RILEYGROUP

December 26, 2017

Mr. Pui Leung
Vibrant Cities
P.O. Box 84084
Seattle, Washington 98124

RE: Supplemental Subsurface Investigation Summary Report
Former Arnold's Texaco
631 Queen Anne Avenue North
Seattle, Washington 98109
RGI Project No. 2017-015D

Dear Mr. Leung:

The Riley Group, Inc. (RGI) is pleased to present this report summarizing RGI's subsurface investigation findings performed in May and December 2017 (collectively referred to as the Supplemental Subsurface Investigation) at the Former Arnold's Texaco property located at 631 Queen Anne Avenue North, Seattle, Washington (hereafter referred to as the Property, Figure 1).

The Property was recently purchased by Vibrant Cities (hereafter referred to as the Client) from the Estate of Arnold F. William and consists of one 0.25-acre parcel identified as King County Tax Parcel No. 387990-0425. The Property is currently occupied by the Manhattan Express Convenience store.

The Property was historically occupied by a Texaco gasoline service station from approximately 1927 to 1993. Previous environmental investigations have identified the presence of petroleum related soil and groundwater contamination on the Property.

Additional information obtained from archived King County Tax Assessor records during RGI's historical review, indicated that the "Acme Cleaners", a possible former dry cleaning facility, was present on the southeastern portion of the Property in 1937. The dry cleaners likely began operations in the late 1920s when the building was constructed and operated up until the 1950s at the latest.

RGI understands that Vibrant Cities (hereafter referred to as the Client) intends to demolish the existing building and construct a mixed-use, multi-story building with one to two levels of underground parking. RGI also understands that the Client intends to perform a cleanup action in conjunction with construction with the ultimate objective of obtaining a Property-specific No Further Action (NFA) from the Washington Department of Ecology (Ecology).

The SSI was performed in general accordance with our *Phase II Subsurface Investigation Proposal* dated March 21, 2017, *Supplemental Subsurface Investigation Proposal* dated July 13, 2017, and *Change Order No. 1* dated November 14, 2017, which were authorized by the Client.

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PROJECT BACKGROUND

Numerous environmental reports documenting previous investigation work have been prepared for the Property. RGI reviewed the following key environmental reports pertaining to the Property prepared by others:

- *Second Semiannual 2013 Groundwater Monitoring Report* (2013 GWM Report) dated March 26, 2014 by Liedos.
- *Limited Subsurface Investigation* (LSI Report)) dated July 10, 2012 by SoundEarth.
- *Final Remedial Investigation and Site Summary Report* (RI Report) dated August 20, 2007 by SAIC.

On behalf of the Client, RGI also completed the following services and/or reports:

- *Draft Focused Subsurface Investigation Report* dated June 27, 2017 by RGI.
- *Groundwater Monitoring – 2nd Quarter 2017* (2017-Q2 GWM Report) dated April 19, 2017 by RGI.
- Additional Historical Research for the Property in February 2017 by RGI.

Previous environmental investigation data and the history of the Property are summarized in the above-mentioned reports. The reader is directed to refer to these reports in their entirety for further details pertaining to these investigations. Previous select soil and groundwater analytical data pertaining to the Property are summarized on Figures 2 and 3, respectively.

Previous investigations identified the presence of petroleum related contaminants of potential concern (COPCs) in soil and groundwater on the Property. Based on a review of this data and discussions with Vibrant Cities, RGI developed a scope of work to further address the following environmental concerns:

- Determine if the former Acme Cleaners dry cleaning facility, which was previously located on the southeastern portion of the Property from approximately 1928 to 1955, had adversely impacted soil and/or groundwater on the Property.
- Determine if soil and/or groundwater impacts were likely present up-gradient and off-Property in locations where remediation would not be feasible (e.g., beyond the northern and eastern extents of the sidewalks adjacent to the Property) as soil in such locations would have the potential to re-contaminate the Property after a potential on-Property cleanup action. In the event contamination extended off-Property and was a source of groundwater contamination migrating back to the Property, the process of obtaining a Property-Specific NFA determination from Ecology would be complicated.
- Determine the maximum depths that soil contamination would likely be encountered on the Property during redevelopment.

At Vibrant Cities request, RGI performed this Supplemental Site Investigation (SSI) in order to evaluate the above-referenced environmental concerns. This scope of work was not intended to address vapor intrusion concerns (if any) for the Property.

REGULATORY FRAMEWORK

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

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

Soil Screening Levels

Soil analytical data on this project were compared to the MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340-740). RGI's evaluation of soil analytical data obtained during this and previous investigations indicate that these soil screening levels are sufficient to determine whether or not soil concentrations of COPCs were in compliance with MTCA regulations.

It should be noted that MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses have not been established for a number of compounds. Therefore, RGI included MTCA Method B soil values protective of groundwater at 13 degrees Celsius for reference.

MTCA Method A and B soil cleanup levels, collectively referred to as soil screening levels, were obtained from Ecology's Cleanup Level and Risk Calculation (CLARC) database on December 19, 2017 and are summarized in Table 1.

Groundwater Screening Levels

Groundwater analytical laboratory data for this project were compared to the MTCA Method A Cleanup Levels for Ground Water (WAC 173-340-720). RGI's evaluation of groundwater analytical data obtained during this and previous investigations indicate that these groundwater screening levels are sufficient to determine whether or not groundwater concentrations of COPCs were in compliance with MTCA regulations on the Property.

MTCA Method A Cleanup Levels For Ground Water have not been established for a number of compounds. Washington Administrative Code (WAC) 173-340-700(5)(a) indicates that it is acceptable to use the state and/or federal Applicable or Relevant and Appropriate Requirements (ARARs) in lieu of MTCA Method A Cleanup Levels For Ground Water when no MTCA Method A cleanup levels have been established. When no Method A or ARAR has been established, the MTCA Method B groundwater cleanup levels are provided for reference.

MTCA Method A and B groundwater cleanup levels and ARARs, collectively referred to as groundwater screening levels, were obtained from Ecology's CLARC database on December 19, 2017 and are summarized in Table 2.

SCOPE OF WORK

The scope of work for this project, included, but was not necessarily limited to the following:

- Coordinated obtaining Street Use Permit #358772 with the Seattle Department of Transportation (SDOT), which included meeting with SDOT to discuss the scope of work and proposed drilling locations.
- Coordinated deactivation of the trolley line along Queen Anne Ave North with the King County/Metro Transit/Division. This was required by the local agencies in order to drill beneath, or in the immediate vicinity, of the overhead trolley lines.
- Coordinated access to the property with the Client and on-Property business owner.
- Coordinated traffic control services in order to close lanes on the south side of West Roy Street and the west side of Queen Anne Avenue North. This also included re-directing pedestrians around work zones.
- Performed public and private utility locating in an attempt to identify the location(s) of buried utility lines situated in proposed drilling locations on the Property and in the sidewalks adjacent to the north and east of the Property.
- Cored concrete in four locations inside the building (P4 through P7), four locations on the adjacent sidewalks (SSI-W1, SSI-W2, SSI-P1, and SSI-P2), and one location in the western portion of the parking lot (SSI-P4).
- Advanced ten test probes to depths ranging from 20 to 37 feet below ground surface (bgs) using a full size probe rig along the northern and eastern Property boundaries, in the adjacent off-Property sidewalks and in the western portion of the parking lot.
- Advanced four test probes inside the building to refusal, which occurred at depths between approximately 4 and 6 feet bgs, using a limited access Acker rig.
- Installed and developed two groundwater monitoring wells (SSI-W1 and SSI-W2) in the sidewalks along Queen Anne Avenue North and West Roy Street.
- Collected soil and groundwater samples and submitted select samples for laboratory analyses of COPCs. This also included retaining the services of an onsite mobile laboratory.
- Compared soil and groundwater analytical results to soil and groundwater screening levels that comply with MTCA regulations.
- Prepared this report presenting a summary of the investigation and soil and groundwater analytical data.

SUPPLEMENTAL SUBSURFACE INVESTIGATION

Permitting and Trolley Line Deactivation

Prior to commencing with the SSI, RGI coordinated obtaining Street Use Permit No. 358772, which allowed for RGI to drill locations SSI-P1, SSI-P2, SSI-W1, and SSI-W2 in the sidewalks situated adjacent to the north and east of the Property. Drilling on the sidewalks was limited due to SDOT restoration requirements outlined in the *Director's Rule 01-2017* dated January 2017 by SDOT. Therefore, RGI also met with SDOT personnel to have proposed drilling locations in the sidewalk approved prior to commencing with the investigation. A copy of Permit No. 358772 is included in Appendix A.

In addition, RGI coordinated deactivation of the King County Metro Transit Service trolley line on December 2, 2017. This was required as the SSI required drilling within 10 feet of the trolley line, which requires deactivation of the line. A copy of the King County Metro Transit trolley line deactivation authorization is included in Appendix A

Utility Locating and Concrete Coring

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

RGI also retained a private utility locator to locate private water, natural gas, electric, and other metallic underground utilities potentially located in the proposed test probe and well locations both on the Property and the adjacent sidewalks.

After utility locating was completed, RGI retained the services of a concrete corer to core concrete in four drilling locations situated inside the building (P4 through P7), three locations in the sidewalk along the south side of West Roy Street (SS1-P1, SSI-P2, SSI-W2), one location in the sidewalk along the west side of Queen Anne Avenue North (SSI-W1) and one location in the western portion of the parking lot (SSI-P4).

Traffic Control Services

On December 2 and 3, 2017, RGI retained the services of Altus Traffic to provide signage and personnel required to close lanes on the south side of West Roy Street and the west side of Queen Anne Avenue North and to re-route pedestrians around work zones. All traffic control was performed in accordance with the Traffic Control Plan approved by SDOT and included in Permit No. 35877.

May 2017 Subsurface Investigation

On May 22, 2017, RGI retained the services of Holocene Drilling, Inc. (Holocene) to advance seven test probes (P1 through P7) to depths ranging from approximately 4 to 20 feet bgs. Test probes P1 through P3 were advanced using a full-sized truck-mounted, direct push test probe rig. Test probes P4 through P7 were advanced using a limited access Acker Probe rig, due to the limited access inside the building. Test probe locations are shown on Figures 2 and 3 and described below.

The rationale for advancing test probes was as follows:

- Test probes P1, P2, and P3 were advanced close to the northern and eastern property boundaries in order to assess if soil and/or groundwater contamination was present in these locations suggesting that potentially significant contamination had migrated off-Property and/or had the potential to re-contaminate the Property after a potential on-Property cleanup action.
- Test probes P4 through P7 were advanced inside the building on the southeastern portion of the Property in order to determine if previous dry cleaning operations on the Property had adversely impacted the Property.

December 2017 Subsurface Investigation

On December 2, 3, and 4 2017 RGI advanced five test probes (SSI-P1 through SSI-P5) and installed two groundwater monitoring wells (SSI-W1 and SSI-W2) to depths ranging from approximately 21 to 37 feet bgs. Test probe and monitoring well locations are shown on Figures 2 and 3 and described below.

The rationale for advancing test probes and installing wells was as follows:

- Test probes SSI-P1 and SSI-P2 and well SSI-W2 were advanced on the sidewalk adjacent to the north of the Property along West Roy Street in order to assess if soil and/or groundwater contamination previously observed in well MW9 and test probe P1 extended beyond the northern boundary of the sidewalk, which represented the maximum northern extent of a potential future remedial excavation. Data obtained from these locations was also used to assess whether or not soil impacts in these locations had the potential to re-contaminate groundwater after a Property-Specific cleanup.
- Monitoring well SSI-W1 was advanced on the sidewalk adjacent to the east of the Property along Queen Anne Avenue North in order to assess if soil and/or groundwater contamination previously observed in test probe P3 extended east beyond the eastern boundary of the sidewalk which represented the maximum eastern extent of a potential future remedial excavation in this location.
- Test probes SSI-P3 through SSI-P5 were advanced on the western portion of the Property in order to determine the maximum vertical extent of soil impacts at these areas.

Subsurface Conditions

Soil conditions encountered were described using the Unified Soil Classification System (USCS). Subsurface soils encountered during drilling generally consisted of varying mixtures of silt, sand, and gravel beneath which a clayey silt was encountered at depths ranging from approximately 17 feet bgs beneath the sidewalk to the east of the Property (SS1-W1) to 29 feet bgs beneath the western portion of the parking lot (SSI-P4).

Perched groundwater was encountered in test probes during drilling at depths ranging from approximately 13 to 19 feet bgs. The perched groundwater was typically located above the underlying clayey silt.

Groundwater was detected in groundwater monitoring wells at depths ranging from approximately 11 to 18 feet bgs during the April 6, 2017 sampling event. The groundwater flow direction across the Property has consistently been reported by others to the southwest. Test probe logs describing subsurface conditions encountered during drilling are included in Appendix B.

Soil Sampling

Discrete soil samples were collected at approximately 5-foot intervals (except in cases where there was too little recovery) from each test probe. At each sample interval, soil was inspected and field screened for the presence of petroleum and/or halogenated volatile organic compound (HVOC) related COPCs using a photoionization detector (PID) and/or water sheen test.

Field screening indicated the presence of petroleum contaminated soil in test probes P1 through P3, SSI-W2 and SSI-P3 through SSI-P5. The presence of groundwater contamination was observed in test probes P1 and P3.

Well Installation & Development

Groundwater monitoring wells SSI-W1 and SSI-W2 were constructed of 1.5-inch diameter Schedule 40 polyvinylchloride (PVC) well casing and screen. In SSI-W1, 10 feet of 0.010-inch slotted prepack well screen was placed from 10 to 20 feet bgs and in SSI-W2 from 12 to 22 feet bgs. This screened interval allows the water table to intersect the well screen. A sand filter-pack

was placed approximately one foot above the screen in each location. The well was backfilled with bentonite above the sand and completed with an approximately one-foot concrete surface seal and flush-mount monument traffic rated monuments. Monitoring well construction details are presented on the boring logs in Appendix B.

Monitoring wells SSI-W1 and SSI-W2 were developed by RGI using a combination of bailing and surging. Well development was terminated once the turbidity of the discharge water decreased to the satisfaction of RGI personnel. Approximately 3 gallons of groundwater were purged from each well during well development. Purge water was observed to be relatively clear prior to ceasing with well development.

Groundwater Grab Sampling

Groundwater grab samples were collected from test probe locations situated at the north and east Property boundaries (P1 to P3) and on the sidewalk adjacent to the north of the Property (SSI-P1 and SSI-P2). Groundwater grab samples were collected through a 3/4-inch-diameter temporary well screen, which was screened to intersect the water table in each test probe location. A peristaltic pump and disposable plastic tubing were used to transfer groundwater samples into laboratory supplied containers using standard low-flow sampling methodology. Due to shallow refusal inside the building at 4 to 6 feet bgs, no shallow groundwater was encountered in test probes P4 through P7.

One groundwater grab sample was collected and submitted for analysis from locations P1, P2, P3, SSI-P1 and SSI-P2. Field observations indicated that groundwater was contaminated in locations P1 and P3 near the north and eastern property boundaries.

Groundwater Monitoring Well Sampling

Groundwater monitoring well samples were collected from wells MW9 and MW13 on August 15, 2017 and from wells SSI-W1 and SSI-W2 on December 6, 2017.

Prior to groundwater sampling, the depth to groundwater was measured from the northernmost point of the top of each well casing using an electronic water level meter.

After collection of groundwater level data, wells were purged using a peristaltic pump and dedicated tubing. Measurements of water quality parameters (temperature, pH, conductivity, dissolved oxygen, turbidity, oxidation/reduction potential, and/or total dissolved solids) were recorded using a Horiba equipped with a flow through cell during purging to ensure that water entering the well casing had stabilized prior to sample collection. Purging continued until either water quality parameters had stabilized or three wetted casing volumes were purged from each well. At that point, the flow through cell was disconnected and groundwater samples were collected.

During sample collection, the flow rate of the pump was reduced to less than 100 milliliters per minute (mL/min) in accordance with standard low flow sampling techniques. Groundwater was pumped directly through dedicated tubing into laboratory-supplied containers appropriate for the intended analyses.

Standard Sampling Protocols

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

All soil and groundwater samples were placed in preconditioned, sterilized containers provided by an Ecology-accredited analytical laboratory. Soil samples collected for analysis of VOCs were collected using the Environmental Protection Agency (EPA) Method 5035 sampling methodology. The samples were immediately placed in a chilled cooler after collection with all subsequent transportation and transfer accomplished in accordance with standard chain-of-custody protocols.

All test probes were abandoned using hydrated bentonite chips and the surface was patched to match the existing grade.

ANALYTICAL LABORATORY ANALYSIS

A total of 38 soil samples, five groundwater grab samples, and four samples collected from groundwater monitoring wells were submitted to either the fixed-base Friedman & Bruya, Inc. (FBI) laboratory or the Libby Environmental fixed-base or mobile laboratory (both Ecology-accredited laboratories) for one or more of the following analyses:

- Hydrocarbon identification (HCID) using Northwest Method TPH-HCID.
- Diesel- and oil-range total petroleum hydrocarbons (TPH) using Northwest Test Method TPH-Dx.
- Gasoline-range TPH using Northwest Test Method TPH-Gx.
- Benzene, ethylbenzene, toluene, and xylenes (BTEX) using EPA Test Method 8021C.
- Halogenated volatile organic compounds (HVOCs) using EPA Test Method 8260C.

Analytical results and the respective soil and groundwater screening levels are summarized in the attached Tables 1 and 2, respectively. Analytical data is displayed graphically on Figures 2 and 3 and copies of analytical laboratory reports and associated sample chain-of-custody forms are included in Appendix C.

SUMMARY OF FINDINGS

Soil Sample Analytical Results

A total of 38 soil samples were submitted for analyses of petroleum related COPCs from test probes P1 through P7, SSI-P1 through SSI-P5, SSI-W1 and SSI-W2.

Hydrocarbon Identification analysis confirmed the presence of diesel-range TPH in locations P1 at 13 feet bgs and P3 at 5 feet bgs. Oil-range TPH was also detected in location P2 at 4 feet bgs. Given that soil is known to be contaminated in all three locations and groundwater contamination was encountered in P1 and P3, the diesel and oil-range TPH qualitative results were not quantified.

Gasoline-range TPH was detected at concentrations exceeding the soil screening level of 30 mg/kg (when benzene is present) in locations P1 (near the northern Property boundary) at 13 feet bgs, P2 (at the northeast corner of the Property) at 4 feet bgs, P3 (near the eastern Property boundary) at 5 feet bgs, SSI-P4 and SSI-P5 (western portion of the parking lot) at 22 and 23 feet, respectively, and SSI-W2 (sidewalk adjacent to the north of the Property) at 12.5 feet bgs. These gasoline-range TPH concentrations ranged from 69 mg/kg to 504 mg/kg. Gasoline-range TPH was either not detected or detected at a concentrations below the soil screening level in the remaining 20 soil samples where this analysis was performed.

Benzene was detected at concentrations exceeding the soil screening level of 0.03 mg/kg in locations SSI-P5 (23 feet bgs) and P3 (5 feet bgs) at concentrations of 4.4 mg/kg and 0.047 mg/kg,

respectively. Benzene was either not detected or detected at a concentration below the soil screening level in the remaining 27 soil samples where this analysis was performed.

