



August 9, 2018
Revised August 14, 2018

Mr. Helmuth Schlueter
Schlueter Family Trust
27911 Northeast Big Rock Road
Duvall, WA 98019

**Re: Phase II Oversight and Sampling Services
Schlueter Property
1515 196th Street Southeast
Bothell, Snohomish County, Washington 98012
RGI Project No. 2018-158**

Dear Mr. Schlueter:

The Riley Group, Inc. (RGI) provided Phase II Oversight and Sampling Services (Phase II) for the Schlueter property located at 1515 196th Street Southeast in Bothell, Washington (hereafter referred to as the Property, Figure 1).

This Phase II was performed at the request of Mr. Helmuth Schlueter with Schlueter Family Trust (hereafter referred to as the Client). The scope of work for this project was performed in accordance with our Phase II Oversight and Sampling Services Proposal dated and approved by the Client on June 20, 2018.

POTENTIAL CONTAMINANTS OF CONCERN

The following preliminary potential contaminants of concern (PCOCs) in soil and/or groundwater were identified for the Property as follows:

- Total Petroleum Hydrocarbon (TPH), as gasoline (TPHg), diesel (TPHd), and/or oil (TPHo) and benzene, toluene, ethylbenzene and xylenes (BTEX).
- Total and dissolved lead and cadmium.

The soil and groundwater screening levels for the PCOCs are obtained from Washington State Department of Ecology's (Ecology's) Model Toxics Control Act (MTCA) Method A Soil and Groundwater Cleanup Levels (as shown on Ecology's Cleanup Levels and Risk Calculation [CLARC] on-line database). The CLARC database is developed and maintained by Ecology and helps establish cleanup levels for hazardous waste sites to comply with the MTCA Cleanup Regulation, chapter 173-340 WAC.

SCOPE OF SERVICES

The scope of services performed for this project included the following tasks:

- Performed public and private utility locating in an attempt to identify the location(s) of buried utility lines within Property area.
- Oversaw the advancement of four direct-push test probes (TP1 through TP4) on the Property to depths of 10 to 20 feet below ground surface (bgs).
- Installed temporary groundwater wells down hole at each of the test probe locations in order

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Bothell, Washington 98011
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www.riley-group.com

- to develop the temp well and collect a relatively representative groundwater grab sample.
- Submitted select soil and/or groundwater grab samples from the test probes for laboratory analysis.
 - Compared analytical results to Ecology's MTCA Method A Cleanup Levels for Groundwater.
 - Prepared this report presenting our findings, observations, conclusions, and recommendations.

REGULATORY ANALYSIS OF SITE CONDITIONS UNDER MTCA

Washington's hazardous waste cleanup law, the Model Toxics Control Act (70.105D RCW), mandates the necessity for site cleanups to protect human health and the environment. The MTCA Cleanup Regulation (173-340 WAC) defines the approach for establishing cleanup requirements for individual sites, including the establishment of cleanup standards and selection of cleanup actions.

For purposes of comparison, analytical laboratory data for this project are compared to the *MTCA Method A Cleanup Levels for Unrestricted Land Uses*, summarized in the attached Table 1.

PHASE II SUBSURFACE INVESTIGATION

PRIVATE AND PUBLIC UTILITY LOCATE

At least 48 hours prior to commencing our subsurface investigation, RGI contacted One-Call to locate known public underground utilities near, or on, the Property. Public underground utilities located included electric, natural gas, telecommunications, water, sewer, and cable.

RGI also retained a private utility locator to locate private water, natural gas, electric, and other metallic underground utility conduits potentially located in the vicinity of the proposed test probe locations.

TEST PROBE INSTALLATION

On July 16, 2018, the Client's drilling contractor (Cascade Drilling) advanced a total of four test probes, TP1 through TP4, to a maximum depth of 20 feet bgs at the Property (Figure 2). Test probe depths ranged between 10 feet and 20 feet bgs. Groundwater was encountered during drilling at depths of approximately 6.5 to 19.5 feet bgs. The test probes were advanced at the request of the Client and Ecology. Test probe TP4 was moved west of the proposed location due water and power utilities located in the eastern portion of the Property.

Test probes were advanced using a full-sized truck-mounted direct push drill rig. All drilling and sampling equipment were cleaned prior to commencing probing and in between sampling and test probe locations. All field sampling and decontamination procedures were performed in accordance with standard sampling and decontamination protocols.

All soil cuttings and purge and decontamination water were contained on the Property in two 30-gallon drums, labeled, and left on-Property.

SUBSURFACE CONDITIONS

Soil conditions encountered were described using the Unified Soil Classification System (USCS). Subsurface soils encountered during drilling consisted of fill (loose silty SAND with gravel) from 0 feet bgs to approximately 12 feet bgs. From approximately 12 feet bgs to the bottom of the boring, the native soils were encountered consisting of dense saturated medium sandy silt. The four borings were terminated between 15 and 20 feet bgs.

