November 30, 2018

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

RE: Groundwater Monitoring and Well Rehabilitation Report
4th Quarter 2017 to 3rd Quarter 2018
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 Groundwater Monitoring and Well Rehabilitation Report (4th Quarter 2017 to 3rd Quarter 2018) 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).

PROJECT OBJECTIVES

The objective of this project was to:

- Evaluate the occurrence of groundwater (i.e., static groundwater, perched groundwater) and depth to groundwater measurements obtained from 2014 to-date.
- Perform a 4th Quarter 2017 groundwater sampling event to evaluate groundwater quality after having operate a soil vapor extraction (SVE) remediation system for approximately 1.5 years.
- Rehabilitate several of the SVE and dual phase extraction[1] (DPE) remediation wells that had relatively high groundwater concentrations during the 4th Quarter 2017 sampling event. This well rehab task was performed to evaluate whether or not the elevated 4th Quarter 2017 groundwater concentrations represented: (1) actual groundwater quality; and/or (2) concentrations where elevated due to the SVE system operation[2]. In addition, the well rehab effort was meant to recovery silt that had accumulated over time within the remediation wells.
- Perform the 1st Quarter 2018 groundwater sampling event.
- Perform the 3rd Quarter 2018 groundwater sampling event.

The location of all former and existing groundwater monitoring and DPE/SVE remediation wells on the Property are illustrated on the attached Figure 2.

[1] The DPE wells were constructed for simultaneous groundwater removal and SVE. However, these DPE wells have only operated, up to this point, as SVE wells.

[2] Petroleum-laden vapors extracted from the subsurface by the SVE system can often condensate within the wells and associated conveyance piping. If this occurs, the concentrations are not considered representative of actual groundwater quality.

2014 THROUGH 2016 DEPTH TO GROUNDWATER MEASUREMENTS

All groundwater analytical results, well construction details, depth to groundwater measurements, and the corresponding groundwater elevations for all former and existing groundwater monitoring and remediation wells are included in the attached Table 1 and summarized in Figure 3 and are briefly discussed below.

The groundwater sampling protocols and laboratory analytical test methods performed during the various groundwater sampling events, between the 4th Quarter 2017 and 3rd Quarter 2018, are referenced in Appendix A.

2014 TO JULY 2015

The 11 two-inch diameter groundwater monitoring wells (MW1 to MW11) located on the Property at that time had sufficient groundwater for the purposes of well purging, sample collection, and laboratory analysis[3]. Note: the existing DPE and SVE remediation wells were not installed at that time (were installed in January and June of 2016).

In general, these monitoring wells were screened somewhere between 66 to 14 feet below ground surface (bgs). Depth to groundwater water measurements recorded in 2014 and 2015 ranged from 37 to 46 feet below well top of casing (TOC).

Groundwater sampling results from these 11 groundwater monitoring wells are presented in RGI's previous report(s) and are summarized in the attached Figure 3 and Table 1.

2016

In January, April, May, and/or October 2016, most of the existing groundwater monitoring wells and DPE/SVE remediation wells (at total of 32 wells) were considered dry wells. In others words, either no groundwater was present in these wells; or these wells had a limited volume of water, which quickly bailed dry and had a very slow recharge rate (in the order of days). Note: the existing DPE and SVE remediation wells were installed in January and June of 2016.

The DPE remediation wells were, in general, screened somewhere between 65 and 20 feet bgs. The SVE remediation wells were, in general, screened somewhere between 45 to 18 feet bgs. Although the DPE and SVE remediation wells were installed, the SVE remediation system installation was not complete or ready for startup until May of 2017.

The explanation as to why most wells were dry in 2016 is unknown. However, the alleged dewatering activities that occurred in 2016 within the immediate project vicinity, associated with the underground City of Seattle transit tunnel construction, may explain the lack of water observed in 2016. However, this explanation is purely speculative.

During the course of 2016, only five wells (DPE8, DPE11, DPE15, MW2, MW8, and MW11) had adequate groundwater present for well purging, sample collection, and laboratory analysis. Depth to water in these wells ranged from 43 feet to 58 feet below well TOC.

Groundwater sampling results from these five groundwater monitoring wells in 2016 are presented in RGI's previous report(s) and are summarized in the attached Figure 3 and Table 1.

[3] Groundwater monitoring well MW6 was decommissioned in July 2015 and groundwater monitoring well MW10 was inadvertently paved over during site construction activities in late-December 2015 or early-January 2016

MAY 2017

In May 2017, the SVE remediation system installation was put into full-scale operation and has continued to operate since then.

JUNE AND JULY 2017

In June and July 2017, depth to groundwater measurements were obtained from 22 of the 32 existing groundwater monitoring and remediation wells located on the Property. The remaining 11 groundwater monitoring or remediation wells were considered dry.

Fourteen DPE wells (DPE1 to DPE4 and DPE6 to DPE15), two groundwater monitoring wells (MW8 and MW11), and six SVE wells (SVE2/MW5, SVE6, SVE7, SVE8, and SVE10/MW1 and SVE11/MW3) appeared to have adequate groundwater present for well purging and sample collection. These findings suggested groundwater in these wells had rebounded since 2016. Depth to groundwater water measurements for the DPE and groundwater monitoring wells ranged from 43 to 56 feet below TOC. Depth to groundwater water measurements for the SVE wells ranged from 28 to 40 feet below well TOC. The remaining 10 wells were considered dry.

RGI observed at this time that many of the groundwater monitoring and/or DPE/SVE remediation wells had accumulated silt within the bottom of the well (see *Well Rehabilitation* section of this report for more discussion).

Groundwater sample collection and/or laboratory analysis was not performed during June and July of 2017.

4TH QUARTER 2017 GROUNDWATER MONITORING EVENT

This 4th Quarter 2017 groundwater monitoring event was the first time sufficient groundwater was present in a majority of the DPE remediation wells. Therefore, this sampling event was first time groundwater samples were collected from these DPE wells for laboratory analysis. Depth to groundwater measurement and analytical results are summarized below and illustrated in the attached Figure 3 and Table 1 and are discussed below.

In October, November and December of 2017, depth to groundwater measurements were recorded from all existing wells (32 wells) at various times and frequency intervals. In general, most of the deeper groundwater monitoring and DPE remediation wells had adequate groundwater present for sampling. Depth to groundwater for the deeper groundwater monitoring and DPE remediation wells ranged between 61 feet (DPE4) to 44 feet (MW11) below well TOC. Most of the shallower SVE remediation wells were considered dry. However, the shallower SVE wells SVE6 and SVE7 had depth to groundwater measurements of 30 feet and 36 feet below well TOC, respectively.

A total of 18 groundwater monitoring wells and DPE/SVE remediation wells were sampled and analyzed for TPH (as gasoline, diesel, and oil) and BTEX. Twelve of these 18 samples had concentrations of one or more of these COCs above their applicable MTCA Method A CULs. These concentrations ranged from 3,200 µg/L (DPE11) to 68,000 µg/L (DPE7) for gasoline-range TPH; 305 µg/L (DPE13) to 19,350 µg/L (DPE7) for total BTEX; and 1,300 µg/L (MW8) to 103,000 µg/L (DPE7) for total diesel- and oil-range TPH. These TPH/BTEX concentrations detected in groundwater where greater than anticipated (based on previous results from other wells located on the Property).

The groundwater results from the remaining four wells were either non-detect, or had concentrations below the applicable MTCA Method A CULs for Groundwater.

As previously mentioned, silt had accumulated within many of the DPE and SVE remediation wells. This accumulation of silt within these wells likely occurred while operating the SVE remediation system, and/or as perched water encountered the well (carrying with it suspended silt). The silt thickness ranged from one-foot to several feet thick. Based on these findings, several of the DPE/SVE remediation wells were selected for well rehabilitation in early 2018 (see *Well Rehabilitation* section of this report for further discussion).

The SVE remediation system commenced in May 2017 and therefore operated from approximately eight months prior to this 4th Quarter 2017 sampling event. RGI suspected that the relatively high groundwater concentrations may have been the result of the SVE remediation system operation. It is not uncommon that the petroleum-laden vapors extracted by the SVE system condensate within the remediation wells and associated conveyance piping. This petroleum-laden water condensate may then drain back into the wells, thereby impacting the water quality as well as the surrounding sand pack.

Based on these findings, RGI recommended that the wells with elevated TPH and BTEX concentrations and accumulated silt within the well be rehabilitated.

REMEDIATION WELL REHABILITATION

The well construction details, depth and thickness of any accumulated silt within the well, before and after the well rehabilitation effort, is summarized in the attached Table 2 and is discussed below.

From January 25 through February 9, 2018 and during July of 2018, 3/8-inch diameter tubing was installed in several DPE remediation wells (DPE2, DPE3, DPE6, DPE7, DPE10, DPE11, and DPE13). The bottom of the tubing was set within the water column of each well. The top of the tubing was routed through the well cap/seal (via a female threaded hole in the well cap/seal). While the SVE remediation system operated, the installed tubing *air sparged* the water – which was meant to help volatilize dissolved-phase VOCs in water and recover air-phase VOCs via the SVE system. This action was undertaken as part of the overall well rehabilitation efforts.

On February 9, 14, and 16 of 2018, RGI and its drilling subcontractor (Cascade Drilling) conducted the decontamination and rehabilitation of 11 DPE/SVE remediation wells on the Property (SVE6, SVE7, DPE1, DPE2, DPE3, DPE6, DPE7, DPE9, DPE10, DPE11, and DPE13). The SVE remediation system was shut-down during the well rehabilitation activities. The wells were selected for rehabilitation having the following characteristics:

- DPE/SVE remediation wells with the greatest groundwater concentrations, well above the MTCA Method A Groundwater Cleanup Levels. RGI surmised that these elevated groundwater concentrations could have been related to the on-going SVE remediation process – and not representative of actual groundwater quality.
- Wells that had accumulated silt with thickness of 0.5-foot or greater within the bottom of the well.
- Wells having adequate, apparent groundwater present in the well. DPE/SVE remediation wells that were considered dry wells were not rehabilitated.

Well decontamination and rehabilitation was completed by well development, surging, introducing OxiClean, and flushing with clean water.

RGI measured the depth to water and bottom of each well; or depth to the top of the accumulated silt, of the 11 remediation wells using an electronic water level meter.

At each well, surging was performed for approximately 15 to 20 minutes using a surge block. The surge block was attached to the hoist of the Cascade Drilling's rig. The surge block was repeatedly raised and lowered across the water-bearing, well screened interval. Tap water was often added to well to enhance the well rehabilitation and silt/water removal. The surging action flushed silt and water in and out of the well screen and surrounding sand pack. This action suspended the silt and sediment within the well's water column. Following the surging action, the water/silt slurry was repeatedly removed from the well using bailers and submersible pumps.

Once the well surging and purging effort was considered complete, a solution of OxiClean (approximately 1/3 cup per 5 gallons of water) was introduced into the DPE/SVE remediation well. OxiClean was selected because it was listed as *die*- and *perfume-free*; and the active ingredients were limited to sodium carbonate, sodium percarbonate, alcohols, and sodium metasilicate. The OxiClean/water solution was introduced to each well in order to bring the level of the solution to 1-foot above the pre-well rehab water level. Well surging continued for another 10 to 15 minutes. The water/OxiClean solution and suspended silt was again pumped from the well. Typically, all wells eventually pumped dry on several occasions. Municipal tap water was frequently added down the well in order to complete the well surging, purging, silt removal, and well cleaning activities.

Next, tap water was introduced into the well to approximately 1 foot above the pre-well rehab levels. Additional, surging was performed for another 10 to 15 minutes, and purged again of the water and any remaining residual suspended silt. Tap water was added to the well, surged, and purged a total of three times for each remediation well. This effort was performed to pump out any residual OxiClean/water solution and fully flush/pump out water from the well and surrounding sand pack.

In general, approximately 50-gallons of waste water and silt slurry was generated during the rehab of the deeper 4-inch diameter DPE wells (screened somewhere between 65 to 18 feet below well TOC). Approximately 15-gallons of waste water and silt slurry was generated during the rehab from the shallower 2-inch diameter SVE wells (screened somewhere between 45 feet to 14 feet bgs). Waste water was stored on-site in 55-gallon drums and two 250-gallon plastic totes. This waste water was periodically removed from the Property, during the well rehabilitation effort, by Marine Vacuum, for proper off-site disposal.

Following the well rehabilitation effort, nearly all of the silt that had accumulated with the wells was removed (see Table 2).

INTERMEDIATE WELL REHABILITATION SAMPLING AND ANALYTICAL RESULTS

Groundwater samples were collected from remediation wells DPE2 and DPE9 immediately after the decontamination and rehabilitation effort. Samples were analyzed for TPH (as gasoline, diesel, and oil), and BTEX.

The gasoline-range TPH concentrations detected in well DPE2 increased after the rehab process. Gasoline-range TPH concentrations increased from 35,000 µg/L (4th Quarter 2017) to 76,000 µg/L immediately after the rehab effort. BTEX concentrations generally increased as well. However, diesel-range TPH concentrations decreased from 40,000 µg/L (4th Quarter 2017) and 11,000 µg/L immediately following the well rehab effort.

The gasoline-range TPH concentrations detected in well DPE9 decreased after the rehab process. Gasoline-range TPH concentrations decreased from 600 µg/L (4th Quarter 2017) to non-detect immediately after the rehab effort. Diesel-range TPH concentrations decreased from 1,800 µg/L (4th Quarter 2017) to 79 µg/L immediately following the well rehab effort.

These apparent concentration increases or decreases are generally within the same orders of magnitude and therefore not much was gained from these intermediate results.

1ST QUARTER 2018

This 1st Quarter 2018 groundwater sampling event was performed approximately one month following RGI's well rehabilitation and silt removal effort (as discussed above).

In February and/or March 2018, depth to groundwater measurements were recorded at all existing groundwater monitoring and remediation wells located on the Property (a total of 32 wells, some of which were monitored more than once during this timeframe). In addition, groundwater samples were collected from wells (with adequate groundwater present) and submitted to the laboratory for analyses which is discussed further in the groundwater monitoring section of the report. Analytical results for the wells sampled during this timeframe are summarized in the attached Figure 3 and Table 2 and are discussed below.

A total of 17 wells had adequate groundwater present for well purging and groundwater sample collection for laboratory analysis. These wells consisted of DPE1 to DP4, DPE6 to DPE15, SVE7, and MW11. In general, depth to groundwater ranged from 44 feet to 58 feet below well TOC. In general, the shallower SVE remediation wells were considered dry - either before purging, or after purging (due to very slow recharge).

