring	GEI-5	7					
Date:2/21/25 P.	C	<b>BE</b>	ol	En	<b>IG</b>	NE	ER!	s /	D		Project Project Project	: Quiet Locatio	Cove S on: Ana	ite icortes, 17.024	, Washing 14	ton				Figure A-5

ies, J Project Number: 5147-024-14

ſ	Drilled	11/1	<u>Start</u> L3/2	024	<u>E</u> 11/13	<u>ind</u> 3/2024	Total Depth	(ft)	15		Logged By NRS Checked By BJT	Driller	Cascade Environmer	ntal			Drilling Method Direct Push
;	Surfac Vertica	e Eleva I Datu	ation m	(ft)		10 NA	0.99 VD88			H D	ammer ata	NA		DE	rilling quipn	nent	Track Drill Rig
	Easting Northii	g (X) ng (Y)				1208 5596	562.06 562.93			S D	ystem WAS	State Plane	North Zone	s	ee "R	emarl	ss" section for groundwater observed
	Notes	:															
ſ					FIEL	d dat	ΓA										
	Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	<u>Sample Name</u> Testing	Graphic Log	Group Classification		M/ DES	ATERIAL CRIPTIC	<u>-</u> DN		Sheen	Headspace Vapor (ppm)	REMARKS
	. <u>^</u>			40		GEI-5	58_0.0-2.0		SP	_	Light brown-gray fine to gravel (moist)	coarse san	d with occasional	_	NS	<1	
-		-				GEI-5	5 <u>8_2.0-4.0</u> CA		SP	-	Brown-light brown fine t	o coarse sa	nd with silt (moist)	-	NS	<1	
_		- 5—				GEI-5	5 <u>8 4.0-6.0</u> CA		SP-SM		Dark brown-brown fine t occasional gravel (n	o coarse sa noist)	and with silt and		NS	<1	
_	හ	-		55		GEI-5	i8_6.0-8.0		SM	_	Dark gray silty fine to cc	arse sand v	vith gravel (wet)		NS	<1	Groundwater observed at approximately 6 feet bgs during drilling
-		-				<u> </u>	i <u>El-58</u> .0-10.0 CA			_				_	NS	<1	
TAL_STANDARD_NO_GV	a	10-		60			i <u>EI-58</u> ).0-12.0 CA			_					NS	<1	
B/GEI8_ENVIRONMEN1		-				G 12	iEI-58_ 2.0-14.0		ML	-	Gray-brown silt with s	and (wet)		-	NS	<1	
TD_US_JUNE_2017.GL		-				G 14	iEI-58_ I.0-15.0			_				_	NS	<1	
514702414.GPJ DBLibrary/Library:GEOENGINEERS_DF_S																	
5147024\GINT\	No Co	te: See ordinat	e Figu es D	ure A- Data S	1 for ex Source:	planatic Horizont	on of syn al appro	nbols. ximat	ed based	d or	n handheld GPS unit. Vert	cal approxi	mated based on 201	.7 Sc	ound I	Develo	opment Group survey.
1:P:\5\5											Log of Bo	oring G	EI-58				

Project: Quiet Cove Site

Project Location: Anacortes, Washington Project Number: 5147-024-14

GEOENGINEERS

	Drilled	11/1	Start 1.3/2	024	<u>E</u> 11/1:	<u>End</u> 3/2024	Total Depth	(ft)	16		Logged By Checked By	NRS BJT	Driller Cascade Environn	nental	I		Drilling Method Direct Push
۹ ۱	Surface /ertical	e Eleva Datur	ition n	(ft)		1: NA	1.03 VD88			H D	lammer Data		NA		Drilling Equipn	nent	Track Drill Rig
E	Easting Northin	; (X) g (Y)				1208 5596	519.52 625.78			S D	lystem Datum	WAS	tate Plane North Zone	:	See "R	emark	s" section for groundwater observed
	Notes:																
	tion (feet)	l (feet)	al	/ered (in)	/foot	ed Sample	le Name	nic Log	) ification			MA DES(	TERIAL CRIPTION			pace (ppm)	REMARKS
	Eleva	Depth	Interv	Recov	Blows	Collect	Testir	Graph	Group Class						Sheen	Heads Vapor	
Ī.	.0	0—		48		GEI-5	9_0.0-2.0		SP		Light gray fine (moist)	e to coarse	sand with trace organics		NS	<1	
_	Y	_							SP		Brown-orange fine to coarse sand with trace silt and occasional gravel (moist)						
-		_				GEI-5	i <u>9_2.0-4.0</u> CA			-					- SS	<1	
-	- SM Dark brown silty fine to coarse sand with occasional gravel (moist)																
-		GEI-59 4.06.0     GEI-59 4.06.0     GEI-59 4.06.0     GEI-59 1.00     GEI-59     GEI-59     GEI-59     GEI-59     GEI-59					NS	<1									
-		5 - 50 GEI-59_Dup1 : : : gravel and trace organics (moist)					HS	179.3									
_<	ò	_				GEI-5	6.0-8.0			-	graver (m	gravel (moist)			NS	<1	Groundwater observed at approximately 6 feet bgs during drilling
-		_								-							
-		-				G 8.	EI-59_ 0-10.0			_	Becomes wet	Becomes wet			- NS	<1	
STANDARD_N0_GV		10 —		42			<u>EI-59</u> 1.0-12.0 CA		SM		Dark gray silty	/ fine to coa	arse sand with gravel (wet)		- NS	<1	
	2	_								-				-	-		
8_ENVIRON		_				G 12	EI-59_ 2.0-14.0			-				-	NS	<1	
7.GLB/GEI		_								-				-			
JUNE_201		_				G IA	EI-59_		SM ML	_	Brown silty fin Light gray sil	e to mediu t with san	m sand (wet) d and trace gravel (moist)		NS	<1	
_STD_US_		15 —		12			10 2010			_				_			
INEERS_DF		_									Boring termin	ated at apr	proximately 16 feet bys due to	0			
/:GEOENGI											refusal			0			
ary/Library																	
3PJ DBLibr																	
4702414.0																	
24\GINT\51	Not Coc	e: See ordinat	Figu es D	ure A- Data S	-1 for ex Source:	xplanatic Horizont	n of syn al appro	nbols. ximat	ed base	d or	n handheld GPS	6 unit. Vertio	al approximated based on 2	017 S	Sound I	Develo	pment Group survey.
:\5\514702												of Ro	ring GFI_59				
/25 Path:P											Project:	Quiet (	Cove Site				
Date:2/21,	GEOENGINEERS Project Location: Anacortes, Washington Figure A-7									Locatio	n: Anacortes, Washi	ngto	on				