Groundwater was encountered during drilling at approximately 6.5 to 19.5 feet bgs. Groundwater did not exhibit any evidence of petroleum sheen or odor.

SOIL SAMPLING

During all drilling activities, soil samples were collected, inspected, and classified by RGI's field geologist only if there were signs of contamination (odor, sheen, elevated PID reading).

All soil samples were screened in the field for the presence of VOCs using a portable gas analyzer equipped with a photoionization detector (PID) and for longer chain hydrocarbons using a water sheen test.

Soil collected from the Property had field screening results in 0.0 volumetric parts per million (Vppm).

None of the soils had any odor, sheen, or elevated PID readings, therefore no soil samples were collected or submitted for laboratory analysis.

GROUNDWATER GRAB SAMPLING

Four (4) groundwater grab samples were collected during this project for potential laboratory analysis. Shallow groundwater was encountered in TP1 through TP4, at approximately 6.5 to 19.5 feet bgs during drilling.

Prior to purging and sampling, the water level in each temporary well was measured using an electronic water level meter. The depth to water was measured relative to the northernmost point on the well casing.

After collection of water level data and prior to sample collection, each temporary groundwater well was purged using a peristaltic pump and dedicated tubing while monitoring field parameters (pH, temperature and specific conductivity). Sampling commenced when field parameters stabilized. A groundwater sample was then collected from each well using a peristaltic pump and polyethylene tubing under low flow conditions. Groundwater samples submitted for metals laboratory analyses were field filtered using a 45-micron filter. No petroleum hydrocarbon sheen was observed during well purging and/or groundwater grab sample collection.

The groundwater grab samples were submitted for laboratory analysis as outlined below.

ANALYTICAL LABORATORY ANALYSIS

Four (4) groundwater grab samples, collected during this project, were selected for laboratory analysis. Groundwater samples collected during this investigation were submitted to On-Site Environmental Inc. of Redmond, Washington, for one or more of the following laboratory analyses:

- TPHg using Ecology Test Method NWTPH-Gx.
- TPHd and TPHo TPH using Ecology Test Method NWTPH-Dx without silica gel.
- Total and Dissolved metals – lead and cadmium using EPA Test Method 6020A.

LABORATORY ANALYTICAL RESULTS

Groundwater analytical results are summarized in the attached Table and Figure, and are discussed below.

Copies of the analytical laboratory report and associated sample chain-of-custody forms are included in Appendix A.

Soil Analytical Results

No soil samples were submitted for laboratory analyses.

Groundwater Analytical Results

TPHg, BTEX, TPHd, TPHo, total and dissolved cadmium, and dissolved lead concentrations were not detected above corresponding laboratory reporting limits (non-detect) in any of the 4 groundwater grab samples, TP1 through TP4, submitted for analyses.

Lead was detected in groundwater grab samples TP1 and TP4 at concentrations of 18 µg/L and 25 µg/L, respectively, which exceeded the MTCA Method A Cleanup Level for Groundwater of 15 µg/L for Lead. Although total metals samples were field filter, the samples were slightly turbid. Groundwater sample TP2 had a concentration of lead at 9.1 µg/L, and thus below the MTCA Method A Cleanup Level. The total lead concentrations was not detected above laboratory reporting limits in groundwater grab sample TP3.

All four groundwater samples (TP1 through TP4) were non-detect for dissolved lead and cadmium.

LIMITATIONS

This report is the property of RGI, Mr. Helmuth Schlueter with Schlueter Family Trust, and their authorized representatives or affiliates and was prepared in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. This report is intended for specific application to the Schlueter property located at 1515 196th Street Southeast in Bothell, Washington. No other warranty, expressed or implied, is made.

The analyses and recommendations presented in this report are based upon data obtained from our review of available information at the time of preparing this report, our test pits excavated or test borings drilled on the Property, or other noted data sources. Conditional changes may occur through time by natural or human-made process on this or adjacent properties. Additional changes may occur in legislative standards, which may or may not be applicable to this report. These changes, beyond RGI's control, may render this report invalid, partially or wholly. If variations appear evident, RGI should be requested to reevaluate the recommendations in this report.

Please contact us at (425) 415-0551 if you have any questions or need additional information.

Sincerely,

THE RILEY GROUP, INC.