These 17 groundwater monitoring and DPE/SVE remediation wells were sampled and analyzed for TPH (as gasoline, diesel, and oil) and BTEX. Nine of these 17 samples had concentrations of one or more of these COCs above their applicable MTCA Method A CULs. These concentrations ranged from 820 µg/L (DPE10) to 76,000 µg/L (DPE7) for gasoline-range TPH; 3,333 µg/L (DPE2) to 17,640 µg/L (DPE2) for total BTEX; and 730 µg/L (DP13) to 35,000 µg/L (DPE7) for total diesel- and oil-range TPH. The groundwater results from the remaining eight wells were either non-detect, or had concentrations below the applicable MTCA Method A CULs for Groundwater.

Altogether, the wells with the greatest TPH/BTEX concentrations in groundwater were detected in wells DPE2, DPE3, DPE6, and DPE7. These four wells are located in the area of the former gasoline UST and diesel UST removed by others in the early 1990s. These two former USTs were located on the southern portion of the Property and west and east of the existing concrete alley.

3RD QUARTER 2018

In August 2018, depth to groundwater measurements were recorded at all existing monitoring and DPE/SVE remediation wells located on the Property. In addition, groundwater samples were collected from wells (with adequate groundwater present) and submitted to the laboratory for TPH (as gasoline, diesel, and oil) and BTEX analyses. Analytical results for the wells sampled during this timeframe are summarized in the attached Figure 3 and Table 1and are discussed below.

A total of 14 wells had adequate groundwater present for well purging and groundwater sample collection for laboratory analysis. These wells consisted of DPE1 to DP4, DPE6 to DPE13, DPE15, and MW11.

In general, the deeper groundwater monitoring and DPE remediation wells had adequate groundwater present for well purging and groundwater sample collection. The depth to groundwater measurement for these wells ranged from 48 feet to 58 feet below well TOC.

In general, the shallower SVE remediation wells were considered dry - either before purging, or after purging (due to very slow recharge).

These 14 groundwater monitoring and DPE remediation wells were sampled and analyzed for TPH (as gasoline, diesel, and oil) and BTEX. Eight of these 14 samples had concentrations of one or more of these COCs above their applicable MTCA Method A CULs. These concentrations ranged from 5,000 µg/L (DPE2) to 30,000 µg/L (DPE7) for gasoline-range TPH; 3,333 µg/L (DPE2) to 17,640 µg/L (DPE2) for total BTEX; and 730 µg/L (DP13) to 35,000 µg/L (DPE7) for total diesel- and oil-range TPH. The groundwater results from the remaining eight wells were either non-detect, or had concentrations below the applicable MTCA Method A CULs for Groundwater.

Altogether, the wells with the greatest TPH/BTEX concentrations in groundwater were detected in, but are not necessarily limited to, wells DPE2, DPE3, DPE6, and DPE7. These four wells are located in the area of the former gasoline UST and diesel UST removed by others in the early 1990s. These two former USTs were located on the southern portion of the Property and west and east of the existing concrete alley.

GEOLOGY AND HYDROGEOLOGIC CONDITIONS

Based on RGI's subsurface investigations and groundwater monitoring results, RGI concludes the following:

- Soils underlying the Property 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.
- Isolated perched water bearing zones were occasionally encountered at depths of somewhere between 30 to 40 feet bgs, and 50 to 60 feet bgs, at various locations across the Property. 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. Static groundwater beneath the Property was not encountered during these subsurface investigations.
- Prior to 2016, most of the existing groundwater monitoring wells installed at that time had adequate water present for well purging and/or sample collection. In 2016, many of these groundwater monitoring wells, as well as the DPE/SVE remediation wells (installed in 2016) were considered dry. These dry wells did not have adequate water present for well purging and/or sample collection. However, since 2016, most of the DPE remediation wells and groundwater monitoring wells MW8 and MW11 had sufficient groundwater present for well purging and groundwater sample collection. Since 2016, the average depth to groundwater for these wells ranged from between 48 and 57 feet below well TOC. Based on these findings, a minimum average of approximately 5 feet, to a maximum average of 12 feet, of (standing) water was present in these wells. A graph illustrating groundwater elevations versus time for these wells is included in Appendix B for reference.
- In general, the shallower SVE remediation wells (screened somewhere between 45 to 14 feet bgs) have either been dry, or have not had sufficient groundwater present for well purging and sample collection. However, groundwater samples have been collected from SVE6 and SVE7 wells on or one or more occasion.

PROJECT CONCLUSIONS

Based on the above-discussed 4th Quarter 2017 to 3rd Quarter 2018 groundwater monitoring and well rehabilitation results, RGI concludes the following:

- **Geology and Hydrogeology:** In general, soils underlying the Property 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.

  Isolated perched water bearing zones were occasionally encountered during drilling at depths of somewhere between 30 to 40 feet bgs, and 50 to 60 feet bgs, at various locations across the Property. These isolated perched water bearing zones were encountered at the medium dense to very dense soil contact (generally occurring somewhere between 30 and 40 feet bgs) and various intervals between 50 to 65 feet bgs. Static groundwater beneath the Property was not encountered during these subsurface investigations. The occurrence of perched water fluctuates seasonally and some wells have always been dry.

- **Groundwater Occurrence – Depth and Elevations:** In 2014 through April of 2015, the existing monitoring wells at the time had sufficient groundwater for the purposes of well purging, sample collection, and laboratory analysis.

  In 2016, many of the monitoring wells and DPE/SVE remediation wells (installed in 2016) were considered dry. These dry wells did not have adequate water present for well purging and/or groundwater sample collection. The explanation as to why most wells were dry in 2016 is unknown and likely, at least partially due to seasonal variations. Alternatively, the dewatering activities that reportedly occurred in 2016 within the immediate project vicinity, associated with the City of Seattle underground transit tunnel construction, may explain the general absence of water observed in 2016. However, this possible explanation is purely speculative.

  In 2017 and 2018, 14 of the 15 DPE remediation wells and other deeper groundwater monitoring wells (for example, SVE7, MW8, and MW11) had sufficient groundwater present for well purging and groundwater sample collection. Average depths to groundwater for these wells ranged from 48 feet to 57 feet below well TOC. Based on these depths to water, a minimum average of approximately 5 feet, to a maximum average of 12 feet, of (standing) water within the well was present. Based on these findings, groundwater (perched water) appeared to have rebounded since 2016.

  A graph summarizing groundwater elevations (feet above a horizontal reference datum) versus time for some select groundwater monitoring and remediation wells is included in Appendix B for reference.

- **Well Rehabilitation:** In February 2018, at total of 11 DPE/SVE remediation wells were rehabilitated in order to: (1) remove silt that had accumulated within the wells (ranging between 0.5- to 6.5-feet thick); and (2) clean wells with elevated groundwater concentrations using Oxiclean® followed by extensive well surging and purging. In addition, air sparging was performed at seven of the DPE remediation wells in late-January to early February 018m, and again in July 2018. This well rehabilitation effort was performed to remove the effects of any artificially elevated groundwater contamination as related to the SVE remediation process (which commenced in May 2017). RGI suspected that the relatively high groundwater concentrations from the 4th Quarter 2018 sampling event may have been the result of the SVE remediation system operation. It is not uncommon that the petroleum-laden vapors extracted by the SVE system can condensate within the remediation wells and associated conveyance

piping. This petroleum-laden water condensate may then drain back into the wells, thereby impacting the water quality as well as the well screen and surrounding sand pack outside the water saturated portion of the well screen.

The well rehabilitation effort was successful in removing the accumulated silt in the selected DPE and SVE remediation wells. The well rehabilitation effort appears to have improved groundwater quality and reduced groundwater concentrations over time (see bullet below).

- **TPH/BTEX Concentrations:** TPH (as gasoline and diesel) and BTEX concentrations in groundwater appear to have decreased over time. The average percent reduction in TPH/BTEX concentrations from 10 of the 15 DPE remediation wells and two SVE/groundwater monitoring wells are as follows: 83% reduction of gasoline-range TPH; 87% reduction of total BTEX; and 69% reduction for total diesel- and oil-range TPH. The other remaining DPE and SVE remediation wells have either had either been considered dry wells, or had concentrations below the applicable MTCA Method A CULs for Groundwater.

  The decrease in TPH/BTEX concentrations over time appear to be related to one or more of the following: (1) the well rehabilitation effort; and/or (2) associated with the ongoing SVE remediation system (which commenced in May 2017). Graphs showing TPH/BTEX concentrations versus time are included in Appendix B for reference.

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.

FOR

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 4th Quarter 2017 through 3rd Quarter 2018

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

Table 2, Summary of Findings Associated with the Remediation Well Rehabilitation Efforts Performed Between February 9 and 20, 2018.

Appendix A, Groundwater Sampling Protocols and Laboratory Analysis

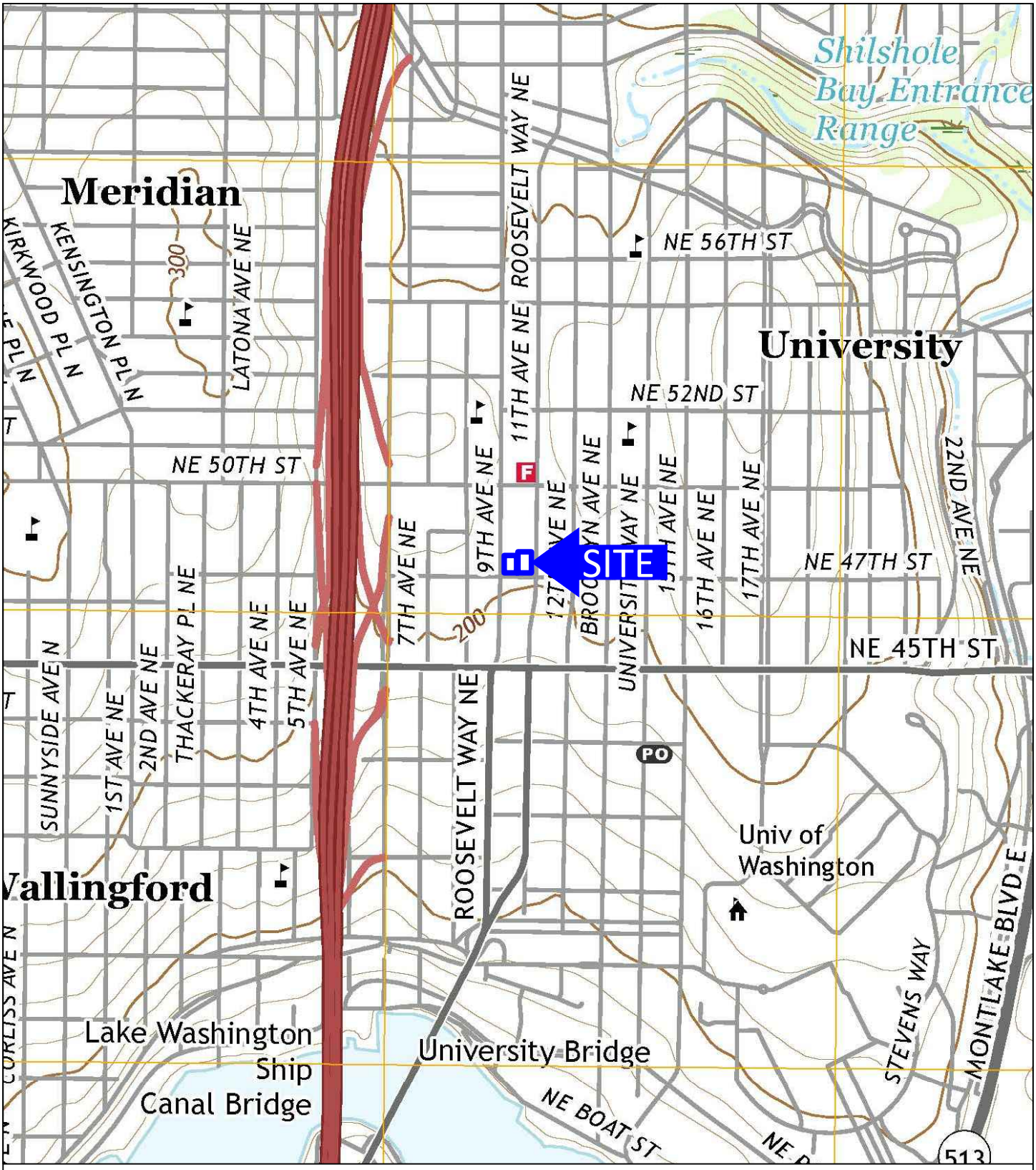
Appendix B, Graphs - Groundwater Elevations versus Time and Groundwater TPH and BTEX Concentrations versus Time)

Appendix C, 4th Quarter 2017 through 3rd Quarter 2018 Analytical Laboratory Reports and Sample Chain of Custody Forms

Distribution

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

Mr. Grant Yang - Washington State Department of Ecology (one bound copy & PDF)



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

Approximate Scale: 1"=1000'

0 500 1000 2000

N

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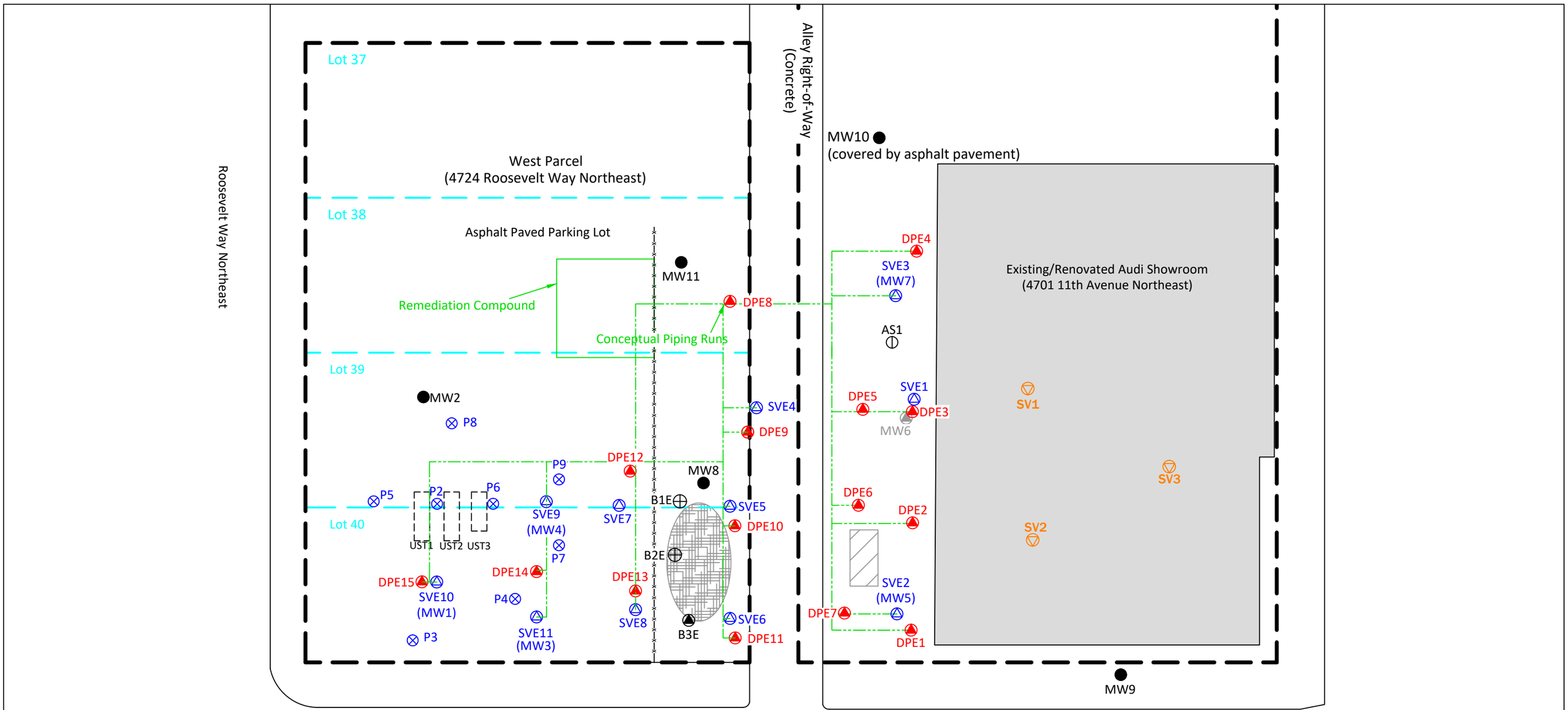
University VW - Audi Property		Figure 1
RGI Project Number 2014-068I	Property Vicinity Map	Date Drawn: 11/2018
Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105		



