January 25, 2021

Mr. Shawn Rahimzadeh
Excellent Choice Auto Sales
P. O. Box 13440
Mill Creek, Washington 98082

RE: Supplemental Phase II Subsurface Investigation
Marysville Excellent Choice Auto Sales
9302, 9310, and 9314 State Avenue
Marysville, Washington 98270
RGI Project No. 2018-244B

Dear Mr. Rahimzadeh:

The following corrections were made to the Final Report for the above listed subject property. We have issued a new report with the following changes.

Reference Page	Previously Read	Now Reads	Reason
Figure 2	TP6 Depth = 10	TP6 Depth = 29	Typographical error
Figure 3	TP5 Gas Concentration = 1,300	TP5 Gas Concentration = 1,900	Typographical error

Please let me know if you have any questions. We appreciate being of service.

Regards,
THE RILEY GROUP, INC.

Audrey R. Day, RG, LHG
Senior Environmental Manager

Corporate Office
17522 Bothell Way Northeast
Bothell, Washington 98011
Phone 425.415.0551 ♦ Fax 425.415.0311

www.riley-group.com

September 19, 2019

Mr. Shawn Rahimzadeh
Excellent Choice Auto Sales
P. O. Box 13440
Mill Creek, Washington 98082

RE: Supplemental Phase II Subsurface Investigation
Marysville Excellent Choice Auto Sales
9302, 9310, and 9314 State Avenue
Marysville, Washington 98270
RGI Project No. 2018-244B

Dear Mr. Rahimzadeh:

The Riley Group, Inc. (RGI) has conducted a supplemental Phase II Subsurface Investigation (Phase II investigation) for the Excellent Choice Auto Sales Property located at 9302, 9310, and 9314 State Avenue in Marysville, Washington (hereafter referred to as the Property, Figure 1).

This Phase II investigation was performed at the request of Mr. Shawn Rahimzadeh with Excellent Choice Auto Sales (hereafter referred to as the Client). The scope of work for this project was performed in general accordance with our *Supplemental Phase II Subsurface Investigation Proposal* (PRP2018-408B) dated June 19, 2019 and approved by the Client on July 23, 2019.

In addition, this Phase II report has incorporated the results of RGI's February 2019 Preliminary Phase II subsurface investigation. All test probe and monitoring well logs prepared by RGI, and analytical laboratory reports, during this project to-date are included in the attached Appendices.

PROJECT BACKGROUND

RGI completed a Phase I Environmental Site Assessment (ESA), on behalf of Excellent Choice Auto Sales, dated December 12, 2018 (RGI project number 2018-244). Based on its findings, the following recognized environmental conditions (RECs) were identified:

- **Historical Gasoline Service Station:** A gasoline fueling and automotive repair station occupied the Property between approximately 1974 and 1994 (20 years). The historical use, handling, storage, and disposal of petroleum products, solvents, and other wastes typically associated with this gasoline fueling and service station was unknown. Assessor records indicate that one hoist, three pump islands, two approximately 550 underground storage tanks (USTs), and one approximately 2,000 gallon UST were utilized on the middle parcel of the Property (parcel no. 30051600303200). The status (abandoned, removed, or closed-in-place) of the USTs associated with the service station was unknown. Soil and groundwater quality in the vicinity of the former and/or abandoned USTs at the Property was unknown. The historical gasoline service station was considered a REC.

Historical Oil Burner: Historical records indicate that the middle building on the Property was previously heated by an oil burner. The type of fuel storage for this oil burner (AST or UST) was not identified. The potential of a heating oil UST on the Property was considered a REC.RGI recommended conducting a

geophysical survey in an effort to locate any abandoned, decommissioned, or former UST location(s) at the Property. If a UST was identified during the geophysical survey, RGI recommended it be properly decommissioned and removed in accordance with the applicable city, country, and/or state requirements. In addition, RGI recommended a preliminary Phase II Subsurface Investigation be performed to evaluate soil and shallow groundwater quality.

The project objective was to help evaluate the soil and shallow groundwater on the Property in relation to the above mentioned RECs. Based on surface topography, sloping downwards to the west, the inferred shallow groundwater flow direction is towards the west.

RGI was previously authorized by the Client to perform a preliminary Phase II Subsurface Investigation in February 2019 (RGI Project No. 2018-244A). As previously stated, this Phase II report incorporates the results of RGI's February 2019 Phase II subsurface investigation and August 2019 Phase II Subsurface Investigation findings.

POTENTIAL CONTAMINANTS OF CONCERN

Based on available information for the Property, the following potential contaminants of concern (PCOCs) in soil and/or groundwater were identified as follows:

- Diesel- and oil-range Total Petroleum Hydrocarbons (TPHd and TPHo)
- Gasoline-range Total Petroleum Hydrocarbons (TPHg)
- Volatile Organic Compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX)

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 Washington Administrative Code (WAC).

SCOPE OF SERVICES

The scope of work for this project was performed in general accordance with our proposals, dated December 24, 2018 and June 19, 2019 and included the following:

- Performed public and private utility locating in an attempt to identify the location(s) of buried utility lines servicing the existing buildings on the Property.
- Performed two geophysical surveys in an attempt to locate any USTs on the Property, primarily in the vicinity of the suspect vent pipe located just west of the middle parcel building, and at and around the location of the former gas station and fuel pumps.
- Advanced twelve (12) direct-push test probes in suspect areas at the Property (B1 through B6 and TP1 through TP6), to a maximum depth of 35 feet below ground surface (bgs). Groundwater grab samples were also collected at temporary wells constructed at all 12 of the test probes.
- Submitted select soil and groundwater samples for laboratory analysis of the PCOCs.
- Compared analytical results to the routine Ecology MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses and MTCA Method A Cleanup Levels for Ground Water (WAC 173-340).
- 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.

The MTCA Cleanup Regulation provides three options for establishing generic and site-specific cleanup levels for soil and groundwater. Method A cleanup levels have been adopted for specific purposes and are intended to provide conservative cleanup levels for sites undergoing routine site characterization or cleanup actions or those sites with relatively few hazardous substances. Method B and C cleanup levels are set using a site risk assessment, which focus on the use of "reasonable maximum exposure" assumptions based on site-specific characteristics and toxicity of the contaminants of concern.

For purposes of comparison, analytical laboratory data for this project are compared to the *MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses* and the *MTCA Method A Cleanup Levels for Groundwater*, summarized in the attached Tables 1 and 2, respectively.

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 boring locations. A possible UST vent pipe was observed west of the middle building during the Phase I inspection; however, the locator was unable to verify an abandoned heating oil UST was actually present. Ground penetrating radar was also utilized to investigate for evidence of existing or former USTs associated with the former gas station. No evidence of existing or former locations of USTs were encountered.

TEST PROBES

On February 21, 2019, RGI advanced six test probes (B1 through B6) with a maximum depth of approximately 30 feet bgs. On August 8, 2019, RGI advanced six test probes (TP1 through TP6) with a maximum depth of approximately 35 feet bgs. All test probes were advanced using a Geoprobe 7730DT direct push drill rig.

During RGI's subsurface investigations, a total of 75 discrete soil samples were collected for potential laboratory analysis. A total of twelve (12) discrete groundwater grab samples were collected by RGI during the investigations, one from each test probe location.

SUBSURFACE CONDITIONS

Soil conditions encountered were described using the Unified Soil Classification System (USCS). Subsurface soil encountered during drilling consisted of fine to medium sand. Groundwater was encountered during drilling from approximately 24 to 31.5 feet bgs in each of the borings advanced. RGI's boring logs are included in Appendix A for reference.

SAMPLING PROTOCOLS

All samples were collected in accordance with our standard operating and decontamination procedures. Prior to advancing each test probe and between each sampling attempt, the sampling equipment and sampling tools were decontaminated by washing in an aqueous detergent solution consisting of a non-phosphate detergent and potable water, and then rinsing with potable water.

Samples were placed in preconditioned, sterilized containers provided by an Ecology-accredited analytical laboratory. If soil samples were collected for analysis of VOCs, they were collected using the Environmental Protection Agency's Method 5035 sampling method. The samples were placed in a cooler with ice throughout the field program, with all subsequent transportation and transfer accomplished in strict accordance with RGI's chain-of-custody procedures.

Analytical test certificates, including quality control, data, and chain-of-custody documentation for all samples submitted to the analytical testing laboratory by RGI as part of the Phase II investigations are included in Appendix B. All test probes were abandoned using hydrated bentonite chips and ready-mix asphalt to match existing pavement.

SOIL SAMPLING

During all drilling activities, soil samples were collected, inspected, and classified by RGI's field geologist. Discrete soil samples were collected at approximately 2.5- to 5-foot sampling depth intervals (except in cases where there was too little recovery) from each test probe and field screened for the presence of volatile organic compounds (VOCs) using a portable gas photoionization detector (PID) and/or water sheen test.

Elevated PID readings and petroleum-like odor and sheen were noted at the capillary fringe, approximately 28 to 30 feet bgs, in test location B4, TP5 and TP6. Otherwise, odors, sheens, discolorations, or other evidence of contamination were not observed. Test probe logs are included in Appendix A.

GROUNDWATER SAMPLING (FROM TEMPORARY WELLS)

Prior to sample collection, groundwater was purged from the temporary groundwater wells using a peristaltic pump that was inserted through 0.75-inch diameter temporary PVC wells. A minimum of three well volumes were purged from each temporary well prior to sample collection or until the water ran clean, whichever came first. No petroleum hydrocarbon sheen was observed during well purging and/or groundwater grab sample collection, with the exception of B4 and TP5, which had a slight sheen and odor during purging and sampling.

Groundwater grab samples were collected from the temporary groundwater wells using a peristaltic pump and dedicated, disposal polyethylene tubing inserted through the temporary wells. The groundwater grab samples were submitted for laboratory analysis as outlined below.

Shallow groundwater grab samples collected from the temporary wells may not be representative of groundwater conditions or quality. To obtain samples that are definitively representative of shallow groundwater, the installation, development, and sampling of shallow groundwater from permanent monitoring wells would need to be installed at the Property. The objectives of this investigation was to determine if groundwater had been impacted by the PCOCs. Groundwater sampling satisfied these project objectives and provided useful information regarding subsurface conditions at the Property.

ANALYTICAL LABORATORY ANALYSIS

Thirteen (13) out of seventy-five (75) discrete soil samples, and all twelve (12) groundwater samples, collected during this project were selected for laboratory analyses. Soil and groundwater grab samples collected during this investigation were submitted to Friedman & Bruya, Inc. of Seattle, Washington, for one or more of the following laboratory analyses:

- Hydrocarbon identification – gasoline, diesel, and heavy oil using Test Method NWTPH-HCID
- Gasoline-range TPH using Northwest Test Method NWTPH-Gx
- Diesel- and oil-range TPH using Northwest Method NWTPH-Dx
- VOCs using EPA Test Method 8260C
- BTEX using EPA Test Method 8021B
- Total lead using EPA Method 6020B
- Total metals using EPA Method 6020B
- VPH using Test Method NWVPH

LABORATORY ANALYTICAL RESULTS

Soil and groundwater analytical results and related field screening data are summarized in the attached tables and figures, and are discussed below.

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

Soil Analytical Results

Six (6) soil samples were submitted for HCID analysis. These selected samples ranged from depths of 15 feet to 25 feet bgs. TPH (as gasoline, diesel, and oil) was not detected above their respective laboratory detection limit in the six samples analyzed.

Seven (7) soil samples were submitted for TPHd and TPHo analysis. TPHd and TPHo were not detected above the laboratory detection limit in any of the samples except for TP5-28, which had a TPHd concentration of 63x milligrams per kilogram (mg/kg), which is below the applicable cleanup level of 2,000 mg/kg. Sample depths ranged from 10 feet to 30 feet bgs.

The above-referenced TPHd concentration was flagged "x" by the laboratory chemist, indicating "*the sample chromatographic pattern does not resemble the fuel standard used for quantitation".* In other words, the reported concentrations may be the result of naturally occurring biogenic material and/or a highly degraded petroleum hydrocarbon.

Twelve (12) soil samples were submitted for BTEX analysis. Benzene was not detected above the laboratory detection limit in any of the soil samples. Toluene was detected in samples TP5-28 and TP6-29 at concentrations of 3.4 mg/kg and 0.08 mg/kg respectively, below the applicable cleanup level of 7 mg/kg for toluene. Ethylbenzene and total xylenes were detected in sample TP5-28 at a concentration of 6.3 mg/kg and 21 mg/kg which exceeds the applicable cleanup level of 6.0 mg/kg and 9.0 mg/kg, respectively.Ethylbenzene was also detected in sample TP6-29 at a concentration of 0.18 mg/kg, which is below the applicable cleanup level for ethylbenzene. Total xylenes were also detected in sample TP6-29 at a concentration of 0.51 mg/kg, which is below the applicable cleanup level for total xylenes. These selected samples ranged from depths of 10 feet to 30 feet bgs.

Six (6) soil samples were submitted for TPHg analysis. With the exception of soil sample TP5-28, TPHg was not detected in any of the soil samples above the laboratory reporting limit. Analytical results indicate TPHg at a concentration of 2,800 mg/kg in soil sample TP5-28 which exceeds the cleanup level of 100 mg/kg. TPHg was also detected in sample TP6-29 at a concentration of 64 mg/kg, which is below the applicable cleanup level for TPHg. These selected samples ranged from depths of 10 feet to 30 feet bgs.

Based on the detection of TPHg within soil sample TP5-28, it was selected for total metals analysis. TP5-28 was found to contain arsenic, cadmium, chromium, lead, and mercury at concentrations below the laboratory detection limits or regional background concentrations

One (1) soil sample, TP5-28, was submitted for petroleum fractionization analysis and is further discussed below.

Volatile Petroleum Hydrocarbon Analysis using Method NWTPH-VPH

In accordance with MTCA, a modified Method B cleanup level for TPH was developed as part of this investigation to include identified potential exposure pathways for humans and environmental impacts based on the current and future planned land use. MTCA rules indicate Method B cleanup levels are acceptable for use at any cleanup site. The TPH in soil Method B cleanup level, based on protection of the direct contact to soil exposure pathway, was calculated using Ecology's MTCATPH workbook and fractionization analytical data (VPH analysis) for soil sample TP5-28.

Analytical results for the Property thus far are inconclusive as to whether or not ethylene dibromide (EDB), a gasoline additive, is present in the petroleum mixture at the Property. EDB has been tested in groundwater samples collected at the Property, with analytical results that do not indicate its presence above 1 microgram per liter (ug/L). The MTCA Method A Cleanup level for EDB in groundwater is 0.01ug/L. Therefore, EDB may not be ruled out as potentially present at levels that present a risk to human health and the environment. Therefore, two Method B TPH calculations were prepared; one that uses half the detection limit for concentration of EDB (0.5mg/kg), and one using zero for the concentration of EDB in the event it is ruled out as a COC.

The Site specific MTCA workbook Method B CUL calculation for TPH in soil is 24mg/kg if EDB is included in the petroleum mixture at half the laboratory detection limit. The CUL for TPH is 2,588mg/kg if zero is entered as the EDB concentration in the petroleum mixture. As indicated above, Method A cleanup levels are used for comparison purposes during this phase of the site characterization. Points of compliance and appropriate cleanup levels will be determined after all components of the remedial investigation have been evaluated. This sample was flagged by the laboratory as being out of the standard hold time for analysis by one day.

<u>Groundwater Analytical Results</u>

Nine (9) groundwater grab samples were submitted for BTEX analysis. Two groundwater samples, B4-W and TP5-W, were submitted for VOC analysis which includes BTEX compounds. BTEX was not detected above their respective laboratory detection limits in any of the samples, with the exception of ethylbenzene in sample TP6-W, at a concentration of 2.9 µg/L, below the applicable cleanup level of 700 µg/L. Other VOCs were not detected above their respective laboratory detection limits, or were well below their applicable cleanup levels, in samples B4-W and TP5-W.