Toluene was detected at a concentration of 7.8 mg/kg in SSI-P5 at 23 feet bgs. This concentration exceeds the soil screening level of 7 mg/kg. Toluene was either not detected or detected at a concentration below the soil screening level in the remaining 28 soil samples where this analysis was performed.

Diesel-range TPH was either not detected or detected at concentrations below the soil screening level in the 17 soil samples where this analysis was performed.

All other petroleum related COPCs were either not detected in soil or detected at a concentrations below the soil screening levels in the 29 sample locations where petroleum compounds were analyzed.

Based on these findings, no soil containing concentrations of petroleum related COPCs above the applicable soil screening levels was intercepted by test probes/well SSI-P1, SSI-P2, and SSI-W1. Isolated soil contamination was intercepted at a depth of 12.5 feet bgs at SS1-W2. No COPCs were detected in soil samples collected above and below this interval. The soil contamination observed in SS1-W2 may be indicative of a smear zone. These test probes/wells were located approximately 11 feet north or 20 feet east of the Property line. These results confirm that soil contamination that would be considered a source of groundwater contamination (i.e., situated in the unsaturated zone), does extend beyond the northern and eastern extent of the sidewalks adjacent to the Property. Therefore, remedial excavation of contaminated soil on-Property and potentially in portions of the sidewalks adjacent to the north and east of the Property could be accomplished without the concern of groundwater migrating onto the Property becoming re-contaminated due to an up-gradient source of soil contamination.

Based on the soil data obtained from SSI-P3, SSI-P4 and SSI-P5, the vertical extent of soil contamination exceeding applicable soil cleanup levels terminates at a depths between approximately 22 and 27 feet bgs on the western portion of the Property. Therefore, soil contamination is anticipated to be encountered at varying depths, extending to a maximum of 27 feet bgs during redevelopment. The maximum vertical extent of soil contamination also correlates closely with the presence of the clayey silt layer, which is present at approximately 17 feet bgs beneath the sidewalk adjacent to the east of the Property and 29 feet bgs near the western Property boundary. Therefore, the depth of remedial excavation is anticipated to extend to greater depths moving west across the Property.

HVOCs, including tetrachloroethene (PCE) and associated degradation compounds, were not detected at concentrations above the laboratory detection limits in any of the nine shallow soil samples collected from beneath the building previously occupied by former Acme Cleaners (P4 to P7). Therefore, it does not appear that the former Acme Cleaners operations have adversely affected soil on the Property.

Groundwater Analytical Results

A total of five groundwater grab samples were submitted for analyses of petroleum related COPCs from test probes P1 through P3 (on-Property) and SSI-P1 and SSI-P2, which were situated off-Property approximately 11 feet north of the Property boundary.

Gasoline-range TPH was detected in groundwater in locations P1 (near the northern Property boundary) and P3 (near the eastern Property boundary) at concentrations of 7,100 µg/L and 1,200 µg/L, respectively. Both of these concentrations exceed the groundwater screening level of 800

µg/L for gasoline-range TPH when benzene is present. Gasoline-range TPH was not detected at a concentration above the laboratory detection limit in locations P2 (northeast corner of the Property) or SSI-P1 and SSI-P2 (sidewalk adjacent to the north of the Property).

Diesel-range TPH was detected in groundwater in locations P1 and P3 at concentrations of 110,000 µg/L and 1,400 µg/L, respectively. Both of these concentrations exceed the groundwater screening level of 500 µg/L for diesel-range TPH when benzene is present. Diesel-range TPH was not detected at a concentration above the laboratory detection limit in locations P2, SSI-P1, and SSI-P2.

Oil-range TPH was detected in location P1 at a concentration of 3,800 µg/L, which exceeds the groundwater screening level of 500 µg/L. However, this concentration was flagged by the analytical laboratory and is likely representative of overlap from the observed diesel-range TPH concentration. Oil-range TPH was not detected at a concentration above the laboratory detection limit in locations P2, P3, SSI-P1, and SSI-P2.

All other petroleum related COPCs were either not detected at a concentration above the laboratory detection limit or detected at concentrations below the applicable groundwater screening levels in all five groundwater grab sample locations.

Based on these findings, the extent of petroleum contaminated groundwater up-gradient to the north and east of the Property boundaries is considered limited (i.e., does not extend beyond the northern and eastern extent of the sidewalks). Furthermore, the lack of significant soil contamination at these locations indicates there is no significant up-gradient source of soil contamination that would have the potential to re-contaminate the Property following a cleanup action performed on-Property and portions of the adjacent sidewalks.

Groundwater Monitoring Well Analytical Results

During the SSI, a total of four samples were collected from groundwater monitoring wells and submitted for analyses of petroleum related COPCs from wells MW9, MW13, SSI-P1, and SSI-P2.

On April 6, 2017 (prior to the SSi), groundwater samples were collected from wells MW9, MW10, MW13, DPE-5, DPE-6, DPE-7 and submitted for analyses of petroleum and HVOC related COPCs. These results are included in the discussion that follows. Details pertaining to the April 6, 2017 sampling event are contained in the *Groundwater Monitoring – 2nd Quarter 2017* dated April 19, 2017 by RGI. All analytical data discussed below is summarized in Table 2.

Diesel-range TPH was detected in well MW9 at a concentration of 1,500 µg/L, which exceeds the groundwater screening level of 500 µg/L for diesel-range TPH. This concentration was flagged by the analytical laboratory with a note indicating that the sample chromatographic pattern did not resemble the fuel standard used for quantitation. Diesel-range TPH was were either not detected at a concentration above the laboratory detection limit or detected at concentrations below the applicable groundwater screening levels in SSI-W1, SSI-W2 and MW13.

All other petroleum related COPCs were either not detected at a concentration above the laboratory detection limit or detected at concentrations below the applicable groundwater screening levels in all groundwater sample locations where these analyses were performed (SSI-W1, SSI-W2, MW9, MW10, and MW13.

Halogenated volatile organic compounds (HVOCs) were not detected at concentrations above the laboratory detection limit in wells MW9, MW10, MW13, DPE5, DPE6, and DPE7.

Based on these findings, petroleum contaminated groundwater is known to be present on Property and likely extends a short distance beyond the northern and eastern Property boundaries. However, this groundwater contamination does not extend beyond the northern and eastern extent of the adjacent sidewalks. This data further supports the conclusion that the likelihood of groundwater becoming re-contaminated after a cleanup action is low. It also does not appear that the former Acme Cleaners operations have adversely affected groundwater beneath the Property.

PROJECT LIMITATIONS

This report is the property of RGI and Vibrant Cities and their authorized representatives or affiliates and was prepared in a manner consistent with the level of skill and care ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. This report is intended for specific application to the Former Arnold's Texaco located at 631 Queen Anne Avenue North, Seattle, Washington. No other warranty, expressed or implied, is made.

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

Please contact the undersigned at (425) 415-0551 should you have any questions or need additional information.

Sincerely,

THE RILEY GROUP, INC.

Jerry Sawetz
Senior Environmental Scientist

Paul Riley, LG, LHG
Principal

Distribution: *Distribution Mr. Pui Leung, Solterra (PDF)*
Mr. Pui Leung, Vibrant Cities (PDF)

Attachments: *Figure 1, Property Vicinity Map*
Figure 2, Summary of SSI and Select Historical Soil Analytical Data
Figure 3, Summary of SSI and Select Historical Groundwater Analytical Data

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

Appendix A, Permit No. 35877 and Trolley Line Deactivation Documentation
Appendix B, Test Probe and Monitoring Well Construction Logs
Appendix C, Analytical Laboratory Results

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

Approximate Scale: 1"=1000'

0 500 1000 2000

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Arnold's/Former Texaco Service Station No. 211577		Figure 1
RGI Project Number 2017-015D	Site Vicinity Map	Date Drawn: 12/2017
Address: 631 Queen Anne Avenue North, Seattle, Washington 98109		

SS1-P2				
Year	Depth	Gas	DSL	B
2017	7.5	ND	ND	ND
2017	10	ND	ND	ND

SS1-W2				
Year	Depth	Gas	DSL	B
2017	12.5	**69**	**266**	ND
2017	16	ND	ND	ND

P1									
Date	Depth	Gas	B	T	E	X	HCID		
							Gas	DSL	Oil
5/22/17	5	----	ND	ND	ND	ND	ND	ND	ND
	10	----	ND	ND	ND	ND	----	----	----
	13	**100**	ND	ND	**0.078**	**0.39**	ND	**D**	ND
	20	**26**	ND	**0.055**	**0.13**	**0.19**	----	----	----

SS1-P1					
Year	Depth	DSL	B	T	
2017	5	ND	ND	ND	**0.17**
2017	9	ND	ND	ND	ND

P03			
Year	Depth	Gas	B
2012	4	**17**	ND
	11	**110**	ND
	15	**590**	**0.06**
	20	ND	ND
	24	ND	ND

P2									
Date	Depth	Gas	B	T	E	X	HCID		
							Gas	DSL	Oil
5/22/17	4	**250**	**0.025**	**1.4**	**1.3**	**2.1**	ND	ND	**D**
	7.5	ND	ND	ND	ND	ND	----	----	----
	14	ND	ND	ND	ND	ND	ND	**D**	ND
	20	ND	ND	ND	ND	ND	ND	ND	ND

PIT-6			
Year	Depth	Gas	B
1993	8	**330**	**7.0**

PIT-5			
Year	Depth	Gas	B
1993	11	**1,000**	**2.1**

DP-2		
Year	Depth	B
2002	14	**0.0571**

PIT-9		
Year	Depth	B
1993	6	**0.35**

P01	
Year	Results
2012	ND @ 6', 11', 20'

P06			
Year	Depth	Gas	B
2012	7	ND	ND
	14	**65**	**0.036**
	19	ND	ND
	24	ND	ND

DP-4			
Year	Depth	Gas	B
2002	20	**90.9**	**0.131**

P05			
Year	Depth	Gas	B
2012	4	**380**	**0.12**
	20	**2.5**	ND
	24	ND	ND

SS1-W1				
Year	Depth	Gas	DSL	B
2017	8	ND	ND	ND
2017	15	ND	ND	ND

PIT-8			
Year	Depth	Gas	B
1993	11	**1,100**	**1.1**

DB-3		
Year	Depth	B
2002	11.0	ND
	31.5	**0.0544**

SS1-P3					
Year	Depth	Gas	DSL	B	E
2017	22	ND	ND	ND	0.15
	31	ND	ND	ND	ND
	34	ND	ND	ND	ND

P3									
Date	Depth	Gas	B	T	E	X	HCID		
							Gas	DSL	Oil
5/22/17	5	**220**	**0.047**	**0.54**	**0.84**	**1.3**	ND	**D**	ND
	8	----	ND	ND	ND	ND	ND	ND	ND
	13	**2.7**	ND	ND	ND	ND	**D**	ND	ND
	20	----	ND	ND	ND	ND	ND	ND	ND

MW-24			
Year	Depth	Gas	B
2004	9	ND	ND
	16	**11**	**0.06**
	18.5	**3,100**	**1.1**

P07				
Year	Depth	Gas	DSL	B
2012	4	**370**	**350**	**0.13**
	20	ND	**3,300**	ND
	24	**3.4**	ND	ND

PIT-7				
Year	Depth	Gas	DSL	B
1993	11	**11,000**	**3,200**	**23**

DP-1	
Year	Results
2002	BSL @ 16'

P02		
Year	Depth	Gas
2012	8	ND
	11	**52**
	20	ND

MW-13	
Year	Results
2002	ND @ 14'

PIT-1			
Year	Depth	Gas	B
1993	12	**1,900**	**4.3**

PIT-10		
Year	Depth	B
1993	11	**0.18**

P09		
Year	Depth	Gas
2012	12	ND
	15	**2,300**
	24	**25**

SS1-P4				
Year	Depth	Gas	DSL	B
2017	22	**504**	**843**	ND
	30	ND	ND	ND
	37	ND	ND	ND

DP-6			
Year	Depth	Gas	B
2002	22	**7,750**	**52.2**

DP-3			
Year	Depth	Gas	B
2002	12	**1,140**	**2.39**

PIT-4		
Year	Depth	B
1993	7	**0.16**

DPE-7				
Year	Depth	Gas	DSL	B
2005	11	**440**	**2,400**	<0.2
	20	**1,400**	----	**0.093**

PIT-11				
Year	Depth	Gas	DSL	B
1993	11	**4,800**	**4,000**	**51**

SP-1			
Year	Depth	Gas	B
2004	19	**100**	**0.09**

PIT-2		
Year	Depth	B
1993	12	**0.23**

DP-7			
Year	Depth	Gas	B
2002	20	**329**	**1.39**

SS1-P5								
Year	Depth	Gas	DSL	B	T	E	X	
2017	23	**99**	ND	**4.4**	**7.8**	**0.29**	**1.0**	
2017	31	ND	ND	ND	ND	ND	ND	

PIT-3	
Year	Results
1993	BSL @ 12'

P7		
Date	Depth	HVOCs
5/22/17	4	ND
	6	ND

P5		
Date	Depth	HVOCs
5/22/17	2	ND
	4	ND

DPE-6			
Year	Depth	Gas	B
2005	17.5	**140**	<1
	20	**96**	<0.5

DPE-5				
Year	Depth	Gas	D	B
2005	14	**460**	**2,800**	<0.3
	17	**250**	**870**	<0.5

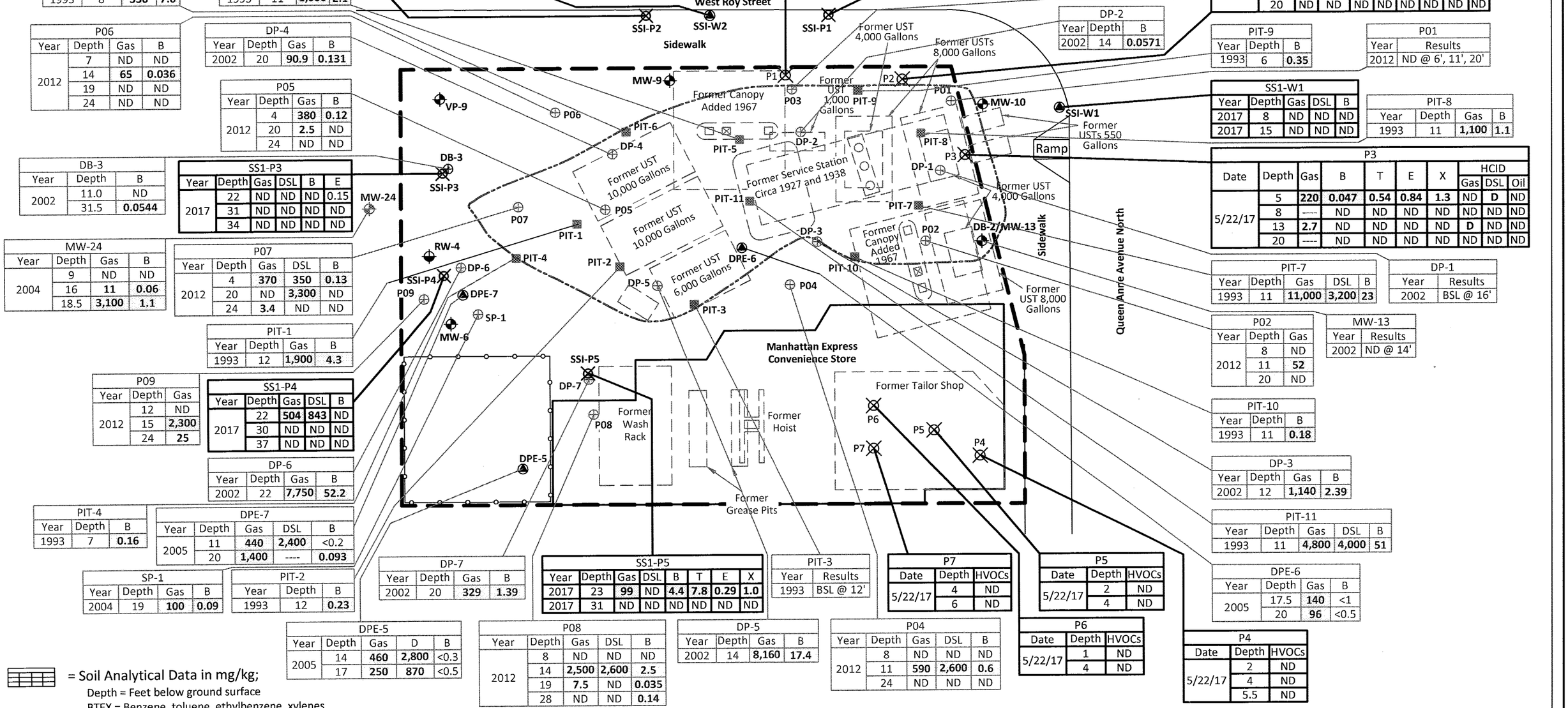
P08				
Year	Depth	Gas	DSL	B
2012	8	ND	ND	ND
	14	**2,500**	**2,600**	**2.5**
	19	**7.5**	ND	**0.035**
	28	ND	ND	**0.14**

DP-5			
Year	Depth	Gas	B
2002	14	**8,160**	**17.4**

P04				
Year	Depth	Gas	DSL	B
2012	8	ND	ND	ND
	11	**590**	**2,600**	**0.6**
	24	ND	ND	ND

P6		
Date	Depth	HVOCs
5/22/17	1	ND
	4	ND

P4		
Date	Depth	HVOCs
5/22/17	2	ND
	4	ND
	5.5	ND



= Soil Analytical Data in mg/kg;

Depth = Feet below ground surface
BTEX = Benzene, toluene, ethylbenzene, xylenes
Gas/DSL = Gasoline/diesel total petroleum hydrocarbons
ND = Not detected
BSL = Concentrations of contaminants were below applicable soil screening levels
Bold and yellow highlight indicates concentrations above MTCA soil screening levels.

