



September 22, 2020

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

**RE: Third Quarter 2020 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 Third Quarter 2020 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) remediation wells (DPE1 to DPE15) – 4-inch diameter wells screened somewhere between 65 feet to 20 feet below ground surface (bgs). *Note: these DPE wells were constructed for simultaneous soil vapor extraction and groundwater removal. However, to-date these DPE wells have only been utilized for soil vapor extraction only.*
- Eight soil vapor extraction (SVE) remediation wells (SVE1 to SVE8) – 2-inch diameter wells screened somewhere between 40 feet to 20 feet bgs.
- Three SVE remediation wells (SVE9 to SVE11) – 2-inch diameter wells screened somewhere between 66 feet to 18 feet bgs. These three SVE wells were converted from previously installed groundwater monitoring wells.
- Five groundwater monitoring wells (MW2, MW8, MW9, MW10, and MW11) – 2-inch diameter wells screened somewhere between 60 feet and 14 feet bgs. Note: Groundwater monitoring well MW10 was paved over in 2015 and groundwater monitoring well MW6 was properly decommissioned in July of 2015.

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

RGI installed and has been operating and maintaining a SVE remediation system since May of 2017 through October of 2019 (for approximately 2.5 years). The SVE remediation system was shut-down since the system appeared to have run its course (i.e., was successful in recovering soil vapor concentrations) and remained shut-down during the Covid19 pandemic.

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RGI is in the process of replacing the existing SVE remedial system with a higher vacuum/low flow DPE remedial system.

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 silty Sand with gravel to depths of 10 to 20 feet bgs, underlain by dense to very dense sandy Gravel with silt to sandy Silt to depths of at least 65 feet bgs.
- 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 somewhere between 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.

THIRD QUARTER 2020 GROUNDWATER MONITORING EVENT

This Third Quarter 2020 groundwater purging and sampling event was performed in August of 2020. Depth to groundwater measurements were recorded at 30 of the existing groundwater monitoring wells, remediation DPE wells, and remediation SVE wells located on and off the Property.

Depth to groundwater ranged from approximately 35 to 45 feet below well top of casing (TOC) at the shallower wells (SVE and certain monitoring wells) and 50 to 53 feet below TOC at the deeper wells (DPE and certain groundwater wells).

DPE wells with adequate groundwater present were purged using a submersible pump until the well purged dry, or until approximately 3 well volumes were purged, whichever came first. SVE and monitoring wells were purged until they purged dry, or approximately 3 well volumes were purged, whichever came first. In general, all wells were allowed to recharge to at least 80% the initial groundwater volume prior to groundwater sample collection. Due to the very slow well recharge rates, wells were sampled approximately 4 to 6 days following the well purging event (in order for these wells to sufficiently recharge – to 80 percent or greater of initial groundwater elevations).

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.

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 21 wells had adequate groundwater for well purging and groundwater sample collection for laboratory analysis. These wells consisted of DPE1 to DP4, DPE6 to DPE15, SVE10/MW1, SVE11/MW3, SVE9/MW4, MW8, MW9, MW11, and SVE7. The remaining nine DPE, SVE, or groundwater monitoring wells located on the Property did not have sufficient groundwater present for groundwater sample collection.

These 21 groundwater monitoring, SVE, and DPE wells were sampled and analyzed for the following:

- Gasoline-range total petroleum hydrocarbon (TPH) using Northwest Test Method NWTPH-Gx/BTEX.
- Diesel- and oil-range TPH using Northwest Test Method NWTPH-Dx without silica gel cleanup.
- Benzene, toluene, ethyl benzene, and total xylenes (BTEX) using EPA Test Method 8021B.

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 A.

Gasoline-range TPH

All 21 groundwater samples were analyzed for gasoline-range TPH. Concentrations ranged from non-detect to 38,000 µg/L. The greatest gasoline-range TPH concentration in groundwater was detected in well DPE7.

Four of the 21 groundwater samples (DPE2, DPE3, DPE6, and DPE7) had concentrations above the applicable MTCA Method A Cleanup Level of 800 µg/L.

Diesel-range TPH

All 21 samples were analyzed for diesel-range TPH. Concentrations ranged from non-detect to 24,000 µg/L. The greatest diesel- and-oil-range TPH concentration in groundwater was detected in well DPE7.

Eight of the 21 groundwater samples (DPE1, DPE2, DPE3, DPE6, DPE7, DPE10, DPE11, and MW8) had concentrations above the applicable MTCA Method A Cleanup Level of 500 µg/L. However, all

groundwater samples analyzed for diesel-range TPH were flagged “x” by the laboratory chemist since the sample chromatographic pattern did not resemble the fuel standard used for quantitation.

Oil-range TPH

All 21 samples were analyzed for oil-range TPH. Concentrations ranged from non-detect to 3,300 µg/L. The greatest oil-range TPH concentration in groundwater was detected in well DPE7.

Five of the 21 groundwater samples (DPE1, DPE2, DPE3, DPE7, and DPE10) 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.

Benzene

All 21 groundwater samples were analyzed for benzene. Concentrations ranged from non-detect to 86 µg/L. The greatest benzene concentration in groundwater was detected in well DPE7.

Four of the 21 groundwater samples (DPE2, DPE6, DPE7, and DPE10) had concentrations above the applicable MTCA Method A Cleanup Level of 5 µg/L.

Toluene

All 21 groundwater samples were analyzed for toluene. Concentrations ranged from non-detect to 41 µg/L. None of the 21 groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 1,000 µg/L.

Ethylbenzene

All 21 groundwater samples were analyzed for ethylbenzene. Concentrations ranged from non-detect to 500 µg/L. None of the 21 groundwater samples had concentrations above the applicable MTCA Method A Cleanup Level of 700 µg/L.

Total xylenes

All 21 groundwater samples were analyzed for total xylenes. Concentrations ranged from non-detect to 6,500 µg/L. One of the 21 groundwater samples (DPE7) had concentrations above the applicable MTCA Method A Cleanup Level of 1,000 µg/L.

Summary of Findings

In summary, the wells with the greatest gasoline-range TPH, BTEX, and diesel- and oil-range TPH groundwater concentrations during this Third Quarter 2020 groundwater monitoring event are the same wells sampled and analyzed back in 2019. These wells with the greatest concentrations still consist of DPE1, DPE2, DPE3, DPE6, and DP7.

According to the analytical laboratory chemist, the elevated diesel- and oil-range TPH (flagged) concentrations detected in groundwater at wells DPE1 to DPE3, DPE6, and DPE7 are likely related to the degradation of petroleum hydrocarbons to non-petroleum organic metabolites. However, the diesel-range TPH concentration in groundwater at well DPE6 may include water soluble diesel-range TPH (which is located in the general vicinity of a former heating oil UST). The gas chromatograms for these five DPE wells, with the analytical chemist’s notes, are included in Appendix A for reference. These five DPE wells are all located east of the concrete alley – in the vicinity of a former UST – east adjacent to the renovated Audi showroom.

The groundwater concentrations from the remaining 16 wells during this Third Quarter 2020 groundwater monitoring event have shown no signs of rebounding (e.g., groundwater concentrations at these 16 wells have not increased following the SVE system shut-down in October of 2019).

PROJECT LIMITATIONS

This report is the property of RGI, Mr. Rob Will, Freeway Properties LLC, 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.

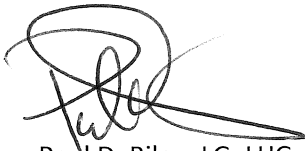
If you have any questions or need additional information, please contact the undersigned at (425) 415-0551.

