g-logics

April 12, 2018
G-Logics Project Number 01-1140-E

M&M Ventures, LLC
Mr. Mike Scarff
33 Knights Lane
Friday Harbor, WA 98250

R&E Investments, LLC
Mr. Roger Vermazen
16932 SE 354th Street
Auburn, WA 98092

**Subject:** **Well Installation and Groundwater Sampling**
**Facility/Site No. 57361549**
**PTAP Project No. PNW030**
**Auburn Way Properties**
**3025 and 3109 Auburn Way N**
**Auburn, WA 98002**

Dear Mr. Scarff and Mr. Vermazen:

G-Logics was authorized by M&M Ventures (recent 3025 property owner) and R&E Investments (recent 3109 property owner) to install and sample groundwater monitoring wells at the Site (Figure 1). This work was a collaborative effort to verify the successful removal of petroleum contaminants at the Site in order to request a No Further Action (NFA) Opinion from the State of Washington's Pollution Liability Insurance Agency (PLIA).

G-Logics performed this work as described in our workplan date February 13, 2018 which was approved in a letter from PLIA dated February 21, 2018. Pervious G-Logics site-exploration and remediation work completed at the Site is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017 and our *Environmental Media Management Report* dated December 4, 2017.

**G-Logics, Inc.**
40 2nd Avenue SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074

## 1.0 Site Background

The Site is composed of two properties, 3025 and 3109 Auburn Way N. The 3025 property is identified as King County tax parcel number 0004000039. The 3109 property is identified as King County tax parcel number 0004000041.

As summarized in the G-Logics Phase I report dated July 18, 2017, this area was primarily agricultural land prior to the 1970s. A review of aerial photographs appears to show row crops throughout the area, with occasional small orchards.

Since at least the early 1970s, an automobile dealership and a service garage historically occupied the northern portion of the 3025 property and the southern portion of the 3109 property (adjacent property to the north). A former 550-gallon used-oil underground storage tank (UST) was removed from west side of the former dealership building located on the 3025 property.

### *1.1 Exploration Background*

Stemen Environmental, Inc. (SEI) conducted a Phase II exploration in this area (report dated December 20, 2012). Soil and groundwater samples were collected on both the 3025 and the 3109 properties. None of the samples that SEI analyzed from the 3025 property contained concentrations of gasoline (GRO), diesel (DRO), oil-range hydrocarbons (ORO), or volatile organic compounds (VOCs) at concentrations above MTCA Method A cleanup levels. Exploration locations are shown on Figure 2. Figure 2a presents the same information, but the background survey mapping has been removed for readability.

In the SEI Phase II exploration, GRO and ORO hydrocarbons were found exceeding MTCA Method A cleanup levels in soils along the southern boundary of the 3109 property. SEI conducted additional sampling work in June 2017 (see Figures 2 and 2a). ORO in soil was detected but at concentrations below MTCA Method A cleanup levels. None of the analyzed groundwater samples contained concentrations of GRO, DRO, ORO, or VOCs. However one groundwater sample contained lead at the MTCA Method A cleanup level (15 ug/L).

To provide additional data for the former UST area, G-Logics conducted soil and groundwater sampling in July 2017. On the 3025 property, the ORO hydrocarbons were found exceeding the MTCA Method A cleanup level in soils along the northern property boundary. DRO and ORO also were found above MTCA Method A cleanup levels in two

grab-groundwater samples collected in this area. Total and dissolved concentrations of arsenic also were reported above the MTCA Method A cleanup level in two of the four grab-groundwater samples and in one monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

The arsenic is likely due to area-wide sources, based on location and lack of relevant operations and activities on the properties. This area is located within the Tacoma Smelter plume. Other off-property sources may include former-agricultural practices in the area, and/or volcanic deposits from Mount Rainier. Specifically, the Osceola Mudflow buried a large portion this area with volcanic material, originating during eruptions approximately 5,600 years ago.

To address the petroleum-contamination, G-Logics recommended a remedial excavation. Mr. Vermazen (3109 property owner) agreed that if petroleum-contaminated soil was found to extend onto his property, then those contaminated soils also should be removed. Accordingly, the remedial excavation planned for the 3025 property extended to the north onto the 3109 property.

### *1.2 Remediation Background*

In November 2017, petroleum-contaminated media (soil and groundwater) was removed from an area spanning the property line. The work consisted of the removal and disposal of approximately 384 tons of petroleum-contaminated soil and approximately 2,600 gallons of water (rain and groundwater). Analyzed confirmation samples indicated that all petroleum-contaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygen-release compound (ORC Advanced) was added to groundwater in the excavation, as well as the backfill material near the groundwater interface (see G-Logics *Environmental Media Management Report* dated December 4, 2017 for more information).

### *1.3 Regulatory Background*

The law that guides the remediation process at sites located within Washington State is the Model Toxics Control Act (MTCA). The regulations implementing MTCA are located in the Washington Administrative Code (WAC), Chapter 173-340. This regulation is administered by the Washington Department of Ecology (Ecology).

The property owners performed an independent remedial action for this site, in accordance with the Ecology guidance. Such remedial actions are specifically allowed by MTCA, also encouraged by Ecology and PLIA.

### *1.4 PLIA Background*

As of January 2, 2018 the Pollution Liability Insurance Agency (PLIA) has authority to respond and deliver opinions on qualifying petroleum-contaminated sites throughout Washington. This ability is called the Petroleum Technical Assistance Program (PTAP), as established under RCW 70.149.040(9).

After the intake meeting with PLIA on January 31, 2018, the Site was accepted into the PTAP program. PLIA offered that the two properties (3025 and 3109) be considered as one Site. PLIA requested additional sampling be conducted on both properties to address potential data gaps and to document that any residual contamination did not migrate beyond the Site boundaries. PLIA also requested that the potential for vapor intrusion in nearby buildings also be assessed. The information requested by PLIA is presented below.

## 2.0 Soil Sampling and Monitoring Well Installation

On March 12th and 13th, 2018, hollow-stem auger borings were drilled and completed as groundwater monitoring wells (MW-02, MW-03, MW-04, MW-05, and MW-06). One soil boring also was drilled (GLB-10). Boring locations (Figures 2 and 2a) were selected based on the findings of the previously completed G-Logics site-exploration and remediation work (Figure 3). This work was conducted to address potential data-gap concerns expressed by PLIA during the intake meeting. Several borings met drilling refusal, these locations also are shown on Figures 2 and 2a.

The completed borings were advanced to depths ranging from approximately 11.5 to 15 feet below ground surface. These borings generally encountered a structural-fill material (believed to be placed sometime between the mid 70’s and mid 80’s) from the surface to approximately a depth of 4 to 5 feet. The fill consisted of a silty sand and gravel mix. Fine-grain native soils were encountered below the fill, generally consisting of silt with clay to a depth of 8 to 9 feet, followed by silty, fine grain sand to the bottom of the borings.

During drilling, soil samples were collected for soil identification and chemical analysis. A photoionization detector (PID) was used to screen for volatile-organic compounds (VOCs)

in the collected soil samples. The results, measured in parts per million by volume (ppmv), were noted on the soil data table (Table 1) and boring logs. Collected soils samples were submitted to the analytical laboratory (Fremont Analytical, Seattle, Washington). Selected soil samples from each boring were analyzed for diesel-range organics (DRO), oil-range organics (ORO), and arsenic.

A description of our field exploration methods is presented in Appendix A. The boring logs are presented in Appendix B. Each log presents soil types and descriptions, field-screening observations, PID readings, and a schematic of the monitoring well installed.

### *2.1 Analytical Results, Soil Samples*

In the analyzed soil samples, ORO was detected in GL-MW-2-2.5 and GL-MW-6-8, but at concentrations below MTCA Method A Cleanup Levels. DRO was not detected in any of the analyzed soil samples. Arsenic was detected in all of the soil samples analyzed but at concentrations below MTCA Method A Cleanup Levels. Results of these analyses are presented in Table 1 of this report. Soil analytical laboratory reports and completed chain-of-custody forms, from this recent effort, are attached as Appendix C.

### *2.2 Quality Assurance/Quality Control Findings*

Quality Assurance/Quality Control (QA/QC) included generally accepted procedures for sample collection, storage, tracking, documentation, and analysis. All sampling equipment was washed with a liquinox wash and distilled water rinse before the collection of the samples. All samples were labeled with a sample number, date, time, and sampler name, and were stored in an ice chest containing frozen blue ice. Appropriate chain-of-custody documentation was completed.

Laboratory duplicate samples were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix C.

## 3.0 Groundwater Sampling

On March 20th, 2018, six groundwater-monitoring wells (MW-1 through MW-6, Figures 2 and 2a) were sampled to obtain information regarding groundwater contaminants. Seven groundwater samples were collected (including a field duplicate) from the six wells. Collected samples from each well were submitted to the analytical laboratory (Fremont Analytical). These seven water samples were analyzed for DRO, ORO, and arsenic (total and dissolved).

### *3.1 Analytical Results, Groundwater Samples*

In the analyzed samples, DRO and ORO were detected in MW-1, MW-4, and MW-6. ORO was also detected in MW-2. All detected petroleum concentrations were below MTCA Method A Cleanup Levels. Total arsenic was found above MTCA Method A Cleanup Levels in all wells except GL-MW-5. Dissolved arsenic was below MTCA Method A Cleanup Levels in all wells except GL-MW-2 and GL-MW-4. The highest dissolved arsenic concentration was 14.1 ug/L in GL-MW-2.

Results of these analyses are presented in Table 2 of this report. Appendix A presents field-exploration methods, while Appendix C includes the laboratory reports and chain-of-custody forms.

### *3.2 Quality Assurance/Quality Control Findings*

Laboratory duplicate samples, as well as one blind-duplicate groundwater sample (MW-1), were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix C.

## 4.0 Elevation Survey- Monitoring Wells

The elevations of the well casings (five new wells and one existing well) were surveyed by G-Logics. The survey was based on a backsight shot to the concrete floor at the north entrance of the auto shop. A previous survey by Terrane, dated 8/3/2017, identified the floor elevation at this location to be 57.7’.

## 5.0 Groundwater-Depth Measurement Findings

On March 14th, 2018, groundwater depths were measured in the six monitoring wells, see Table 3. Depth measurements were made from the top of the PVC well casing, prior to well development. Groundwater was found at depths ranging from 6.19 to 8.11 feet below top of PVC casing. Measured groundwater elevations for these wells have been plotted on Figure 4. The plotted groundwater elevations indicate groundwater flow toward the northeast, with a very flat gradient.

## 6.0 Initial Petroleum Vapor-Intrusion Assessment

Given the presence of residual petroleum contaminants at the Site, G-Logics has performed an initial petroleum vapor-intrusion (PVI) assessment. For this assessment, we followed the Ecology vapor intrusion guidance documents: *Guidance for Evaluating Soil Vapor Intrusion in Washington State*, dated October 2009, revised February 2016, and the *Implementation Memorandum No. 18*, dated January 10, 2018. The PVI assessment is further discussed below.

### *6.1 PVI Exposure Pathways*

At sites with volatile contaminants, contaminated soil-vapor can present a potential risk to human health through inhalation. Specifically, an exposure pathway could exist for contaminants to migrate into indoor air via vapor intrusion. At this Site, the primary contaminant of concern is ORO, which contains little of the volatile contaminants associated with vapor-intrusion risks from a petroleum release (i.e., benzene and naphthalene). DRO also has been detected in soil and groundwater at the Site, but at low concentrations below applicable cleanup levels.

### *6.2 PVI Lateral-Inclusion Zones and Vertical Separation*

Based on the PVI guidance documents published by the United States Environmental Protection Agency and Ecology (*Memorandum No. 14* dated March 2016), existing and/or future buildings located laterally and/or vertically within set distances of subsurface contamination may experience unacceptable vapor-intrusion impacts. The screening levels used for PVI assessments, for benzene and total petroleum hydrocarbons as presented in Appendix B of Ecology's *Memorandum 14*, are presented in the following table.

**Recommended Screening Levels for Assessing PVI**

| Media | Benzene | TPH |
|---|---|---|
| **Soil** (mg/kg) | ≤ 10 | ≤ 100 (for unweathered GRO)<br>≤ 250 (for weathered GRO & DRO) |
| | > 10 | > 100 (for unweathered GRO)<br>> 250 (for weathered GRO & DRO) |
| **Groundwater** (µg/L) | ≤ 5,000 | ≤ 30,000 |
| | > 5,000 | > 30,000 |

Further information regarding the lateral-inclusion zone and vertical separation distance is described below.

### *6.2.1 Lateral-Inclusion Zone*

Based on the guidance documents, buildings that are laterally within 30 feet of subsurface petroleum contamination with soil and/or groundwater concentrations above screening levels (presented in the table above) may experience unacceptable vapor-intrusion impacts. This distance is referred to as the lateral-inclusion zone and is defined as the area surrounding a petroleum-contaminant source through which vapor-phase contamination might travel and intrude into buildings at unacceptable concentrations.

The lateral distance to subsurface contamination should first be identified to assess if a building or buildings are within the lateral-inclusion zone. If existing or planned buildings are not in the lateral inclusion zone (30 feet), then the initial PVI assessment process is complete. Specifically, a 30-foot horizontal separation distance from the edge of the contamination to a structure is likely to provide an adequate separation distance to exclude vapor-intrusion concerns.

At this Site, low-level concentrations of DRO and/or ORO have been detected in soil and groundwater samples collected within 30 lateral feet of a building footprint. Specifically, concentrations have been detected in samples collected from boring GLB-5 and wells GL-MW-1 and GL-MW-2. Because contaminants are present within the lateral-inclusion zone, the vertical separation distance was assessed.

### *6.2.2 Vertical Separation Distance*

If a building or buildings are within the lateral-inclusion zone, the vertical separation distance between the contaminant source and the building foundation also should be considered to assess if unacceptable vapor-intrusion impacts may occur. The vertical separation distance represents the thickness of clean, biologically-active soil between the source of petroleum-hydrocarbon vapors and the deepest point of a structure.

For the vertical-separation distances, soil and groundwater must be assessed separately. As described in Ecology's *Memorandum No. 14*, the depths of contaminants in soil and/or groundwater are compared to the screening-level concentrations of benzene and/or total petroleum-hydrocarbons (TPH). The vertical separation distances for petroleum contaminants in soil and groundwater are shown in the following table.

**Recommended Vertical-Separation Distances Between Contamination and Building Basement, Foundation, or Crawlspace**

| Media | Benzene | TPH | Vertical Separation |
|---|---|---|---|
| **Soil** (mg/kg) | ≤ 10 | ≤ 100 (for unweathered GRO)<br>≤ 250 (for weathered GRO & DRO) | 6' |
| | > 10 | > 100 (for unweathered GRO)<br>> 250 (for weathered GRO & DRO) | 15' |
| **Groundwater** (µg/L) | ≤ 5,000 | ≤ 30,000 | 6' |
| | > 5,000 | > 30,000 | 15' |

The depth to subsurface contamination should be assessed to identify if a building or buildings are within the specified vertical-separation distance. Dependent on contaminant concentrations, if the separation-distance criteria are met (as specified in the table above) based on the measured soil and groundwater concentrations for benzene and TPH, then the initial PVI assessment process is complete.

For this Site, benzene and DRO were not detected in soil samples collected within the lateral inclusion zone. ORO was detected in one soil samples collected at a depth of 2.5 feet from well GL-MW-2. Although this ORO concentration slightly exceeds the specified TPH concentration for DRO in the above table, ORO contains little volatile contaminants and does not pose a vapor-intrusion risk.

Groundwater at the Site is at a depth greater than six feet. In addition, all detectable concentrations of benzene, GRO, DRO, and ORO have been well below the screening levels presented in the table above. Therefore, based on the lateral and vertical PVI review conducted above, residual petroleum contaminants found in soil and groundwater do not pose a PVI risk to the nearby buildings.

## 7.0 Conclusions

Petroleum contaminated soils and groundwater were removed through the remedial excavation conducted in November 2017. Analyzed confirmation samples (Table 1, and Figure 3) collected during the excavation indicate that all petroleum-contaminated soils had been successfully removed from this area.

The additional sampling, conducted during this March 2018 exploration (Table 1, Table 2, Figures 2 and 2a), has confirmed that the petroleum contamination (associated with the former UST) has been successfully removed and did not migrate beyond the remedial-excavation boundaries. Additionally, a review of PVI risks also documents that vapor intrusion is not a concern, due to the low concentrations of residual petroleum contaminants and the low volatility of ORO.

With the completion of this work, M&M Ventures and R&E Investments have successfully addressed the petroleum-contaminated soils and groundwater water in this area of the two properties.

With respect to arsenic, historical review of the Site did not identify any commercial or industrial source of arsenic from prior activities or operations. The Site is within the Asarco area-wide smelter plume, and volcanic deposits from the Osceola mud flow are likely also present. Agricultural practices in the area may also have contributed to area-wide arsenic concentrations.

Notably, soil concentrations for arsenic generally increase at approximate depths of 5-8 feet (Table 1). These higher concentrations of arsenic at 5-8 feet bgs are associated with the native soils at the Site, which are located beneath the structural-fill materials. This information would indicate that arsenic would have been present at the property prior to placement of the structural-fill material and construction of the site buildings. Potential exposures to arsenic in the groundwater are very limited. Specifically, this area is covered with buildings or asphalt, prohibiting direct contact with the groundwater. Additionally, the shallow groundwater in this area likely would be of low quality and would yield insufficient quantities to be considered to be a viable source of drinking water. With these understandings, detected arsenic concentrations do not present any risk to human health or the environment, and therefore do not require further evaluation or remediation.