= Fence
= 1993 Excavation boundary
= Property boundary

P4 = RGI test probe location, P1 - P7 drilled May 2017 and SSI-P1 - SSI-P5 drilled December 2017
SSI-W1 = Existing groundwater monitoring well location. SSI-W1 and SSI-W2 installed by RGI in December 2017
MW-14 = Monitoring well by others
DPE-5 = Extraction well by others
RW-4 = Recovery well by others
DB,SP&DP = Soil boring by others
P09 = Soil boring (Sound Earth 2012)
Pit-1 = 1993 Remedial excavation sample

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

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Arnold's/Former Texaco Service Station No. 211577 | Figure 2

RGI Project Number 2017-015D | Summary of SSI and Select Historical Soil Analytical Results | Date Drawn: 12/2017

Address: 631 Queen Anne Avenue North, Seattle, Washington 98109

P1-W							
Date	Gas	DSL	Oil	B	T	E	X
05/22/17	**7,100**	**110,000ve**	**3,800x**	ND	**12**	**5.4**	**27**

SSI-P2				
Date	Gas	DSL	Oil	BTEX
12/02/17	ND	ND	ND	ND

SSI-W2				
Date	Gas	DSL	Oil	BTEX
12/06/17	ND	ND	ND	ND

SSI-P1				
Date	Gas	DSL	Oil	BTEX
12/02/17	ND	ND	ND	ND

P2-W							
Date	Gas	DSL	Oil	B	T	E	X
05/22/17	ND	ND	ND	ND	ND	ND	ND

MW-9									
Date	Elev.	Gas	DSL	Oil	B	T	E	X	HVOCs
08/15/17	94.64	----	**1,500x**	**490x**	----	----	----	----	----
04/06/17	96.34	**480**	----	----	ND	**2.2**	**1.8**	**3.4**	ND

MW-10											
Date	Elev.	Gas	DSL	Oil	B	T	E	X	PCE	TCE	HVOCs
04/06/17	103.85	ND	----	----	ND	ND	ND	ND	ND	ND	ND
11/13/13	102.74	ND	ND	ND	ND	----	----	----	----	----	----

SSI-W1				
Date	Gas	DSL	Oil	BTEX
12/06/17	ND	ND	ND	ND

P3-W							
Date	Gas	DSL	Oil	B	T	E	X
05/22/17	**1,200**	**1,400**	ND	ND	**9.7**	**8.2**	**19**

MW-24							
Date	Elev.	Gas	DSL	Oil	B	PCE	TCE
01/2005	102.37	ND	ND	ND	ND	ND	ND

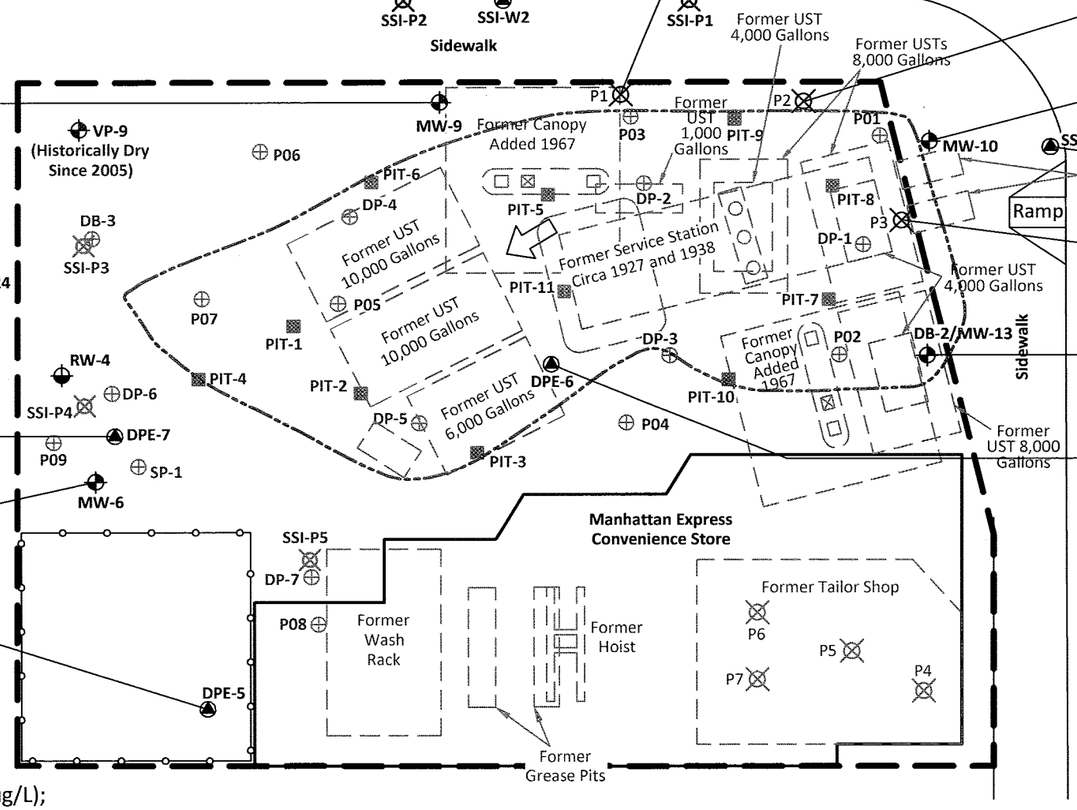
MW-13									
Date	Elev.	Gas	DSL	Oil	B	T	E	X	HVOCs
08/15/17	96.76	----	**60x**	ND	----	----	----	----	----
04/06/17	98.54	ND	----	----	ND	ND	ND	ND	ND

DPE-7								
Date	Elev.	Gas	DSL	Oil	B	PCE	TCE	HVOCs
04/06/17	95.87	----	----	----	----	ND	ND	ND
04/2008	90.87	ND	**6,100**	ND	**7**	----	----	----

DPE-6								
Date	Elev.	Gas	DSL	Oil	B	PCE	TCE	HVOCs
04/06/17	95.57	----	----	----	----	ND	ND	ND
11/13/13	94.10	**140**	**1,100**	ND	**7**	----	----	----

MW-6					
Date	Elev.	Gas	DSL	Oil	B
11/13/13	93.25	**94**	**340**	ND	**2**

DPE-5								
Date	Elev.	Gas	DSL	Oil	B	PCE	TCE	HVOCs
04/07/17	100.44	----	----	----	----	ND	ND	ND
11/13/13	97.14	**5,400**	**150**	ND	**44**	----	----	----



= Groundwater Analytical Data in micrograms per liter (ug/L);

Elev. = Groundwater elevation (in feet)
Gas/DSL/Oil = Gasoline/diesel/oil total petroleum hydrocarbons
BTEX = Benzene, toluene, ethylbenzene, xylenes
PCE, TCE, HVOCs = Tetrachloroethene, trichloroethene, halogenated volatile organic compounds
ND = Not detected
---- = Not sampled or not applicable
Bold and yellow highlight (if any) indicates concentrations above MTCA Groundwater cleanup levels.
BSL = Either not detected at a concentration above the laboratory detection limit or detected at a concentration below the groundwater screening level

SSI-P2 = RGI test probe location in December 2017
P4 = RGI test probe location in May 2017
SSI-W1 = Existing groundwater monitoring well location. SSI-W1 and SSI-W2 installed by RGI in December 2017
MW-14 = Monitoring well by others
DPE-5 = Extraction well by others
RW-4 = Recovery well by others
DB,SP&DP = Soil boring by others
P09 = Soil boring (Sound Earth 2012)
Pit-1 = 1993 Remedial excavation sample

= Groundwater flow direction
= Excavation boundary
= Site boundary

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

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Arnold's/Former Texaco Service Station No. 211577		Figure 3
RGI Project Number 2017-015D	Summary of SSI and Select Historical Groundwater Analytical Data	Date Drawn: 12/2017
Address: 631 Queen Anne Avenue North, Seattle, Washington 98109		

Table 1, Page 1 of 3. Summary of Soil Sample Analytical Laboratory Results Associated with RGI's May 2017 and December 2017 Subsurface Investigations
Arnold's/Former Texaco Service Station No. 211577
631 Queen Anne Avenue North, Seattle, Washington 98109
The Riley Group, Inc. Project No. 2017-015D

Sample Number	Sample Depth	Sample Date	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	HCID			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	1,1-DCE	Other HVOCs
					B	T	E	X			Gasoline	Diesel	Oil							
Supplemental Subsurface Investigation (December 2017)																				
SS1-P1-5	5	12/02/17	0.0	ND<10	ND<0.02	**0.17**	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P1-9	9	12/02/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P1-14	14	12/02/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P1-17	17	12/02/17	1.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P1-19	19	12/02/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P1-19.5	19.5	12/02/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P2-7.5	7.5	12/03/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P2-10	10	12/03/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P2-15	15	12/03/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P2-15.5	15.5	12/03/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P2-18	18	12/03/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-5	5	12/04/17	0.1	----	----	`	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-10	10	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-12	12	12/04/17	2.3	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-17	17	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-22	22	12/04/17	69.7	ND<10	ND<0.02	ND<0.10	**0.15**	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P3-27	27	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P3-31	31	12/04/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P3-34	34	12/04/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P3-35	35	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-5	5	12/04/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-7	7	12/04/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-7.5	7.5	12/04/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-10	10	12/04/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-11	11	12/04/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-14	14	12/04/17	3.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-17	17	12/04/17	19	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-18	18	12/04/17	0.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-19	19	12/04/17	17.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-22	22	12/04/17	27.4	**504**	ND<0.02	ND<0.10	ND<0.05	ND<0.15	**843**	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P4-27	27	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Soil Screening Levels	MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses			100/30[1]	0.03	7	6	9	2,000		100/30[1]	2,000		0.05	0.03	NVE	NVE	NVE	NVE	Analyte Specific
	MTCA Method B Soil Cleanup Levels for Unrestricted Land Uses[2]			---	---	---	---	---	---	---	---	---	---	-----	-----	0.078	0.518	0.05[3]	0.05[3]	Analyte Specific

Table 1, Page 2 of 3. Summary of Soil Sample Analytical Laboratory Results Associated with RGI's May 2017 and December 2017 Subsurface Investigations
Arnold's/Former Texaco Service Station No. 211577
631 Queen Anne Avenue North, Seattle, Washington 98109
The Riley Group, Inc. Project No. 2017-015D

Sample Number	Sample Depth	Sample Date	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	HCID			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	1,1-DCE	Other HVOCs
					B	T	E	X			Gasoline	Diesel	Heavy							
SS1-P4-30	30	12/04/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P4-35	35	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P4-37	37	12/04/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P5-8	8	12/04/17	0.1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P5-12.5	12.5	12/04/17	815	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P5-17	17	12/04/17	195	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P5-20	20	12/04/17	145	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P5-23	23	12/04/17	5.2	**99**	**4.4**	**7.8**	**0.29**	**1.0**	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-P5-28	28	12/04/17	0.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-P5-31	31	12/04/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W1-8	8	12/02/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W1-15	15	12/02/17	0.1	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W1-18	18	12/02/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-W1-21	21	12/02/17	0.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
SS1-W2-9	9	12/02/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W2-12.5	12.5	12/02/17	51.8	**69**	ND<0.02	**0.12**	**0.56**	**0.84**	**266**	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W2-16	16	12/02/17	0.0	ND<10	ND<0.02	ND<0.10	ND<0.05	ND<0.15	ND<50	ND<250	----	----	----	----	----	----	----	----	----	----
SS1-W2-19.5	19.5	12/02/17	0.0	ND<10	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
May 2017 Subsurface Investigation																				
P1-5	5	05/22/17	0.051	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
P1-10	10	05/22/17	0.029	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----	----	----
P1-13	13	05/22/17	31	**100**	ND<0.02	ND<0.02	**0.078**	**0.39**	----	----	ND<20	**D>50**	ND<250	----	----	----	----	----	----	----
P1-20	20	05/22/17	33	**26**	ND<0.02	**0.055**	**0.13**	**0.19**	----	----	----	----	----	----	----	----	----	----	----	----
P2-4	4	05/22/17	42	**250**	**0.025**	**1.4**	**1.3**	**2.1**	----	----	ND<20	ND<50	**D>250**	----	----	----	----	----	----	----
P2-7.5	7.5	05/22/17	41	ND<2	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	----	----	----	----	----	----	----	----	----	----
P2-14	14	05/22/17	25	ND<2	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
P2-17	17	05/22/17	0.021	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
P2-20	20	05/22/17	0.031	ND<2	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
P3-5	5	05/22/17	7.032	**220**	**0.047**	**0.54**	**0.84**	**1.3**	----	----	ND<20	**D>50**	ND<250	----	----	----	----	----	----	----
P3-8	8	05/22/17	0.15	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
P3-13	13	05/22/17	30	**2.7**	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	**D>20**	ND<50	ND<250	----	----	----	----	----	----	----
P3-20	20	05/22/17	25	----	ND<0.02	ND<0.02	ND<0.02	ND<0.06	----	----	ND<20	ND<50	ND<250	----	----	----	----	----	----	----
Soil Screening Levels	**MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses**			**100/30[1]**	**0.03**	**7**	**6**	**9**	**2,000**		**100/30[1]**	**2,000**		**0.05**	**0.03**	**NVE**	**NVE**	**NVE**	**NVE**	**Analyte Specific**
	MTCA Method B Soil Cleanup Levels for Unrestricted Land Uses[2]			---	---	---	---	---	---	---	---	---	---	-----	-----	**0.078**	**0.518**	**0.05[3]**	**0.05[3]**	**Analyte Specific**

Table 1, Page 3 of 3. Summary of Soil Sample Analytical Laboratory Results Associated with RGI's May 2017 and December 2017 Subsurface Investigations
Arnold's/Former Texaco Service Station No. 211577
631 Queen Anne Avenue North, Seattle, Washington 98109
The Riley Group, Inc. Project No. 2017-015D

Sample Number	Sample Depth	Sample Date	PID	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	HCID			PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	1,1-DCE	Other HVOCs
					B	T	E	X			Gasoline	Diesel	Oil							
P4-2	2	05/22/17	0.013	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P4-4	4	05/22/17	0.01	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P4-5.5	5.5	05/22/17	0.01	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P5-2	2	05/22/17	0.013	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P5-4	4	05/22/17	0.011	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P6-1	1	05/22/17	0.021	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P6-4	4	05/22/17	0.017	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P7-2	2	05/22/17	0.009	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
P7-4	4	05/22/17	0.010	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
P7-6	6	05/22/17	0.011	----	----	----	----	----	----	----	----	----	----	ND<0.025	ND<0.02	ND<0.05	ND<0.05	ND<0.05	ND<0.05	ND
Soil Screening Levels **MTCA Method A Soil Cleanup Levels for Unrestricted Land Uses**				**100/30[1]**	**0.03**	**7**	**6**	**9**	**2,000**		**100/30[1]**	**2,000**		**0.05**	**0.03**	**NVE**	**NVE**	**NVE**	**NVE**	**Analyte Specific**
MTCA Method B Soil Cleanup Levels for Unrestricted Land Uses[2]				**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**----**	**----**	**0.078**	**0.518**	**0.05[3]**	**0.05[3]**	**Analyte Specific**

Notes:

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

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

PID = Photoionization detector. PID results from 5/22/17 were obtained using a PID that measures in parts per billion (ppb).

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

BTEX (benzene, toluene, ethylbenzene, and xylenes) determined using EPA Test Method 8021B or 8260C.

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

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

PCE (tetrachloroethene), TCE (trichloroethene), cis-1,2-DCE (cis-1,2-dichloroethene), trans-1,2-DCE (trans-1,2-dichloroethene), VC (vinyl chloride), 1,1-DCE (1,1-dichloroethene), and other HVOCs (halogenated volatile organic compounds) determined using EPA Test Method 8260C.

ND = Not detected above 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 Soil Cleanup Levels for Unrestricted Land Uses (WAC 173-340-900, Table 740-1). MTCA Method B Soil Screening Levels from Ecology's Cleanup Level and Risk Calculation (CLARC) database on December 15, 2017.

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

[2] No MTCA Method A Cleanup Level has been established. Therefore, the MTCA Method B Non-Carcinogenic Standard Formula Value protective of groundwater at 13°C is listed for reference.

[3] Cleanup levels default to the practical quantitation limit (PQL).

Bold results indicated concentrations above laboratory detection limits.

Bold and yellow highlighted results indicate concentrations (if any) that the applicable soil screening level.

Table 2. Summary of Groundwater Analytical Laboratory Results Associated with RGI's May 2017 and December 2017 Subsurface Investigations
Arnold's/Former Texaco Service Station No. 211577
631 Queen Anne Avenue North, Seattle, Washington 98109
The Riley Group, Inc. Project No. 2017-015D

Sample Number	Sample Date	TOC Elevation	Depth to Water (bgs)	Groundwater Elevation	Gasoline TPH	BTEX				Diesel TPH	Oil TPH	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	VC	1,1-DCE	Other HVOCs
						B	T	E	X									
Groundwater Monitoring Wells																		
SS1-W1	12/06/17	----	10.75	----	ND<100	ND<1.0	ND<2.0	ND<1.0	ND<3.0	ND<200	ND<400	----	----	----	----	----	----	----
SS1-W2	12/06/17	----	13.65	----	ND<100	ND<1.0	ND<2.0	ND<1.0	ND<3.0	ND<200	ND<400	----	----	----	----	----	----	----
MW9	08/15/17	114.27	19.63	94.64	----	----	----	----	----	**1,500 x**	**490 x**	----	----	----	----	----	----	----
	04/06/17	114.27	17.93	96.34	**480**	ND<1	**2.2**	**1.8**	**3.4**	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
MW10	04/06/17	115.28	11.43	103.85	ND<100	ND<1	ND<1	ND<1	ND<3	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
MW13	08/15/17	114.80	18.04	96.76	----	----	----	----	----	**60 x**	ND<250	----	----	----	----	----	----	----
	04/06/17	114.80	16.26	98.54	ND<100	ND<1	ND<1	ND<1	ND<3	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
DPE 5	04/06/17	113.81	13.37	100.44	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
DPE 6	04/06/17	113.32	17.75	95.57	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
DPE 7	04/06/17	113.15	17.28	95.87	----	----	----	----	----	----	----	ND<1	ND<1	ND<1	ND<1	ND<0.2	ND<1	ND
Groundwater Grab Samples																		
SS1-P1	12/02/17	----	----	----	ND<100	ND<1.0	ND<2.0	ND<1.0	ND<2.0	ND<200	ND<400	----	----	----	----	----	----	----
SS1-P2	12/02/17	----	----	----	ND<100	ND<1.0	ND<2.0	ND<1.0	ND<2.0	ND<200	ND<400	----	----	----	----	----	----	----
P1-W	05/22/17	----	13.00	----	**7,100**	ND<5	**12**	**5.4**	**27**	**110,000 ve**	**3,800 x**	----	----	----	----	----	----	----
P2-W	05/22/17	----	14.00	----	ND<100	ND<1	ND<1	ND<1	ND<3	ND<60	ND<300	----	----	----	----	----	----	----
P3-W	05/22/17	----	13.00	----	**1,200**	ND<5	**9.7**	**8.2**	**19**	**1,400**	ND<300	----	----	----	----	----	----	----
Groundwater Screening Levels	**MTCA Method A Cleanup Levels for Ground Water**				**800/1,000[1]**	**5**	**1,000**	**700**	**1,000**	**500**	**500**	**5**	**5**	**NVE**	**NVE**	**0.2**	**NVE**	**Analyte Specific**
	Applicable or Relevant and Appropriate Requirements (ARARs)[2]				----	----	----	----	----	----	----	**5**	**5**	**70**	**100**	**2**	**7**	**Analyte Specific**
	MTCA Method B Cleanup Levels for Ground Water[2]				----	----	----	----	----	----	----	**20.8**	**0.54**	**16**	**160**	**0.029**	**400**	**Analyte Specific**

Notes:

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

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

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

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

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

PCE (tetrachloroethene), TCE (trichloroethene), cis-1,2-DCE (cis-1,2-dichloroethene), trans-1,2-DCE (trans-1,2-dichloroethene), VC (vinyl chloride), 1,1-DCE (1,1-dichloroethene), and other HVOCs (halogenated volatile organic compounds) determined using EPA Test Method 8260C.