Megan E. Poysnick, LG
Project Geologist

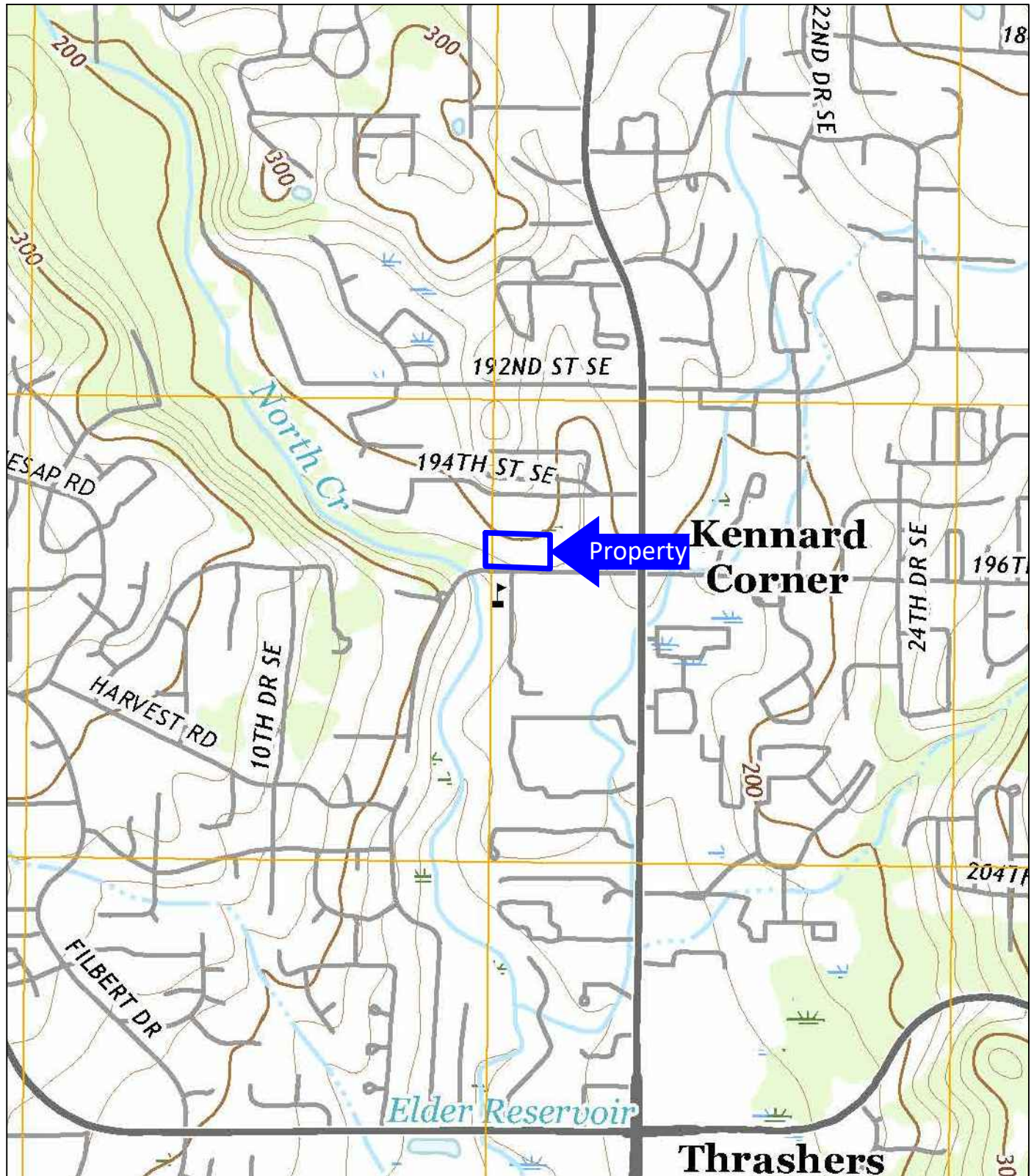


 Paul D. Riley, LG, LHG
Principal

- Attachments*
- Figure 1, Property Vicinity Map*
 - Figure 2, Property Plan with Test Probe Locations and Groundwater Analytical Data*

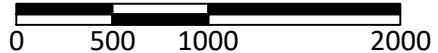
 - Table 1, Summary of Groundwater Grab Sample Analytical Laboratory Results*
 - Appendix A, Analytical Laboratory Reports and Chains of Custody*
 - Appendix B, Groundwater Sampling Information Sheets*

Distribution Mr. Helmuth Schlueter, Schlueter Family Trust (PDF)



USGS, 2017, Bothell, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'



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Bothell, Washington 98011
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Schlueter Property

