



April 23, 2019

Mr. Rob Will
Freeway Properties, LLC
4724 Roosevelt Way Northeast
Seattle, Washington 98105

**RE: First Quarter 2019 Groundwater Monitoring Report
University VW-Audi Property
4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast
Seattle, Washington 98105
RGI Project No. 2014-068I
Ecology VCP No. NW2584**

Dear Mr. Will:

The Riley Group, Inc. (RGI) has completed this First Quarter 2019 Groundwater Monitoring Report for the University VW-Audi Property located at 4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington (hereafter referred to as the Property, Figure 1 and 2).

The location of all former and existing groundwater monitoring and remediation wells on the Property are illustrated on the attached Figure 2 and 3. These existing wells located on the Property include the following:

- Fifteen dual phase extraction (DPE) wells (DPE1 to DPE15) – 4-inch diameter wells generally screened between approximately 60 feet to 40 feet below well top of casing (TOC). *Note: these DPE wells were constructed for simultaneous soil vapor extraction (SVE) and groundwater removal. However, to-date these DPE wells have been utilized for soil vapor extraction only.*
- Eleven soil vapor extraction (SVE) wells (SVE1 to SVE11) – 2-inch diameter wells generally screened between approximately 40 feet to 20 feet below ground surface (bgs). Several of these SVE wells were converted from previously installed groundwater monitoring wells.
- Five groundwater monitoring wells (MW2, MW8, MW9, MW10, and MW11) – 2-inch diameter wells generally screened somewhere between 60 feet and 25 feet bgs.

The current status (active, decommissioned), well construction details, and well screened intervals for all wells installed on the Property are shown on Table 1.

RGI installed and has been operating and maintaining a SVE remediation system for the past approximately 2 years (since May 2017).

GEOLOGY AND HYDROGEOLOGIC CONDITIONS

Based on RGI's subsurface investigations and groundwater monitoring results, the geology and hydrogeological conditions underlying the property are summarized as follows:

- Soils generally consist of loose to medium dense sand with silt and gravel to depths of 5 feet to 10 feet bgs, underlain by dense to very dense sand with silt and gravel to depths of at least 65 feet bgs.

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- Isolated perched water bearing zones were occasionally encountered at depths of somewhere between 30 to 40 feet bgs, and 50 to 65 feet bgs, at various locations. These isolated perched water bearing zones appeared to be encountered at the medium dense to very dense soil contact (between 30 and 40 feet bgs) and within more permeable (sand/gravel) horizons at 50 to 65 feet bgs. A static groundwater bearing zone was not encountered beneath the Property – only isolated perched water bearing zones were encountered.

REGULATORY ANALYSIS OF SITE CONDITIONS UNDER MTCA

Washington State’s hazardous waste cleanup law, the Model Toxics Control Act (MTCA, 70.105D RCW), mandates the necessity for site cleanups to protect human health and the environment. MTCA Cleanup Regulations (173-340 WAC) define 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.

The selected groundwater cleanup levels for the Property are the MTCA Method A Cleanup Levels for Groundwater. RGI’s evaluation of groundwater analytical data obtained during previous investigations indicate that these groundwater cleanup levels are sufficient to evaluate whether or not groundwater concentrations of Contaminants of Potential Concern (COPCs) on the Property are in compliance with MTCA regulations.

When no Method A groundwater cleanup level was available for a given compound, MTCA Method B groundwater cleanup levels were referenced.

MTCA Method A Cleanup Levels for groundwater, and MTCA Method B groundwater cleanup levels, collectively referred to as groundwater cleanup levels, are summarized in Table 1. Groundwater cleanup levels were obtained from the Ecology Cleanup Levels and Risk Calculation (CLARC) database.

FIRST QUARTER 2019

This First Quarter 2019 groundwater purging and sampling event was performed in February and March 2019. Depth to groundwater measurements were recorded at 31 of the existing groundwater monitoring and remediation DVE and SVE wells located on the Property.

Depth to groundwater ranged from approximately 30 to 40 feet below well top of casing (TOC) at the shallower wells (SVE and certain monitoring wells) and 50 to 55 feet below TOC at the deeper wells (DPE and certain groundwater wells).

Wells with apparent, adequate groundwater present were purged using a submersible pump until they purged dry. These wells were allowed to recharge to at least 80% the initial groundwater volume. Due to very slow well recharge rates, wells were sampled approximately 13 to 15 days following the well purging event.

Groundwater samples were collected from wells with adequate groundwater present using bladder pumps under low flow conditions, and submitted to the laboratory for analyses. Minimal purging was performed the day of groundwater sample collection. In addition, prior to sample collection, depth to groundwater measurements below well TOC were recorded and are shown on Table 1.

Groundwater samples were collected from the approximate middle of the water column under low-flow conditions.

Daily field reports (DFRs) pertaining to this groundwater monitoring event are included in Appendix A for reference.

Analytical results for the wells sampled during this sampling event are summarized in the attached Figure 3 and Table 1 and are discussed below.

A total of 17 wells had adequate groundwater for well purging and groundwater sample collection for laboratory analysis. These wells consisted of DPE1 to DP4, DPE6, DPE7, DPE9 to DPE15, SVE7, SVE11, MW2, and MW8. In general, the shallower SVE remediation wells were considered dry - either before purging, or after purging (due to very slow recharge). The remaining DPE, SVE, or MW wells located on the Property did not have sufficient groundwater present for groundwater sample collection.

These 17 groundwater monitoring and DPE/SVE remediation wells were sampled and analyzed for the following:

- Gasoline-range total petroleum hydrocarbon (TPH) using Northwest Test Method NWTPH-Gx/BTEX (17 samples).
- Diesel- and oil-range TPH using Northwest Test Method NWTPH-Dx without silica gel cleanup (17 samples).

Select groundwater monitoring and DPE/SVE remediation wells were sampled and analyzed for one or more of the following:

- Benzene, toluene, ethyl benzene, and total xylenes (BTEX) using EPA Test Method 8021B (2 samples).
- Total and dissolved lead using EPA Test Method 6020B (4 samples).
- Carcinogenic polyaromatic hydrocarbons (cPAHs) using either EPA Test Method 8270D (4 samples).
- Naphthalene using either EPA Test Method 8260 or 8270D (4 samples).
- Volatile organic compounds (VOCs) using EPA Test Method 8260C (2 samples).
- Total and dissolved lead (Pb) using EPA Test Method 6020B (4 total and dissolved metals). Groundwater samples analyzed for dissolved metals were filtered (using a 0.45-micron filter) by the laboratory analytical chemist prior to sample analysis.

LABORATORY ANALYTICAL RESULTS

Laboratory analytical results are summarized in the attached Figure 3 and Table 1 and are discussed below. Laboratory analytical reports and associated sample chain of custody forms are included in Appendix B.

Gasoline-range TPH

All 17 groundwater samples were analyzed for gasoline-range TPH. Concentrations ranged from non-detect to 21,000 µg/L. Four of the 17 groundwater samples (DPE2, DPE3, DPE6, and DPE7) had concentrations above the applicable MTCA Method A Cleanup Level of 800 µg/L (with benzene present).

Diesel-range TPH

All 17 samples were analyzed for diesel-range TPH. Concentrations ranged from non-detect to 13,000 µg/L. Eight of the 17 groundwater samples (DPE1, DPE2, DPE3, DPE6, DPE7, DPE10, DPE11, and SVE7) had concentrations above the applicable MTCA Method A Cleanup Level of 500 µg/L. However, these samples were flagged “x” by the laboratory chemist since the sample chromatographic pattern did not resemble the fuel standard used for quantitation. The laboratory chemist indicated during subsequent phone conversations that the flagged x concentrations actually was due to an overlap of gasoline-range TPH.

Oil-range TPH

All 17 samples were analyzed for oil-range TPH. Concentrations ranged from non-detect to 650 µg/L. One of the 17 (DPE7) had a concentration above the applicable MTCA Method A Cleanup Level of 500 µg/L. However, these samples were flagged “x” by the laboratory chemist since the sample chromatographic pattern did not resemble the fuel standard used for quantitation. The laboratory chemist indicated during subsequent phone conversations that the flagged x concentrations actually was due to an overlap of gasoline-range TPH.

Benzene

Four of the 17 samples were analyzed for benzene. Concentrations ranged from non-detect to 21 µg/L. Two of the four groundwater samples (DPE3 and DPE7) had concentrations above the applicable MTCA Method A Cleanup Level of 5 µg/L.

Toluene

Four of the 17 samples were analyzed for toluene. Concentrations ranged from non-detect to 19 µg/L. None of the four groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 1,000 µg/L.

Ethylbenzene

Four of the 17 samples were analyzed for ethylbenzene. Concentrations ranged from non-detect to 510 µg/L. None of the four groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 700 µg/L.

Total xylenes

Four of the 17 samples were analyzed for total xylenes. Concentrations ranged from non-detect to 4,400 µg/L. Two of the four groundwater samples (DPE3 and DPE7) had concentrations above the applicable MTCA Method A Cleanup Level of 1,000 µg/L.

Total lead

Four of the 17 samples were analyzed for total lead. Concentrations ranged from non-detect to 3.42 µg/L. None of the four groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 50 µg/L.

Dissolved lead

Four of the 17 samples were analyzed for dissolved lead. Concentrations for all four groundwater samples were non-detect. None of the four had concentrations above the applicable MTCA Method A Cleanup Level of 50 µg/L.

cPAHs

Four of the 17 samples were analyzed for cPAHs. Concentrations for all four were non-detect. None of the four groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level.