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 3rd Quarter 2020

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

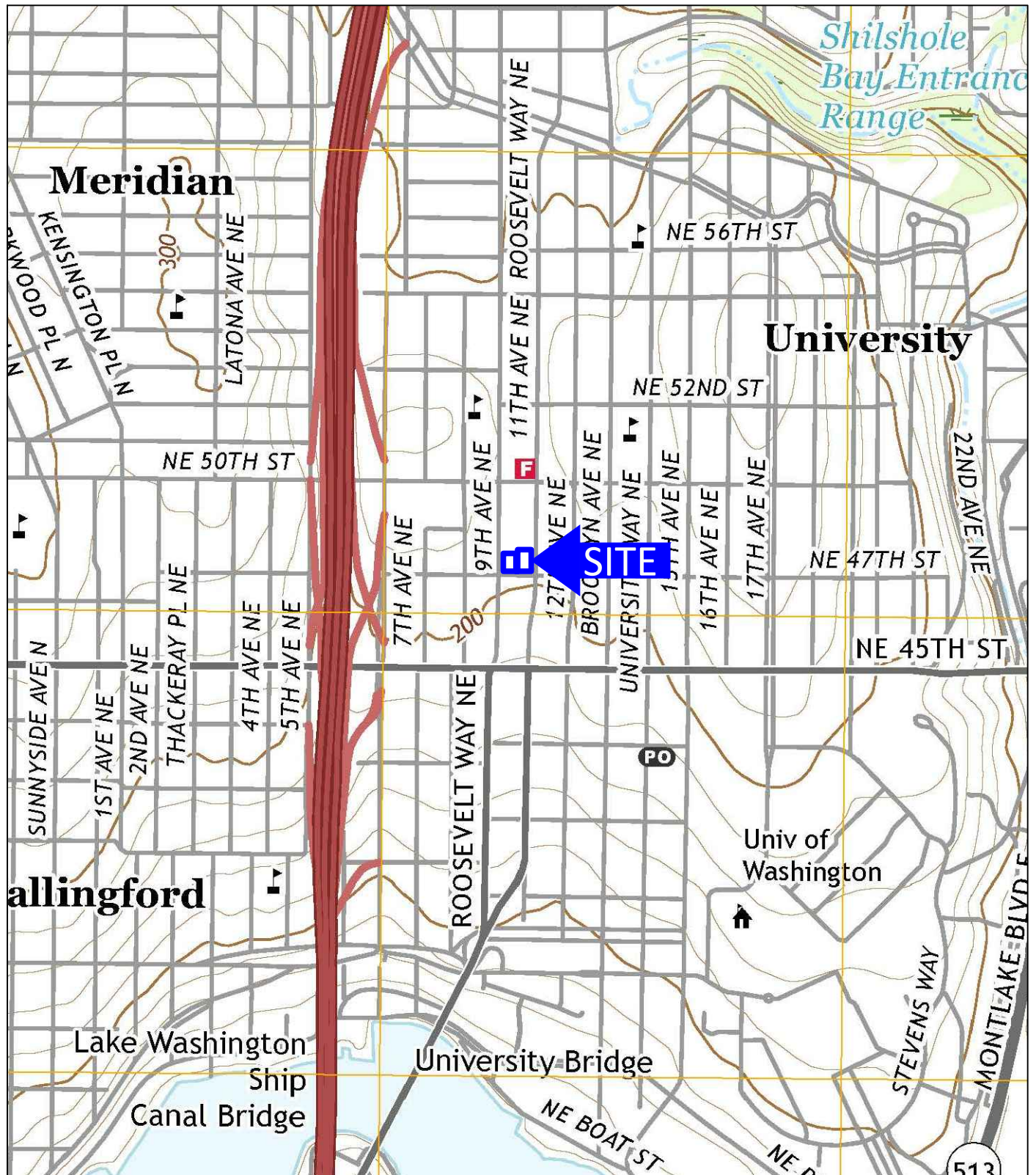
Appendix A, 3rd Quarter 2020 Analytical Laboratory Reports and Sample Chain of Custody Forms

Distribution

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

Miles Richardson – Freeway Properties, LLC (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

RGI Project Number
2014-0681

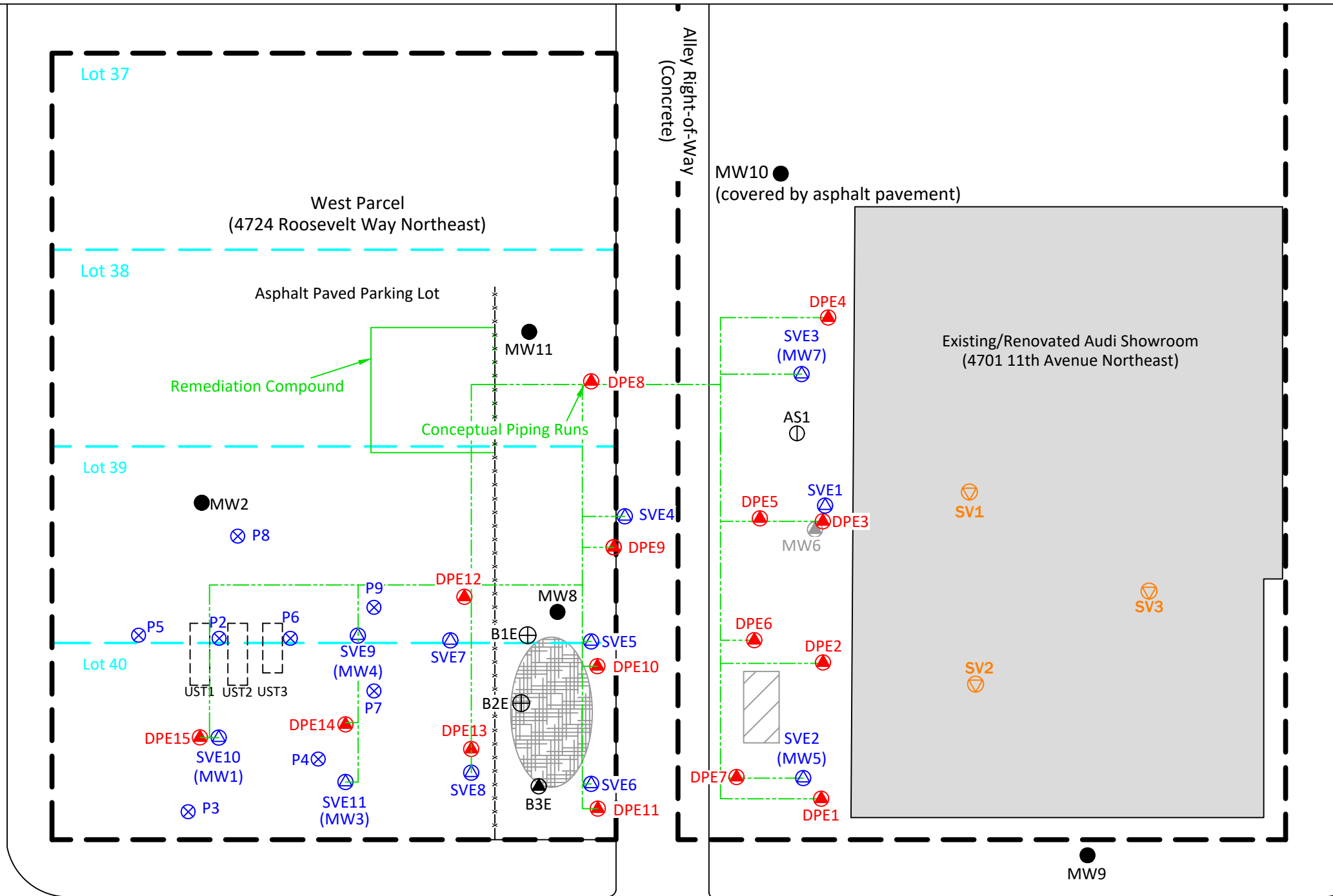
Property Vicinity Map

Figure 1

Date Drawn:
09/2020

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

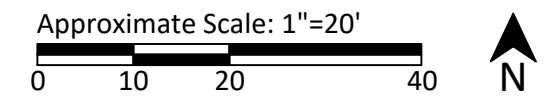
Roosevelt Way Northeast



Alley Right-of-Way
(Concrete)