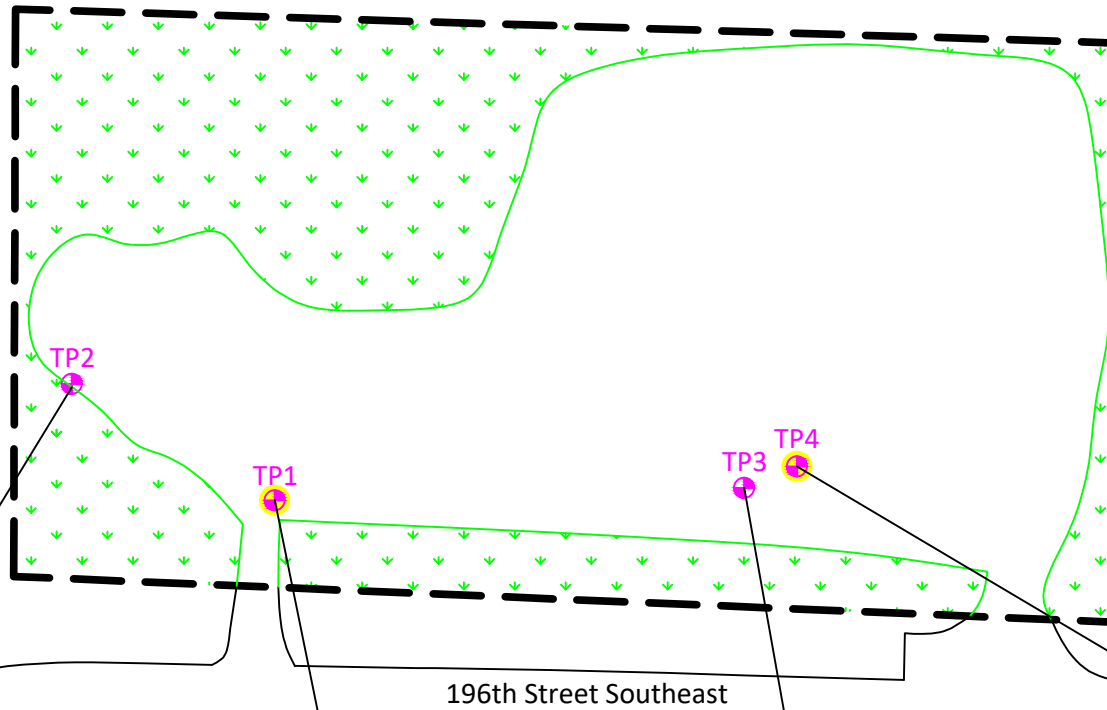
Figure 1

RGI Project Number
2018-158

Property Vicinity Map

Date Drawn:
08/2018

Address: 1515 196th Street Southeast, Bothell, Washington 98012




TP2									
Depth	Gas	BTEX	DSL	Oil	Total		Dissolved		
					Cd	Pb	Cd	Pb	Pb
14.5	ND	ND	ND	ND	ND	9.1	ND	ND	ND


TP1									
Depth	Gas	BTEX	DSL	Oil	Total		Dissolved		
					Cd	Pb	Cd	Pb	Pb
14.5	ND	ND	ND	ND	ND	18	ND	ND	ND

TP3									
Depth	Gas	BTEX	DSL	Oil	Total		Dissolved		
					Cd	Pb	Cd	Pb	Pb
14.5	ND	ND	ND	ND	ND	ND	ND	ND	ND

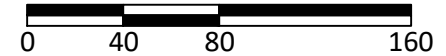
TP4									
Depth	Gas	BTEX	DSL	Oil	Total		Dissolved		
					Cd	Pb	Cd	Pb	Pb
14.5	ND	ND	ND	ND	ND	25	ND	ND	ND

 = Groundwater Analytical Laboratory Results in ug/L;
 Depth = Feet below ground surface
 Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
 BTEX = Benzene, toluene, ethylbenzene, xylenes
 Cd/Pb = Cadmium/lead
 ND = Not detected below laboratory detection limits
 Bold results indicate concentrations above laboratory detection limits
 Bold and yellow results indicate concentrations above MTCA A or B Cleanup Levels

 = Test probe by Cascade Drilling, 7/16/18

 = Site boundary

Approximate Scale: 1"=80'




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Schlueter Property		Figure 2
RGI Project Number 2018-158	Property Plan with Test Probe Locations and Groundwater Analytical Data	Date Drawn: 08/2018
Address: 1515 196th Street Southeast, Bothell, Washington 98012		

Table 1. Summary of Groundwater Grab Sample Analytical Laboratory Results

Schlueter Property

1515 196th Street Southeast, Bothell, Washington 98012

The Riley Group, Inc. Project No. 2018-158

Sample Number	Sample Date	Depth to Water (bgs)	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	Total Metals		Dissolved Metals	
				B	T	E	X			Cd	Pb	Cd	Pb
TP1	07/16/18	14.5	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<250	ND<400	ND<4.4	18	ND<4.0	ND<1.0
TP2	07/16/18	19.5	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<310	ND<500	ND<4.4	9.1	ND<4.0	ND<1.0
TP3	07/16/18	6.5	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<300	ND<480	ND<4.4	ND<1.1	ND<4.0	ND<1.0
TP4	07/16/18	7.0	ND<100	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<250	ND<400	ND<4.4	25	ND<4.0	ND<1.0
MTCA Method A Cleanup Levels for Ground Water			800/1,000¹	5	1,000	700	1,000	500	500	5	15	5	15

Notes:

Samples collected by RGI field staff using a peristaltic pump under low-flow conditions.