Project Number: 5147-024-14

Figure A-7 Sheet 1 of 1

	rilled	<u>9</u> 11/1	Start 3/2	024	<u> </u> 11/1	<u>End</u> 3/2024	Total Depth	(ft)	14	Logged By Checked By	NRS BJT	Driller	Cascade Environme	ental		Drilling Method
S V	urfac	e Eleva al Datur	tion n	(ft)		12 NA	2.96 VD88			Hammer Data		NA		Drillin Equip	g ment	Track Drill Rig
E	astin Iorthi	g (X) ng (Y)				1208 5596	3550.02 605.63			System Datum	WAS	State Plane	North Zone	See "	Remar	s" section for groundwater observed
ſ	Votes	:														
Ĩ					FIEI	_D DA1	ΓA									
· ·	Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	<u>Sample Name</u> Testing	Graphic Log	Group Classification		MA DES	ATERIAL CRIPTIC	- DN	Sheen	Headspace Vapor (ppm)	REMARKS
		0-		31		GEI-6	60_0.0-2.0		SM	Gray silty fine	e to coarse s	sand with g	gravel (moist)	NS	<1	
_	ò	-				GEI-6	<u>60_2.0-4.0</u> CA		SM	– Black silty fine	e to coarse	sand (mois	st)	- NS	<1	
-		-				GEI-6	60_4.0-6.0		SM SM	Light brown s Brown silty fir	silty fine to o ne to coarso	coarse sand e sand with	d (moist) a gravel (moist)	- NS	<1	
-		5 —		25					SP	Dark gray fine	e to coarse	sand with s	silt (wet)	NS	<1	Groundwater observed at approximately 5 feet bgs during drilling
-		_					CA			-				-		
- N	)	_					<u>EI-60</u> .0-10.0 CA			-				- NS	<1	
_STANDARD_NO_C		10 —		50			<u>EI-60</u> ).0-12.0 CA 60. Dup-1		SM	 Dark gray silty	y fine to co	arse sand v	with gravel (wet)	NS	<1	
ENVIRONMENTAL		-					EI-60_ 2.0-14		ML	Gray silt with	sand and t	race gravel	(moist)	- NS	<1	
17.GLB/GEI8	)	_							ML	Gray silt with	sand (mois	st)				
S_JUNE_20: I		_				<u> </u>				Boring termin refusal	nated at ap	proximately	/ 14 feet bgs due to			
GPJ DBLibrary/Library/GEOENGINEERS_DF_STD_U	refusai															
24\GINT\514702414	Note: See Figure A-1 for explanation of symbols. Coordinates Data Source: Horizontal approximated based on handheld GPS unit. Vertical approximated based on 2017 Sound Development Group survey.															
P:\5\51470										Log	s of Bo	oring G	EI-60			
1/25 Path:		-								Project:	Quiet (	Cove Sit	e			
Date:2/21	GEOENGINEERS							5 /		Project Project	Project Location: Anacortes, WashingtonFigure A-8Project Number: 5147-024-14Sheet 1 of 1					

Figure A-8 Sheet 1 of 1

# Attachment B

Laboratory Data Report



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

November 18, 2024

Brian Tracy GeoEngineers, Inc. 2101 4th Avenue, Suite 950 Seattle, WA 98121

Re: Analytical Data for Project 05147-024-14 Laboratory Reference No. 2411-196

Dear Brian:

Enclosed are the analytical results and associated quality control data for samples submitted on November 14, 2024.

#### Please note that the data for the standard turn around analyses will follow in the final report.

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,

Blair Goodrow Project Manager

Enclosures



#### **Case Narrative**

Samples were collected on November 13, 2024 and received by the laboratory on November 14, 2024. They were maintained at the laboratory at a temperature of  $2^{\circ}$ C to  $6^{\circ}$ C.

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

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

#### Volatiles EPA 8260D Analysis

All four internal standards did not meet acceptance criteria for sample GEI-DUP1. The sample was re-analyzed with similar results. Leaks in the sealed VOA environment caused by grit between the VOA lip and VOA cap septum have been shown to cause low internal standard recovery. Method 5035A states that for low-level VOC analysis the purge-and-trap system employed must be capable of agitating the sealed sample during the purging process. The purge-and-trap system that OnSite Environmental utilizes for the analysis of low-level VOCs has a stir motor that spins a magnetic stir bar within the sample thereby agitating the sample and providing more efficient purging. Due to the aforementioned failed analyses, a VOA vial without a stir bar was analyzed and reported for the low-level VOC analysis.