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

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

ND = Not detected above the noted analytical detection limit.

NVE = No value established

---- = Not analyzed or not applicable.

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

ARAR = Applicable or Relevant and Appropriate Requirement. ARARs for the Property are the Federal and State Primary Maximum Contaminant Levels (MCLs) as established under the Environmental Protection Agency (EPA) National Primary Drinking Water Regulations.

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

[2] No MTCA Method A Cleanup Level has been established. Therefore, the MTCA Method B Carcinogenic (when available) Standard Formula Value and the Federal and State ARARs are referenced.

Bold results indicated concentrations above laboratory detection limits.

Bold and yellow highlighted results indicate concentrations (if any) that exceed the applicable groundwater screening level.

Seattle Dept of Transportation
Street Use Permits, 23rd Floor
700 Fifth Ave, Suite 2300
P O Box 34996
Seattle, WA 98124-4996

STREET USE PERMIT

Permit No.: 358772

☐ Inspector Copy ☐ Permittee Copy ☐ File Copy

Project ID:	IMPACT Project ID: ex	Estimated Project Completion Date: 08/11/2017

Inspector: Horton Young
Inspection District: MAGNOLIA/QUEEN ANNE

LOCATION

Address: 631 QUEEN ANNE AVE N
High Impact Area: N
Details: (2 LOCS) ON ROY ST, WEST OF QUEEN ANNE AVE N, SOUTH CURB LANE AND SIDEWALK CLOSED
(2 LOCS) ON QUEEN ANNE AVE N, SOUTH OF ROY ST, WEST CURB LANE AND SIDEWALK CLOSED

Application Date: 8/11/17 12:06 pm
Issue Date: 11/8/17 8:19 am

PARTIES (* Primary Applicant)

Role	Name	Address	Phone	From	To
*24 Hour Contact	SAWETZ, JERRY	17522 BOTHELL WAY NE,,BOTHELL,WA,98011	(425)301-1227		
Permittee	SOLTERRA DBA VIBRANT CITIES	606 MAYNARD AVE S #251,,SEATTLE,WA,98104-	(425)793-9088		
Contractor'S Agent	LEUNG, PUI	606 MAYNARD AVE S#251,,SEATTLE,WA,98104	(425)793-9088		

PERMITTED USES

To Be Restored By: PERMITTEE

QUEEN ANNE AVE N BETWEEN ROY ST AND W ROY ST - ARTERIAL

Use 511 Space A - Prepatory or exploratory work for upcoming projects, including surveying, installing monitoring wells, and soil sampling

Condition Description

Start Date 12/02/2017 - Sidewalk and curbside travel lane closed.

Start Date	Duration	End Date	Sq. Ft	Issue Date	Ext.	Side of Street	Location Type	Closure Type	Peak Work OK	Day or Time Rstrctns
12/02/2017	10	03/02/2018	1,006	11/08/2017	N	WEST	SIDEWALK	CLOSED		

W ROY ST BETWEEN QUEEN ANNE AVE N AND 1ST AVE W - ARTERIAL

Use 511 Space B - Prepatory or exploratory work for upcoming projects, including surveying, installing monitoring wells, and soil sampling

Condition Description

Start Date 12/02/2017 - Sidewalk and curbside travel lane closed.

Start Date	Duration	End Date	Sq. Ft	Issue Date	Ext.	Side of Street	Location Type	Closure Type	Peak Work OK	Day or Time Rstrctns
12/02/2017	10	03/02/2018	1,018	11/08/2017	N	SOUTH	SIDEWALK	CLOSED		

CONDITIONS OF USE

DESCRIPTION OF WORK :

Seattle Dept of Transportation
Street Use Permits, 23rd Floor
700 Fifth Ave, Suite 2300
P O Box 34996
Seattle, WA 98124-4996

STREET USE PERMIT

Permit No.: 358772

Project ID:	IMPACT Project ID: ex	Estimated Project Completion Date: 08/11/2017

Additional Notes: *SCOPE: Install (2) 12" in diameter, PVC Schedule 40, monitoring wells for five years, and (3) 4" in diameter test probes in the sidewalk.*

IMPACT:
(2 LOCS) ON ROY ST, WEST OF QUEEN ANNE AVE N, SOUTH CURB LANE AND SIDEWALK CLOSED
(2 LOCS) ON QUEEN ANNE AVE N, SOUTH OF ROY ST, WEST CURB LANE AND SIDEWALK CLOSED

Cust Desc: Plan to install two permanent groundwater monitoring in sidewalk adjacent to the north (south side of West Roy Street) and in the sidewalk adjacent to the east (west side of Queen Anne Ave N) of the property located at 631 Queen Anne Ave N. A 12-inch diameter concrete core will be removed from the sidewalk on the south side of West Roy Street and the sidewalk on the west side of Queen Anne Ave N. In both locations, groundwater monitoring wells will be installed using 1.5" PVC and traffic rated flush mount monuments in accordance with applicable regulations. RGI also plans to advance one to three test probes in the vicinity of the groundwater monitoring wells within the sidewalks in each area. In each test probe location, an approximately 4-inch concrete core will be removed from the sidewalk. Upon completion of drilling, each test probe will be abandoned by backfilling the test probe with bentonite chips and patching the surface with concrete to match the existing grade. All work will be completed in accordance with Seattle DOT Right-Of-Way Opening and Restorations Rules dated December 15, 2016. A site plan displaying work locations and proposed traff

E1.15 :
MULCHING AND MATTING - Apply mulch to protect exposed soils and promote plant establishment.

E1.40 :
PERMANENT SEEDING AND PLANTING - Install temporary surface runoff control measures prior to seeding or planting to protect the surface from erosion until the vegetation is established. Establish permanent vegetation (e.g., grasses, legumes, trees, and shrubs) as rapidly as possible to prevent soil erosion by wind or water.

E1.45 :
SODDING - Establish permanent turf for immediate erosion protection or to stabilize drainage pathways where concentrated overland flow will occur.

E1.50 :
TOPSOILING - Preserve and use topsoil to enhance final site stabilization with vegetation and to provide a suitable growth medium for final site stabilization with vegetation.

E3.25 :
STORM DRAIN INLET PROTECTION - Install storm drain covers on stormwater structures less than 12 inches deep during construction. Install catch basin filter socks in stormwater structures greater than 12 inches deep. Place the storm drain or catch basin grate on top of the catch basin filter sock to hold it in place.

C1.20 :
USE OF CHEMICALS DURING CONSTRUCTION - Use only the recommended amounts of chemical materials and apply them in a proper manner. Neutralize the pH of concrete wash water from concrete mixers, if necessary.

C1.35 :
SAWCUTTING AND PAVING POLLUTION PREVENTION - Vacuum slurry and cuttings during the activity to prevent migration offsite and do not leave slurry and cuttings on permanent concrete or asphalt paving overnight. Dispose of collected slurry and cuttings, waste material, and demolition debris in a manner that does not violate groundwater or surface water quality standards. Implement preventative measures such as berms, barriers, secondary containment, and vactor trucks if observations indicate that a violation of water quality standards could occur.

C1.45 :
SOLID WASTE HANDLING AND DISPOSAL - Remove and dispose of accumulated solid waste at authorized disposal areas. Label waste containers and place them in a covered area with closed lids. Salvage and recycle any useful materials.

BMP5 :
SPILL PREVENTION AND CLEANUP-Keep a spill cleanup kit in a nearby vehicle or next to the work site so that it is easily accessible. Make sure the contents of the spill kit are appropriate for the types and quantities of materials used for this work task. Refill spill kit materials before beginning work.

BMP16 :
CONCRETE POURING, CONCRETE/ASPHALT CUTTING, AND ASPHALT APPLICATION - Sweep or shovel loose aggregate chunks and dust for recycling or proper disposal. Place storm drain covers or similarly effective containment devices over all storm drains located downslope or adjacent to the work area. Shovel or vacuum all slurry and remove from the site. Perform cleaning of concrete application and mixing equipment or concrete-delivery vehicles in a designated area where the rinse water is controlled.

BMP20 :
LANDSCAPING AND LAWN VEGETATION MANAGEMENT - Use proper fertilizer and herbicide application techniques to minimize nutrient pollution of stormwater. Implement proper landscaping and mulching techniques to prevent plant material and excess mulch from entering the separate storm drainage system. Do not dispose of collected vegetation in separate storm drainage systems, waterways, water bodies or greenbelt areas.

DAMAGED OR DESTROYED UTILITY :
SDOT makes no representation regarding the safety or integrity of the subject structure. If the structure is damaged or destroyed, SDOT will have no obligation to provide an alternative location for the permit utility.

HUB COORDINATION NOTIFICATION :

Seattle Dept of Transportation
Street Use Permits, 23rd Floor
700 Fifth Ave, Suite 2300
P O Box 34996
Seattle, WA 98124-4996

STREET USE PERMIT

Permit No.: 358772

Project ID:	IMPACT Project ID: ex	Estimated Project Completion Date: 08/11/2017

The location of the proposed work is within a Coordination Hub that has been identified by the City as an area with significant construction activity.

The contractor and/or applicant shall coordinate all right of way impacts with the Site Coordinator at least 3 weeks prior to beginning work. The contractor and/or applicant shall enter schedule and impact information weekly in the 3 Week Look Ahead schedules.

Any scope changes including street improvement and utility major work must be reviewed and coordinated with the Site Coordinator and reviewer 6-8 weeks prior to beginning work.

The contractor and/or applicant shall communicate with impacted property owners, businesses and residents related to disruptions to pedestrian, vehicular access, transit service and on-street parking throughout the duration of construction.

METRO BUS RESTRICTIONS :
Contact Metro for bus restrictions 206-477-1140 prior to starting work.

METRO TRANSIT TROLLEY LINES :
Care shall be taken to assure that METRO Transit trolleys can access their overhead power lines at all times to maintain uninterrupted service. Contact METRO Transit 206-477-1150 (Trolley Impacts) five days prior to the start of work or a minimum of two weeks prior if line deactivation is required.

PED MOBILITY COORDINATION :
PEDESTRIAN MOBILITY COORDINATION: One sidewalk at this location must remain open for safe pedestrian passage at all times. Prior to the beginning of any construction, this permit requires: Contractor will coordinate with existing permit holders to coordinate construction impacts on this street segment. Contractor must ensure that one sidewalk or temporary pedestrian pathway remain open at all times to provide for safe pedestrian passage. SDOT reserves the right to require documentation confirming coordination on future permit requests or extensions when deemed necessary. Permittee is required to notify the district Street Use inspector to ensure all required inspections are scheduled.

RIGHTS - ALREADY APV CONTRACTR :
RIGHTS TO OTHER CONTRACTORS ALREADY APPROVED FOR WORK: The scope of work listed in this permit is approved for the scheduled dates only. SDOT recognizes that construction coordination may be required to allow other contractors with existing approved permits priority in conducting work in the right of way where potential construction conflicts may occur. If, in any given area, the work allowed under this permit conflicts with other area work where contractors demonstrate an existing approved permit, the permittee must move to another location. Permittee is required to notify district Street Use inspector regarding conflicts and any work that is rescheduled due to conflicts. Work that is rescheduled may require an extension or revision to the Street Use permit.

TREE TRUNK OR ROOTS :
Contact the City Arborist Office (684-8733) a minimum of five working-days prior to digging within any landscaped areas in the street rights-of-way. The edge of all trenching must be at least five feet (5') from any street trees. When trenching near trees with trunks greater than twelve inches (12") in diameter, hand dig all trenching for a distance of ten feet (10'), measured five feet (5') radius from the tree trunk. When encountering tree roots, cut off cleanly with sharp saw (do not leave torn or ripped tree roots unattended). Do not cut roots greater than two inches (2") in diameter (contractor will have to hand tunnel underneath the roots). Do not paint ends of roots. Notify Landscape Maintenance at 684-4121 at least forty eight (48) hours in advance when working in landscaped areas or on trees.

WALKWAY FOR PEDS :
Maintain a four-foot (4') wide walkway for pedestrians through or around the work areas. Permittee shall contact all businesses and residents who may be affected by the work to be done under this permit at least one week before starting any construction activity in the street rights-of-way. Permittee must coordinate this work with any other contractors working near its construction zone to avoid conflicts. Access to all businesses shall be maintained during construction. All driveways will be cleared and accessible at the end of every work day.

FEES PAID AT THE COUNTER OR ONLINE

Description	Date	Amount
ISSUANCE FEE - SIGNIFICANT	11/07/2017	$305.00
USE FEE - USE 511 - SPACE A	11/07/2017	$100.60
USE FEE - USE 511 - SPACE B	11/07/2017	$101.80
Totals:		$507.40

STREET USE INSPECTOR

Horton Young (206) 316-7304

Permittee _____ Director Per _____

GENERAL REQUIREMENTS

1. Nature of permit. This permit is issued according to Seattle Municipal Code ("SMC"), Chapter 15.04, for the use or occupancy of the public right of

way in a manner consistent with the terms and conditions in this permit. This permit is wholly of a temporary nature, vests no permanent rights, and is revocable according to SMC Section 15.04.070.

2. ***Acceptance of terms, conditions, and requirements.*** The Permittee accepts the terms, conditions, and requirements of this permit and agrees to comply with them to the satisfaction of the Seattle Department of Transportation, Street Use Division ("Street Use"), or such other agency as may be designated by the City. The Permittee further agrees to comply with all applicable City ordinances, including but not limited to SMC Title 15, and all applicable state and federal laws.
3. ***Copy of permit.*** A copy of the issued permit and current approved plans shall be on site and available at all times.
4. ***Expiration of permit.*** This permit shall remain valid until revoked according to SMC Section 15.04.070; provided that the permit shall expire automatically if the authorized work does not begin within six months from the date the permit is issued. The Permittee is responsible for keeping the permit up to date including submitting updated plans for approval. The Permittee shall submit requests to update a permit in writing or in person, and all requests shall be made to Street Use in a timely manner; otherwise, the Permittee may lose access to requested schedule for continued work in the right of way.
5. ***Superiority of Street Improvement Permits.*** When a Street Improvement Permit exists, rights acquired under the Street Improvement Permit supersede those acquired under any other Street Use or Utility Permits. Work not approved under the Street Improvement Permit shall require separate Street Use or Utility Permits and Permittee shall obtain these permits in advance of work.
6. ***Compliance with technical requirements and standards.*** All work within the public right of way shall be performed and completed according to the current or subsequently-amended requirements in the following technical documents published by the City: Right-of-Way Improvements Manual; Street Tree Manual; Standard Specifications for Road, Bridge and Municipal Construction; Standard Plans for Municipal Construction; Right of Way Opening and Restoration Rule; and Traffic Control Manual for In-Street Work.
7. ***Scope of work.*** The Permittee shall stage equipment or materials and construct or install the improvements and infrastructure reflected in and in accordance with this permit and the City-approved construction plans. Any revisions, omissions, or additions to the scope of work shall be reviewed and approved by the City before implementation.
8. ***Street Use notification.*** Construction work may be completed in several phases: site preparation (installing traffic control, saw-cutting, etc.); ground breaking; restoration; and staging of equipment and materials. Before beginning any phase of work in the public right of way, the Permittee shall notify Street Use of each start date. The Permittee shall be responsible for notifying Street Use Job Start at (206-684-5270) or SDOTJobStart@seattle.gov a minimum of 2-business days before starting work and shall provide the following information:
   - Permit number;
   - Job-site address;
   - Start date: please specify if Job Start date is the same as the excavation or ground breaking date. If the dates are different, please provide both dates;
   - Brief work description; and
   - Job-site contact name and phone number.

   Failure to notify Street Use Job Start shall result in a $300 penalty or other amounts according to SMC Section 15.04.074. For Street Improvement Permits and Utility Major Permits, a preconstruction meeting is required before starting construction, and the assigned inspector shall be notified a minimum of 2-business days before required inspections. Construction or utility activity occurring with, but not approved under, a Street Improvement or Utility Major Permit shall be permitted under separate Street Use permits. The Permittee shall apply for and obtain these Street Use permits in advance of work. Failure to do so may subject the Permittee to penalties and additional permit review charges may apply.
9. ***Underground and overhead utility notification.*** The Permittee shall notify the following entities, as applicable, 2-business days in advance:
   - Utility Underground Locate Center (811 or 1-800-424-5555) before ground disturbance; and
   - Seattle City Light (206-684-4911) if working within 10 feet of high-voltage lines.
10. ***Olympic Pipe Line Company notification.*** When work in the right of way occurs within 100 feet of an Olympic Pipe Line Company ("OPLC") pipeline, the Permittee shall coordinate the work with OPLC, which may include submitting detailed construction plans to OPLC. The Permittee shall notify OPLC's field coordinator 10-business days in advance of the work (425-981-2506) and an OPLC representative may be required to be onsite during the work.
11. ***King County Metro notification.*** The contractor shall notify King County Metro Transit in advance of any construction that may disrupt transit service according to the following schedule.
   - Five working days notice for any work requiring a temporary bus stop.
   - Ten working days notice for relocation of a bus shelter or reroute of bus service.
   - King County Metro Transit's electric storage battery Trolley Busses can be activated for weekend outage requires with 15 working days notification. Subject to vehicle and staff support capacity restrictions.
   - No two consecutive transit stops may be closed.

   If trolley wires are present, call (206) 477-1150 or email trolley.impacts@kingcounty.gov

   If trolley wires are not present, call (206) 477-1140 or email construction.coord@kingcounty.gov
12. ***Public notification.*** The Permittee shall notify all potentially affected residents and businesses at least 10-business days before starting work in

the public right of way, including alleys. If work requires removal of existing permitted structures, then at-least a 30-calendarday notice is required for any permit modification or revocation requests. Notification methods and timelines, including when ongoing notification is needed, must comply with Street Use standards and requirements.

- If a tree has been approved for removal, the Permittee shall post a "tree removal" public-notice placard at least 10-business days before starting work.
- If an SDOT public notice comment period is required prior to permitting, the Permittee shall conduct the public notice outreach prior to commencement of the SDOT public notice comment period.