Unless otherwise noted, all analytical results are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

Gasoline TPH (total petroleum hydrocarbons) determined using Northwest Test Method NWTPH-Gx.

BTEX (benzene, toluene, ethylbenzene, and xylenes) determined using EPA Test Method 8021B.

Diesel and Oil TPH (total petroleum hydrocarbons) determined using Northwest Test Method NWTPH-Dx without silica gel cleanup.

Total and Dissolved Metals (Cd = cadmium, Pb = lead) determined using EPA Method 200.8.

ND = Not detected above the noted analytical detection limit.

---- = Not analyzed or not applicable.

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Cleanup Levels for Ground Water (WAC 173-340-900, Table 720-1).

¹ The higher cleanup level is applicable if no benzene is detected in groundwater.

Bold results indicate concentrations (if any) above laboratory detection limits.

Bold and yellow highlighted results indicate concentrations (if any) that exceed MTCA Method A or B Cleanup Levels for Ground Water.



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

July 24, 2018

Cliff Nale
The Riley Group, Inc.
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Re: Analytical Data for Project Schlueter Property
Laboratory Reference No. 1807-095

Dear Cliff:

Enclosed are the analytical results and associated quality control data for samples submitted on July 16, 2018.

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

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

Sincerely,

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

David Baumeister
Project Manager

Enclosures



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

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

Date of Report: July 24, 2018
Samples Submitted: July 16, 2018
Laboratory Reference: 1807-095
Project: Schlueter Property

Case Narrative

Samples were collected on July 16, 2018 and received by the laboratory on July 16, 2018. They were maintained at the laboratory at a temperature of 2°C to 6°C.

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

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



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	TP1					
Laboratory ID:	07-095-01					
Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Toluene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Ethyl Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
m,p-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
o-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Gasoline	ND	100	NWTPH-Gx	7-17-18	7-17-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	<i>82</i>	<i>66-117</i>				
Client ID:	TP2					
Laboratory ID:	07-095-02					
Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Toluene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Ethyl Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
m,p-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
o-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Gasoline	ND	100	NWTPH-Gx	7-17-18	7-17-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	<i>81</i>	<i>66-117</i>				
Client ID:	TP3					
Laboratory ID:	07-095-03					
Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Toluene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Ethyl Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
m,p-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
o-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Gasoline	ND	100	NWTPH-Gx	7-17-18	7-17-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	<i>80</i>	<i>66-117</i>				



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

NWTPH-Gx/BTEX

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	TP4					
Laboratory ID:	07-095-04					
Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Toluene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Ethyl Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
m,p-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
o-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Gasoline	ND	100	NWTPH-Gx	7-17-18	7-17-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	<i>81</i>	<i>66-117</i>				



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

**NWTPH-Gx/BTEX
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0717W1					
Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Toluene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Ethyl Benzene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
m,p-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
o-Xylene	ND	1.0	EPA 8021B	7-17-18	7-17-18	
Gasoline	ND	100	NWTPH-Gx	7-17-18	7-17-18	
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>Fluorobenzene</i>	82	66-117				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-095-01							
	ORIG	DUP						
Benzene	ND	ND	NA	NA	NA	NA	NA	30
Toluene	ND	ND	NA	NA	NA	NA	NA	30
Ethyl Benzene	ND	ND	NA	NA	NA	NA	NA	30
m,p-Xylene	ND	ND	NA	NA	NA	NA	NA	30
o-Xylene	ND	ND	NA	NA	NA	NA	NA	30
Gasoline	ND	ND	NA	NA	NA	NA	NA	30
<i>Surrogate:</i>								
<i>Fluorobenzene</i>				82	82	66-117		

MATRIX SPIKES

Laboratory ID:	07-095-01									
	MS	MSD	MS	MSD		MS	MSD			
Benzene	47.5	46.1	50.0	50.0	ND	95	92	82-122	3	11
Toluene	45.3	44.0	50.0	50.0	ND	91	88	83-123	3	12
Ethyl Benzene	45.4	44.2	50.0	50.0	ND	91	88	83-123	3	12
m,p-Xylene	44.7	43.6	50.0	50.0	ND	89	87	83-123	2	12
o-Xylene	45.1	43.9	50.0	50.0	ND	90	88	83-123	3	11
<i>Surrogate:</i>										
<i>Fluorobenzene</i>						88	82	66-117		