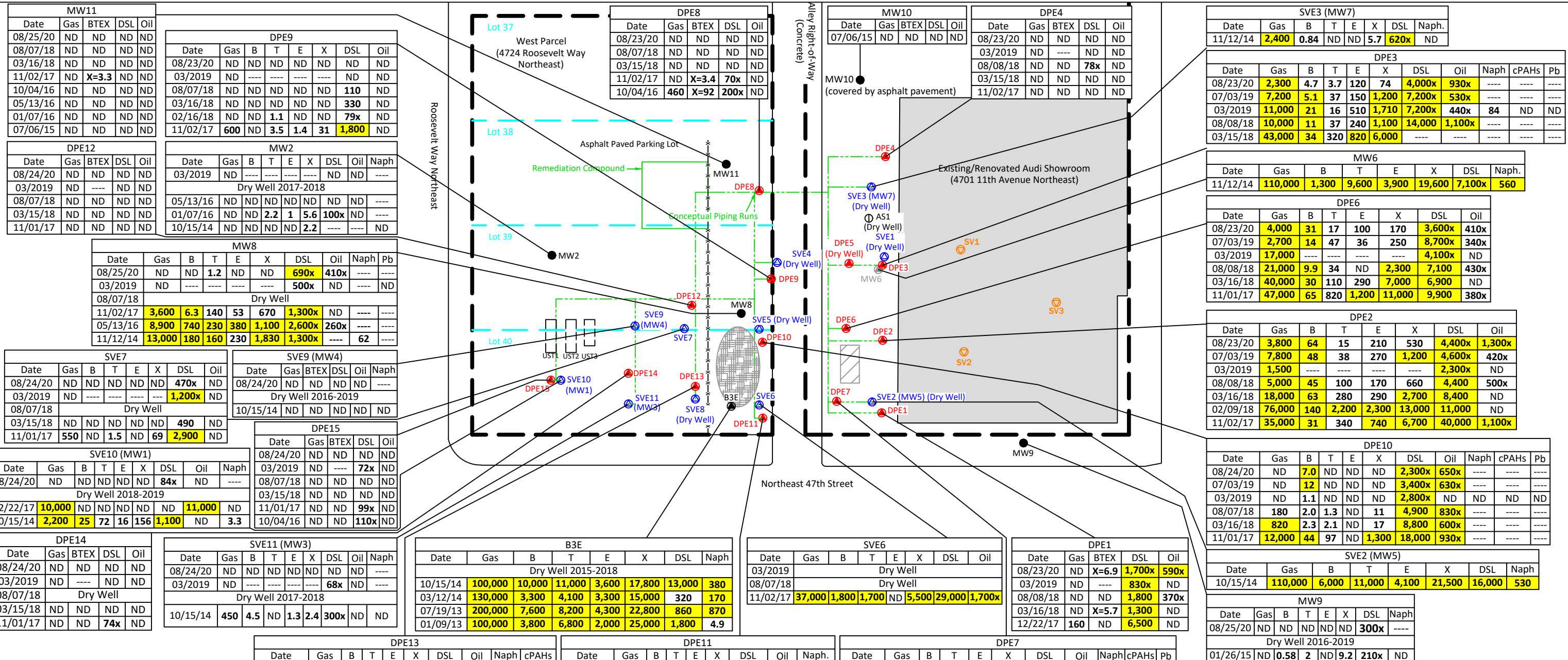
Northeast 47th Street

- = (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.
- x-x-x-x- = Fence
- - - - - = Property boundary



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University VW - Audi Property		Figure 2
RGI Project Number	Property Plan Showing Existing and/or Former Wells and Borings	Date Drawn:
2014-0681		09/2020
Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105		



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

DPE13										
Date	Gas	B	T	E	X	DSL	Oil	Naph	cPAHs	Pb
08/24/20	ND	1.8	ND	ND	ND	66x	ND	ND	ND	ND
03/2019	ND	ND	ND	ND	ND	220	ND	ND	ND	ND
08/07/18	ND	ND	ND	ND	ND	1,000	ND	ND	ND	ND
03/15/18	280	1.5	ND	20	21	730	ND	ND	ND	ND
11/01/17	6,400	5.3	4.5	5.4	290	8,000	500x	ND	ND	ND

DPE11										
Date	Gas	B	T	E	X	DSL	Oil	Naph	cPAHs	Pb
08/24/20	ND	ND	ND	ND	ND	1,600x	400x	ND	ND	ND
07/03/19	ND	ND	ND	ND	ND	450x	ND	ND	ND	ND
03/2019	ND	ND	ND	ND	ND	2,000x	ND	ND	ND	ND
08/07/18	130	6.8	1.2	4.4	5.4	3,400	310x	ND	ND	ND
03/16/18	420	3.5	1.5	3.1	12	4,200	310x	ND	ND	ND
11/02/17	3,200	22	39	27	340	7,000	560x	ND	ND	ND
10/04/16	2,400	82	30	59	230	740x	ND	4.9	ND	ND

DPE7										
Date	Gas	B	T	E	X	DSL	Oil	Naph	cPAHs	Pb
08/23/20	38,000	86	41	500	6,500	24,000x	3,300x	ND	ND	ND
07/03/19	26,000	22	29	330	6,600	18,000x	1,800x	ND	ND	ND
03/2019	21,000	13	19	210	4,700	13,000x	650x	70	ND	ND
08/08/18	30,000	110	380	280	6,000	22,000	1,400x	ND	ND	ND
03/16/18	64,000	60	670	370	15,000	34,000	1,000x	ND	ND	ND
11/01/17	68,000	370	2,300	680	16,000	100,000	3,100x	ND	ND	ND

SVE2 (MW5)										
Date	Gas	B	T	E	X	DSL	Naph	cPAHs	Pb	
10/15/14	110,000	6,000	11,000	4,100	21,500	16,000	530	ND	ND	ND

- = (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

Legend:

- = 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.