= (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 decomissioned 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

Approximate Scale: 1"=20'
0 10 20 40
N

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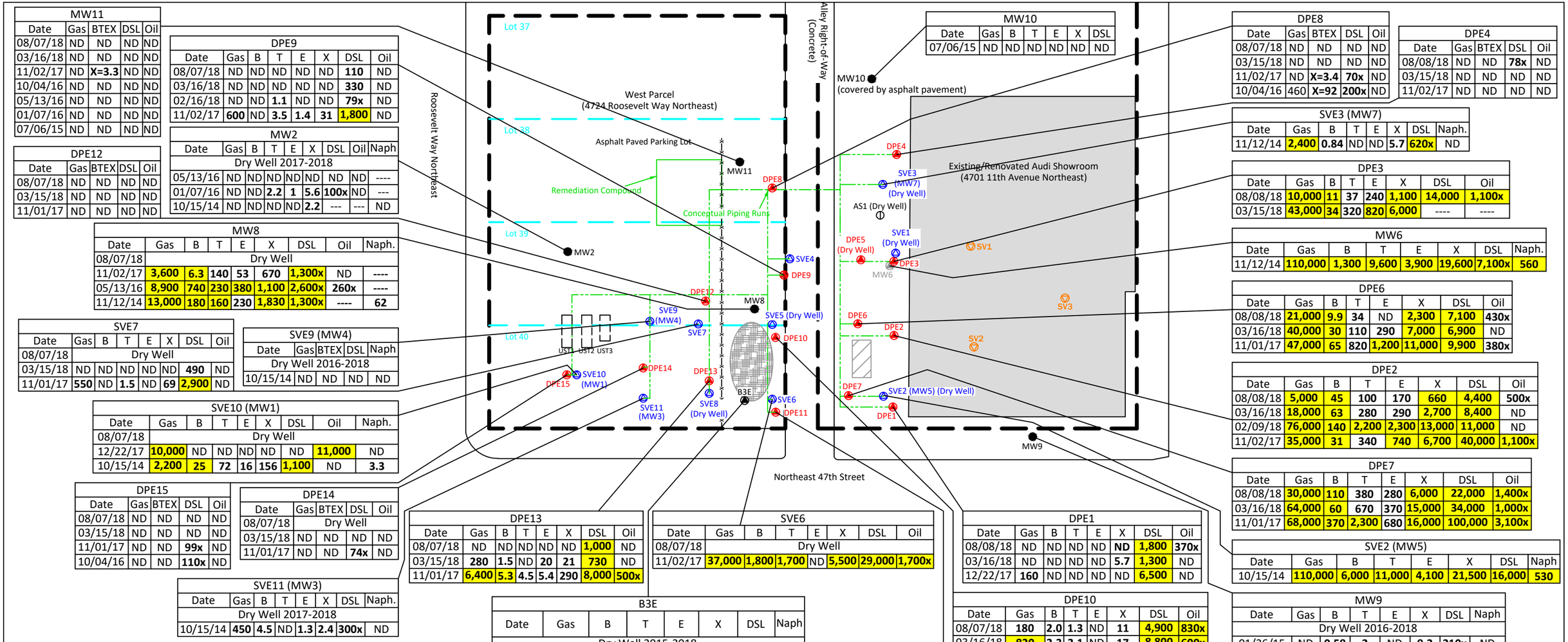
University VW - Audi Property		Figure 2
RGI Project Number 2014-068I	Property Plan Showing Existing and/or Former Wells and Borings	Date Drawn: 11/2018
Address: 4724 Roosevelt Way Northeast & 4701 11th Avenue Northeast, Seattle, Washington 98105		



MW11				
Date	Gas	BTEX	DSL	Oil
08/07/18	ND	ND	ND	ND
03/16/18	ND	ND	ND	ND
11/02/17	ND	**X=3.3**	ND	ND
10/04/16	ND	ND	ND	ND
05/13/16	ND	ND	ND	ND
01/07/16	ND	ND	ND	ND
07/06/15	ND	ND	ND	ND

DPE9							
Date	Gas	B	T	E	X	DSL	Oil
08/07/18	ND	ND	ND	ND	ND	**110**	ND
03/16/18	ND	ND	ND	ND	ND	**330**	ND
02/16/18	ND	ND	**1.1**	ND	ND	**79x**	ND
11/02/17	**600**	ND	**3.5**	**1.4**	**31**	**1,800**	ND

MW2								
Date	Gas	B	T	E	X	DSL	Oil	Naph
Dry Well 2017-2018								
05/13/16	ND	ND	ND	ND	ND	ND	ND	----
01/07/16	ND	ND	**2.2**	**1**	**5.6**	**100x**	ND	---
10/15/14	ND	ND	ND	ND	**2.2**	---	---	ND

DPE12				
Date	Gas	BTEX	DSL	Oil
08/07/18	ND	ND	ND	ND
03/15/18	ND	ND	ND	ND
11/01/17	ND	ND	ND	ND

MW8								
Date	Gas	B	T	E	X	DSL	Oil	Naph.
08/07/18	Dry Well							
11/02/17	**3,600**	**6.3**	**140**	**53**	**670**	**1,300x**	ND	----
05/13/16	**8,900**	**740**	**230**	**380**	**1,100**	**2,600x**	**260x**	----
11/12/14	**13,000**	**180**	**160**	**230**	**1,830**	**1,300x**	----	**62**

SVE7							
Date	Gas	B	T	E	X	DSL	Oil
08/07/18	Dry Well						
03/15/18	ND	ND	ND	ND	ND	**490**	ND
11/01/17	**550**	ND	**1.5**	ND	**69**	**2,900**	ND

SVE9 (MW4)				
Date	Gas	BTEX	DSL	Naph
Dry Well 2016-2018				
10/15/14	ND	ND	ND	ND

SVE10 (MW1)								
Date	Gas	B	T	E	X	DSL	Oil	Naph.
08/07/18	Dry Well							
12/22/17	**10,000**	ND	ND	ND	ND	ND	**11,000**	ND
10/15/14	**2,200**	**25**	**72**	**16**	**156**	**1,100**	ND	**3.3**

DPE15				
Date	Gas	BTEX	DSL	Oil
08/07/18	ND	ND	ND	ND
03/15/18	ND	ND	ND	ND
11/01/17	ND	ND	**99x**	ND
10/04/16	ND	ND	**110x**	ND

DPE14				
Date	Gas	BTEX	DSL	Oil
08/07/18	Dry Well			
03/15/18	ND	ND	ND	ND
11/01/17	ND	ND	**74x**	ND

SVE11 (MW3)							
Date	Gas	B	T	E	X	DSL	Naph.
Dry Well 2017-2018							
10/15/14	**450**	**4.5**	ND	**1.3**	**2.4**	**300x**	ND

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

SVE6							
Date	Gas	B	T	E	X	DSL	Oil
08/07/18	Dry Well						
11/02/17	**37,000**	**1,800**	**1,700**	ND	**5,500**	**29,000**	**1,700x**

B3E							
Date	Gas	B	T	E	X	DSL	Naph
Dry Well 2015-2018							
10/15/14	**100,000**	**10,000**	**11,000**	**3,600**	**17,800**	**13,000**	**380**
03/12/14	**130,000**	**3,300**	**4,100**	**3,300**	**15,000**	**320**	**170**
07/19/13	**200,000**	**7,600**	**8,200**	**4,300**	**22,800**	**860**	**870**
01/09/13	**100,000**	**3,800**	**6,800**	**2,000**	**25,000**	**1,800**	4.9

MW10							
Date	Gas	B	T	E	X	DSL	
07/06/15	ND	ND	ND	ND	ND	ND	ND

DPE1							
Date	Gas	B	T	E	X	DSL	Oil
08/08/18	ND	ND	ND	ND	**ND**	**1,800**	**370x**
03/16/18	ND	ND	ND	ND	**5.7**	**1,300**	ND
12/22/17	**160**	ND	ND	ND	ND	**6,500**	ND

DPE10							
Date	Gas	B	T	E	X	DSL	Oil
08/07/18	**180**	**2.0**	**1.3**	ND	**11**	**4,900**	**830x**
03/16/18	**820**	**2.3**	**2.1**	ND	**17**	**8,800**	**600x**
11/01/17	**12,000**	**44**	**97**	ND	**1,300**	**18,000**	**930x**

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

DPE8					
Date	Gas	BTEX	DSL	Oil	
08/07/18	ND	ND	ND	ND	
03/15/18	ND	ND	ND	ND	
11/02/17	ND	**X=3.4**	**70x**	ND	
10/04/16	460	**X=92**	**200x**	ND	

DPE4				
Date	Gas	BTEX	DSL	Oil
08/08/18	ND	ND	**78x**	ND
03/15/18	ND	ND	ND	ND
11/02/17	ND	ND	ND	ND

SVE3 (MW7)							
Date	Gas	B	T	E	X	DSL	Naph.
11/12/14	**2,400**	**0.84**	ND	ND	**5.7**	**620x**	ND

DPE3							
Date	Gas	B	T	E	X	DSL	Oil
08/08/18	**10,000**	**11**	**37**	**240**	**1,100**	**14,000**	**1,100x**
03/15/18	**43,000**	**34**	**320**	**820**	**6,000**	----	----

MW6							
Date	Gas	B	T	E	X	DSL	Naph.
11/12/14	**110,000**	**1,300**	**9,600**	**3,900**	**19,600**	**7,100x**	**560**

DPE6							
Date	Gas	B	T	E	X	DSL	Oil
08/08/18	**21,000**	**9.9**	**34**	ND	**2,300**	**7,100**	**430x**
03/16/18	**40,000**	**30**	**110**	**290**	**7,000**	**6,900**	ND
11/01/17	**47,000**	**65**	**820**	**1,200**	**11,000**	**9,900**	**380x**

DPE2							
Date	Gas	B	T	E	X	DSL	Oil
08/08/18	**5,000**	**45**	**100**	**170**	**660**	**4,400**	**500x**
03/16/18	**18,000**	**63**	**280**	**290**	**2,700**	**8,400**	ND
02/09/18	**76,000**	**140**	**2,200**	**2,300**	**13,000**	**11,000**	ND
11/02/17	**35,000**	**31**	**340**	**740**	**6,700**	**40,000**	**1,100x**

DPE7							
Date	Gas	B	T	E	X	DSL	Oil
08/08/18	**30,000**	**110**	**380**	**280**	**6,000**	**22,000**	**1,400x**
03/16/18	**64,000**	**60**	**670**	**370**	**15,000**	**34,000**	**1,000x**
11/01/17	**68,000**	**370**	**2,300**	**680**	**16,000**	**100,000**	**3,100x**

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

MW9							
Date	Gas	B	T	E	X	DSL	Naph
Dry Well 2016-2018							
01/26/15	ND	**0.58**	**2**	ND	**9.2**	**210x**	ND

= Groundwater analytical laboratory results in ug/L;
Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, xylenes
Naph. = Naphthalene
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.

= (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 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) 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 decomissioned 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

Approximate Scale: 1"=30'
0 15 30 60
N

RILEYGROUP
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 2014-068I

Summary of Groundwater Laboratory Results - Including 4th Quarter 2017 through 3rd Quarter 2018