Twelve (12) groundwater grab samples were submitted for TPHg analysis. TPHg was not detected above the laboratory detection limit in eight of the samples. Analytical results for samples TP4-W and TP6-W indicated concentrations above the laboratory detection limits, but below the applicable cleanup level.

Analytical results for samples B4-W and TP5-W reported TPHg concentrations of 1,300 µg/L and 1,900 µg/L respectively, which exceed the applicable cleanup level of 1,000 µg/L for TPHg. Groundwater samples B4-W and TP5-W were collected inferred downgradient of the former gasoline service station.

Twelve (12) groundwater grab samples were submitted for TPHo analysis. TPHo was not detected above the laboratory detection limit in all twelve samples.

Twelve (12) groundwater grab samples were submitted for TPHd analysis. Analytical results indicate TPHd at a concentration below the laboratory detection limit, or above the laboratory detection limit but below the applicable cleanup level in all of the samples with the exception of B4-W. Analytical results for sample B4-W reported a TPHd concentration of 680 µg/L x, which exceeds the MTCA Method A Cleanup Level of 500 µg/L for TPHd. Groundwater sample B4-W was collected inferred downgradient of the former gasoline service station.

The above-referenced TPHd concentrations flagged "x" by the laboratory chemist, indicates that "*the sample chromatographic pattern does not resemble the fuel standard used for quantitation".* In other words, the reported concentrations may be the result of naturally occurring biogenic material and/or a highly degraded petroleum hydrocarbon.

One (1) groundwater grab sample was submitted for total lead analysis. TP5-W was found to contain a lead concentration of 2.2 µg/L, which is below the applicable cleanup level for lead of 15 µg/L.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the Phase II investigations RGI concludes the following:

- Groundwater and soil are impacted by an apparent release from the former gasoline service station operation and related improvements (for example, USTs, product piping, etcetera) and appears to extend beneath the Property to the west of the gasoline fueling and automotive repair station.
- Analytical results for all soil samples demonstrate gasoline ethylbenzene, toluene, naphthalene are present in Property soil and/or groundwater at concentrations requiring cleanup under Chapter 173-340 WAC and are the contaminants of concern associated with the release.
- Diesel range petroleum hydrocarbons and EDB remain potential contaminants of concern.

Based on the findings of this preliminary Phase II investigation, RGI recommends the following:

- RGI recommends preparation of a Remedial Investigation and Feasibility Study to determine a cleanup action plan and enrolling in Ecology's Voluntary Cleanup Program with the goal of obtaining a No Further Action determination through approved cleanup actions at the Site.
- The discovery of contamination during this preliminary Phase II subsurface investigation requires reporting the known release to Ecology as promulgated under WAC 173-340-300. Under WAC 173-340-300, the owner or operator of the Property shall report such information regarding this encountered contamination to Ecology within 90 days of discovery. The release report can be made by contacting the Ecology Northwest Regional Office at (425) 649-7229 and by mailing a copy of this report to the Ecology Northwest Regional office located at 3190 160th Avenue SE, Bellevue, Washington 98008-5452. On written request, RGI can contact, or submit a copy of this report to, Ecology on behalf of the Property Owner.

LIMITATIONS

This report is the property of RGI, Mr. Shawn Rahimzadeh of Excellent Choice Auto Sales, 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 Marysville Excellent Choice Auto Sales Property located at 9302, 9310, and 9314 State Avenue in Marysville, 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.

Stafford Larsen
Project Geologist

FOR

Audrey R. Heisey, LHG
Senior Environmental Manager

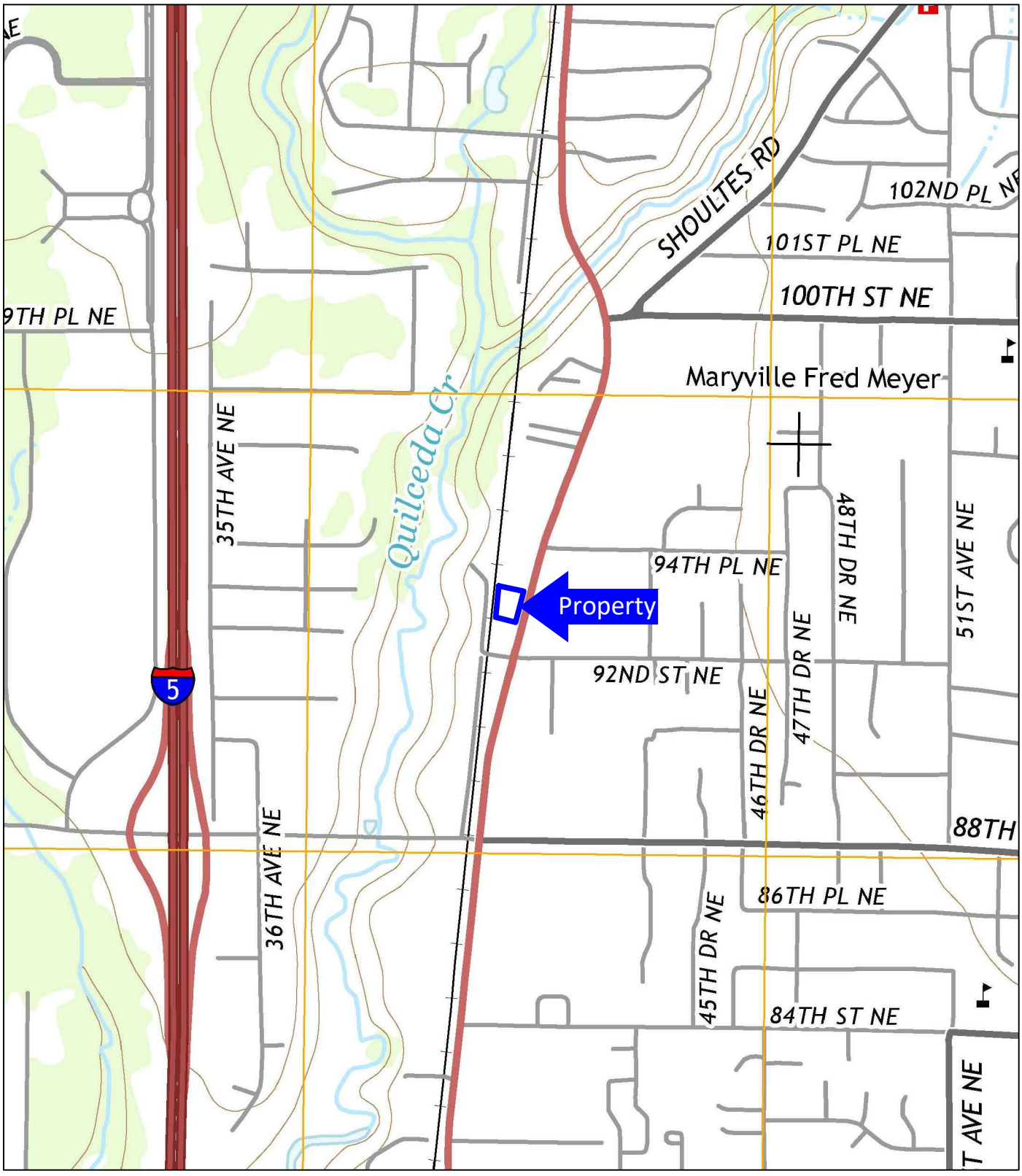
Attachments

Figure 1, Property Vicinity Map
Figure 2, Property Representation with Soil Analytical Results
Figure 3, Property Representation with Groundwater Analytical Results

Table 1, Summary of Soil Sample Analytical Laboratory Results
Table 2, Summary of Groundwater Grab Sample Analytical Laboratory Results

Appendix A, Boring Logs
Appendix B, Analytical Laboratory Reports and Chains of Custody
Appendix C, MTCATPH Calculations

Report Distribution *Mr. Shawn Rahimzadeh (one electronic PDF)*



USGS, 2014, Marysville, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'

0 500 1000 2000

N

RILEYGROUP
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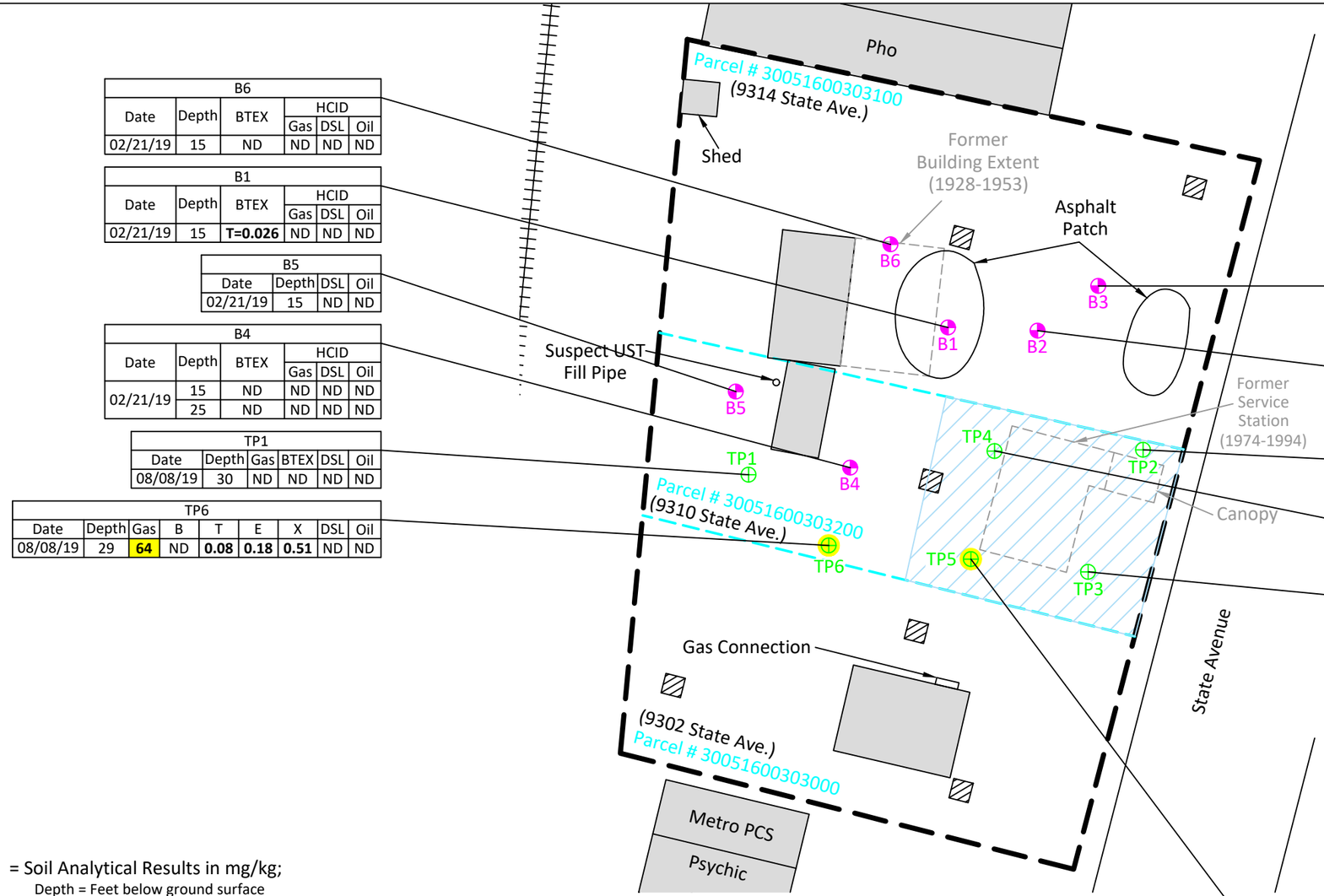
Marysville Excellent Choice Auto Sales		Figure 1
RGI Project Number 2018-244B	Property Vicinity Map	Date Drawn: 09/2019
Address: 9302, 9310 & 9314 State Avenue, Marysville Washington 98270		



B6					
Date	Depth	BTEX	HCID		
			Gas	DSL	Oil
02/21/19	15	ND	ND	ND	ND

B1					
Date	Depth	BTEX	HCID		
			Gas	DSL	Oil
02/21/19	15	**T=0.026**	ND	ND	ND

B5			
Date	Depth	DSL	Oil
02/21/19	15	ND	ND

B4					
Date	Depth	BTEX	HCID		
			Gas	DSL	Oil
02/21/19	15	ND	ND	ND	ND
	25	ND	ND	ND	ND

TP1					
Date	Depth	Gas	BTEX	DSL	Oil
08/08/19	30	ND	ND	ND	ND

TP6								
Date	Depth	Gas	B	T	E	X	DSL	Oil
08/08/19	29	**64**	ND	**0.08**	**0.18**	**0.51**	ND	ND

B3					
Date	Depth	BTEX	HCID		
			Gas	DSL	Oil
02/21/19	15	ND	ND	ND	ND

B2					
Date	Depth	BTEX	HCID		
			Gas	DSL	Oil
02/21/19	15	ND	ND	ND	ND

TP2					
Date	Depth	Gas	BTEX	DSL	Oil
08/08/19	15	ND	ND	ND	ND

TP4					
Date	Depth	Gas	BTEX	DSL	Oil
08/08/19	10	ND	ND	ND	ND

TP3					
Date	Depth	Gas	BTEX	DSL	Oil
08/08/19	15	ND	ND	ND	ND

TP5															
Date	Depth	Gas	B	T	E	X	DSL	Oil	Naph.	MTBE	Total Metals				
											As	Cd	Cr	Pb	Hg
08/08/19	28	**2,800**	ND	**3.4**	**6.3**	**21**	**63x**	ND	**11.2**	ND	**2.33**	ND	**16.7**	**3.21**	ND

= Soil Analytical Results in mg/kg;

Depth = Feet below ground surface
Gas = Gasoline total petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, xylenes
DSL/Oil = Diesel/oil total petroleum hydrocarbons
HCID = Hydrocarbon identification
Naph. = Naphthalene
MTBE = Methyl t-butyl ether
As, Cd, Cr, Pb, Hg = Arsenic, cadmium, chromium, lead, mercury
x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
ND = Not detected above laboratory detection limits
Bold results (if any) indicate concentrations above laboratory detection limits
Bold and highlighted results (if any) indicate concentrations above MTCA Method A Soil Cleanup Levels

= A geophysical survey was completed on 08/08/19. See full report text for discussion of results.
= Stormwater catch basin
= Test probe by RGI, 08/08/19
= Boring by RGI, 02/21/19
= Property boundary