Approximate Scale: 1"=30'

Table 1, Page 1 of 10. 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	08/23/20	204.51	51.05	153.46	----	ND<100	ND<1	ND<1	ND<1	6.9	1,700x	590x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	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	08/23/20	204.33	50.90	153.43	----	3,800	64	15	210	530	4,400x	1,300x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	07/03/19	204.33	53.18	151.15	----	7,800	48	38	270	1,200	4,600x	420x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	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	08/23/20	204.62	51.26	153.36	----	2,300	4.7	3.7	120	74	4,000x	930x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
	07/03/19	204.62	53.69	150.93	----	7,200	5.1	37	150	1,200	7,200x	530x	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	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	----	----	----		
	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	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----		
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 10. 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	Ag
DPE15 Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																															
DPE15	08/24/20	206.73	51.78	154.95	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	03/2019	206.73	54.65	152.08	----	ND<100	----	----	----	----	72x	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	08/2018	206.73	57.37	149.36	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	206.73	56.29	150.44	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/01/17	206.73	54.12	152.61	0	ND<100	ND<1	ND<1	ND<1	ND<3	99x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.73	53.85	152.88	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.73	49.9	156.83	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	06/2017	206.73	51.3	155.43	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
10/04/16	206.73	57.28	149.45	23.6	ND<100	ND<1	ND<1	ND<1	ND<3	110x	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
SVE1 Screened Interval 40-25 ft bgs, Total boring depth 40 ft bgs																															
SVE1	03/2019	204.95	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	08/2018	204.95	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	10/2017	204.95	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
	07/01/17	204.95	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
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		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
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					----	----	----	----	----	----	----	----	----	----	----	----	----	----	3,200	----	----	----	----	80	80	----	3,200	----	----	80	80

Table 1, Page 10 of 10. 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

Notes:

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

Top of well casing (TOC) elevations surveyed by Lanktree Surveying.

Dry well = the well was determined to be a dry well during the noted sampling event and/or did not have an adequate volume of water present for purging and sample collection.

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

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

BTEX (benzene, toluene, ethylbenzene, and xylenes) determined using EPA Test Method 8260C.

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

VOCs (volatile organic compounds) determined using EPA Test Method 8260C or 8260B.

Naph (naphthalene) determined using EPA Test Method 8270D SIM or 8260C. Most conservative value shown where applicable.

cPAHs (carcinogenic polynuclear aromatic hydrocarbons) determined using EPA Test Method 8270D SIM.

RCRA 8 Metals (As = Arsenic, Ba = Barium, Cd = Cadmium, Cr = Chromium, Pb = Lead, Hg = Mercury, Se = Selenium, Ag = Silver) determined using EPA Method 6020 and 7471. Total metals were non-filtered. Dissolved metals were filtered in the field.

DRY = Dry entries indicate either no groundwater present or limited water was present but was insufficient for sampling purposes (purged dry and did not recharge within a reasonable period of time)

ND = Not detected above the noted analytical detection limit, NVE = No value established by MTCA Methods A or B.

---- = Not analyzed or not applicable.

Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A Screening Levels for Ground Water (WAC 173-340-900, Table 720-1). MTCA Method B Screening Levels for Ground Water from Ecology's Cleanup Level and Risk Calculation (CLARC) database.

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

² MTCA Method A Screening Level was not available. Therefore, the MTCA Method B Non-Carcinogenic Screening Level is referenced.

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

Bold results indicated concentrations above laboratory detection limits.

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

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
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September 3, 2020

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

Dear Mr Riley:

Included are the results from the testing of material submitted on August 27, 2020 from the UW VW/Audi PO 2014-068, F&BI 008420 project. There are 11 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: Tait Russell
TRG0903R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 27, 2020 by Friedman & Bruya, Inc. from the The Riley Group UW VW/Audi PO 2014-068, F&BI 008420 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>The Riley Group</u>
008420 -01	DPE1
008420 -02	DPE2
008420 -03	DPE3
008420 -04	DPE4
008420 -05	DPE6
008420 -06	DPE7
008420 -07	DPE8
008420 -08	DPE9
008420 -09	DPE10
008420 -10	DPE11
008420 -11	DPE12
008420 -12	DPE13
008420 -13	DPE14
008420 -14	DPE15
008420 -15	MW1/SVE10
008420 -16	MW3/SVE11
008420 -17	MW4/SVE9
008420 -18	MW8
008420 -19	MW9
008420 -20	MW11
008420 -21	SVE7

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20
 Date Received: 08/27/20
 Project: UW VW/Audi PO 2014-068, F&BI 008420
 Date Extracted: 08/28/20
 Date Analyzed: 08/28/20

**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)
DPE1 008420-01	<1	<1	<1	6.9	<100	75
DPE2 008420-02 1/5	64	15	210	530	3,800	81
DPE3 008420-03	4.7	3.7	120	74	2,300	89
DPE4 008420-04	<1	<1	<1	<3	<100	82
DPE6 008420-05 1/5	31	17	100	170	4,000	87
DPE7 008420-06 1/40	86	41	500	6,500	38,000	87
DPE8 008420-07	<1	<1	<1	<3	<100	82
DPE9 008420-08	<1	<1	<1	<3	<100	82
DPE10 008420-09	7.0	<1	<1	<3	<100	83
DPE11 008420-10	<1	<1	<1	<3	<100	80

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20
 Date Received: 08/27/20
 Project: UW VW/Audi PO 2014-068, F&BI 008420
 Date Extracted: 08/28/20
 Date Analyzed: 08/28/20

**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)
DPE12 008420-11	<1	<1	<1	<3	<100	83
DPE13 008420-12	1.8	<1	<1	<3	<100	83
DPE14 008420-13	<1	<1	<1	<3	<100	83
DPE15 008420-14	<1	<1	<1	<3	<100	83
MW1/SVE10 008420-15	<1	<1	<1	<3	<100	81
MW3/SVE11 008420-16	<1	<1	<1	<3	<100	82
MW4/SVE9 008420-17	<1	<1	<1	<3	<100	82
MW8 008420-18	<1	1.2	<1	<3	<100	80
MW9 008420-19	<1	<1	<1	<3	<100	80
MW11 008420-20	<1	<1	<1	<3	<100	83

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20

Date Received: 08/27/20

Project: UW VW/Audi PO 2014-068, F&BI 008420

Date Extracted: 08/28/20

Date Analyzed: 08/28/20

**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)
SVE7 008420-21	<1	<1	<1	<3	<100	78
Method Blank 00-1809 MB	<1	<1	<1	<3	<100	76
Method Blank 00-1810 MB	<1	<1	<1	<3	<100	78

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20
 Date Received: 08/27/20
 Project: UW VW/Audi PO 2014-068, F&BI 008420
 Date Extracted: 08/28/20
 Date Analyzed: 08/28/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-D_x
 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 41-152)
DPE1 008420-01	1,700 x	590 x	101
DPE2 008420-02	4,400 x	1,300 x	116
DPE3 008420-03	4,000 x	930 x	82
DPE4 008420-04	<50	<250	89
DPE6 008420-05	3,600 x	410 x	90
DPE7 008420-06	24,000 x	3,300 x	111
DPE8 008420-07	<50	<250	71
DPE9 008420-08	<50	<250	71
DPE10 008420-09	2,300 x	650 x	83
DPE11 008420-10	1,600 x	400 x	80
DPE12 008420-11	<50	<250	76
DPE13 008420-12	66 x	<250	71

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20
 Date Received: 08/27/20
 Project: UW VW/Audi PO 2014-068, F&BI 008420
 Date Extracted: 08/28/20
 Date Analyzed: 08/28/20

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS
 DIESEL AND MOTOR OIL
 USING METHOD NWTPH-D_x**
 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 41-152)
DPE14 008420-13	<50	<250	108
DPE15 008420-14 1/1.2	<60	<300	108
MW1/SVE10 008420-15 1/1.2	84 x	<300	81
MW3/SVE11 008420-16	<50	<250	109
MW4/SVE9 008420-17	<50	<250	120
MW8 008420-18	690 x	410 x	114
MW9 008420-19	300 x	<250	112
MW11 008420-20	<50	<250	117
SVE7 008420-21	470 x	<250	111
Method Blank 00-1959 MB	<50	<250	101
Method Blank 00-1959 MB	<50	<250	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20