Date Drawn: 11/2018

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	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	08/2018	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	08/2018	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		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE4	Screened Interval 65-40 ft bgs, Total boring depth 65 ft bgs																														
DPE4	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	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 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	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	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	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	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**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	204.84	52.33	152.51	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	204.84	53.25	151.59	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	204.84	dry well		633.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	204.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	204.84	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE8	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																													
DPE8	08/2018	205.73	57.02	148.71	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	205.73	56.00	149.73	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 3 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	Ag
DPE8	11/02/17	205.73	55.29	150.44	16.7	ND<100	ND<1	ND<1	ND<1	**3.4**	**70x**	ND<280	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.73	54.37	151.36	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.73	44.5	161.23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	06/2017	205.73	49.3	156.43	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.73	57.34	148.39	87.5	**460**	ND<1	ND<1	ND<1	**92**	**200x**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE9	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE9	08/2018	205.46	56.24	149.22	----	ND<100	ND<1	ND<1	ND<1	ND<3	**110**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/16/18	205.46	53.91	151.55	----	ND<100	ND<1	ND<1	ND<1	ND<3	**330**	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/16/18	205.46	53.2	152.26	----	ND<100	ND<1	**1.1**	ND<1	ND<3	**79 x**	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/14/2018																														
	11/02/17	205.46	49.44	156.02	----	**600**	ND<1	**3.5**	**1.4**	**31**	**1,800**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.46	46.4	159.06	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.46	44.81	160.65	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.46	dry well		110.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE10	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE10	08/2018	203.33	55.6	147.73	----	**180**	**2.0**	**1.3**	ND<1	**11**	**4,900**	**830x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/16/18	203.33	55.33	148.00	----	**820**	**2.3**	**2.1**	ND<1	**17**	**8,800**	**600x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	203.33	54.2	149.13	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/16/2018																														
	11/01/17	203.33	47.30	156.03	10.0	**12,000**	**44**	**97**	ND<1	**1,300**	**18,000**	**930x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	203.33	46.64	156.69	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	203.33	45.78	157.55	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	203.33	dry well		165.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE11	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE11	08/2018	205.03	55.04	149.99	----	**130**	**6.8**	**1.2**	**4.4**	**5.4**	**3,400**	**310x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/16/18	205.03	54.06	150.97	----	**420**	**3.5**	**1.5**	**3.1**	**12**	**4,200**	**310x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	205.03	54.00	151.03	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/14/2018																														
	11/02/17	205.03	54.12	150.91	165	**3,200**	**22**	**39**	**27**	**340**	**7,000**	**560x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.03	53.93	151.10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.03	51.57	153.46	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	06/2017	205.03	57.8	147.23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.03	57.05	147.98	2.0	**2,400**	**82**	**30**	**59**	**230**	**740x**	ND<250	----	**4.9**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE12	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE12	08/2018	206.91	57.24	149.67	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	206.91	47.19	159.72	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/01/17	206.91	49.14	157.77	0	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.91	47.8	159.11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.91	45.8	161.11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.91	dry well		42.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE13	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE13	08/2018	206.92	52.81	154.11	----	ND<100	ND<1	ND<1	ND<1	ND<3	**1,000**	ND<50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	206.92	47.50	159.42	----	**280**	**1.5**	ND<1	**20**	**21**	**730**	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 4 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	Ag
DPE13	02/09/18	206.92	48.80	158.12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/16/2018																													
	11/01/17	206.92	47.32	159.6	0	**6,400**	**5.3**	**4.5**	**5.4**	**290**	**8,000**	**500x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.92	47.41	159.51	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.92	46.35	160.57	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.92	dry well		306.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE14	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE14	08/2018	205.87	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	205.87	55.78	150.09	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/01/17	205.87	45.7	160.17	0	ND<100	ND<1	ND<1	ND<1	ND<3	**74x**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.87	46.26	159.61	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.87	44.01	161.86	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.87	dry well		13.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
DPE15	Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																														
DPE15	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	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)	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)	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		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 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	Ag
SVE3 (MW7)	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	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	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	08/2018	205.49	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/16/18	205.49	38.15	167.34	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	205.49	37.5	167.99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/14/2018																														
	02/14/18	205.49	37.5	167.99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/02/17	205.49	37.81	167.68	145	**37,000**	**1,800**	**1,700**	ND<40	**5,500**	**29,000**	**1,700x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.49	35.66	169.83	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	06/2017	205.49	34.32	171.17	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SVE7 Screened Interval 40-20 ft bgs, Total boring depth 40 ft bgs																															
SVE7	08/2018	206.71	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	206.71	33.28	173.43	----	ND<100	ND<1	ND<1	ND<1	ND<3	**490**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	206.71	30.3	176.41	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	WELL REHAB 2/16/2018																														
	11/01/17	206.71	30.54	176.17	1.0	**550**	ND<1	**1.5**	ND<1	**69**	**2,900**	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.71	30.35	176.36	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.71	29.85	176.86	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.71	36.60	170.11	408.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SVE8 Screened Interval 40-20 ft bgs, Total boring depth 40 ft bgs																															
SVE8	08/2018	206.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	206.01	dry well		7.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	206.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/01/17	206.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.01	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.01	28.83	177.18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.01	dry well		251.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 6 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	Ag
SVE9 (MW4) Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																															
SVE9 (MW4)	08/2018	206.26	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/01/17	206.26	dry well		0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.26	dry well		5.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.26	dry well		5.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	206.26	dry well		3.7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	206.26	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	206.26	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	206.26	43.50	162.76	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/15/14	206.26	45.25	161.01	----	ND<100	ND<0.35	ND<1	ND<1	ND<2	ND<50	ND<250	ND	ND<1	----	----	----	----	----	**3.32**	----	----	----	----	----	----	----	----	----	----
SVE10 (MW1) Screened Interval 66-18 ft bgs, Total boring depth 70 ft bgs																															
SVE10 (MW1)	08/2018	205.89	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	205.89	56.47	149.42	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	02/09/18	205.89	55.6	150.29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	ATTEMPTED WELL REHAB 2/16/2018 (UNSUCCESSFUL DUE TO BEND IN UPPER WELL CASING)																														
	12/22/17	205.89	57.78	148.11	----	**10,000**	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<6,700	**11,000**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.89	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.89	47.9	157.99	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.89	dry well		52.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	205.89	dry well		4,064	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	205.89	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	205.89	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	205.89	46.49	159.40	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	205.89	42.79	163.11	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	205.89	44.56	161.33	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/15/14	205.89	44.72	161.17	----	**2,200**	**25**	**72**	**16**	**156**	**1,100**	ND<250	ND	**4.5**	ND<0.1	**2.62**	**63.2**	ND<1	ND<1	ND<1	ND<0.1	ND<1	ND<1	**1.78**	**43.3**	ND<1	ND<1	ND<1	ND<0.1	ND<1	ND<1
SVE11 (MW3) Screened Interval 60-20 ft bgs, Total boring depth 60 ft bgs																															
SVE11 (MW3)	08/2018	205.66	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.66	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.66	49.65	156.01	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.66	dry well		145.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	205.66	dry well		3.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	205.66	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	205.66	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	205.66	46.73	158.93	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	205.66	43.40	162.26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/15/14	205.66	44.82	160.84	----	**450**	**4.5**	ND<1	**1.3**	**2.4**	**300x**	ND<250	ND	ND<1	----	----	----	----	----	ND<1	----	----	----	----	----	----	----	----	----	----	----
MW2 Screened Interval 45-14 ft bgs, Total boring depth 65 ft bgs																															
MW2	08/2018	206.90	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.90	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.90	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	06/2017	206.90	34.40	172.50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 7 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	Ag
MW2	10/04/16	206.90	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	206.90	43.01	163.89	0.0	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	206.90	42.96	163.94	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	206.90	43.97	162.93	----	ND<100	ND<1	**2.2**	**1**	**5.6**	**100x**	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	206.90	43.69	163.21	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	206.90	41.79	165.12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	206.90	42.61	164.29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/15/14	206.90	43.26	163.64	----	ND<100	ND<0.35	ND<1	ND<1	**2.2**	----	----	ND	ND<1	----	----	----	----	----	**2.60**	----	----	----	----	----	----	----	----	----	----
MW6	Screened Interval 60-30 ft bgs, Total boring depth 60 ft bgs, decomissioned 7/23/15																													
MW6	04/16/15	204.73	43.94	160.80	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	204.73	44.28	160.45	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/12/14	204.73	44.28	160.45	----	**110,000**	**1,300**	**9,600**	**3,900**	**19,600**	**7,100x**	ND<250	ND<100	**560**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW8	Screened Interval 60-25 ft bgs, Total boring depth 60 ft bgs																													
MW8	08/2018	206.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/02/17	206.25	53.07	153.18	53	**3,600**	**6.3**	**140**	**53**	**670**	**1,300x**	ND<380	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	206.25	52.05	154.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	206.25	50.23	156.02	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	206.25	dry well		66.9	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	206.25	52.49	153.76	232.6	**8,900**	**740**	**230**	**380**	**1,100**	**2,600x**	**260x**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	206.25	52.39	153.86	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	206.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	206.25	46.20	160.05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	206.25	42.73	163.53	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	206.25	45.15	161.10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/12/14	206.25	45.25	161.00	----	**13,000**	**180**	**160**	**230**	**1,830**	**1,300x**	ND<250	ND	**67**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW9	Screened Interval 56-36 ft bgs, Total boring depth 56 ft bgs																													
MW9	08/2018	203.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	203.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	203.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	203.25	dry well		0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	203.25	dry well		0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	203.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	203.25	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	203.25	40.41	162.84	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	203.25	39.31	163.94	----	ND<100	**0.58**	**2**	ND<1	**9.2**	**210x**	ND<250	ND	ND<1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW10	Screened Interval 45-25 ft bgs, Total boring depth 45 ft bgs (due to refusal at 45 ft bgs). Monument paved over in 2015.																													
MW10	08/2018	206.94	----		NOT LOCATED (PAVED OVER)																									
	04/15/16	206.94	----		NOT LOCATED (PAVED OVER)																									
	01/07/16	206.94	----		NOT LOCATED																									
	07/06/15	206.94	36.9	170.04	----	ND<100	ND<0.35	ND<1	ND<1	ND<2	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MW11	Screened Interval 56-41 ft bgs, Total boring depth 56 ft bgs																													
MW11	08/2018	208.02	45.00	163.02	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<50	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
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 8 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	Ag
MW11	03/16/18	208.02	43.83	164.19	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	11/02/17	208.02	44.54	163.48	1.1	ND<100	ND<1	ND<1	ND<1	**3.3**	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	208.02	44.16	163.86	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	208.02	42.92	165.10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	208.02	44.93	163.09	44.93	ND<100	ND<1	ND<1	ND<1	ND<3	ND<65	ND<325	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	208.02	44.15	163.87	0.0	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	208.02	44.02	164.00	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	208.02	44.31	163.71	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	208.02	43.32	164.70	----	ND<100	ND<0.35	ND<1	ND<1	ND<2	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
B3E	Screened Interval 49.5-39.5 ft bgs, Total boring depth 49.5 ft bgs																														
B3E	08/2018	205.20	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205.20	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205.20	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/04/16	205.20	dry well		66.26	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	05/13/16	205.20	dry well		50.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/15/16	205.20	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/07/16	205.20	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/06/15	205.20	46.15	159.05	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	04/16/15	205.20	43.81	161.40	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/26/15	205.20	44.59	160.61	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/15/14	205.20	44.61	160.60	----	**100,000**	**10,000**	**11,000**	**3,600**	**17,800**	**13,000**	ND<250	ND<100	**380**	ND<1	**18.9**	**44.9**	ND<1	**10.5**	**1.76**	ND<0.1	ND<1	ND<1	**18.6**	**13.7**	ND<1	ND<1	ND<1	ND<0.1	ND<1	ND<1
	03/2014	205.20	----	----	----	**130,000**	**3,300**	**4,100**	**3,300**	**15,000**	**320**	ND<500	**Chloroform = 5.5 Styrene = 120 4-Chlorotoluene - 120 Methylene chloride = 16 1,2-Dichloroethane = 66 2-Chlorotoluene = 550**	**170**		ND<5	----	ND<5	ND<10	ND<2	ND<0.5	----	----	ND<5	----	ND<5	ND<10	ND<2	ND<0.5	----	----
	07/19/13	205.20	----	----	----	**200,000**	**7,600**	**8,200**	**4,300**	**22,800**	**860**	----	----	**870**	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	01/2013	205.20	----	----	----	**100,000**	**3,800**	**6,800**	**2,000**	**25,026**	**13,000**	ND<250	ND	**4.9**	----	----	----	----	----	----	----	----	----	ND<5	----	ND<5	ND<10	ND<2	ND<0.5	----	----
AS1	Screened Interval 58-54 ft bgs, Total boring depth 58 ft bgs																														
AS1	08/2018	205	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	03/15/18	205	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	10/2017	205	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	07/2017	205	dry well		----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
MTCA Method A Screening Levels for Ground Water					----	**800/1,000[1]**	**5**	**1,000**	**700**	**1,000**	**500**	**500**	**Methylene chloride = 5 1,2-Dichloroethane = 5**	**160**	**TEF = 0.1**	**5**	**----**	**5**	**50**	**50**	**2**	**----**	**----**	**5**	**----**	**5**	**50**	**50**	**2**	**----**	**----**
MTCA Method B Screening Levels for Ground Water[2]					----	**----**	**----**	**----**	**----**	**----**	**----**	**----**	**Chloroform = 80 Styrene = 1,600 2-Chlorotoluene = 160**	**----**	**----**	**----**	**3,200**	**----**	**----**	**----**	**----**	**80**	**80**	**----**	**3,200**	**----**	**----**	**----**	**----**	**80**	**80**

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.

Table 1, Page 9 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

Notes continued:

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 Calcualtion (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.

Table 2. Summary of Findings Associated with the Remediation Well Rehabilitation Efforts Performed Between February 9 and 20, 2018.
University VW - Audi Property
4724 Roosevelt Way Northeast and 4701 11th Avenue Northeast, Seattle, Washington 98105
The Riley Group, Inc. Project No. 2014-068I

Well ID	PRIOR TO WELL REHABILITATION					DURING AND FOLLOWING WELL REHABILITATION								
	Well Construction			Well Siltation		Depth to Water Before and After Well Rehabilitation					Silt Removal During Rehab and Depth to Bottom of Well			
	Well Diameter (inches)	Well Construction Depth (ft. bgs)	Well Screen Interval (ft. bgs)	Depth to Silt In Well (ft. below TOC)	Silt Thickness in Well (ft.)	Depth to Water Before Well Rehab (ft. below TOC)	Total Water/Silt Purged During Well Rehab (gallons)	Depth to Water Immediately After Well Rehab (ft. below TOC)	Depth to Water 4 to 5 Days After Well Rehab (ft. below TOC)	Water Level Recharge 4 to 5 Days After Well Rehab (ft.)	Depth To Silt Prior to Rehab (ft. below TOC)	Depth to Bottom of Well Following Rehab (ft. bgs)	Silt Removed (ft.)	Remaining Thickness of Silt in Well After Rehab (ft.)
DPE1	4	65	65 to 40	61	4	56.9	50	60.5	57.6	2.9	61	65	4	negligible
DPE2	4	65	65 to 40	62.5	2.5	53.3	50	63.5	58.8	4.7	62.5	65	2.5	negligible
DPE3	4	60	60 to 40	57.5	2.5	54.4	50	57.3	57.9	-0.6	57.5	60	2.5	negligible
DPE4	4	65	65 to 40	64	1	----	----	----	----	----	----	----	----	----
DPE5	4	52.5	52.5 to 37.5	51.5	1	----	----	----	----	----	----	----	----	----
DPE6	4	65	65 to 40	63	2	56	50	64.1	57.7	6.4	63	65	2	negligible
DPE7	4	65	65 to 40	61.5	3.5	54	50	62	57.2	4.8	61.5	65	3.5	negligible
DPE8	4	60	60 to 20	58.5	1.5	----	----	----	----	----	----	----	----	----
DPE9	4	60	60 to 20	58	2	53.2	50	56.1	53	3.1	58	60	2	negligible
DPE10	4	60	60 to 20	59	1	54.2	50	56.3	55.3	1	59	60	1	negligible
DPE11	4	60	60 to 20	59	1	54	50	57.3	54.1	3.2	59	60	1	negligible
DPE12	4	60	60 to 20	59.5	0.5	----	----	----	----	----	----	----	----	----
DPE13	4	60	60 to 20	59	1	48.8	50	55.2	47.7	7.5	59	60	1	negligible
DPE14	4	60	60 to 20	60	0	----	----	----	----	----	----	----	----	----
DPE15	4	60	60 to 20	59	1	----	----	----	----	----	----	----	----	----
MW11	2	56	56 to 41	54	2	----	----	----	----	----	----	----	----	----
SVE6	2	40	40 to 20	40	0	37.5	15	38.2	38.3	-0.1	40	40	0	negligible
SVE7	2	40	40 to 20	40	0	30.3	15	35.6	30.7	4.9	40	40	0	negligible
SVE10*	2	66	66 to 18	59.5	6.5	55.6	0	55.6	55.6	0	59.5	----	----	6.5

Notes:
ft. bgs = feet below ground surface.
TOC = top of well casing.
---- = well rehabilitation not performed.
* = SVE10(MW1) could not be rehabilitated due to bent well casing.
In addition to the well rehabilitation efforts and results shown above, groundwater at several of the DPE remediation wells were air sparged in late-January to early-February of 2018 and in July 2018.