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

NWTPH-Dx

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	TP1					
Laboratory ID:	07-095-01					
Diesel Range Organics	ND	0.25	NWTPH-Dx	7-18-18	7-19-18	X1
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	7-18-18	7-19-18	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>105</i>	<i>50-150</i>				
Client ID:	TP2					
Laboratory ID:	07-095-02					
Diesel Range Organics	ND	0.31	NWTPH-Dx	7-18-18	7-18-18	X1
Lube Oil Range Organics	ND	0.50	NWTPH-Dx	7-18-18	7-18-18	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>96</i>	<i>50-150</i>				
Client ID:	TP3					
Laboratory ID:	07-095-03					
Diesel Range Organics	ND	0.30	NWTPH-Dx	7-18-18	7-18-18	X1
Lube Oil Range Organics	ND	0.48	NWTPH-Dx	7-18-18	7-18-18	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>96</i>	<i>50-150</i>				
Client ID:	TP4					
Laboratory ID:	07-095-04					
Diesel Range Organics	ND	0.25	NWTPH-Dx	7-18-18	7-19-18	X1
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	7-18-18	7-19-18	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>104</i>	<i>50-150</i>				



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

**NWTPH-Dx
 QUALITY CONTROL**

Matrix: Water
 Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0718W1					
Diesel Range Organics	ND	0.25	NWTPH-Dx	7-18-18	7-18-18	X1
Lube Oil Range Organics	ND	0.40	NWTPH-Dx	7-18-18	7-18-18	X1
<i>Surrogate:</i>	<i>Percent Recovery</i>	<i>Control Limits</i>				
<i>o-Terphenyl</i>	<i>105</i>	<i>50-150</i>				

Analyte	Result	Spike Level	Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE								
Laboratory ID:	07-098-01							
	ORIG	DUP						
Diesel Range	ND	ND	NA	NA	NA	NA	NA	
Lube Oil Range	ND	ND	NA	NA	NA	NA	NA	
<i>Surrogate:</i>								
<i>o-Terphenyl</i>				86	86	50-150		



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TOTAL METALS
EPA 200.8

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	TP1					
Laboratory ID:	07-095-01					
Cadmium	ND	4.4	EPA 200.8	7-18-18	7-18-18	
Lead	18	1.1	EPA 200.8	7-18-18	7-18-18	
Client ID:	TP2					
Laboratory ID:	07-095-02					
Cadmium	ND	4.4	EPA 200.8	7-18-18	7-18-18	
Lead	9.1	1.1	EPA 200.8	7-18-18	7-18-18	
Client ID:	TP3					
Laboratory ID:	07-095-03					
Cadmium	ND	4.4	EPA 200.8	7-18-18	7-18-18	
Lead	ND	1.1	EPA 200.8	7-18-18	7-18-18	
Client ID:	TP4					
Laboratory ID:	07-095-04					
Cadmium	ND	4.4	EPA 200.8	7-18-18	7-18-18	
Lead	25	1.1	EPA 200.8	7-18-18	7-18-18	



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

**TOTAL METALS
 EPA 200.8
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0718WM1					
Cadmium	ND	4.4	EPA 200.8	7-18-18	7-18-18	
Lead	ND	1.1	EPA 200.8	7-18-18	7-18-18	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	07-098-01									
	ORIG	DUP								
Cadmium	ND	ND	NA	NA		NA	NA	NA	20	
Lead	1.11	ND	NA	NA		NA	NA	NA	20	

MATRIX SPIKES

Laboratory ID:	07-098-01									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	125	127	222	222	ND	56	57	75-125	2	20
Lead	123	126	222	222	1.11	55	56	75-125	2	20



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

DISSOLVED METALS
EPA 200.8

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	TP1					
Laboratory ID:	07-095-01					
Cadmium	ND	4.0	EPA 200.8		7-18-18	
Lead	ND	1.0	EPA 200.8		7-18-18	

Client ID:	TP2					
Laboratory ID:	07-095-02					
Cadmium	ND	4.0	EPA 200.8		7-18-18	
Lead	ND	1.0	EPA 200.8		7-18-18	

Client ID:	TP3					
Laboratory ID:	07-095-03					
Cadmium	ND	4.0	EPA 200.8		7-18-18	
Lead	ND	1.0	EPA 200.8		7-18-18	

Client ID:	TP4					
Laboratory ID:	07-095-04					
Cadmium	ND	4.0	EPA 200.8		7-18-18	
Lead	ND	1.0	EPA 200.8		7-18-18	



Date of Report: July 24, 2018
 Samples Submitted: July 16, 2018
 Laboratory Reference: 1807-095
 Project: Schlueter Property

**DISSOLVED METALS
 EPA 200.8
 QUALITY CONTROL**

Matrix: Water
 Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0718D1					
Cadmium	ND	4.0	EPA 200.8		7-18-18	
Lead	ND	1.0	EPA 200.8		7-18-18	

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	07-095-04									
	ORIG	DUP								
Cadmium	ND	ND	NA	NA		NA	NA	NA	20	
Lead	ND	ND	NA	NA		NA	NA	NA	20	