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



#### ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
GEI-54_2.0-4.0	11-196-02	Soil	11-13-24	11-14-24	
GEI-54_6.0-8.0	11-196-04	Soil	11-13-24	11-14-24	
GEI-54_12.0-14.0	11-196-07	Soil	11-13-24	11-14-24	
GEI-55_2.0-4.0	11-196-11	Soil	11-13-24	11-14-24	
GEI-55_6.0-8.0	11-196-13	Soil	11-13-24	11-14-24	
GEI-55_10.0-12.0	11-196-15	Soil	11-13-24	11-14-24	
GEI-56_2.0-4.0	11-196-17	Soil	11-13-24	11-14-24	
GEI-56_6.0-8.0	11-196-19	Soil	11-13-24	11-14-24	
GEI-56_12.0-14.0	11-196-21	Soil	11-13-24	11-14-24	
GEI-57_2.0-4.0	11-196-26	Soil	11-13-24	11-14-24	
GEI-57_4.0-6.0	11-196-27	Soil	11-13-24	11-14-24	
GEI-57_10.0-12.0	11-196-30	Soil	11-13-24	11-14-24	
GEI-58_2.0-4.0	11-196-36	Soil	11-13-24	11-14-24	
GEI-58_4.0-6.0	11-196-37	Soil	11-13-24	11-14-24	
GEI-58_10.0-12.0	11-196-40	Soil	11-13-24	11-14-24	
GEI-59_2.0-4.0	11-196-44	Soil	11-13-24	11-14-24	
GEI-59_4.0-6.0	11-196-45	Soil	11-13-24	11-14-24	
GEI-59_10.0-12.0	11-196-48	Soil	11-13-24	11-14-24	
GEI-60_2.0-4.0	11-196-52	Soil	11-13-24	11-14-24	
GEI-60_6.0-8.0	11-196-54	Soil	11-13-24	11-14-24	
GEI-60_10.0-12.0	11-196-56	Soil	11-13-24	11-14-24	
GEI-DUP1	11-196-58	Soil	11-13-24	11-14-24	
GEI-DUP2	11-196-59	Soil	11-13-24	11-14-24	



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

Matrix: Soil Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-54_2.0-4.0					
Laboratory ID:	11-196-02					
Gasoline	ND	6.1	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	77	62-134				
Client ID:	GEI-54_6.0-8.0					
Laboratory ID:	11-196-04					
Gasoline	ND	6.7	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	62-134				
Client ID:	GEI-54_12.0-14.0					
Laboratory ID:	11-196-07					
Gasoline	ND	4.4	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	70	62-134				
Client ID:	GEI-55_2.0-4.0					
Laboratory ID:	11-196-11					
Gasoline	ND	5.7	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	103	62-134				
Client ID:	GEI-55_6.0-8.0					
Laboratory ID:	11-196-13					
Gasoline	ND	6.7	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	62-134				
Client ID:	GEI-55_10.0-12.0					
Laboratory ID:	11-196-15					
Gasoline	ND	5.6	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	62-134				
Client ID:	GEI-56_2.0-4.0					
Laboratory ID:	11-196-17					
Gasoline Range Organics	10	6.0	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	78	62-134				



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

4

Matrix: Soil Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-56_6.0-8.0					
Laboratory ID:	11-196-19					
Gasoline Range Organics	74	7.3	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	62-134				
Client ID:	GEI-56_12.0-14.0					
Laboratory ID:	11-196-21					
Gasoline	ND	4.7	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	79	62-134				
Client ID:	GEI-57_2.0-4.0					
Laboratory ID:	11-196-26					
Gasoline	ND	5.5	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	62-134				
Client ID:	GEI-57_4.0-6.0					
Laboratory ID:	11-196-27					
Gasoline	ND	6.5	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	91	62-134				
Client ID:	GEI-57_10.0-12.0					
Laboratory ID:	11-196-30					
Gasoline	ND	5.3	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	62-134				
Client ID:	GEI-58_2.0-4.0					
Laboratory ID:	11-196-36					
Gasoline	ND	5.3	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	62-134				
Client ID:	GEI-58_4.0-6.0					
Laboratory ID:	11-196-37					
Gasoline	ND	6.1	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	89	62-134				



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

Matrix: Soil Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-58_10.0-12.0					
Laboratory ID:	11-196-40					
Gasoline	ND	5.1	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	62-134				
Client ID:	GEI-59_2.0-4.0					
Laboratory ID:	11-196-44					
Gasoline	ND	6.5	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	99	62-134				
Client ID:	GEI-59_4.0-6.0					
Laboratory ID:	11-196-45					
Gasoline Range Organics	65	7.1	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	92	62-134				
Client ID:	GEI-59_10.0-12.0					
Laboratory ID:	11-196-48					
Gasoline	ND	5.0	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	62-134				
Client ID:	GEI-60_2.0-4.0					
Laboratory ID:	11-196-52					
Gasoline	ND	6.2	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	98	62-134				
Client ID:	GEI-60_6.0-8.0					
Laboratory ID:	11-196-54					
Gasoline	ND	6.8	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	93	62-134				
Client ID:	GEI-60_10.0-12.0					
Laboratory ID:	11-196-56					
Gasoline	ND	6.3	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	94	62-134				



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

6

Matrix: Soil Units: mg/kg (ppm)

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-DUP1					
Laboratory ID:	11-196-58					
Gasoline Range Organics	65	7.4	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	97	62-134				
Client ID:	GEI-DUP2					
Laboratory ID:	11-196-59					
Gasoline	ND	6.1	NWTPH-Gx	11-15-24	11-15-24	
Surrogate:	Percent Recovery	Control Limits				
Fluorobenzene	100	62-134				



7

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



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

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



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

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



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

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



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

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-54_2.0-4.0					
Laboratory ID:	11-196-02					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0050	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	98	75-123				

Client ID:	GEI-54_6.0-8.0					
Laboratory ID:	11-196-04					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0057	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0023	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	109	69-124				
Toluene-d8	107	80-118				
4-Bromofluorobenzene	110	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-54_12.0-14.0					
Laboratory ID:	11-196-07					
Methyl t-Butyl Ether	ND	0.00088	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0044	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.00088	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00044	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.00088	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00044	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.00088	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0018	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.00088	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	108	69-124				
Toluene-d8	107	80-118				
4-Bromofluorobenzene	109	75-123				

Client ID:	GEI-55_2.0-4.0					
Laboratory ID:	11-196-11					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0050	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	108	69-124				
Toluene-d8	104	80-118				
4-Bromofluorobenzene	98	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-55_6.0-8.0					
Laboratory ID:	11-196-13					
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0059	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0012	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00059	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0012	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00059	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0012	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0023	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0012	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	106	69-124				
Toluene-d8	104	80-118				
4-Bromofluorobenzene	103	75-123				

Client ID:	GEI-55_10.0-12.0					
Laboratory ID:	11-196-15					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0057	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0023	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	69-124				
Toluene-d8	103	80-118				
4-Bromofluorobenzene	102	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-56_2.0-4.0					
Laboratory ID:	11-196-17					
Methyl t-Butyl Ether	ND	0.00098	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0049	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.00098	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00049	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.00098	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00049	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.00098	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.00098	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	108	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	95	75-123				