APPENDIX A

GROUNDWATER SAMPLING PROTOCOLS AND LABORATORY ANALYSIS

General groundwater sampling protocols and analytical laboratory analyses performed during the 4th Quarter 2017 to 3rd Quarter 2018 are discussed below.

Prior to sampling, RGI recorded depth to groundwater from well top of casing (TOC) using an electronic water level meter.

Prior to sample collection from groundwater monitoring and DPE/SVE remediation wells, wells were purged using a stainless steel GEOSUB submersible pump with pump controller and dedicated polyethylene tubing. Well purging continued until at least 10 gallons/well were purged from the well, or until the well purged dry, whichever came first.

Wells that did not purge dry, after purging 10 gallons of water, included DPE6 , DPE10, DPE12, DPE13, and DPE14. All these wells eventually purged dry.

The wells that purged dry, before 10 gallons of purge water could be generated, generally included DPE2 DPE7, DPE8, DPE11, MW8, SVE5, SVE6, and SVE7.

All well purge water was placed in the 250-gallon plastic totes located inside the fenced remediation compound pending proper off-site disposal.

Following well purging, and after allowing groundwater to adequately recharge, the wells were sampled using the GEOSUB submersible pump with flow controller under relatively low flow conditions.

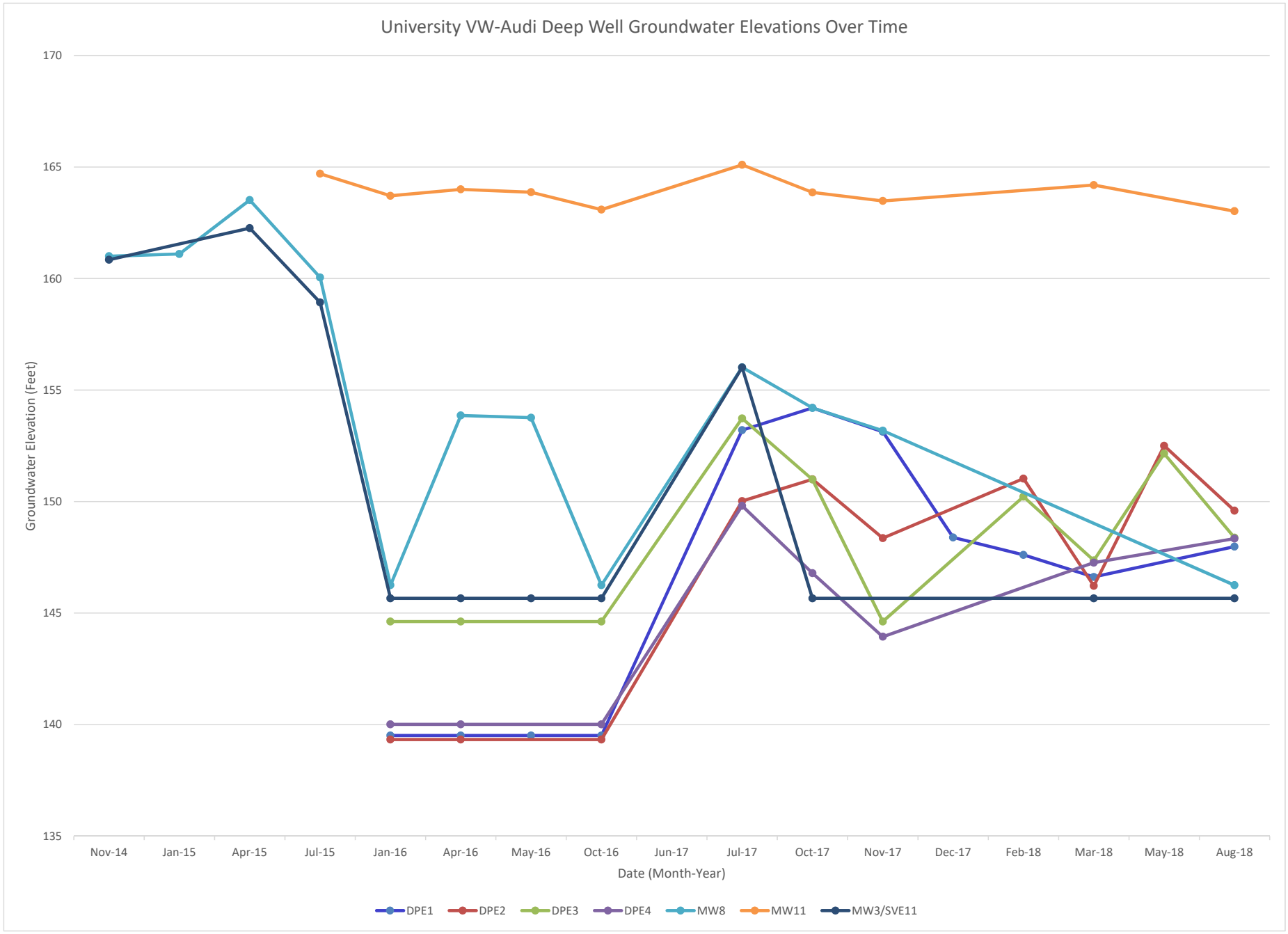
Samples were collected using laboratory-supplied sample containers, placed in an ice-chilled cooler, and transported to the analytical laboratory using standard chain-of-custody protocols.

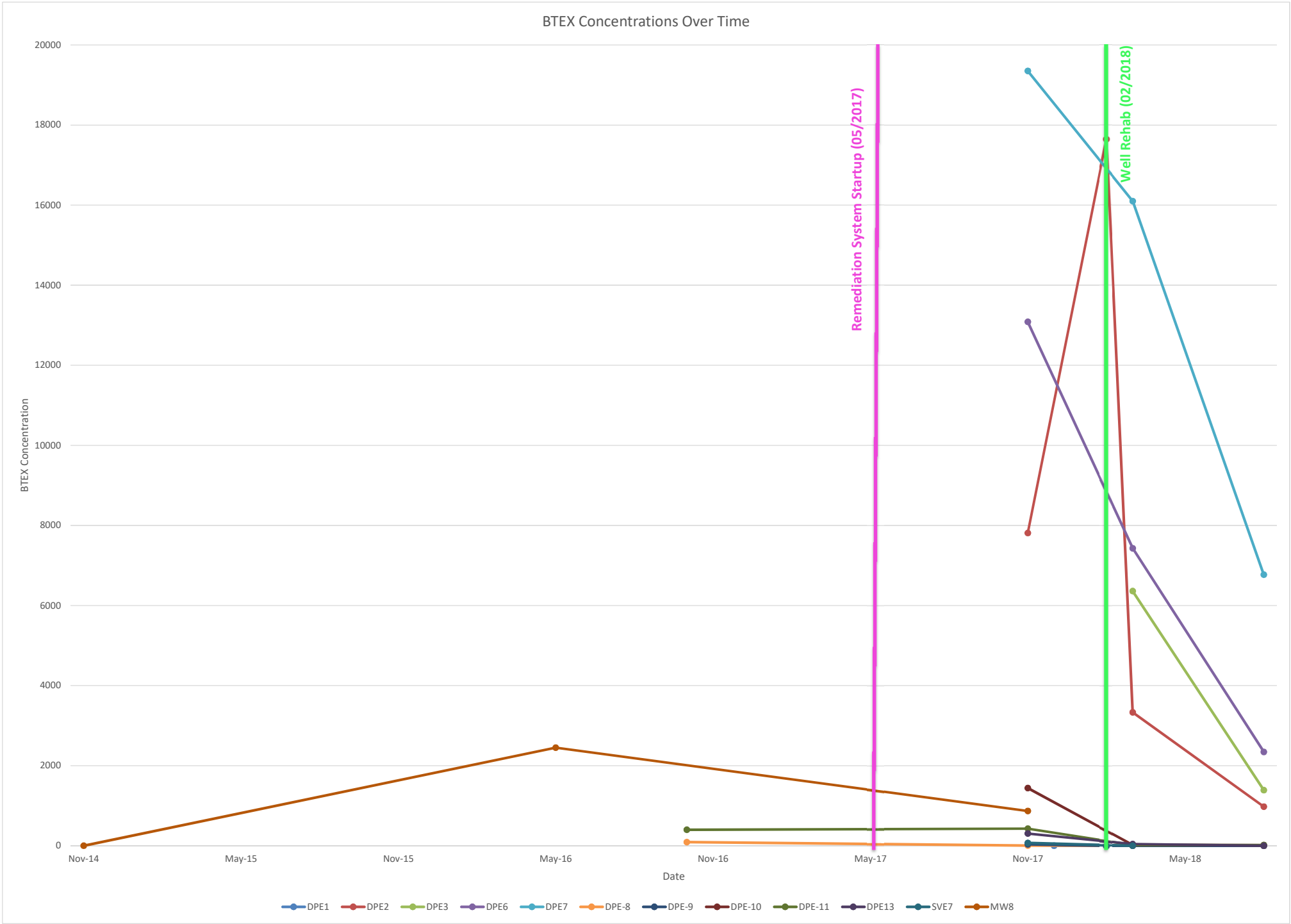
LABORATORY ANALYSIS

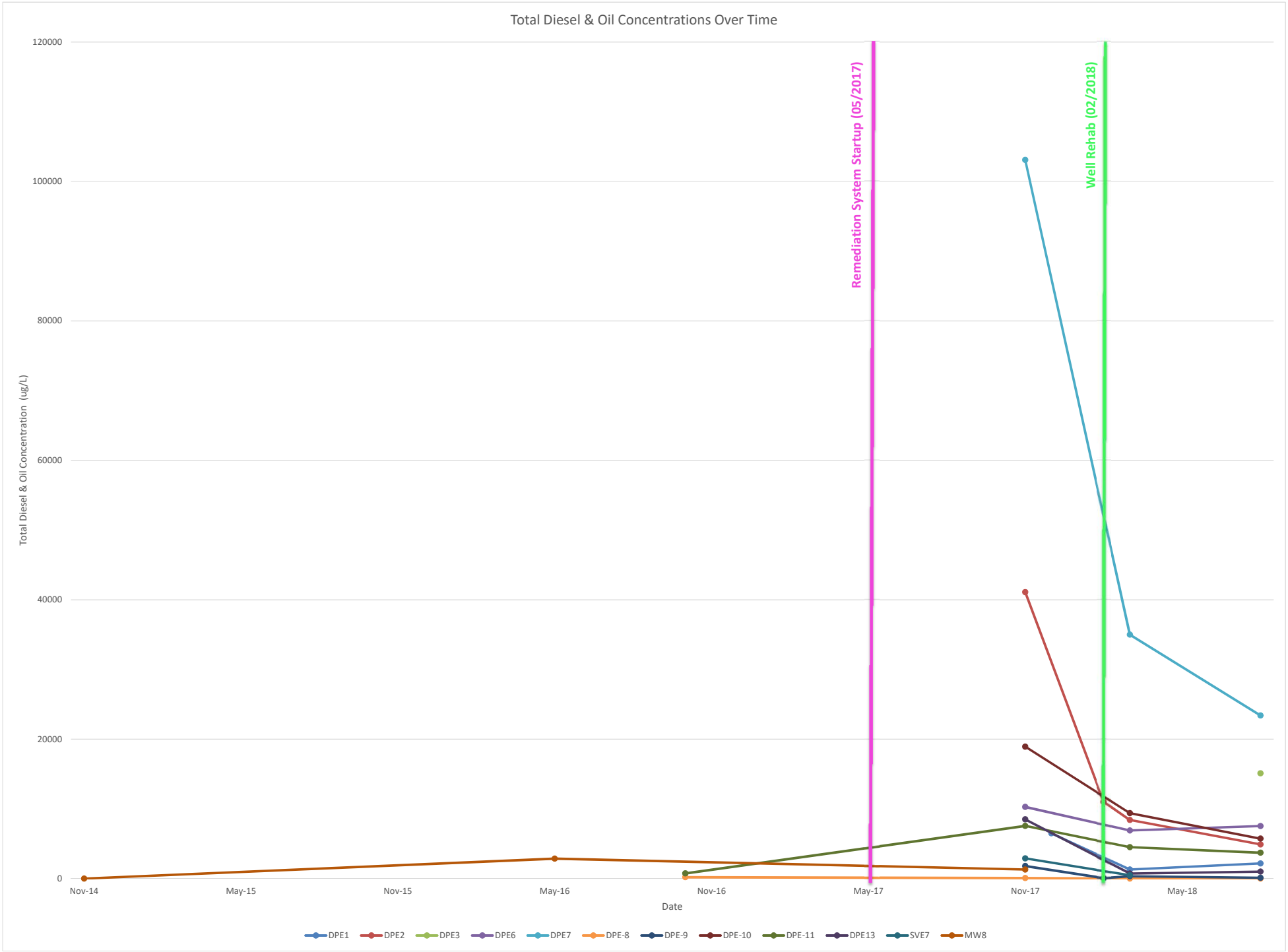
Groundwater samples were submitted to either Friedman & Bruya, Inc. of Seattle, Washington; or the ALS Group of Everett, Washington, for the following analyses:

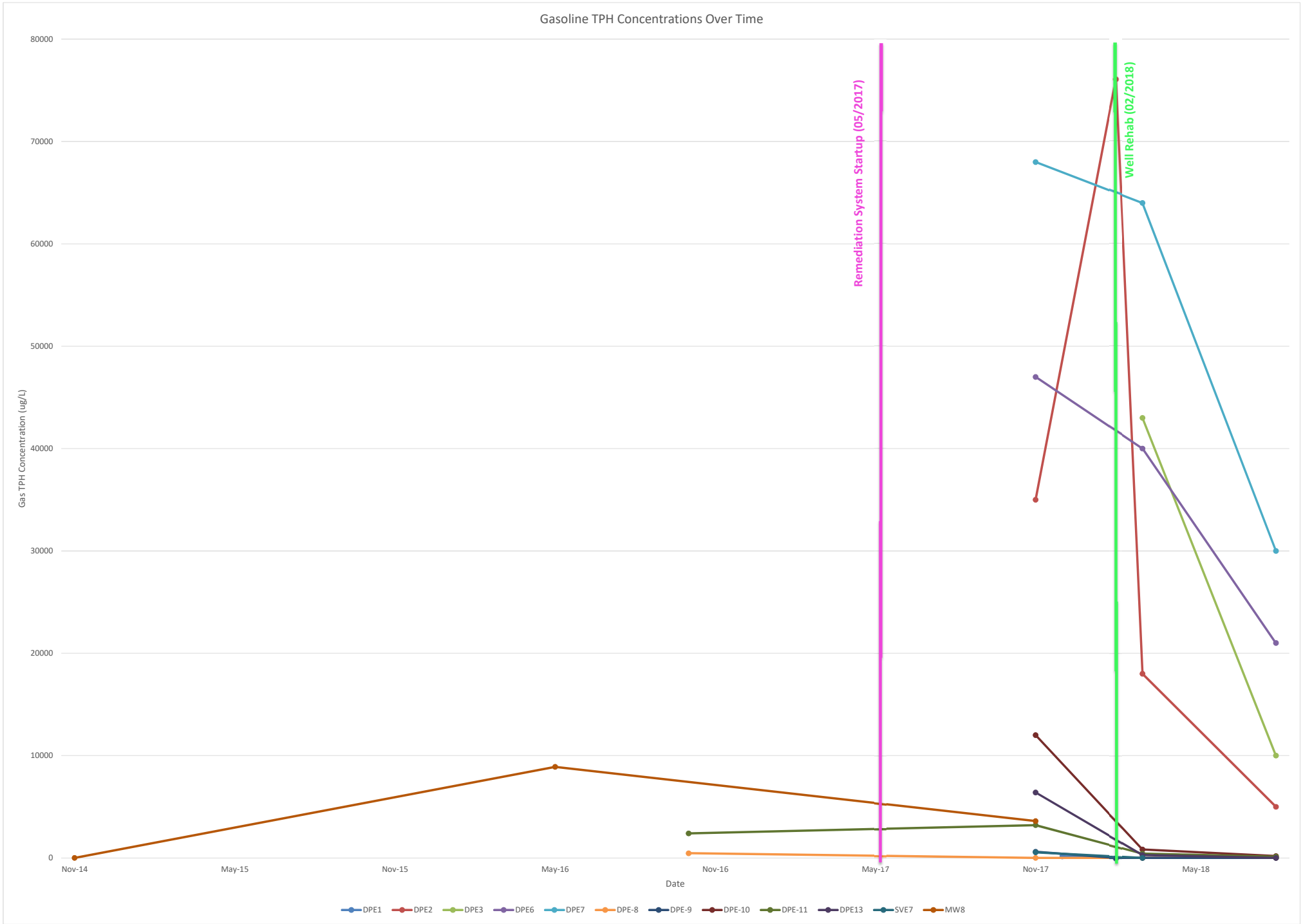
- Gasoline-range total petroleum hydrocarbons (TPH) using the Northwest Test Method NWTPH-Gx.
- Diesel- and motor oil-range total petroleum hydrocarbons (TPH) using the Northwest Test Method NWTPH-Dx (without silica gel.
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8021B.

Copies of the analytical laboratory reports for all groundwater sampling performed during the 4th Quarter 2017 to 3rd Quarter 2018 events, and associated sample chain-of-custody forms, are included in Appendix C.


University VW-Audi Deep Well Groundwater Elevations Over Time
Groundwater Elevation (Feet)
170
165
160
155
150
145
140
135
Nov-14
Jan-15
Apr-15
Jul-15
Jan-16
Apr-16
May-16
Oct-16
Jun-17
Jul-17
Oct-17
Nov-17
Dec-17
Feb-18
Mar-18
May-18
Aug-18
Date (Month-Year)
DPE1
DPE2
DPE3
DPE4
MW8
MW11
MW3/SVE11


BTEX Concentrations Over Time
BTEX Concentration
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
Nov-14
May-15
Nov-15
May-16
Nov-16
May-17
Nov-17
May-18
Date
Remediation System Startup (05/2017)
Well Rehab (02/2018)
DPE1
DPE2
DPE3
DPE6
DPE7
DPE-8
DPE-9
DPE-10
DPE-11
DPE13
SVE7
MW8


Total Diesel & Oil Concentrations Over Time
Remediation System Startup (05/2017)
Well Rehab (02/2018)
Total Diesel & Oil Concentration (ug/L)
120000
100000
80000
60000
40000
20000
0
Nov-14
May-15
Nov-15
May-16
Nov-16
May-17
Nov-17
May-18
Date
DPE1
DPE2
DPE3
DPE6
DPE7
DPE-8
DPE-9
DPE-10
DPE-11
DPE13
SVE7
MW8


Gasoline TPH Concentrations Over Time
Remediation System Startup (05/2017)
Well Rehab (02/2018)
Gas TPH Concentration (ug/L)
80000
70000
60000
50000
40000
30000
20000
10000
0
Nov-14
May-15
Nov-15
May-16
Nov-16
May-17
Nov-17
May-18
Date
DPE1
DPE2
DPE3
DPE6
DPE7
DPE-8
DPE-9
DPE-10
DPE-11
DPE13
SVE7
MW8

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.

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Seattle, WA 98119-2029
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fbi@isomedia.com
www.friedmanandbruya.com

August 16, 2018

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 9, 2018 from the UW VW/Audi 2014-068I, F&BI 808243 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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
TRG0816R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 9, 2018 by Friedman & Bruya, Inc. from the The Riley Group UW VW/Audi 2014-068I, F&BI 808243 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
808243 -01	DPE1
808243 -02	DPE2
808243 -03	DPE3
808243 -04	DPE4
808243 -05	DPE6
808243 -06	DPE7
808243 -07	DPE8
808243 -08	DPE9
808243 -09	DPE10
808243 -10	DPE11
808243 -11	DPE12
808243 -12	DPE13
808243 -13	DPE15
808243 -14	MW11

All quality control requirements were acceptable.

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243
Date Extracted: 08/10/18
Date Analyzed: 08/10/18 and 08/13/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DPE1 808243-01	<1	<1	<1	<3	<100	87
DPE2 808243-02 1/10	45	100	170	660	5,000	89
DPE3 808243-03 1/5	11	37	240	1,100	10,000	97
DPE4 808243-04	<1	<1	<1	<3	<100	86
DPE6 808243-05 1/5	9.9	34	<5	2,300	21,000	95
DPE7 808243-06 1/40	110	380	280	6,000	30,000	88
DPE8 808243-07	<1	<1	<1	<3	<100	86
DPE9 808243-08	<1	<1	<1	<3	<100	87
DPE10 808243-09	2.0	1.3	<1	11	180	90
DPE11 808243-10	6.8	1.2	4.4	5.4	130	87

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243
Date Extracted: 08/10/18
Date Analyzed: 08/10/18 and 08/13/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DPE12 808243-11	<1	<1	<1	<3	<100	86
DPE13 808243-12	<1	<1	<1	<3	<100	87
DPE15 808243-13	<1	<1	<1	<3	<100	86
MW11 808243-14	<1	<1	<1	<3	<100	88
Method Blank 08-1743 MB	<1	<1	<1	<3	<100	87

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243
Date Extracted: 08/10/18
Date Analyzed: 08/10/18 and 08/13/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
DPE1 808243-01	1,800	370 x	112
DPE2 808243-02	4,400	500 x	105
DPE3 808243-03	14,000	1,100 x	112
DPE4 808243-04	78 x	<250	112
DPE6 808243-05	7,100	430 x	112
DPE7 808243-06	22,000	1,400 x	107
DPE8 808243-07	<50	<250	120
DPE9 808243-08	110	<250	113
DPE10 808243-09	4,900	830 x	105
DPE11 808243-10	3,400	310 x	126
DPE12 808243-11	<50	<50	ip

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243
Date Extracted: 08/10/18
Date Analyzed: 08/10/18 and 08/13/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
DPE13 808243-12	1,000	<50	114
DPE15 808243-13	<50	<50	118
MW11 808243-14	<50	<50	123
Method Blank 08-1813 MB	<50	<250	110

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243

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

Laboratory Code: 808243-01 (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	93	72-119
Toluene	ug/L (ppb)	50	94	71-113
Ethylbenzene	ug/L (ppb)	50	98	72-114
Xylenes	ug/L (ppb)	150	91	72-113
Gasoline	ug/L (ppb)	1,000	106	70-119

Date of Report: 08/16/18
Date Received: 08/09/18
Project: UW VW/Audi 2014-068I, F&BI 808243

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	100	112	61-133	11

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.

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.

808243

SAMPLE CHAIN OF CUSTODY

ME 08/09/18 VW24/DO4

Page # 1 of 2

Report To Paul Riley

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone 425-415-0551 Email priley@riley-group.com

SAMPLERS (*signature*) Tait Russell

PROJECT NAME VW VW/Audi

PO # 2014-068I

REMARKS ctrussell@riley-group.com

INVOICE TO

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
DPE1	01 A-D	8/8	1355	water	4		X	X	X								
DPE2	02	8/8	1235				X	X	X								
DPE3	03	8/8	1200				X	X	X								
DPE4	04	8/8	1100				X	X	X								
DPE6	05	8/8	1310				X	X	X								
DPE7	06	8/8	1430				X	X	X								
DPE8	07	8/7	1050				X	X	X								
DPE9	08	8/7	1220				X	X	X								
DPE10	09	8/7	1315				X	X	X								
DPE11	10	8/8	1015				X	X	X								Samples received at 5 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tait Russell	RGI	8/8	1700
Received by:	Wilson Thomas	FEDEX	8.9.18	10:35
Relinquished by:				
Received by:	Nhan Phan	FEBI	8/9/18	1145

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

808243

SAMPLE CHAIN OF CUSTODY

ME 08/09/18 VW4/DO4

Report To Paul Riley

Company RGI

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone 425-415-0551 Email priley@rileygroup.com

SAMPLERS (*signature*) Tait Russell

PROJECT NAME: VW/Audi

PO #: 2014-0681

REMARKS: cc: trussell@rileygroup.com

INVOICE TO

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
DPE12	11 A-D	8/8	910	Water	4		X	X	X								
DPE13	12	8/7	855				X	X	X								
DPE15	13	8/7	955				X	X	X								
MW11	14	8/7	1145	↓	↓		X	X	X								
																	Samples received at 5 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Tait Russell	Tait Russell	RGI	8/8	[illegible]
Received by: [signature]	Wilson Yamamas	FedEx	8.9.18	1035
Relinquished by:				
Received by: [signature]	Khan Phan	FCBT	8/9/18	1145

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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fbi@isomedia.com
www.friedmanandbruya.com

March 23, 2018

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 19, 2018 from the Audi 2014-068I, F&BI 803294 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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
TRG0323R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 19, 2018 by Friedman & Bruya, Inc. from the The Riley Group Audi 2014-068I, F&BI 803294 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
803294 -01	MW11
803294 -02	SVE7
803294 -03	DPE1
803294 -04	DPE2
803294 -05	DPE3
803294 -06	DPE4
803294 -07	DPE6
803294 -08	DPE7
803294 -09	DPE8
803294 -10	DPE9
803294 -11	DPE10
803294 -12	DPE11
803294 -13	DPE12
803294 -14	DPE13
803294 -15	DPE14
803294 -16	DPE15

All quality control requirements were acceptable.

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294
Date Extracted: 03/20/18
Date Analyzed: 03/20/18 and 03/21/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW11 803294-01	<1	<1	<1	<3	<100	85
SVE7 803294-02	<1	<1	<1	<3	<100	86
DPE1 803294-03	<1	<1	<1	5.7	<100	84
DPE2 803294-04 1/20	63	280	290	2,700	18,000	84
DPE3 803294-05	34	320	820	6,000	43,000	80
DPE4 803294-06	<1	<1	<1	<3	<100	85
DPE6 803294-07 1/10	30	110	290	7,000	40,000	86
DPE7 803294-08 1/40	60	670	370	15,000	64,000	83
DPE8 803294-09	<1	<1	<1	<3	<100	84
DPE9 803294-10	<1	<1	<1	<3	<100	85

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294
Date Extracted: 03/20/18
Date Analyzed: 03/20/18 and 03/21/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DPE10 803294-11	2.3	2.1	<1	17	820	86
DPE11 803294-12	3.5	1.5	3.1	12	420	85
DPE12 803294-13	<1	<1	<1	<3	<100	85
DPE13 803294-14	1.5	<1	20	21	280	85
DPE14 803294-15	<1	<1	<1	<3	<100	84
DPE15 803294-16	<1	<1	<1	<3	<100	84
Method Blank	<1	<1	<1	<3	<100	85

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294
Date Extracted: 03/20/18
Date Analyzed: 03/20/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW11 803294-01 1/1.2	<60	<300	104
SVE7 803294-02	490	<250	102
DPE1 803294-03	1,300	<250	105
DPE2 803294-04	8,400	<250	97
DPE4 803294-06 1/1.2	<60	<300	98
DPE6 803294-07	6,900	<250	100
DPE7 803294-08	34,000	1,000 x	103
DPE8 803294-09 1/1.2	<60	<300	116
DPE9 803294-10 1/1.2	330	<300	104

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294
Date Extracted: 03/20/18
Date Analyzed: 03/20/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
DPE10 803294-11 1/1.2	8,800	600 x	109
DPE11 803294-12	4,200	310 x	103
DPE12 803294-13	<50	<250	104
DPE13 803294-14 1/1.2	730	<300	100
DPE14 803294-15 1/1.2	<60	<300	90
DPE15 803294-16	<50	<250	100
Method Blank 08-600 MB	<50	<250	104

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294

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

Laboratory Code: 803294-01 (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	103	72-119
Toluene	ug/L (ppb)	50	96	71-113
Ethylbenzene	ug/L (ppb)	50	99	72-114
Xylenes	ug/L (ppb)	150	86	72-113
Gasoline	ug/L (ppb)	1,000	98	70-119

Date of Report: 03/23/18
Date Received: 03/19/18
Project: Audi 2014-068I, F&BI 803294

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	104	96	61-133	8

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 compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.

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.