Approximate Scale: 1"=40'
0 20 40 80
N

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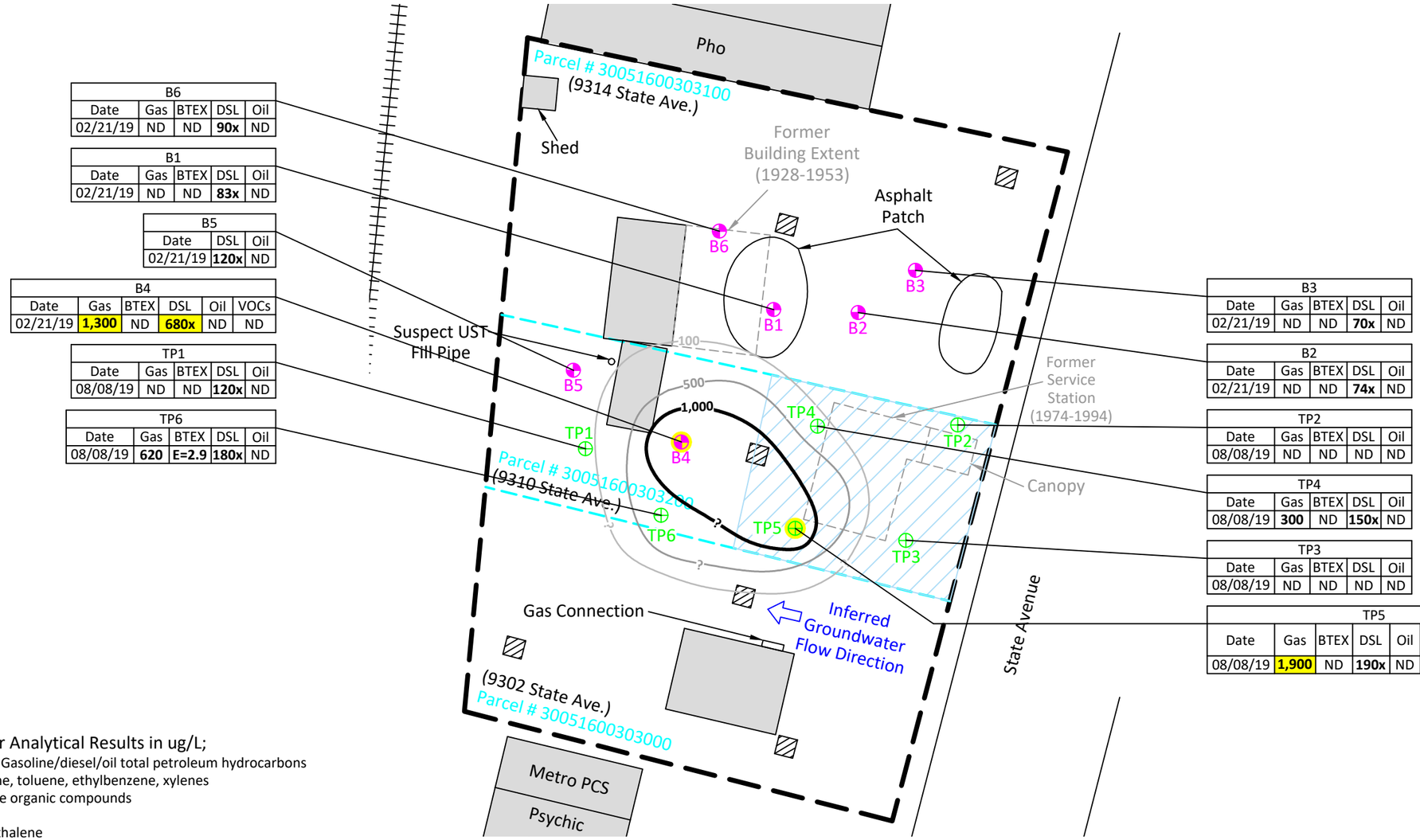
Marysville Excellent Choice Auto Sales | Figure 2

RGI Project Number 2018-244B | Property Representation with Soil Analytical Results | Date Drawn: 09/2019

Address: 9302, 9310 & 9314 State Avenue, Marysville Washington 98270



B6				
Date	Gas	BTEX	DSL	Oil
02/21/19	ND	ND	**90x**	ND

B1				
Date	Gas	BTEX	DSL	Oil
02/21/19	ND	ND	**83x**	ND

B5		
Date	DSL	Oil
02/21/19	**120x**	ND

B4					
Date	Gas	BTEX	DSL	Oil	VOCs
02/21/19	**1,300**	ND	**680x**	ND	ND

TP1				
Date	Gas	BTEX	DSL	Oil
08/08/19	ND	ND	**120x**	ND

TP6				
Date	Gas	BTEX	DSL	Oil
08/08/19	**620**	**E=2.9**	**180x**	ND

B3				
Date	Gas	BTEX	DSL	Oil
02/21/19	ND	ND	**70x**	ND

B2				
Date	Gas	BTEX	DSL	Oil
02/21/19	ND	ND	**74x**	ND

TP2				
Date	Gas	BTEX	DSL	Oil
08/08/19	ND	ND	ND	ND

TP4				
Date	Gas	BTEX	DSL	Oil
08/08/19	**300**	ND	**150x**	ND

TP3				
Date	Gas	BTEX	DSL	Oil
08/08/19	ND	ND	ND	ND

TP5							
Date	Gas	BTEX	DSL	Oil	VOCs	Naph.	Total Lead
08/08/19	**1,900**	ND	**190x**	ND	**H=14**	**1.4**	**2.02**

= Groundwater Analytical Results in ug/L;

Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, xylenes
VOCs = Volatile organic compounds
H = Hexane
Naph. = Naphthalene
ND = Not detected above laboratory detection limits
Bold results (if any) indicate concentrations above laboratory detection limits
Bold and highlighted results (if any) indicate concentrations above MTCA Method A Groundwater Cleanup Levels

= Isoconcentration lines. Bold black line represents the approximate location of gasoline contaminated groundwater present at concentrations above the MTCA Method A groundwater cleanup level of 1,000 ug/L, when benzene is not present at the Property.

= A geophysical survey was completed on 08/08/19. See full report text for discussion of results.

= Stormwater catch basin

= Test probe by RGI, 08/08/19

= Boring by RGI, 02/21/19

= Property boundary

Approximate Scale: 1"=40'

0 20 40 80

N

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Marysville Excellent Choice Auto Sales | Figure 3

RGI Project Number: 2018-244B

Isoconcentration Map with Groundwater Analytical Results

Date Drawn: 09/2019

Address: 9302, 9310 & 9314 State Avenue, Marysville Washington 98270

Table 1. Summary of Soil Sample Analytical Laboratory Results
Marysville Excellent Choice Auto Sales
9302, 9310 & 9314 State Avenue, Marysville Washington 98270
The Riley Group, Inc. Project No. 2018-244B

Sample Number	Sample Depth	Sample Date	PID	Gasoline	Diesel TPH	Oil TPH	BTEX				HCID			Naph.	MTBE	Total Metals				
							B	T	E	X	Gasoline	Diesel	Heavy Oil			As	Cd	Cr	Pb	Hg
August 2019 Subsurface Investigation																				
TP1-7	7	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP1-12	12	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP1-19	19	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP1-25	25	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP1-30	30	08/08/19	0.3	ND<5	ND<50	ND<250	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----
TP1-32	32	08/08/19	0.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP2-7	7	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP2-10	10	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP2-15	15	08/08/19	0.1	ND<5	ND<50	ND<250	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----
TP2-20	20	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP2-25	25	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP2-30	30	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP3-5	5	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP3-10	10	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP3-15	15	08/08/19	0.1	ND<5	ND<50	ND<250	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----
TP3-20	20	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP3-27	27	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP4-5	5	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP4-10	10	08/08/19	0.0	ND<5	ND<50	ND<250	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----
TP4-15	15	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP4-19	19	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP4-24	24	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP4-29	29	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-5	5	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-10	10	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-14	14	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-19	19	08/08/19	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-24	24	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-26	26	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP5-28	28	08/08/19	22.5	**2,800**	**63 x**	ND<250	ND<0.02	**3.4**	**6.3**	**21**	----	----	----	**11.2**	ND<0.386	**2.33**	ND<1	**16.7**	**3.21**	ND<1
TP6-5	5	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP6-9	9	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP6-14	14	08/08/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses				**100/30[1]**	**2,000**		**0.03**	**7**	**6**	**9**	**100/30[1]**	**2,000**		**5**	**0.1**	**20**	**2**	**19/2,000[2]**	**250**	**2**
MTCA Method B TPH Soil Cleanup Level for Direct Contact[3]				**2,588**			----	----	----	----	----	----	----	----	----	----	----	----	----	----

Table 1. Summary of Soil Sample Analytical Laboratory Results
Marysville Excellent Choice Auto Sales
9302, 9310 & 9314 State Avenue, Marysville Washington 98270
The Riley Group, Inc. Project No. 2018-244B

Sample Number	Sample Depth	Sample Date	PID	Gasoline	Diesel TPH	Oil TPH	BTEX				HCID			Naph.	MTBE	Total Metals				
							B	T	E	X	Gasoline	Diesel	Heavy Oil			As	Cd	Cr	Pb	Hg
TP6-19	19	08/08/19	0.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP6-24	24	08/08/19	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP6-27	27	08/08/19	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
TP6-29	29	08/08/19	17.6	**64**	ND<50	ND<250	ND<0.02	**0.08**	**0.18**	**0.51**	----	----	----	----	----	----	----	----	----	----
February 2019 Phase II																				
B1-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B1-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B1-15	15	02/21/19	0.0	----	----	----	ND<0.02	**0.026**	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B1-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B1-27	27	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-15	15	02/21/19	0.0	----	----	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B2-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-25	25	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-27	27	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B2-30	30	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3-15	15	02/21/19	0.0	----	----	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B3-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3-25	25	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3-30	30	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B4-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B4-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B4-15	15	02/21/19	0.0	----	----	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B4-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B4-25	25	02/21/19	0.0	----	----	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B4-28	28	02/21/19	3.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B4-30	30	02/21/19	1.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B5-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B5-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B5-15	15	02/21/19	0.0	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B5-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses				**100/30[1]**	**2,000**		**0.03**	**7**	**6**	**9**	**100/30[1]**	**2,000**		**5**	**0.1**	**20**	**2**	**19/2,000[2]**	**250**	**2**
MTCA Method B TPH Soil Cleanup Level for Direct Contact[3]				**2,588**			----	----	----	----	----	----	----	----	----	----	----	----	----	----

Table 1. Summary of Soil Sample Analytical Laboratory Results
Marysville Excellent Choice Auto Sales
9302, 9310 & 9314 State Avenue, Marysville Washington 98270
The Riley Group, Inc. Project No. 2018-244B

Sample Number	Sample Depth	Sample Date	PID	Gasoline	Diesel TPH	Oil TPH	BTEX				HCID			Naph.	MTBE	Total Metals				
							B	T	E	X	Gasoline	Diesel	Heavy Oil			As	Cd	Cr	Pb	Hg
B5-25	25	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B5-28	28	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-5	5	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-10	10	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-15	15	02/21/19	0.0	----	----	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
B6-20	20	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-25	25	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-28	28	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B6-30	30	02/21/19	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses				**100/30[1]**	**2,000**		**0.03**	**7**	**6**	**9**	**100/30[1]**	**2,000**		**5**	**0.1**	**20**	**2**	**19/2,000[2]**	**250**	**2**
MTCA Method B TPH Soil Cleanup Level for Direct Contact[3]				**2,588**			----	----	----	----	----	----	----	----	----	----	----	----	----	----

Notes:

All results and detection limits are given in milligrams per kilogram (mg/kg); equivalent to parts per million (ppm).

Sample Depth = Soil sample depth interval in feet below ground surface (bgs).

PID = Photoionization detector.

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.

Gasoline, Diesel, and Oil HCID (hydrocarbon identification) determined using Northwest Test Method NWTPH-HCID.

Naph. (naphthalene) determined using EPA Test Method NWVPH.

MTBE (methyl tert-butyl ether) determined using EPA Test Method NWVPH.

Total Metals (As = Arsenic, Cd = Cadmium, Cr = Chromium, Pb = Lead, Hg = Mercury) determined using EPA Test Method 6020B.

x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

ND = Not detected at noted analytical detection limit.

---- = Not analyzed or not applicable.

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340-900, Table 740-1).

Ecology MTCA Method B TPH Soil Cleanup Level for Direct Contact calculated using site-specific petroleum effective carbon range analytical results and Ecology's "Soil Cleanup Level for TPH Sites Workbook" downloaded September 12, 2019 from Ecology's Cleanup Tools Website. See Appendices for workbook sheets and analytical reports.

[1] The higher cleanup level is allowed if no benzene is present in the gasoline mixture and the total concentration of toluene, ethylbenzene and xylenes is less than 1% of the gasoline mixture.

[2] The higher cleanup level is allowed if no hexavalent chromium (CrVI) is present in the sample.

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

Bold and yellow highlighted results indicate concentrations (if any) that exceed MTCA Method A Soil Cleanup Levels.

Table 2. Summary of Groundwater Grab Sample Analytical Laboratory Results
Marysville Excellent Choice Auto Sales
9302, 9310 & 9314 State Avenue, Marysville Washington 98270
The Riley Group, Inc. Project No. 2018-244B

Sample Number	Sample Date	Depth to Water (bgs)	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	MTBE	EDC	EDB	Other VOCs	Naph.	Total Lead
				B	T	E	X								
August 2019 Subsurface Investigation															
TP1-W	08/08/19	31.5	ND<100	ND<1	ND<1	ND<1	ND<3	**120 x**	ND<330	----	----	----	----	----	----
TP2-W	08/08/19	26	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----
TP3-W	08/08/19	26	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----
TP4-W	08/08/19	27.5	**300**	ND<1	ND<1	ND<1	ND<3	**150 x**	ND<250	----	----	----	----	----	----
TP5-W	08/08/19	27	**1,900**	ND<0.35	ND<1	ND<1	ND<3	**190 x**	ND<330	ND<1	ND<1	ND<1	Hexane = 14	**1.4**	**2.02**
TP6-W	08/08/19	28	**620**	ND<1	ND<1	**2.9**	ND<3	**180 x**	ND<300	----	----	----	----	----	----
February 2019 Phase II															
B1-W	02/21/19	27	ND<100	ND<1	ND<1	ND<1	ND<3	**83 x**	ND<330	----	----	----	----	----	----
B2-W	02/21/19	27	ND<100	ND<1	ND<1	ND<1	ND<3	**74 x**	ND<330	----	----	----	----	----	----
B3-W	02/21/19	24	ND<100	ND<1	ND<1	ND<1	ND<3	**70 x**	ND<320	----	----	----	----	----	----
B4-W	02/21/19	28	**1,300**	ND<0.35	ND<1	ND<1	ND<3	**680 x**	ND<320	ND<1	ND<1	ND<1	ND	ND<1	----
B5-W	02/21/19	28	----	----	----	----	----	**120 x**	ND<320	----	----	----	----	----	----
B6-W	02/21/19	28	ND<100	ND<1	ND<1	ND<1	ND<3	**90 x**	ND<350	----	----	----	----	----	----
MTCA Method A Cleanup Levels for Ground Water			**800/1,000[1]**	**5**	**1,000**	**700**	**1,000**	**500**	**500**	**20**	**5**	**0.1**	**Hexane = 480**	**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 or 8260C.

Diesel and Oil TPH (total petroleum hydrocarbons) determined using Northwest Test Method NWTPH-Dx.

MTBE (methyl t-butyl ether), EDC (1,2-dichloroethane), EDB (1,2-dibromoethane), and other VOCs (volatile organic compounds) determined using EPA Test Method 8260C. Other VOCs not reported in Table 2 were not detected above the laboratory detection limit, see Appendix A for laboratory analytical results.

Note: Petroleum-related VOCs (for example, n-Propylbenzene) are factored into the MTCA Method A TPH Cleanup Levels calculations and were not evaluated separately. MTCA TPH cleanup levels are sufficient for assessing these compounds.

Total lead determined using EPA Test Method 6020B.

ND = Not detected above the noted analytical detection limit.

---- = Not analyzed or not applicable.

x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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).