MATRIX SPIKES

Laboratory ID:	07-095-04									
	MS	MSD	MS	MSD		MS	MSD			
Cadmium	197	203	200	200	ND	98	102	75-125	3	20
Lead	192	197	200	200	ND	96	98	75-125	2	20





Data Qualifiers and Abbreviations

- A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
 - B - The analyte indicated was also found in the blank sample.
 - C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
 - E - The value reported exceeds the quantitation range and is an estimate.
 - F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
 - H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
 - I - Compound recovery is outside of the control limits.
 - J - The value reported was below the practical quantitation limit. The value is an estimate.
 - K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.
 - L - The RPD is outside of the control limits.
 - M - Hydrocarbons in the gasoline range are impacting the diesel range result.
 - M1 - Hydrocarbons in the gasoline range (toluene-naphthalene) are present in the sample.
 - N - Hydrocarbons in the lube oil range are impacting the diesel range result.
 - N1 - Hydrocarbons in diesel range are impacting lube oil range results.
 - O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.
 - P - The RPD of the detected concentrations between the two columns is greater than 40.
 - Q - Surrogate recovery is outside of the control limits.
 - S - Surrogate recovery data is not available due to the necessary dilution of the sample.
 - T - The sample chromatogram is not similar to a typical _____.
 - U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
 - U1 - The practical quantitation limit is elevated due to interferences present in the sample.
 - V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
 - W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
 - X - Sample extract treated with a mercury cleanup procedure.
 - X1 - Sample extract treated with a sulfuric acid/silica gel cleanup procedure.
 - Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.
 - Z -
- ND - Not Detected at PQL
 PQL - Practical Quantitation Limit
 RPD - Relative Percent Difference



The Riley Group, Inc.

Groundwater Sampling Information

Well No./Location: TP1	Project No: 2018-158	Sampling Date: 7/16/18
Depth to Water: 14.10	Time: 13:21 / 13:25	Water Volume In Casing: 0.16 gal
Depth to Product:	13:32	
Total Depth: 14.50	Purged Time: 0:07	Volume Purged: 0.25 gal
Purging Method: Per Pump	Purge Volume Measurement Method: grad bucket	
Project Location:	Parameter Monitoring	Sampled By: TR

Time	Cumulative Volume	pH	COND	TEMP	DO	TURB	ORP	SAL	TDS	Appearance	Odor
		SU	mS/cm	Degree C	mg/L	NTU	mV	%	g/L		
10:24	Purged										
13:26	0.0	7.94	0.615	39.53	4.67	114	64	—	0.393	NO	NO
13:29	0.25	7.94	0.357	30.39	2.12	0.0	-138	—	0.224	"	"
13:37	0.25	7.76	0.343	23.47	2.50	0.0	-151	—	0.231	"	"
13:32	Purged										

Sampling Methods:	Sample Data	Waste Container:
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Field Sample No.	Sample Container	Time	Sample Depth	Matrix Type	Sample Type	Preserved By

Chain of Custody (yes/no):	Duplicate Sample Numbers:
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Analytical Lab	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Analytical Lab/QC	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Split	Name(s):	
	Organization(s):	

Matrix Types				Sample Types	
AA ambient air	GW groundwater	SD sediment	SW surface water	CS composite sample	FB field blank
BM building material	NS near-surface soil	SL soil	TI tissue	ER equipment rinsate	FD field duplicate
DR debris/rubble	SB subsurface soil	SU sludge	WR water	ES environmental sample	TB trip blank

Additional Comments: **Pumped @ <100 ml/min**
Very limited water - Cliff said to get 3 samples.

Recorder:	Date:
Checker:	Date:

> 3x well volumes purged before sampling

Groundwater Sampling Information

Well No./Location: T02	Project No: 2018-158	Sampling Date: 7/16/18
Depth to Water: 19.5	Time: 13:41 / 15:22	Water Volume In Casing: 0.07 gal
Depth to Product:	15.22	
Total Depth: L0	Purged Time: 0.14	Volume Purged: 0.5 gal
Purging Method: Pump & Dump	Purge Volume Measurement Method: Graduated Bucket	
Project Location:	Parameter Monitoring	
	Sampled By: TR	

Time	Cumulative Volume	pH	COND	TEMP	DO	TURB	ORP	SAL	TDS	Appearance	Odor
		SU	mS/cm	Degree C	mg/L	NTU	mV	%	g/L		
13:45	0.0	7.56	0.205	22.55	2.06	0.0	-104	—	0.157	No	No
13:46	0.25	Purged		Drop							
15:16	0.25	7.97	0.185	23.65	3.37	0.0	-101	—	0.121	No	No
15:19	0.25	7.97	0.192	18.55	1.66	0.0	-127	—	0.127	"	"
15:22	0.5	7.87	0.197	17.59	1.29	0.0	-193	—	0.128	"	"