Client ID:	GEI-56_6.0-8.0					
Laboratory ID:	11-196-19					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0051	EPA 8260D	11-16-24	11-16-24	
Benzene	0.0019	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00051	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00051	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	0.0055	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	0.0012	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	69-124				
Toluene-d8	105	80-118				
4-Bromofluorobenzene	103	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-56_12.0-14.0					
Laboratory ID:	11-196-21					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
n-Hexane	ND	0.0051	EPA 8260D	11-18-24	11-18-24	
Benzene	0.0016	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dichloroethane	ND	0.00051	EPA 8260D	11-18-24	11-18-24	
Toluene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dibromoethane	ND	0.00051	EPA 8260D	11-18-24	11-18-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-18-24	11-18-24	
o-Xylene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	98	75-123				

Client ID:	GEI-57_2.0-4.0					
Laboratory ID:	11-196-26					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0055	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00055	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00055	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0022	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	100	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-57_4.0-6.0					
Laboratory ID:	11-196-27					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0053	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0021	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	102	80-118				
4-Bromofluorobenzene	99	75-123				

Client ID:	GEI-57_10.0-12.0					
Laboratory ID:	11-196-30					
Methyl t-Butyl Ether	ND	0.00099	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0049	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.00099	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00049	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.00099	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00049	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.00099	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.00099	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	101	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-58_2.0-4.0					
Laboratory ID:	11-196-36					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0053	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0021	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	98	75-123				

Client ID:	GEI-58_4.0-6.0					
Laboratory ID:	11-196-37					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0052	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00052	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00052	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0021	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	104	69-124				
Toluene-d8	102	80-118				
4-Bromofluorobenzene	101	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-58_10.0-12.0					
Laboratory ID:	11-196-40					
Methyl t-Butyl Ether	ND	0.00073	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0037	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.00073	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00037	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.00073	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00037	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.00073	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0015	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.00073	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	100	75-123				

Client ID:	GEI-59_2.0-4.0					
Laboratory ID:	11-196-44					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0057	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0023	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	91	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-59_4.0-6.0					
Laboratory ID:	11-196-45					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0057	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00057	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0031	EPA 8260D	11-16-24	11-16-24	U1
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	102	69-124				
Toluene-d8	106	80-118				
4-Bromofluorobenzene	108	75-123				

Client ID:	GEI-59_10.0-12.0					
Laboratory ID:	11-196-48					
Methyl t-Butyl Ether	ND	0.00094	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0047	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.00094	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00047	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.00094	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00047	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.00094	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0019	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.00094	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	101	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	99	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-60_2.0-4.0					
Laboratory ID:	11-196-52					
Methyl t-Butyl Ether	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0053	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00053	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0021	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0011	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	101	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	98	75-123				

Client ID:	GEI-60_6.0-8.0					
Laboratory ID:	11-196-54					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0052	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00052	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00052	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0021	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	102	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	94	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-60_10.0-12.0					
Laboratory ID:	11-196-56					
Methyl t-Butyl Ether	ND	0.00079	EPA 8260D	11-18-24	11-18-24	
n-Hexane	ND	0.0039	EPA 8260D	11-18-24	11-18-24	
Benzene	ND	0.00079	EPA 8260D	11-18-24	11-18-24	
1,2-Dichloroethane	ND	0.00039	EPA 8260D	11-18-24	11-18-24	
Toluene	ND	0.00079	EPA 8260D	11-18-24	11-18-24	
1,2-Dibromoethane	ND	0.00039	EPA 8260D	11-18-24	11-18-24	
Ethylbenzene	ND	0.00079	EPA 8260D	11-18-24	11-18-24	
m,p-Xylene	ND	0.0016	EPA 8260D	11-18-24	11-18-24	
o-Xylene	ND	0.00079	EPA 8260D	11-18-24	11-18-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	105	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	99	75-123				

Client ID:	GEI-DUP1					
Laboratory ID:	11-196-58					
Methyl t-Butyl Ether	ND	0.0012	EPA 8260D	11-18-24	11-18-24	
n-Hexane	ND	0.0058	EPA 8260D	11-18-24	11-18-24	
Benzene	ND	0.0012	EPA 8260D	11-18-24	11-18-24	
1,2-Dichloroethane	ND	0.00058	EPA 8260D	11-18-24	11-18-24	
Toluene	ND	0.0012	EPA 8260D	11-18-24	11-18-24	
1,2-Dibromoethane	ND	0.00058	EPA 8260D	11-18-24	11-18-24	
Ethylbenzene	ND	0.0012	EPA 8260D	11-18-24	11-18-24	
m,p-Xylene	ND	0.0023	EPA 8260D	11-18-24	11-18-24	
o-Xylene	ND	0.0012	EPA 8260D	11-18-24	11-18-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	102	69-124				
Toluene-d8	101	80-118				
4-Bromofluorobenzene	102	75-123				



				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
Client ID:	GEI-DUP2					
Laboratory ID:	11-196-59					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
n-Hexane	ND	0.0051	EPA 8260D	11-18-24	11-18-24	
Benzene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dichloroethane	ND	0.00051	EPA 8260D	11-18-24	11-18-24	
Toluene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dibromoethane	ND	0.00051	EPA 8260D	11-18-24	11-18-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-18-24	11-18-24	
o-Xylene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	107	69-124				
Toluene-d8	102	80-118				
4-Bromofluorobenzene	102	75-123				



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

Matrix: Soil Units: mg/kg (ppm)