Naphthalene

Four of 17 samples were analyzed for naphthalene. Concentrations ranged from non-detect to 84 µg/L. None of the four groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 160 µg/L.

VOCs

Two of the 17 samples were analyzed for VOCs. Neither of the two groundwater samples had concentrations of VOC constituents above their applicable MTCA Method A Cleanup Levels.

PROJECT LIMITATIONS

Work for this project was performed, and prepared, in accordance with generally accepted professional practices for the nature and conditions of work completed in same or similar locations at the present time. RGI's results and findings from the select area do not necessarily reflect soil or groundwater conditions underlying other areas of the Property not investigated. RGI reserves the right to modify its conclusions and/or recommendations as new data and information is made available. No legal or other warranty, expressed or implied, is made.

This report is the property of RGI, Mr. Rob Will, and their representatives 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 4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington. No other warranty, expressed or implied, is made.

If you have any questions or need additional information, please contact the undersigned at (425) 415-0551.

Respectfully submitted,

THE RILEY GROUP, INC.



Tait S. Russell, GIT
Staff Geologist



Paul D. Riley, LG, LHG
Principal

Attachments

Figure 1, Property Vicinity Map

Figure 2, Property Plan Showing Existing and/or Former Well and Boring Locations

Figure 3, Summary of Groundwater Laboratory Results – Including 1st Quarter 2019

Table 1, Summary of Groundwater Monitoring Well and DPE/SVE Remediation Well Sampling and Analytical Laboratory Results

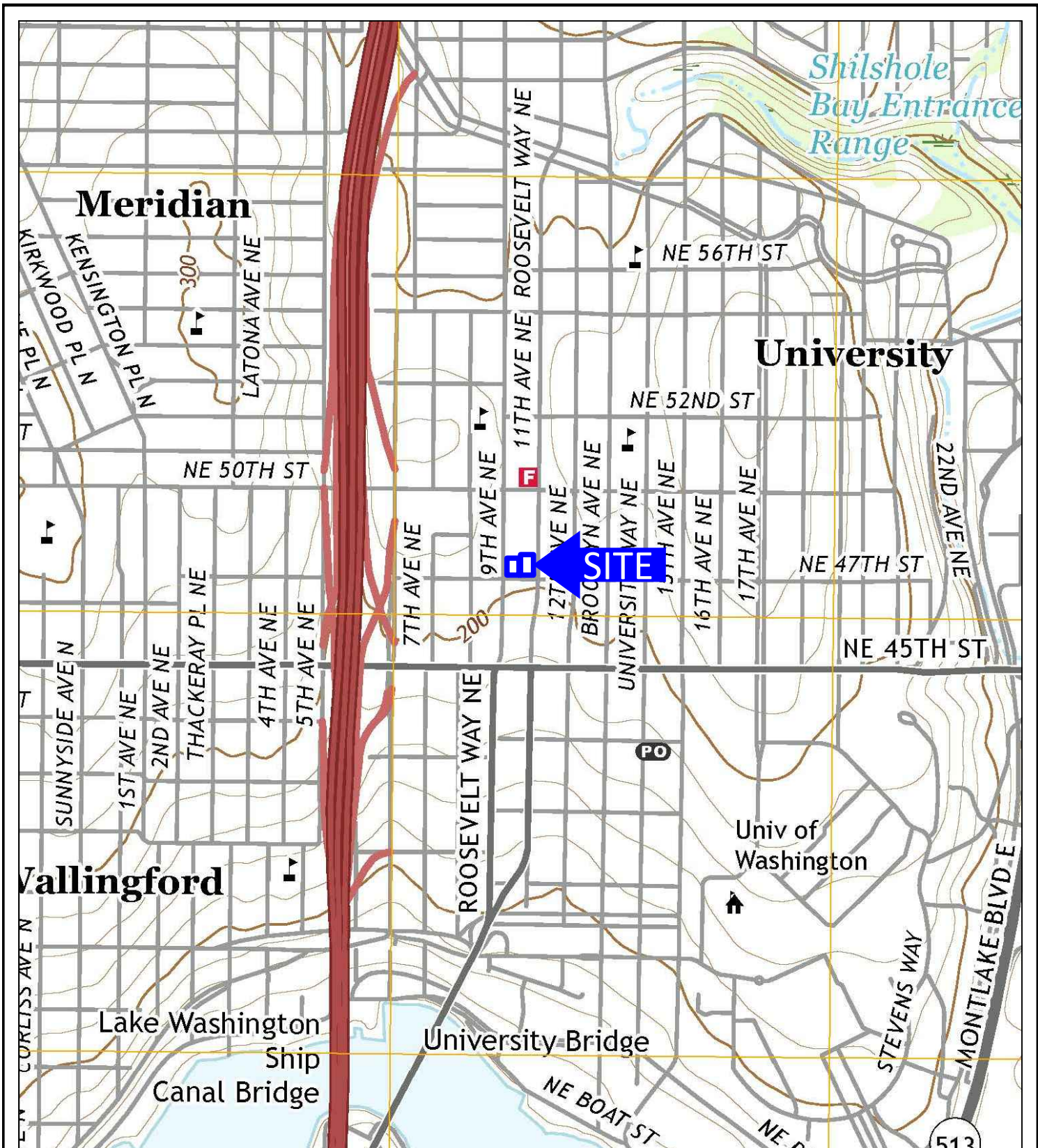
Appendix A, Daily Field Reports (DFRs)

Appendix B, 1st Quarter 2019 Analytical Laboratory Reports and Sample Chain of Custody Forms

Distribution

Rob Will and Miles Richardson– Freeway Properties, LLC (one bound copy & PDF)

Grant Yang - WSDOE – Northwest Region (one bound copy & PDF)



USGS, 2017, Seattle North, Washington
7.5-Minute Quadrangle

Approximate Scale: 1"=1000'



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University VW - Audi Property