13. ***Alley notification.*** Where this permit authorizes work in an alley, the Permittee shall notify all potentially impacted property owners and businesses prior to any activity occurring in the alley, including and especially those property owners and businesses with tenants using the alley to access parking or for building ingress/egress or deliveries. The Permittee shall schedule work around waste-management-collection days. If this is not possible, the Permittee shall coordinate with waste management services to either provide intermittent alley access during waste pickup or to temporarily establish waste pickup at an alternate location. If an alley is to remain open during permitted work, a minimum 11-foot clear width is required for vehicular access. If an alley is closed to through traffic, the Permittee shall notify the nearest Seattle Fire Department fire station and the Seattle Police Department at the non-emergency numbers prior to commencing work.
14. ***Coordination of work.*** In performing work authorized by this permit, the Permittee shall coordinate with other contractors, public agencies and other permitees working in the public right of way to minimize impact to the public. Documented coordination agreements may be required prior to permit issuance and additional notification to the public may be required.
15. ***Hours of work.*** Work performed in the public right of way shall occur only during hours authorized under all applicable codes, regulations, rules, and permits.
16. ***Off-hours work.*** Work outside of normal working hours, 8:00 AM - 5:00 PM Monday through Friday, is considered "off-hours work" and requires a minimum of 3-business days advanced notice to the Street Use Inspection Supervisor before the off-hours work commences. Off-hours work may also require a separately-approved traffic control plan. A minimum of two hours of inspection time shall be charged for off-hours inspections at the premium rate. A Stop Work order or Citation may be issued for failing to notify Street Use at least 3-business days before the off-hours work.
17. ***Inspection fees.*** The Permittee shall pay for City inspections of work authorized under this permit according to the current fee schedule established by SMC Section 15.04.074 and all other associated costs.
18. ***Billing.*** All fees and costs billed according to this permit shall be paid to the City of Seattle within 30-calendar days from the invoice date. Past due invoices may be subject to interest charges and may be sent to collections.
19. ***Deposits, charges, and future billings.*** The Permittee, also identified as the "Financially Responsible Party" on Street Use permit applications, is responsible and liable for all permit-related charges. If a deposit was made for estimated future Street Use services, any unused portion of the deposit shall be refunded to the Permittee. Any charges in excess of the deposit shall be billed to the Permittee on a monthly basis.
20. ***Corrective work.*** The Permittee is responsible for any additional costs incurred by the City resulting from temporary or corrective measures required to bring the work area into compliance with standards that apply, including but not limited to: temporary traffic control, requirements for temporary structures, temporary stabilization, and temporary restoration when the Permittee is not on site.
21. ***Indemnification.*** The Permittee agrees to defend, indemnify, and hold harmless the City of Seattle, its officials, officers, employees, and agents; against any liability, claims, causes of action, judgments, or expenses, including reasonable attorney fees; resulting directly or indirectly from any act or omission of the Permittee, its contractors, subcontractors, anyone directly or indirectly employed by them, and anyone for whose acts or omissions they may be liable; arising out of the Permittee's use or occupancy of the public right of way; and all loss by the failure of the Permittee to fully or adequately perform, in any respect, all authorizations or obligations under this Permit.
22. ***Insurance.*** The Permittee shall obtain and maintain in full force and effect, at its own expense, public liability insurance in an amount sufficient to protect the City from all potential claims and risks of loss from perils in connection with any activity that may arise from or be related to the Permittee's activity upon or the use or occupation of the public right of way allowed by the permit; and all claims and risks in connection with activities performed by the Permittee by virtue of the permission granted by the permit. The Permittee shall meet all other insurance requirements in SMC 15.04.045.

EXISTING IMPROVEMENTS

1. ***Costs of damage to City property and improvements.*** The Permittee shall be responsible for the costs of repairing any damage to City property or improvements, including street trees, resulting from work performed by or on behalf of the Permittee within the public right of way. Damage to street trees is assessed on the value of the tree according to SMC subsection 15.90.018.B.
2. ***Utility protection.*** The Permittee shall be responsible for checking locations and providing adequate protection for all utilities in the work area.
3. ***Utility relocation.*** The Permittee shall be responsible for notifying affected utilities and requesting any necessary relocation.
4. ***Survey monuments.*** Before removing, destroying, disturbing, or covering a survey monument such that the survey point is no longer visible or readily accessible, the Permittee shall obtain a permit from the Department of Natural Resources according to Washington Administrative Code, Chapter 332-120.
5. ***Protecting, removing, and relocating existing improvements.*** In addition to General Requirements item 12, the Permittee, at their own cost and expense, shall be responsible for coordinating the removal and relocation of existing improvements within the public right of way that their construction or permitted project may interfere with. These existing improvements include, but are not limited to trees, bike racks, newsstands, bike-share stations, signs, benches, artwork, and waste receptacles.
   - For bike-share stations, the Permittee shall contact the bike-share operator at least 30-calendar days before starting work in order to

coordinate the removal and relocation of the bike-share station.

- For all other existing improvements, the Permittee shall contact the improvement owner at least 10-business days before starting work to coordinate the temporary removal of the improvement.
- For newsstands, the Permittee shall coordinate temporary relocation during the construction period by posting notice of upcoming construction projects at SeattleNewsstands.org at least 10-business days before starting work.

The Permittee shall be responsible for reinstalling the improvements or coordinating the reinstallation in their original location or at a reasonable alternative location approved by the existing improvement owner and meeting all applicable City requirements. The Permittee is further responsible for protecting all trees within the construction project area and shall contact Urban Forestry to disclose and describe any construction impacts to trees.

Failure to contact the improvement owners or Urban Forestry is cause for Street Use to revoke this permit.

6. ***Monorail system proximity requirements.*** The Permittee shall be responsible for coordinating with the Seattle Center when any work, deliveries, or loading/unloading will occur within 14 feet of a Monorail structure or 20 feet of a Monorail foundation or below-ground installation. The Permittee shall contact the Seattle Center at 206-905-2601 at least 10-business days before starting construction. Failure to do so is cause for permit revocation.
7. ***Monorail system proximity guidelines.*** Below grade: The restricted digging area includes a 45-degree cone extending outward and downward from the ground level of all monorail piers. Nearby excavations shall be monitored to assure footing stability. At- or above-grade: The piers above ground level cannot be moved, nor can any item like lighting or signage be attached to the piers without prior written consent from the Seattle Center Director. Piers shall not be painted. Landscaping shall not occur adjacent to piers or within 10 feet of a Monorail structure without prior written consent of the Seattle Center Director. Any construction activity in the area of the power rails shall follow OSHA guidelines for working around high voltage. Construction equipment shall be located and operated in awareness of and taking account of beam height and the train's 14-foot-operational envelope from each side of the beam. Contractors shall string warning lines from pier to pier under the beams as a guide. Spotters shall be employed when any construction activity occurs within 25 feet of the beams.

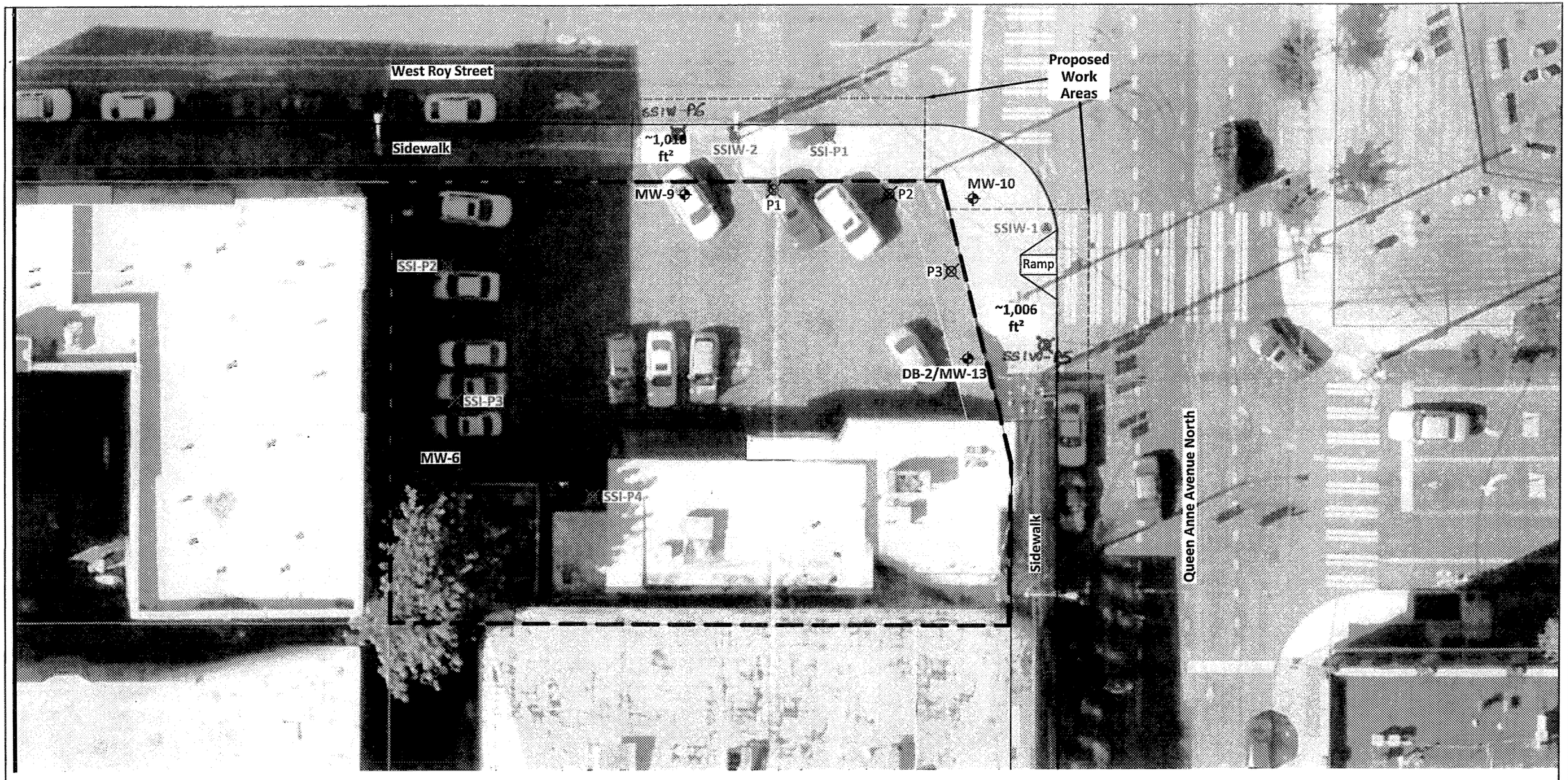
ENVIRONMENTAL PROTECTION

1. ***Best management practices required.*** The Permittee shall be responsible for protecting the public place, including but not limited to protecting existing street trees and green stormwater infrastructure, and controlling surface runoff, erosion and sediment at the construction site, as required by: the Stormwater Code, (SMC Title 22, Subtitle VIII); the Street and Sidewalk Use Code, (SMC Title 15); the Standard Specifications for Road, Bridge, and Municipal Construction; and Department of Planning and Development Director's Rule 21-2015/Seattle Public Utilities DWW 200, or successor rules or provisions. The site and the surrounding area shall generally be kept clean and free of construction debris or other material, including but not limited to mud, dust, rock, asphalt, and concrete. Waste materials shall be collected and disposed of at an appropriate disposal site. These materials shall be prevented from entering any part of the public sewer and storm drain system, and any surface waters.

TRAFFIC CONTROL REQUIREMENTS

1. ***Compliance with the Traffic Control Manual for In-Street Work.*** In order to provide safe and effective work areas and to ward, control, protect, and expedite vehicular and pedestrian traffic; signage for all construction within the public right of way shall comply with the City of Seattle Traffic Control Manual for In-Street Work, as amended. When required, the conditions on the traffic control plan shall supersede any conflicting provisions or requirements in the City of Seattle Traffic Control Manual for In-Street Work. A copy of the current City of Seattle Traffic Control Manual for
   In-Street Work and the approved traffic control plan shall be on site at all times.
2. ***Lanes to remain open during peak hours.*** Traffic lanes shall not be closed during the following peak hours: 6:00 AM-9:00 AM and 3:00 PM-7:00 PM in the Central Business District; and 7:00 AM-9:00 AM and 4:00 PM-6:00 PM for arterials elsewhere in the City, unless specifically noted on the approved traffic control plan.
3. ***Maintain access.*** Access to adjoining properties and businesses shall be maintained or accommodated during construction. Pedestrian access around construction sites shall be implemented and maintained per SDOT Director's Rule 10-2015, or successor rule.
4. ***Width of temporary traffic lanes.*** Temporary traffic lanes created during the permitted work shall be a minimum of 11 feet in width unless otherwise approved on the traffic control plan.
5. ***Working within restricted curb spaces.*** When the project impacts a restricted curb space, such as meters, pay stations, specific use and load zones; the Permittee shall obtain permission from SDOT Traffic Operations and reserve the spaces with the Traffic Operations Permit Counter (206-684-5086) before starting work.
6. ***Temporary No Parking signs and easels.*** In areas without parking pay stations or parking meters, or when Traffic Operations allows reserved parking spaces to be controlled with Temporary No Parking signs, establishing a Temporary No Parking Zone requires placing type R7-T38 (T-38) or R7-T39 (T-39) easels and completing an online verification form in conformance with the Traffic Control Manual for In-Street Work. In high impact areas, the Central Business District, and in areas where construction projects are densely clustered (such as in City-designated "Construction Hubs"), additional requirements for establishing a Temporary No Parking Zone may apply.
7. ***Nighttime illumination.*** Four or more Type B warning lights of sufficient brilliance to be seen from 500 feet shall be maintained at all times during the hours of darkness at the points of obstruction or excavation of any right of way.
8. ***Work in alleys.*** For work occurring in alleys that impedes vehicular access, including but not limited to egress, ingress, or through travel; "Street Closed" signs shall be placed at each end of the alley. Property owners adjacent to the alley shall be contacted, and their access concerns shall be addressed and mitigated if possible. This may require alternative work scheduling in the case of Solid Waste collection days

and hours.



Approximate Scale: 1"=20'

0 10 20 40

N

= Previous test probe location
= Proposed test probe location
= Proposed flush mount groundwater monitoring well location
= Monitoring well by others
= Site boundary

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

Arnold's/Former Texaco Service Station No. 211577		Figure 1
RGI Project Number 2017-015D	Proposed Sidewalk and Street Closure Locations	Date Drawn: 08/2017
Address: 631 Queen Anne Avenue North, Seattle, Washington 98109		

TRAFFIC CONTROL PLAN
SEATTLE, WA

Permit # 358772

LEGEND

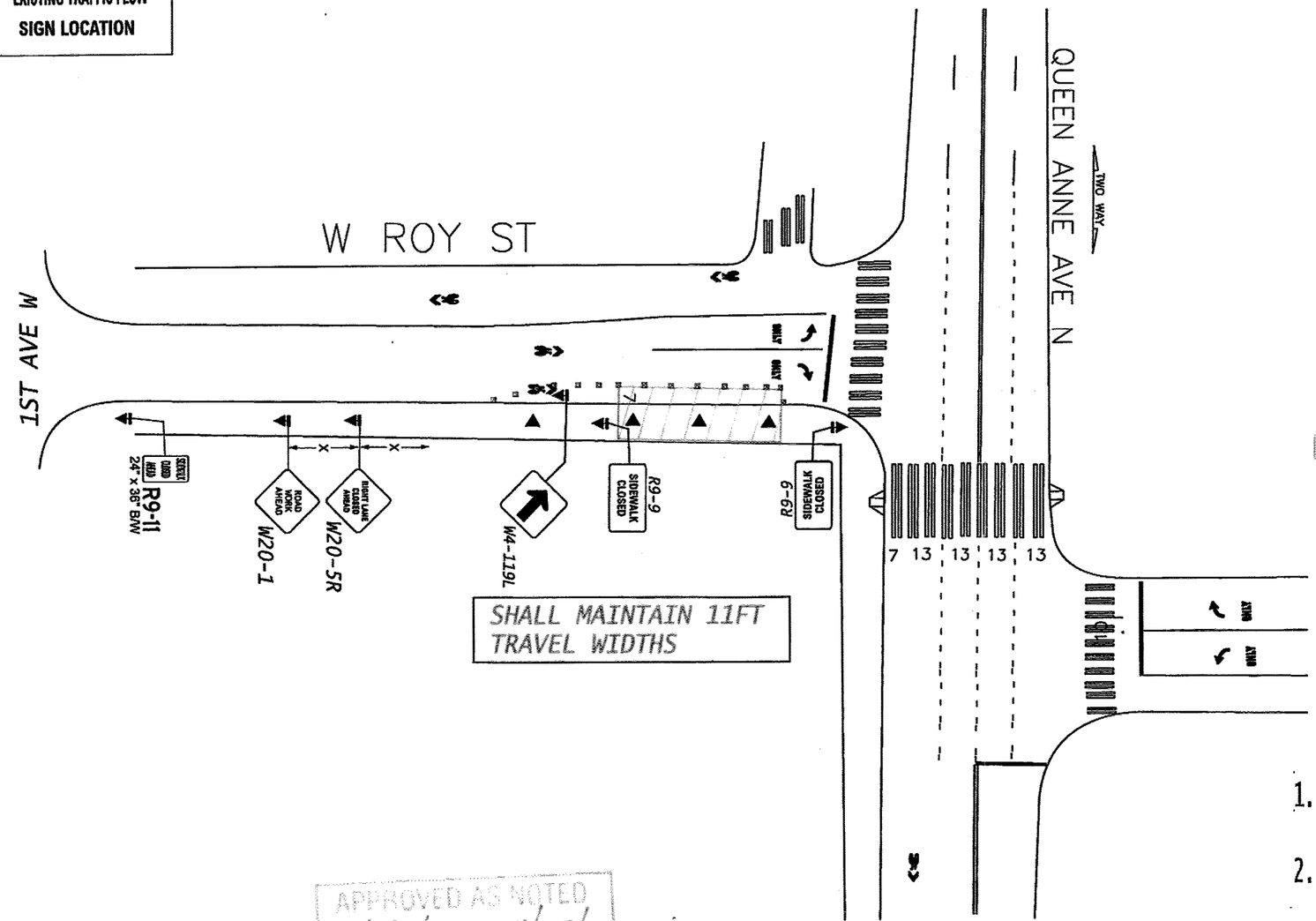
- WORK AREA
- TRAFFIC CONE
- EXISTING TRAFFIC FLOW
- SIGN LOCATION

SPEED LIMIT 30

N

NOT TO SCALE

Typical Parking Lane and Sidewalk Closure



APPROVED AS NOTED
MGV 8/25/11
TRAFFIC OPERATIONS

ROAD CLASS DEFINITIONS

CLASS I - Central District, University District

CLASS II - Arterial streets

CLASS III - All partially or full controlled arterial streets

*Advance warning signs if feasible

**Vertical barricades, cones, tubular guideposts

WORK AREA DIMENSIONS

60 ' x 17 '

Table XI-1

CLASS OF ROAD	WARNING SIGN SPACING IN FEET			TAPER LENGTH (L) IN FEET		CHANNELIZING DEVICE SPACING ON FEET (maximum)				WARNING SIGNS MIN. SIZE IN INCHES
						VEHICLE BARRICADES & DRUMS		OTHER**		
	A	B	C	LANE WIDTH 10'	LANE WIDTH 12'	TAPER (S)	TANGENT	TAPER (S)	TANGENT	
I	*			75	90	SPEED LIMIT	SPEED LIMIT x 2	15	30	30x30
II	150	150	75	150	200	SPEED LIMIT	SPEED LIMIT x 2	20	60	30x30
III	300	300	150	400	600	SPEED LIMIT	SPEED LIMIT x 2	30	60	30x30

28" CONES FOR DELINEATION SPACED @ 15'

GENERAL NOTES

1. ALL SIGNS AND SPACING SHALL CONFORM TO THE CITY OF SEATTLE TRAFFIC CONTROL MANUAL FOR IN-STREET WORK.
2. PRIORITY PASSAGE THROUGH WORK AREA FOR EMERGENCY VEHICLES SHALL BE PROVIDED AT ALL TIMES.
3. ALERT METRO TRANSIT 5 DAYS IN ADVANCE (206-477-1150).If applicable
4. PROTECTIVE VEHICLE RECOMMENDED-MAY BE A WORK VEHICLE.
5 DEVICES SHOULD NOT ENCROACH INTO ADJACENT LANES.
6. CHANNELIZATION DEVICES ARE 28" REFL. CONES. (see TABLE 1 for spacing distances).
7. ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS AND/OR DRIVEWAYS.