0 0 (11 /								Date	Date	•	
Analyte		Result		PQL	Ме	thod		Prepared	Analyz	ed	Flags
METHOD BLANK											
Laboratory ID:		MB1115S1									
Gasoline		ND		5.0	NWT	PH-G	ĸ	11-15-24	11-15-:	24	
Surrogate:	Pei	rcent Recovery	/ C	ontrol Limit	s						
Fluorobenzene	98			62-134							
Laboratory ID:		MB1115S2									
Gasoline		ND		5.0	NWT	PH-G	ĸ	11-15-24	11-15-	24	
Surrogate:	Pe	rcent Recovery	/ C	ontrol Limit	s						
Fluorobenzene	102			62-134							
Laboratory ID:		MB1115S3									
Gasoline		ND		5.0	NWT	PH-G	ĸ	11-15-24	11-15-:	24	
Surrogate:	Pei	rcent Recovery	/ C	ontrol Limit	s						
Fluorobenzene		93		62-134							
					Source	Per	cent	Recovery		RPD	
Analyte	Res	sult	Spił	ke Level	Result	Reco	overy	Limits	RPD	Limit	Flags
DUPLICATE											
Laboratory ID:	11-19	96-02									
	ORIG	DUP									
Gasoline	ND	ND	NA	NA		N	IA	NA	NA	30	
Surrogate:											
Fluorobenzene						77	75	62-134			
Laboratory ID:	11-19	96-04									
	ORIG	DUP									
Gasoline	ND	ND	NA	NA		N	A	NA	NA	30	
Surrogate:											
Fluorobenzene						89	81	62-134			
Laboratory ID:	11-19	96-07									
	ORIG	DUP									
Gasoline	ND	ND	NA	NA		N	A	NA	NA	30	

Surrogate:

Fluorobenzene



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

70

92

62-134

#### GASOLINE RANGE ORGANICS NWTPH-Gx CONTINUING CALIBRATION SUMMARY

	True	Calc.	Percent	Control
Lab ID	Value (ppm)	Value	Difference	Limits
CCVD1115G-1	5.00	4.47	11	+/- 20%
CCVD1115G-2	5.00	4.22	16	+/- 20%



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

#### VOLATILE ORGANICS EPA 8260D QUALITY CONTROL

				Date	Date	
Analyte	Result	PQL	Method	Prepared	Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB1116S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
n-Hexane	ND	0.0050	EPA 8260D	11-16-24	11-16-24	
Benzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dichloroethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Toluene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
1,2-Dibromoethane	ND	0.00050	EPA 8260D	11-16-24	11-16-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-16-24	11-16-24	
o-Xylene	ND	0.0010	EPA 8260D	11-16-24	11-16-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	96	69-124				
Toluene-d8	97	80-118				
4-Bromofluorobenzene	102	75-123				
Laboratory ID:	MB1118S1					
Methyl t-Butyl Ether	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
n-Hexane	ND	0.0050	EPA 8260D	11-18-24	11-18-24	
Benzene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dichloroethane	ND	0.00050	EPA 8260D	11-18-24	11-18-24	
Toluene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
1,2-Dibromoethane	ND	0.00050	EPA 8260D	11-18-24	11-18-24	
Ethylbenzene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
m,p-Xylene	ND	0.0020	EPA 8260D	11-18-24	11-18-24	
o-Xylene	ND	0.0010	EPA 8260D	11-18-24	11-18-24	
Surrogate:	Percent Recovery	Control Limits				
Dibromofluoromethane	103	69-124				
Toluene-d8	100	80-118				
4-Bromofluorobenzene	98	75-123				



#### VOLATILE ORGANICS EPA 8260D QUALITY CONTROL

Matrix: Soil Units: mg/kg

					Per	cent	Recovery		RPD	
Analyte	Res	sult	Spike	Level	Reco	overy	Limits	RPD	Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB11	16S1								
	SB	SBD	SB	SBD	SB	SBD				
Methyl t-Butyl Ether	0.0534	0.0578	0.0500	0.0500	107	116	76-129	8	15	
Benzene	0.0514	0.0556	0.0500	0.0500	103	111	75-126	8	15	
1,2-Dichloroethane	0.0524	0.0560	0.0500	0.0500	105	112	70-133	7	15	
Toluene	0.0509	0.0544	0.0500	0.0500	102	109	78-124	7	17	
1,2-Dibromoethane	0.0494	0.0545	0.0500	0.0500	99	109	80-125	10	15	
Ethylbenzene	0.0488	0.0526	0.0500	0.0500	98	105	80-120	7	15	
m,p-Xylene	0.0973	0.105	0.100	0.100	97	105	80-121	8	15	
o-Xylene	0.0481	0.0517	0.0500	0.0500	96	103	80-120	7	15	
Surrogate:										
Dibromofluoromethane					105	105	69-124			
Toluene-d8					105	104	80-118			
4-Bromofluorobenzene					110	111	75-123			
Laboratory ID:	SB11	18S1								
	SB	SBD	SB	SBD	SB	SBD				
Methyl t-Butyl Ether	0.0540	0.0531	0.0500	0.0500	108	106	76-129	2	15	
Benzene	0.0508	0.0509	0.0500	0.0500	102	102	75-126	0	15	
1,2-Dichloroethane	0.0514	0.0514	0.0500	0.0500	103	103	70-133	0	15	
Toluene	0.0507	0.0508	0.0500	0.0500	101	102	78-124	0	17	
1,2-Dibromoethane	0.0560	0.0535	0.0500	0.0500	112	107	80-125	5	15	
Ethylbenzene	0.0518	0.0524	0.0500	0.0500	104	105	80-120	1	15	
m,p-Xylene	0.103	0.104	0.100	0.100	103	104	80-121	1	15	
o-Xylene	0.0513	0.0517	0.0500	0.0500	103	103	80-120	1	15	
Surrogate:										
Dibromofluoromethane					104	103	69-124			
Toluene-d8					100	99	80-118			
4-Bromofluorobenzene					100	100	75-123			