Figure 1

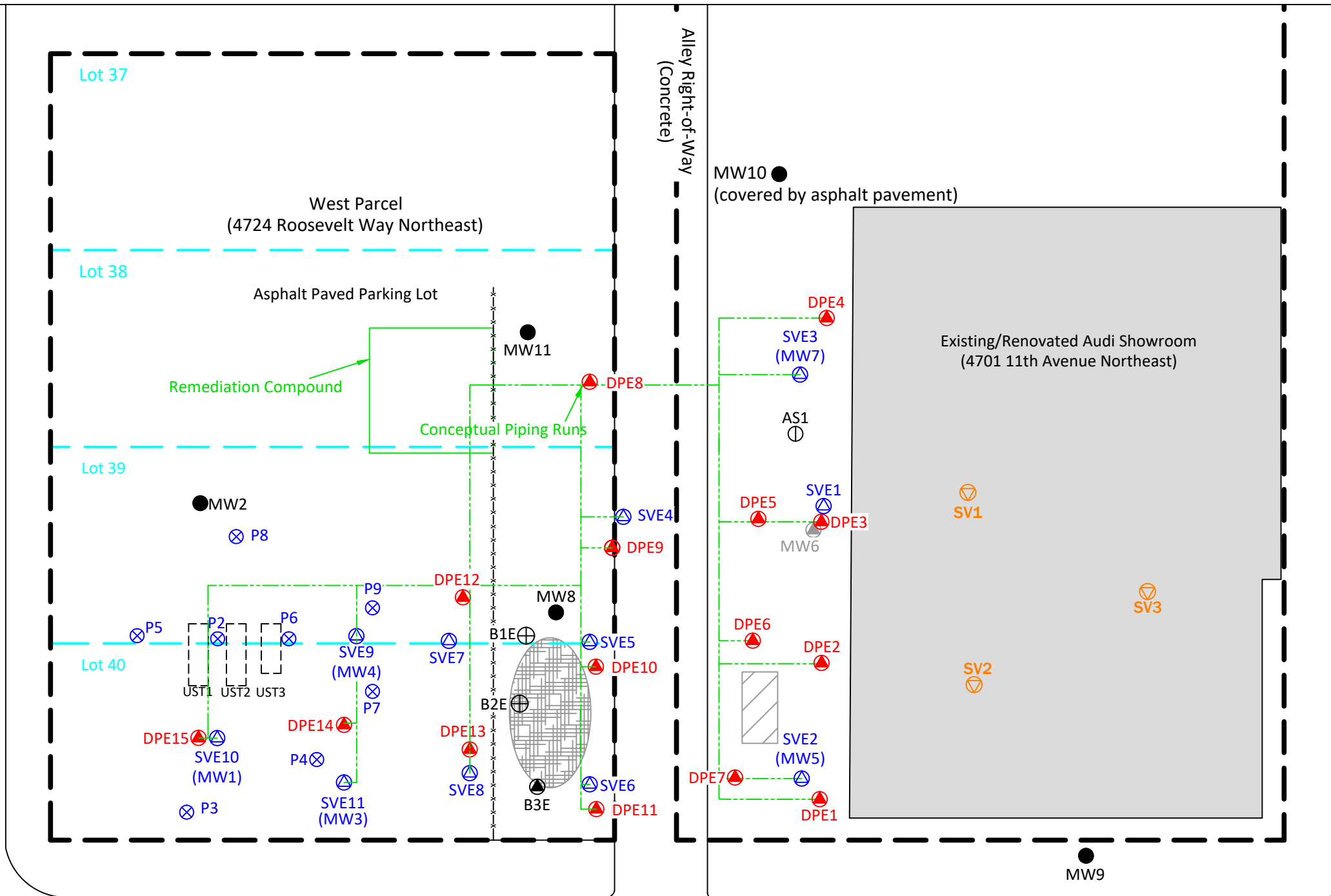
RGI Project Number
2014-0681

Property Vicinity Map

Date Drawn:
04/2019

Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105

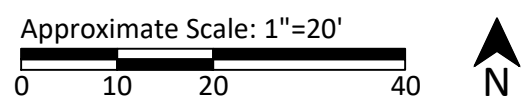
Roosevelt Way Northeast



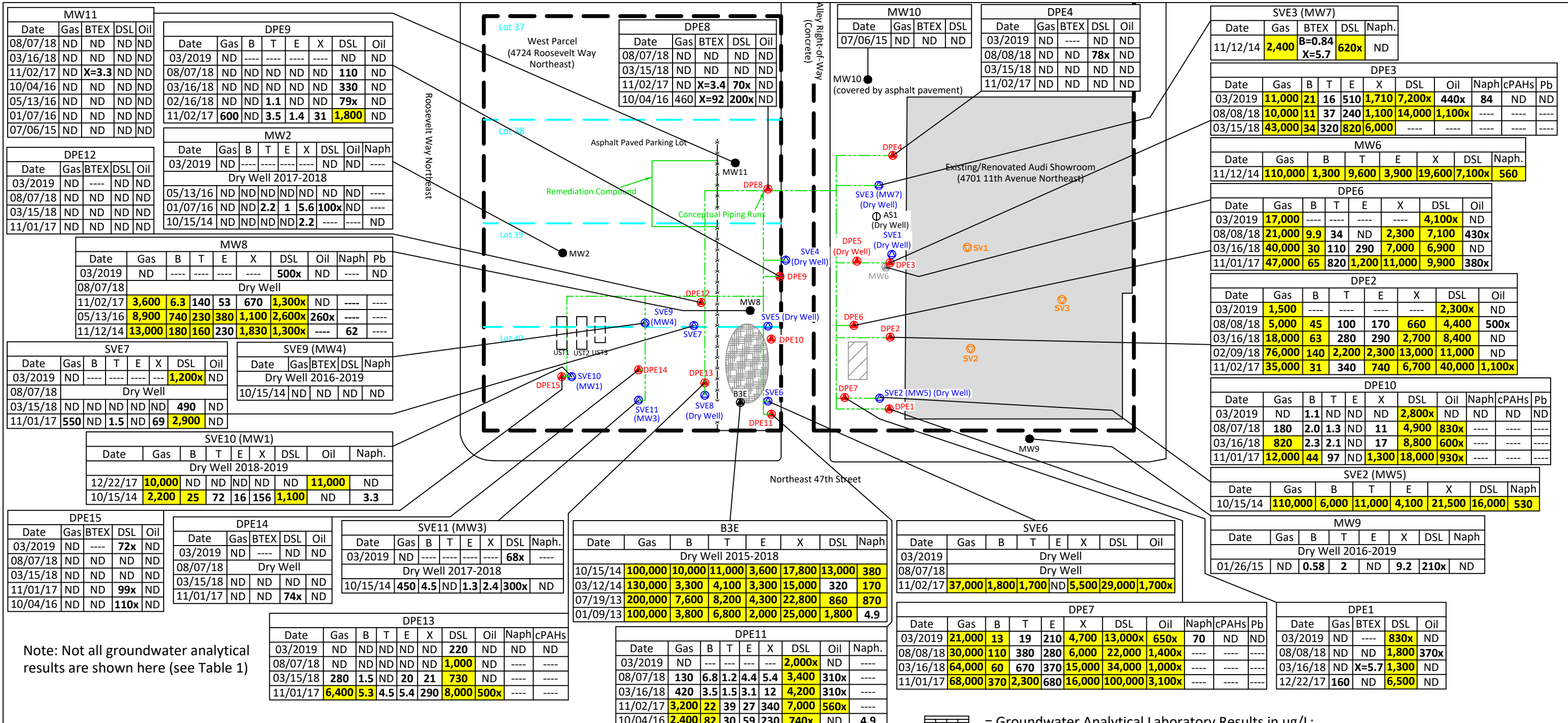
Alley Right-of-Way
(Concrete)

Northeast 47th Street

- = (in green) Horizontal lines connected to DPE/SVE remediation wells
- = (in red) Dual Phase Extraction (DPE) remediation wells installed by RGI in 2015.
- = (in blue) Soil Vapor Extraction (SVE) remediation wells installed by RGI in 2015. Some SVE wells were converted from groundwater monitoring wells (as indicated)
- = (in orange) Former sub-slab soil vapor temp point installed by RGI in 2015.
- = (in black) Existing groundwater well location installed by RGI in 2014 and 2015.
- = (in black) Air sparge point installed by RGI in 2014.
- = (in blue) Test probe location by RGI in 2014.
- = Previous soil boring location by others.
- = Former groundwater monitoring well properly decommissioned in July 2015.
- = Existing groundwater monitoring well location by others.
- = Reported location of former 4,000 gallon diesel UST reportedly removed by others in the early 1990's.
- = Former gasoline UST location removed and partial cleanup performed in 1993 by others.
- = Former gasoline USTs removed by RGI in 2016.
- = Fence
- = Property boundary



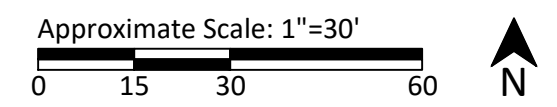
	Corporate Office 17522 Bothell Way Northeast Bothell, Washington 98011 Phone: 425.415.0551 Fax: 425.415.0311		University VW - Audi Property		Figure 2
	RGI Project Number 2014-0681	Property Plan Showing Existing and/or Former Wells and Borings		Date Drawn: 04/2019	
	Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105				



Note: Not all groundwater analytical results are shown here (see Table 1)

- = (in green) Horizontal SVE piping connected to DPE/SVE remediation wells.
- = (in red) Dual Phase Extraction (DPE) remediation wells installed by RGI in 2015.
- = (in orange) Former sub-slab soil vapor temp point installed by RGI in 2015.
- = (in blue) Soil Vapor Extraction (SVE) remediation wells installed by RGI in 2015.
- Some SVE wells were converted from groundwater monitoring wells (as indicated).
- = (in black) Air sparge point installed by RGI in 2014.
- = (in black) Existing groundwater well location installed by RGI in 2014 and 2015.
- = Former groundwater monitoring well properly decommissioned in July 2015.
- ▲ = Existing groundwater monitoring well location by others
- ▭ = Reported location of former 4,000 gallon diesel UST reportedly removed by others in the early 1990's.
- ▭ = Former gasoline UST location removed and partial cleanup performed in 1993 by others.
- ▭ = Former gasoline USTs removed by RGI in 2016.
- = Fence
- = Property boundary

▭ = Groundwater Analytical Laboratory Results in ug/L;
 Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
 BTEX = Benzene, toluene, ethylbenzene, xylenes
 Naph. = Naphthalene, cPAHs = Carcinogenic polycyclic aromatic hydrocarbons
 Pb = Dissolved lead
 ND = Not detected above laboratory detection limits, ---- = Not analyzed
 Yellow and bold highlight indicate results exceed MTCA Method A or B Screening Levels.
 x = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



 Corporate Office 17522 Bothell Way Northeast Bothell, Washington 98011 Phone: 425.415.0551 Fax: 425.415.0311	University VW - Audi Property		Figure 3
	RGI Project Number 2014-0681	Summary of Groundwater Laboratory Results - Including 1st Quarter 2019	Date Drawn: 04/2019
	Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105		

Table 1, Page 1 of 9. Summary of Groundwater Monitoring Well and DPE/SVE Remediation Well Sampling and Analytical Laboratory Results