803294

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 03-19-18 VW5/E04

Page # 1 of 2

SAMPLERS (*signature*)	
PROJECT NAME: Audi	PO #: 2014-068I
REMARKS: ccspriley@riley-group.com	INVOICE TO:

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel/Oil	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											
MW11	01 A-D	3/16	945	water	4		X	X	X								
SVE7	02	3/15	900		4		X	X	X								
DPE1	03	3/16	1415		4		X	X	X								
DPE2	04	3/16	1330		4		X	X	X								
DPE3	05 A-B	3/16	1330		2			X	X								Only VOAs!
DPE4	06 A-D	3/15	1410	↓	4		X	X	X								
~~DPE5~~		~~3/16~~															
DPE6	07 A-D	3/16	1240	water	4		X	X	X								
DPE7	08	3/16	1410		4		X	X	X								
~~DPE8~~	09	3/15	1310	↓	4		X	X	X								

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tait Russell	RGI	3/16	645
Received by:	Jared Underkoffler	Fedex	3/19	9:15 AM
Relinquished by:				
Received by:	Nham Phan	FEBI	3/19/18	1000

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

803294 [redacted]

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 03-19-18 [redacted] VW5/E04

Page # 2 of 2

SAMPLERS (signature)		TURNAROUND TIME
[signature]		☒ Standard Turnaround ☐ RUSH ____ Rush charges authorized by:
PROJECT NAME Audi	PO # 2014-068I	
REMARKS cc: priley@riley-group.com	INVOICE TO	SAMPLE DISPOSAL ☒ Dispose after 30 days ☐ Archive Samples ☐ Other ____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel/oil	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
DPE9	10 A-D	3/16	945	Water	4		X	X	X								
DPE10	11	3/16	1045	↓	4		X	X	X								
DPE11	12	3/16	1120	↓	4		X	X	X								
DPE12	13	3/15	1015	↓	4		X	X	X								
DPE13	14	3/15	1230	↓	4		X	X	X								
DPE14	15	3/15	1000	↓	4		X	X	X								
DPE15	16	3/15	1045	↓	4		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:	[signature]	Tait Russell	RGI	3/16	1645
Received by:	[signature]	Jared Underdown	Fedex	3/19	9:15AM
Relinquished by:					
Received by:	[signature]	Nhan Phan	FEBI	3/19/18	1000

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

February 16, 2018

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 February 12, 2018 from the Audi 2014-068K, F&BI 802175 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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
TRG0216R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 12, 2018 by Friedman & Bruya, Inc. from the The Riley Group Audi 2014-068K, F&BI 802175 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
802175 -01	DPE2

All quality control requirements were acceptable.

Date of Report: 02/16/18
Date Received: 02/12/18
Project: Audi 2014-068K, F&BI 802175
Date Extracted: 02/13/18
Date Analyzed: 02/14/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DPE2 802175-01 1/100	140	2,200	2,300	13,000	76,000	97
Method Blank	<1	<1	<1	<3	<100	92

Date of Report: 02/16/18
Date Received: 02/12/18
Project: Audi 2014-068K, F&BI 802175
Date Extracted: 02/13/18
Date Analyzed: 02/13/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
DPE2 802175-01	11,000	<250	68
Method Blank 08-314 MB3	<50	<250	92

Date of Report: 02/16/18
Date Received: 02/12/18
Project: Audi 2014-068K, F&BI 802175

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

Laboratory Code: 802139-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Benzene	ug/L (ppb)	7.5	7.6	1
Toluene	ug/L (ppb)	1.3	<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	108	72-119
Toluene	ug/L (ppb)	50	103	71-113
Ethylbenzene	ug/L (ppb)	50	106	72-114
Xylenes	ug/L (ppb)	150	92	72-113
Gasoline	ug/L (ppb)	1,000	91	70-119

Date of Report: 02/16/18
Date Received: 02/12/18
Project: Audi 2014-068K, F&BI 802175

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	84	84	61-133	0

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 compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.

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.

802175

SAMPLE CHAIN OF CUSTODY ME 02-12-18

302 / VW1

Page # 1 of 1

Report To Paul Riley

Company The Riley Group, Inc

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone 425-415-0551 Email priley@riley-group.com

SAMPLERS (signature) [signature]

PROJECT NAME	PO #
Audi	2014-068K

REMARKS	INVOICE TO
cc: trussell@riley-group.com	

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM				Notes
OPE2	01 A-D	2/9/18		water	4		X	X	X							

Samples received at 4 °C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Todd Russell	RGI	2/12	945
Received by:	[signature]	WES HERRING	Fed Ex	2/12/18	11:15 AM
Relinquished by:	[signature]	WES HERRING	Fed Ex	2/12/18	12:00 PM
Received by:	[signature]	Eric Young	FEB	2/12/18	1200

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

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

February 28, 2018

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 February 19, 2018 from the Audi 2014-068K, F&BI 802307 project. There are 6 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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
TRG0228R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on February 19, 2018 by Friedman & Bruya, Inc. from the The Riley Group Audi 2014-068K, F&BI 802307 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
802307 -01	DPE9

All quality control requirements were acceptable.

Date of Report: 02/28/18
Date Received: 02/19/18
Project: Audi 2014-068K, F&BI 802307
Date Extracted: 02/23/18
Date Analyzed: 02/23/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
DPE9 802307-01	<1	1.1	<1	<3	<100	95
Method Blank	<1	<1	<1	<3	<100	85

Date of Report: 02/28/18
Date Received: 02/19/18
Project: Audi 2014-068K, F&BI 802307
Date Extracted: 02/20/18
Date Analyzed: 02/20/18

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
DPE9 802307-01 1/1.2	79 x	<300	ip
Method Blank 08-383 MB	<50	<250	88

Date of Report: 02/28/18
Date Received: 02/19/18
Project: Audi 2014-068K, F&BI 802307

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: 802353-01 (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	107	72-119
Toluene	ug/L (ppb)	50	103	71-113
Ethylbenzene	ug/L (ppb)	50	106	72-114
Xylenes	ug/L (ppb)	150	91	72-113
Gasoline	ug/L (ppb)	1,000	97	70-119

Date of Report: 02/28/18
Date Received: 02/19/18
Project: Audi 2014-068K, F&BI 802307

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	84	80	58-134	5

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 compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.

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.

802307

SAMPLE CHAIN OF CUSTODY

ME 2/19/18 1 CO1/YW1

Page # 1 of 1

Report To Paul Riley

Company The Riley Group, Inc.

Address 17522 Bothell Way NE

City, State, ZIP Bothell, WA 98011

Phone 425-415-0551 Email priley@riley-group.com

SAMPLERS (*signature*)

PROJECT NAME: Audi

PO #: 2014-068K

REMARKS

INVOICE TO

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
DUP 9	01 A D	2/16	900	Water	4		X	X	X								
													Samples received at 4 °C				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tom Kussell	RGI	2/19	945
Received by:	Eric Glover	FBA	2/19	315
Relinquished by:				
Received by:				

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

December 28, 2017

Mr. Paul Riley
The Riley Group, Inc.
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Dear Mr. Riley,

On December 22nd, 2 samples were received by our laboratory and assigned our laboratory project number EV17120153. The project was identified as your 2014-068I. The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	The Riley Group, Inc. 17522 Bothell Way NE, Suite A Bothell, WA 98011	DATE:	12/28/2017
		ALS JOB#:	EV17120153
		ALS SAMPLE#:	EV17120153-01
CLIENT CONTACT:	Paul Riley	DATE RECEIVED:	12/22/2017
CLIENT PROJECT:	2014-068I	COLLECTION DATE:	12/22/2017 10:00:00 AM
CLIENT SAMPLE ID	DPE1	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**160**	50	1	UG/L	12/27/2017	SNC
Benzene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Toluene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Xylenes	EPA-8021	U	3.0	1	UG/L	12/27/2017	SNC
TPH-Diesel Range	NWTPH-DX	**6500**	130	1	UG/L	12/27/2017	EBS
TPH-Oil Range	NWTPH-DX	U	250	1	UG/L	12/27/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**86.9**	12/27/2017	SNC
TFT	EPA-8021	**101**	12/27/2017	SNC
C25	NWTPH-DX	**93.9**	12/27/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains an unidentified gasoline range product and diesel.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	The Riley Group, Inc. 17522 Bothell Way NE, Suite A Bothell, WA 98011	DATE: ALS JOB#: ALS SAMPLE#:	12/28/2017 EV17120153 EV17120153-02
CLIENT CONTACT:	Paul Riley	DATE RECEIVED:	12/22/2017
CLIENT PROJECT:	2014-068I	COLLECTION DATE:	12/22/2017 10:30:00 AM
CLIENT SAMPLE ID	SVE10	WDOE ACCREDITATION:	C601

SAMPLE DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	**10000**	500	10	UG/L	12/27/2017	SNC
Benzene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Toluene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	12/27/2017	SNC
Xylenes	EPA-8021	U	3.0	1	UG/L	12/27/2017	SNC
TPH-Diesel Range	NWTPH-DX	U	6700	2	UG/L	12/27/2017	EBS
TPH-Oil Range	NWTPH-DX	**11000**	500	2	UG/L	12/27/2017	EBS

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT 10X Dilution	NWTPH-GX	**95.0**	12/27/2017	SNC
TFT	EPA-8021	**135**	12/27/2017	SNC
C25 2X Dilution	NWTPH-DX	**105**	12/27/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.
Chromatogram indicates that it is likely that sample contains highly weathered gasoline, diesel and lube oil.
Diesel range product reporting limits raised due to motor oil range product overlap.
Diesel range product reporting limits raised due to volatile range product overlap.
Gasoline range product results biased high due to diesel range product overlap.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	The Riley Group, Inc. 17522 Bothell Way NE, Suite A Bothell, WA 98011	DATE:	12/28/2017
		ALS SDG#:	EV17120153
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Paul Riley		
CLIENT PROJECT:	2014-068I		

LABORATORY BLANK RESULTS

MBG-122117W2 - Batch 123738 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	UG/L	50	12/21/2017	SNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122117W2 - Batch 123738 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	UG/L	1.0	12/21/2017	SNC
Toluene	EPA-8021	U	UG/L	1.0	12/21/2017	SNC
Ethylbenzene	EPA-8021	U	UG/L	1.0	12/21/2017	SNC
Xylenes	EPA-8021	U	UG/L	3.0	12/21/2017	SNC

U - Analyte analyzed for but not detected at level above reporting limit.

MB-122717W - Batch 123872 - Water by NWTPH-DX

ANALYTE	METHOD	RESULTS	UNITS	REPORTING LIMITS	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range	NWTPH-DX	U	UG/L	130	12/27/2017	EBS
TPH-Oil Range	NWTPH-DX	U	UG/L	250	12/27/2017	EBS

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	The Riley Group, Inc. 17522 Bothell Way NE, Suite A Bothell, WA 98011	DATE:	12/28/2017
		ALS SDG#:	EV17120153
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Paul Riley		
CLIENT PROJECT:	2014-068I		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 123738 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**80.4**			66.5	122.7	12/21/2017	SNC
TPH-Volatile Range - BSD	NWTPH-GX	**78.0**	**3**		66.5	122.7	12/21/2017	SNC

ALS Test Batch ID: 123738 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**93.6**			83	120	12/21/2017	SNC
Benzene - BSD	EPA-8021	**96.6**	**3**		83	120	12/21/2017	SNC
Toluene - BS	EPA-8021	**93.9**			85	115	12/21/2017	SNC
Toluene - BSD	EPA-8021	**98.2**	**5**		85	115	12/21/2017	SNC
Ethylbenzene - BS	EPA-8021	**97.4**			85	113	12/21/2017	SNC
Ethylbenzene - BSD	EPA-8021	**101**	**3**		85	113	12/21/2017	SNC
Xylenes - BS	EPA-8021	**94.4**			85	116	12/21/2017	SNC
Xylenes - BSD	EPA-8021	**96.9**	**3**		85	116	12/21/2017	SNC

ALS Test Batch ID: 123872 - Water by NWTPH-DX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	LIMITS MIN	LIMITS MAX	ANALYSIS DATE	ANALYSIS BY
TPH-Diesel Range - BS	NWTPH-DX	**83.9**			67	125.2	12/27/2017	EBS
TPH-Diesel Range - BSD	NWTPH-DX	**83.5**	**1**		67	125.2	12/27/2017	EBS

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 9820 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Group USA, Corp dba ALS Environmental

ALS Environmental
8620 Holly Drive, Suite 100
Everett, WA 98208
Phone (425) 356-2600
Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only): EV17120153

Date 12/22 Page 1 Of 1

PROJECT ID: 2014-068I
REPORT TO COMPANY: Riley Group Inc.
PROJECT MANAGER: Paul Riley
ADDRESS: 17522 Bothell Way NE
Bothell, WA, 98011
PHONE: 425 415 0551 FAX: 425 415 0311
P.O. #: E-MAIL: pRiley@riley-group.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

ANALYSIS REQUESTED / OTHER (Specify)

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA 8021 ☑ BTEX by EPA 8260 ☐	MTBE by EPA 8021 ☐ MTBE by EPA 8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA 8270 SIM	PCB by EPA 8082 ☐ Pesticides by EPA 8081 ☐	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	Diesel/oil TPH (NO silica gel)						NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. DPE1	12/22	10:00	1L Amber water	1																X						1	
2. DPE1	|	10:00	3 Voa water	1			X	X																		3	
3. SVE10	|	10:30	1L-Amber water	2																X						1	
4. SVE10	|	10:30	3 Voa water	2			X	X																		3	
5.																											
6.																											
7.																											
8.																											
9.																											
10.																											

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):
1. Relinquished By: [signature], RGI 2:45
Received By: [signature], ALS, 12/22/17, 2:45
2. Relinquished By:
Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: ☒ 10 (Standard) ☐ 5 ☐ 3 ☐ 2 ☐ 1 ☐ SAME DAY

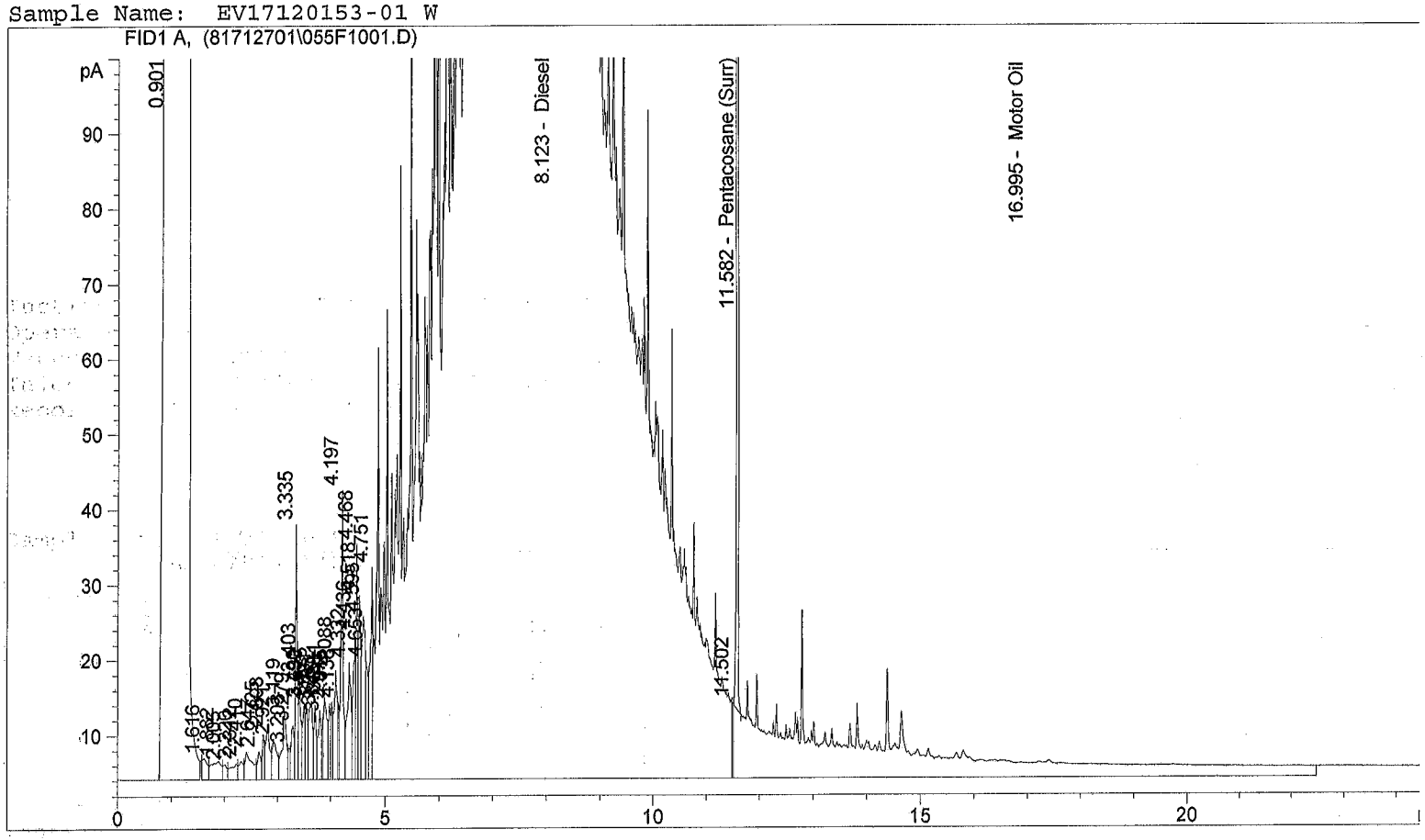
Fuels & Hydrocarbon Analysis: ☒ 5 (Standard) ☐ 3 ☐ 1 ☐ SAME DAY