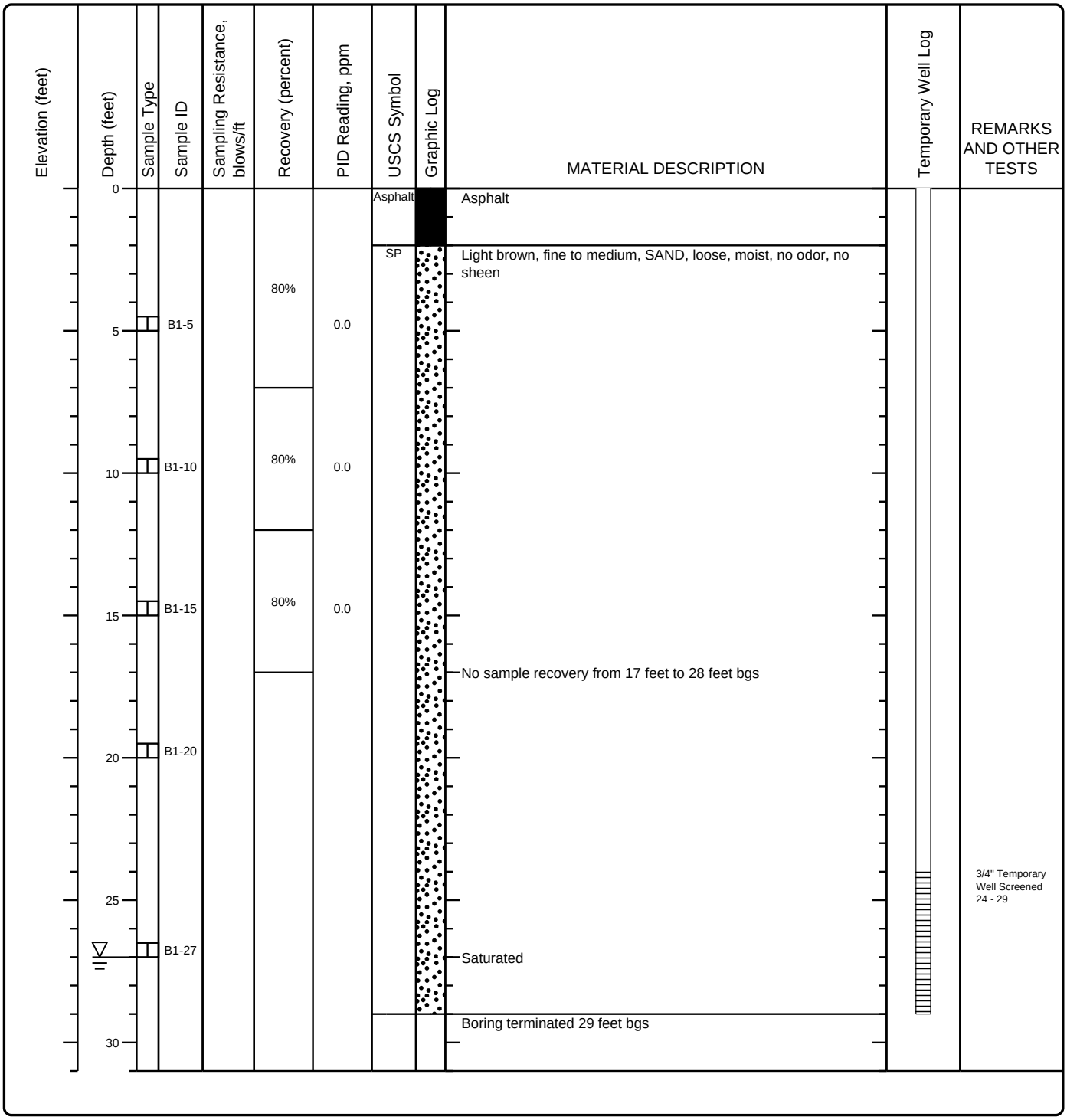
[1] The higher cleanup level is applicable if no benzene is detected in groundwater.

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 Cleanup Levels for Ground Water.

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244A** Client: **Excellent Choice Auto Sales**	RILEYGROUP Boring/Well No.: **B1** **Sheet 1 of 1**

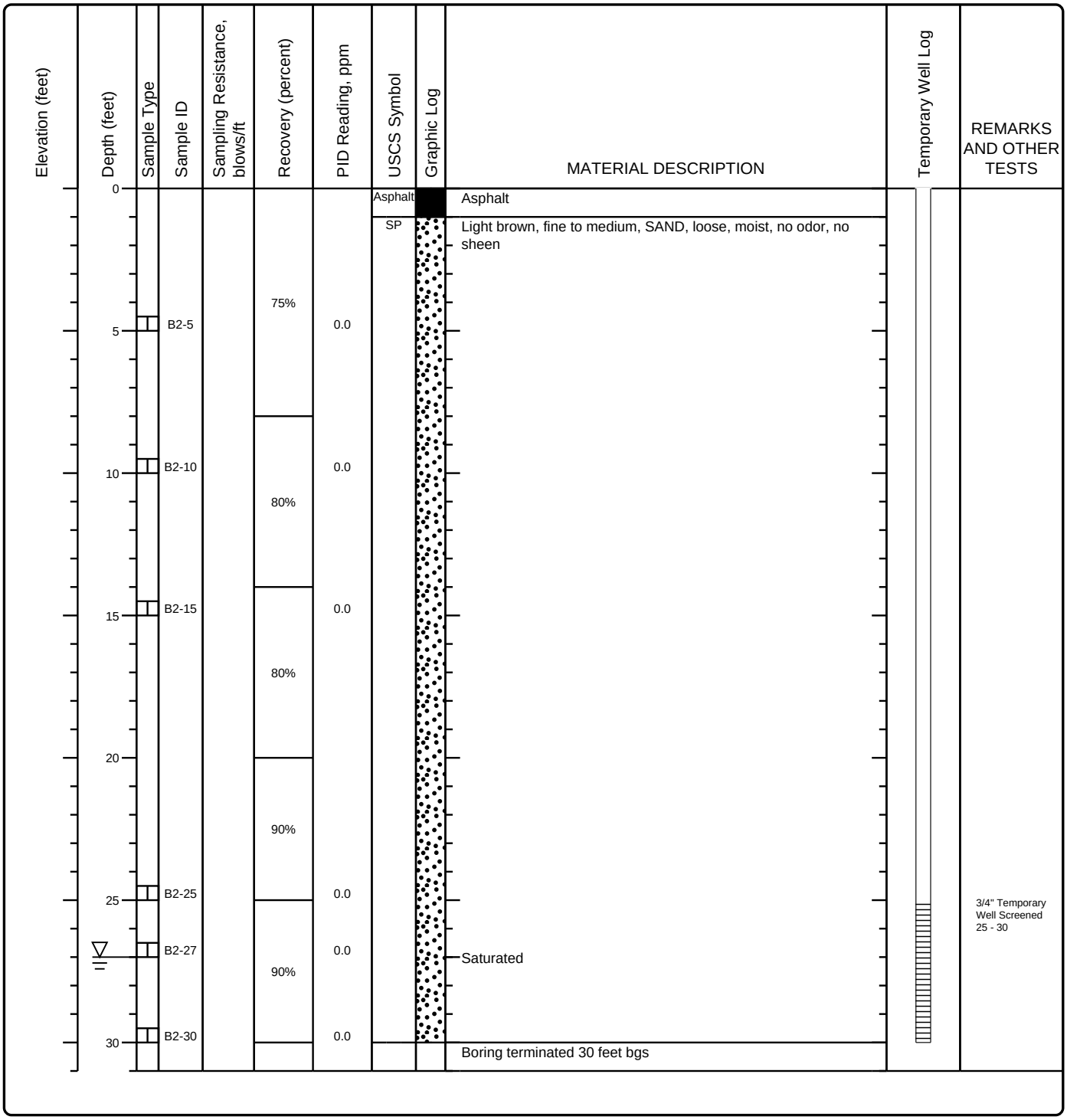
Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **29 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **27'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	



The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244A** Client: **Excellent Choice Auto Sales**	Boring/Well No.: **B2** **Sheet 1 of 1**

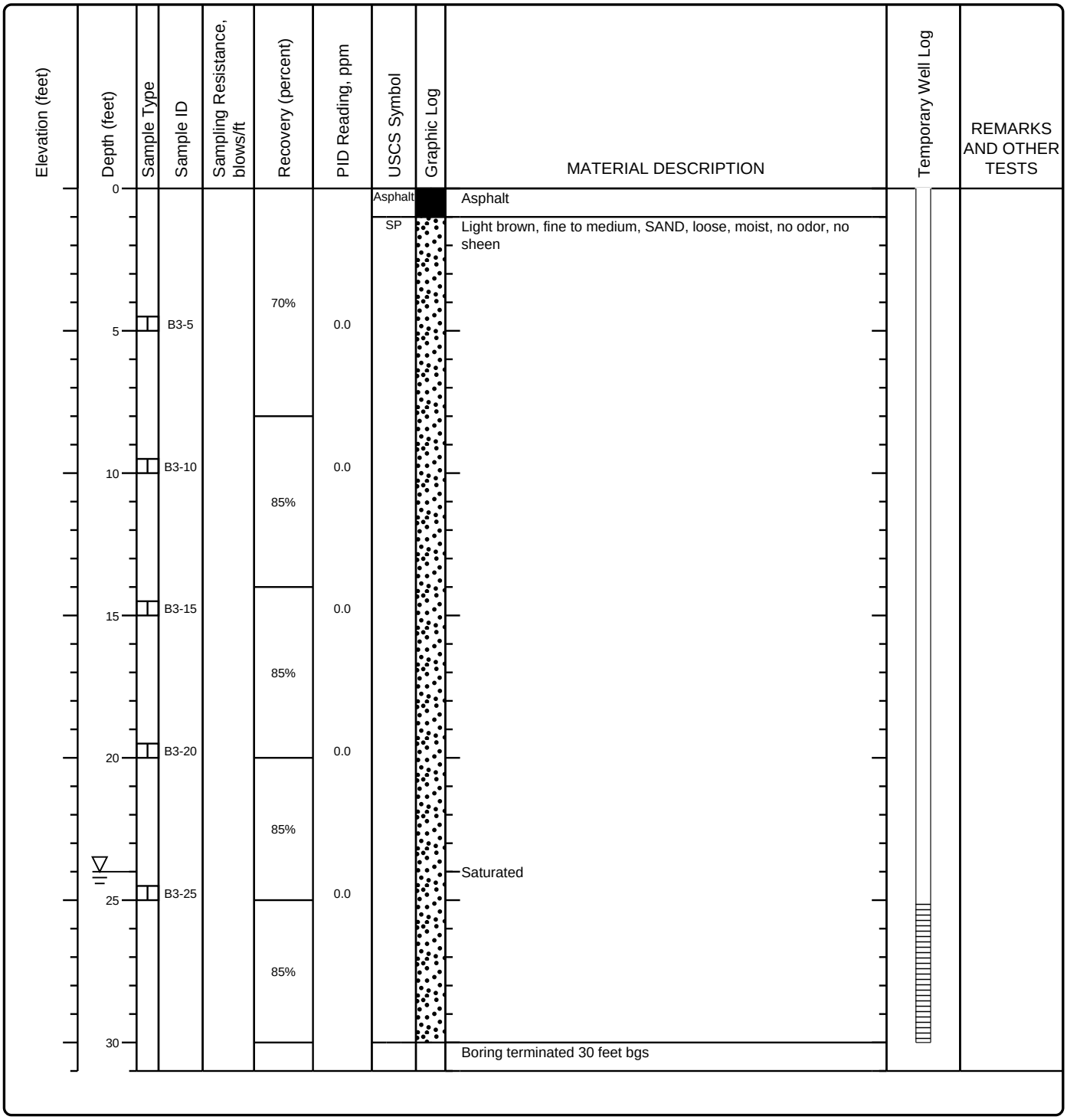
Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **30 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **27'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	



The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244A** Client: **Excellent Choice Auto Sales**	Boring/Well No.: **B3** **Sheet 1 of 1**

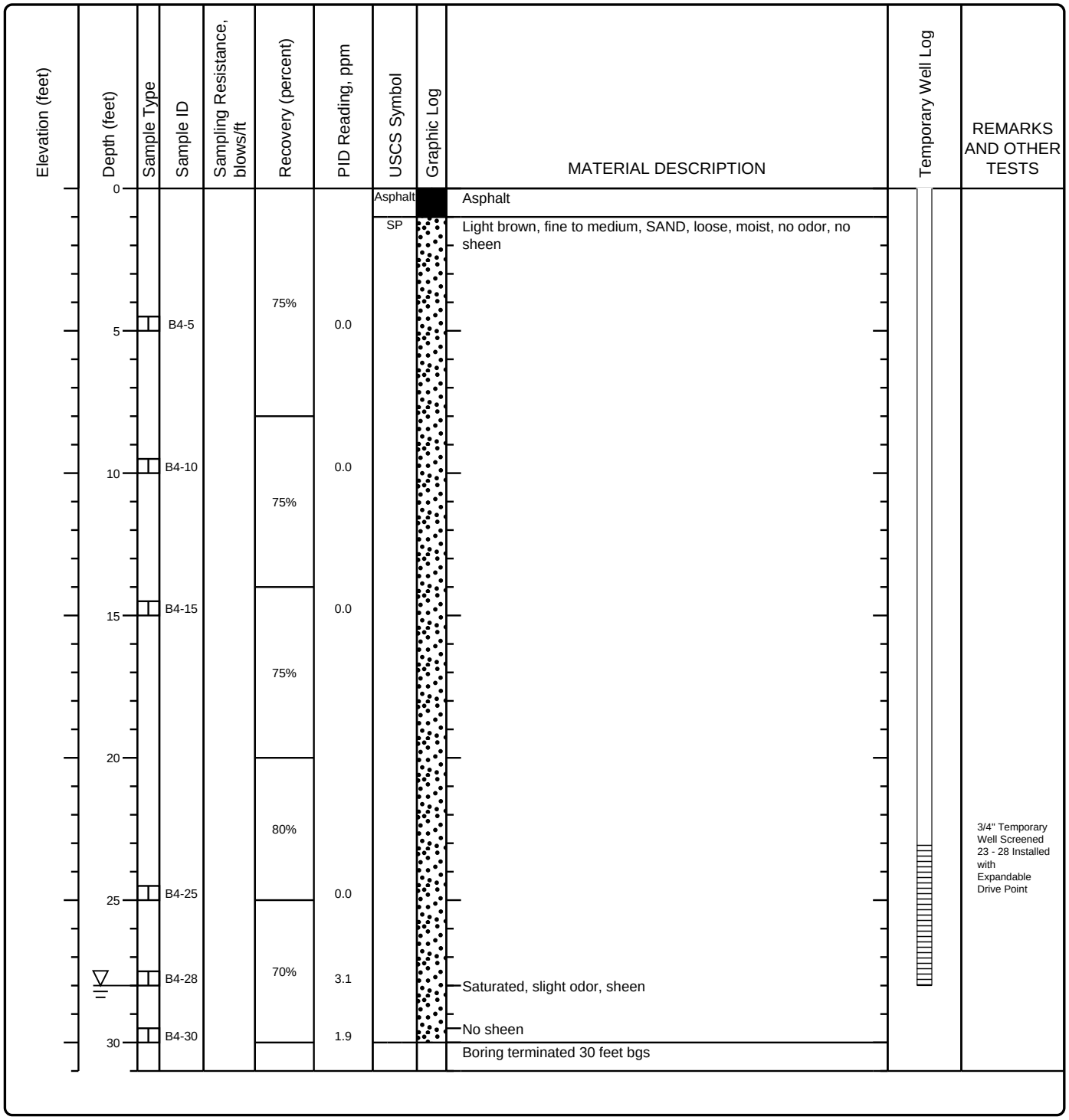
Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **30 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **24'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	



The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244A** Client: **Excellent Choice Auto Sales**	RILEYGROUP Boring/Well No.: **B4** **Sheet 1 of 1**

Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **30 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **28'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	



The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**
Project Number: **2018-244A**
Client: **Excellent Choice Auto Sales**

RILEYGROUP

Boring/Well No.: **B5**

Sheet 1 of 1

Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Gravel**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **30 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **28'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (percent)	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Temporary Well Log	REMARKS AND OTHER TESTS
	0								Gravel		
							SP		Gray/light brown, SAND, loose, moist, no odor, no sheen		
					70%						
	5		B5-5			0.0					
					75%						
	10		B5-10			0.0					
					75%						
	15		B5-15			0.0					
					80%						
	20		B5-20			0.0					
					80%						
	25		B5-25			0.0					3/4" Temporary Well Screened 25 - 30
			B5-28			0.0			Saturated		
	30								Boring terminated 30 feet bgs		