University VW - Audi Property

4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington 98105

The Riley Group, Inc. Project No. 2014-068I

Sample Number	Sample Date	Top of Casing Elevation (feet)	Depth to Water (below TOC)	Groundwater Elevation (feet)	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	VOCs Not Included in TPH Screening Level Calculations	Naph	cPAHs	Total Metals								Dissolved Metals											
							B	T	E	X						As	Ba	Cd	Total Cr	Pb	Hg	Se	Ag	As	Ba	Cd	Total Cr	Pb	Hg	Se	Ag				
DPE1 Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																																			
DPE1	03/2019	204.51	53.80	150.71	----	ND<100	----	----	----	----	830x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	204.51	56.53	147.98	----	ND<100	ND<1	ND<1	ND<1	ND<3	1,800	370x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	03/16/18	204.51	57.89	146.62	----	ND<100	ND<1	ND<1	ND<1	5.7	1,300	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	02/09/18	204.51	56.9	147.61	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	WELL REHAB 2/9/2018																																		
	12/22/17	204.51	56.12	148.39	----	160	ND<1.0	ND<1.0	ND<1.0	ND<3.0	6,500	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	11/02/17	204.51	51.38	153.13	17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	10/2017	204.51	50.31	154.20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	07/2017	204.51	51.31	153.20	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	10/04/16	204.51	dry well		33.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
05/13/16	204.51	dry well		0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
04/15/16	204.51	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
01/07/16	204.51	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
DPE2 Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																																			
DPE2	03/2019	204.33	53.44	150.89	----	1,500	----	----	----	----	2,300x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	204.33	54.74	149.59	----	5,000	45	100	170	660	4,400	500x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	05/11/18	204.33	51.83	152.50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	05/09/18	204.33	50.27	154.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	03/16/18	204.33	58.11	146.22	----	18,000	63	280	290	2,700	8,400	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	02/09/18	204.33	53.3	151.03	----	76,000	140	2,200	2,300	13,000	11,000	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/9/2018																																		
	11/02/17	204.33	55.97	148.36	30.3	35,000	31	340	740	6,700	40,000	1,100x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	10/2017	204.33	53.33	151.00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	07/2017	204.33	54.31	150.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
10/04/16	204.33	dry well		675.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
04/15/16	204.33	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
01/07/16	204.33	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
DPE3 Screened Interval 60-40 ft bgs, Total boring depth 60 ft bgs																																			
DPE3	03/2019	204.62	53.76	150.86	----	11,000	21	16	510	1,710	7,200x	440x	Hexane = 19	84	ND<0.04	----	----	----	----	ND<1	----	----	----	----	----	----	----	ND<1	----	----	----	----			
	08/2018	204.62	56.24	148.38	----	10,000	11	37	240	1,100	14,000	1,100x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	05/11/18	204.62	52.47	152.15	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	05/09/18	204.62	52.58	152.04	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	03/16/18	204.62	57.26	147.36	----	43,000	34	320	820	6,000	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	02/09/18	204.62	54.4	150.22	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	WELL REHAB 2/9/2018																																		
	11/02/17	204.62	dry well		2.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	10/2017	204.62	53.63	150.99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	07/2017	204.62	50.89	153.73	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
10/04/16	204.62	dry well		350.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
04/15/16	204.62	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
01/07/16	204.62	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
MTCA Method A Screening Levels for Ground Water					----	800/1,000 ¹	5	1,000	700	1,000	500	500	Analyte Specific	160	TEF = 0.1	5	----	5	50	50	2	----	----	5	----	5	50	50	2	----	----				
MTCA Method B Screening Levels for Ground Water ²					----	----	----	----	----	----	----	----	n-Hexane = 480	----	----	----	3,200	----	----	----	----	80	80	----	3,200	----	----	----	80	80	----	----			

Table 1, Page 2 of 9. Summary of Groundwater Monitoring Well and DPE/SVE Remediation Well Sampling and Analytical Laboratory Results

University VW - Audi Property

4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington 98105

The Riley Group, Inc. Project No. 2014-068I

Sample Number	Sample Date	Top of Casing Elevation (feet)	Depth to Water (below TOC)	Groundwater Elevation (feet)	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	VOCs Not Included in TPH Screening Level Calculations	Naph	cPAHs	Total Metals							Dissolved Metals								
							B	T	E	X						As	Ba	Cd	Total Cr	Pb	Hg	Se	Ag	As	Ba	Cd	Total Cr	Pb	Hg	Se	Ag
DPE4 Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																															
DPE4	03/2019	205.01	54.10	150.91	----	ND<100	----	----	----	----	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	08/2018	205.01	56.67	148.34	----	ND<100	ND<1	ND<1	ND<1	ND<3	78x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	03/15/18	205.01	57.75	147.26	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	11/02/17	205.01	61.07	143.94	25.4	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	10/2017	205.01	58.22	146.79	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	07/2017	205.01	55.2	149.81	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.01	dry well		38.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	04/15/16	205.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
01/07/16	205.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
DPE5 Screened Interval 52.5-37.5 ft bgs, Total boring depth 52.5 ft bgs																															
DPE5	03/2019	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	08/2018	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	03/16/18	205.29	dry well		2.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	11/01/17	205.29	dry well		2.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	10/2017	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	07/2017	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	10/04/16	205.29	----	----	317.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	04/15/16	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
01/07/16	205.29	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
DPE6 Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																															
DPE6	03/2019	204.97	51.65	153.32	----	17,000	----	----	----	----	4,100x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	204.97	57.73	147.24	----	21,000	9.9	34	ND<5	2,300	7,100	430x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	05/11/18	204.97	52.20	152.77	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	05/09/18	204.97	47.83	157.14	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	03/16/18	204.97	57.66	147.31	----	40,000	30	110	290	7,000	6,900	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	02/14/18	204.97	56.00	148.97	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	WELL REHAB 2/14/2018																														
	11/01/17	204.97	48.88	156.09	14.7	47,000	65	820	1,200	11,000	9,900	380x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/2017	204.97	48.32	156.65	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	07/2017	204.97	43.38	161.59	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/04/16	204.97	dry well		934.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
04/15/16	204.97	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
01/07/16	204.97	dry well (LNAPL ?)		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
DPE7 Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																															
DPE7	03/2019	204.84	52.92	151.92	----	21,000	13	19	210	4,700	13,000x	650x	Hexane = 63	70	ND<0.04	----	----	----	----	ND<1	----	----	----	----	----	----	ND<1	----			
	08/2018	204.84	57.67	147.17	----	30,000	110	380	280	6,000	22,000	1,400x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
	05/11/18	204.84	52.63	152.21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
	05/09/18	204.84	49.56	155.28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
	03/16/18	204.84	56.28	148.56	----	64,000	60	670	370	15,000	34,000	1,000x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
	02/14/18	204.84	54.00	150.84	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
	WELL REHAB 2/14/2018																														
11/01/17	204.84	51.59	153.25	2.0	68,000	370	2,300	680	16,000	100,000	3,100x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----					
MTCA Method A Screening Levels for Ground Water					----	800/1,000 ¹	5	1,000	700	1,000	500	500	Analyte Specific	160	TEF = 0.1	5	5	50	50	2	----	5	----	5	50	50	2	----			
MTCA Method B Screening Levels for Ground Water ²					----	----	----	----	----	----	----	----	n-Hexane = 480	----	----	----	3,200	----	----	----	80	80	----	3,200	----	----	80	80			

Table 1, Page 5 of 9. Summary of Groundwater Monitoring Well and DPE/SVE Remediation Well Sampling and Analytical Laboratory Results

University VW - Audi Property

4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington 98105

The Riley Group, Inc. Project No. 2014-068I

Sample Number	Sample Date	Top of Casing Elevation (feet)	Depth to Water (below TOC)	Groundwater Elevation (feet)	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	Other VOCs	Naph	cPAHs	Total Metals						Dissolved Metals								
							B	T	E	X						As	Ba	Cd	Total Cr	Pb	Hg	Se	Ag	As	Ba	Cd	Total Cr	Pb	Hg	Se
SVE2 (MW5) Original Screened Interval 65-30 ft bgs, Total boring depth 65 ft bgs. Modified Screened Interval 45-30 ft bgs (July 2015).																														
SVE2 (MW5)	03/2019	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	08/2018	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	12/22/17	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	10/2017	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	07/2017	204.07	40.02	164.05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	10/04/16	204.07	dry well		1764	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	05/13/16	204.07	dry well		818.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	04/15/16	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	01/07/16	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	07/06/15	204.07	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
04/16/15	204.07	42.26	161.82	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
10/15/14	204.07	43.64	160.44	----	110,000	6,000	11,000	4,100	21,500	16,000	ND<250	ND<100	400	ND<1	8.17	85.2	ND<1	17.6	1.83	ND<0.1	ND<1	ND<1	5.82	47.5	ND<1	ND<1	ND<1	ND<0.1	ND<1	ND<1
SVE3 (MW7) Original Screened Interval 60-30 ft bgs, Total boring depth 60 ft bgs. Modified Screened Interval 45-30 ft bgs (July 2015).																														
SVE3 (MW7)	03/2019	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/07/18	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	03/15/18	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	11/02/17	205.24	dry well		54.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/2017	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	07/2017	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/04/16	205.24	dry well		1,315	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	05/13/16	205.24	dry well		2.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	04/15/16	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	01/07/16	205.24	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	04/16/15	205.24	44.17	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
11/12/14	205.24	44.55	dry well		----	2,400	0.84	ND<1	ND<1	5.7	620x	ND<250	ND	ND<1	----	----	----	----	----	----	----	----	----	----	----	----				
SVE4 Screened Interval 39.5-19.5 ft bgs, Total boring depth 39.5 ft bgs																														
SVE4	03/2019	205.67	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	205.67	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/2017	205.67	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	06/2017	205.67	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
SVE5 Screened Interval 40-20 ft bgs, Total boring depth 40 ft bgs																														
SVE5	03/2019	205.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	205.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	03/16/18	205.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	11/02/17	205.84	dry well		178	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	10/2017	205.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
06/2017	205.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
SVE6 Screened Interval 40-20 ft bgs, Total boring depth 40 ft bgs																														
SVE6	03/2019	205.49	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	08/2018	205.49	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----			
	03/16/18	205.49	38.15	167.34	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----				
MTCA Method A Screening Levels for Ground Water					----	800/1,000 ¹	5	1,000	700	1,000	500	500	Analyte Specific	160	TEF = 0.1	5	----	5	50	50	2	----	5	----	5	50	50	2	----	
MTCA Method B Screening Levels for Ground Water²					----	----	----	----	----	----	----	----	----	----	----	----	3,200	----	----	----	----	80	80	----	3,200	----	----	----	80	80

Daily Field Report





Corporate Office
 17522 Bothell Way Northeast
 Bothell, Washington 98011
 425.415.0551
 www.riley-group.com

Project No: 2014-0681
 Report No: _____
 RGI rep: _____
 Date: 2/26/19
 Subject: _____
 Weather: Clear, ~35-45F

Project: UW VW/Audi

I (Tait) arrived on-Site at about 08:45 A.M. with the remediation system off. Eric and Steve arrived shortly after. Started purging in the NW portion of the property, and moved SE (from historically least to most contaminated). Each well was measured with a PID (see below) and recorded both the depth to water (DTW) below well top of casing (TOC) – see below) and approximate DTW below ground surface (GS – see below) before purging. All wells with apparent and/or sufficient water present in the well was purged until the well was dry. In general, sufficient water for purging, and potential sample collection, was 2 ft. of water present in the 4" diameter wells and 3 ft. of water present in the 2" diameter wells. A one-way check valve was used to prevent water in the tubing from flowing back into the wells during pumping and/or pump removal. Purge water was stored in the tote in the remediation shed. After a few wells, it became clear that Steve wouldn't be needed for excessive water removal, so we had him leave. Eric and I continued to purge the remaining wells. We left the Site at about 14:00 with the system off.