Date Received: 08/27/20

Project: UW VW/Audi PO 2014-068, F&BI 008420

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

Laboratory Code: 008420-01 (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)	6.9	6.1	12
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	105	65-118
Toluene	ug/L (ppb)	50	112	72-122
Ethylbenzene	ug/L (ppb)	50	113	73-126
Xylenes	ug/L (ppb)	150	112	74-118
Gasoline	ug/L (ppb)	1,000	112	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20

Date Received: 08/27/20

Project: UW VW/Audi PO 2014-068, F&BI 008420

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

Laboratory Code: 008420-21 (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	89	65-118
Toluene	ug/L (ppb)	50	98	72-122
Ethylbenzene	ug/L (ppb)	50	100	73-126
Xylenes	ug/L (ppb)	150	99	74-118
Gasoline	ug/L (ppb)	1,000	103	69-134

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20

Date Received: 08/27/20

Project: UW VW/Audi PO 2014-068, F&BI 008420

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

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	96	92	63-142	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/03/20

Date Received: 08/27/20

Project: UW VW/Audi PO 2014-068, F&BI 008420

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

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	88	92	61-133	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

008420

SAMPLE CHAIN OF CUSTODY

ME 08/27/20 UW 51 DOY

Report To Paul Riky
 Company RGI
 Address _____
 City, State, ZIP Bothell, WA
 Phone _____ Email priky@rky.com

SAMPLERS (signature) [Signature]
 PROJECT NAME UW VW/Audi PO # 2014-068
 REMARKS CC: Test INVOICE TO _____
 Project specific RLs? - Yes / No

Page # 1 of 3
 TURNAROUND TIME
 Standard turnaround
 RUSH
 Rush charges authorized by: _____
 SAMPLE DISPOSAL
 Archive samples
 Other _____
 Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes			
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082							
DPE1	01 A-D	8/25	1010	UW/VW	4	X	X	X											
DPE2	02		1230			X	X	X											
DPE3	03		1300			X	X	X											
DPE4	04		1210			X	X	X											
DPE6	05		1400			X	X	X											
DPE7	06		1430			X	X	X											
DPE8	07		1020			X	X	X											
DPE9	08		040			X	X	X											
DPE10	09	8/24	1500			X	X	X											
DPE11	10		1420			X	X	X											

Samples received at 4 °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>[Signature]</u>	<u>Test R</u>	<u>RGI</u>	<u>8/25</u>	<u>1030</u>
Received by: <u>[Signature]</u>	<u>D. Bams</u>	<u>FedX SDC</u>	<u>8/27</u>	<u>9:25</u>
Relinquished by: _____	_____	_____	_____	_____
Received by: <u>[Signature]</u>	<u>Whan Phan</u>	<u>FEBI</u>	<u>8/27/20</u>	<u>1300</u>

008420

SAMPLE CHAIN OF CUSTODY ME 08/27/20

UWS/DOY 3

Report To _____
Company RGF
Address _____
City, State, ZIP _____
Phone _____ Email _____

SAMPLERS (signature) To [Signature]

PROJECT NAME _____ PO # 2014-068

REMARKS _____ INVOICE TO _____

Project specific RLs? - Yes / No _____

Page # 2 of 3

TURNAROUND TIME

Standard turnaround
 RUSH
Rush charges authorized by: _____

SAMPLE DISPOSAL

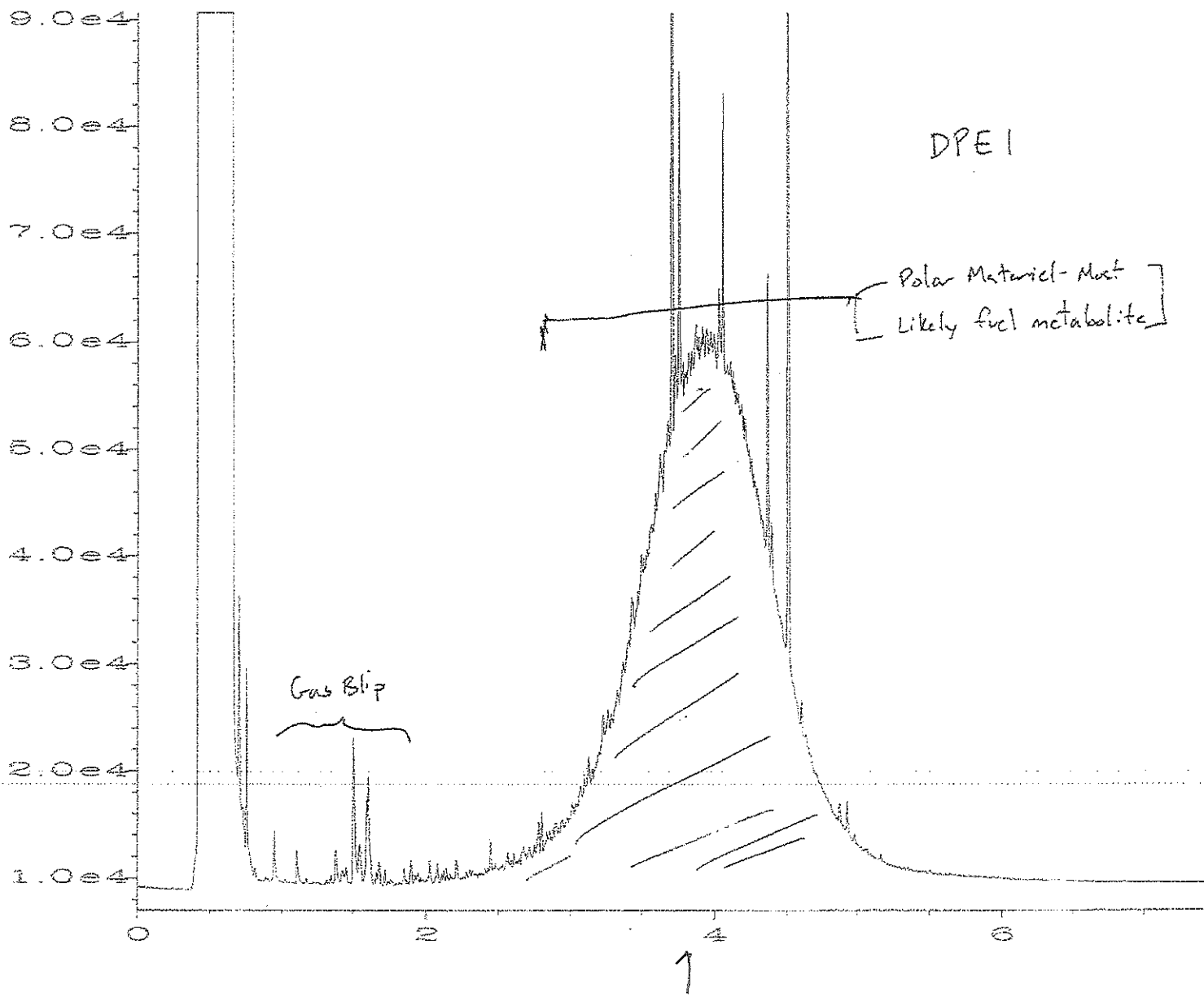
Archive samples
 Other _____
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED										Notes		
						NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						
DPE12	11 A-D	8/24	1330	water	4	X	X	X										
DPE13	12		1100			X	X	X										
DPE14	13		1000			X	X	X										
DPE15	14		1150			X	X	X										
MW1/SVE10	15		1130			X	X	X										
MW3/SVE11	16		1020			X	X	X										
MW4/SVE9	17		1230			X	X	X										
MW8	18	8/25	1020			X	X	X										
MW9	19		1540			X	X	X										
MW11	20		1130			X	X	X										Samples received at <u>4</u> °C