27

#### % MOISTURE

Olivert ID		0/ Maintura	Date
	Lab ID	% Moisture	Analyzed
GEI-54_2.0-4.0	11-196-02	10	11-18-24
GEI-54_6.0-8.0	11-196-04	13	11-18-24
GEI-54_12.0-14.0	11-196-07	5	11-18-24
GEI-55_2.0-4.0	11-196-11	15	11-18-24
GEI-55_6.0-8.0	11-196-13	16	11-18-24
GEI-55_10.0-12.0	11-196-15	15	11-18-24
GEI-56_2.0-4.0	11-196-17	12	11-18-24
GEI-56_6.0-8.0	11-196-19	17	11-18-24
GEI-56_12.0-14.0	11-196-21	8	11-18-24
GEI-57_2.0-4.0	11-196-26	5	11-18-24
GEI-57_4.0-6.0	11-196-27	15	11-18-24
GEI-57_10.0-12.0	11-196-30	13	11-18-24
GEI-58_2.0-4.0	11-196-36	3	11-18-24
GEI-58_4.0-6.0	11-196-37	13	11-18-24
GEI-58_10.0-12.0	11-196-40	11	11-18-24
GEI-59_2.0-4.0	11-196-44	8	11-18-24
GEI-59_4.0-6.0	11-196-45	20	11-18-24
GEI-59_10.0-12.0	11-196-48	15	11-18-24
GEI-60_2.0-4.0	11-196-52	16	11-18-24
GEI-60_6.0-8.0	11-196-54	17	11-18-24
GEI-60_10.0-12.0	11-196-56	12	11-18-24
GEI-DUP1	11-196-58	20	11-18-24
GEI-DUP2	11-196-59	14	11-18-24



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



#### **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.
- X2 Sample extract treated with a 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.

Ζ-

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



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

Heviewed/Date	Received	Relinquished	Received	Keiinquished	Number	Penning M K		10 GEL 55 0.0-2.0	9 GE1-54-16.0-16.0	8 BE1-54-14.0-16.0	7 GE1-54-12.0-14.0	6 GE1-54-10.0 12.0	5 GE1-54, 8,0-10.0	4 GE1-51-60-30	3 GE1-51-40-60	2 GEI - 54-2.0-4.0	1 GE1-51-0.0-2.0	Lab ID Sample Identification	NATE SCIENCE	BRIAN TRACY	Project Manager: Project Manager:	05147 - 024 - 14 Project Name:	Project Number:	Phone: (425) 883-3881 • www.onsite-env.com Company:	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052	OnSite Environmental Inc.
Reviewed/Date					OSE	GEI	Company	1 1300 1 5	1230 5	1225 5	1220 5	1215	212	1205 5	1200 5	1155	11.1324 1150 501- 5	Date Time Sampled Sampled Matrix	(other) er of (	Contair	Standard (7 Days)		Same Day	(Check One)	Turnaround Request (in working days)	Chain of C
					11/14/24 1340	11.14.24 1346	Date Time				× × ×			X X X		× × ×		NWTP NWTP NWTP Volatile Haloge	H-HCI H-Gx/ H-Gx H-Dx es 826 enated PA 80	D BTEX (i (SG Cle 0 X Volatile	8021 [] ean-up [ - <b>She</b> es 8260	8260 ]) / <b>/ - Ľ</b>	) SJ-		Laboratory Number:	ustody
Chromatograms with final report 🗆 Electronic Data Deliverables (EDDs)	Data Package: Standard  Level III Level IV					Y BTEX, MTBE, EDB EDC. M-HER	Comments/Special Instructions	×	×	×	×		×	×	×	×		Semiv (with k PAHs 2 PCBs Organd Organd Chlorir Total R Total N TCLP I HEM (0	olatiles ow-lev 3270/S 8082 ochlori ophosp nated / CRA N ITCA I ITCA I Metals	a 8270// el PAHs el PAHs ilM (lov ne Pes ohorus Acid He Acid He Acid He Itels	SIM s) v-level) ticides 8 Pesticic rbicides ) 1664	3081 les 827 s 8151	0/SIM		:11-196	Page of 5

Heviewed/Date	Received	Relinquished	Received	Relinquished	Received Nichelly Jan	Relinquished M R L	Signature	20 GEI - 56- 8.0-10.0	19 GE1 - 56_ (0.0-8.0	18 GE1 - 56 - 4.0 - 6.0	17 951 - 56 - 20 - 4.0	14 GE - 56 - 0.0 - 2.0	15 GEI-55-10.0-12.0	14 GEL-55-8.0-10.0	13 GE1-55-6.0-8.0	12 GEI-SS_40-60	11 GE1-55-2.0-4.0	Lab ID Sample Identification	NATE SOLOMON	Sampled by:	POA - OC RIPACTAN ZONE SOIL IN	DSIUT - OZU - IU	GEOENGINEERS INC.	Company: Company:	OnSite Environmental Inc.
Reviewed/Date					ese	GEI	Company	z 1450 1 5	1445 5	1440 5	1435 5	1430 5	1325 5	1320 5	1315	1310	11.18.24 BOS SOL 5	Date Time E Sampled Sampled Matrix	(other)	Contai	Standard (7 Days)	2 Days 3 Days	Same Day 1 Day	(in working days) (Check One)	Chain of
					ונווילוצא וגאס	11. 14.24 1340	Date Time		× × ×		× × ×		× × ×		× × ×		× × ×	NWTP NWTP NWTP NWTP Volatile Haloge EDB E	H-HC H-Gx/ H-Gx H-Dx es 826 enated PA 80	D BTEX ( (SG Cle 0 X Volatili 11 (Wat	8021 8 ean-up	3260 [] ) )		Laboratory Number	Custody
Chromatograms with final report   Electronic Data Deliverables (EDDs)	Data Package: Standard  Level III  Level IV						Comments/Special Instructions	×	×	×	×	×	×	×	×	×	× ×	Semivo (with lo PAHS & PCBS & Organo Organo Chlorin Total R Total M TCLP N HEM (o	Datiles Datiles 270/S 3082 Dchlori ated A 0RAN Aetals ill and	a 8270/ el PAH: IIM (lov ne Pes horus ccid He letals grease	SIM SIM S) /-level) ticides 80 Pesticides M·77 1664	281 ез 8270, 8151 с А	/SIM	<b>i: 11-196</b>	Page 2 of 6