Project Name: **Marysville Excellent Choice Auto Sales**
Project Number: **2018-244A**
Client: **Excellent Choice Auto Sales**

RILEYGROUP

Boring/Well No.: **B6**

Sheet 1 of 1

Date(s) Drilled: **02/21/19**	Logged By: **ED**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **MacroCore 2.25" Rods**	Total Depth of Borehole: **30 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **28'**	Sampling Method(s): **Continuous**	Hammer Data : **GH62**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville Washington 98270**	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	Recovery (percent)	PID Reading, ppm	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Temporary Well Log	REMARKS AND OTHER TESTS
	0						Asphalt		Asphalt		
							SP		Light brown, fine to medium, SAND, loose, moist, no odor, no sheen		
	5		B6-5		50%	0.0					
	10		B6-10			0.0					
					90%						
	15		B6-15			0.0					
					90%						
	20		B6-20			0.0					
	25		B6-25		100%	0.0					
			B6-28		70%	0.0			Saturated		
	30		B6-30			0.0			Boring terminated 30 feet bgs		

3/4" Temporary Well Screened 23 - 28 Installed with Expandable Drive Point

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244A**

Client: **Excellent Choice Auto Sales**

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Boring Log Key

Sheet 1 of 1

1 Elevation (feet)	2 Depth (feet)	3 Sample Type	4 Sample ID	5 Sampling Resistance, blows/ft	6 Recovery (percent)	7 PID Reading, ppm	8 USCS Symbol	9 Graphic Log	10 MATERIAL DESCRIPTION	11 Temporary Well Log	12 REMARKS AND OTHER TESTS

COLUMN DESCRIPTIONS

1. Elevation (feet): Elevation (MSL, feet).
2. Depth (feet): Depth in feet below the ground surface.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Sample ID: Sample identification number.
5. Sampling Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.
6. Recovery (percent): Percent Recovery
7. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
8. USCS Symbol: USCS symbol of the subsurface material.
9. Graphic Log: Graphic depiction of the subsurface material encountered.
10. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
11. Temporary Well Log: Graphical representation of well installed upon completion of drilling and sampling.
12. REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Asphaltic Concrete (AC)

Gravel

Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler

Bulk Sample

3-inch-OD California w/ brass rings

CME Sampler

Grab Sample

2.5-inch-OD Modified California w/ brass liners

Pitcher Sample

2-inch-OD unlined split spoon (SPT)

Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)

Water level (after waiting)

Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	RILEYGROUP Test Probe No.: **TP1** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **35 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **31.5'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light brown, fine, SAND, moist, no odor, no sheen	
0.0			70%				
					5		
0.0	TP1-7		60%				
					10		
0.0	TP1-12		80%				
					15		
			80%				
0.0	TP1-19				20		

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Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

RILEYGROUP

Test Probe No.: **TP1**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
			70%		20	Light brown, fine, SAND, moist, no odor, no sheen	
0.0	TP1-25				25		
			80%				
0.3	TP1-30				30		
0.2	TP1-32		80%	▽			
					35	Test probe drilled to 35 feet bgs	
					40		
					45		
					50		

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Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	RILEYGROUP Test Probe No.: **TP2** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **33 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **26'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
			60%		0	Asphalt Light brown, fine, SAND, moist, no odor, no sheen	
0.0	TP2-7		80%		5		
0.0	TP2-10		80%		10		
0.1	TP2-15		70%		15		
0.0	TP2-20				20		

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Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

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Test Probe No.: **TP2**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
			80%		20	Light brown, fine, SAND, moist, no odor, no sheen	
0.0	TP2-25				25		
0.0	TP2-27		70%				
			40%		30		
						Test probe drilled to 33 feet bgs	
					35		
					40		
					45		
					50		

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17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	Test Probe No.: **TP3** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **28 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **26'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light brown, fine, SAND, moist, no odor, no sheen	
			60%				
0.0	TP3-5				5		
			80%				
0.0	TP3-10				10		
			70%				
0.1	TP3-15				15		
			80%				
0.0	TP3-20				20		

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Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

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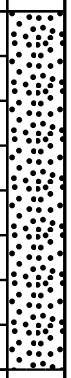
Test Probe No.: **TP3**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
			80%		20	Light brown, fine, SAND, moist, no odor, no sheen	
0.0	TP3-25				25		
0.0	TP3-27		90%				
						Test probe drilled to 28 feet bgs	
					30		
					35		
					40		
					45		
					50		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	Test Probe No.: **TP4** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **29 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **27.5'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Dark brown, SAND, moist, no odor, no sheen	
			70%				
0.0	TP4-5				5		
			70%				
0.0	TP4-10				10		
			60%				
0.0	TP4-15				15		
			80%				
0.0	TP4-19				20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

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Test Probe No.: **TP4**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
0.0	TP4-24		80%		20	Dark brown, SAND, moist, no odor, no sheen	
0.0	TP4-28		70%	▽	25		
					30	Test probe drilled to 29 feet bgs	
					35		
					40		
					45		
					50		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	Test Probe No.: **TP5** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **29 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **27'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Brown, SAND, moist, no odor, no sheen	
			70%				
0.0	TP5-5				5		
			60%				
0.0	TP5-10				10		
			80%				
0.0	TP5-14				15		
			80%				
0.1	TP5-19				20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

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Test Probe No.: **TP5**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					20	Brown, SAND, moist, no odor, no sheen Small rocks present	
			80%				
0.0	TP5-24						
					25		
0.0	TP5-26						
			90%	▽		Dark gray, SAND, moist, strong petroleum odor and sheen	
22.5	TP5-28					Test probe drilled to 29 feet bgs	
					30		
					35		
					40		
					45		
					50		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales** Project Number: **2018-244B** Client: **Excellent Choice Auto Sales**	Test Probe No.: **TP6** **Sheet 1 of 2**

Date(s) Drilled: **08/08/19**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2.25"**	Total Depth of Borehole: **29 feet bgs**
Drill Rig Type: **Geoprobe 7730 DT**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **n/a**
Groundwater Level: **28'**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **9302, 9310 & 9314 State Avenue, Marysville, Washington 98270**	

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Brown, SAND, moist, no odor, no sheen	
			70%				
0.0	TP6-5				5		
			80%				
0.0	TP6-9						
					10		
			80%				
0.0	TP6-14						
					15		
			70%				
0.2	TP6-19				20		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

RILEYGROUP

Test Probe No.: **TP6**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					20	Brown, SAND, moist, no odor, no sheen	
			80%				
0.1	TP6-24				25		
0.1	TP6-27		80%	▽		Gray, SAND, moist, slight petroleum odor and sheen	
17.6	TP6-29					Test probe drilled to 29 feet bgs	
					30		
					35		
					40		
					45		
					50		

The Riley Group, Inc.
17522 Bothell Way NE, Bothell, WA 98011

Project Name: **Marysville Excellent Choice Auto Sales**

Project Number: **2018-244B**

Client: **Excellent Choice Auto Sales**

RILEYGROUP

Boring Log Key

Sheet 1 of 1

PID Reading, ppm	Sample ID	Sample Type	Recovery (percent)	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
1	2	3	4	5	6	7	8

COLUMN DESCRIPTIONS

1. PID Reading, ppm: The reading from a photo-ionization detector, in parts per million.
2. Sample ID: Sample identification number.
3. Sample Type: Type of soil sample collected at the depth interval shown.
4. Recovery (percent): Percent Recovery
5. GW Depth: Groundwater depth in feet below the ground surface.
6. Depth (feet): Depth in feet below the ground surface.
7. MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.
8. Graphic Log: Graphic depiction of the subsurface material encountered.

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
COMP: Compaction test
CONS: One-dimensional consolidation test
LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Asphaltic Concrete (AC)

Poorly graded SAND (SP)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler

Bulk Sample

3-inch-OD California w/ brass rings

CME Sampler

Grab Sample

2.5-inch-OD Modified California w/ brass liners

Pitcher Sample

2-inch-OD unlined split spoon (SPT)

Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)

Water level (after waiting)

Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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March 4, 2019

Stafford Larsen, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Larsen:

Included are the results from the testing of material submitted on February 22, 2019 from the 2018-244A, F&BI 902325 project. There are 17 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0304R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 22, 2019 by Friedman & Bruya, Inc. from the The Riley Group 2018-244A, F&BI 902325 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
902325 -01	B1-5
902325 -02	B1-10
902325 -03	B1-15
902325 -04	B1-20
902325 -05	B1-27
902325 -06	B1-W
902325 -07	B2-5
902325 -08	B2-10
902325 -09	B2-15
902325 -10	B2-27
902325 -11	B2-30
902325 -12	B2-W
902325 -13	B3-5
902325 -14	B3-10
902325 -15	B3-15
902325 -16	B3-20
902325 -17	B3-25
902325 -18	B3-W
902325 -19	B4-5
902325 -20	B4-10
902325 -21	B4-15
902325 -22	B4-25
902325 -23	B4-28
902325 -24	B4-30
902325 -25	B4-W
902325 -26	B5-5
902325 -27	B5-10
902325 -28	B5-15
902325 -29	B5-20
902325 -30	B5-25
902325 -31	B5-28
902325 -32	B5-W
902325 -33	B6-5
902325 -34	B6-10
902325 -35	B6-15

CASE NARRATIVE (CONTINUED)

Laboratory ID	The Riley Group
902325 -36	B6-20
902325 -37	B6-25
902325 -38	B6-28
902325 -39	B6-30
902325 -40	B6-W
902325 -41	B2-25
902325 -42	B2-20
902325 -43	B3-30
902325 -44	B4-20

All quality control requirements were acceptable.

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19
Date Analyzed: 02/25/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
B1-15 902325-03	ND	ND	ND	90
B2-15 902325-09	ND	ND	ND	81
B3-15 902325-15	ND	ND	ND	82
B4-15 902325-21	ND	ND	ND	92
B4-25 902325-22	ND	ND	ND	94
B6-15 902325-35	ND	ND	ND	93
Method Blank 09-409 MB	ND	ND	ND	91

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19
Date Analyzed: 02/25/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING METHOD 8021B

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Surrogate (% Recovery) (Limit 50-132)
B1-15 902325-03	<0.02	0.026	<0.02	<0.06	85
B2-15 902325-09	<0.02	<0.02	<0.02	<0.06	83
B3-15 902325-15	<0.02	<0.02	<0.02	<0.06	82
B4-15 902325-21	<0.02	<0.02	<0.02	<0.06	84
B4-25 902325-22	<0.02	<0.02	<0.02	<0.06	85
B6-15 902325-35	<0.02	<0.02	<0.02	<0.06	85
Method Blank 09-339 MB	<0.02	<0.02	<0.02	<0.06	82

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19
Date Analyzed: 02/25/19 and 02/27/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B1-W 902325-06	<1	<1	<1	<3	<100	100
B2-W 902325-12	<1	<1	<1	<3	<100	101
B3-W 902325-18	<1	<1	<1	<3	<100	99
B6-W 902325-40	<1	<1	<1	<3	<100	81
Method Blank 09-337 MB	<1	<1	<1	<3	<100	102

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19Date Analyzed: 02/25/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
B4-W 902325-25	1,300	91
Method Blank 09-337 mb	<100	75

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19
Date Analyzed: 02/25/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
B5-15 902325-28	<50	<250	90
Method Blank 09-404 MB	<50	<250	96

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325
Date Extracted: 02/25/19
Date Analyzed: 02/25/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
B1-W 902325-06 1/1.3	83 x	<330	111
B2-W 902325-12 1/1.3	74 x	<330	119
B3-W 902325-18 1/1.3	70 x	<320	118
B4-W 902325-25 1/1.3	680 x	<320	106
B5-W 902325-32 1/1.3	120 x	<320	113
B6-W 902325-40 1/1.4	90 x	<350	133
Method Blank 09-407 MB 1/1.2	<50	<250	112

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	B4-W	Client:	The Riley Group
Date Received:	02/22/19	Project:	2018-244A, F&BI 902325
Date Extracted:	02/25/19	Lab ID:	902325-25
Date Analyzed:	02/25/19	Data File:	022530.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	3.4
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	3.7
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	11
Trichloroethene	<1	p-Isopropyltoluene	7.9
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2018-244A, F&BI 902325
Date Extracted:	02/25/19	Lab ID:	09-0301 mb
Date Analyzed:	02/25/19	Data File:	022509.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code: 902307-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	72-119
Toluene	ug/L (ppb)	50	97	71-113
Ethylbenzene	ug/L (ppb)	50	97	72-114
Xylenes	ug/L (ppb)	150	86	72-113
Gasoline	ug/L (ppb)	1,000	88	70-119

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES USING EPA METHOD 8021B

Laboratory Code: 902325-03 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	0.026	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	81	66-121
Toluene	mg/kg (ppm)	0.5	95	72-128
Ethylbenzene	mg/kg (ppm)	0.5	92	69-132
Xylenes	mg/kg (ppm)	1.5	98	69-131

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 902336-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	7,000	148 b	120 b	64-133	21 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	79	58-147

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	3,000	91	90	63-142	1

Date of Report: 03/04/19
Date Received: 02/22/19
Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 902307-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	117	10-172
Chloromethane	ug/L (ppb)	50	<10	102	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	106	36-166
Bromomethane	ug/L (ppb)	50	<1	102	47-169
Chloroethane	ug/L (ppb)	50	<1	100	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	105	44-165
Acetone	ug/L (ppb)	250	<50	82	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	99	60-136
Hexane	ug/L (ppb)	50	<1	103	52-150
Methylene chloride	ug/L (ppb)	50	<5	106	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	104	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	102	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	103	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	96	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	103	71-127
Chloroform	ug/L (ppb)	50	<1	101	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	92	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	105	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	104	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	99	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	109	56-152
Benzene	ug/L (ppb)	50	<0.35	97	76-125
Trichloroethene	ug/L (ppb)	50	<1	94	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	97	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	101	61-150
Dibromomethane	ug/L (ppb)	50	<1	101	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	100	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	99	72-132
Toluene	ug/L (ppb)	50	<1	94	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	93	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	91	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	98	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	99	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	106	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	101	69-134
Chlorobenzene	ug/L (ppb)	50	<1	97	77-122
Ethylbenzene	ug/L (ppb)	50	<1	96	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	105	73-137
m,p-Xylene	ug/L (ppb)	100	<2	99	69-135
o-Xylene	ug/L (ppb)	50	<1	98	60-140
Styrene	ug/L (ppb)	50	<1	101	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	98	65-142
Bromoform	ug/L (ppb)	50	<1	107	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	98	58-144
Bromobenzene	ug/L (ppb)	50	<1	102	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	98	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	99	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	98	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	98	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	96	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	97	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	96	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	97	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	98	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	96	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	98	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	107	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	100	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	99	60-143
Naphthalene	ug/L (ppb)	50	<1	100	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	102	69-148

Date of Report: 03/04/19
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Project: 2018-244A, F&BI 902325