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

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>To [Signature]</u>	<u>To [Signature]</u>	<u>RGF</u>	<u>8/26</u>	<u>1030</u>
Received by: <u>[Signature]</u>	<u>D Bams</u>	<u>FEDEx SOC</u>	<u>8/27</u>	<u>9:25A</u>
Relinquished by: _____	_____	_____	_____	_____
Received by: <u>[Signature]</u>	<u>Nhan Phan</u>	<u>FEBI</u>	<u>8/27/20</u>	<u>1300</u>

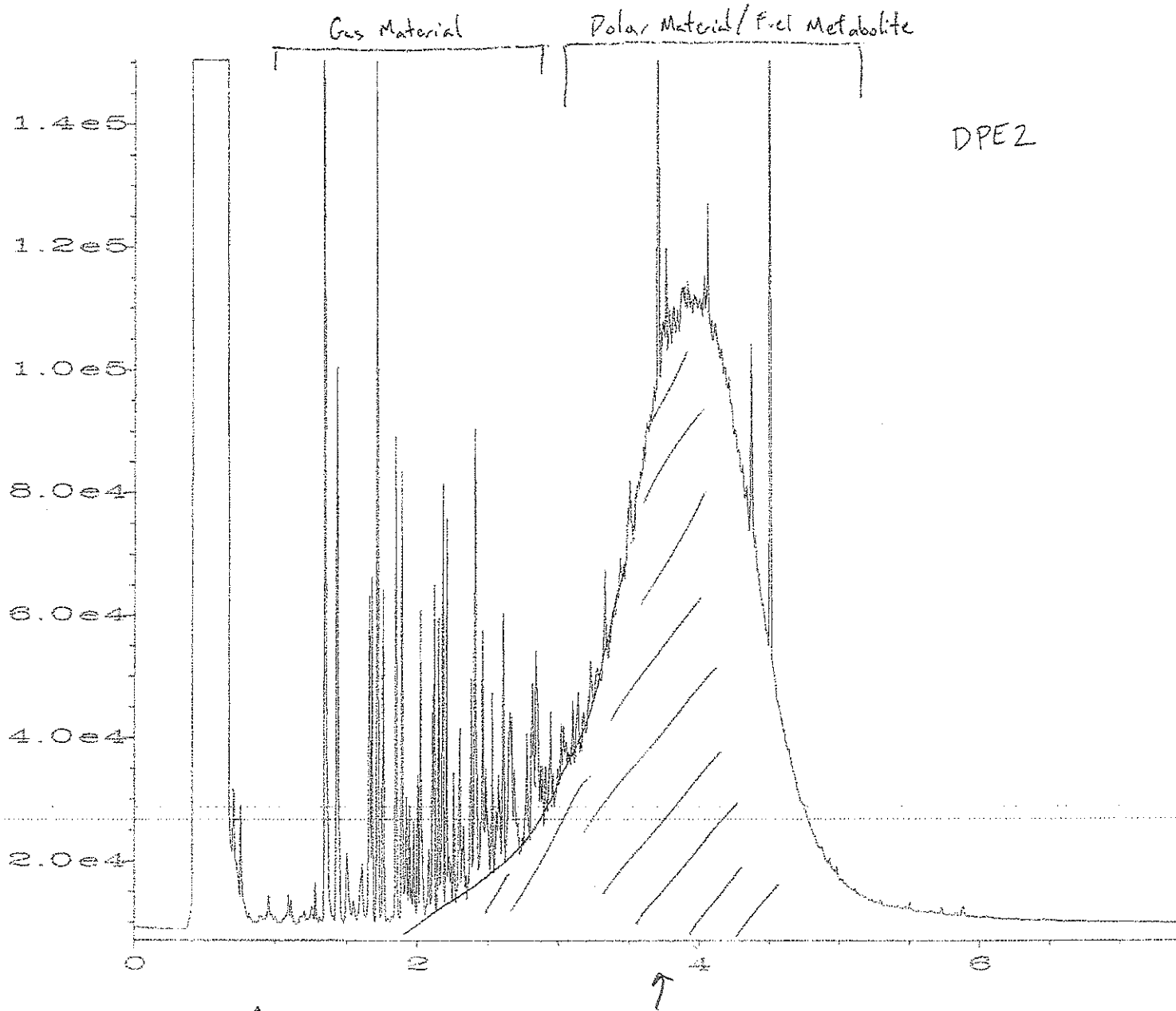
True Xylene b17



D/O = 1,700x / 590x

Data File Name : C:\HPCHEM\1\DATA\08-28-20\027F0701.D
Operator : TL
Instrument : GCL
Sample Name : 008420-01
Run Time Bar Code :
Acquired on : 28 Aug 20 03:00 PM
Report Created on: 21 Sep 20 11:55 AM
Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DX.MTH