## 8.0 Recommendations

The completed work documents the successful remediation of the former UST area, demonstrates the lack of vapor-intrusion concerns, and identifies that arsenic is an area-wide issue with no presented risk. Based on the completed work, G-Logics recommends that PLIA provide a No Further Action opinion for the Site.

## 9.0 Limitations

The scope of work on this project was presented in our identified workplan and subsequently approved by M&M Ventures and R&E Investments. Please be aware our scope of work was limited to those items specifically identified in the workplan. Other activities not specifically included in the presented scope of work (in a workplan, correspondence, or this report) are excluded and are therefore not part of our services.

Land use, site conditions (both on-site and off-site), and other factors will change over time. Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the site sampling.

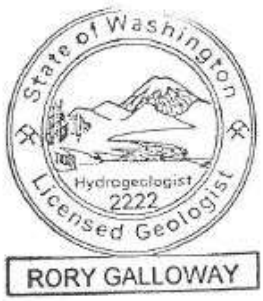
This report is prepared for the sole use of our client and reviewing regulatory agencies. The scope of services performed during this assessment may not be appropriate for the needs of other users. Re-use of this document or the findings, conclusions, or recommendations presented herein, are at the sole risk of said user(s). Any party other than our client who would like to use this report shall notify G-Logics of such intended use by executing the "Permission and Conditions for Use and Copying" contained in this document. Based on the intended use of the report, G-Logics may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements will release G-Logics from any liability resulting from the use of this report by any unauthorized party.

No warranty, either express or implied, is made.

## 10.0 Closing

We appreciate this opportunity to provide our services on this project. Please contact us at your convenience with any questions regarding our work or findings.

Sincerely,
**G-Logics, Inc.**




Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Staff Geologist

cc Greg Rairdon
Ken Lederman

**FIGURES**

| | |
|---|---|
| Figure 1: | Site Location Maps |
| Figure 2: | Exploration Locations with Survey |
| Figure 2a: | Exploration Locations |
| Figure 3 | Excavation-Sampling Locations |
| Figure 4 | Groundwater Elevations (3/14/2018) |

**TABLES**

| | |
|---|---|
| Table 1 | Soil Sample Analyses |
| Table 2 | Groundwater Sample Analyses |
| Table 3 | Groundwater Elevation Measurements |

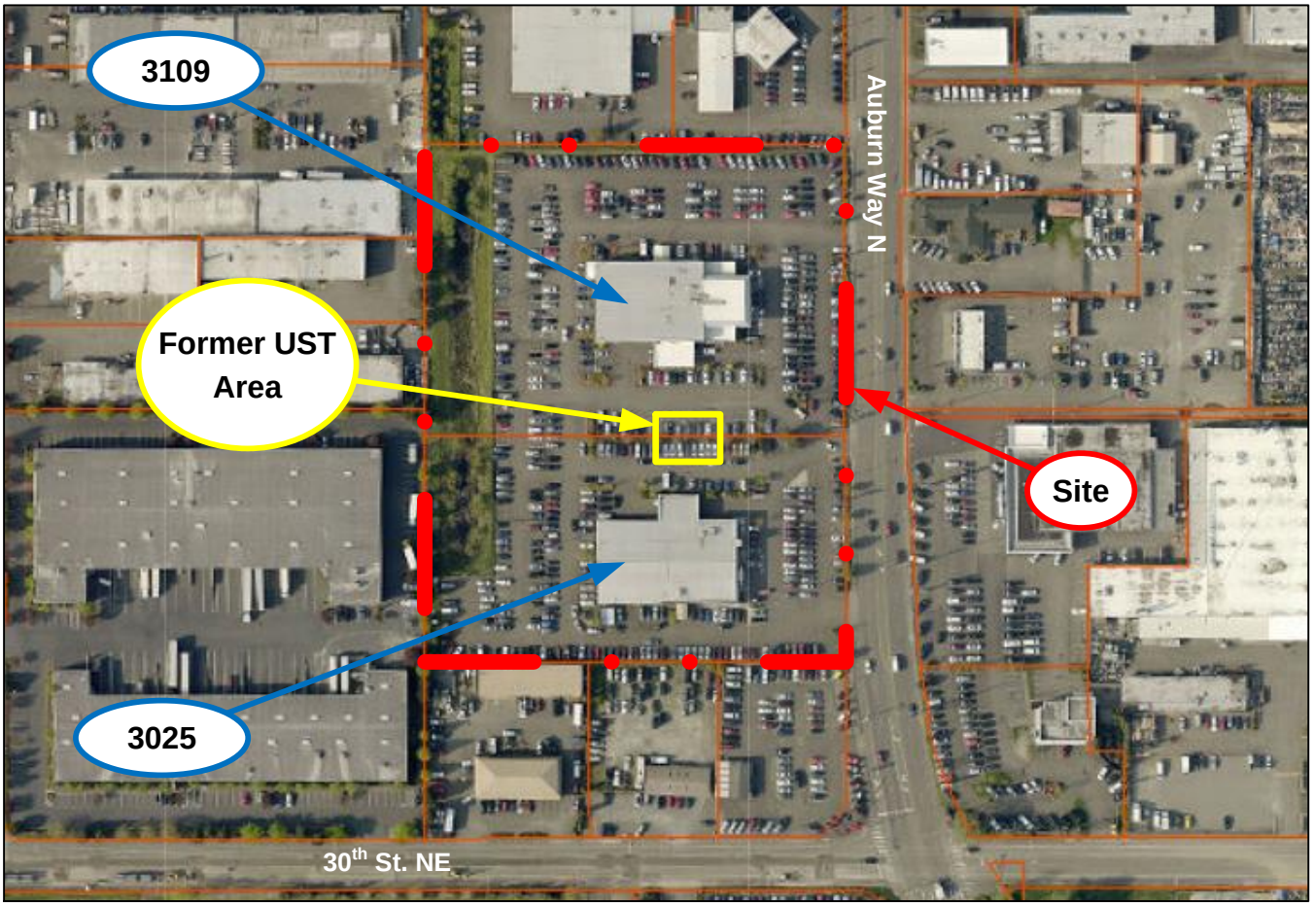
**APPENDICES**

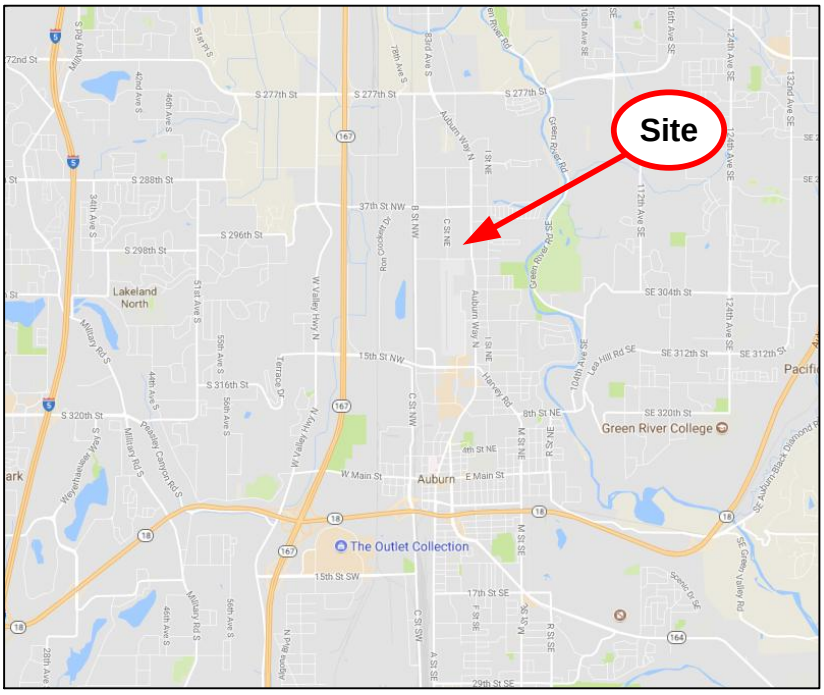
| | |
|---|---|
| Appendix A: | Field Exploration Methods |
| Appendix B: | Boring/Well Logs |
| Appendix C: | Laboratory Data and Chain-of-Custody Documents |

**ATTACHMENTS**

| | |
|---|---|
| Attachment A: | Permission and Conditions for Use and Copying |

# FIGURES





g-logics

**Site Location Maps**

***Auburn Way Property***

***3025 and 3109 Auburn Way North***

***Auburn, Washington***

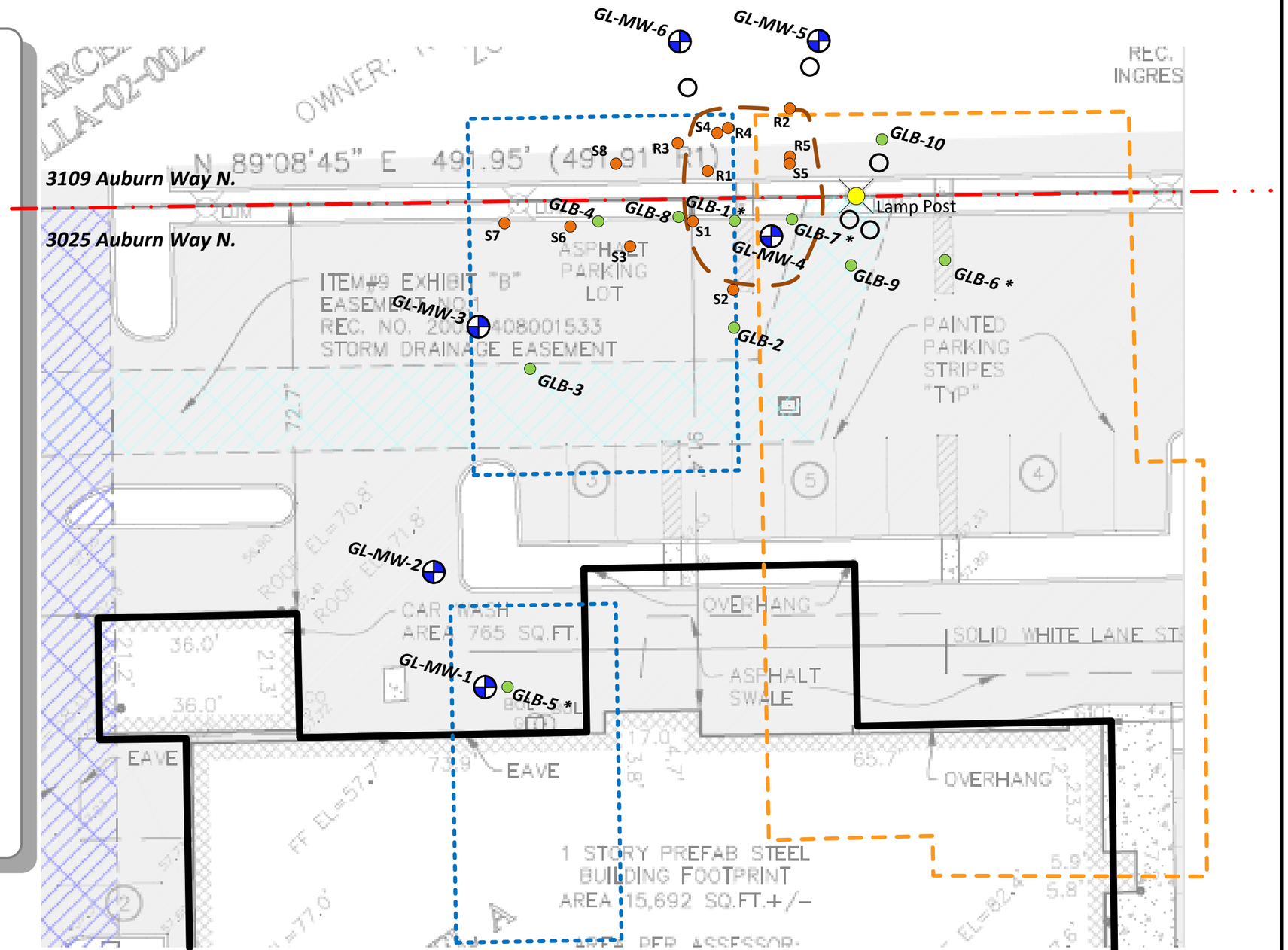
Figure 1

Project File: 01-1140-E-RT-F1.vsd

Mapping Reference: King County iMap, Delorme, Google Maps, and G-Logics Site Visit Observations

## Legend

- Parcel Boundary
- Existing Building
- GLB-1 — G-Logics Boring Locations
- GL-MW-1 — G-Logics Monitoring Well
- S4/R4 — Soil Boring (Stemen, 2012 and 2017)
- GLB-1 * — Grab Groundwater Sample
- G-Logics Boring, Refusal at 2.5'-3'
- Area Of 11-2017 Excavation
- Former Auto Dealership, 1990
- Former 1998 and 2000 Building Additions




Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Exploration Locations With Survey***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

Figure 2

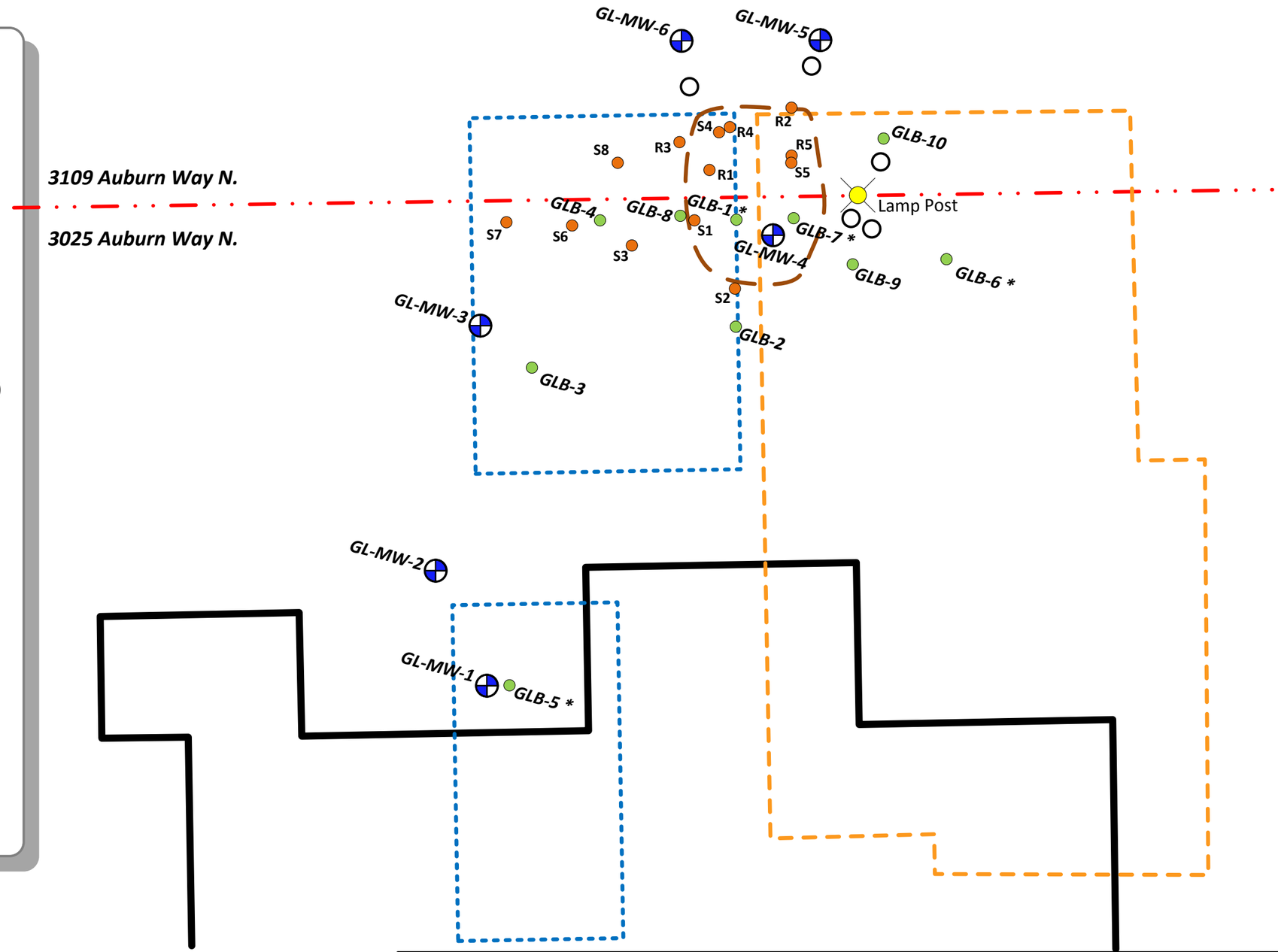
Project File: 01-1140-E-RT-F2.vsd

*Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements*

N

## Legend

- Parcel Boundary
- Existing Building
- GLB-1 — G-Logics Boring Locations
- GL-MW-1 — G-Logics Monitoring Well
- S4/R4 — Soil Boring (Stemen, 2012 and 2017)
- GLB-1 * — Grab Groundwater Sample
- G-Logics Boring, Refusal at 2.5'-3'
- Area Of 11-2017 Excavation
- Former Auto Dealership, 1990
- Former 1998 and 2000 Building Additions