neviewed/Late	neceived	Relinquished	Received	Heiinquisned	Hecewed Nailly	Relinquished	Signature	30 961- 27- 10.0 - 12.0	29 GEI - 57 8.0 - 10.0	28 GEI - 57-6.0-8.0	17 GE1-57-4.0-6.0	24 GE1-57-2.0-4.0	25 GE1-57_ 0.0-2.0	24 GE1-56 - 18.0 - 20.0	23 GE1-56-16.0-18.0	22 GE1-56-140-16.0	21 GEI-56-120-140	Lab ID Sample Identification	NATE SOLOWON	Sampled by:	POA- OC ENPARITAN ZONE SOIL INV.	05147-024-14 Project Name:	Project Number:	14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	Analytical Laboratory Testion Services	
Reviewed/Date					BG	GEI	Company	+ 0915 + 5	010 5	0905	0900 5	0855	0850	5 5151	1510 5	1505	11.13.24 1500 Soir 5	Date Time Sampled Sampled Matrix	(other)	Contai	Standard (7 Days)	2 Days 3 Days	Same Day 1 Day	(in working days) (Check One)	Gnain or u	
					11/14/24 1340	11.14.24 1340	Date Time	XXX			× × ×	× × ×					× × × ×	NWTF       NWTF       NWTF       NWTF       NWTF       NWTF       Uolatil       Haloga       EDB E	PH-HCI PH-Gx/ PH-Gx PH-Dx es 826 enated	ID BTEX (SG CI 0 X Volati 11 (Wa	(8021	3260 []) ])		Laboratory Number	Gustody	
Chromatograms with final report 🗌 Electronic Data Deliverables (EDDs)	Data Package: Standard  Level III  Level IV						Comments/Special Instructions	×	×		×	×	X	X	X	×	×	Semiv (with k PAHs & PCBs Organd Organd Chlorir Total R Total R Total N TCLP N HEM (c	olatiles ow-leve 3270/S 8082 ochlori ophosp ophosp ophosp ophosp ophosp inated A CRA M Vletals	s 8270, el PAH IIM (loo ne Pes horus Acid Hi letals grease	/SIM /SIM /s) w-level) sticides 8 Pesticide erbicides	, 081 es 8270, 8151	/SIM		Page 3 of 6	

Reviewed/Date	Received	Relinquished	Received	Relinquished	Received Nichtling mi	Relinquished	Signature	40 GEI - 58 - 10.0 - 12.0	39 GE1-58- 8.0-10.0	38 GE1-58-6.0-80	37 981-58-4.0-6.0	36 651-58-2.0-4.0	35 GE1-58-0.0-2.0	34 GE1-57-18.0-20.0	33 651-57, 14.0-18.0	32 GE1-57-14.0-160	31 GEI-57-12.0-14.0	Lab ID Sample Identification	NAME SOLOMON	BRIAN TRACK	Project Manager:	05147-024-14	Project Number:	14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com Company:	Analytical Laboratory Testing Services	Environmental Inc.
Reviewed/Date					986	GEI	Company	5 7 3101 7	1610 5	1005 5	1000 5	0955 5	0950 5	2580	0930	cq25 5	11.13.24 0920 SOL 5	Sampled Sampled Matrix N	(other) er of (	Contai	Standard (7 Days)	2 Days 3 Days	Same Day 1 Day	(in working days) (Check One)	Turnaround Request	Chain of C
					11/14/24 1340	11.14.24 1340	Date Time	× × ×			× × ×	× × × ×						NWTP NWTP NWTP Volatil Halogo	H-Gx/ H-Gx H-Dx es 826 enated PA 80	(SG Cl (SG Cl 0 X Volati	(8021	3260 []] ])	)		borotom Niimbori	ustody
Chromatograms with final report 🛛 Electronic Data Deliverables (EDI	Data Package: Standard 🛛 Level III 🗌 Level IV 🗌						Comments/Special Instructions	×	×	×	×	×	×	×	×	×	×	Semiv (with la PAHs i PCBs Organ Organ Chlorir Total R Total N TCLP	olatile: bw-lew 3270/s 8082 bohlor pphosp mated / ITCA I ITCA I ITCA I ITCA I ItCA I	s 8270, el PAH Ine Per Dohorus Acid H Metals greas	/SIM Is) w-level) sticides 8 Pesticid erbicides erbicides	081 es 8270 8151	D/SIM		4 4 0 0	Page 4 of 6
DDs)								$\times$			4	$\times$						% Mois	sture							

Reviewed/Date	Received	Relinquished	Received	Relinquished	Received Nichliffins	Relinquished Nak h	Signature	50 GEI - 59- 14.0 - 16.0	49 GEI - 59 - 12.0 - 14.0	48 GE1-59-10.0-12.0	47 GE1-59-8.0-10.0	46 621-59-0.0-80	45 GE1-59-4.0-6.0	44 GE1 - 59, 2.0 -4.0	45 GE1-59-0.0-2.0	42 GE1-58 14.0 - 15.0	41 GE1-SB-12.0-14.0	Lab ID Sample Identification	NATE Solowood	Sampled by:	Project Manager:	05147-024-14 Project Name	GEOENSINEES INC.	Analytical Laboratory Testing Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	Environmental Inc.
Reviewed/Dat	р. Э				980	GEI	Company	1 1125	1120	1115	1110	1105	1065	1050	1045	1025	11.13.24 1020	Date Time Sampled Sampled	(other)		Standard (7 Days)	2 Days	Same Day	(in working day (Check One)	Cha
Ø								1	S	<b>U</b> I	сл	cr	ري ال	ហ	S	S	SOIL S	Matrix Numb	er of I	Contai D	ners	] 3 Days	1 Day		ain of Cu
					11/14/24 1	11.14.24	Date T			××××			××	×				NWTP NWTP NWTP	H-Gx/ H-Gx H-Dx	BTEX	(8021 8	3260 [] ) )		aboratory N	ustody
0	-				240	1340	ime						×	×				Haloge EDB El	nated	Volati	les 8260 iters Only	)		Number:	
Chromatograms with fir	Data Package: Standa						Comments/Special Inst			×			×	*				With lo       PAHs 8       PCBs 8       Organo       Organo	w-lev 270/S 3082 ochlori	ilM (lo ne Pes	sticides 80 Pesticide	081 es 8270	/SIM	11-196	
al report 🗌 Electroni	rd 🛛 Level III 🗌						ructions			×			*	×				Chlorin Total Re Total M TCLP N	ated A CRA N TCA N Netals	Acid H Netals Netals	erbicides	8151			Page _
c Data Deliverables (ED	Level IV						- -	*	×		×	*			×	×	X		il and	greas	9) 1664			_	ମ ୁ ତ
)Ds)										X			4	$\times$				% Moist	ure						