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	118	119	25-158	1
Chloromethane	ug/L (ppb)	50	102	101	45-156	1
Vinyl chloride	ug/L (ppb)	50	106	106	50-154	0
Bromomethane	ug/L (ppb)	50	101	102	55-143	1
Chloroethane	ug/L (ppb)	50	99	99	58-146	0
Trichlorofluoromethane	ug/L (ppb)	250	107	107	50-150	0
Acetone	ug/L (ppb)	250	82	82	53-131	0
1,1-Dichloroethene	ug/L (ppb)	50	97	96	67-136	1
Hexane	ug/L (ppb)	50	107	106	57-137	1
Methylene chloride	ug/L (ppb)	50	105	103	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	101	101	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	101	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	103	102	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	109	109	55-143	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	102	80-123	0
Chloroform	ug/L (ppb)	50	100	101	80-121	1
2-Butanone (MEK)	ug/L (ppb)	250	94	94	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	105	105	73-132	0
1,1,1-Trichloroethane	ug/L (ppb)	50	104	104	83-130	0
1,1-Dichloropropene	ug/L (ppb)	50	99	99	77-129	0
Carbon tetrachloride	ug/L (ppb)	50	109	109	75-158	0
Benzene	ug/L (ppb)	50	95	95	69-134	0
Trichloroethene	ug/L (ppb)	50	93	93	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	95	95	77-123	0
Bromodichloromethane	ug/L (ppb)	50	101	102	81-133	1
Dibromomethane	ug/L (ppb)	50	99	100	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	99	99	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	100	99	82-132	1
Toluene	ug/L (ppb)	50	95	93	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	96	93	80-136	3
1,1,2-Trichloroethane	ug/L (ppb)	50	97	94	75-124	3
2-Hexanone	ug/L (ppb)	250	93	91	60-136	2
1,3-Dichloropropane	ug/L (ppb)	50	96	95	76-126	1
Tetrachloroethene	ug/L (ppb)	50	99	98	76-121	1
Dibromochloromethane	ug/L (ppb)	50	108	108	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	100	100	82-125	0
Chlorobenzene	ug/L (ppb)	50	96	96	83-114	0
Ethylbenzene	ug/L (ppb)	50	97	96	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	106	106	84-127	0
m,p-Xylene	ug/L (ppb)	100	99	98	83-125	1
o-Xylene	ug/L (ppb)	50	97	97	81-121	0
Styrene	ug/L (ppb)	50	100	99	84-119	1
Isopropylbenzene	ug/L (ppb)	50	98	97	85-117	1
Bromoform	ug/L (ppb)	50	115	111	74-136	4
n-Propylbenzene	ug/L (ppb)	50	98	98	74-126	0
Bromobenzene	ug/L (ppb)	50	100	100	80-121	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	97	97	78-123	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	102	102	66-126	0
1,2,3-Trichloropropane	ug/L (ppb)	50	99	100	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	98	97	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	97	97	78-128	0
tert-Butylbenzene	ug/L (ppb)	50	96	97	80-123	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	95	96	79-122	1
sec-Butylbenzene	ug/L (ppb)	50	96	96	80-125	0
p-Isopropyltoluene	ug/L (ppb)	50	96	96	81-123	0
1,3-Dichlorobenzene	ug/L (ppb)	50	96	98	85-116	2
1,4-Dichlorobenzene	ug/L (ppb)	50	94	95	84-121	1
1,2-Dichlorobenzene	ug/L (ppb)	50	96	97	85-116	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	110	111	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	98	99	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	99	100	53-141	1
Naphthalene	ug/L (ppb)	50	100	100	64-133	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	99	100	65-136	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

902325

SAMPLE CHAIN OF CUSTODY

ME 02/22/19

Page # ____ of ____

Report To Stafford Larsen

Company The Riley Group

Address 17522 Bothell Way NE

City, State, ZIP Bothell WA

Phone ____ Email ____

SAMPLERS (signature) [signature]

PROJECT NAME: 2018-244A

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☒ Standard Turnaround
- ☐ RUSH ____
- Rush charges authorized by: ____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other ____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B1-5	01 A-E	2/21/19		soil	5												
B1-10	02																
B1-15	03					X			X								
B1-20	04																
B1-27	05																
B1-W	06A-G			H2O	7		X	X	X								
B2-5	07 A-E			Soil	5												
B2-10	08																
B2-15	09					x			x								
B2-27	10																

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford Larsen	F&I	2/20/19	1:45
Received by:	[signature]	Nhan Pham	F&BT	2/22/19	1:45
Relinquished by:					4
Received by:			Samples received at		____ °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

902325

SAMPLE CHAIN OF CUSTODY

ME 02/22/19 NS4/VW3/5 Day

Page # 2 of 5

Report To Stafford Larsen

Company The Riley Group

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: 2018-244A

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B2-30	11 A-E	2/21/19		soil	5												
B2-W	12 A-G			H2O	7		X	X	X								
B3-5	13 A-E			soil	5												
B3-10	14																
B3-15	15					X			X								
B3-20	16																
B3-25	17																Sample labeled B3-24 EWB 2/22/19
B3-W	18 A-G			H2O	7		X	X	X								
B4-5	19 A-E			soil	5												
B4-10	20																

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stafford Larsen	Riley	2/22/19	1:45
Received by:	Nham Pham	FEST	2/22/19	1:45
Relinquished by:				
Received by:		Samples received at 4 °C		

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Seattle, WA 98119-2029
Ph. (206) 285-8282

902325

SAMPLE CHAIN OF CUSTODY

ME 02/22/19 VW3/VS4/B04

Page # 3 of 5

Report To: Stafford Larsen

Company: The Riley Group

Address:

City, State, ZIP:

Phone: Email:

SAMPLERS (signature): [signature]

PROJECT NAME: 2018-244A

PO #:

REMARKS:

INVOICE TO:

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B4-15	21 A-E	2/21/19		soil	5	X			X								
B4-25	22	↓		↓	↓	X			X								
B4-28	23																
B4-30	24																
B4-W	25A-G			H_2O	7		X	X	[illegible]	X							
B5-5	26 A-E			soil	5												
B5-10	27			↓	↓												
B5-15	28						X										
B5-20	29																
B5-25	30	↓			↓												

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Seattle, WA 98119-2029
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	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford	RGI	2/22/19	145
Received by:	[signature]	Nhan Phan	FEBT	2/22/19	1:45
Relinquished by:					
Received by:			Samples received at 4 °C		

902325 [redacted] Stafford [signature]

Company RGI

Address

City, State, ZIP

Phone Email

SAMPLE CHAIN OF CUSTODY

ME 02/22/19 VW3/D4/4 VS4 [redacted]

Page # ____ of 5

SAMPLERS (signature)	
[signature]	
PROJECT NAME	PO #
2018-244A	
REMARKS	INVOICE TO

TURNAROUND TIME
☐ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

						ANALYSES REQUESTED											
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B5-28	31 A-E	2/21/19		soil	5												
B5-w	32 A-G	↓		H2O	7		X	[illegible]	[illegible]								
B6-5	33 A-E			soil	5												
B6-10	34 ↓			↓	↓												
B6-15	35					X			X								
B6-20	36																
B6-25	37																
B6-28	38																
B6-30	39																
B6-w	40 A-G	↓		H2O	7		X	X	X								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	[signature]	RGI	2/22/19	1:45
Received by:	[signature]	Nhan Phan	FEBI	2/22/19	1:45
Relinquished by:					
Received by:			Samples received at 4 °C		

SAMPLE CHAIN OF CUSTODY

ME 02/22/19

VSH/VW3/ 5 D04 5

Page # 5 of 5

902325 Stoffel Lam

Company RGI

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: 2018-044A

PO #

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
B2-25	41A-C	2/21	1017		5												
B2-20	42	"	"		"												
B3-20	43	"	"		"												
B4-20	44	"	"		"												

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stoffel	RGI	2/22/19	
Received by:	Liz Webber-Bruya	FBI	2/22/19	1530
Relinquished by:				EAB
Received by:		Samples received at 4 °C		

Friedman & Bruya, Inc.
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Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 21, 2019

Stafford Larsen, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Larsen:

Included are the results from the testing of material submitted on August 9, 2019 from the 2018-244B, F&BI 908189 project. There are 24 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0821R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 9, 2019 by Friedman & Bruya, Inc. from the The Riley Group 2018-244B, F&BI 908189 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
908189 -01	TP1-7
908189 -02	TP1-12
908189 -03	TP1-19
908189 -04	TP1-25
908189 -05	TP1-30
908189 -06	TP1-32
908189 -07	TP1-W
908189 -08	TP2-7
908189 -09	TP2-10
908189 -10	TP2-15
908189 -11	TP2-20
908189 -12	TP2-25
908189 -13	TP2-W
908189 -14	TP3-5
908189 -15	TP3-10
908189 -16	TP3-15
908189 -17	TP3-20
908189 -18	TP3-27
908189 -19	TP3-W
908189 -20	TP4-5
908189 -21	TP4-10
908189 -22	TP4-15
908189 -23	TP4-19
908189 -24	TP4-24
908189 -25	TP4-W
908189 -26	TP5-5
908189 -27	TP5-10
908189 -28	TP5-14
908189 -29	TP5-19
908189 -30	TP5-24
908189 -31	TP5-26
908189 -32	TP5-28
908189 -33	TP5-W
908189 -34	TP6-5
908189 -35	TP6-9
908189 -36	TP6-14

CASE NARRATIVE (continued)

Laboratory ID	The Riley Group
908189 -37	TP6-19
908189 -38	TP6-24
908189 -39	TP6-27
908189 -40	TP6-29
908189 -41	TP6-W
908189 -42	TP2-30
908189 -43	TP4-29

Acetone in the 8260C laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189
Date Extracted: 08/15/19
Date Analyzed: 08/15/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
TP5-W 908189-33	1,900	129
Method Blank 09-1959 MB	<100	105

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189
Date Extracted: 08/15/19
Date Analyzed: 08/15/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
TP1-W 908189-07	<1	<1	<1	<3	<100	100
TP2-W 908189-13	<1	<1	<1	<3	<100	101
TP3-W 908189-19	<1	<1	<1	<3	<100	100
TP4-W 908189-25	<1	<1	<1	<3	300	100
TP6-W 908189-41	<1	<1	2.9	<3	620	97
Method Blank 09-1960 MB	<1	<1	<1	<3	<100	100

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189
Date Extracted: 08/13/19
Date Analyzed: 08/13/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
TP1-30 908189-05	<0.02	<0.02	<0.02	<0.06	<5	76
TP2-15 908189-10	<0.02	<0.02	<0.02	<0.06	<5	76
TP3-15 908189-16	<0.02	<0.02	<0.02	<0.06	<5	77
TP4-10 908189-21	<0.02	<0.02	<0.02	<0.06	<5	77
TP5-28 908189-32 1/10	<0.2	3.4	6.3	21	2,800	105
TP6-29 908189-40	<0.02	0.08	0.18	0.51	64	82
Method Blank 09-1954 MB2	<0.02	<0.02	<0.02	<0.06	<5	75

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189
Date Extracted: 08/14/19
Date Analyzed: 08/14/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
TP1-30 908189-05	<50	<250	103
TP2-15 908189-10	<50	<250	102
TP3-15 908189-16	<50	<250	108
TP4-10 908189-21	<50	<250	103
TP5-28 908189-32	63 x	<250	102
TP6-29 908189-40	<50	<250	102
Method Blank 09-2003 MB	<50	<250	107

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189
Date Extracted: 08/13/19
Date Analyzed: 08/14/19

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
TP1-W 908189-07 1/1.3	120 x	<330	100
TP2-W 908189-13	<50	<250	101
TP3-W 908189-19 1/1.2	<60	<300	95
TP4-W 908189-25	150 x	<250	106
TP5-W 908189-33 1/1.3	190 x	<330	91
TP6-W 908189-41 1/1.2	180 x	<300	101
Method Blank 09-1989 MB	<50	<250	117

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP5-28	Client:	The Riley Group
Date Received:	08/09/19	Project:	2018-244B, F&BI 908189
Date Extracted:	08/13/19	Lab ID:	908189-32
Date Analyzed:	08/13/19 and 08/14/19	Data File:	908189-32.187 and 908189-32.149
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.33
Cadmium	<1
Chromium	16.7
Lead	3.21
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2018-244B, F&BI 908189
Date Extracted:	08/13/19	Lab ID:	I9-492 mb
Date Analyzed:	08/14/19	Data File:	I9-492 mb.140
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	TP5-W	Client:	The Riley Group
Date Received:	08/09/19	Project:	2018-244B, F&BI 908189
Date Extracted:	08/12/19	Lab ID:	908189-33
Date Analyzed:	08/12/19	Data File:	908189-33.154
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	2.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	2018-244B, F&BI 908189
Date Extracted:	08/12/19	Lab ID:	I9-486 mb
Date Analyzed:	08/14/19	Data File:	I9-486 mb.031
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TP5-W	Client:	The Riley Group
Date Received:	08/09/19	Project:	2018-244B, F&BI 908189
Date Extracted:	08/13/19	Lab ID:	908189-33
Date Analyzed:	08/13/19	Data File:	081330.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	14	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	15
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	46
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	86
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	300 ve
Benzene	<0.35	sec-Butylbenzene	4.4
Trichloroethene	<1	p-Isopropyltoluene	2.4
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	1.4
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TP5-W	Client:	The Riley Group
Date Received:	08/09/19	Project:	2018-244B, F&BI 908189
Date Extracted:	08/13/19	Lab ID:	908189-33 1/10
Date Analyzed:	08/14/19	Data File:	081409.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500 jl	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	13	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	11
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	33
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	50
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	170
Benzene	<3.5	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2018-244B, F&BI 908189
Date Extracted:	08/13/19	Lab ID:	09-1865 mb
Date Analyzed:	08/13/19	Data File:	081311.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS/AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 908195-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 908189-07 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	<1	<1	nm
Toluene	ug/L (ppb)	<1	<1	nm
Ethylbenzene	ug/L (ppb)	<1	<1	nm
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	84	65-118
Toluene	ug/L (ppb)	50	85	72-122
Ethylbenzene	ug/L (ppb)	50	85	73-126
Xylenes	ug/L (ppb)	150	84	74-118
Gasoline	ug/L (ppb)	1,000	88	69-134

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code: 908222-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	94	69-120
Toluene	mg/kg (ppm)	0.5	96	70-117
Ethylbenzene	mg/kg (ppm)	0.5	97	65-123
Xylenes	mg/kg (ppm)	1.5	97	66-120
Gasoline	mg/kg (ppm)	20	105	71-131

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 908189-05 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	<50	<50	nm

Laboratory Code: 908189-05 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	<50	104	63-146

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	79-144

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	5,000	74	88	63-142	17

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 908189-32 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.70 ca	76	78	75-125	3
Cadmium	mg/kg (ppm)	10	<1	104	103	75-125	1
Chromium	mg/kg (ppm)	50	13.9	89	85	75-125	5
Lead	mg/kg (ppm)	50	2.66	94	91	75-125	3
Mercury	mg/kg (ppm	5	<1	94	92	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	85	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	101	80-120
Lead	mg/kg (ppm)	50	107	80-120
Mercury	mg/kg (ppm)	5	108	80-120

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 908195-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	87	87	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	95	80-120

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 908215-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<10	84	55-137
Chloromethane	ug/L (ppb)	50	<100	93	57-129
Vinyl chloride	ug/L (ppb)	50	<2	93	61-139
Bromomethane	ug/L (ppb)	50	<10	112	20-265
Chloroethane	ug/L (ppb)	50	<10	103	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<10	110	65-137
Acetone	ug/L (ppb)	250	<500	60	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<10	101	71-123
Hexane	ug/L (ppb)	50	<10	77	44-139
Methylene chloride	ug/L (ppb)	50	<50	80	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<10	87	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<10	90	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<10	91	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<10	70	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<10	89	63-126
Chloroform	ug/L (ppb)	50	<10	97	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<100	72	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<10	97	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<10	99	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<10	93	67-121
Carbon tetrachloride	ug/L (ppb)	50	<10	105	70-132
Benzene	ug/L (ppb)	50	<3.5	90	75-114
Trichloroethene	ug/L (ppb)	50	<10	93	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<10	93	80-111
Bromodichloromethane	ug/L (ppb)	50	<10	107	78-117
Dibromomethane	ug/L (ppb)	50	<10	100	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<100	102	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<10	98	76-120
Toluene	ug/L (ppb)	50	<10	98	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<10	100	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<10	98	81-116
2-Hexanone	ug/L (ppb)	250	<100	95	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<10	100	80-113
Tetrachloroethene	ug/L (ppb)	50	<10	96	40-155
Dibromochloromethane	ug/L (ppb)	50	<10	121	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<10	104	79-120
Chlorobenzene	ug/L (ppb)	50	<10	99	75-115
Ethylbenzene	ug/L (ppb)	50	<10	98	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<10	114	76-130
m,p-Xylene	ug/L (ppb)	100	<20	101	63-128
o-Xylene	ug/L (ppb)	50	<10	98	64-129
Styrene	ug/L (ppb)	50	<10	102	56-142
Isopropylbenzene	ug/L (ppb)	50	<10	100	74-122
Bromoform	ug/L (ppb)	50	<10	110	49-138
n-Propylbenzene	ug/L (ppb)	50	<10	100	65-129
Bromobenzene	ug/L (ppb)	50	<10	100	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<10	103	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<10	107	77-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<10	98	62-125
2-Chlorotoluene	ug/L (ppb)	50	<10	99	40-159
4-Chlorotoluene	ug/L (ppb)	50	<10	100	76-122
tert-Butylbenzene	ug/L (ppb)	50	<10	104	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<10	101	59-136
sec-Butylbenzene	ug/L (ppb)	50	<10	103	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<10	103	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<10	102	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<10	97	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<10	102	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<100	113	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<10	96	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<10	91	53-136
Naphthalene	ug/L (ppb)	50	<10	99	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<10	99	59-130