Project File: 01-1140-E-RT-F2a.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Exploration Locations***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

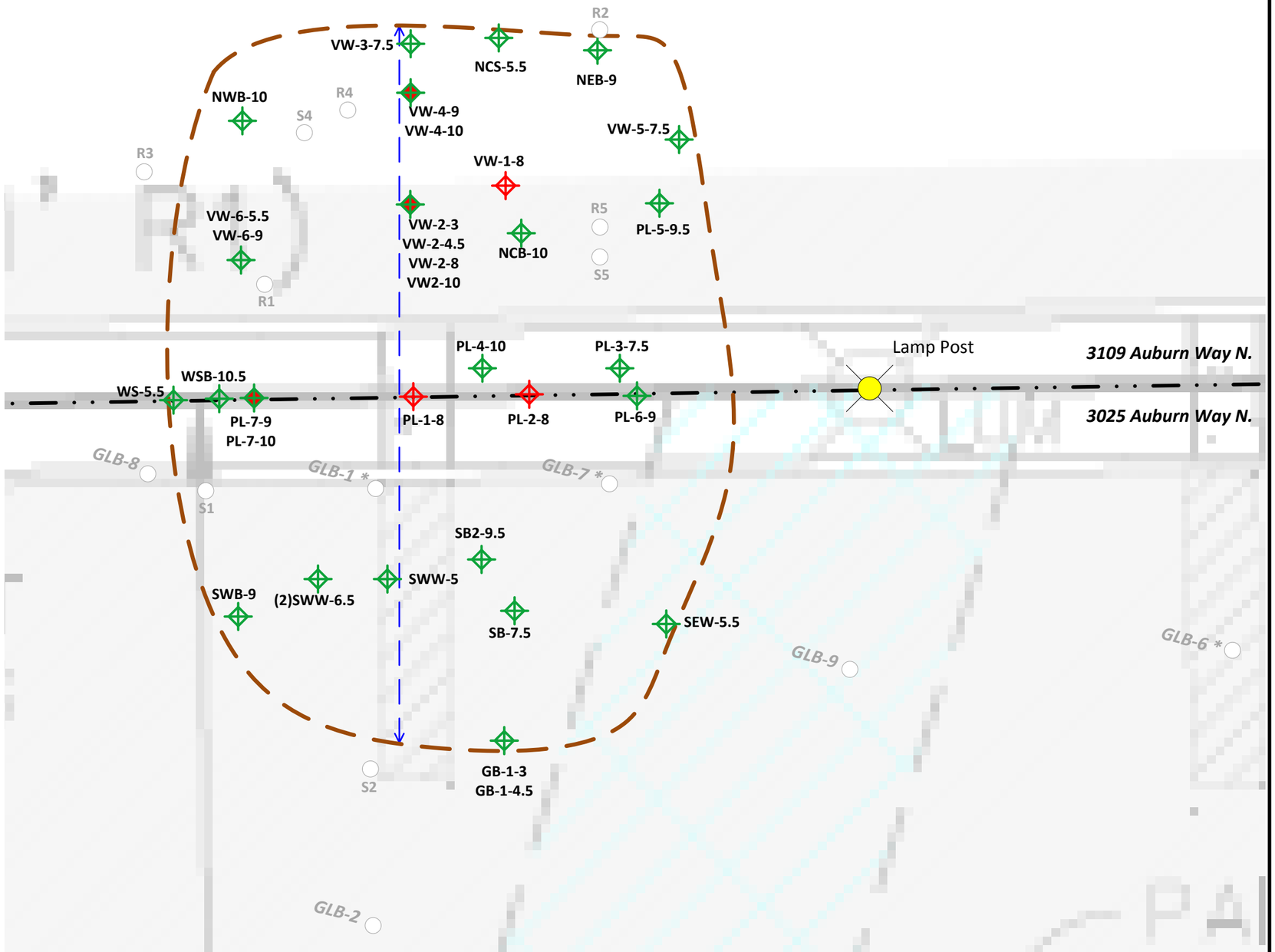
Figure 2a

*Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements*

N

## Legend

- S4 — Soil Boring (Stemen, 2012 and 2017)
- GLB-2 — Soil Boring (G-Logics, 2017)
- GLB-1* — Grab Groundwater Sample
- PL-4-10 — Excavation-Confirmation Soil Sample Location, Results Below MTCA Method A Cleanup Level
- PL-1-8 — Excavation-Performance Soil Sample Location, Results Above MTCA Method A Cleanup Level (soil subsequently removed)
- PL-7-10 — Excavation-Performance Soil Sample Location, Results Above MTCA Method A Cleanup Level, Soil Subsequently Removed And Confirmation Sample Collected (Results Below Cleanup Level).
- Property Line
- Black ABS Pipe (“4) Containing Communication Lines Between Dealerships (Approximate Location)
- Area of Excavation




Project File: 01-1140-E-RT-F3.vsd

g-logics

**Approximate Drawing Scale: 1" = 5'**

0 ft. 3 ft. 5 ft. 10 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Excavation-Sampling Locations***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

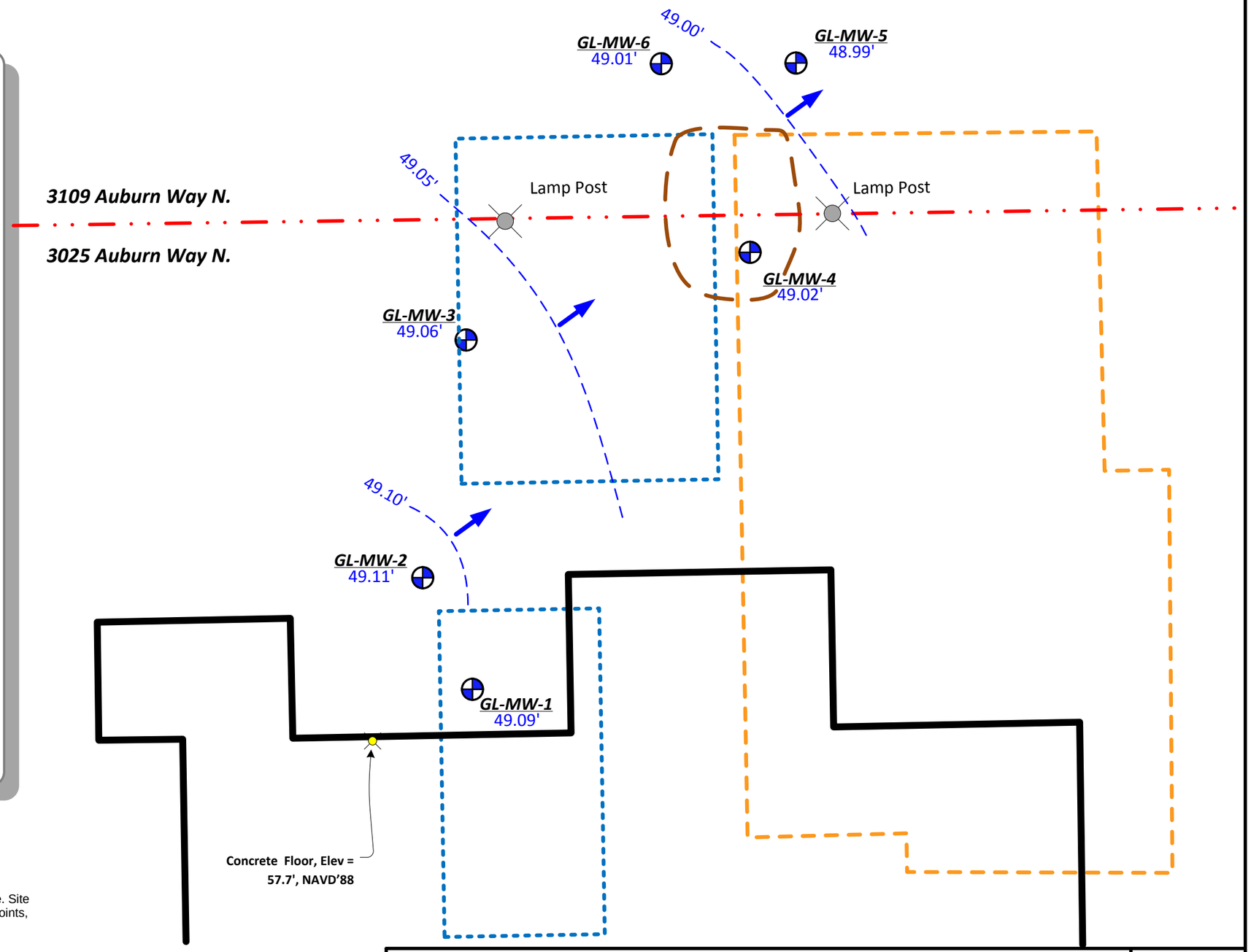
Figure 3

*Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements*

N

## Legend

- Parcel Boundary
- Existing Building
- GL-MW-1 — G-Logics Well — 49.09' — Elevation
- 49.00' — Inferred groundwater elevation contour
- Inferred groundwater flow direction
- Area Of 11-2017 Excavation
- Former Auto Dealership, 1990
- Former 1998 and 2000 Building Additions




### Notes

1. Vertical datum: NAVD88.
2. The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

Project File: 01-1140-E-RT-F4.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Groundwater Elevations (3/14/2018)***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

Figure 4

*Mapping Reference: Terrane ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements*

# TABLES

**TABLE 1**
**Soil Sample Analyses (1)**
**Auburn Way Properties**
**3025 and 3109 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft.) | PID Reading (ppmv) | Gasoline Range Organics | Diesel Range Organics | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Total PCBS | Arsenic | Cadmium | Chromium (III) | Chromium (IV, Hexavalent) | Lead | Mercury | VOCs | Phenanthrene | Pyrene | Total cPAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | NA | 100(a)/30(b) | 2,000 | 2,000 | 2,000 | 0.03 | 7 | 6 | 9 | 1 | 20 | 2 | 2,000 | 19 | 250 | 2 | Various (c) | ** | 2,400* | 1 |
| (units in mg/kg ) | | | | | | | | | | | | | | | | | | | | | | | |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | | |
| **December, 2012** | | | | | | | | | | | | | | | | | | | | | | | |
| **S1** | 12/12/2012 | S1-8 | 8 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | S1-12 | 12 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S2** | 12/12/2012 | S2-9 | 9 | --- | <10 | <50 | **120** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S3** | 12/12/2012 | S3-9 | 9 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S4** | 12/12/2012 | S4-8 | 8 | --- | **500** | <50 | **3,800** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S5** | 12/12/2012 | S5-9 | 9 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S6** | 12/12/2012 | S6-9 | 9 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S7** | 12/12/2012 | S7-8 | 8 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S8** | 12/12/2012 | S8-8 | 8 | --- | <10 | <50 | <100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | | |
| **June, 2017** | | | | | | | | | | | | | | | | | | | | | | | |
| **R1** | 6/2/2017 | R1-5 | 5 | --- | <10 | <50 | **710** | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | R1-8 | 8 | --- | <10 | <50 | **210** | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **R2** | 6/2/2017 | R2-5 | 5 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | R2-8 | 8 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **R3** | 6/2/2017 | R3-5 | 5 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | R3-8 | 8 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**TABLE 1**
**Soil Sample Analyses (1)**
**Auburn Way Properties**
**3025 and 3109 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft.) | PID Reading (ppmv) | Gasoline Range Organics | Diesel Range Organics | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Total PCBS | Arsenic | Cadmium | Chromium (III) | Chromium (IV, Hexavalent) | Lead | Mercury | VOCs | Phenanthrene | Pyrene | Total cPAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | NA | 100(a)/30(b) | 2,000 | 2,000 | 2,000 | 0.03 | 7 | 6 | 9 | 1 | 20 | 2 | 2,000 | 19 | 250 | 2 | Various (c) | ** | 2,400* | 1 |
| (units in mg/kg ) | | | | | | | | | | | | | | | | | | | | | | | |
| **R4** | 6/2/2017 | R4-5 | 5 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | R4-8 | 8 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **R5** | 6/2/2017 | R5-5 | 5 | --- | <10 | **67** | **110** | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | R5-10 | 10 | --- | <10 | <50 | <100 | --- | <0.02 | <0.05 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | | |
| **July, 2017 (Pre Remedial Excavation)** | | | | | | | | | | | | | | | | | | | | | | | |
| **GLB-1** | 7/21/2017 | GLB-1-5 | 5 | 8.4 | <6.10 | <26.2 | **6,110** | **5,990** | <0.0244 | <0.0244 | <0.0305 | <0.0610 | **0.132** | **15.2** | **0.278** | **27.7** | <0.682 | **91.8** | <0.345 | nd | <0.0525 | <0.0525 | nd |
| | | GLB-1-10 | 10 | 0.4 | --- | <23.8 | <59.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-1-14 | 14 | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-2** | 7/21/2017 | GLB-2-4 | 4 | 1.4 | --- | <24.3 | <60.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-2-8 | 8 | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-2-111 | 11 | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-3** | 7/21/2017 | GLB-3-4 | 4 | 0.8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-3-8 | 8 | 0.5 | --- | <24.3 | <60.9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-3-11 | 11 | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-4** | 7/21/2017 | GLB-4-4 | 4 | 0.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-4-8 | 8 | 0.3 | --- | <23.9 | <59.9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-4-11 | 11 | 0.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-5** | 7/21/2017 | GLB-5-8 | 8 | 0.4 | <5.91 | <25.3 | <63.4 | --- | <0.0237 | <0.0237 | <0.0296 | <0.0591 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-5-12 | 12 | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-6** | 7/21/2017 | GLB-6-4 | 4 | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-6-8 | 8 | 0.5 | <5.60 | <25.3 | <63.2 | --- | <0.0224 | <0.0224 | <0.0280 | <0.0560 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-6-11 | 11 | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-7** | 7/21/2017 | GLB-7-6 | 6 | 5.5 | <5.70 | <23.8 | **2,160** | **2,500** | <0.0228 | <0.0228 | <0.0285 | **0.0468** | --- | --- | --- | --- | --- | --- | --- | --- | --- | | --- |
| | | GLB-7-9 | 9 | 8.3 | **24.3** | <26.1 | **2,900** | **3,250** | <0.0241 | <0.0241 | <0.0302 | <0.0604 | **0.316** | **3.47** | <0.222 | **20.9** | **---** | **4.09** | <0.340 | nd | **0.0651** | **0.0701** | nd |
| | | GLB-7-11 | 11 | --- | --- | <22.3 | <55.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-8** | 7/21/2017 | GLB-8-9 | 9 | --- | --- | <22.3 | <55.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-9** | 7/21/2017 | GLB-9-9 | 9 | --- | --- | <26.9 | <67.2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**TABLE 1**
**Soil Sample Analyses (1)**
**Auburn Way Properties**
**3025 and 3109 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft.) | PID Reading (ppmv) | Gasoline Range Organics | Diesel Range Organics | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Total PCBS | Arsenic | Cadmium | Chromium (III) | Chromium (IV, Hexavalent) | Lead | Mercury | VOCs | Phenanthrene | Pyrene | Total cPAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | NA | 100(a)/30(b) | 2,000 | 2,000 | 2,000 | 0.03 | 7 | 6 | 9 | 1 | 20 | 2 | 2,000 | 19 | 250 | 2 | Various (c) | ** | 2,400* | 1 |
| (units in mg/kg ) | | | | | | | | | | | | | | | | | | | | | | | |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | | |
| **Remedial Excavation, November 2017** | | | | | | | | | | | | | | | | | | | | | | | |
| **SWW** | 11/6/2017 | SWW-5 | 5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **(2)SWW** | 11/7/2017 | (2)SWW-6.5 | 6.5 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SWB** | 11/9/2017 | SWB-9 | 9 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SEW** | 11/6/2017 | SEW-5.5 | 5.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NWB** | 11/8/2017 | NWB-10 | 10 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NCS** | 11/8/2017 | NCS-5.5 | 5.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NEB** | 11/8/2017 | NEB-9 | 9 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WS** | 11/9/2017 | WS-5.5 | 5.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WSB** | 11/9/2017 | WSB-10.5 | 10.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GB-1** | 11/6/2017 | GB-1-3 | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <5.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/6/2017 | GB-1-4.5 | 4.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **6.2** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SB** | 11/6/2017 | SB-7.5 | 7.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | **6.2** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SB2** | 11/9/2017 | SB2-9.5 | 9.5 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-1** | 11/7/2017 | PL-1-8 | 8 | --- | --- | <500 | **12,200E** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-2** | 11/7/2017 | PL-2-8 | 8 | --- | --- | <500 | **20,800** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-3** | 11/7/2017 | PL-3-7.5 | 7.5 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-4** | 11/7/2017 | PL-4-10 | 10 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | **0.17** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-5** | 11/7/2017 | PL-5-9.5 | 9.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PL-6** | 11/7/2017 | PL-6-9 | 9 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**TABLE 1**
**Soil Sample Analyses (1)**
**Auburn Way Properties**
**3025 and 3109 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft.) | PID Reading (ppmv) | Gasoline Range Organics | Diesel Range Organics | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Total PCBS | Arsenic | Cadmium | Chromium (III) | Chromium (IV, Hexavalent) | Lead | Mercury | VOCs | Phenanthrene | Pyrene | Total cPAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | NA | 100(a)/30(b) | 2,000 | 2,000 | 2,000 | 0.03 | 7 | 6 | 9 | 1 | 20 | 2 | 2,000 | 19 | 250 | 2 | Various (c) | ** | 2,400* | 1 |
| (units in mg/kg ) | | | | | | | | | | | | | | | | | | | | | | | |
| **PL-7** | 11/8/2017 | PL-7-9 | 9 | --- | --- | **280** | **18,000E** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/8/2017 | PL-7-10 | 10 | --- | --- | <50 | **1,650** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-1** | 11/7/2017 | VW-1-8 | 8 | --- | --- | <500 | **4,390** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NCB** | 11/8/2017 | NCB-10 | 10 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-2** | 11/7/2017 | VW-2-3 | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <5.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/7/2017 | VW-2-4.5 | 4.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | <5.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/7/2017 | VW-2-8 | 8 | --- | --- | <500 | **17,200** | --- | --- | --- | --- | --- | --- | <5.0 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/9/2017 | VW2-10 | 10 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-3** | 11/7/2017 | VW-3-7.5 | 7.5 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-4** | 11/7/2017 | VW-4-9 | 9 | --- | --- | <500 | **22,700** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/8/2017 | VW-4-10 | 10 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-5** | 11/7/2017 | VW-5-7.5 | 7.5 | --- | <10 | <50 | <250 | --- | <0.02 | <0.10 | <0.05 | <0.15 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VW-6** | 11/8/2017 | VW-6-5.5 | 5.5 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 11/8/2017 | VW-6-9 | 9 | --- | --- | <50 | <250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | | |
| **March, 2018 (Post Remedial Excavation)** | | | | | | | | | | | | | | | | | | | | | | | |
| **GL-MW-2** | 3/12/2018 | GL-MW-2-2.5 | 2.5 | 0.4 | --- | <20 | **320** | --- | --- | --- | --- | --- | --- | **3.45** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-2-6 | 6 | 0.7 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **10.80** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-2-8.5 | 8.5 | 0.4 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **6.26** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-2-11 | 11 | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | **5.20** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-3** | 3/12/2018 | GL-MW-3-2.5 | 2.5 | 0.2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | **---** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-3-6 | 6 | 0.3 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **9.86** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-3-8.5 | 8.5 | 0.3 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **6.03** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-3-11 | 11 | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | **2.57** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-4** | 3/12/2018 | GL-MW-4-11 | 11 | 1.4 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **2.47** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-4-13 | 13 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **---** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-5** | 3/12/2018 | GL-MW-5-3 | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **---** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-5-8 | 8 | 0.3 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **4.56** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-5-11 | 11 | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | **2.46** | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**TABLE 1**
**Soil Sample Analyses (1)**
**Auburn Way Properties**
**3025 and 3109 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft.) | PID Reading (ppmv) | Gasoline Range Organics | Diesel Range Organics | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Total PCBS | Arsenic | Cadmium | Chromium (III) | Chromium (IV, Hexavalent) | Lead | Mercury | VOCs | Phenanthrene | Pyrene | Total cPAHs |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | NA | 100(a)/30(b) | 2,000 | 2,000 | 2,000 | 0.03 | 7 | 6 | 9 | 1 | 20 | 2 | 2,000 | 19 | 250 | 2 | Various (c) | ** | 2,400* | 1 |
| (units in mg/kg ) | | | | | | | | | | | | | | | | | | | | | | | |
| **GL-MW-6** | 3/13/2018 | GL-MW-6-2 | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **3.78** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-6-5 | 5 | 0.5 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **8.57** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-6-8 | 8 | --- | --- | <20 | **206** | --- | --- | --- | --- | --- | --- | **8.34** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GL-MW-6-10 | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **---** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GLB-10** | 3/13/2018 | GLB-10-2 | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **4.43** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-10-6 | 6 | 0.3 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **15.70** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-10-8.5 | 8.5 | 0.2 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **4.83** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | GLB-10-10.5 | 10.5 | 0.2 | --- | <20 | <50 | --- | --- | --- | --- | --- | --- | **2.52** | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Notes:

(1) Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.

(2) Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2013. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.

(3) Results For Cd, Cr, Pb, PAHs, PCB, and VOCs can be found in G-Logics Additional Soil and Groundwater Sampling report dated August 13, 2017

(a) Soil Cleanup Level For Gasoline With No Detectable Benzene In The Soil.

(b) Soil Cleanup Level For Gasoline With Detectable Benzene In The Soil.

--- Sample not analyzed.

**E** Indicates Reported Result Is An Estimate Because It Exceeds The Calibration Range

<50.0 Sample concentration below laboratory reporting limit.

**27** Bold number(s) indicates contaminant detected, below cleanup level.

**160** Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.

**SGT** Silica Gel Treatment

* Method B Cleanup Level.

** Not researched, no available data.

**<250** Reporting limits exceeds cleanup level.

(c) VOCs analyzed were not detected. See attached analytical laboratory reports for details.

**TABLE 2 (1)**
**Groundwater Sample Analyses**
**Auburn Way Property**
**3025 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft) | Gasoline Range Organics (no detectable benzene) | Diesel Range Organics | Diesel Range Organics (SGT) | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Arsenic (Total) | Arsenic (Dissolved) | Cadmium | Chromium (Total) | Lead | Mercury | Total PCBs (a) | VOCs (a) | 2-Methylnaphthalene | cPAHs (a) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | 1,000 | 500 | 500 | 500 | 500 | 5.00 | 1,000 | 700 | 1,000 | 5 | 5 | 5 | 50 | 15 | 2 | 0.100 | Various | 32* | 0.1 |
| **(units in ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | |
| **December, 2012** | | | | | | | | | | | | | | | | | | | | | | |
| **S1** | 12/12/2012 | S1-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | nd | --- | --- |
| **S4 (b)** | 12/12/2012 | S4-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S6** | 12/12/2012 | S6-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | |
| **December, 2012** | | | | | | | | | | | | | | | | | | | | | | |
| **R2 (b)** | 6/2/2017 | R2-W | | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | **15** | --- | --- | nd | --- | --- |
| **R5 (b)** | 6/2/2017 | R5-W | | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | |
| **July, 2017 (Pre Remedial Eacvation)** | | | | | | | | | | | | | | | | | | | | | | |
| **GLB-1-W (4)** | 7/21/2017 | GLB-1-W | 9-14ft | <50 | <49.9 | --- | **1,670** | **1,210** | <1 | <1 | <1 | <1 | **2.44** | --- | <0.200 | **1.79** | **2.06** | <0.100 | <0.100 | nd | <0.0997 | nd |
| **GLB-5-W (4)** | 7/21/2017 | GLB-5-W | 9-14ft | <50 | <49.9 | --- | **700** | **599** | <1 | <1 | <1 | <1 | **20.7** | **5.19** | <0.200 | **8.68** | **0.592** | <0.100 | --- | nd | --- | --- |
| **GLB-6-W (4)** | 7/21/2017 | GLB-6-W | 9-14ft | <50 | <49.9 | --- | **161** | --- | <1 | <1 | <1 | <1 | **6.25** | --- | <0.200 | **2.00** | **1.32** | <0.100 | --- | nd | --- | --- |
| **GLB-7-W (4)** | 7/21/2017 | GLB-7-W | 9-14ft | <50 | **1,200** | **857** | **4,370** | **3,090** | <1 | <1 | <1 | <1 | **19.0** | **6.94** | <0.200 | **1.87** | **1.89** | <0.100 | <0.999 | nd | **0.143** | nd |

**TABLE 2 (1)**
**Groundwater Sample Analyses**
**Auburn Way Property**
**3025 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft) | Gasoline Range Organics (no detectable benzene) | Diesel Range Organics | Diesel Range Organics (SGT) | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Arsenic (Total) | Arsenic (Dissolved) | Cadmium | Chromium (Total) | Lead | Mercury | Total PCBs (a) | VOCs (a) | 2-Methylnaphthalene | cPAHs (a) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | 1,000 | 500 | 500 | 500 | 500 | 5.00 | 1,000 | 700 | 1,000 | 5 | 5 | 5 | 50 | 15 | 2 | 0.100 | Various | 32* | 0.1 |
| **(units in ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| **GL-MW-1** | 7/31/2017 | GL-MW-1 | 5-15ft | --- | <49.9 | --- | **426** | --- | --- | --- | --- | --- | **25.0** | **20.7** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-1(Dup.)** | 7/31/2017 | GL-MW-100 | 5-15 ft | --- | <49.8 | --- | **375** | --- | --- | --- | --- | --- | **27.9** | **21.1** | --- | --- | --- | --- | --- | --- | --- | --- |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | |
| **Excavation)** | | | | | | | | | | | | | | | | | | | | | | |
| **GL-MW-1** | 3/20/2018 | GL-MW-1 | 5-15ft | <50 | **119** | --- | **219** | --- | <1 | <1 | <1 | <1 | **26.0** | **4.31** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 3/20/2018 | GL-MW-A | Field Dup. | <50 | **78.1** | --- | **291** | --- | <1 | <1 | <1 | <1 | **27.0** | **4.61** | | | | | --- | --- | --- | --- |
| **GL-MW-2** | 3/20/2018 | GL-MW-2 | 5-15ft | <50 | <49.9 | --- | **161** | --- | <1 | <1 | <1 | <1 | **44.3** | **14.1** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-3** | 3/20/2018 | GL-MW-3 | 5-15ft | <50 | <49.9 | --- | <99.9 | --- | <1 | <1 | <1 | <1 | **25.70** | **4.56** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-4** | 3/20/2018 | GL-MW-4 | 5-15ft | <50 | **152** | --- | **259** | --- | <1 | <1 | <1 | <1 | **6.16** | **6.15** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-5** | 3/20/2018 | GL-MW-5 | 5-15ft | <50 | <50 | --- | <100 | --- | <1 | <1 | <1 | <1 | **1.80** | <1.75 | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-6** | 3/20/2018 | GL-MW-6 | 5-15ft | <50 | **69.8** | --- | **346** | --- | <1 | <1 | <1 | <1 | **11.1** | **2.57** | --- | --- | --- | --- | --- | --- | --- | --- |

Notes:

(1) Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.

(2) Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2013. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.

(3) Gasoline Analyses by Method NWTPH-Gx, Diesel and Heavy Oil by NWTPH-Dx/Dx Ext., MTCA 5 Metals by 200.8/245.1, VOCs by 8260C, PAH by 8270 (SIM), PCB by 8082.

(4) Grab Groundwater Sample

(a) Analytes were not detected. See attached analytical laboratory reports for details.

(b) No analytical laboratory report included in the Stemen Environmental report to verify analytical data.

* Method B Cleanup Level.

** Not researched, no available data.

--- Sample not analyzed.

nd Not Detected

Dup. Duplicate Sample for QA/QC.

<50.0 Sample concentration below laboratory reporting limit.

**27** Bold number(s) indicates contaminant detected, below cleanup level.

**160** Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.

**SGT** Silica Gel Treatment

## TABLE 3

## Groundwater Elevation Measurements
## Auburn Way Properties

| Well Designation | Well Installation Date | Elevation Top of PVC Casing (ft.)* | Depth to Top of Screen (ft.) | Depth to Bottom of Screen (ft.) | Well Diam. (in.) | Date Measured | Depth to Water (ft.) | Calculated GW Elevations (ft.) |
|---|---|---|---|---|---|---|---|---|
| **GL-MW-01** | 7/31/18 | 57.20 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 8.11<br>8.29 | 49.09<br>48.91 |
| **GL-MW-02** | 3/12/18 | 56.64 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 7.53<br>7.68 | 49.11<br>48.96 |
| **GL-MW-03** | 3/12/18 | 56.09 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 7.03<br>7.21 | 49.06<br>48.88 |
| **GL-MW-04** | 3/12/18 | 55.87 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 6.85<br>7.02 | 49.02<br>48.85 |
| **GL-MW-05** | 3/12/18 | 55.18 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 6.19<br>6.35 | 48.99<br>48.83 |
| **GL-MW-06** | 3/13/18 | 55.53 | 5 | 15 | 2 | 03/14/18<br>03/20/18 | 6.52<br>6.7 | 49.01<br>48.83 |

Notes:

* Elevations based on a backsight to the concrete floor at the north entrance of the auto shop. The floor elevation at this location is 57.7' (Figure 2).

\# Depth not recorded.

-- Not Applicable.

# APPENDIX A

# FIELD EXPLORATION METHODS

G-Logics performed subsurface soil and shallow groundwater sampling during the assessment conducted on the subject property. The sampling activities were conducted in general accordance with Washington Department of Ecology (Ecology) guidelines and regulations.

## Health and Safety Plan

In accordance with the WISHA standards, under the assumption that the project is being performed under the WISHA Hazardous Waste Operations Standard and state regulations, a site-specific Health and Safety Plan was developed for the field activities completed at the subject property. All field personnel reviewed the plan and implemented the procedures while conducting the on-site field activities.

## Underground Utility Clearance

Before conducting the subsurface exploration, G-Logics contacted a service that notifies public utilities of proposed subsurface investigations. Additionally, on-site private utilities were located by a private locating company to identify on-site utilities as well as specific areas of concern. Consequently, the below-grade utility locations were identified by marking their inferred location on the ground surface. This information was used to aid in identifying sampling locations.

## Quality Assurance Quality Control

Quality Assurance/Quality Control (QA/QC) for the presented scope of work included generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment was washed and rinsed before the collection of the samples. All samples were labeled with a sample number, date, time, and sampler name, and were stored in an ice chest containing frozen "blue ice". Appropriate chain-of-custody documentation was completed.

## Hollow-Stem Auger Borings

Soil borings were drilled using a truck-mounted hollow-stem auger-drilling rig, provided by our drilling subcontractor. A G-Logics employee was present during the drilling and assisted in obtaining samples of the subsurface materials, maintained a log of the borings, made detailed observations of site conditions, and provided technical assistance, as required.

All drilling and sampling equipment was cleaned before mobilization and between borings to reduce the potential for cross contamination. In addition, the sampling equipment was cleaned between each sampling interval before the collection of the next sample.

## Auger Soil Sampling, Driven Sampler

Soil samples were collected by using a stainless steel split-spoon sampler. Sample collection was attempted at approximately 2.5' depth intervals by driving the sampler approximately 18 inches with a 140-pound hammer allowed to free-fall 30 inches. The number of blows required to drive the sampler each 6-inch interval was noted and recorded on the boring logs. Soils were classified according to the Unified Soil Classification System.

Collected soil samples were evaluated for evidence of contamination by visible discoloration of the soil sample or VOCs detected by the photoionization detector (PID). A portion of each soil sample was placed into a plastic zip-lock bag, and the vapors were drawn through the PID for qualitative screening of VOCs. The vapor readings were documented as the field screening results. A new plastic bag was used each time a sample was screened.

The soil sample was removed from the sampler, placed directly into laboratory-provided sample jars, and sealed with a Teflon lined lid.

The samples were then placed into an ice chest containing frozen "blue ice" for preservation. The sample was then forwarded to the analytical laboratory using proper Chain-of-Custody procedures. All soil sample containers were labeled with sample identification numbers, the date, and the sampler's name.

**Groundwater Monitoring-Well Construction, Shallow Hollow-Stem Auger Methods**

Soil borings were completed as groundwater monitoring-wells in the following manner.

- The well casing materials consisted of 2-inch-diameter, flush-threaded, schedule 40 PVC pipe.
- The screened interval of the well casing was perforated with 0.020-inch or 0.010-inch factory-cut slots (refer to boring logs).
- The filter pack for the well consisted of clean, 10/20 Colorado Silica Sand.
- The annular seal of the well consisted of 3/8-inch bentonite chip.
- All PVC casing materials were cleaned at the factory before installation.
- The bottom of the well casing was sealed with a threaded sediment cup. Blank (non-slotted) riser casing was used to extend the well from the top of the screened interval to ground surface. The length of the screened interval is identified on the boring logs.
- Well construction was accomplished by lowering the casing, into the completed boring, through the inside of the hollow-stem augers. The augers were withdrawn from the boring about three feet, and the resulting annular space around the well screen was backfilled with sand (poured through the top of the hollow-stem augers). This process was repeated until the filter pack was installed to about two feet above the top of the screened interval. The augers were completely withdrawn from the boring, and the annular space around the blank riser was backfilled with granulated bentonite to the depth shown on the boring logs.
- The well casing was sealed at the ground surface with a watertight expansion cap.
- A tamper-resistant steel cover was set over the well, flush to the ground surface. The cover was grouted in place with concrete.
- A reference point was marked on the top of the PVC well casing for consistent groundwater-depth measurements.
- An Ecology well-identification tag was placed inside the well box.

## Well Development

After monitoring-well construction and prior to purging the wells for sampling, the wells were developed. Over pumping, or removing water from the well at a rapid rate, was the devolvement technique used. An in-well GeoTech “Geosquirt 12DVC Purge Pump” was lowered to near the bottom of the well screen, and connected to a 12-volt power source. A swab/surge development technique also was used. This movement was created by both lifting and lowering the pump, and by periodically turning the pump off and allowing the water to flow back into the well. Well development continued until the initially turbid water turned nearly clear. This process was repeated until approximately 30-35 gallons of groundwater had been removed.