Reviewed/Date	Received	Relinquished	Received	Relinquished	Received Nichula Zami	Relinquished	Signature		57 GEI - DUP2	58 GE1-DUP1	57 GEI - 60- 12.0 - 14.0	56 951-60-10.0-12.0	55 GE1-60-8.0-10.0	54 GEI-60-6.0-8.0	53 GEI-60-4.0-6.0	52 GE1-60-20-4.0	51 GE1-60-0.0-2.0	Lab ID Sample Identification	NATE SOLOMON	Samuel hr:	Project Manager:	05147 - 024 - 14 Project Name:	Project Number	Analytical Laboratory Jesting Services 14648 NE 95th Street • Redmond, WA 98052 Phone: (425) 883-3881 • www.onsite-env.com	OnSite Environmental Inc.
Reviewed/Date					036	651	Company	*	1607 5		1610	1605 5	1600 S	1555 S	1560	S451	11.12,24 1540 Soin 5	Date Time E Sampled Sampled Matrix E	(other) er of (	Contai	Standard (7 Days)	2 Days 3 Days	Same Day 1 Day	(in working days) (Check One)	Chain of C
					11/14/24 1340	11. 14.24 1340	Date Time		××××	× × ×		× × ×		× × ×		× × ×		NWTP NWTP NWTP NWTP Volatik Haloge	H-HCI H-Gx/ H-Gx H-Dx es 826 enated PA 80	D BTEX (SG CI 0 X Volatil 11 (Wa	(8021] ean-up [ es 8260 ters Only	8260 []; ]) /)	)	Laboratory Number:	ustody
Chromatograms with final report   Electronic Data Deliverables (EDDs)	Data Package: Standard 🗌 Level III 🗌 Level IV 🗌						Comments/Special Instructions		*	×	*	×	×		×	× ·	×	Semiv (with la PAHs & PCBs Organd Organd Chlorir Total R Total N TCLP I HEM (c	olatiles az70/S az70/S bochlori ophosp nated <i>J</i> CRA N ITCA N Vletals iil and <b>J</b> <b>J</b> <b>L L L</b>	s 8270/, ele PAH SIM (lov ne Pes bhorus Acid Hi /letals grease E.	'SIM s) w-level) sticides & Pesticic erbicides	3081 les 8270 3 8151	)/SIM	<b>44-196</b>	Page 6 of 6

# Sample/Cooler Receipt and Acceptance Checklist

Client: <u>GES</u>			$\infty$
Client Project Name/Number: 05147-027-14		Initiated by	(M///MB
OnSite Project Number: 11-196		Date Initiate	ed: 1//19/24
1.0 Cooler Verification			
1.1 Were there custody seals on the outside of the cooler?	Yes	No	N/A 1 2 3 4
1.2 Were the custody seals intact?	Yes	No	N/A 1 2 3 4
1.3 Were the custody seals signed and dated by last custodian?	Yes	No	N/A 1234
1.4 Were the samples delivered on ice or blue ice?	(es)	No	N/A 1234
1.5 Were samples received between 0-6 degrees Celsius?	Yes	No	N/A Temperature: S. 2.1
1.6 Have shipping bills (if any) been attached to the back of this form?	Yes	N/A	
1.7 How were the samples delivered?	Clien	Courier	UPS/FedEx OSE Pickup Other
			Current Controller Current
2.0 Chain of Custody Verification			
2.1 Was a Chain of Custody submitted with the samples?	(Yes)	No	1 2 3 4
2.2 Was the COC legible and written in permanent ink?	res	No	1 2 3 4
2.3 Have samples been relinquished and accepted by each custodian?	(es)	No	1 2 3 4
2.4 Did the sample labels (ID, date, time, preservative) agree with COC?	Yes	No	1 2 3 4
2.5 Were all of the samples listed on the COC submitted?	Ves	No	1 2 3 4
2.6 Were any of the samples submitted omitted from the COC?	Yes	NO	1 2 3 4
3.0 Sample Verification 3.1 Were any sample containers broken or compromised?	Yes	No	1234
3.2 Were any sample labels missing or illegible?	Yes	No	1 2 3 4
3.3 Have the correct containers been used for each analysis requested?	Tes	No	1 2 3 4
3.4 Have the samples been correctly preserved?	Yes	No	1234
3.5 Are volatiles samples free from headspace and bubbles greater than 6mm?	Yes	No	
3.6 Is there sufficient sample submitted to perform requested analyses?	Tes	No	1234
3.7 Have any holding times already expired or will expire in 24 hours?	Yes	(Na)	1 2 3 4
3.8 Was method 5035A used?	Yes	No	N/A 1 2 3 4
3.9 If 5035A was used, which sampling option was used (#1, 2, or 3).	#	1	N/A 1 2 3 4
Explain any discrepancies:			
2,4) #5) 1205 m visus #6) 1210 an vi	isls #	+7) 120	San visto #8) 1220 mil
# 9) 1225 a visits #10) 1255 a visits	711)1	305 a	visl #17) 1430 an 1 stil
#34) -16.0 - 18.0 ~ (stir #39)	GÉI-	54-8-0	-DD a lyind
#40) I vial un labeled #41) GEI-	58 a	Irial	
# 44) GE1-59-2.0- an Estir #	57) [[	ols an	visls

1 - Discuss issue in Case Narrative

3 - Client contacted to discuss problem

2 - Process Sample As-is

4 - Sample cannot be analyzed or client does not wish to proceed

//SERVER\OSE\Administration\forms\cooler\_checklist.xls