Well	PID	DTW below well TOC (ft.)	DTW below GS (ft.)	Water Column in Well (in ft.)	Vol. Water Purged (in gal.)	Notes
MW2	0.1	44	45.75	1.75	1	
SVE10	0.1	N/A	44.9	N/A	N/A	Dry
DPE15	0.1	54.65	61.2	6.55	10	
DPE14	0.9	55.55	60	4.45	12	
DPE12	1	55.2	59.1	3.9	8	
SVE7	4.5	30.85	40.2	9.35	5	
SVE8	25.5	39.34	40.05	0.71	N/A	Dry
DPE13	1.5	50.35	61	10.65	11	
DPE9	0.5	51.75	60.3	8.55	10	
SVE4	0.3	39.06	39.65	0.59	N/A	Dry
MW11	0.3	44.5	54.3	9.8	12	
DPE8	0	54.52	58.69	4.17	8	
MW9	0	N/A	53.2	N/A	N/A	Dry
SVE2	2.4	N/A	43.6	N/A	N/A	Dry

RGI Rep sign:  Copies To: _____
 Reviewed by  _____

Daily Field Report



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 Bothell, Washington 98011
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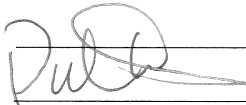
Project No: 2014-0681
 Report No: _____
 RGI rep: _____
 Date: 2/27/19
 Page No. _____
 Subject: _____
 Superintendent _____
 Visitors: _____
 Weather: Clear, ~35-45F

Permit No: _____
 Project: UW VW/Audi
 Client Name: _____
 & Address: _____

OBSERVATIONS

I (Tait) arrived on-Site at about 08:45 with the system off. Eric arrived at about 09:00. We continued purging from where we left off yesterday, and continued generally from the NW to the SE. We finished purging all the wells and left the Site at about 15:50 with the system off.

Well	PID	DTW below well TOC (ft.)	DTW below GS (ft.)	Water Column in Well (in ft.)	Vol. Water Purged (in gal.)	Notes
SVE9	6.3	N/A	55.56	N/A	N/A	Dry
SVE11	6	55.45	57.8	2.35	2	
DPE10	0.9	52.03	59.5	7.47	10	
SVE5	8.5	35.5	39.1	3.6	N/A	Too silty
MW8	0.4	52.1	58.85	6.75	6	
SVE6	1.8	37.12	40.08	2.96	0	Attempted, but dry
DPE11	4.4	53.14	60.8	7.66	8	
DPE4	1	54.1	64.34	10.24	10	
SVE3	0.4	N/A	43	N/A	N/A	Dry
AS1	0.2	53.64	56.5	2.86	N/A	Dry
SVE1	29.1	N/A	38.1	N/A	N/A	Dry
DPE3	0.2	53.76	60	6.24	10	
DPE5	0.3	51.41	51.7	0.29	N/A	Dry
DPE6	1	51.65	65	13.35	16	
DPE2	2	53.44	63.52	10.08	16	
DPE1	0	53.8	62.54	8.74	7	
DPE7	0.3	52.92	62	9.08	6	

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Daily Field Report



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 Bothell, Washington 98011
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Project No: 2014-0681
 Report No: _____
 RGI rep: _____
 Date: 3/13/19
 Page No. _____
 Subject: _____
 Contractor: _____
 Superintendent _____
 Visitors: _____
 Weather: Overcast to partly cloudy, ~40-45F

Permit No: _____
 Project: UW VW/Audi
 Location: _____
 Client Name: _____
 & Address: _____

OBSERVATIONS

I (Tait) arrived on-Site at about 09:50 with the remediation system off. I sampled the remaining wells that were inaccessible yesterday due to parked cars, car repairs, etc.

Depth to water (DTW) was measured before sampling (see below). Groundwater sampling was performed using a bladder pump under low-flow conditions. Groundwater samples were collected from the approximate middle of the water column. Minimal, to no, purging was performed, on this day, prior to groundwater sample collection.

Also, we measured the difference between each well top of casing (TOC) and the ground surface (GS) (see below).

I left the Site at about 15:00 with the system off.

Well	DTW below well TOC (ft.)	GS minus TOC (ft.)
DPE14	56.05	1.25
SVE7	29.44	0.70
DPE12	55.07	0.60
SVE11	55.30	0.45
DPE13	48.77	0.95

RGI Rep sign: _____ Copies To: _____
 Reviewed by Tait _____

Daily Field Report



Corporate Office
 17522 Bothell Way Northeast
 Bothell, Washington 98011
 425.415.0551
 www.riley-group.com

Project No: 2014-0681
 Report No: _____
 RGI rep: _____
 Date: 3/12/19
 Page No. _____
 Subject: _____
 Weather: Scattered Rain, ~35-45F

Permit No: _____
 Project: UW VW/Audi

OBSERVATIONS

I (Tait) arrived on-Site at about 08:20 with the remediation system off. Eric arrived shortly after. The repair crew was working in the SE corner of VW, so we planned to collect those well samples tomorrow when the repair crew will not be there.

In general, we sampled from the NW portion of the Site to the SE (historically least to most contaminated areas). Depth to water (DTW) was measured before sampling (see below). Sampling was performed using bladder pumps under low-flow conditions, and samples were collected from the approximate middle portion of the water column. Minimal, if any, further purging was performed prior to groundwater sample collection.

Also, we measured the difference between each well top-of-casing (TOC) and the ground surface (GS) (see below).

SVE6 had insufficient water to sample.

We left the Site at about 15:15 with the system off.

Well	DTW below well TOC (ft.)	GS minus TOC (ft.)
MW2	43.78	0.55
DPE15	57.72	0.40
DPE11	53.39	0.75
SVE6	38.69	0.25
MW8	52.69	0.50
DPE10	53.38	1.10
DPE9	53.83	1.10
DPE4	54.00	0.90
DPE3	54.00	0.60
DPE2	53.73	1.00
DPE6	53.62	0.50
DPE1	53.99	0.50
DPE7	53.85	0.70

RGI Rep sign: 
 Reviewed by 

Copies To: _____

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

April 4, 2019

Tait Russell, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Russell:

Included are the additional results from the testing of material submitted on March 14, 2019 from the UW VW/Audi 2014-068I, F&BI 903270 project. There are 6 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
c: Paul Riley
TRG0404R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 14, 2019 by Friedman & Bruya, Inc. from the The Riley Group UW VW/Audi 2014-068I, F&BI 903270 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>The Riley Group</u>
903270 -01	DPE1
903270 -02	DPE2
903270 -03	DPE3
903270 -04	DPE4
903270 -05	DPE6
903270 -06	DPE7
903270 -07	DPE9
903270 -08	DPE10
903270 -09	DPE11
903270 -10	DPE12
903270 -11	DPE13
903270 -12	DPE14
903270 -13	DPE15
903270 -14	SVE7
903270 -15	SVE11
903270 -16	MW2
903270 -17	MW8

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: DPE7	Client: The Riley Group
Date Received: 03/14/19	Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/26/19	Lab ID: 903270-06 1/100
Date Analyzed: 03/27/19	Data File: 032649.D
Matrix: Water	Instrument: GCMS9
Units: ug/L (ppb)	Operator: MS/IJL

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<100	1,3-Dichloropropane	<100
Chloromethane	<1,000	Tetrachloroethene	<100
Vinyl chloride	<20	Dibromochloromethane	<100
Bromomethane	<100	1,2-Dibromoethane (EDB)	<100
Chloroethane	<100	Chlorobenzene	<100
Trichlorofluoromethane	<100	Ethylbenzene	210
Acetone	<5,000	1,1,1,2-Tetrachloroethane	<100
1,1-Dichloroethene	<100	m,p-Xylene	3,000
Hexane	<100	o-Xylene	1,700
Methylene chloride	<500	Styrene	<100
Methyl t-butyl ether (MTBE)	<100	Isopropylbenzene	<100
trans-1,2-Dichloroethene	<100	Bromoform	<100
1,1-Dichloroethane	<100	n-Propylbenzene	<100
2,2-Dichloropropane	<100	Bromobenzene	<100
cis-1,2-Dichloroethene	<100	1,3,5-Trimethylbenzene	520
Chloroform	<100	1,1,2,2-Tetrachloroethane	<100
2-Butanone (MEK)	<1,000	1,2,3-Trichloropropane	<100
1,2-Dichloroethane (EDC)	<100	2-Chlorotoluene	<100
1,1,1-Trichloroethane	<100	4-Chlorotoluene	<100
1,1-Dichloropropene	<100	tert-Butylbenzene	150
Carbon tetrachloride	<100	1,2,4-Trimethylbenzene	970
Benzene	<35	sec-Butylbenzene	<100
Trichloroethene	<100	p-Isopropyltoluene	<100
1,2-Dichloropropane	<100	1,3-Dichlorobenzene	<100
Bromodichloromethane	<100	1,4-Dichlorobenzene	<100
Dibromomethane	<100	1,2-Dichlorobenzene	<100
4-Methyl-2-pentanone	<1,000	1,2-Dibromo-3-chloropropane	<1,000
cis-1,3-Dichloropropene	<100	1,2,4-Trichlorobenzene	<100
Toluene	<100	Hexachlorobutadiene	<100
trans-1,3-Dichloropropene	<100	Naphthalene	<100
1,1,2-Trichloroethane	<100	1,2,3-Trichlorobenzene	<100
2-Hexanone	<1,000		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	09-0569 mb
Date Analyzed:	03/18/19	Data File:	031817.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	100	63	127
4-Bromofluorobenzene	99	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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