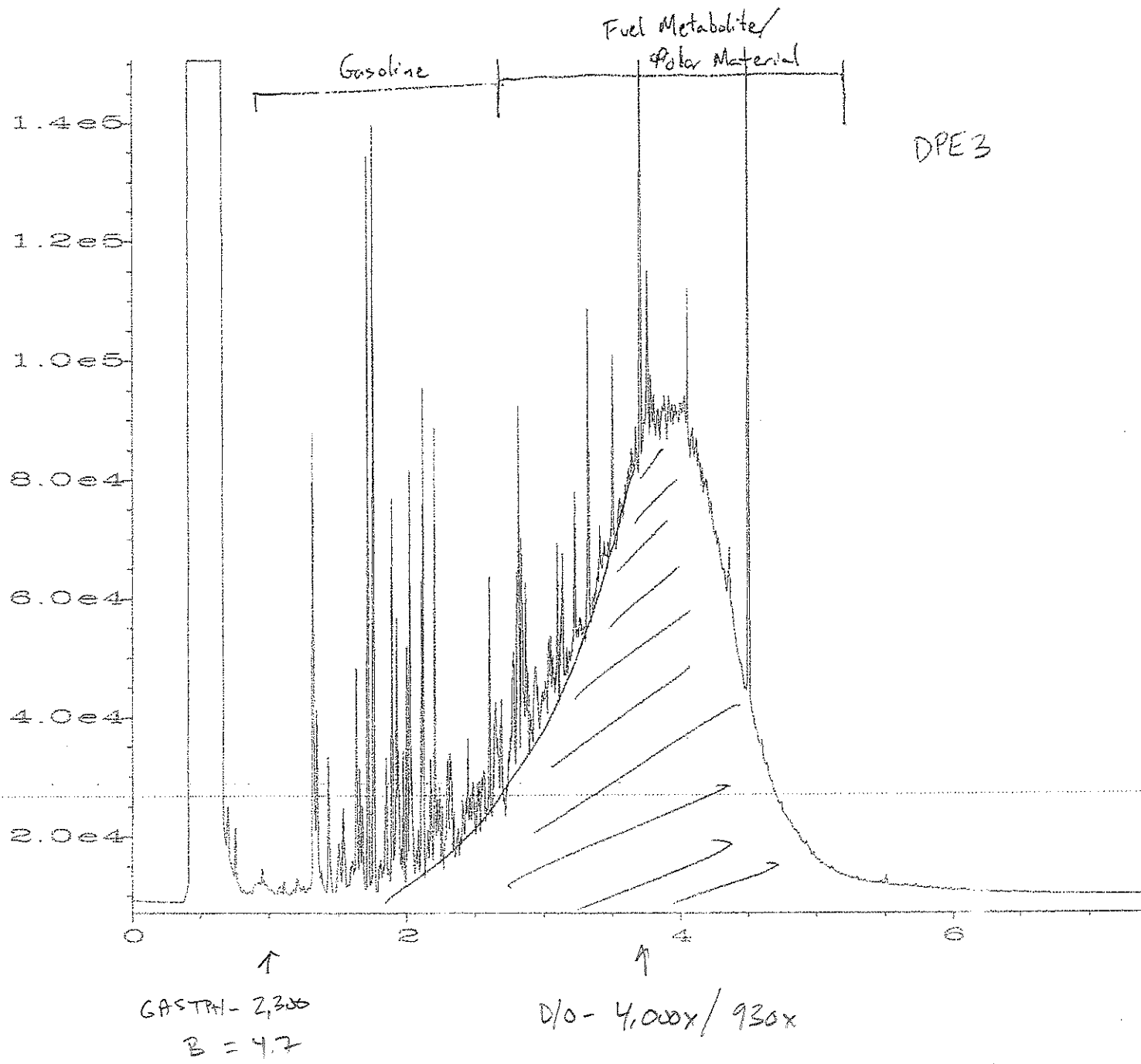
GASTPH - 3,300
B - 64



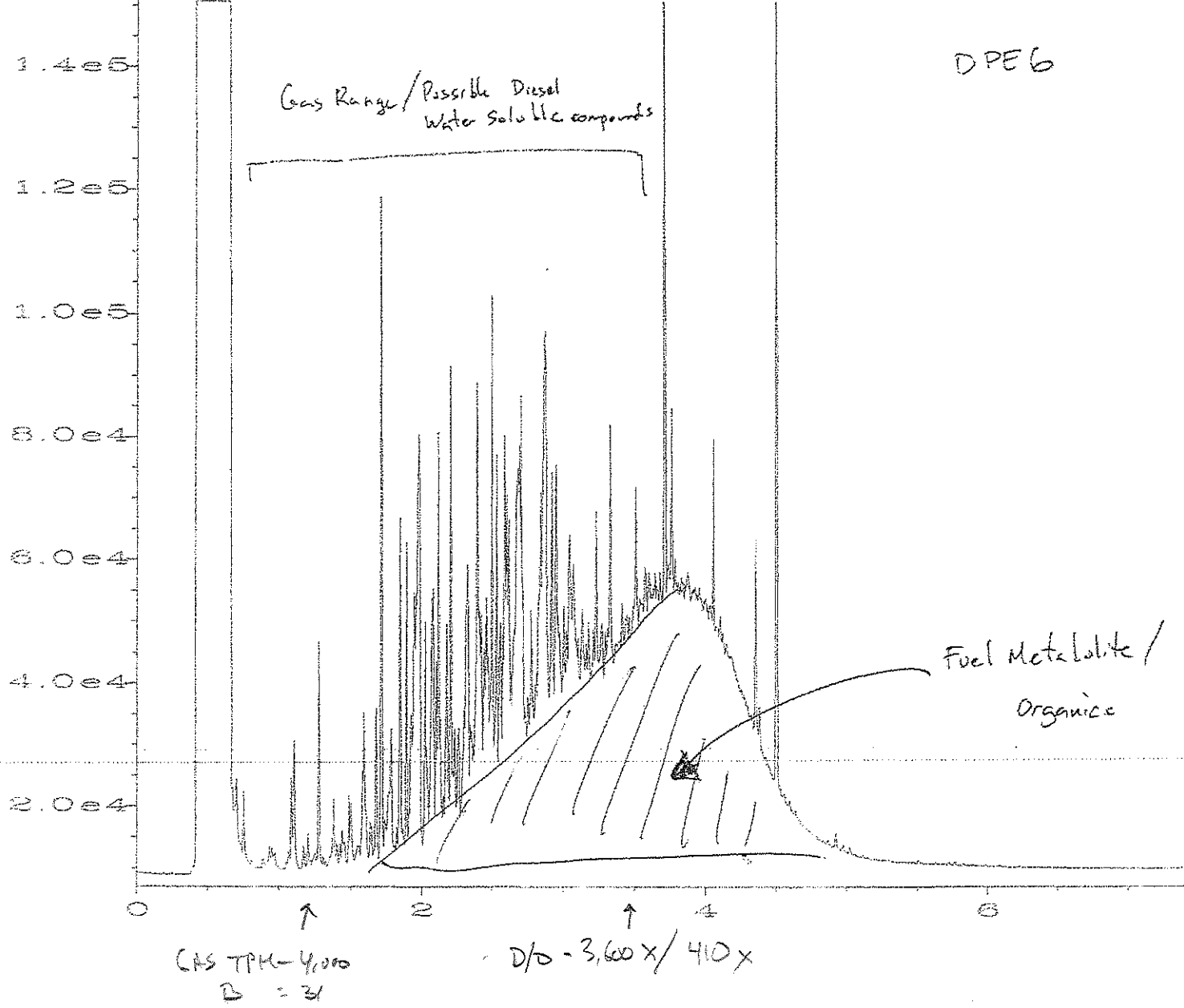
D/O - 4.400 x / 1,300 x

DPE2

Data File Name : C:\HPCHEM\1\DATA\08-28-20\028F0701.D
Operator : TL
Instrument : GC1
Sample Name : 008420-02
Run Time Bar Code : 28 Aug 20 03:12 PM
Acquired on : 28 Aug 20 03:12 PM
Report Created on : 21 Sep 20 11:56 AM
Page Number : 1
Vial Number : 28
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DX.MTH