All Signs & Spacing to conform to the MUTCD & The City of Seattle Traffic Control Manual

TRAFFIC CONTROL PLAN
SEATTLE, WA

Permit # 358772

LEGEND

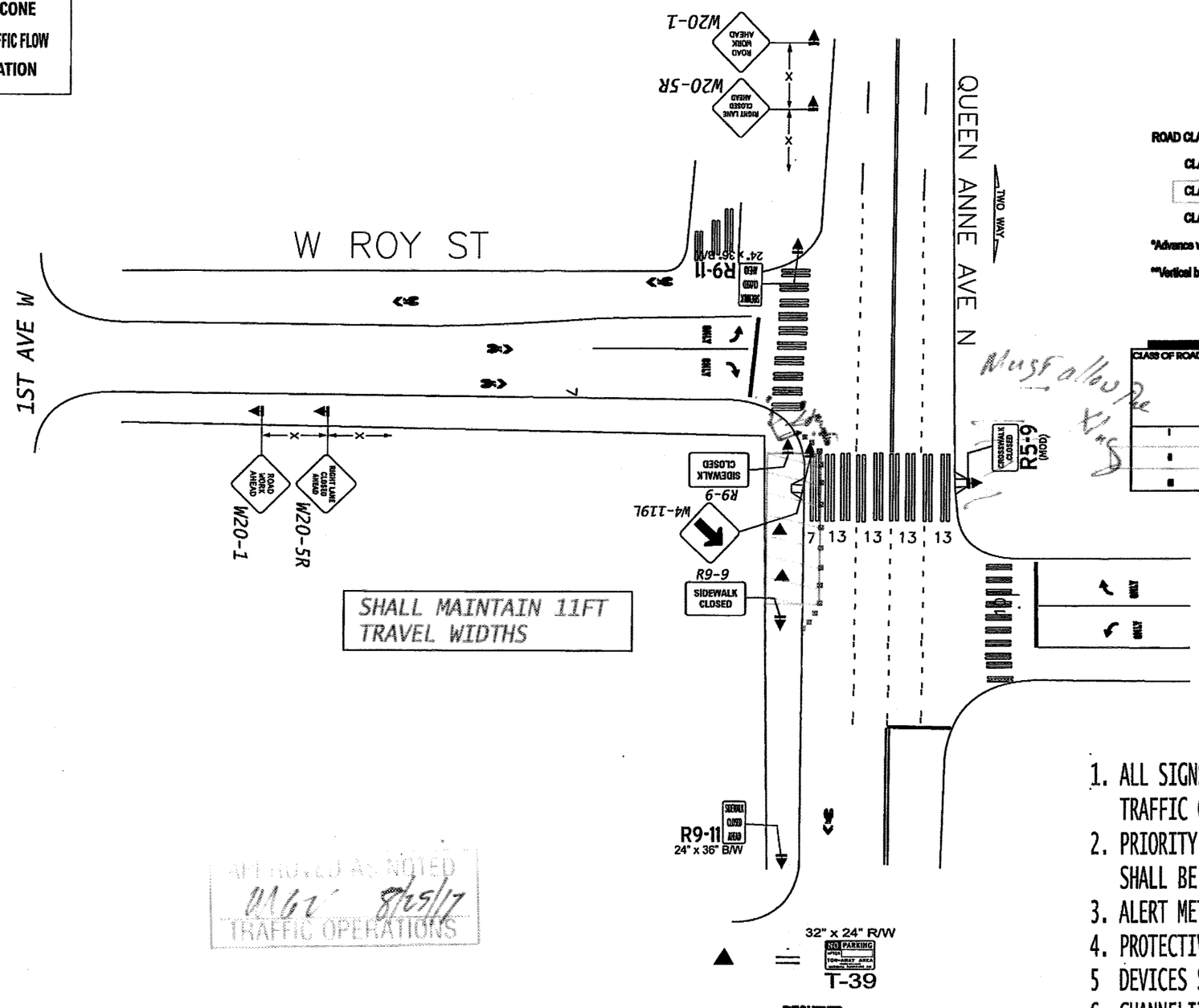
- WORK AREA
- TRAFFIC CONE
- EXISTING TRAFFIC FLOW
- SIGN LOCATION

SPEED LIMIT 30

N

NOT TO SCALE

Typical Parking Lane/Sidewalk AND Crosswalk Closure



SHALL MAINTAIN 11FT TRAVEL WIDTHS

APPROVED AS NOTED
TRAFFIC OPERATIONS
8/25/17

REQUIRED

T-39 NO PARK VERIFICATION REQUIRED TO IMPLEMENT THIS PLAN.
GO TO http://web1.seattle.gov/sdot/noparkt/ FOR DETAILS

ROAD CLASS DEFINITIONS

CLASS I - Central District, University District

CLASS II - Arterial streets

CLASS III - All partially or full controlled arterial streets

*Advance warning signs if feasible

**Vertical barricades, cones, tubular guideposts

WORK AREA DIMENSIONS

44 ' x 25 '

Table XI-1

CLASS OF ROAD	WARNING SIGN SPACING IN FEET			TAPER LENGTH (L) IN FEET		CHANNELIZING DEVICE SPACING ON FEET (maximum)				WARNING SIGNS MIN. SIZE IN INCHES
						VEHICLE BARRICADES & DRUMS		OTHER**		
	A	B	C	LANE WIDTH 10'	LANE WIDTH 12'	TAPER (S)	TANGENT	TAPER (S)	TANGENT	
I	*			75	90	S*SPEED LIMIT	S*SPEED LIMIT x 2	15	30	30x30
II	150	150	75	150	200	S*SPEED LIMIT	S*SPEED LIMIT x 2	20	60	30x30
III	300	300	150	400	500	S*SPEED LIMIT	S*SPEED LIMIT x 2	30	60	30x30

28" CONES FOR DELINEATION SPACED @ 15'

COORDINATED DRAW SLU HUB

GENERAL NOTES

1. ALL SIGNS AND SPACING SHALL CONFORM TO THE CITY OF SEATTLE TRAFFIC CONTROL MANUAL FOR IN-STREET WORK.
2. PRIORITY PASSAGE THROUGH WORK AREA FOR EMERGENCY VEHICLES SHALL BE PROVIDED AT ALL TIMES.
3. ALERT METRO TRANSIT 5 DAYS IN ADVANCE (206-477-1150).If applicable
4. PROTECTIVE VEHICLE RECOMMENDED-MAY BE A WORK VEHICLE.
5 DEVICES SHOULD NOT ENCROACH INTO ADJACENT LANES.
6. CHANNELIZATION DEVICES ARE 28" REFL. CONES. (see TABLE 1 for spacing distances).
7. ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE AT-GRADE INTERSECTIONS AND/OR DRIVEWAYS.

All Signs & Spacing to conform to the MUTCD & The City of Seattle Traffic Control Manual

King County METRO
Service Quality

CONSTRUCTION INFORMATION CENTER

Electric Trolley Bus Overhead Deactivation Request

► Per WAC 296-155: All non-qualified personnel & equipment must maintain a minimum of 10' distance from contact wires when the line is active.
► Approval of a deactivation is not authorization to begin work. Start of work requires clearance from the Metro Power dispatcher.
► Requested deactivation times are not guaranteed. Metro will make every effort to accommodate.

MINIMUM FIFTEEN BUSINESS DAYS NOTIFICATION TO THIS OFFICE

REQUIRED INFORMATION

Company Name	Office Phone	Is project managed by Seattle Department of Transportation?	
Vibrant Cities	**206-659-5750**	No ☒ Yes ☐ If "Yes" continue below	
Submitter Name	Mobile Phone	SDOT Project Manager Name	SDOT PM Office Phone
Pui Leung	**425-793-9088**		
Submitter Email Address	Fax (optional)		
pleung@vibrantcities.com			

Deactivation Date(s) Weekends only	Start Time Not before 5:30 AM Saturday	End Time Not after 12:01 AM Monday
Start Date **12/02/17** End Date **12/04/17**	**5**:30 ☒ **AM** ☐ **PM**	**12:01** ☒ **AM** ☐ **PM**

Location of Work (No addresses; identify affected street - include nearest cross streets or intersecting street)

West Roy Street ☐ **between** &	**OR** ☒ **intersecting at Queen Anne Ave North**	**Street Use Permit No 358772**
Primary Contact Person (On-site preferred)		Mobile Phone 24/7
Paul Riley		**206-713-3066**
Alternate Contact Person (On-site preferred)		Mobile Phone 24/7
Amelia Oates		**585-613-5158**
Purchase or Work Order No.	Billing Address (Include "Attn" + Person Name)	
2017-015D	**Attn: Mr. Pui Leung, 606 Maynard Ave S #251, Seattle, WA 98104**	

Description of work

▼ Provide additional info if work requires any removal / relocation / shifting of trolley overhead ▼

Nature of Work
Subsurface Investigation-Installation of groundwater monitoring well SS1W-1 (See TCP Figure)

Will work require a road or lane closure w/traffic detour or shift(s)? ▼ If "YES" provide brief description of traffic control plan. ▼ **Partial closure of eastbound W Roy Street and southbound Queen Anne Ave N**	**(Check one)** ►	☒ YES	☐ NO
Have you submitted a traffic plan to the city for approval? ▼ If "YES" provide dates & times of TCP implementation ▼ **Yes, begin 12/2/17 7am -5pm (work that will not affect trolley line may extend into 12/3/17)**	**(Check one)** ►	☒ YES	☐ NO
Will on-site work hours differ than those for the deactivation? ▼ If "YES" provide actual times crews will be present & working on-site ▼	**(Check one)** ►	☐ YES	☒ NO
Will bus stop(s) be closed or relocated because of this work? ▼ If "YES" provide location & direction of affected bus stops (i.e. "s/b 1 Av/Pike St") ▼	**(Check one)**►	☐ YES	☒ NO

Request Determination ►►► **FOR KC METRO USE ONLY** ◄◄◄ **Form No. 17.12.02.07**

Request Approved? ☒**Yes** ☐**No** If "No" then explanation for denial ►

Routes Requiring Motorization: **1(14), 2(13)** ☐ **Sat** ☐ **Sun** ☒ **Sat/Sun** ☐ **Fri night or other** (specify)	☐ **Reroutes required for the following route/runs:**
Reviewed by Metro Power? ☒ **Yes** ☐ **No** **Power Chief Name Mark McDoniel**	**Date Reviewed 11/8/17**

☐ *Request Rescinded by Metro or Cancelled by Submitter* ***Date*** ***Explanation:*** ►

CIC Coordinator	Date Received	Date of Final Action
Jeanine Maury	**11/7/17**	**11/29/17**

King County / Metro Transit Division / Service Quality Section / Construction Information Center (CIC)
1500 Sixth Avenue So. Seattle, WA 98134-1308 ■ Mail Stop SVQ-TR-010 ■ E-mail: Trolley.Impacts@kingcounty.gov ■ Phone: 206-477-1150 ■ Fax: 206-684-2686

Project Name: **Arnold's/Former Texaco Service Station No. 211577**	Test Probe/Well No.: **SSI-W1**
Project Number: **2017-015D**	**Sheet 1 of 1**
Client: **Vibrant Cities**	RILEYGROUP

Date(s) Drilled: **12/02/17**	Logged By: **LC**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **21 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **115'**
Groundwater Level: **10.75' on 12/06/17**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North,Seattle, Washington 98109**	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	PID Reading, ppm	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0						Concrete		Concrete		Concrete 0 - 1
							SM		Brown, silty SAND to SAND with some silt, medium dense, damp (fill)		Blank 1.5" PVC 0 - 10
							ML		Gray, SILT with trace sand and gravel, stiff, damp		Bentonite 1 - 3
	5										
			SS1-W1-8		0.0	50%	SP-SM		Light brown to blue-gray, SAND with some silt and trace gravel to silty SAND with some gravel, dense, moist to wet, hydrocarbon odor		
	10	▼									Prepack Slotted 1.5" PVC 10 - 20
	15		SS1-W1-15		0.1	95%					
			SSW-W1-18		0.0	90%	CL		Light brown to blue-gray, silty CLAY with some gravel and trace sand, very stiff, damp		
	20								No gravel or sand		
			SS1-W1-21		0.0	100%			Boring terminated 21 feet bgs		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**	Test Probe/Well No.: **SSI-W2**
Project Number: **2017-015D**	**Sheet 1 of 1**
Client: **Vibrant Cities**	RILEYGROUP

Date(s) Drilled: **12/02/17**	Logged By: **LC**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **22 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation (feet amsl): **114'**
Groundwater Level: **13.65' on 12/06/17**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North,Seattle, Washington 98109**	

Elevation (feet)	Depth (feet)	Sample Type	Sample ID	Sampling Resistance, blows/ft	PID Reading, ppm	Recovery (%)	USCS Symbol	Graphic Log	MATERIAL DESCRIPTION	Well Log	REMARKS AND OTHER TESTS
	0						Concrete		Concrete		Concrete 0 - 1
							SM		Brown, silty SAND to SAND with some silt, medium dense, damp (fill)		Blank 1.5" PVC 0 - 12
											Bentonite 1 - 3
							ML		Black to brown, sandy SILT with trace gravel, very stiff, damp		
	5										
							SM		Light brown to gray, SAND with some silt, soft to medium dense, wet, hydrocarbon odor		
			SS1-W2-9		0.0	70%			Trace gravel and silt 8' - 10'		
	10										
			SS1-W2-12.5		51.8	100%	ML		Sandy SILT and CLAY, stiff		Prepack Slotted 1.5" PVC 12 - 22
							SM		Light brown to gray, SAND with some silt, soft to medium dense, wet, hydrocarbon odor		
	15		SSW-W2-16		0.0	100%			Trace silt		
									Silty with trace gravel		
			SS1-W2-19.5		0.0	100%	CL		Light brown to gray, silty CLAY with trace sand, very stiff, wet		
	20										
									Boring terminated 22 feet bgs		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**

Project Number: **2017-015D**

Client: **Vibrant Cities**

RILEYGROUP

Boring Log Key

Sheet 1 of 1

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

COLUMN DESCRIPTIONS

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

FIELD AND LABORATORY TEST ABBREVIATIONS

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

MATERIAL GRAPHIC SYMBOLS

- Bentonite
- Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
- Portland Cement Concrete
- SILT, SILT w/SAND, SANDY SILT (ML)
- Silty SAND (SM)
- Poorly graded SAND with Silt (SP-SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Auger sampler
- Bulk Sample
- 3-inch-OD California w/ brass rings
- CME Sampler
- Grab Sample
- 2.5-inch-OD Modified California w/ brass liners
- Pitcher Sample
- 2-inch-OD unlined split spoon (SPT)
- Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting)
- Minor change in material properties within a stratum
- Inferred/gradational contact between strata
- Queried contact between strata

GENERAL NOTES

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

Project Name: **Arnold's/Former Texaco Service Station No. 211577**	Test Probe No.: **SSI-P1**
Project Number: **2017-015D**	**Sheet 1 of 1**
Client: **Vibrant Cities**	RILEYGROUP

Date(s) Drilled: **12/02/17**	Logged By: **LC**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **23 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **114.5'**
Groundwater Level: **12.37' on 12/3**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Concrete	
						Light brown to gray, silty SAND with trace gravel, medium dense, damp to moist	
						Light brown to gray, sandy SILT with trace gravel, medium dense, damp to moist	
0.0	SSI-P1-5		60%		5	Light brown to gray, SILT with trace gravel, medium dense, damp to moist	
0.0	SSI-P1-9		60%		10	Less gravel	
0.0	SSI-P1-14		100%			Light brown to gray, SAND with trace to some silt, medium dense, wet	
1.0	SSI-P1-17		66%		15		
0.0	SSI-P1-19		100%			Silty sand	
0.0	SSI-P1-19.5		100%		20	Gray, silty CLAY, very stiff, damp	
						Boring terminated 23 feet bgs	
					25		

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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: SSI-P2

Sheet 1 of 1

Date(s) Drilled: **12/02/17**	Logged By: **LC**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **22 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **114**
Groundwater Level: **19.17' on 12/2**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Concrete
						Light brown to gray, silty SAND with trace gravel and some silt, medium dense, damp, hydrocarbon odor
					5	
0.0	SSI-P2-7.5		50%			
						Light brown to gray, gravelly SAND with some silt, medium dense, damp
0.0	SSI-P2-10		75%		10	Wet, loose
0.0	SSI-P2-15		100%		15	
0.0	SSI-P2-15.5		100%			Light brown/black, medium to coarse SAND, medium dense, wet, hydrocarbon odor
						Light brown, SILT with trace sand, very stiff, damp, hydrocarbon odor
0.0	SSI-P2-18		100%	▽		Gray, silty CLAY, very stiff, damp
					20	
						Boring terminated 22 feet bgs
					25	

Graphic Log

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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: SSI-P3

Sheet 1 of 2

Date(s) Drilled: **12/04/17**	Logged By: **LC**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **35 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **113.5'**
Groundwater Level: **Not measured**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Asphalt
						Fill
						Light brown to gray, silty SAND to sandy SILT with some gravel, dense, damp, hydrocarbon odor
0.1	SSI-P3-5		60%		5	
						Light brown to gray, silty SAND to SAND with trace silt and gravel, dense, damp, hydrocarbon odor
0.1	SSI-P3-10		80%		10	
2.3	SSI-P3-12		100%			Light brown to gray, SAND with trace silt and gravel, soft, wet, hydrocarbon odor
					15	
0.1	SSI-P3-17		100%			
						Less gravel
					20	Some gravel
69.7	SSI-P3-22		90%			Slight sheen potentially related to groundwater contamination
					25	

Graphic Log

Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: SSI-P3

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
0.1	SSI-P3-27		100%		25		
						Gray, CLAY with trace sand, stiff, damp	
					30		
0.1	SSI-P3-31		100%			Very stiff, no odor	
0.1	SSI-P3-34		100%				
0.1	SSI-P3-35		100%		35	Refusal at 35 feet bgs	
					40		
					45		
					50		
					55		
					60		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**	RILEYGROUP	Test Probe No.: **SSI-P4**
Project Number: **2017-015D**		**Sheet 1 of 2**
Client: **Vibrant Cities**		