Date of Report: 08/21/19
Date Received: 08/09/19
Project: 2018-244B, F&BI 908189

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	115	120	25-158	4
Chloromethane	ug/L (ppb)	50	115	116	45-156	1
Vinyl chloride	ug/L (ppb)	50	116	123	50-154	6
Bromomethane	ug/L (ppb)	50	119	126	55-143	6
Chloroethane	ug/L (ppb)	50	109	117	58-146	7
Trichlorofluoromethane	ug/L (ppb)	50	120	126	50-150	5
Acetone	ug/L (ppb)	250	54	52 vo	53-131	4
1,1-Dichloroethene	ug/L (ppb)	50	116	122	67-136	5
Hexane	ug/L (ppb)	50	99	100	57-137	1
Methylene chloride	ug/L (ppb)	50	113	116	39-148	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	118	125	64-147	6
trans-1,2-Dichloroethene	ug/L (ppb)	50	115	122	68-128	6
1,1-Dichloroethane	ug/L (ppb)	50	110	117	79-121	6
2,2-Dichloropropane	ug/L (ppb)	50	115	121	55-143	5
cis-1,2-Dichloroethene	ug/L (ppb)	50	116	120	80-123	3
Chloroform	ug/L (ppb)	50	110	114	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	66	58	57-149	13
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	102	98	73-132	4
1,1,1-Trichloroethane	ug/L (ppb)	50	112	119	81-125	6
1,1-Dichloropropene	ug/L (ppb)	50	109	109	77-129	0
Carbon tetrachloride	ug/L (ppb)	50	115	121	75-158	5
Benzene	ug/L (ppb)	50	103	102	69-134	1
Trichloroethene	ug/L (ppb)	50	107	106	79-113	1
1,2-Dichloropropane	ug/L (ppb)	50	102	97	77-123	5
Bromodichloromethane	ug/L (ppb)	50	107	101	81-133	6
Dibromomethane	ug/L (ppb)	50	105	99	82-125	6
4-Methyl-2-pentanone	ug/L (ppb)	250	101	94	65-138	7
cis-1,3-Dichloropropene	ug/L (ppb)	50	103	92	82-132	11
Toluene	ug/L (ppb)	50	99	99	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	98	90	80-136	9
1,1,2-Trichloroethane	ug/L (ppb)	50	99	96	75-124	3
2-Hexanone	ug/L (ppb)	250	72	64	60-136	12
1,3-Dichloropropane	ug/L (ppb)	50	96	89	76-126	8
Tetrachloroethene	ug/L (ppb)	50	104	105	76-121	1
Dibromochloromethane	ug/L (ppb)	50	105	102	84-133	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	95	88	82-115	8
Chlorobenzene	ug/L (ppb)	50	101	100	83-114	1
Ethylbenzene	ug/L (ppb)	50	102	102	77-124	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	112	119	84-127	6
m,p-Xylene	ug/L (ppb)	100	102	102	81-112	0
o-Xylene	ug/L (ppb)	50	104	108	81-121	4
Styrene	ug/L (ppb)	50	103	102	84-119	1
Isopropylbenzene	ug/L (ppb)	50	106	110	80-117	4
Bromoform	ug/L (ppb)	50	104	104	74-136	0
n-Propylbenzene	ug/L (ppb)	50	104	103	74-126	1
Bromobenzene	ug/L (ppb)	50	101	98	80-121	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	106	106	78-123	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	101	98	66-126	3
1,2,3-Trichloropropane	ug/L (ppb)	50	95	92	67-124	3
2-Chlorotoluene	ug/L (ppb)	50	103	103	77-127	0
4-Chlorotoluene	ug/L (ppb)	50	103	99	78-128	4
tert-Butylbenzene	ug/L (ppb)	50	105	104	80-123	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	105	104	79-122	1
sec-Butylbenzene	ug/L (ppb)	50	107	105	80-116	2
p-Isopropyltoluene	ug/L (ppb)	50	106	105	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	50	106	105	83-113	1
1,4-Dichlorobenzene	ug/L (ppb)	50	102	101	83-107	1
1,2-Dichlorobenzene	ug/L (ppb)	50	107	108	84-112	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	105	107	57-141	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	125	135 vo	72-130	8
Hexachlorobutadiene	ug/L (ppb)	50	111	111	53-141	0
Naphthalene	ug/L (ppb)	50	120	130	64-133	8
1,2,3-Trichlorobenzene	ug/L (ppb)	50	126	140 vo	65-136	11

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 1 of 5

VS4 VW3 BI4 CO3

Send Report To Stafford Larsen :

Company The Riley Group

Address 17522 Bothell Way NE

City, State, ZIP Bothell WA 98011

Phone # 425 415 0551 Fax #

Email Address slarsen@Riley-Group.com

SAMPLERS (signature) [signature]

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

- ELECTRONIC DATA REQUESTED

TURNAROUND TIME
- Standard Turnaround
- RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel/oil	TPH-Gasoline/BTEX	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
TP1-7	01 A-E	8/8/19		Soil	5													Silica gel
TP1-12	02	↓		↓	↓													on soils.
TP1-19	03																	
TP1-25	04																	
TP1-30	05					X	X											
TP1-32	06					[illegible]	[illegible]											
TP1-W	07 A-G			H2O	7	X	X											
TP2-7	08 A-E			Soil	5													
TP2-10	09			↓	↓													
TP2-15	10	↓				X	X											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Stafford Larsen	RGI	8/9/19	
Received by: [signature]	Leo Toggan	FedEx	8/9/19	1:11 PM
Relinquished by:		Samples received at 3 °C		
Received by: [signature]	Nhan Phan	FeBI	8/9/19	1415

FORMS\COC\COC.DOC

908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 2 of 5 VS4

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME VW3 BI4 C03

· Standard Turnaround

· RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

· Dispose after 30 days

· Return samples

· Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel/Oil 10/20	TPH-Gasoline 10/20	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP2-20	11 A-E	8/8/19		Soil	5												
TP2-25	12					X	X										
~~TP2-27~~																	* Did not receive EWB
TP2-W	13 A-G			H2O	7	X	X										
TP3-5	14 A-E			Soil	5												
TP3-10	15																
TP3-15	16					X	X										
TP3-20	17																
~~TP3-25~~	~~HOLD~~																* Did not receive EWB
TP3-27	18																

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Stafford Larsen	RGI	8/9	
Received by:		Leo Reeson	FedEx	8/T	1:12 PM
Relinquished by:					
Received by:		Nhan Pham	FEB-I	8/9/19	1415

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908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19 Page # 3 of 5

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME
· Standard Turnaround
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions

Samples Received at ____ °C

VS4 VW3 BI4 C03

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel / 8021	TPH-Gasoline / 8021	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP3-W	19 A-G	8/8/19		H2O	7	X	X										
TP4-5	20 A-E			Soil	5												
TP4-10	21					X	X										
TP4-15	22																
TP4-19	23																
TP4-24	24																
~~TP4-28~~																	* Did not receive EAB
TP4-W	25 A-G			H2O	7	X	X										
TP5-5	26 A-E			Soil	5												
TP5-10	27																

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stafford Larsen	RGI	8/9	
Received by:	Ed Logan	FedEx	8/9	1:12PM
Relinquished by:				
Received by:	Khan Pham	FEBI	8/9/19	1415

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3012 16th Avenue West
Seattle, WA 98119-2029
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908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 4 of 5 VS4

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature) [signature]

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME VW3 BI4 CO3

· Standard Turnaround
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline/BTEX	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	MTCA 5	Lead				Notes
TP5-14	28 A-E	8/9/19		soil	5												
TP5-19	29	↓		↓	↓												
TP5-24	30	↓		↓	↓												
TP5-26	31	↓		↓	↓												
TP5-28	32	↓		↓	↓	X	X					X					
TP5w	33 A-G	↓		H_2O	7	X	X		X				X				
TP6-5	34 A-E	↓		soil	5												
TP6-9	35	↓		↓	↓												
TP6-14	36	↓		↓	↓												
TP6-19	37	↓		↓	↓												

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Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford Larsen	RGI	8/9/19	
Received by:	[signature]	Leo Forney	FedEx	8/9/19	1:12 PM
Relinquished by:					
Received by:	[signature]	Nhan Phan	FEBI	8/9/19	1415

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908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 5 of 5

VW3 / BI4 / CO3

Send Report To: Stafford Larsen

Company: RGI

Address:

City, State, ZIP:

Phone #: Fax #:

Email Address

SAMPLERS (signature): [signature]

PROJECT NAME/NO.: 2018-244B

PO #:

PROJECT ADDRESS:

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME
- Standard Turnaround
- RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel /oil	TPH-Gasoline /Bten	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP6-24	38 A-E	8/8/19		Soil	5												
TP6-27	39	↓		↓	↓												
TP6-29	40	↓		↓	↓	X	X										
TP6w	41 A-G	↓		H2O	7	X	X										
TP2-30	42 A-E																* Added in Lab
TP4-29	43																* Added in Lab

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Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford Larsen	RGI	8/9/19	
Received by:	[signature]	Leo Rogosan	FedEx	8/9/19	11:25
Relinquished by:					
Received by:	[signature]	Nhan Phan	FeBI	8/9/19	1415

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

September 3, 2019

Stafford Larsen, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Larsen:

Included are the additional results from the testing of material submitted on August 9, 2019 from the 2018-244B, F&BI 908189 project. There are 2 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
TRG0903R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 9, 2019 by Friedman & Bruya, Inc. from the The Riley Group 2018-244B, F&BI 908189 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
908189 -01	TP1-7
908189 -02	TP1-12
908189 -03	TP1-19
908189 -04	TP1-25
908189 -05	TP1-30
908189 -06	TP1-32
908189 -07	TP1-W
908189 -08	TP2-7
908189 -09	TP2-10
908189 -10	TP2-15
908189 -11	TP2-20
908189 -12	TP2-25
908189 -13	TP2-W
908189 -14	TP3-5
908189 -15	TP3-10
908189 -16	TP3-15
908189 -17	TP3-20
908189 -18	TP3-27
908189 -19	TP3-W
908189 -20	TP4-5
908189 -21	TP4-10
908189 -22	TP4-15
908189 -23	TP4-19
908189 -24	TP4-24
908189 -25	TP4-W
908189 -26	TP5-5
908189 -27	TP5-10
908189 -28	TP5-14
908189 -29	TP5-19
908189 -30	TP5-24
908189 -31	TP5-26
908189 -32	TP5-28
908189 -33	TP5-W
908189 -34	TP6-5
908189 -35	TP6-9
908189 -36	TP6-14

CASE NARRATIVE (continued)

Laboratory ID	The Riley Group
908189 -37	TP6-19
908189 -38	TP6-24
908189 -39	TP6-27
908189 -40	TP6-29
908189 -41	TP6-W
908189 -42	TP2-30
908189 -43	TP4-29

Sample TP5-28 was sent to Fremont Analytical for VPH analysis. The report is enclosed.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 908189
Work Order Number: 1908306

August 29, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 8/22/2019 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *08/29/2019*

CLIENT: Friedman & Bruya
Project: 908189
Work Order: 1908306

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1908306-001	TPS-28	08/09/2019 12:00 AM	08/22/2019 10:46 AM

Case Narrative

WO#: **1908306**
Date: **8/29/2019**

CLIENT: Friedman & Bruya
Project: 908189

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1908306**
Date Reported: **8/29/2019**

Client: Friedman & Bruya
Collection Date: 8/9/2019
Project: 908189
Lab ID: 1908306-001
Matrix: Soil
Client Sample ID: **TPS-28**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 25623		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	27.1	1.35	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Aliphatic Hydrocarbon (C6-C8)	191	19.3	DH	mg/Kg-dry	10	8/27/2019 12:12:24 AM
Aliphatic Hydrocarbon (C8-C10)	93.8	1.08	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Aliphatic Hydrocarbon (C10-C12)	137	11.6	DH	mg/Kg-dry	10	8/27/2019 12:12:24 AM
Aromatic Hydrocarbon (C8-C10)	156	2.31	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Aromatic Hydrocarbon (C10-C12)	380	4.63	DH	mg/Kg-dry	10	8/27/2019 12:12:24 AM
Aromatic Hydrocarbon (C12-C13)	129	54.0	DH	mg/Kg-dry	10	8/27/2019 12:12:24 AM
Benzene	ND	0.463	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Toluene	5.77	0.540	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Ethylbenzene	5.01	0.540	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
m,p-Xylene	2.17	1.00	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
o-Xylene	3.77	0.463	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Naphthalene	11.2	0.386	H	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Methyl tert-butyl ether (MTBE)	ND	0.386	QH	mg/Kg-dry	1	8/27/2019 1:34:30 AM
Surr: 1,4-Difluorobenzene	100	65 - 140	H	%Rec	1	8/27/2019 1:34:30 AM
Surr: Bromofluorobenzene	108	65 - 140	H	%Rec	1	8/27/2019 1:34:30 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Moisture (Percent Moisture)				Batch ID: R53559		Analyst: MCR
Percent Moisture	17.0	0.500		wt%	1	8/29/2019 9:31:11 AM

Work Order: 1908306
CLIENT: Friedman & Bruya
Project: 908189

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-25623** SampType: **LCS** Units: **mg/Kg** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **LCSS** Batch ID: **25623** Analysis Date: **8/26/2019** SeqNo: **1059591**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	29.5	1.75	30.00	0	98.4	70	130				
Aliphatic Hydrocarbon (C6-C8)	10.1	2.50	10.00	0	101	70	130				
Aliphatic Hydrocarbon (C8-C10)	9.85	1.40	10.00	0	98.5	70	130				
Aliphatic Hydrocarbon (C10-C12)	9.62	1.50	10.00	0	96.2	70	130				
Aromatic Hydrocarbon (C8-C10)	41.2	3.00	40.00	0	103	70	130				
Aromatic Hydrocarbon (C10-C12)	12.1	0.600	10.00	0	121	70	130				
Aromatic Hydrocarbon (C12-C13)	10.8	7.00	10.00	0	108	70	130				
Benzene	10.1	0.600	10.00	0	101	70	130				
Toluene	10.2	0.700	10.00	0	102	70	130				
Ethylbenzene	10.2	0.700	10.00	0	102	70	130				
m,p-Xylene	20.6	1.30	20.00	0	103	70	130				
o-Xylene	10.2	0.600	10.00	0	102	70	130				
Naphthalene	11.4	0.500	10.00	0	114	70	130				
Methyl tert-butyl ether (MTBE)	11.9	0.500	10.00	0	119	70	130				
Surr: 1,4-Difluorobenzene	2.70		2.500		108	65	140				
Surr: Bromofluorobenzene	2.69		2.500		108	65	140				