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

Laboratory Code: 903261-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	
				Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	108	10-172
Chloromethane	ug/L (ppb)	50	<10	100	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	104	36-166
Bromomethane	ug/L (ppb)	50	<1	113	47-169
Chloroethane	ug/L (ppb)	50	<1	101	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	110	44-165
Acetone	ug/L (ppb)	250	<50	90	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	94	60-136
Hexane	ug/L (ppb)	50	<1	93	52-150
Methylene chloride	ug/L (ppb)	50	<5	97	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	92	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	91	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	90	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	109	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	92	71-127
Chloroform	ug/L (ppb)	50	<1	91	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	99	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	92	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	95	56-152
Benzene	ug/L (ppb)	50	<0.35	91	76-125
Trichloroethene	ug/L (ppb)	50	<1	87	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	90	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	89	61-150
Dibromomethane	ug/L (ppb)	50	<1	89	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	93	72-132
Toluene	ug/L (ppb)	50	<1	86	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	88	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	89	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	92	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	89	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	91	69-134
Chlorobenzene	ug/L (ppb)	50	<1	92	77-122
Ethylbenzene	ug/L (ppb)	50	<1	90	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	88	73-137
m,p-Xylene	ug/L (ppb)	100	<2	92	69-135
o-Xylene	ug/L (ppb)	50	<1	88	60-140
Styrene	ug/L (ppb)	50	<1	91	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	90	65-142
Bromoform	ug/L (ppb)	50	<1	83	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	88	58-144
Bromobenzene	ug/L (ppb)	50	<1	89	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	89	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	98	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	92	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	88	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	88	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	89	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	89	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	86	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	89	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	89	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	89	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	87	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	89	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	89	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	77	60-143
Naphthalene	ug/L (ppb)	50	<1	92	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	90	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/04/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

**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	105	105	25-158	0
Chloromethane	ug/L (ppb)	50	93	95	45-156	2
Vinyl chloride	ug/L (ppb)	50	104	105	50-154	1
Bromomethane	ug/L (ppb)	50	105	106	55-143	1
Chloroethane	ug/L (ppb)	50	98	99	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	109	112	50-150	3
Acetone	ug/L (ppb)	250	84	84	53-131	0
1,1-Dichloroethene	ug/L (ppb)	50	98	101	67-136	3
Hexane	ug/L (ppb)	50	90	91	57-137	1
Methylene chloride	ug/L (ppb)	50	98	100	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	105	108	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	105	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	104	106	79-121	2
2,2-Dichloropropane	ug/L (ppb)	50	127	132	55-143	4
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	105	80-123	3
Chloroform	ug/L (ppb)	50	103	107	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	96	96	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	106	108	73-132	2
1,1,1-Trichloroethane	ug/L (ppb)	50	110	113	83-130	3
1,1-Dichloropropene	ug/L (ppb)	50	103	105	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	112	115	75-158	3
Benzene	ug/L (ppb)	50	100	102	69-134	2
Trichloroethene	ug/L (ppb)	50	97	97	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	103	106	77-123	3
Bromodichloromethane	ug/L (ppb)	50	115	117	81-133	2
Dibromomethane	ug/L (ppb)	50	104	106	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	100	101	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	111	113	82-132	2
Toluene	ug/L (ppb)	50	98	100	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	116	117	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	102	102	75-124	0
2-Hexanone	ug/L (ppb)	250	90	90	60-136	0
1,3-Dichloropropane	ug/L (ppb)	50	100	101	76-126	1
Tetrachloroethene	ug/L (ppb)	50	104	105	76-121	1
Dibromochloromethane	ug/L (ppb)	50	110	111	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	101	101	82-125	0
Chlorobenzene	ug/L (ppb)	50	100	100	83-114	0
Ethylbenzene	ug/L (ppb)	50	100	101	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	112	115	84-127	3
m,p-Xylene	ug/L (ppb)	100	99	100	83-125	1
o-Xylene	ug/L (ppb)	50	98	100	81-121	2
Styrene	ug/L (ppb)	50	103	104	84-119	1
Isopropylbenzene	ug/L (ppb)	50	106	107	85-117	1
Bromoform	ug/L (ppb)	50	118	119	74-136	1
n-Propylbenzene	ug/L (ppb)	50	98	101	74-126	3
Bromobenzene	ug/L (ppb)	50	99	101	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	103	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	111	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	94	96	67-124	2
2-Chlorotoluene	ug/L (ppb)	50	98	100	77-127	2
4-Chlorotoluene	ug/L (ppb)	50	99	101	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	101	105	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	102	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	101	104	80-125	3
p-Isopropyltoluene	ug/L (ppb)	50	104	107	81-123	3
1,3-Dichlorobenzene	ug/L (ppb)	50	99	102	85-116	3
1,4-Dichlorobenzene	ug/L (ppb)	50	95	98	84-121	3
1,2-Dichlorobenzene	ug/L (ppb)	50	98	102	85-116	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	111	115	57-141	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	97	101	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	103	105	53-141	2
Naphthalene	ug/L (ppb)	50	99	102	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	98	100	65-136	2

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.

903270

17522 Bothell Way NE
Bothell, WA 98011
www.riley-group.com

Tait Russell, GIT, Staff Geologist

t: 425.415.0551
m: 425.780.0615
f: 425.415.0311
trussell@riley-group.com

SAMPLE CHAIN OF CUSTODY

ME 03/14/19

nw4/ED4/AT4
Page # 1 of 2

SAMPLERS (signature) *Tait Russell*

PROJECT NAME: *nw nw/Audi* PO #: *2014-0681*

REMARKS: *cc: riley@riley-group.com* 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	ANALYSES REQUESTED											Notes	
						TPH-HCID	TPH-Diesel + 07	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Total PB	Met Filter # Dissolved Pb	CPAHs	Maple		
DPE1	01A-D	3/12	1420	water	4	X	X											
DPE2	02A-D		1340		4	X	X											
DPE3	03A-D		1310		9	X	X		X				X	X	X	X		
DPE4	04A-D		1300		4	X	X											
DPE6	05A-D		1400		4	X	X											
DPE7	06A-I		1430		9	X	X		X				X	X	X	X		
DPE9	07A-D		1220		4	X	X											
DPE10	08A-G		1145		7	X	X	X					X	X	X	X		
DPE11	09 AD	↓	1045		4	X	X											
DPE12	10 AD	3/13	1225	↓	4	X	X											2 Samples received at ___ °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<i>Tait Russell</i>	Tait R	RGI	3/14	1030
<i>SF Thornton</i>	SF Thornton	FeDEX	3/14	12:45
<i>SF Thornton</i>	SF Thornton	FeDEX	3/14	1:45
<i>Eric Devo</i>	Eric Devo	FeB	3/14	1345

903270

17522 Bothell Way NE
Bothell, WA 98011
www.riley-group.com

Tait Russell, GIT, Staff Geologist

t: 425.415.0551
m: 425.780.0615
f: 425.415.0311
trussell@riley-group.com

SAMPLE CHAIN OF CUSTODY

ME 03/14/19 vuv/Edy/ADY
Page # 2 of 2

SAMPLERS (signature) <i>Tait Russell</i>		TURNAROUND TIME <input checked="" type="checkbox"/> Standard Turnaround <input type="checkbox"/> RUSH Rush charges authorized by:	
PROJECT NAME <i>vuv vuv/Audi</i>	PO # <i>2014-0685</i>	SAMPLE DISPOSAL <input checked="" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Archive Samples <input type="checkbox"/> Other	
REMARKS <i>copy to riley group.com</i>	INVOICE TO		

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED											Notes	
						TPH-HCID	TPH-Diesel + oil	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Totals Pb	Allyl Filter Pb Dissolved Pb	CPATHs	Naph.		
DPE13	11 A-G	3/13	1420	Water	7	X	X	X								X	X	
DPE14	12 A-D	3/13	1045		4	X	X											
OPE15	13 A-D	3/12	1000		4	X	X											
SVE7	14 A-D	3/13	1145		4	X	X											
SVE11	15 A-D	3/13	1315		4	X	X											
nw2	16 A-D	3/12	930		4	X	X											
nw8	17 A-F	3/12	1140	↓	6	X	X							X	X			
Samples received at <u>2</u> °C																		

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<i>Tait Russell</i>	Tait R.	RGI	3/14	1030
<i>S.F. Thornton</i>	S.F. Thornton	FedEx	3/14	12:45
<i>S.F. Thornton</i>	S.F. Thornton	FedEx	3/14	1:45
<i>Eric Chan</i>	Eric Chan	FE	3/14	1:45

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

March 26, 2019

Tait Russell, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Russell:

Included is the amended report from the testing of material submitted on March 14, 2019 from the UW VW/Audi 2014-068I, F&BI 903270 project. There are 34 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
c: Paul Riley
TRG0325R.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
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fbi@isomedia.com
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March 25, 2019

Tait Russell, Project Manager
The Riley Group, Inc.
17522 Bothell Way NE
Bothell, WA 98011

Dear Mr Russell:

Included are the results from the testing of material submitted on March 14, 2019 from the UW VW/Audi 2014-068I, F&BI 903270 project. There are 34 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
c: Paul Riley
TRG0325R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on March 14, 2019 by Friedman & Bruya, Inc. from the The Riley Group UW VW/Audi 2014-068I, F&BI 903270 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>The Riley Group</u>
903270 -01	DPE1
903270 -02	DPE2
903270 -03	DPE3
903270 -04	DPE4
903270 -05	DPE6
903270 -06	DPE7
903270 -07	DPE9
903270 -08	DPE10
903270 -09	DPE11
903270 -10	DPE12
903270 -11	DPE13
903270 -12	DPE14
903270 -13	DPE15
903270 -14	SVE7
903270 -15	SVE11
903270 -16	MW2
903270 -17	MW8

The dissolved metals samples were filtered at Friedman and Bruya on March 15, 2019 at 09:37. The data were flagged accordingly.