## Water-Level Measurements in Wells

Water-level measurements were referenced to the top of the well casing. The static water level was measured in each monitoring-well using a conductivity type, water-level probe (Keck Model 1213, Flat Tape Water Level Meter). The conductivity probe was lowered into the well until the instrument detected water. The tape on the probe was used to obtain a depth-to-water measurement, from the reference point, to within 0.01 feet.

## Vertical Survey

The tops of the well casings were surveyed to determine their relative elevations. The wells were surveyed using a LaserMark LMH laser level and graduated survey rod using standard elevation-leveling techniques.

**Monitoring-Well Sampling, Peristaltic-Pump Method**

A G-Logics employee sampled groundwater wells in accordance with the following protocol.

- The height of the water column within the well was calculated by subtracting the depth to water from the total depth of the well. The volume of this water column was calculated using the relationship $V=3.14r^2h$. Where V is the volume of water in cubic feet, r is the radius of the well in feet and h is the height of the water column in feet.
- Based on these calculations, 3 to 5 volumes of water were removed from the well casing prior to collection of samples.
- All purge water was collected and placed into an onsite oil-water separator located inside the car wash area.
- The contract laboratory prepared the sample containers to conform to EPA-recommended preservation techniques for the analytes of concern.
- Groundwater samples were collected with a peristaltic pump. Sample containers were open only as long as necessary to collect the samples.
- Sample bottles were labeled with a sample number, date, time, and G-Logics employee's name, and were stored in an ice chest containing frozen "blue ice". Chain-of-custody procedures were followed to document sample handling.
- Dedicated tubing was used at each sampling location.

# APPENDIX B

# Unified Soil Classification System (USCS)

| PRIMARY DIVISIONS | | | SYMBOL | DESCRIPTIONS |
|---|---|---|---|---|
| **COARSE GRAINED SOILS**<br>Sands & Gravels, Over 50% retained on #200 sieve | **GRAVELS**<br>Over 50% of coarse material retained on #4 sieve | **CLEAN GRAVEL**<br>Less than 5% passing #200 sieve | GW | Well graded gravel, many different particle sizes, little or no fines |
| | | | GP | Poorly graded, few different particle sizes, little or no fines |
| | | **GRAVEL WITH FINES** | GM | Silty gravels, gravel-sand-silt mixtures |
| | | | GC | Clayey gravels, gravel-sand-clay mixtures |
| | **SAND**<br>Over 50% of coarse material passed #4 sieve | **CLEAN SANDS**<br>Less than 5% passing #200 sieve | SW | Well graded gravel, many different particle sizes, little or no fines |
| | | | SP | Poorly graded, few different particle sizes, little or no fines |
| | | **SAND WITH FINES** | SM | Silty gravels, gravel-sand-silt mixtures |
| | | | SC | Clayey gravels, gravel-sand-clay mixtures |
| **FINE GRAINED SOILS**<br>Silts & Clays, Over 50% passing the #200 sieve | **SILTS AND CLAYS**<br>Liquid limit is less than 50 % | | ML | Inorganic silts, slight to no plasticity |
| | | | CL | Inorganic clays, low to moderate plasticity |
| | | | OL | Organic silts and clays of low plasticity |
| | **SILTS AND CLAYS**<br>Liquid limit is more than 50 % | | MH | Inorganic silts, moderate to high plasticity |
| | | | CH | Inorganic clays, high plasticity, fat clays |
| | | | OH | Organic silts and clays of high plasticity |
| **Highly Organic Soils** | | | PT | Peat and other highly organic soils |

## Soil Samples

- Disturbed, bag, bulk, or grab sample
- Standard penetration split spoon sample
- Cuttings
- Continuous-Core Sample

## Field Measurements

- Water Level Observed During Drilling
- PID — Photoionization Detector
- ppmv — Parts Per Million by Volume
- End of Boring (E.O.B)

**Note:** Blows per foot is the number of blows used to drive a split-spoon (2" OD) sampler through the last 12 inches of an 18-inch sampling attempt. One blow is a 30-inch fall of a 140-pound hammer.

**Note:** The line separating strata on the logs represents approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of the strata between exploration locations. Logs represent the soil section observed at the exploration location on the date of exploration only.

ExplorationLogLegend.pub

g-logics

# *Exploration Log Legend*

glb-1.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| 0 | | Asphalt Pavement<br>0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, petroleum odor in cutting shoe, moist.<br>2'-5': No recovery. | 40 | SW | | 2" Boring |
| 5 | GLB1-5 | 5'-9': SILT with clay: medium plasticity; gray brown, petroleum odor at top of sample, moist to wet @ 9 feet. Groundwater at 9.02' | 90 | ML | 8.4 | 0.75" PVC Blank |
| 10 | GLB1-10<br>GLB-1-W | 9'-13': SILTY SAND: fine grain; olive brown, no odor, wet. | 90 | SM | 0.4 | |
| | GLB1-14 | 13'-14': SAND, poorly-graded: fine grain; olive brown, no odor, wet. E.O.B. at 14 feet | | SP | 0.3 | .075" PVC Screen |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | Depth in feet | | | | | |

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite. |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-1

glb-2.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| | | Asphalt Pavement | | | | |
| 0 | | 0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 40 | SW | | |
| | | 2'-4': No recovery. | | | | |
| | GLB2-4 | | | ML | 1.4 | |
| 5 | | 4'-8': SILT with clay: medium plasticity; gray brown turning to olive brown @ 5 feet, no odor, moist to wet @ 6 feet. Groundwater at 7.58' | 90 | | | |
| | GLB2-8 | | | | 0.3 | |
| | | 8'-12': SILTY SAND: fine grain; olive brown, no odor, wet. | 90 | SM | | |
| 10 | GLB2-11 | | | | 0.4 | |
| | | E.O.B. at 12 feet | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |

Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-2

glb-3.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| 0 | | Asphalt Pavement | | | | |
| | | 0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 40 | SW | | |
| | | 2'-4': No recovery. | | | | |
| | GLB3-4 | | | ML | 0.8 | |
| 5 | | 4'-8': SILT with clay: medium plasticity; yellow brown turning to gray @ 7 feet, no odor, moist. | 80 | | | |
| | GLB3-8 | 8'-12': SILTY SAND: fine grain; olive brown, no odor, wet @ 8 feet. | 90 | SM | 0.5 | |
| 10 | GLB3-11 | Groundwater at 10.8' | | | 0.4 | |
| | | E.O.B. at 12 feet | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |

Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-3

glb-4.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| | | Asphalt Pavement | | | | |
| 0 | | 0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 50 | SW | | |
| | | 2'-4': No recovery. | | | | |
| | GLB4-4 | 4'-6': SILT with clay: medium plasticity; olive brown, no odor moist to wet @ 6 feet. | | | 0.5 | |
| 5 | | 6'-8': No recovery. | 60 | ML | | |
| | | Groundwater at 7.54' | | | | |
| | GLB4-8 | 8'-9': Same as above; gray, no odor, wet. | | | 0.3 | |
| | | 9'-12': SILTY SAND: fine grain; olive brown, no odor, wet. | 80 | | | |
| 10 | GLB4-11 | | | SM | 0.5 | |
| | | E.O.B. at 12 feet | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |

Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-4

glb-5.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| 0 | | Asphalt Pavement | | | | 2" Boring |
| | | 0-4': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 50 | SW | | |
| | | 4'-6': No recovery. | | | | |
| 5 | | 6'-9': SILT with clay: medium plasticity; gray brown turning gray blue @ 7 feet, no odor, moist to wet @ 8 feet, possible sheen in water. | 75 | ML | 0.4 | 0.75" PVC Blank |
| | GLB5-8 | Groundwater at 10.14' | | | | |
| 10 | | 9'-12': SILTY SAND: fine grain; gray brown turning olive brown @ 11 feet, no odor, wet. | 50 | SM | 0.4 | |
| | GLB5-12 | | | | | |
| | GLB-5-W | 12'-14': No recovery. | | | | .075" PVC Screen |
| 15 | | E.O.B. at 14 feet | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |

Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: Slow Recovery on water. Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite. |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

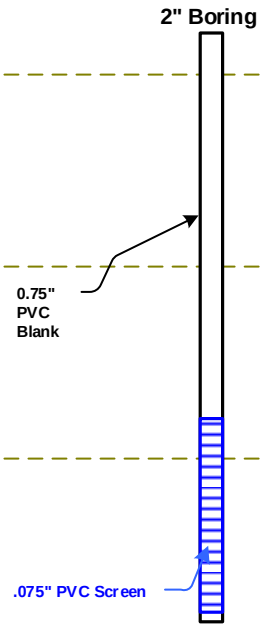
***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-5

glb-6.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) |
|---|---|---|---|---|---|
| 0 | | Asphalt Pavement | | | |
| | | 0-2': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 55 | SW | |
| | GLB6-4 | 2'-4': No recovery. | | | 0.6 |
| 5 | | 4'-9': SILT with clay: medium plasticity; gray brown, no odor, moist to wet @ 9 feet. | 75 | ML | |
| | GLB6-8 | Groundwater at 9.02' | | | 0.5 |
| 10 | GLB-6-W | 9'-12': SILTY SAND: fine grain; olive brown, no odor, wet. | 75 | SM | 0.4 |
| | GLB6-11 | 12'-14': No sample collected, drove casing to 14' to set PVC. E.O.B. at 14 feet | | | |
| 15 | | | | | |
| 20 | | | | | |
| 25 | | | | | |
| 30 | | | | | |

Depth in feet




| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite. |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

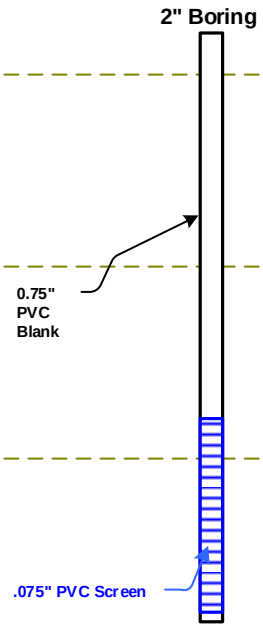
GLB-6

glb-7.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) |
|---|---|---|---|---|---|
| 0 | | Asphalt Pavement | | | |
| 5 | GLB7-6 | 4'-9': SILT with clay: medium plasticity; brown turning gray @ 5 feet, petroleum odor, moist to wet @ 9 feet. | 75 | ML | 5.5 |
| | | Groundwater at 9.09' | | | |
| | GLB7-9 | 9'-12': SILTY SAND: fine grain; gray brown turning | | | 8.3 |
| 10 | | olive brown @ 11 feet, petroleum odor decreasing | 75 | SM | |
| | GLB7-11 | with depth, wet. | | | -- |
| | GLB-7-W | 12'-14': No sample collected, drove casing to 14' to set PVC. E.O.B. at 14 feet | | | |
| 15 | | | | | |
| 20 | | | | | |
| 25 | | | | | |
| 30 | | | | | |

Depth in feet

WELL CONSTRUCTION




| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: Grab water sample collected with a peristaltic pump. Following sample collection, PVC was removed and the boring was backfilled with bentonite. |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-7

glb-8.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| | | Asphalt Pavement | | | | |
| | | 4'-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | | SW | | |
| | | 5'-9.5': SILT with clay: medium plasticity; yellow brown turning gray @ 7 feet, no odor, moist to wet @ 6 feet. Groundwater at 9' | 70 | ML | | |
| | GLB8-9 | 9.5'-12': SILTY SAND: fine grain; gray, no odor, wet. | 70 | SM | | |
| | | E.O.B. at 12 feet | | | | |

0 5 10 15 20 25 30 Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-8

glb-9.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| | | Asphalt Pavement | | | | |
| | | 4'-.5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | | SW | | |
| | | 4.5'-9.5': SILT with clay: medium plasticity; yellow brown turning gray @ 7 feet, no odor, moist to wet @ 9 feet. Groundwater at 9' | 70 | ML | | |
| | GLB9-9 | 9.5'-12': SILTY SAND: fine grain; gray, no odor, wet. | 70 | SM | | |
| | | E.O.B. at 12 feet | | | | |

0 5 10 15 20 25 30

Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/21/2017 | Other Information: |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Two Inches | Page 1 of 1 | |
| Logged By: K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GLB-9

gl-b-10.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | | |
| 0 | | | Refusal twice (Unidentified Object). Moved boring northeast. | | | | |
| 12<br>13<br>16 | | GL-B-10-2 | 0-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 100 | SW | | |
| 5 1<br>1<br>2 | | GL-B-10-6 | 5'-8': SILT with clay: medium plasticity; gray brown, no odor, moist to wet by 8'. | 75 | ML | 0.3 | |
| 1<br>1<br>2 | | GL-B-10-8.5 | 8'-11.5': SILTY SAND: fine grain; gray, no odor, wet. | 100 | | 0.2 | |
| 10 2<br>2<br>2 | | GL-B-10-10.5 | | 100 | SM | 0.2 | |
| | | | E.O.B. at 11.5 feet | | | | |
| 15 | | | | | | | |
| 20 | | | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

Depth in feet

| | | |
|---|---|---|
| **Drilling Method:** HSA | **Date:** 3/13/2018 | **Other Information:** |
| **Drilling Company:** Holocene | **Weather:** Cloudy, 60 Degrees | Refusal twice at approximately 2.5' and 3' (Unidentified Object). Moved boring. |
| **Boring Diameter:** Eight Inches | **Page** 1 **of** 1 | |
| **Logged By:** K. Vandehey | | |

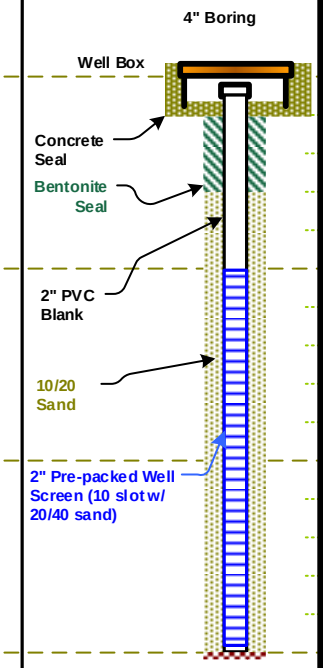
g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-B-10

gl-mw-1.vsd

| INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|
| 0 | | Asphalt Pavement | | | | |
| | | Soils Not Observed | | | | |
| 5 | | | | | | |
| | | Groundwater at 10' | | | | |
| 10 | | | | | | |
| | | E.O.B. at 15 feet | | | | |
| 15 | | | | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |




Depth in feet

| | | |
|---|---|---|
| Drilling Method: Direct-Push | Date: 7/31/2017 | Other Information: Well Tag ID# BJW 614 |
| Drilling Company: ESN Northwest | Weather: Sunny, Warm | |
| Boring Diameter: Four Inches | Page 1 of 1 | |
| Logged By: J. Stordahl | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-MW-1

gl-mw-2.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | | 8" Boring |
| 0 | | | 0-6': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium | | | | Well Box, Well Cap, Concrete Seal |
| 6 8 7 | | GL-MW-2-2.5 | sand; some fines; brown, no odor, moist. | 50 | SW | 0.4 | |
| 5 | | | | | | | 5 |
| 1 1 2 | | GL-MW-2-6 | 6'-11': SILT with clay: medium plasticity; gray brown turning gray @ 8', no odor, moist to wet. | 100 | | 0.7 | 2" PVC Blank |
| 2 1 1 | | GL-MW-2-8.5 | Groundwater at 7.53' | 100 | ML | 0.4 | 10/20 Sand |
| 10 | | | | | | | 10 |
| 1 1 4 | | GL-MW-2-11 | 11'-11.5': SILTY SAND: fine grain; gray, no odor, wet. | 100 | SM | 0.7 | 2" PVC Screen (20 Slot) |
| | | | 11.5'-15': Soil not observed. | | | | 2" PVC Plug |
| 15 | | | E.O.B. at 15 feet | | | | 15 |
| 20 | | | | | | | 20 |
| 25 | | | | | | | 25 |
| 30 | | | | | | | 30 |

Depth in feet

| | | |
|---|---|---|
| **Drilling Method:** HSA | **Date:** 3/12/2018 | **Other Information:** Groundwater Depth Measured 3/14/2018 |
| **Drilling Company:** Holocene | **Weather:** Sunny, 60-70 Degrees | Ecology Well Tag # BKC-474 |
| **Boring Diameter:** Eight Inches | **Page** 1 **of** 1 | |
| **Logged By:** K. Vandehey | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