Sampling Methods:	Sample Data	Waste Container:
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Field Sample No.	Sample Container	Time	Sample Depth	Matrix Type	Sample Type	Preserved By

Chain of Custody (yes/no):	Duplicate Sample Numbers:	
Analytical Lab	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Analytical Lab/QC	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Split	Name(s):	
	Organization(s):	

Matrix Types				Sample Types	
AA ambient air	GW groundwater	SD sediment	SW surface water	CS composite sample	FB field blank
BM building material	NS near-surface soil	SL soil	TI tissue	ER equipment rinse	FD field duplicate
DR debris/rubble	SB subsurface soil	SU sludge	WR water	ES environmental sample	TB trip blank

Additional Comments: **Pumped @ 100 mL/min**
Very limited water - GFF said to get 3 readings.

Recorder:	Date:
Checker:	Date:

→ 3x mobil. volumes purged before sampling

The Riley Group, Inc.

Groundwater Sampling Information

Well No./Location: TP3	Project No: 2018-158	Sampling Date: 7/16/18
Depth to Water: 0.50	Time: 13:55	Water Volume In Casing: 0.15 gal
Depth to Product:	14:01	
Total Depth: 12.00	Purged Time: 0.08	Volume Purged: 0.25
Purging Method: Per. Pump	Purge Volume Measurement Method: Grad. Bucket	
Project Location:	Parameter Monitoring	Sampled By: TR

Time	Cumulative Volume	pH SU	COND mS/cm	TEMP Degree C	DO mg/L	TURB NTU	ORP mV	SAL %	TDS g/L	Appearance	Odor
13:57	0.0	7.01	0.513	20.20	3.61	0.0	-110	-	0.341	No	No
14:01	0.25	6.80	0.541	21.00	1.43	0.0	-108	-	0.344		
14:04	0.50	6.75	0.536	21.26	1.56	0.0	-93	-	0.344		

Sampling Methods:	Sample Data	Waste Container:				
Field Sample No.	Sample Container	Time	Sample Depth	Matrix Type	Sample Type	Preserved By

Chain of Custody (yes/no):	Duplicate Sample Numbers:	
Analytical Lab	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Analytical Lab/QC	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Split	Name(s):	
	Organization(s):	

Matrix Types				Sample Types	
AA ambient air	GW groundwater	SD sediment	SW surface water	CS composite sample	FB field blank
BM building material	NS near-surface soil	SL soil	TI tissue	ER equipment rinseate	FD field duplicate
DR debris/rubble	SB subsurface soil	SU sludge	WR water	ES environmental sample	TB trip blank

Additional Comments: **Pumped @ < 100 ml/min**
Limited water (slow recharge for site) - diff said to get

Recorder: 3 readings	Date:
Checker:	Date:

The Riley Group, Inc.

Groundwater Sampling Information

Well No./Location: TP4	Project No: 2018-158	Sampling Date: 7/16/18
Depth to Water: 7.0	Time: 14:31	Water Volume In Casing: 0.2 gal
Depth to Product:	14:38	
Total Depth: 13.0	Purged Time: 0:01	Volume Purged: 0.15 gal
Purging Method: Per Pump	Purge Volume Measurement Method: Gravel Bucket	
Project Location:	Parameter Monitoring	Sampled By: JR

Time	Cumulative Volume	pH SU	COND mS/cm	TEMP Degree C	DO mg/L	TURB NTU	ORP mV	SAL %	TDS g/L	Appearance	Odor
14:33	0.0	6.50	21.59			0.0	61				
14:33	0.0	6.50	0.570	21.57	1.66	0.0	-61	-	0.378	NA	NA
14:35	0.25	6.40	0.589	21.47	1.76	0.0	-91	-	0.374	NA	NA
14:38	10.25	6.34	0.573	21.84	1.21	0.0	-111	-	0.366	NA	NA

Sampling Methods:	Sample Data	Waste Container:
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Field Sample No.	Sample Container	Time	Sample Depth	Matrix Type	Sample Type	Preserved By

Chain of Custody (yes/no):	Duplicate Sample Numbers:	
Analytical Lab	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Analytical Lab/QC	Lab Name:	Date Sent to Lab:
	Lab Address:	Shipment Method:
Split	Name(s):	
	Organization(s):	

Matrix Types				Sample Types	
AA ambient air	GW groundwater	SD sediment	SW surface water	CS composite sample	FB field blank
BM building material	NS near-surface soil	SL soil	TI tissue	ER equipment rinsate	FD field duplicate
DR debris/rubble	SB subsurface soil	SU sludge	WR water	ES environmental sample	TB trip blank

Additional Comments: **Pumped @ < 100 ml/min**
Limited water (slow recharge for Ste.) - Diff said to get

Recorder: **3 [Signature]** Date: _____
 Checker: _____ Date: _____