The 8260C calibration standard failed the acceptance criteria for bromoform. In addition, the o-xylene concentration for sample DPE7 exceeded the calibration range. The data were flagged accordingly.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19
Date Received: 03/14/19
Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/15/19
Date Analyzed: 03/15/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-134)
DPE1 903270-01	<100	89
DPE2 903270-02	1,500	113
DPE3 903270-03 1/5	11,000	115
DPE4 903270-04	<100	97
DPE6 903270-05 1/10	17,000	112
DPE7 903270-06 1/10	21,000	112
DPE9 903270-07	<100	98
DPE11 903270-09	<100	98
DPE12 903270-10	<100	96
DPE14 903270-12	<100	100
DPE15 903270-13	<100	97

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19
Date Received: 03/14/19
Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/15/19
Date Analyzed: 03/15/19

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**
Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (% Recovery) (Limit 51-134)
SVE7 903270-14	<100	98
SVE11 903270-15	<100	97
MW2 903270-16	<100	97
MW8 903270-17	<100	96
Method Blank 09-492 MB	<100	102

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19
Date Received: 03/14/19
Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/15/19
Date Analyzed: 03/15/19

**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)

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl Benzene</u>	<u>Total Xylenes</u>	<u>Gasoline Range</u>	<u>Surrogate (% Recovery)</u> (Limit 52-124)
DPE10 903270-08	1.1	<1	<1	<3	<100	83
DPE13 903270-11	<1	<1	<1	<3	<100	82
Method Blank 09-492 MB	<1	<1	<1	<3	<100	84

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19
 Date Received: 03/14/19
 Project: UW VW/Audi 2014-068I, F&BI 903270
 Date Extracted: 03/15/19
 Date Analyzed: 03/15/19

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
DPE1 903270-01	830 x	<250	91
DPE2 903270-02	2,300 x	<250	75
DPE3 903270-03	7,200 x	440 x	78
DPE4 903270-04	<50	<250	88
DPE6 903270-05	4,100 x	<250	89
DPE7 903270-06	13,000 x	650 x	95
DPE9 903270-07	<50	<250	90
DPE10 903270-08	2,800 x	<250	82
DPE11 903270-09	2,000 x	<250	89
DPE12 903270-10	<50	<250	100

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19
 Date Received: 03/14/19
 Project: UW VW/Audi 2014-068I, F&BI 903270
 Date Extracted: 03/15/19
 Date Analyzed: 03/15/19

**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)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (Limit 51-134)
DPE13 903270-11	220	<250	91
DPE14 903270-12 1/1.4	<70	<350	88
DPE15 903270-13 1/1.2	72 x	<300	79
SVE7 903270-14	1,200 x	<250	84
SVE11 903270-15	68 x	<250	87
MW2 903270-16 1/1.2	<60	<300	67
MW8 903270-17	500 x	<250	82
Method Blank 09-601 MB	<50	<250	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DPE3 f	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/15/19	Lab ID:	903270-03
Date Analyzed:	03/15/19	Data File:	903270-03.047
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DPE7 f	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/15/19	Lab ID:	903270-06
Date Analyzed:	03/15/19	Data File:	903270-06.050
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	DPE10 f	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/15/19	Lab ID:	903270-08
Date Analyzed:	03/15/19	Data File:	903270-08.051
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW8 f	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/15/19	Lab ID:	903270-17
Date Analyzed:	03/15/19	Data File:	903270-17.052
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	The Riley Group
Date Received:	NA	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/15/19	Lab ID:	I9-173 mb
Date Analyzed:	03/15/19	Data File:	I9-173 mb.043
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DPE3	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/19/19	Lab ID:	903270-03
Date Analyzed:	03/19/19	Data File:	903270-03.086
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
----------	-----------------------------

Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DPE7	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/19/19	Lab ID:	903270-06
Date Analyzed:	03/19/19	Data File:	903270-06.144
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	DPE10	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/19/19	Lab ID:	903270-08
Date Analyzed:	03/19/19	Data File:	903270-08.145
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW8	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/19/19	Lab ID:	903270-17
Date Analyzed:	03/19/19	Data File:	903270-17.146
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	3.42

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	The Riley Group
Date Received:	NA	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/19/19	Lab ID:	I9-183 mb
Date Analyzed:	03/19/19	Data File:	I9-183 mb.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
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Lead	<1
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE3	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-03 1/2
Date Analyzed:	03/19/19	Data File:	031911.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	81	31	160
Benzo(a)anthracene-d12	95	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	32 ve
2-Methylnaphthalene	19 ve
1-Methylnaphthalene	17
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE3	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-03 1/20
Date Analyzed:	03/21/19	Data File:	032118.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	127 d	31	160
Benzo(a)anthracene-d12	96 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	33
2-Methylnaphthalene	18
1-Methylnaphthalene	17
Benz(a)anthracene	<0.4
Chrysene	<0.4
Benzo(a)pyrene	<0.4
Benzo(b)fluoranthene	<0.4
Benzo(k)fluoranthene	<0.4
Indeno(1,2,3-cd)pyrene	<0.4
Dibenz(a,h)anthracene	<0.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE7	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-06 1/2
Date Analyzed:	03/19/19	Data File:	031912.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	2.4
2-Methylnaphthalene	17 ve
1-Methylnaphthalene	24 ve
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE7	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-06 1/20
Date Analyzed:	03/21/19	Data File:	032119.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91 d	31	160
Benzo(a)anthracene-d12	107 d	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<4
2-Methylnaphthalene	16
1-Methylnaphthalene	23
Benz(a)anthracene	<0.4
Chrysene	<0.4
Benzo(a)pyrene	<0.4
Benzo(b)fluoranthene	<0.4
Benzo(k)fluoranthene	<0.4
Indeno(1,2,3-cd)pyrene	<0.4
Dibenz(a,h)anthracene	<0.4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE10	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-08 1/2
Date Analyzed:	03/19/19	Data File:	031909.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	160
Benzo(a)anthracene-d12	96	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DPE13	Client:	The Riley Group
Date Received:	03/14/19	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	903270-11 1/2
Date Analyzed:	03/19/19	Data File:	031910.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93	31	160
Benzo(a)anthracene-d12	103	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.4
2-Methylnaphthalene	<0.4
1-Methylnaphthalene	<0.4
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	09-605 mb
Date Analyzed:	03/18/19	Data File:	031809.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	160
Benzo(a)anthracene-d12	99	25	165

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.2
2-Methylnaphthalene	<0.2
1-Methylnaphthalene	<0.2
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: DPE3	Client: The Riley Group
Date Received: 03/14/19	Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/15/19	Lab ID: 903270-03 1/10
Date Analyzed: 03/15/19	Data File: 031548.D
Matrix: Water	Instrument: GCMS4
Units: ug/L (ppb)	Operator: MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

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	510
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	1,200
Hexane	19	o-Xylene	510
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	30
trans-1,2-Dichloroethene	<10	Bromoform	<10 ca
1,1-Dichloroethane	<10	n-Propylbenzene	75
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	240
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	630
Benzene	21	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	16	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	84
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: DPE7	Client: The Riley Group
Date Received: 03/14/19	Project: UW VW/Audi 2014-068I, F&BI 903270
Date Extracted: 03/15/19	Lab ID: 903270-06 1/10
Date Analyzed: 03/15/19	Data File: 031549.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	99	63	127
4-Bromofluorobenzene	97	60	133

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	200
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	2,800
Hexane	63	o-Xylene	1,600 ve
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	17
trans-1,2-Dichloroethene	<10	Bromoform	<10 ca
1,1-Dichloroethane	<10	n-Propylbenzene	41
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	460
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	870
Benzene	13	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	19	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	70
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	UW VW/Audi 2014-068I, F&BI 903270
Date Extracted:	03/18/19	Lab ID:	09-0569 mb
Date Analyzed:	03/18/19	Data File:	031817.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	100	63	127
4-Bromofluorobenzene	99	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		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

**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: 903270-01 (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	96	65-118
Toluene	ug/L (ppb)	50	101	72-122
Ethylbenzene	ug/L (ppb)	50	95	73-126
Xylenes	ug/L (ppb)	150	101	74-118
Gasoline	ug/L (ppb)	1,000	92	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