Date(s) Drilled: **12/04/17**	Logged By: **LC**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **37 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **113'**
Groundwater Level: **Not measured**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION
					0	Asphalt
						Light to medium brown/black, sandy SILT, medium stiff, damp, hydrocarbon odor
						SAND
0.0	SSI-P4-5		60%		5	Light to medium brown/black, sandy SILT, medium stiff, damp, hydrocarbon odor
						Light brown to black, silty SAND, medium dense, damp, odor
						Gravelly, asphaltic lens
0.0	SSI-P4-7		100%			Light brown to black, silty SAND, medium dense, damp, odor
0.0	SSI-P4-7.5		66%			Light brown to brick red to black, sandy SILT, medium stiff, damp to moist
						Light brown, SAND with some silt and trace sand, medium dense, damp, odor
0.0	SSI-P4-10		66%		10	
0.0	SSI-P4-11		50%			Light brown to gray, sandy SILT to silty SAND with trace gravel, medium stiff, dense, no odor
3.4	SSI-P4-14		100%			Light brown to dark gray, SAND with trace to some silt, loose to medium dense, wet, hydrocarbon odor
					15	Trace gravel
19	SSI-P4-17		100%			
0.2	SSI-P4-18		100%			Strong sheen 18' to 23' bgs. Hydrocarbon odor to 28' bgs
17.5	SSI-P4-19		100%			
					20	
27.4	SSI-P4-22		100%			
					25	

Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

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Test Probe No.: SSI-P4

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
0.1	SSI-P4-27		100%		25		
						Light brown, sandy SILT, medium stiff, damp, slight hydrocarbon odor	
0.1	SSI-P4-30		100%		30	Gray, CLAY with trace to no sand, very stiff, damp, no odor	
0.1	SSI-P4-35		100%		35		
0.1	SSI-P4-37		100%			Refusal at 37 feet bgs	
					40		
					45		
					50		
					55		
					60		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: SSI-P5

Sheet 1 of 2

Date(s) Drilled: **12/04/17**	Logged By: **LC**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **3.25" Diameter**	Total Depth of Borehole: **31 feet bgs**
Drill Rig Type: **Geoprobe**	Drilling Contractor: **RGI**	Approximate Surface Elevation: **113'**
Groundwater Level: **Not encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Light to medium brown/gray to black, silty SAND with some gravel, medium dense, damp (fill)	
0.1	SSI-P5-8		50%		5		
815	SSI-P5-12.5		95%		10	Light brown to gray, medium SAND with trace silt and gravel, medium dense, moist, strong hydrocarbon odor, strong sheen 10' to 20' bgs	
195	SSI-P5-17		100%		15	Loose, damp	
145	SSI-P5-20		100%		20	Gray, CLAY, very stiff, damp, no odor	
5.2	SSI-P5-23		100%		25		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**

Project Number: **2017-015D**

Client: **Vibrant Cities**

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Test Probe No.: **SSI-P5**

Sheet 2 of 2

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					25	Gray, CLAY, very stiff, damp, no odor	
0.2	SSI-P5-28		100%				
					30		
0.1	SSI-P5-31					Refusal at 31 feet bgs	
					35		
					40		
					45		
					50		
					55		
					60		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015D**
Client: **Vibrant Cities**

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Boring Log Key

Sheet 1 of 1

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

COLUMN DESCRIPTIONS

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

FIELD AND LABORATORY TEST ABBREVIATIONS

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

MATERIAL GRAPHIC SYMBOLS

- Asphaltic Concrete (AC)
- Lean CLAY, CLAY w/SAND, SANDY CLAY (CL)
- Portland Cement Concrete
- AF
- Poorly graded GRAVEL (GP)
- SILT, SILT w/SAND, SANDY SILT (ML)
- Silty SAND (SM)
- Silty SAND to Sandy SILT (SM-ML)
- Poorly graded SAND (SP)
- Poorly graded SAND with Silt (SP-SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS

- Auger sampler
- Bulk Sample
- 3-inch-OD California w/ brass rings
- CME Sampler
- Grab Sample
- 2.5-inch-OD Modified California w/ brass liners
- Pitcher Sample
- 2-inch-OD unlined split spoon (SPT)
- Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

- Water level (at time of drilling, ATD)
- Water level (after waiting)
- Minor change in material properties within a stratum
- Inferred/gradational contact between strata
- Queried contact between strata

GENERAL NOTES

1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015C**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: P1

Sheet 1 of 1

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **20 feet bgs**
Drill Rig Type: **Truck-Mounted**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **13' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
						Grayish brown, silty SAND, dense, moist, no odor, no sheen	
			75				
0.051	P1-5				5		
			80				
0.029	P1-10				10		
31	P1-13		70	▽		Gray, silty SAND, dense, wet, strong odor, sheen	
					15		
			70				
33	P1-20				20	Boring terminated 20 feet bgs	
					25		

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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015C**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: P2

Sheet 1 of 1

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **20 feet bgs**
Drill Rig Type: **Truck-Mounted**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114.5'**
Groundwater Level: **14' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
			70			Grayish brown, silty SAND, dense, moist, strong odor, slight sheen	
42	P2-4						
			85		5		
41	P2-7.5						
						Compact density fill (CDF) or concrete	
						Brown, silty SAND, dense, moist, slight odor, slight sheen	
			75		10		
25	P2-14			▽			
						Gray, silty SAND, dense, moist, strong odor, sheen	
					15		
0.021	P2-17		90				
0.031	P2-20				20	Boring terminated 20 feet bgs	
					25		

Project Name: **Arnold's/Former Texaco Service Station No. 211577** Project Number: **2017-015C** Client: **Vibrant Cities**	RILEYGROUP **Test Probe No.: P3** **Sheet 1 of 1**

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Asphalt**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **20 feet bgs**
Drill Rig Type: **Truck-Mounted**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **13' bgs**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Asphalt	
			60			Brown, silty SAND, medium dense, moist, no odor, no sheen	
7.032	P3-5				5	Gray, silty SAND, medium dense, moist, strong odor, slight sheen	
			85				
0.15	P3-8					Brown, silty SAND, moist, no odor, no sheen	
					10		
			75				
30	P3-13			▽		Gray, silty SAND, medium dense, odor, slight sheen	
						Wet	
					15		
						No odor	
			90				
25	P3-20				20	Boring terminated 20 feet bgs	
					25		

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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015C**
Client: **Vibrant Cities**

RILEYGROUP

Test Probe No.: P4

Sheet 1 of 1

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **5.5 feet bgs**
Drill Rig Type: **Track-Mounted, Limited Access**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Concrete	
			80			Light brown, silty SAND, medium dense, moist, no odor, no sheen	
0.013	P4-2						
			80				
0.01	P4-4						
			70		5		
0.01	P4-5.5					Boring refusal at 5.5 feet bgs	
					10		
					15		
					20		
					25		

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Project Name: **Arnold's/Former Texaco Service Station No. 211577** Project Number: **2017-015C** Client: **Vibrant Cities**	RILEYGROUP **Test Probe No.: P5** **Sheet 1 of 1**

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **6 feet bgs**
Drill Rig Type: **Track-Mounted, Limited Access**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Concrete	
			80			Light brown, silty SAND, dense, moist, no odor, no sheen	
0.013	P5-2						
			45				
0.011	P5-4						
			0		5		
						Boring refusal at 6 feet bgs	
					10		
					15		
					20		
					25		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**	Test Probe No.: **P6**
Project Number: **2017-015C**	**Sheet 1 of 1**
Client: **Vibrant Cities**	RILEYGROUP

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **4 feet bgs**
Drill Rig Type: **Track-Mounted, Limited Access**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
0.021	P6-1		80		0	Concrete	
						Light brown, silty SAND with gravel, dense, moist, no odor, no sheen	
			75				
0.017	P6-4						
						Boring refusal at 4 feet bgs	
					5		
					10		
					15		
					20		
					25		

Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015C**
Client: **Vibrant Cities**

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Test Probe No.: P7

Sheet 1 of 1

Date(s) Drilled: **05/22/17**	Logged By: **SL**	Surface Conditions: **Concrete**
Drilling Method(s): **Direct Push**	Drill Bit Size/Type: **2" Probe**	Total Depth of Borehole: **6 feet bgs**
Drill Rig Type: **Track-Mounted, Limited Access**	Drilling Contractor: **Holocene**	Approximate Surface Elevation: **114'**
Groundwater Level: **Not Encountered**	Sampling Method(s): **Continuous**	Hammer Data : **n/a**
Borehole Backfill: **Bentonite**	Location: **631 Queen Anne Avenue North, Seattle, Washington 98109**	

PID Reading, ppm	Sample ID	Sample Type	% Recovery	GW Depth	Depth (feet)	MATERIAL DESCRIPTION	Graphic Log
					0	Concrete	
			80			Light brown, silty SAND, dense, moist, no odor, no sheen	
0.009	P7-2						
			75				
0.010	P7-4						
			70		5		
0.011	P7-6						
						Boring refusal at 6 feet bgs	
					10		
					15		
					20		
					25		

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Project Name: **Arnold's/Former Texaco Service Station No. 211577**
Project Number: **2017-015C**
Client: **Vibrant Cities**

RILEYGROUP

Boring Log Key

Sheet 1 of 1

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

COLUMN DESCRIPTIONS

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LL: Liquid Limit, percent
PI: Plasticity Index, percent
SA: Sieve analysis (percent passing No. 200 Sieve)
UC: Unconfined compressive strength test, Qu, in ksf
WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS

Asphaltic Concrete (AC)

Portland Cement Concrete

Silty SAND (SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS

Auger sampler

Bulk Sample

3-inch-OD California w/ brass rings

CME Sampler

Grab Sample

2.5-inch-OD Modified California w/ brass liners

Pitcher Sample

2-inch-OD unlined split spoon (SPT)

Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS

Water level (at time of drilling, ATD)

Water level (after waiting)

Minor change in material properties within a stratum

Inferred/gradational contact between strata

Queried contact between strata

GENERAL NOTES

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

Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

December 13, 2017

Jerry Sawetz
The Riley Group
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Dear Mr. Sawetz:

Please find enclosed the analytical data report for the Arnold's Former Texaco Service Station Project located in Seattle, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: RGI (Riley Group)
Address:
City: Bothell State: WA Zip:
Phone: Fax:
Client Project # 2017-015D

Date: ~~12/3~~ ~~12/4~~ 12/4, 2017 Page: 1 of 3
Project Manager: Jerry Sauerz
Project Name: Arnolds Former Texaco Service Station
Location: Roy st & Queen Anne City, State: Seattle WA
Collector: Logan Quinn Date of Collection: 12/2 - 12/4
Email: jsauerz@riley-group.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals		Field Notes
1 SSL-P1-14	14	15:30	Soil	2 voa, 1 jar														12-5-17 run
2 SSL-P1-17	17	15:45		1														samples per Jerry
3 SSL-P1-19	19	16:00		1														via email.
4 SSL-P1-19.5	19.5	16:15		4 voa, 1 jar														unpreserved 12/3
5 SSL-P2-7.5	7.5	10:15		2 voa, 1 jar	X	X			X									
6 SSL-P2-15	15	11:00		2 jars														unpreserved 12/3
7 SSL-P2-15.5	15.5	11:15		1														1
8 SSL-P2-18	18	10:30		1														
9 SSL-P3-5	5	14:45		2 voa, 1 jar														
10 SSL-P3-10	10	14:30		1														
11 SSL-P3-12	12	14:15		1														
12 SSL-P3-17	17	14:10		1														
13 SSL-P3-22	22	14:00		1	X	X			X									
14 SSL-P3-27	27	~~12:45~~		1														
15 ~~SSL-P3~~ SSL-P3-35	35	14:45		1														
16 SSL-P4-5	5	12:30		1 jar														unpreserved 12/3
17 SSL-P4-7	7	12:45		1														1

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	12/4/2017 17:20	[signature]	12/4/17 1720
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y N
Temp.	°C
Seals Intact?	Y N N/A
Total Number of Containers	

Remarks:

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

4139 Libby Road NE
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Ph: 360-352-2110
Fax: 360-352-4154

Chain of Custody Record

www.LibbyEnvironmental.com

Client: RGI (Riley Group)
Address:
City: Bothell State: WA Zip:
Phone: Fax:
Client Project # 2017-015D

Date: Page: 2 of 3
Project Manager: Jerry Sametz
Project Name: Arnolds Former Texaco Service Station
Location: Roy St & Queen Anne City, State: Seattle, WA
Collector: Logan Chinn Date of Collection: 12
Email: jsametz@riley-group.com

Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1 SS1-P4-7.5	7.5	13:00	Soil	~~1 jar~~															unpreserved, 12/3
2 SS1-P4-10	10	13:15		2 voa, 1 jar															12-5-17 run
3 SS1-P4-11	11	8:30																	samples per Jerry
4 SS1-P4-14	14	8:45																	via email.
5 SS1-P4-17	17	9:15																	
6 SS1-P4-18	18	9:30																	
7 SS1-P4-19	19	10:00																	
8 SS1-P4-22	22	10:15				X	X			X									
9 SS1-P4-27	27	11:30																	
10 SS1-P4-35	35	10:45																	
11 SS1-P5-8	8	15:00																	
12 SS1-P5-12.5	12.5	15:30																	
13 SS1-P5-17	17	15:45																	
14 SS1-P5-20	20	16:00																	
15 SS1-P5-23	23	16:15				X	X			X									
16 SS1-P5-28	28	16:30																	
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	12/4/17 17:20	[signature]	12/4/17 1720
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR 48HR (5-DAY)

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: RGI (Riley Group)
Address:
City: State: Zip:
Phone: Fax:
Client Project # 2017-0151

Date: 12/4/17 Page: 3 of 3
Project Manager: Jerry Sawetz
Project Name: Arnold's Former Texaco
Location: Seattle City, State: WA
Collector: Logan Chinn Date of Collection: 12/2-4/17
Email:

	Sample Number	Depth	Time	Sample Type	Container Type	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals		Field Notes
1	SSL-MW-18	18	10:30	Soil	2oz-1jar														12-5-17 run
2	SSL-MW-21	21	10:45	"	"														samples per Jerry
3	SSL-MW2-16	16	13:00	"	"														via email.
4	SSL-MW2-19.5	19.5	13:15	"	4oz, 1jar														unpreserved, 12/3
5	SSL-P1		9:15	water	1L, 3voa	X	X			X									unpreserved 12/3
6	SSL-P2		14:00	water	1L, 3voa	X	X			X									↓
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by:	Date / Time	Received by:	Date / Time
Logan Chinn	12/4/2017 17:20	[signature]	12/4/17 1720
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y	N	
Temp.		°C	
Seals Intact?	Y	N	N/A
Total Number of Containers			

Remarks:

TAT: 24HR (48HR) 5-DAY

LEGAL ACTION CLAUSE: *In the event of default of payment and/or failure to pay, Client agrees to pay the costs of collection including court costs and reasonable attorney fees to be determined by a court of law.*

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

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ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group Inc
Seattle, Washington
Libby Project # L171205-8
Client Project # 2017-015D

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260C) in Soil

Sample Number	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline (mg/kg)	Surrogate Recovery (%)
Method Blank	12/11/17	nd	nd	nd	nd	nd	95
LCS	12/11/17	120%	126%				94
SS1-P2-7.5	12/11/17	nd	nd	nd	nd	nd	93
SS1-P2-7.5 Dup	12/11/17	nd	nd	nd	nd	nd	99
SS1-P3-22	12/11/17	nd	nd	0.15	nd	293	99
SS1-P4-22	12/11/17	nd	nd	nd	nd	504	100
SS1-P5-23	12/11/17	4.4	7.8	0.29	1.0	99	106
SS1-P2-7.5 MS	12/11/17	121%	130%				95
SS1-P2-7.5 MSD	12/11/17	110%	118%				84
Practical Quantitation Limit		0.02	0.10	0.05	0.15	10	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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Olympia, WA 98506
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ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group Inc
Seattle, Washington
Libby Project # L171205-8
Client Project # 2017-015D

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	12/7/17	109	nd	nd
SS1-P2-7.5	12/7/17	106	nd	nd
SS1-P3-22	12/7/17	113	nd	nd
SS1-P4-22	12/7/17	int	843	nd
SS1-P5-23	12/7/17	99	nd	nd
SS1-P5-23 Dup	12/7/17	100	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Vanessa Cheang

Libby Environmental, Inc.

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Olympia, WA 98506
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ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group Inc
Seattle, Washington
Libby Project # L171205-8
Client Project # 2017-015D

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260C) in Water

Sample Number	Date Analyzed	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Gasoline (µg/L)	Surrogate Recovery (%)
Method Blank	12/6/17	nd	nd	nd	nd	nd	95
LCS	12/6/17	120%	121%				95
SS1-P1	12/6/17	nd	nd	nd	nd	nd	95
SS1-P2	12/6/17	nd	nd	nd	nd	nd	96
L171201-1 MS	12/6/17	102%	100%				95
Practical Quantitation Limit		1.0	2.0	1.0	2.0	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

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Email: libbyenv@aol.com

ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group Inc
Seattle, Washington
Libby Project # L171205-8
Client Project # 2017-015D

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	12/6/17	106	nd	nd
SS1-P1	12/6/17	108	nd	nd
SS1-P2	12/6/17	108	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Vanessa Cheang

Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

December 8, 2017

Jerry Sawetz
The Riley Group
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Dear Mr. Sawetz:

Please find enclosed the analytical data report for the Arnold's Former Texaco Service Station Project located in Seattle, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: The Riley Group Inc
Address:
City: Bothell State: WA Zip:
Phone: Fax:
Client Project # 2017-015D

Date: 12/6/2017 Page: 1 of 1
Project Manager: Jerry Sawetz
Project Name: Arnold's Former Texaco Service Station
Location: Roy st & Queen Anne City, State: Seattle
Collector: Logan Chinn Date of Collection: 12/6/2017
Email: jsawetz@riley-grp.com

Sample Number	Depth	Time	Sample Type	Container Type (Jar / L / Vial)	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	c PAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
1 SS1-WS1		10:30	water	1 3		X	X			X									unpreserved 1
2 SS1-WS2		11:30	water	1 3		X	X			X									
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			
16																			
17																			

Relinquished by: Logan Chinn Date / Time 13:00 12/6/2017
Relinquished by: Bill O'Brien Date / Time 12-6-17 1:23
Relinquished by: Date / Time

Received by: Date / Time
Received by: Phung Chuk Jan Date / Time 12/6/17 16:30
Received by: Date / Time

Sample Receipt
Good Condition? Y N
Temp. 8 °C
Seals Intact? Y N N/A
Total Number of Containers 8

Remarks: 48 hr. TAT

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab. Yellow - File. Pink - Originator

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
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Email: libbyenv@aol.com

ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
The Riley Group, Inc.
Seattle, Washington
Libby Project # L171206-2
Client Project # 2017-015D

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8260C) in Water

Sample Number	Date Analyzed	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Gasoline (µg/L)	Surrogate Recovery (%)
Method Blank	12/8/17	nd	nd	nd	nd	nd	95
LCS	12/8/17	108%	110%				95
SS1-W1	12/8/17	nd	nd	nd	nd	nd	96
SS1-W2	12/8/17	nd	nd	nd	nd	nd	96
Practical Quantitation Limit		1.0	2.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Toluene-d8): 65% TO 135%

ANALYSES PERFORMED BY: Kodey Eley

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
The Riley Group, Inc.
Seattle, Washington
Libby Project # L171206-2
Client Project # 2017-015D

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Water

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (µg/L)	Oil (µg/L)
Method Blank	12/7/17	109	nd	nd
SS1-W1	12/7/17	110	nd	nd
SS1-W2	12/7/17	98	nd	nd
Practical Quantitation Limit			200	400

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Vanessa Cheang

Libby Environmental, Inc.