Sample ID: **MB-25623** SampType: **MBLK** Units: **mg/Kg** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **MBLKS** Batch ID: **25623** Analysis Date: **8/26/2019** SeqNo: **1059592**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Benzene	ND	0.600		0	0						
Toluene	ND	0.700		0	0						

Work Order: 1908306
CLIENT: Friedman & Bruya
Project: 908189

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-25623** SampType: **MBLK** Units: **mg/Kg** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **MBLKS** Batch ID: **25623** Analysis Date: **8/26/2019** SeqNo: **1059592**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	0.700		0	0						
m,p-Xylene	ND	1.30		0	0						
o-Xylene	ND	0.600		0	0						
Naphthalene	ND	0.500		0	0						
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						Q
Surr: 1,4-Difluorobenzene	2.47		2.500		98.8	65	140				
Surr: Bromofluorobenzene	2.57		2.500		103	65	140				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample ID: **1908284-009ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **BATCH** Batch ID: **25623** Analysis Date: **8/26/2019** SeqNo: **1059577**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	55.0	36.3		0	0			59.38	7.57	25	D
Aliphatic Hydrocarbon (C6-C8)	879	51.9		0	0			889.8	1.21	25	D
Aliphatic Hydrocarbon (C8-C10)	534	29.0		0	0			515.9	3.45	25	D
Aliphatic Hydrocarbon (C10-C12)	925	31.1		0	0			853.5	8.00	25	D
Aromatic Hydrocarbon (C8-C10)	807	62.2		0	0			790.1	2.09	25	D
Aromatic Hydrocarbon (C10-C12)	2,600	12.4		0	0			2,505	3.83	25	DE
Aromatic Hydrocarbon (C12-C13)	1,040	145		0	0			1,035	0.458	25	D
Benzene	ND	12.4		0	0			0		25	D
Toluene	46.6	14.5		0	0			46.25	0.739	25	D
Ethylbenzene	73.2	14.5		0	0			70.39	3.88	25	D
m,p-Xylene	ND	27.0		0	0			0		25	D
o-Xylene	30.3	12.4		0	0			29.35	3.19	25	D
Naphthalene	112	10.4		0	0			93.62	17.7	25	D
Methyl tert-butyl ether (MTBE)	ND	10.4		0	0			0		25	DQ
Surr: 1,4-Difluorobenzene	55.1		51.85		106	65	140		0		D
Surr: Bromofluorobenzene	53.9		51.85		104	65	140		0		D

Work Order: 1908306
CLIENT: Friedman & Bruya
Project: 908189

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1908284-009ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **BATCH** Batch ID: **25623** Analysis Date: **8/26/2019** SeqNo: **1059577**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **1908284-025AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **BATCH** Batch ID: **25623** Analysis Date: **8/27/2019** SeqNo: **1059579**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	308	18.2	312.5	0	98.5	70	130				D
Aliphatic Hydrocarbon (C6-C8)	143	26.0	104.2	58.91	80.3	70	130				D
Aliphatic Hydrocarbon (C8-C10)	152	14.6	104.2	55.00	93.6	70	130				D
Aliphatic Hydrocarbon (C10-C12)	161	15.6	104.2	72.48	84.7	70	130				D
Aromatic Hydrocarbon (C8-C10)	497	31.3	416.7	57.10	106	70	130				D
Aromatic Hydrocarbon (C10-C12)	381	6.25	104.2	268.2	109	70	130				D
Aromatic Hydrocarbon (C12-C13)	496	72.9	104.2	396.3	95.3	70	130				D
Benzene	113	6.25	104.2	0	108	70	130				D
Toluene	116	7.29	104.2	0	111	70	130				D
Ethylbenzene	117	7.29	104.2	0	112	70	130				D
m,p-Xylene	230	13.5	208.4	0	110	70	130				D
o-Xylene	115	6.25	104.2	0	110	70	130				D
Naphthalene	104	5.21	104.2	15.71	84.5	70	130				D
Methyl tert-butyl ether (MTBE)	109	5.21	104.2	0	104	70	130				D
Surr: 1,4-Difluorobenzene	28.6		26.04		110	65	140				D
Surr: Bromofluorobenzene	26.8		26.04		103	65	140				D

Sample ID: **1908284-025AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **BATCH** Batch ID: **25623** Analysis Date: **8/27/2019** SeqNo: **1059580**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	308	18.2	312.5	0	98.7	70	130	307.9	0.165	30	D
Aliphatic Hydrocarbon (C6-C8)	131	26.0	104.2	58.91	69.0	70	130	142.6	8.66	30	DS

Work Order: 1908306
CLIENT: Friedman & Bruya
Project: 908189

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1908284-025AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **8/26/2019** RunNo: **53537**
Client ID: **BATCH** Batch ID: **25623** Analysis Date: **8/27/2019** SeqNo: **1059580**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	162	14.6	104.2	55.00	103	70	130	152.5	6.30	30	D
Aliphatic Hydrocarbon (C10-C12)	149	15.6	104.2	72.48	73.5	70	130	160.7	7.54	30	D
Aromatic Hydrocarbon (C8-C10)	495	31.3	416.7	57.10	105	70	130	497.4	0.514	30	D
Aromatic Hydrocarbon (C10-C12)	308	6.25	104.2	268.2	37.9	70	130	381.2	21.3	30	DS
Aromatic Hydrocarbon (C12-C13)	478	72.9	104.2	396.3	78.9	70	130	495.5	3.51	30	D
Benzene	112	6.25	104.2	0	108	70	130	112.8	0.657	30	D
Toluene	114	7.29	104.2	0	110	70	130	115.5	1.21	30	D
Ethylbenzene	114	7.29	104.2	0	110	70	130	116.9	2.16	30	D
m,p-Xylene	227	13.5	208.4	0	109	70	130	230.1	1.37	30	D
o-Xylene	113	6.25	104.2	0	108	70	130	114.7	1.66	30	D
Naphthalene	106	5.21	104.2	15.71	86.2	70	130	103.7	1.70	30	D
Methyl tert-butyl ether (MTBE)	11.3	5.21	104.2	0	10.8	70	130	108.6	162	30	DRS
Surr: 1,4-Difluorobenzene	27.9		26.04		107	65	140		0		D
Surr: Bromofluorobenzene	26.2		26.04		100	65	140		0		D

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.
R - High RPD observed. The method is in control as indicated by the LCS.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1908306**
Logged by:	**Carissa True**	Date Received:	**8/22/2019 10:46:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	FedEx			

Log In

3.	Coolers are present?	Yes ☐	No ☑	NA ☐	
		No cooler present.			
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐	
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐	
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☐	No ☑	NA ☐	
		Please refer to item information			
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☐	No ☑		

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☑ No ☐ NA ☐

Person Notified:	Michael Erdahl	Date:	8/22/2019
By Whom:	Brianna Barnes	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Unable to meet hold time		
Client Instructions:	Proceed		

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	13.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1908306

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO. 908189

PO # A-364

REMARKS

Please Email Results

TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH								Notes
TPS-20		8/9/19		So,1	1			X								Dry Wt 83%

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	8/22/19	8:07AM
Received by:		Sara Becker-Mayer	FAI	8/22/19	1046
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 1 of 5

VS4 VW3 BT4 CO3

Send Report To Stafford Larsen :

Company The Riley Group

Address 17522 Bothell Way NE

City, State, ZIP Bothell WA 98011

Phone # 425 415 0551 Fax #

Email Address slarsen@Riley-Group.com

SAMPLERS (signature)	
PROJECT NAME/NO. 2018-244B	PO #
PROJECT ADDRESS	
• ELECTRONIC DATA REQUESTED	

TURNAROUND TIME
- ~~Standard Turnaround~~
- RUSH

Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel/oil	TPH-Gasoline/BTEX	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS							Notes
TP1-7	01 A-E	8/8/19		Soil	5													Silica gel
TP1-12	02																	on soils.
TP1-19	03																	
TP1-25	04																	
TP1-70	05					X	X											
TP1-32	06					~~X~~	~~X~~											
TP1-W	07 A-G			H2O	7	X	X											
TP2-7	08 A-E			Soil	5													
TP2-10	09																	
TP2-15	10					X	X											

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Stafford Larsen	RGI	8/9/19	
Received by: [signature]	Leo Tocson	FedEx	8/9/19	1:11 PM
Relinquished by:		**Samples received at 3 °C**		
Received by: [signature]	Nhan Phan	FeBI	8/9/19	1415

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908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 2 of 5 VS4

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME VW3 BI4 C03

· Standard Turnaround

· RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

· Dispose after 30 days

· Return samples

· Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel/Oil 10/20	TPH-Gasoline 10/20	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP2-20	11 A-E	8/8/19		Soil	5												
TP2-25	12					X	X										
~~TP2-27~~																	* Did not receive EWB
TP2-W	13 A-G			H2O	7	X	X										
TP3-5	14 A-E			Soil	5												
TP3-10	15																
TP3-15	16					X	X										
TP3-20	17																
~~TP3-25~~	~~HOLD~~																* Did not receive EWB
TP3-27	18																

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Stafford Larsen	RGI	8/9	
Received by:		Leo Reeson	FedEx	8/T	1:12 PM
Relinquished by:					
Received by:		Nhan Pham	FEB-I	8/9/19	1415

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Seattle, WA 98119-2029
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SAMPLE CHAIN OF CUSTODY

ME 08-09-19 Page # 3 of 5

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME
· Standard Turnaround
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions

Samples Received at ____ °C

VS4 VW3 BI4 C03

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel / 8021	TPH-Gasoline / 8021	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP3-W	19 A-G	8/8/19		H2O	7	X	X										
TP4-5	20 A-E			Soil	5												
TP4-10	21					X	X										
TP4-15	22																
TP4-19	23																
TP4-24	24																
~~TP4-28~~																	* Did not receive EAB
TP4-W	25 A-G			H2O	7	X	X										
TP5-5	26 A-E			Soil	5												
TP5-10	27																

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stafford Larsen	RGI	8/9	
Received by:	Ed Logan	FedEx	8/9	1:12PM
Relinquished by:				
Received by:	Khan Pham	FEBI	8/9/19	1415

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SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 4 of 5 VS4

VW3 BI4 C03

Send Report To Stafford Larsen

Company RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature) [signature]

PROJECT NAME/NO. 2018-244B

PO #

PROJECT ADDRESS

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME
- Standard Turnaround
- RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel [illegible]	TPH-Gasoline [illegible]	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	MTCA 5	Lead				Notes
TP5-14	28 A-E	8/9/19		soil	5												
TP5-19	29	↓		↓	↓												
TP5-24	30	↓		↓	↓												
TP5-26	31	↓		↓	↓												
TP5-28	32	↓		↓	↓	X	X					X					
TP5W	33 A-G	↓		H_2O	7	X	X		X				X				
TP6-5	34 A-E	↓		soil	5												
TP6-9	35	↓		↓	↓												
TP6-14	36	↓		↓	↓												
TP6-19	37	↓		↓	↓												

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford Larsen	RGI	8/9/19	
Received by:	[signature]	Leo Forney	Fed Ex	8/9/19	1:12 PM
Relinquished by:					
Received by:	[signature]	Nhan Phan	FEBI	8/9/19	1415

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908189

SAMPLE CHAIN OF CUSTODY

ME 08-09-19

Page # 5 of 5

VW3 / BI4 / CO3

Send Report To: Stafford Larsen

Company: RGI

Address

City, State, ZIP

Phone # Fax #

Email Address

SAMPLERS (signature): [signature]

PROJECT NAME/NO.: 2018-244B

PO #

PROJECT ADDRESS

• ELECTRONIC DATA REQUESTED

TURNAROUND TIME
- Standard Turnaround
- RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- Dispose after 30 days
- Return samples
- Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel/oil	TPH-Gasoline/BTEX	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
TP6-24	38 A-E	8/8/19		Soil	5												
TP6-27	39	↓		↓	↓												
TP6-29	40	↓		↓	↓	X	X										
TP6w	41 A-G	↓		H2O	7	X	X										
TP2-30	42 A-E																* Added in Lab
TP4-29	43																* Added in Lab

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Stafford Larsen	RGI	8/9/19	
Received by:	[signature]	Leo Rogaszen	FedEx	8/9/19	1125
Relinquished by:					
Received by:	[signature]	Nhan Phan	FeBI	8/9/19	1415

FORMS\COC\COC.DOC

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/12/19
Site Name: ECAS Marysville
Sample Name: TP5-28

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	27.1	2.42%
AL_EC >6-8	191	17.05%
AL_EC >8-10	93.8	8.37%
AL_EC >10-12	137	12.23%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	145.05	12.95%
AR_EC >10-12	368.8	32.92%
AR_EC >12-16	129	11.52%
AR_EC >16-21	0	0.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	5.77	0.52%
Ethylbenzene	5.01	0.45%
Total Xylenes	5.94	0.53%
Naphthalene	11.2	1.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0.5	0.04%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1120.17	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/12/2019
Site Name: ECAS Marysville
Sample Name: TP5-28
Measured Soil TPH Concentration, mg/kg: **1,120.170**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	24	4.60E-05	4.33E-01	Fail
	Method C	1,438	7.79E-06	2.37E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	Use A2.2	6.60E-02	3.93E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	36	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**24.35**	**1,437.65**
Most Stringent Criterion	**EDB**	**Total Risk=1E-5**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	*NO*	2.58E+03	1.06E-04	1.00E+00	*NO*	4.72E+04	3.28E-04	1.00E+00
Total Risk=1E-5	*NO*	2.43E+02	1.00E-05	9.42E-02	YES	1.44E+03	1.00E-05	3.05E-02
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	YES	2.43E+01	1.00E-06	9.42E-03				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Total Risk = 1E-5**
Protective Ground Water Concentration, ug/L	**0.84**
Protective Soil Concentration, mg/kg	**0.06**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	3.05E+02	6.09E-03	1.00E+00	4.24E+01
Total Risk = 1E-5	YES	8.40E-01	1.00E-05	2.89E-03	6.21E-02
Total Risk = 1E-6	YES	8.89E-02	1.00E-06	3.07E-04	6.16E-03
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	5.85E-03	1.72E+00	**3.62E+01**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/12/19
Site Name: ECAS Marysville
Sample Name: TP5-28

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	27.1	2.42%
AL_EC >6-8	191	17.06%
AL_EC >8-10	93.8	8.38%
AL_EC >10-12	137	12.24%
AL_EC >12-16	0	0.00%
AL_EC >16-21	0	0.00%
AL_EC >21-34	0	0.00%
AR_EC >8-10	145.05	12.95%
AR_EC >10-12	368.8	32.94%
AR_EC >12-16	129	11.52%
AR_EC >16-21	0	0.00%
AR_EC >21-34	0	0.00%
Benzene	0	0.00%
Toluene	5.77	0.52%
Ethylbenzene	5.01	0.45%
Total Xylenes	5.94	0.53%
Naphthalene	11.2	1.00%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1119.67	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	500	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/12/2019
Site Name: ECAS Marysville
Sample Name: TP5-28
Measured Soil TPH Concentration, mg/kg: **1,119.670**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,588	0.00E+00	4.33E-01	Pass
	Method C	47,222	0.00E+00	2.37E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	Use A2.2	0.00E+00	3.46E+00	Fail
	Target TPH GW Conc. @ 500 ug/L	36	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,587.64**	**47,221.59**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.59E+03	0.00E+00	1.00E+00	YES	4.72E+04	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA	NA			
EDB	NA	NA	NA	NA	NA			
EDC	NA	NA	NA	NA	NA			

NA

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**315.90**
Protective Soil Concentration, mg/kg	**44.26**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.16E+02	0.00E+00	1.00E+00	4.43E+01
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 500 ug/L	5.00E+02	0.00E+00	1.69E+00	**3.65E+01**