**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)	2,500	72	76	58-134	5

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

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

Laboratory Code: 903270-03 (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	86	86	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	101	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

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

Laboratory Code: 903319-01 (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	86	90	75-125	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	98	80-120

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	74	79	67-116	7
2-Methylnaphthalene	ug/L (ppb)	1	80	86	63-122	7
1-Methylnaphthalene	ug/L (ppb)	1	79	85	65-122	7
Benz(a)anthracene	ug/L (ppb)	1	85	96	60-118	12
Chrysene	ug/L (ppb)	1	84	94	66-125	11
Benzo(b)fluoranthene	ug/L (ppb)	1	95	99	55-135	4
Benzo(k)fluoranthene	ug/L (ppb)	1	87	98	62-125	12
Benzo(a)pyrene	ug/L (ppb)	1	89	97	58-127	9
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	95	89	36-142	7
Dibenz(a,h)anthracene	ug/L (ppb)	1	78	70	37-133	11

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

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

Laboratory Code: 903261-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent	
				Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	108	10-172
Chloromethane	ug/L (ppb)	50	<10	100	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	104	36-166
Bromomethane	ug/L (ppb)	50	<1	113	47-169
Chloroethane	ug/L (ppb)	50	<1	101	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	110	44-165
Acetone	ug/L (ppb)	250	<50	90	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	94	60-136
Hexane	ug/L (ppb)	50	<1	93	52-150
Methylene chloride	ug/L (ppb)	50	<5	97	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	92	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	91	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	90	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	109	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	92	71-127
Chloroform	ug/L (ppb)	50	<1	91	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	94	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	99	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	92	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	95	56-152
Benzene	ug/L (ppb)	50	<0.35	91	76-125
Trichloroethene	ug/L (ppb)	50	<1	87	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	90	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	89	61-150
Dibromomethane	ug/L (ppb)	50	<1	89	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	102	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	93	72-132
Toluene	ug/L (ppb)	50	<1	86	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	88	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	89	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	92	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	91	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	89	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	91	69-134
Chlorobenzene	ug/L (ppb)	50	<1	92	77-122
Ethylbenzene	ug/L (ppb)	50	<1	90	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	88	73-137
m,p-Xylene	ug/L (ppb)	100	<2	92	69-135
o-Xylene	ug/L (ppb)	50	<1	88	60-140
Styrene	ug/L (ppb)	50	<1	91	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	90	65-142
Bromoform	ug/L (ppb)	50	<1 ca	83	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	88	58-144
Bromobenzene	ug/L (ppb)	50	<1	89	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	89	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	98	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	92	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	88	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	88	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	89	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	89	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	86	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	89	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	89	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	89	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	87	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	89	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	89	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	77	60-143
Naphthalene	ug/L (ppb)	50	<1	92	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	90	69-148

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/25/19

Date Received: 03/14/19

Project: UW VW/Audi 2014-068I, F&BI 903270

**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	105	105	25-158	0
Chloromethane	ug/L (ppb)	50	93	95	45-156	2
Vinyl chloride	ug/L (ppb)	50	104	105	50-154	1
Bromomethane	ug/L (ppb)	50	105	106	55-143	1
Chloroethane	ug/L (ppb)	50	98	99	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	109	112	50-150	3
Acetone	ug/L (ppb)	250	84	84	53-131	0
1,1-Dichloroethene	ug/L (ppb)	50	98	101	67-136	3
Hexane	ug/L (ppb)	50	90	91	57-137	1
Methylene chloride	ug/L (ppb)	50	98	100	39-148	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	105	108	64-147	3
trans-1,2-Dichloroethene	ug/L (ppb)	50	102	105	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	104	106	79-121	2
2,2-Dichloropropane	ug/L (ppb)	50	127	132	55-143	4
cis-1,2-Dichloroethene	ug/L (ppb)	50	102	105	80-123	3
Chloroform	ug/L (ppb)	50	103	107	80-121	4
2-Butanone (MEK)	ug/L (ppb)	250	96	96	57-149	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	106	108	73-132	2
1,1,1-Trichloroethane	ug/L (ppb)	50	110	113	83-130	3
1,1-Dichloropropene	ug/L (ppb)	50	103	105	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	112	115	75-158	3
Benzene	ug/L (ppb)	50	100	102	69-134	2
Trichloroethene	ug/L (ppb)	50	97	97	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	103	106	77-123	3
Bromodichloromethane	ug/L (ppb)	50	115	117	81-133	2
Dibromomethane	ug/L (ppb)	50	104	106	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	100	101	65-138	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	111	113	82-132	2
Toluene	ug/L (ppb)	50	98	100	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	116	117	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	50	102	102	75-124	0
2-Hexanone	ug/L (ppb)	250	90	90	60-136	0
1,3-Dichloropropane	ug/L (ppb)	50	100	101	76-126	1
Tetrachloroethene	ug/L (ppb)	50	104	105	76-121	1
Dibromochloromethane	ug/L (ppb)	50	110	111	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	101	101	82-125	0
Chlorobenzene	ug/L (ppb)	50	100	100	83-114	0
Ethylbenzene	ug/L (ppb)	50	100	101	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	112	115	84-127	3
m,p-Xylene	ug/L (ppb)	100	99	100	83-125	1
o-Xylene	ug/L (ppb)	50	98	100	81-121	2
Styrene	ug/L (ppb)	50	103	104	84-119	1
Isopropylbenzene	ug/L (ppb)	50	106	107	85-117	1
Bromoform	ug/L (ppb)	50	118	119	74-136	1
n-Propylbenzene	ug/L (ppb)	50	98	101	74-126	3
Bromobenzene	ug/L (ppb)	50	99	101	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	103	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	109	111	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	94	96	67-124	2
2-Chlorotoluene	ug/L (ppb)	50	98	100	77-127	2
4-Chlorotoluene	ug/L (ppb)	50	99	101	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	101	105	80-123	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	100	102	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	101	104	80-125	3
p-Isopropyltoluene	ug/L (ppb)	50	104	107	81-123	3
1,3-Dichlorobenzene	ug/L (ppb)	50	99	102	85-116	3
1,4-Dichlorobenzene	ug/L (ppb)	50	95	98	84-121	3
1,2-Dichlorobenzene	ug/L (ppb)	50	98	102	85-116	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	111	115	57-141	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	97	101	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	103	105	53-141	2
Naphthalene	ug/L (ppb)	50	99	102	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	98	100	65-136	2

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.

903270

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SAMPLE CHAIN OF CUSTODY

ME 03/14/19

nw4/ED4/AT4
Page # 1 of 2

SAMPLERS (signature) *Tait Russell*

PROJECT NAME: *nw nw/Audi* PO #: *2014-0681*

REMARKS: *cc: riley@riley-group.com* 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	ANALYSES REQUESTED											Notes	
						TPH-HCID	TPH-Diesel + 07	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Total PB	Met Filter # Dissolved Pb	CPAHs	Maple		
DPE1	01A-D	3/12	1420	water	4	X	X											
DPE2	02A-D		1340		4	X	X											
DPE3	03A-D		1310		9	X	X		X				X	X	X	X		
DPE4	04A-D		1300		4	X	X											
DPE6	05A-D		1400		4	X	X											
DPE7	06A-I		1430		9	X	X		X				X	X	X	X		
DPE9	07A-D		1220		4	X	X											
DPE10	08A-G		1145		7	X	X	X					X	X	X	X		
DPE11	09 AD	↓	1045		4	X	X											
DPE12	10 AD	3/13	1225	↓	4	X	X											2 Samples received at ___ °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<i>Tait Russell</i>	Tait R	RGI	3/14	1030
<i>SF Thornton</i>	SF Thornton	FeDEX	3/14	12:45
<i>SF Thornton</i>	SF Thornton	FeDEX	3/14	1:45
<i>Eric Devo</i>	Eric Devo	FeB	3/14	1345

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SAMPLE CHAIN OF CUSTODY

ME 03/14/19 vuv/Edy/ [Signature]
Page # 2 of 2/12/4

SAMPLERS (signature) <i>Tait Russell</i>		TURNAROUND TIME <input checked="" type="checkbox"/> Standard Turnaround <input type="checkbox"/> RUSH Rush charges authorized by:	
PROJECT NAME <i>vuv vuv/Audi</i>	PO # <i>2014-0685</i>	SAMPLE DISPOSAL <input checked="" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Archive Samples <input type="checkbox"/> Other	
REMARKS <i>copy to riley group.com</i>	INVOICE TO		

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED											Notes	
						TPH-HCID	TPH-Diesel + oil	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Totals Pb	Alto Filter Pb Dissolved Pb	CPATHs	Naph.		
DPE13	11 A-G	3/13	1420	Water	7	X	X	X								X	X	
DPE14	12 A-D	3/13	1045		4	X	X											
OPE15	13 A-D	3/12	1000		4	X	X											
SVE7	14 A-D	3/13	1145		4	X	X											
SVE11	15 A-D	3/13	1315		4	X	X											
nw2	16 A-D	3/12	930		4	X	X											
nw8	17 A-F	3/12	1140	↓	6	X	X							X	X			
Samples received at <u>2</u> °C																		

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Seattle, WA 98119-2029
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
<i>Tait Russell</i>	Tait R.	RGI	3/14	1030
<i>S.F. Thornton</i>	S.F. Thornton	FedEx	3/14	12:45
<i>S.F. Thornton</i>	S.F. Thornton	FedEx	3/14	1:45
<i>[Signature]</i>	[Signature]	[Signature]	[Signature]	[Signature]