4139 Libby Road NE • Olympia, WA 98506-2518

December 6, 2017

Jerry Sawetz
The Riley Group
17522 Bothell Way NE, Suite A
Bothell, WA 98011

Dear Mr. Sawetz:

Please find enclosed the analytical data report for the Arnold's Former Texaco Service Station Project located in Seattle, Washington.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included. The sample(s) will be disposed of in 30 days unless we are contacted to arrange long term storage.

Libby Environmental, Inc. appreciates the opportunity to have provided analytical services for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Sherry L. Chilcutt
Senior Chemist
Libby Environmental, Inc.

Phone (360) 352-2110 • Fax (360) 352-4154 • libbyenv@aol.com

Libby Environmental, Inc.

Chain of Custody Record

www.LibbyEnvironmental.com

4139 Libby Road NE
Olympia, WA 98506
Ph: 360-352-2110
Fax: 360-352-4154

Client: Riley Group Inc
Address:
City: Bothell State: WA Zip:
Phone: 425-415-0551 Fax:
Client Project # 2017-015D

Date: 12/4/2017 Page: 1 of 1
Project Manager: Jerry Sawetz
Project Name: Arnold's Former Texaco Service Station
Location: Roy St / Queen Anne City, State: Seattle, WA
Collector: Logan Ching Date of Collection: 12/2 - 12/3
Email: jsawetz@riley-group.com

	Sample Number	Depth	Time	Sample Type	Container Jar Type	Container Vial	VOC 8260	NWTPH-Gx	BTEX 8021	NWTPH-HCID	NWTPH-Dx	NWTPH-Dx/Dx	cPAH 8270	PAH 8270	Semi Vol 8270	PCB 8082	MTCA 5 Metals	RCRA 8 Metals			Field Notes
12	1 SS1-P1-5	5	15:00	Soil	1	4	X	X			X										Sampled 12/2
2	2 SS1-P1-9	9	15:15		1	2															" 12/2
3	3 SS1-P2-10	10	10:30		1	2															" 12/3
12	4 SS1-W1-8	8	10:00		1	2															" 12/2
12	5 SS1-W1-15	15	10:15		1	2															" 12/2
12	6 SS1-W2-9	9	12:30		1	2															" 12/2
12	7 SS1-W2-12.5	12.5	12:45		1	2															" 12/2
14	8 SS1-P4-37	37	11:00		1	2															" 12/4
2	9 SS1-W2-16	16	13:06		1	2															" 12/2
14	10 SS1-P4-30	30	11:45		1	2															" 12/4
14	11 SS1-P3-34	34	13:15		1	2															" 12/4
14	12 SS1-P3-31	31	13:00		1	2															" 12/4
	13 SS1-P5-31	31	15:15		1	2															" 12/4
	14																				
	15																				
	16																				
	17																				

Relinquished by:	Date / Time	Received by:	Date / Time
[signature]	12/4/2017 16:30	[signature]	12/4/17 1630
Relinquished by:	Date / Time	Received by:	Date / Time
Relinquished by:	Date / Time	Received by:	Date / Time

Sample Receipt

Good Condition?	Y N
Temp.	°C
Seals Intact?	Y N N/A
Total Number of Containers	

Remarks: ML

TAT: 24HR 48HR 5-DAY

Distribution: White - Lab, Yellow - File, Pink - Originator

Libby Environmental, Inc.

4139 Libby Road NE
Olympia, WA 98506
Phone: (360) 352-2110
FAX: (360) 352-4154
Email: libbyenv@aol.com

ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group, Inc.
Seattle, Washington
Libby Project # L171204-30
Client Project # 2017-015D

Analyses of Gasoline (NWTPH-Gx) & BTEX (EPA Method 8021B) in Soil

Sample Number	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline (mg/kg)	Surrogate Recovery (%)
Method Blank	12/4/17	nd	nd	nd	nd	nd	90
LCS	12/4/17	106%	93%				117
SS1-P1-5	12/4/17	nd	0.17	nd	nd	nd	89
SS1-P1-9	12/4/17	nd	nd	nd	nd	nd	101
SS1-P2-10	12/4/17	nd	nd	nd	nd	nd	96
SS1-W1-8	12/4/17	nd	nd	nd	nd	nd	96
SS1-W1-8 Dup	12/4/17	nd	nd	nd	nd	nd	85
SS1-W1-15	12/4/17	nd	nd	nd	nd	nd	94
SS1-W2-9	12/4/17	nd	nd	nd	nd	nd	75
SS1-W2-12.5	12/4/17	nd	0.12	0.56	0.84	69	89
SS1-P4-37	12/4/17	nd	nd	nd	nd	nd	89
SS1-W2-16	12/4/17	nd	nd	nd	nd	nd	94
SS1-P4-30	12/4/17	nd	nd	nd	nd	nd	94
SS1-P3-34	12/4/17	nd	nd	nd	nd	nd	86
SS1-P3-31	12/4/17	nd	nd	nd	nd	nd	101
SS1-P5-31	12/4/17	nd	nd	nd	nd	nd	108
SS1-W2-16 MS	12/4/17	70%	83%				67
SS1-W2-16 MSD	12/4/17	72%	85%				92
Practical Quantitation Limit		0.02	0.10	0.05	0.15	10	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Trifluorotoluene): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

Libby Environmental, Inc.

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FAX: (360) 352-4154
Email: libbyenv@aol.com

ARNOLD'S FORMER TEXACO SERVICE STATION PROJECT
Riley Group, Inc.
Seattle, Washington
Libby Project # L171204-30
Client Project # 2017-015D

Analyses of Diesel & Oil (NWTPH-Dx/Dx Extended) in Soil

Sample Number	Date Analyzed	Surrogate Recovery (%)	Diesel (mg/kg)	Oil (mg/kg)
Method Blank	12/4/17	101	nd	nd
SS1-P1-5	12/4/17	102	nd	nd
SS1-P1-9	12/4/17	97	nd	nd
SS1-P2-10	12/4/17	96	nd	nd
SS1-W1-8	12/4/17	98	nd	nd
SS1-W1-15	12/4/17	101	nd	nd
SS1-W2-9	12/4/17	100	nd	nd
SS1-W2-12.5	12/4/17	int	266	nd
SS1-W2-12.5 Dup	12/4/17	int	234	nd
SS1-P4-37	12/4/17	104	nd	nd
SS1-P4-37 Dup	12/4/17	99	nd	nd
SS1-W2-16	12/4/17	112	nd	nd
SS1-P4-30	12/4/17	101	nd	nd
SS1-P3-34	12/4/17	98	nd	nd
SS1-P3-31	12/4/17	93	nd	nd
SS1-P5-31	12/4/17	90	nd	nd
Practical Quantitation Limit			50	250

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (2-F Biphenyl): 65% TO 135%

ANALYSES PERFORMED BY: Paul Burke

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

August 21, 2017

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

Dear Mr Sawetz:

Included are the results from the testing of material submitted on August 15, 2017 from the 2017-015D Arnold's Texaco, F&BI 708278 project. There are 4 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
TRG0821R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 15, 2017 by Friedman & Bruya, Inc. from the The Riley Group 2017-015D Arnold's Texaco, F&BI 708278 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
708278 -01	MW9
708278 -02	MW13

All quality control requirements were acceptable.

Date of Report: 08/21/17
Date Received: 08/15/17
Project: 2017-015D Arnold's Texaco, F&BI 708278
Date Extracted: 08/17/17
Date Analyzed: 08/17/17

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)
MW9 708278-01	1,500 x	490 x	108
MW13 708278-02	60 x	<250	107
Method Blank 07-1783 MB	<50	<250	94

Date of Report: 08/21/17
Date Received: 08/15/17
Project: 2017-015D Arnold's Texaco, F&BI 708278

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	100	63-142	4

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.

708278

SAMPLE CHAIN OF CUSTODY

ME 001[illegible] 1105

Report To Jerry Sawetz
Company RGI
Address 17522 Bothell Way NE
City, State, ZIP Bothell WA 98011
Phone 425-415-0551 Email jsawetz@riley-group.com

SAMPLERS (signature) Amelia Oates
PROJECT NAME 2017-015D Arnold's Texaco
PO #
REMARKS
INVOICE TO

Page # 1 of 1

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
MW9	01	8/15/17	1130	H2O	1		X										
MW13	02	↓	1020	↓	1		X										
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: Amelia Oates	Amelia Oates	RGI	8/15/17	1215
Received by:	Nhan Phan	FEBI	8/15/17	1215
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
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FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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www.friedmanandbruya.com

June 1, 2017

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

Dear Mr Larsen:

Included are the results from the testing of material submitted on May 22, 2017 from the 2017-015C, F&BI 705379 project. There are 21 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
TRG0601R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 22, 2017 by Friedman & Bruya, Inc. from the The Riley Group 2017-015C, F&BI 705379 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	The Riley Group
705379 -01	P1-5
705379 -02	P1-10
705379 -03	P1-13
705379 -04	P1-20
705379 -05	P1-W
705379 -06	P2-4
705379 -07	P2-7.5
705379 -08	P2-14
705379 -09	P2-17
705379 -10	P2-20
705379 -11	P2-W
705379 -12	P3-5
705379 -13	P3-8
705379 -14	P3-13
705379 -15	P3-20
705379 -16	P3-W
705379 -17	P4-2
705379 -18	P4-4
705379 -19	P4-5.5
705379 -20	P5-2
705379 -21	P5-4
705379 -22	P6-1
705379 -23	P6-4
705379 -24	P7-2
705379 -25	P7-4
705379 -26	P7-6

The NWTPH-Dx concentration in sample P1-W exceeded the calibration range of the instrument. The data were flagged accordingly.

All quality control requirements were acceptable.

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379
Date Extracted: 05/24/17
Date Analyzed: 05/24/17

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

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

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

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
P1-5 705379-01	ND	ND	ND	104
P1-13 705379-03	ND	D	ND	105
P2-4 705379-06 1/10	ND	ND	D	98
P2-14 705379-08	ND	ND	ND	104
P2-20 705379-10	ND	ND	ND	105
P3-5 705379-12	ND	D	ND	108
P3-8 705379-13	ND	ND	ND	108
P3-13 705379-14	D	ND	ND	125
P3-20 705379-15	ND	ND	ND	110
Method Blank 07-1130 MB	ND	ND	ND	106

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

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379
Date Extracted: 05/25/17
Date Analyzed: 05/25/17 and 05/30/17

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 50-150)
P1-W 705379-05 1/5	<5	12	5.4	27	7,100	84
P2-W 705379-11	<1	<1	<1	<3	<100	96
P3-W 705379-16 1/5	<5	9.7	8.2	19	1,200	100
Method Blank 07-1138 MB	<1	<1	<1	<3	<100	96

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379
Date Extracted: 05/25/17
Date Analyzed: 05/26/17

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

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

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
P1-13 705379-03	<0.02	<0.02	0.078	0.39	100	103
P1-20 705379-04	<0.02	0.055	0.13	0.19	26	99
P2-4 705379-06	0.025	1.4	1.3	2.1	250	130
P2-7.5 705379-07	<0.02	<0.02	<0.02	<0.06	<2	96
P2-14 705379-08	<0.02	<0.02	<0.02	<0.06	<2	97
P2-20 705379-10	<0.02	<0.02	<0.02	<0.06	<2	95
P3-5 705379-12	0.047	0.54	0.84	1.3	220	121
P3-13 705379-14	<0.02	<0.02	<0.02	<0.06	2.7	96
Method Blank 07-1100 MB2	<0.02	<0.02	<0.02	<0.06	<2	95

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379
Date Extracted: 05/25/17
Date Analyzed: 05/26/17

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

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

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Surrogate (% Recovery) (Limit 50-150)
P1-5 705379-01	<0.02	<0.02	<0.02	<0.06	92
P1-10 705379-02	<0.02	<0.02	<0.02	<0.06	92
P3-8 705379-13	<0.02	<0.02	<0.02	<0.06	96
P3-20 705379-15	<0.02	<0.02	<0.02	<0.06	97
Method Blank 07-1100 MB2	<0.02	<0.02	<0.02	<0.06	95

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379
Date Extracted: 05/24/17
Date Analyzed: 05/24/17

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)
P1-W 705379-05	110,000 ve	3,800 x	124
P2-W 705379-11 1/1.2	<60	<300	90
P3-W 705379-16 1/1.2	1,400	<300	87
Method Blank 07-1124 MB2	<50	<250	95

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P4-2	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-17
Date Analyzed:	05/23/17	Data File:	052336.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	89	113
Toluene-d8	97	64	137
4-Bromofluorobenzene	97	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P4-4	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-18
Date Analyzed:	05/23/17	Data File:	052337.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	89	113
Toluene-d8	97	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P4-5.5	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-19
Date Analyzed:	05/23/17	Data File:	052338.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	89	113
Toluene-d8	98	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P5-2	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-20
Date Analyzed:	05/23/17	Data File:	052339.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	98	64	137
4-Bromofluorobenzene	99	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P5-4	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-21
Date Analyzed:	05/23/17	Data File:	052340.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	100	64	137
4-Bromofluorobenzene	99	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P6-1	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-22
Date Analyzed:	05/23/17	Data File:	052341.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	100	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P6-4	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-23
Date Analyzed:	05/23/17	Data File:	052342.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	98	64	137
4-Bromofluorobenzene	96	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P7-4	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-25
Date Analyzed:	05/23/17	Data File:	052343.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	89	113
Toluene-d8	98	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	P7-6	Client:	The Riley Group
Date Received:	05/22/17	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	705379-26
Date Analyzed:	05/24/17	Data File:	052344.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	99	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	The Riley Group
Date Received:	Not Applicable	Project:	2017-015C, F&BI 705379
Date Extracted:	05/23/17	Lab ID:	07-1034 mb
Date Analyzed:	05/23/17	Data File:	052305.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	98	64	137
4-Bromofluorobenzene	98	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379

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: 705431-01 (Duplicate)

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/L (ppb)	50	102	72-119
Toluene	ug/L (ppb)	50	96	71-113
Ethylbenzene	ug/L (ppb)	50	100	72-114
Xylenes	ug/L (ppb)	150	101	72-113
Gasoline	ug/L (ppb)	1,000	97	70-119

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379

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

Laboratory Code: 705433-22 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	71	69-120
Toluene	mg/kg (ppm)	0.5	70	70-117
Ethylbenzene	mg/kg (ppm)	0.5	70	65-123
Xylenes	mg/kg (ppm)	1.5	72	66-120
Gasoline	mg/kg (ppm)	20	73	71-131

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379

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	90	89	63-142	1

Date of Report: 06/01/17
Date Received: 05/22/17
Project: 2017-015C, F&BI 705379

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

Laboratory Code: 705379-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	70	10-91
Chloroethane	mg/kg (ppm)	2.5	<0.5	77	10-101
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	88	22-107
Methylene chloride	mg/kg (ppm)	2.5	<0.5	95	14-128
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	94	13-112
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	93	23-115
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	93	25-120
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	95	22-124
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	94	27-112
Trichloroethene	mg/kg (ppm)	2.5	<0.02	91	30-112
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	95	25-114

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	51	53	42-107	4
Chloroethane	mg/kg (ppm)	2.5	60	61	47-115	2
1,1-Dichloroethene	mg/kg (ppm)	2.5	68	71	65-110	4
Methylene chloride	mg/kg (ppm)	2.5	84	87	50-127	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	78	79	71-113	1
1,1-Dichloroethane	mg/kg (ppm)	2.5	80	82	74-109	2
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	80	83	73-110	4
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	80	83	73-111	4
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	80	82	72-116	2
Trichloroethene	mg/kg (ppm)	2.5	78	77	72-107	1
Tetrachloroethene	mg/kg (ppm)	2.5	80	81	73-111	1

Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The 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.

705379

SAMPLE CHAIN OF CUSTODY

ME 05-22-17

E04 / W2 / V8V

Page # 1 of 1

Report To Stafford Larsen
Company The Riley Group
Address 17522 Bothell Way NE
City, State, ZIP Bothell WA 98011
Phone _____ Email SLarsen@Riley-group.com

SAMPLERS (*signature*) Stafford Larsen

PROJECT NAME: 2017-015C

PO #:

REMARKS:

INVOICE TO:

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
						ANALYSES REQUESTED											√ per SL email @ 05/23
P1-5	01 A-E	5/22/17	1230	Soil	5	✓			✓								
P1-10	02 T		1250						✓								E with Email
P1-13'	03		1300			✓		✓	✓								~~Tuesday~~
P1-20'	04		1305	↓	↓			✓	✓								~~w/ analysis~~
P1-W	05 A-C		1330	H2O	7		✓	✓	✓								
P2-4'	06 A-E		1145	Soil	5	✓		✓	✓								
P2-7.5'	07 T		1150					✓	✓								
P2-14'	08		1155			✓		✓	✓								
P2-17'	09		1200														Samples received at 4 °C
P2-20'	10	↓	1200	↓	↓	✓		✓	✓								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stafford	RGI	5/22/17	230
Received by:	Khan Phan	FEBI	5/22/17	230
Relinquished by:				
Received by:				

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

405379

SAMPLE CHAIN OF CUSTODY

ME 05-22-17

E04 / VW2 / VS2

Page # 2 of

Report To Stafford Larson

Company The Riley Group

Address 17322 Bothell Way NE

City, State, ZIP Bothell WA 98011

Phone ____ Email ____

SAMPLERS (*signature*) Stafford

PROJECT NAME: 2017-015C

PO #

REMARKS

INVOICE TO

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

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

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	cVOCs				Notes
						ANALYSES REQUESTED											√ - per Stafford Email 5/23/17
P2-W	11 A-G	5/22/17	1220	H2O	7		✓	✓	✓								
P3-5	12 A-E		805	soil	5	✓		✓	✓								
P3-9	13		810			✓			✓								
P3-13	14		815			✓		✓	✓								
P3-20	15		820			✓			✓								
P3-W	16 A-G		840	H2O	7		✓	✓	✓								
P4-2	17 A-E		940	soil	5								✓				
P4-4	18		945										✓				
P4-5.5	19		950										✓				Samples received at 4 °C
P5-2	20		1020		2								✓				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Stafford	FGL	5/22/17	2:30
Received by:	Phan Phan	FEBT	5/22/17	L
Relinquished by:				
Received by:				

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

705374

SAMPLE CHAIN OF CUSTODY

ME 05-22-17

Page # 3 of 4 / Pg 2

Report To Stafford Lobsen

Company The Riley Group

Address 17522 Bothell Way NE

City, State, ZIP Bothell WA 98011

Phone _____ Email _____

SAMPLERS (*signature*) [signature]

PROJECT NAME: 2017-015C

PO #:

REMARKS:

INVOICE TO:

TURNAROUND TIME VC2

☑ 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	HVOCs				Notes
P5-4	21 A-E	5/22/17	1030	soil	5								✓				
P6-1	22		1035										✓				
P6-4	23		1040										✓				
P7-2	24		1000										✓				
P7-4	25		1005										✓				
P7-6	26		1010										✓				

Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Stafford Lobsen	R61	5/22/17	230
Received by: [signature]	Nhan Phan	FEBT	5/23/17	230
Relinquished by:				
Received by:				

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