OTHER:
Specify:

*Turnaround request less than standard may incur Rush Charges

Instrument #81 Data File: C:\HPCHEM\1\DATA\81712701\055F1001.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO1216.M
Injection Date & Time: 12/27/2017 12:19:22 PM 12/27/2017 12:19:22 PM
Report Creation: 12/27/2017 12:51:59 PM

Sample Name: EV17120153-01 W



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.123	FID1 A,	Diesel	38531.605	3243.633
11.582		Pentacosane (Surr)	1117.015	37.575 94%
16.995		Motor Oil	1979.608	189.318

500 mL

$D = 3243.633\ \mu g/mL \times \frac{1.0\ mL}{500\ mL} = 6500\ \mu g/L$

Diesel fuel

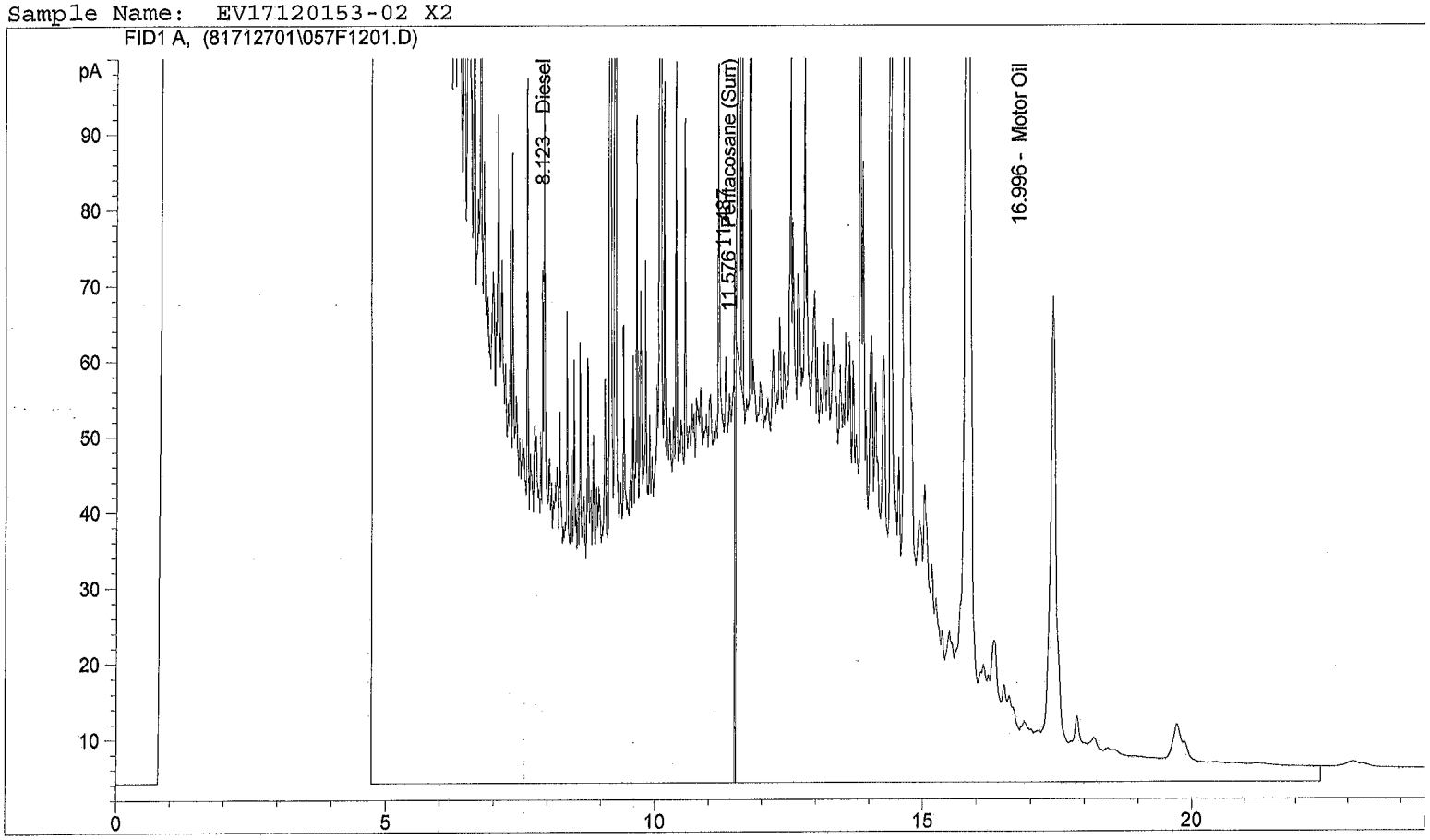
$0 < 250\ \mu g/L$

REVIEWED BY & DATE 12/28/17

12-27-17 DC

Instrument #81 Data File: C:\HPCHEM\1\DATA\81712701\057F1201.D
Operator: EBS
Method: C:\HPCHEM\1\METHODS\FDMO1216.M
Injection Date & Time: 12/27/2017 1:19:46 PM 12/27/2017 1:19:46 PM
Report Creation: 12/27/2017 1:47:10 PM

Sample Name: EV17120153-02 X2



Ret. Time	Signal	Compound Name	Response	Amount ug/mL
8.123	FID1 A,	Diesel	49218.945	4143.305
11.576		Pentacosane (Surr)	622.122	20.928 ×2=105%
16.996		Motor Oil	17156.242	1640.724

300 ml

$D < 1000\ \mu g/ml \times \frac{1.0\,ml}{300\,ml} \times 2 < 6700\ \mu g/L$ *

$D = 11000\ \mu g/L$

lube oil

REVIEWED BY & DATE CS 12/28/17

* RL raised due to gasoline & motor oil range product overlap

12-27-17 DC

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

November 17, 2017

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 November 3, 2017 from the University VW/Audi PO 2014-068I, F&BI 711085 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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
TRG1117R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 3, 2017 by Friedman & Bruya, Inc. from the The Riley Group University VW/Audi PO 2014-068I, F&BI 711085 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
711085 -01	DPE2
711085 -02	DPE4
711085 -03	DPE6
711085 -04	DPE7
711085 -05	DPE8
711085 -06	DPE9
711085 -07	DPE10
711085 -08	DPE11
711085 -09	DPE12
711085 -10	DPE13
711085 -11	DPE14
711085 -12	DPE15
711085 -13	SVE6
711085 -14	SVE7
711085 -15	MW8
711085 -16	MW11

All quality control requirements were acceptable.

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085
Date Extracted: 11/10/17
Date Analyzed: 11/10/17 and 11/13/17

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
DPE2 711085-01 1/20	31	340	740	6,700	35,000	99
DPE4 711085-02	<1	<1	<1	<3	<100	87
DPE6 711085-03 1/10	65	820	1,200	11,000	47,000	110
DPE7 711085-04 1/40	370	2,300	680	16,000	68,000	98
DPE8 711085-05	<1	<1	<1	3.4	<100	93
DPE9 711085-06	<1	3.5	1.4	31	600	90
DPE10 711085-07	44	97	<1	1,300	12,000	105
DPE11 711085-08 1/10	22	39	27	340	3,200	90
DPE12 711085-09	<1	<1	<1	<3	<100	94
DPE13 711085-10	5.3	4.5	5.4	290	6,400	99

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085
Date Extracted: 11/10/17
Date Analyzed: 11/10/17 and 11/13/17

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
DPE14 711085-11	<1	<1	<1	<3	<100	91
DPE15 711085-12	<1	<1	<1	<3	<100	88
SVE6 711085-13 1/40	1,800	1,700	<40	5,500	37,000	96
SVE7 711085-14	<1	1.5	<1	69	550	91
MW8 711085-15	6.3	140	53	670	3,600	101
MW11 711085-16	<1	<1	<1	3.3	<100	93
Method Blank 07-2525 MB	<1	<1	<1	<3	<100	87
Method Blank 07-2460 MB	<1	<1	<1	<3	<100	91

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085
Date Extracted: 11/07/17
Date Analyzed: 11/07/17 and 11/08/17

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
DPE2 711085-01 1/1.2	40,000	1,100 x	ip
DPE4 711085-02	<50	<250	82
DPE6 711085-03 1/1.1	9,900	380 x	85
DPE7 711085-04 1/12	100,000	3,100 x	38 d
DPE8 711085-05 1/1.1	70 x	<280	115
DPE9 711085-06	1,800	<250	85
DPE10 711085-07 1/1.2	18,000	930 x	43
DPE11 711085-08 1/1.1	7,000	560 x	93
DPE12 711085-09	<50	<250	84
DPE13 711085-10 1/1.2	8,000	500 x	88
DPE14 711085-11	74 x	<250	89

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085
Date Extracted: 11/07/17
Date Analyzed: 11/07/17 and 11/08/17

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

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
DPE15 711085-12	99 x	<250	91
SVE6 711085-13	29,000	1,700 x	85
SVE7 711085-14 1/1.2	2,900	<300	97
MW8 711085-15 1/1.5	1,300 x	<380	92
MW11 711085-16	<50	<250	92
Method Blank 07-2491 MB	<50	<250	75

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085

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

Laboratory Code: 711200-01 (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)	4.7	3.8	21 a
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	650	510	24 hr

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	107	65-118
Toluene	ug/L (ppb)	50	105	72-122
Ethylbenzene	ug/L (ppb)	50	110	73-126
Xylenes	ug/L (ppb)	150	105	74-118
Gasoline	ug/L (ppb)	1,000	95	69-134

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085

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

Laboratory Code: 710463-04 (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)	3.7	3.3	11
Xylenes	ug/L (ppb)	<3	<3	nm
Gasoline	ug/L (ppb)	470	410	14

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	103	72-122
Ethylbenzene	ug/L (ppb)	50	109	73-126
Xylenes	ug/L (ppb)	150	104	74-118
Gasoline	ug/L (ppb)	1,000	99	69-134

Date of Report: 11/17/17
Date Received: 11/03/17
Project: University VW/Audi PO 2014-068I, F&BI 711085

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	96	96	63-142	0

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 compound 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. Compounds in the sample matrix interfered with the quantitation of the analyte.

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.

711085

SAMPLE CHAIN OF CUSTODY

ME 11-03-17 AQ4/VW5

Page # 1 of 2

Send Report To: Paul Riley
Company: The Riley Group, Inc.
Address: 17522 Bothell Way NE
City, State, ZIP: Bothell WA 98011
Phone #: (425) 415-0551 Fax #: priley@rileygroup.com

SAMPLERS (signature): Taft Russell

PROJECT NAME/NO.: University VW/Audi

PO #: 2014-0681

REMARKS: cc: trussell@rileygroup.com

TURNAROUND TIME
- [X] Standard (1 Weeks) If possible
- [ ] RUSH
- Rush charges authorized by:

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

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Notes
DPE2	01 A-E	11/2	1230	Water	5	X	X	X				4 VOAs, 1-500mL Amb
DPE4	02	11/2	1300			X	X	X				
DPE6	03	11/1	1530			X	X	X				
DPE7	04	11/1	1705			X	X	X				
DPE8	05	11/2	1540			X	X	X				
DPE9	06	11/2	1200			X	X	X				
DPE10	07	11/1	1405			X	X	X				
DPE11	08	11/2	950			X	X	X				
DPE12	09	11/1	1330			X	X	X				
DPE13	10	11/1	1105			X	X	X				

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

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Taft Russell	Taft Russell	RGI	11/3	1115
Received by:	P Riley	P. Riley	RGI	11/3	
Relinquished by:	Bill Gleason	Bill Gleason	FEDEX	11/3	1214
Received by:	Nhan Phan	Nhan Phan	FEBT	11/3/17	14.40

Samples received at 2 °C

711085

SAMPLE CHAIN OF CUSTODY

ME 11-03-17

ADU / VWS

Page # 2 of 2

Send Report To: Paul Riley
Company: The Riley Group, Inc.
Address: 17522 Bothell Way NE
City, State, ZIP: Bothell WA 98011
Phone #: 425-415-0551 Fax #: priley@rileygroup.com

SAMPLERS (signature): Taft Russell

PROJECT NAME/NO.: University VW/AMP

PO #: 2014-0681

REMARKS: ctaftrussell@rileygroup.com

TURNAROUND TIME
- [x] Standard (3 Weeks) If possible
- [ ] RUSH
- Rush charges authorized by:

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

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS						Notes
OPE14	11 A-D	11/1	900	water	4	X	X	X									3 VOAs, 1-500mL Amber
OPE15	12 A-E	11/1	1300		5	X	X	X									4 VOAs, 1-500mL Amber
SVE6	13 T	11/2	900			X	X	X									
SVE7	14	11/1	1230			X	X	X									
MW8	15	11/2	1040			X	X	X									
MW11	16	11/2	1600			X	X	X									

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Taft Russell	Taft Russell	RGI	11/3	1115
Received by: Paul Riley	P. Riley	RGI	11/3	
Relinquished by: Bill Gleason	Bill Gleason	FedEx	11/3	12:40
Received by: Nham Phan	Nham Phan	FEBI	11/3/17	1440

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
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Samples received at 2 °C