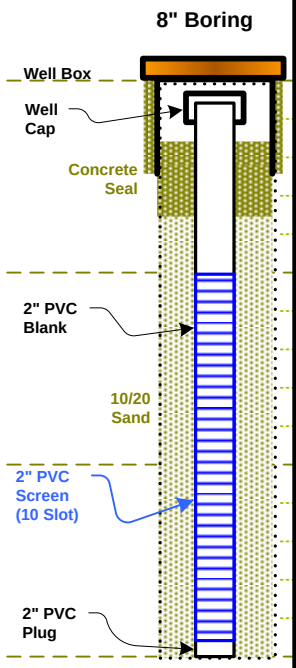
GL-MW-2

gl-mw-3.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) |
|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | |
| 0 | | | 0-5': SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium | | | |
| 10 8 8 | | GL-MW-3-2.5 | sand; some fines; brown, no odor, moist. | 50 | SW | 0.2 |
| 5 3 3 10 | | GL-MW-3-6 | 5'-9.5': SILT with clay: medium plasticity; gray brown, no odor, moist to wet. | 75 | ML | 0.3 |
| | | | Groundwater at 7.03' | | | |
| 1 1 1 | | GL-MW-3-8.5 | | 100 | | 0.3 |
| | | | 9.5'-11.5': SILTY SAND: fine grain; gray, no odor, | | | |
| 10 2 3 3 | | GL-MW-3-11 | wet. | 100 | SM | 0.3 |
| | | | 11.5'-15': Soil not observed. | | | |
| 15 | | | E.O.B. at 15 feet | | | |
| 20 | | | | | | |
| 25 | | | | | | |
| 30 | | | | | | |

Depth in feet

WELL CONSTRUCTION




| | | |
|---|---|---|
| **Drilling Method:** HSA | **Date:** 3/12/2018 | **Other Information:** Groundwater Depth Measured 3/14/2018 |
| **Drilling Company:** Holocene | **Weather:** Sunny, 60-70 Degrees | Ecology Well Tag # BKC-473 (Original well that was decommissioned because it kept filling with drillers sand.) Replacement Well Tag # BKC-486. |
| **Boring Diameter:** Eight Inches | **Page** 1 **of** 1 | |
| **Logged By:** K. Vandehey | | |

g-logics

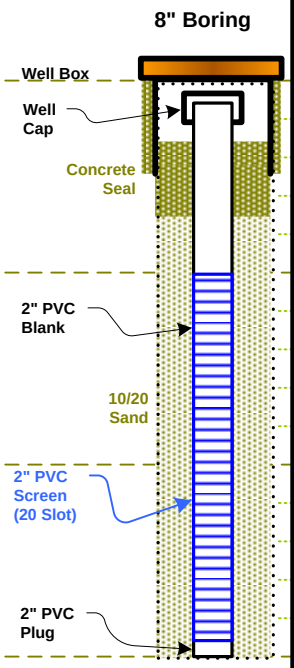
***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-MW-3

gl-mw-4.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) |
|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | |
| | | | 0-9': Within excavation area. Soil not observed. | | | |
| | | | Groundwater at 6.85' | | | |
| 1<br>2<br>3 | | | Poor recovery. Excavation backfill. | 10 | | |
| 2<br>3<br>4 | | GL-MW-4-11 | 11'-13': SILTY SAND: fine grain; gray, no odor, wet. | 100 | SM | 1.4 |
| 2<br>4<br>6 | | GL-MW-4-13 | 13'-14.5': SAND, poorly-graded: fine grain; olive brown, no odor, wet. | 100 | SP | |
| | | | E.O.B. at 15 feet | | | |

WELL CONSTRUCTION




Depth in feet

| | | | |
|---|---|---|---|
| **Drilling Method:** | HSA | **Date:** | 3/12/2018 |
| **Drilling Company:** | Holocene | **Weather:** | Sunny, 60-70 Degrees |
| **Boring Diameter:** | Eight Inches | **Page** | 1 of 1 |
| **Logged By:** | K. Vandehey | | |

**Other Information:**
Groundwater Depth Measured 3/14/2018
Ecology Well Tag # BKC-475

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-MW-4

gl-mw-5.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | | 8" Boring |
| | | | Drilled through a 6" PVC pipe at approximately 3' | | | | Well Box |
| | | | (Unidentified Utility). Moved boring northeast. | | | | Well Cap |
| 10<br>4<br>3 | | GL-MW-5-3 | 0-8': Poor Recovery. | 5 | SW | | Concrete Seal |
| 1<br>1<br>1 | | | Groundwater at 6.19' | 0 | ML | | 2" PVC Blank |
| 1<br>2<br>3 | | GL-MW-5-8 | 8'-9': SILT with clay: medium plasticity; brown, no odor, wet. | 100 | | 0.3 | 10/20 Sand |
| 2<br>2<br>5 | | GL-MW-5-11 | 9.5'-11.5': SILTY SAND: fine grain; brown, no odor, wet. | 100 | SM | 0.3 | 2" PVC Screen (20 Slot) |
| | | | 11.5'-15': Soil not observed. | | | | 2" PVC Plug |
| | | | E.O.B. at 15 feet | | | | |

0, 5, 10, 15, 20, 25, 30

Depth in feet

| | | | |
|---|---|---|---|
| **Drilling Method:** HSA | **Date:** 3/12/2018 | **Other Information:** | |
| **Drilling Company:** Holocene | **Weather:** Sunny, 60-70 Degrees | Groundwater Depth Measured 3/14/2018 | |
| **Boring Diameter:** Eight Inches | **Page** 1 **of** 1 | Ecology Well Tag # BKC-476 | |
| **Logged By:** K. Vandehey | | | |

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-MW-5

gl-mw-6.vsd

| BLOWS/6 inches | INTERVAL | SAMPLE NUMBER | SOIL DESCRIPTION | Recovery % | USCS | PID (ppmv in headspace) | WELL CONSTRUCTION |
|---|---|---|---|---|---|---|---|
| | | | Asphalt Pavement | | | | 8" Boring |
| | | | Refusal at approximately 3' (Unidentified Object). | | | | Well Box |
| | | | Moved boring northwest. | | | | Well Cap |
| 20<br>18<br>12 | | GL-MW-6-2 | 0-5': Poor Recovery. SILTY SAND, well-graded with gravel: subrounded fine to coarse gravel; fine to medium sand; some fines; brown, no odor, moist. | 15 | SW | 0.5 | Concrete Seal |
| 5<br>2<br>2 | | GL-MW-6-5 | 5'-9.5': SILT with clay: medium plasticity; gray turning gray brown @ 8', no odor, moist to wet. | 50 | ML | | 2" PVC Blank |
| | | | Groundwater at 6.52' | | | | |
| 2<br>2<br>1 | | GL-MW-6-8 | | 10 | | | 10/20 Sand |
| 7<br>9<br>5 | | GL-MW-6-10 | 9.5'-11.5': SILTY SAND: fine grain; brown, no odor, wet. | 15 | SM | | 2" PVC Screen (20 Slot) |
| | | | 11.5'-15': Soil not observed. | | | | 2" PVC Plug |
| | | | E.O.B. at 15 feet | | | | |

0, 5, 10, 15, 20, 25, 30

Depth in feet

| | | | |
|---|---|---|---|
| **Drilling Method:** | HSA | **Date:** | 3/13/2018 |
| **Drilling Company:** | Holocene | **Weather:** | Cloudy, 60 Degrees |
| **Boring Diameter:** | Eight Inches | **Page** | 1 of 1 |
| **Logged By:** | K. Vandehey | | |

**Other Information:**
Groundwater Depth Measured 3/14/2018
Ecology Well Tag # BKC-477

g-logics

***Boring/Well Log***
***Auburn Way Property***
***3001 and 3025 Auburn Way N***
***Auburn, Washington***

GL-MW-6

# APPENDIX C

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

**G-Logics**
Karis Vandehey
40 Second Ave. SE
Issaquah, WA 98027

**RE: Auburn Way Properties**
**Work Order Number: 1803149**

March 20, 2018

**Attention Karis Vandehey:**

Fremont Analytical, Inc. received 21 sample(s) on 3/13/2018 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***
***Sample Moisture (Percent Moisture)***
***Total Metals by EPA Method 6020***

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

**Date:** *03/20/2018*

**CLIENT:** G-Logics
**Project:** Auburn Way Properties
**Work Order:** 1803149

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 1803149-001 | GL-MW-2-2.5 | 03/12/2018 10:40 AM | 03/13/2018 3:25 PM |
| 1803149-002 | GL-MW-2-6 | 03/12/2018 10:45 AM | 03/13/2018 3:25 PM |
| 1803149-003 | GL-MW-2-8.5 | 03/12/2018 10:50 AM | 03/13/2018 3:25 PM |
| 1803149-004 | GL-MW-2-11 | 03/12/2018 10:55 AM | 03/13/2018 3:25 PM |
| 1803149-005 | GL-MW-3-2.5 | 03/12/2018 9:15 AM | 03/13/2018 3:25 PM |
| 1803149-006 | GL-MW-3-6 | 03/12/2018 9:20 AM | 03/13/2018 3:25 PM |
| 1803149-007 | GL-MW-3-8.5 | 03/12/2018 9:25 AM | 03/13/2018 3:25 PM |
| 1803149-008 | GL-MW-3-11 | 03/12/2018 9:30 AM | 03/13/2018 3:25 PM |
| 1803149-009 | GL-MW-4-11 | 03/12/2018 12:50 PM | 03/13/2018 3:25 PM |
| 1803149-010 | GL-MW-4-13 | 03/12/2018 12:55 PM | 03/13/2018 3:25 PM |
| 1803149-011 | GL-MW-5-3 | 03/12/2018 2:40 PM | 03/13/2018 3:25 PM |
| 1803149-012 | GL-MW-5-8 | 03/12/2018 3:25 PM | 03/13/2018 3:25 PM |
| 1803149-013 | GL-MW-5-11 | 03/12/2018 3:30 PM | 03/13/2018 3:25 PM |
| 1803149-014 | GL-MW-6-2 | 03/13/2018 8:30 AM | 03/13/2018 3:25 PM |
| 1803149-015 | GL-MW-6-5 | 03/13/2018 8:55 AM | 03/13/2018 3:25 PM |
| 1803149-016 | GL-MW-6-8 | 03/13/2018 9:00 AM | 03/13/2018 3:25 PM |
| 1803149-017 | GL-MW-6-10 | 03/13/2018 9:05 AM | 03/13/2018 3:25 PM |
| 1803149-018 | GLB-10-2 | 03/13/2018 10:35 AM | 03/13/2018 3:25 PM |
| 1803149-019 | GLB-10-6 | 03/13/2018 10:40 AM | 03/13/2018 3:25 PM |
| 1803149-020 | GLB-10-8.5 | 03/13/2018 10:45 AM | 03/13/2018 3:25 PM |
| 1803149-021 | GLB-10-10.5 | 03/13/2018 10:50 AM | 03/13/2018 3:25 PM |

# Case Narrative

WO#: **1803149**

Date: **3/20/2018**

**CLIENT:** G-Logics

**Project:** Auburn Way Properties

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

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

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

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

Qualifiers:

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

Acronyms:

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

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 10:40:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-001
**Matrix:** Soil
**Client Sample ID:** **GL-MW-2-2.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 20.0 | | mg/Kg-dry | 1 | 3/16/2018 11:31:52 PM |
| Heavy Oil | 320 | 50.0 | | mg/Kg-dry | 1 | 3/16/2018 11:31:52 PM |
| Surr: 2-Fluorobiphenyl | 86.5 | 50 - 150 | | %Rec | 1 | 3/16/2018 11:31:52 PM |
| Surr: o-Terphenyl | 94.5 | 50 - 150 | | %Rec | 1 | 3/16/2018 11:31:52 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 3.45 | 0.199 | | mg/Kg-dry | 1 | 3/15/2018 1:39:05 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 7.85 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 10:45:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-002
**Matrix:** Soil
**Client Sample ID:** **GL-MW-2-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 26.8 | | mg/Kg-dry | 1 | 3/16/2018 4:36:06 PM |
| Heavy Oil | ND | 67.0 | | mg/Kg-dry | 1 | 3/16/2018 4:36:06 PM |
| Surr: 2-Fluorobiphenyl | 81.7 | 50 - 150 | | %Rec | 1 | 3/16/2018 4:36:06 PM |
| Surr: o-Terphenyl | 94.1 | 50 - 150 | | %Rec | 1 | 3/16/2018 4:36:06 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 10.8 | 0.273 | | mg/Kg-dry | 1 | 3/15/2018 1:43:06 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 29.5 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 10:50:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-003
**Matrix:** Soil
**Client Sample ID:** **GL-MW-2-8.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 25.1 | | mg/Kg-dry | 1 | 3/16/2018 5:06:02 PM |
| Heavy Oil | ND | 62.8 | | mg/Kg-dry | 1 | 3/16/2018 5:06:02 PM |
| Surr: 2-Fluorobiphenyl | 77.4 | 50 - 150 | | %Rec | 1 | 3/16/2018 5:06:02 PM |
| Surr: o-Terphenyl | 87.9 | 50 - 150 | | %Rec | 1 | 3/16/2018 5:06:02 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 6.26 | 0.267 | | mg/Kg-dry | 1 | 3/15/2018 1:47:07 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 28.1 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 10:55:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-004
**Matrix:** Soil
**Client Sample ID:** **GL-MW-2-11**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 5.20 | 0.248 | | mg/Kg-dry | 1 | 3/15/2018 1:51:09 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 28.0 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 9:20:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-006
**Matrix:** Soil
**Client Sample ID:** **GL-MW-3-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 26.1 | | mg/Kg-dry | 1 | 3/16/2018 5:35:52 PM |
| Heavy Oil | ND | 65.2 | | mg/Kg-dry | 1 | 3/16/2018 5:35:52 PM |
| Surr: 2-Fluorobiphenyl | 83.2 | 50 - 150 | | %Rec | 1 | 3/16/2018 5:35:52 PM |
| Surr: o-Terphenyl | 95.2 | 50 - 150 | | %Rec | 1 | 3/16/2018 5:35:52 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 9.86 | 0.267 | | mg/Kg-dry | 1 | 3/15/2018 1:55:10 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 26.9 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 9:25:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-007
**Matrix:** Soil
**Client Sample ID:** **GL-MW-3-8.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 26.1 | | mg/Kg-dry | 1 | 3/16/2018 6:05:40 PM |
| Heavy Oil | ND | 65.3 | | mg/Kg-dry | 1 | 3/16/2018 6:05:40 PM |
| Surr: 2-Fluorobiphenyl | 76.7 | 50 - 150 | | %Rec | 1 | 3/16/2018 6:05:40 PM |
| Surr: o-Terphenyl | 88.0 | 50 - 150 | | %Rec | 1 | 3/16/2018 6:05:40 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 6.03 | 0.239 | | mg/Kg-dry | 1 | 3/15/2018 1:59:11 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 25.9 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 9:30:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-008
**Matrix:** Soil
**Client Sample ID:** **GL-MW-3-11**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 2.57 | 0.252 | | mg/Kg-dry | 1 | 3/15/2018 2:03:13 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 29.6 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 12:50:00 PM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-009
**Matrix:** Soil
**Client Sample ID:** **GL-MW-4-11**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 24.4 | | mg/Kg-dry | 1 | 3/16/2018 6:35:25 PM |
| Heavy Oil | ND | 61.1 | | mg/Kg-dry | 1 | 3/16/2018 6:35:25 PM |
| Surr: 2-Fluorobiphenyl | 81.6 | 50 - 150 | | %Rec | 1 | 3/16/2018 6:35:25 PM |
| Surr: o-Terphenyl | 91.3 | 50 - 150 | | %Rec | 1 | 3/16/2018 6:35:25 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 2.47 | 0.238 | | mg/Kg-dry | 1 | 3/15/2018 2:07:15 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 26.1 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 3:25:00 PM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-012
**Matrix:** Soil
**Client Sample ID:** **GL-MW-5-8**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 24.4 | | mg/Kg-dry | 1 | 3/16/2018 7:05:07 PM |
| Heavy Oil | ND | 61.1 | | mg/Kg-dry | 1 | 3/16/2018 7:05:07 PM |
| Surr: 2-Fluorobiphenyl | 80.0 | 50 - 150 | | %Rec | 1 | 3/16/2018 7:05:07 PM |
| Surr: o-Terphenyl | 91.1 | 50 - 150 | | %Rec | 1 | 3/16/2018 7:05:07 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 4.56 | 0.248 | | mg/Kg-dry | 1 | 3/15/2018 2:19:21 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 29.4 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/12/2018 3:30:00 PM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-013
**Matrix:** Soil
**Client Sample ID:** **GL-MW-5-11**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 2.46 | 0.243 | | mg/Kg-dry | 1 | 3/15/2018 2:23:22 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 27.4 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 8:30:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-014
**Matrix:** Soil
**Client Sample ID:** **GL-MW-6-2**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 3.78 | 0.202 | | mg/Kg-dry | 1 | 3/15/2018 2:27:23 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 8.86 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 8:55:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-015
**Matrix:** Soil
**Client Sample ID:** **GL-MW-6-5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 26.7 | | mg/Kg-dry | 1 | 3/16/2018 8:04:27 PM |
| Heavy Oil | ND | 66.8 | | mg/Kg-dry | 1 | 3/16/2018 8:04:27 PM |
| Surr: 2-Fluorobiphenyl | 110 | 50 - 150 | | %Rec | 1 | 3/16/2018 8:04:27 PM |
| Surr: o-Terphenyl | 117 | 50 - 150 | | %Rec | 1 | 3/16/2018 8:04:27 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 8.57 | 0.265 | | mg/Kg-dry | 1 | 3/15/2018 2:31:25 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 27.4 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 9:00:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-016
**Matrix:** Soil
**Client Sample ID:** **GL-MW-6-8**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 23.6 | | mg/Kg-dry | 1 | 3/17/2018 12:30:55 AM |
| Heavy Oil | 206 | 58.9 | | mg/Kg-dry | 1 | 3/17/2018 12:30:55 AM |
| Surr: 2-Fluorobiphenyl | 89.8 | 50 - 150 | | %Rec | 1 | 3/17/2018 12:30:55 AM |
| Surr: o-Terphenyl | 99.1 | 50 - 150 | | %Rec | 1 | 3/17/2018 12:30:55 AM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 8.34 | 0.248 | | mg/Kg-dry | 1 | 3/15/2018 2:35:26 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 19.4 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 10:35:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-018
**Matrix:** Soil
**Client Sample ID:** **GLB-10-2**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 4.43 | 0.194 | | mg/Kg-dry | 1 | 3/15/2018 2:39:28 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 5.91 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 10:40:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-019
**Matrix:** Soil
**Client Sample ID:** **GLB-10-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 27.5 | | mg/Kg-dry | 1 | 3/16/2018 8:34:22 PM |
| Heavy Oil | ND | 68.7 | | mg/Kg-dry | 1 | 3/16/2018 8:34:22 PM |
| Surr: 2-Fluorobiphenyl | 81.4 | 50 - 150 | | %Rec | 1 | 3/16/2018 8:34:22 PM |
| Surr: o-Terphenyl | 91.8 | 50 - 150 | | %Rec | 1 | 3/16/2018 8:34:22 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 15.7 | 0.264 | | mg/Kg-dry | 1 | 3/15/2018 2:43:29 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 28.7 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 10:45:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-020
**Matrix:** Soil
**Client Sample ID:** **GLB-10-8.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 23.4 | | mg/Kg-dry | 1 | 3/16/2018 9:03:57 PM |
| Heavy Oil | ND | 58.4 | | mg/Kg-dry | 1 | 3/16/2018 9:03:57 PM |
| Surr: 2-Fluorobiphenyl | 83.2 | 50 - 150 | | %Rec | 1 | 3/16/2018 9:03:57 PM |
| Surr: o-Terphenyl | 93.0 | 50 - 150 | | %Rec | 1 | 3/16/2018 9:03:57 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 4.83 | 0.243 | | mg/Kg-dry | 1 | 3/15/2018 2:47:31 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 27.0 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