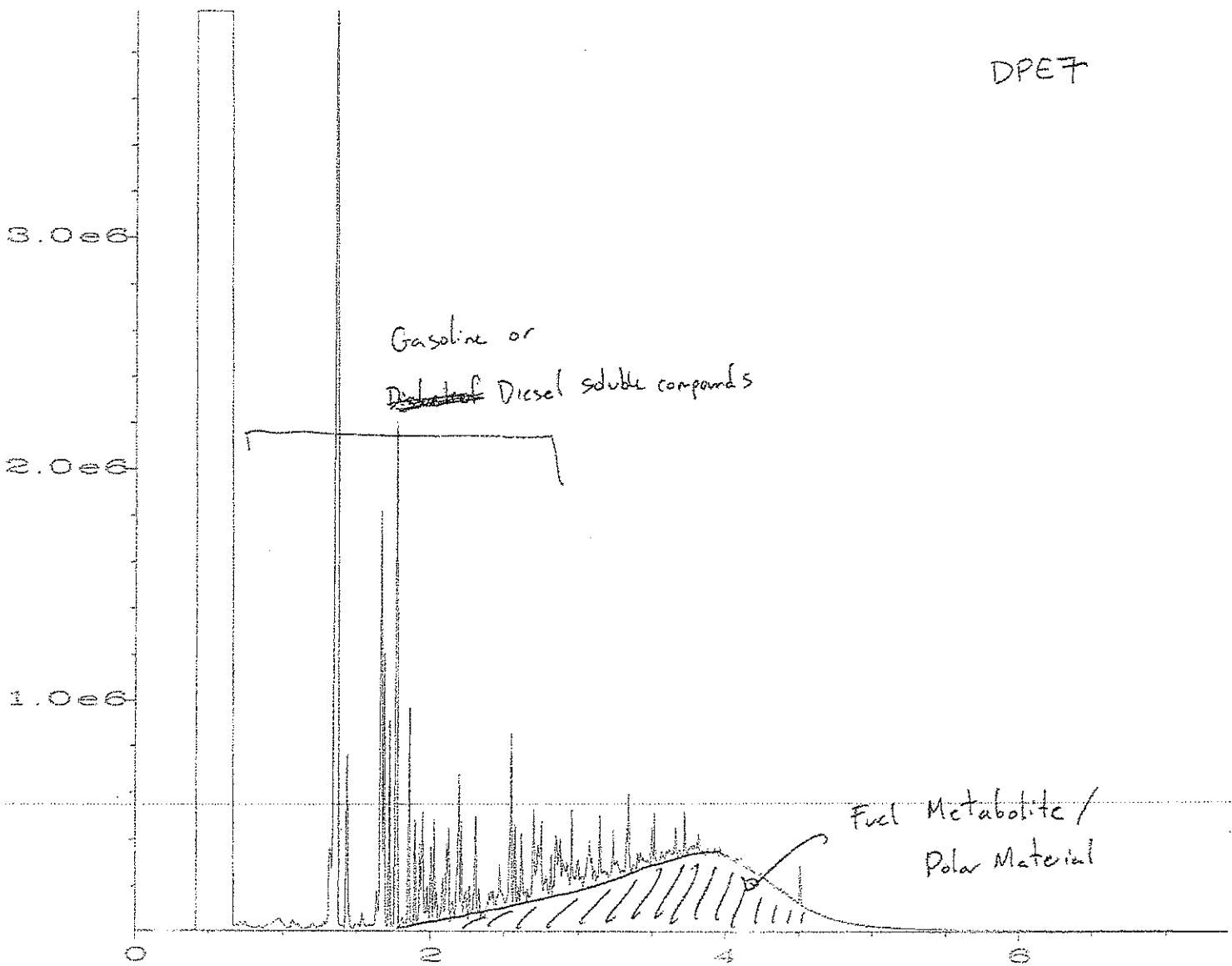


Data File Name : C:\HPCHEM\1\DATA\08-28-20\029F0701.D
 Operator : TL
 Instrument : GCL
 Sample Name : 008420-03
 Run Time Bar Code : 28 Aug 20 03:25 PM
 Acquired on : 21 Sep 20 11:56 AM
 Report Created on :
 Page Number : 1
 Vial Number : 29
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH



Data File Name : C:\HPCHEM\1\DATA\08-28-20\031F0701.D
 Operator : TL
 Instrument : GC1
 Sample Name : 008420-05
 Run Time Bar Code : 28 Aug 20 03:50 PM
 Acquired on : 21 Sep 20 11:56 AM
 Report Created on : 21 Sep 20 11:56 AM

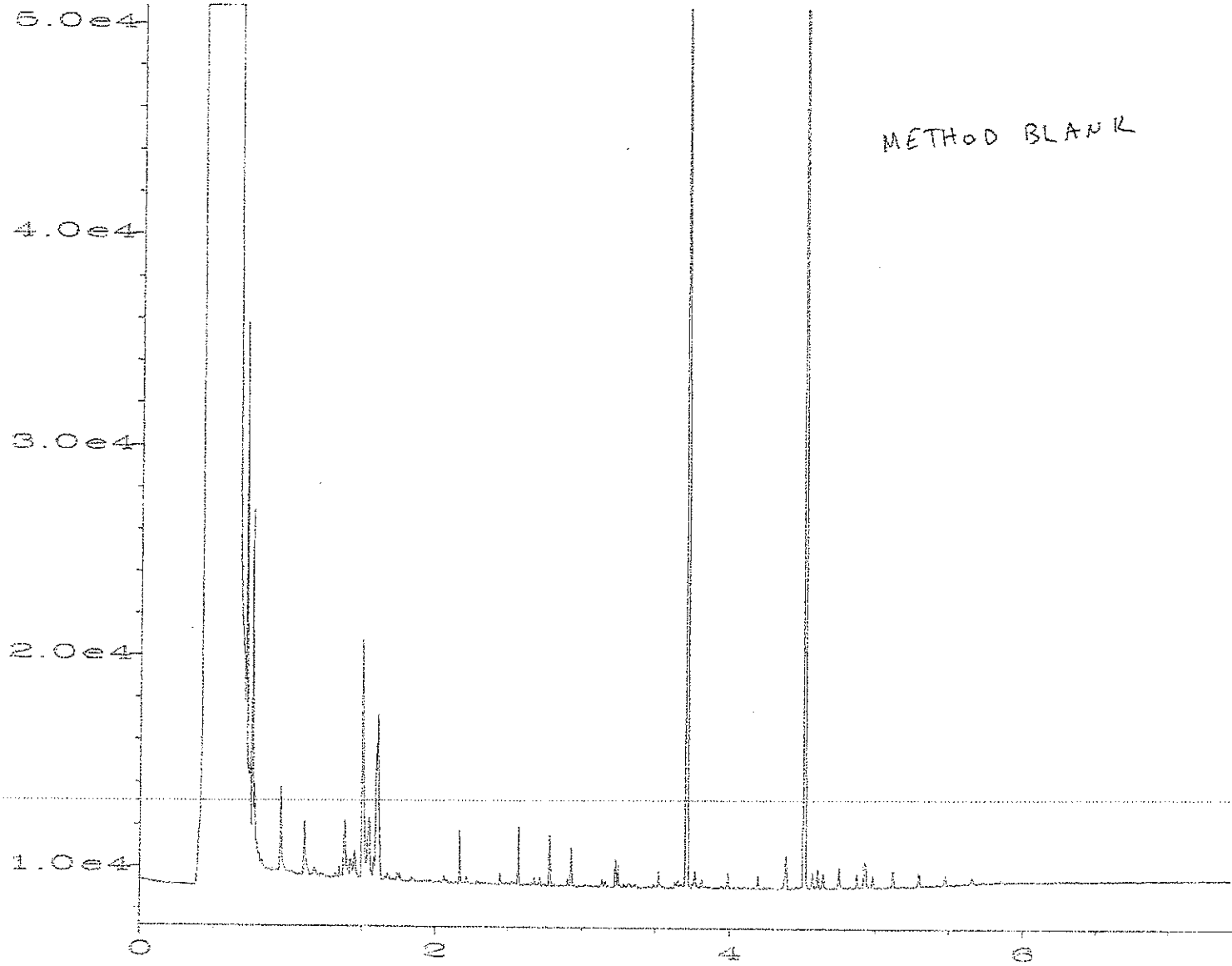
Page Number : 1
 Vial Number : 31
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH



DPE7

Data File Name : C:\HPCHEM\1\DATA\08-28-20\032F0701.D
 Operator : TLL
 Instrument : GC1
 Sample Name : 008420-06
 Run Time Bar Code : 28 Aug 20 04:03 PM
 Acquired on : 28 Aug 20 04:03 PM
 Report Created on: 21 Sep 20 11:57 AM

Page Number : 1
 Vial Number : 32
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH



METHOD BLANK

Data File Name : C:\HPCHEM\1\DATA\08-28-20\024F0701.D
 Operator : TL
 Instrument : GC1
 Sample Name : 00-1959 mb
 Run Time Bar Code : 28 Aug 20 02:23 PM
 Acquired on : 21 Sep 20 11:57 AM
 Page Number : 1
 Vial Number : 24
 Injection Number : 1
 Sequence Line : 7
 Instrument Method: DX.MTH
 Analysis Method : DX.MTH