# Analytical Report

Work Order: **1803149**
Date Reported: **3/20/2018**

**Client:** G-Logics
**Collection Date:** 3/13/2018 10:50:00 AM
**Project:** Auburn Way Properties
**Lab ID:** 1803149-021
**Matrix:** Soil
**Client Sample ID:** **GLB-10-10.5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20086 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 25.9 | | mg/Kg-dry | 1 | 3/16/2018 9:33:35 PM |
| Heavy Oil | ND | 64.8 | | mg/Kg-dry | 1 | 3/16/2018 9:33:35 PM |
| Surr: 2-Fluorobiphenyl | 81.8 | 50 - 150 | | %Rec | 1 | 3/16/2018 9:33:35 PM |
| Surr: o-Terphenyl | 90.6 | 50 - 150 | | %Rec | 1 | 3/16/2018 9:33:35 PM |
| **Total Metals by EPA Method 6020** | | | | Batch ID: 20061 | | Analyst: WC |
| Arsenic | 2.52 | 0.261 | | mg/Kg-dry | 1 | 3/15/2018 2:51:32 PM |
| **Sample Moisture (Percent Moisture)** | | | | Batch ID: R42246 | | Analyst: CG |
| Percent Moisture | 25.1 | 0.500 | | wt% | 1 | 3/15/2018 12:55:16 PM |

**Work Order:** 1803149
**CLIENT:** G-Logics
**Project:** Auburn Way Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **MB-20086** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **MBLKS** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815134**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 20.0 | | | | | | | | | |
| Heavy Oil | ND | 50.0 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 16.8 | | 20.00 | | 84.2 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 18.6 | | 20.00 | | 92.8 | 50 | 150 | | | | |

Sample ID **LCS-20086** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **LCSS** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815135**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 521 | 20.0 | 500.0 | 0 | 104 | 65 | 135 | | | | |
| Surr: 2-Fluorobiphenyl | 19.1 | | 20.00 | | 95.7 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 20.1 | | 20.00 | | 101 | 50 | 150 | | | | |

Sample ID **1803185-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **BATCH** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815672**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 21.1 | | | | | | 0 | | 30 | |
| Heavy Oil | ND | 52.9 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 17.3 | | 21.14 | | 81.9 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 19.3 | | 21.14 | | 91.2 | 50 | 150 | | 0 | | |

Sample ID **1803185-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **BATCH** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815673**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 387 | 17.9 | 447.5 | 0 | 86.6 | 65 | 135 | | | | |
| Surr: 2-Fluorobiphenyl | 14.0 | | 17.90 | | 78.4 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 15.0 | | 17.90 | | 84.0 | 50 | 150 | | | | |

**Work Order:** 1803149
**CLIENT:** G-Logics
**Project:** Auburn Way Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **1803185-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **BATCH** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815673**

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

Sample ID **1803185-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **BATCH** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815674**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 396 | 18.9 | 472.7 | 0 | 83.8 | 65 | 135 | 387.5 | 2.15 | 30 | |
| Surr: 2-Fluorobiphenyl | 19.2 | | 18.91 | | 102 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 20.5 | | 18.91 | | 108 | 50 | 150 | | 0 | | |

Sample ID **1803149-012ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/16/2018** RunNo: **42272**
Client ID: **GL-MW-5-8** Batch ID: **20086** Analysis Date: **3/16/2018** SeqNo: **815684**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 25.9 | | | | | | 0 | | 30 | |
| Heavy Oil | ND | 64.8 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 21.2 | | 25.91 | | 81.7 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 23.9 | | 25.91 | | 92.3 | 50 | 150 | | 0 | | |

**Work Order:** 1803149
**CLIENT:** G-Logics
**Project:** Auburn Way Properties

# QC SUMMARY REPORT

## Sample Moisture (Percent Moisture)

Sample ID **1803149-001ADUP** SampType: **DUP** Units: **wt%** Prep Date: **3/15/2018** RunNo: **42246**
Client ID: **GL-MW-2-2.5** Batch ID: **R42246** Analysis Date: **3/15/2018** SeqNo: **814600**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 9.28 | 0.500 | | | | | | 7.850 | 16.7 | 20 | |

Sample ID **1803173-001ADUP** SampType: **DUP** Units: **wt%** Prep Date: **3/15/2018** RunNo: **42246**
Client ID: **BATCH** Batch ID: **R42246** Analysis Date: **3/15/2018** SeqNo: **814877**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Moisture | 8.87 | 0.500 | | | | | | 10.46 | 16.5 | 20 | |

**Work Order:** 1803149
**CLIENT:** G-Logics
**Project:** Auburn Way Properties

# QC SUMMARY REPORT

## Total Metals by EPA Method 6020

| Sample ID | MB-20061 | SampType: | MBLK | | | Units: | mg/Kg | Prep Date: | 3/14/2018 | RunNo: | 42257 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | MBLKS | Batch ID: | 20061 | | | | | Analysis Date: | 3/15/2018 | SeqNo: | 814843 | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | | ND | 0.194 | | | | | | | | | |

| Sample ID | LCS-20061 | SampType: | LCS | | | Units: | mg/Kg | Prep Date: | 3/14/2018 | RunNo: | 42257 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | LCSS | Batch ID: | 20061 | | | | | Analysis Date: | 3/15/2018 | SeqNo: | 814844 | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | | 39.6 | 0.192 | 38.46 | 0 | 103 | 80 | 120 | | | | |

| Sample ID | 1803158-001ADUP | SampType: | DUP | | | Units: | mg/Kg-dry | Prep Date: | 3/14/2018 | RunNo: | 42257 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | BATCH | Batch ID: | 20061 | | | | | Analysis Date: | 3/15/2018 | SeqNo: | 814846 | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | | 3.38 | 0.232 | | | | | | 3.384 | 0.185 | 20 | |

| Sample ID | 1803158-001AMS | SampType: | MS | | | Units: | mg/Kg-dry | Prep Date: | 3/14/2018 | RunNo: | 42257 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | BATCH | Batch ID: | 20061 | | | | | Analysis Date: | 3/15/2018 | SeqNo: | 814848 | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | | 45.6 | 0.228 | 45.58 | 3.384 | 92.6 | 75 | 125 | | | | |

| Sample ID | 1803158-001AMSD | SampType: | MSD | | | Units: | mg/Kg-dry | Prep Date: | 3/14/2018 | RunNo: | 42257 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | BATCH | Batch ID: | 20061 | | | | | Analysis Date: | 3/15/2018 | SeqNo: | 814849 | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
| Arsenic | | 50.1 | 0.230 | 45.94 | 3.384 | 102 | 75 | 125 | 45.61 | 9.33 | 20 | |

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **GL** | Work Order Number: | **1803149** |
| Logged by: | **Clare Griggs** | Date Received: | **3/13/2018 3:25:00 PM** |

## Chain of Custody

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

## Log In

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

## Special Handling (if applicable)

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

| | | | |
|---|---|---|---|
| Person Notified: | Karis Vandehey | Date | 3/14/2018 |
| By Whom: | Clare Griggs | Via: | ☑ eMail ☑ Phone ☐ Fax ☐ In Person |
| Regarding: | Confirming sample name. | | |
| Client Instructions: | Jar labeled GL-MW-5-10 @ 9:05 should be COC sample GL-MW-6-10 @ 9:05 | | |

19. Additional remarks:

**Item Information**

| Item # | Temp ºC |
|---|---|
| Cooler | 7.8 |
| Sample | 6.6 |

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

# Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/12/18 Page: 1 of: 3

Laboratory Project No (internal): 1803149

Project Name: AUBURN WAY PROPERTIES

Special Remarks:

Project No: 01-1140-E

Client: G-LOGGES

Collected by: KAELS VANDEHEY

Address: 40 2ND AVE SE

Location: 3025 & 3109 AUBURN Way N. AUBURN WA

City, State, Zip: ISSAQUAH WA

Report To (PM):

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Telephone:

Fax:

PM Email: KAELS VANDEHEY

| Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) | Total (T) | Dissolved (D) | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 GL-MW-2-2.5 | 3/12/18 | 1040 | SOIL | | | | | X | | | | | X | | | | | (1) 4oz Jar |
| 2 GL-MW-2-6 | | 1045 | | | | | | X | | | | | X | | | | | |
| 3 GL-MW-2-8.5 | | 1050 | | | | | | X | | | | | X | | | | | |
| 4 GL-MW-2-11 | | 1055 | | | | | | | | | | | X | | | | | |
| 5 GL-MW-3-2.5 | | 0915 | | | | | | | | | | | | | | | | HOLD |
| 6 GL-MW-3-6 | | 0920 | | | | | | X | | | | | X | | | | | |
| 7 GL-MW-3-8.5 | | 0925 | | | | | | X | | | | | X | | | | | |
| 8 GL-MW-3-11 | | 0930 | | | | | | | | | | | X | | | | | |
| 9 GL-MW-4-11 | | 1250 | | | | | | X | | | | | X | | | | | |
| 10 GL-MW-4-13 | | 1255 | | | | | | | | | | | | | | | | HOLD |

(2) AS

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished | Date/Time | Received | Date/Time |
|---|---|---|---|
| x | 3/13/18 1525 | x | 3/13/18 1525 |
| Relinquished | Date/Time | Received | Date/Time |
| x | | x | |

**Turn-around Time:**

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 3/12+3/13/18 Page: 2 of: 3

Project Name: AUBURN PROPERTIES

Project No: 01-1140-E

Collected by: KAREN VANDEHEY

Location: 3025 + 3109 AUBURN WAY N

Report To (PM): KAREN VANDEHEY

PM Email:

Client: GLOGICS

Address:

City, State, Zip:

Telephone:

Fax:

Laboratory Project No (internal):

Special Remarks:

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) (Total (T) / Dissolved (D)) AS | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GL-MW-5-3 | 3/12/18 | 1440 | SOIL | | | | | | | | | | X | | | HOLD (1) 4oz JAR |
| 2 | GL-MW5-8 | | 1525 | SOIL | | | | | X | | | | | X | | | |
| 3 | GL-MW5-11 | | 1530 | | | | | | | | | | | X | | | |
| 4 | GL-MW-6-2 | 3/13/18 | 0830 | | | | | | | | | | | X | | | |
| 5 | GL-MW-6-5 | | 0855 | | | | | | X | | | | | X | | | |
| 6 | GL-MW-6-8 | | 0900 | | | | | | X | | | | | X | | | NOT A FULL JAR |
| 7 | GL-MW-6-10 | | 0905 | | | | | | | | | | | | | | HOLD |
| 8 | GLB-10-2 | | 1035 | | | | | | | | | | | X | | | |
| 9 | GLB-10-6 | | 1040 | | | | | | X | | | | | X | | | |
| 10 | GLB-10-8.5 | | 1045 | | | | | | X | | | | | X | | | |

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished | Date/Time | Received | Date/Time |
|---|---|---|---|
| x | 3/13/18 1525 | x | 3/13/18 15:25 |
| Relinquished | Date/Time | Received | Date/Time |
| x | | x | |

**Turn-around Time:**

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 3/13/18 Page: 3 of: 3

Project Name: AUBURN PROPERTIES

Project No: 01-1140-E

Collected by: KV

Location: 3025-3109 AUBURN WAY N.

Report To (PM): KARIS VANDEHEY

PM Email:

Client: G-LOGICS

Address:

City, State, Zip: ISSAQUAH WA

Telephone:

Fax:

Laboratory Project No (internal):

Special Remarks:

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) (Total (T) \| Dissolved (D)) AS | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GLB-10-10.5 | 3/13/18 | 1050 | SOIL | | | | | | X | | | | X | | | (1) 4oz JAR |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished | Date/Time | Received | Date/Time |
|---|---|---|---|
| x | 3/13/18 1525 | x | 3/13/18 15:25 |
| x | Date/Time | x | Date/Time |

***Turn-around Time:***

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

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

**G-Logics**
Karis Vandehey
40 Second Ave. SE
Issaquah, WA 98027

**RE: Auburn Properties**
**Work Order Number: 1803247**

March 28, 2018

**Attention Karis Vandehey:**

Fremont Analytical, Inc. received 8 sample(s) on 3/21/2018 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***
***Dissolved Metals by EPA Method 200.8***
***Gasoline by NWTPH-Gx***
***Total Metals by EPA Method 200.8***
***Volatile Organic Compounds by EPA Method 8260C***

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

**Date:** *03/28/2018*

**CLIENT:** G-Logics
**Project:** Auburn Properties
**Work Order:** 1803247

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 1803247-001 | GL-MW-1 | 03/20/2018 12:40 PM | 03/21/2018 8:30 AM |
| 1803247-002 | GL-MW-2 | 03/20/2018 12:50 PM | 03/21/2018 8:30 AM |
| 1803247-003 | GL-MW-3 | 03/20/2018 6:35 PM | 03/21/2018 8:30 AM |
| 1803247-004 | GL-MW-4 | 03/20/2018 3:00 PM | 03/21/2018 8:30 AM |
| 1803247-005 | GL-MW-5 | 03/20/2018 11:10 AM | 03/21/2018 8:30 AM |
| 1803247-006 | GL-MW-6 | 03/20/2018 10:55 AM | 03/21/2018 8:30 AM |
| 1803247-007 | GL-MW-A | 03/20/2018 12:00 AM | 03/21/2018 8:30 AM |
| 1803247-008 | Trip Blank | 03/06/2018 10:12 AM | 03/21/2018 8:30 AM |

# Case Narrative

WO#: **1803247**

Date: **3/28/2018**

**CLIENT:** G-Logics

**Project:** Auburn Properties

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

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

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

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

Qualifiers:

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

Acronyms:

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

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 12:40:00 PM
**Project:** Auburn Properties
**Lab ID:** 1803247-001
**Matrix:** Water
**Client Sample ID:** **GL-MW-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 3/23/2018 6:04:40 PM |
| Diesel Range Organics (C12-C24) | 119 | 49.9 | | µg/L | 1 | 3/23/2018 6:04:40 PM |
| Heavy Oil | 219 | 99.7 | | µg/L | 1 | 3/23/2018 6:04:40 PM |
| Surr: 2-Fluorobiphenyl | 89.8 | 50 - 150 | | %Rec | 1 | 3/23/2018 6:04:40 PM |
| Surr: o-Terphenyl | 89.1 | 50 - 150 | | %Rec | 1 | 3/23/2018 6:04:40 PM |
| **NOTES:** DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24). | | | | | | |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| Surr: Toluene-d8 | 97.9 | 65 - 135 | | %Rec | 1 | 3/27/2018 11:58:19 AM |
| Surr: 4-Bromofluorobenzene | 99.1 | 65 - 135 | | %Rec | 1 | 3/27/2018 11:58:19 AM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 11:58:19 AM |
| Surr: Dibromofluoromethane | 88.4 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 11:58:19 AM |
| Surr: Toluene-d8 | 98.4 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 11:58:19 AM |
| Surr: 1-Bromo-4-fluorobenzene | 96.5 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 11:58:19 AM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 4.31 | 1.75 | | µg/L | 1 | 3/27/2018 4:51:03 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 26.0 | 1.75 | | µg/L | 1 | 3/26/2018 1:08:48 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 12:50:00 PM
**Project:** Auburn Properties
**Lab ID:** 1803247-002
**Matrix:** Water
**Client Sample ID:** **GL-MW-2**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 3/23/2018 6:34:14 PM |
| Heavy Oil | 161 | 99.8 | | µg/L | 1 | 3/23/2018 6:34:14 PM |
| Surr: 2-Fluorobiphenyl | 89.0 | 50 - 150 | | %Rec | 1 | 3/23/2018 6:34:14 PM |
| Surr: o-Terphenyl | 85.0 | 50 - 150 | | %Rec | 1 | 3/23/2018 6:34:14 PM |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| Surr: Toluene-d8 | 98.6 | 65 - 135 | | %Rec | 1 | 3/27/2018 12:29:00 PM |
| Surr: 4-Bromofluorobenzene | 99.6 | 65 - 135 | | %Rec | 1 | 3/27/2018 12:29:00 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:29:00 PM |
| Surr: Dibromofluoromethane | 93.6 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 12:29:00 PM |
| Surr: Toluene-d8 | 96.0 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 12:29:00 PM |
| Surr: 1-Bromo-4-fluorobenzene | 97.6 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 12:29:00 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 14.1 | 1.75 | | µg/L | 1 | 3/27/2018 4:55:04 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 44.3 | 1.75 | | µg/L | 1 | 3/26/2018 1:12:49 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 6:35:00 PM
**Project:** Auburn Properties
**Lab ID:** 1803247-003
**Matrix:** Water
**Client Sample ID:** **GL-MW-3**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 3/23/2018 7:03:42 PM |
| Heavy Oil | ND | 99.9 | | µg/L | 1 | 3/23/2018 7:03:42 PM |
| Surr: 2-Fluorobiphenyl | 87.6 | 50 - 150 | | %Rec | 1 | 3/23/2018 7:03:42 PM |
| Surr: o-Terphenyl | 79.5 | 50 - 150 | | %Rec | 1 | 3/23/2018 7:03:42 PM |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| Surr: Toluene-d8 | 99.1 | 65 - 135 | | %Rec | 1 | 3/27/2018 12:59:41 PM |
| Surr: 4-Bromofluorobenzene | 98.5 | 65 - 135 | | %Rec | 1 | 3/27/2018 12:59:41 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 12:59:41 PM |
| Surr: Dibromofluoromethane | 94.6 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 12:59:41 PM |
| Surr: Toluene-d8 | 94.9 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 12:59:41 PM |
| Surr: 1-Bromo-4-fluorobenzene | 96.8 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 12:59:41 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 4.56 | 1.75 | | µg/L | 1 | 3/27/2018 4:59:06 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 25.7 | 1.75 | | µg/L | 1 | 3/26/2018 1:16:51 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 3:00:00 PM
**Project:** Auburn Properties
**Lab ID:** 1803247-004
**Matrix:** Water
**Client Sample ID:** **GL-MW-4**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.8 | | µg/L | 1 | 3/23/2018 3:36:16 PM |
| Diesel Range Organics (C12-C24) | 152 | 49.8 | | µg/L | 1 | 3/23/2018 3:36:16 PM |
| Heavy Oil | 259 | 99.6 | | µg/L | 1 | 3/23/2018 3:36:16 PM |
| Surr: 2-Fluorobiphenyl | 91.4 | 50 - 150 | | %Rec | 1 | 3/23/2018 3:36:16 PM |
| Surr: o-Terphenyl | 81.0 | 50 - 150 | | %Rec | 1 | 3/23/2018 3:36:16 PM |
| **NOTES:** DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24). | | | | | | |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| Surr: Toluene-d8 | 99.5 | 65 - 135 | | %Rec | 1 | 3/27/2018 1:30:21 PM |
| Surr: 4-Bromofluorobenzene | 99.1 | 65 - 135 | | %Rec | 1 | 3/27/2018 1:30:21 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 1:30:21 PM |
| Surr: Dibromofluoromethane | 96.6 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 1:30:21 PM |
| Surr: Toluene-d8 | 95.2 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 1:30:21 PM |
| Surr: 1-Bromo-4-fluorobenzene | 97.1 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 1:30:21 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 6.15 | 1.75 | | µg/L | 1 | 3/27/2018 5:03:07 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 6.16 | 1.75 | | µg/L | 1 | 3/26/2018 1:20:52 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 11:10:00 AM
**Project:** Auburn Properties
**Lab ID:** 1803247-005
**Matrix:** Water
**Client Sample ID:** **GL-MW-5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 50.0 | | µg/L | 1 | 3/23/2018 9:30:56 PM |
| Heavy Oil | ND | 100 | | µg/L | 1 | 3/23/2018 9:30:56 PM |
| Surr: 2-Fluorobiphenyl | 75.1 | 50 - 150 | | %Rec | 1 | 3/23/2018 9:30:56 PM |
| Surr: o-Terphenyl | 78.6 | 50 - 150 | | %Rec | 1 | 3/23/2018 9:30:56 PM |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| Surr: Toluene-d8 | 99.9 | 65 - 135 | | %Rec | 1 | 3/27/2018 2:00:53 PM |
| Surr: 4-Bromofluorobenzene | 99.6 | 65 - 135 | | %Rec | 1 | 3/27/2018 2:00:53 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:00:53 PM |
| Surr: Dibromofluoromethane | 92.9 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 2:00:53 PM |
| Surr: Toluene-d8 | 95.5 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 2:00:53 PM |
| Surr: 1-Bromo-4-fluorobenzene | 98.1 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 2:00:53 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | ND | 1.75 | | µg/L | 1 | 3/27/2018 5:07:09 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 1.80 | 1.75 | | µg/L | 1 | 3/26/2018 1:24:54 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018 10:55:00 AM
**Project:** Auburn Properties
**Lab ID:** 1803247-006
**Matrix:** Water
**Client Sample ID:** **GL-MW-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 3/23/2018 10:00:22 PM |
| Diesel Range Organics (C12-C24) | 69.8 | 49.9 | | µg/L | 1 | 3/23/2018 10:00:22 PM |
| Heavy Oil | 346 | 99.8 | | µg/L | 1 | 3/23/2018 10:00:22 PM |
| Surr: 2-Fluorobiphenyl | 83.2 | 50 - 150 | | %Rec | 1 | 3/23/2018 10:00:22 PM |
| Surr: o-Terphenyl | 84.3 | 50 - 150 | | %Rec | 1 | 3/23/2018 10:00:22 PM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| Surr: Toluene-d8 | 98.7 | 65 - 135 | | %Rec | 1 | 3/27/2018 2:31:35 PM |
| Surr: 4-Bromofluorobenzene | 98.8 | 65 - 135 | | %Rec | 1 | 3/27/2018 2:31:35 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 2:31:35 PM |
| Surr: Dibromofluoromethane | 90.5 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 2:31:35 PM |
| Surr: Toluene-d8 | 98.1 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 2:31:35 PM |
| Surr: 1-Bromo-4-fluorobenzene | 96.7 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 2:31:35 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 2.57 | 1.75 | | µg/L | 1 | 3/27/2018 5:11:10 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 11.1 | 1.75 | | µg/L | 1 | 3/26/2018 1:28:55 PM |

# Analytical Report

Work Order: **1803247**
Date Reported: **3/28/2018**

**Client:** G-Logics
**Collection Date:** 3/20/2018
**Project:** Auburn Properties
**Lab ID:** 1803247-007
**Matrix:** Water
**Client Sample ID:** **GL-MW-A**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 20126 | | Analyst: SB |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 3/23/2018 10:29:45 PM |
| Diesel Range Organics (C12-C24) | 78.1 | 49.9 | | µg/L | 1 | 3/23/2018 10:29:45 PM |
| Heavy Oil | 291 | 99.8 | | µg/L | 1 | 3/23/2018 10:29:45 PM |
| Surr: 2-Fluorobiphenyl | 89.4 | 50 - 150 | | %Rec | 1 | 3/23/2018 10:29:45 PM |
| Surr: o-Terphenyl | 88.4 | 50 - 150 | | %Rec | 1 | 3/23/2018 10:29:45 PM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 20158 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| Surr: Toluene-d8 | 97.4 | 65 - 135 | | %Rec | 1 | 3/27/2018 3:02:16 PM |
| Surr: 4-Bromofluorobenzene | 101 | 65 - 135 | | %Rec | 1 | 3/27/2018 3:02:16 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 20158 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 3/27/2018 3:02:16 PM |
| Surr: Dibromofluoromethane | 90.0 | 45.4 - 152 | | %Rec | 1 | 3/27/2018 3:02:16 PM |
| Surr: Toluene-d8 | 98.5 | 40.1 - 139 | | %Rec | 1 | 3/27/2018 3:02:16 PM |
| Surr: 1-Bromo-4-fluorobenzene | 97.8 | 64.2 - 128 | | %Rec | 1 | 3/27/2018 3:02:16 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 20166 | | Analyst: WC |
| Arsenic | 4.61 | 1.75 | | µg/L | 1 | 3/27/2018 5:15:12 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 20146 | | Analyst: WC |
| Arsenic | 27.0 | 1.75 | | µg/L | 1 | 3/26/2018 1:32:56 PM |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **MB-20126** SampType: **MBLK** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **MBLKW** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818070**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 50.0 | | | | | | | | | |
| Heavy Oil | ND | 100 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 65.0 | | 80.00 | | 81.2 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 70.0 | | 80.00 | | 87.5 | 50 | 150 | | | | |

Sample ID **LCS-20126** SampType: **LCS** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **LCSW** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818071**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 908 | 50.0 | 999.3 | 0 | 90.9 | 65 | 135 | | | | |
| Surr: 2-Fluorobiphenyl | 68.2 | | 79.94 | | 85.3 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 67.3 | | 79.94 | | 84.1 | 50 | 150 | | | | |

Sample ID **1803229-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **BATCH** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818547**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 49.9 | | | | | | 0 | | 30 | |
| Diesel Range Organics (C12-C24) | 4,590 | 49.9 | | | | | | 4,752 | 3.38 | 30 | E |
| Heavy Oil | 2,310 | 99.8 | | | | | | 1,924 | 18.3 | 30 | |
| Surr: 2-Fluorobiphenyl | 101 | | 79.83 | | 126 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 70.7 | | 79.83 | | 88.6 | 50 | 150 | | 0 | | |

**NOTES:**
E - Estimated value. The amount exceeds the linear working range of the instrument.
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **1803247-004BMS** SampType: **MS** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **GL-MW-4** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818549**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 931 | 49.7 | 994.1 | 151.9 | 78.4 | 65 | 135 | | | | |
| Surr: 2-Fluorobiphenyl | 74.1 | | 79.53 | | 93.2 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 66.0 | | 79.53 | | 83.0 | 50 | 150 | | | | |

Sample ID **1803247-004BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **GL-MW-4** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818550**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 1,050 | 49.8 | 995.4 | 151.9 | 90.0 | 65 | 135 | 931.3 | 11.8 | 30 | |
| Surr: 2-Fluorobiphenyl | 73.2 | | 79.64 | | 91.9 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 67.4 | | 79.64 | | 84.6 | 50 | 150 | | 0 | | |

Sample ID **1803266-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/22/2018** RunNo: **42413**
Client ID: **BATCH** Batch ID: **20126** Analysis Date: **3/23/2018** SeqNo: **818562**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 49.9 | | | | | | 0 | | 30 | |
| Heavy Oil | ND | 99.8 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 72.4 | | 79.84 | | 90.7 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 67.2 | | 79.84 | | 84.2 | 50 | 150 | | 0 | | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

| Sample ID | **MB-20166** | SampType: | **MBLK** | | | Units: | **µg/L** | | Prep Date: | **3/27/2018** | | RunNo: | **42478** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **20166** | | | | | | Analysis Date: | **3/27/2018** | | SeqNo: | **819358** | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual | | |
| Arsenic | | ND | 1.75 | | | | | | | | | | | |

| Sample ID | **LCS-20166** | SampType: | **LCS** | | | Units: | **µg/L** | | Prep Date: | **3/27/2018** | | RunNo: | **42478** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **20166** | | | | | | Analysis Date: | **3/27/2018** | | SeqNo: | **819359** | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual | | |
| Arsenic | | 101 | 1.75 | 100.0 | 0 | 101 | 85 | 115 | | | | | | |

| Sample ID | **1803294-001ADUP** | SampType: | **DUP** | | | Units: | **µg/L** | | Prep Date: | **3/27/2018** | | RunNo: | **42478** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20166** | | | | | | Analysis Date: | **3/27/2018** | | SeqNo: | **819361** | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual | | |
| Arsenic | | 5.40 | 1.75 | | | | | | 6.672 | 21.0 | 30 | | | |

| Sample ID | **1803294-001AMS** | SampType: | **MS** | | | Units: | **µg/L** | | Prep Date: | **3/27/2018** | | RunNo: | **42478** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20166** | | | | | | Analysis Date: | **3/27/2018** | | SeqNo: | **819364** | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual | | |
| Arsenic | | 539 | 1.75 | 500.0 | 6.672 | 106 | 70 | 130 | | | | | | |

| Sample ID | **1803294-001AMSD** | SampType: | **MSD** | | | Units: | **µg/L** | | Prep Date: | **3/27/2018** | | RunNo: | **42478** | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20166** | | | | | | Analysis Date: | **3/27/2018** | | SeqNo: | **819365** | |
| Analyte | | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual | | |
| Arsenic | | 533 | 1.75 | 500.0 | 6.672 | 105 | 70 | 130 | 538.7 | 0.981 | 30 | | | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

Sample ID **MB-20150FB** SampType: **MBLK** Units: **µg/L** Prep Date: **3/27/2018** RunNo: **42478**
Client ID: **MBLKW** Batch ID: **20166** Analysis Date: **3/27/2018** SeqNo: **819380**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

**NOTES:**
Filter Blank

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Gasoline by NWTPH-Gx

Sample ID **LCS-20158** SampType: **LCS** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **LCSW** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818999**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 561 | 50.0 | 500.0 | 0 | 112 | 65 | 135 | | | | |
| Surr: Toluene-d8 | 24.8 | | 25.00 | | 99.3 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 25.3 | | 25.00 | | 101 | 65 | 135 | | | | |

Sample ID **MB-20158** SampType: **MBLK** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **MBLKW** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819000**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | 50.0 | | | | | | | | | |
| Surr: Toluene-d8 | 25.3 | | 25.00 | | 101 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 24.4 | | 25.00 | | 97.6 | 65 | 135 | | | | |

Sample ID **1803324-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **BATCH** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818990**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | 50.0 | | | | | | 0 | | 30 | |
| Surr: Toluene-d8 | 25.1 | | 25.00 | | 100 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 24.4 | | 25.00 | | 97.4 | 65 | 135 | | 0 | | |

Sample ID **1803325-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **BATCH** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818994**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | 50.0 | | | | | | 0 | | 30 | |
| Surr: Toluene-d8 | 25.0 | | 25.00 | | 99.8 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 24.7 | | 25.00 | | 98.8 | 65 | 135 | | 0 | | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Gasoline by NWTPH-Gx

Sample ID **1803247-004AMS** SampType: **MS** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **GL-MW-4** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819548**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 524 | 50.0 | 500.0 | 0 | 105 | 65 | 135 | | | | |
| Surr: Toluene-d8 | 25.1 | | 25.00 | | 100 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 25.3 | | 25.00 | | 101 | 65 | 135 | | | | |

Sample ID **1803247-004AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42457**
Client ID: **GL-MW-4** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819549**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 487 | 50.0 | 500.0 | 0 | 97.3 | 65 | 135 | 523.6 | 7.31 | 30 | |
| Surr: Toluene-d8 | 24.9 | | 25.00 | | 99.7 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 25.4 | | 25.00 | | 102 | 65 | 135 | | 0 | | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Total Metals by EPA Method 200.8

| Sample ID | **MB-20146** | SampType: | **MBLK** | | | Units: | **µg/L** | Prep Date: | **3/26/2018** | RunNo: | **42437** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **20146** | | | | | Analysis Date: | **3/26/2018** | SeqNo: | **818587** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

| Sample ID | **LCS-20146** | SampType: | **LCS** | | | Units: | **µg/L** | Prep Date: | **3/26/2018** | RunNo: | **42437** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **20146** | | | | | Analysis Date: | **3/26/2018** | SeqNo: | **818588** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 92.5 | 1.75 | 100.0 | 0 | 92.5 | 85 | 115 | | | | |

| Sample ID | **1803229-001DDUP** | SampType: | **DUP** | | | Units: | **µg/L** | Prep Date: | **3/26/2018** | RunNo: | **42437** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20146** | | | | | Analysis Date: | **3/26/2018** | SeqNo: | **818590** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 10.2 | 1.75 | | | | | | 9.911 | 3.26 | 30 | |

| Sample ID | **1803229-001DMS** | SampType: | **MS** | | | Units: | **µg/L** | Prep Date: | **3/26/2018** | RunNo: | **42437** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20146** | | | | | Analysis Date: | **3/26/2018** | SeqNo: | **818591** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 534 | 1.75 | 500.0 | 9.911 | 105 | 70 | 130 | | | | |

| Sample ID | **1803229-001DMSD** | SampType: | **MSD** | | | Units: | **µg/L** | Prep Date: | **3/26/2018** | RunNo: | **42437** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **20146** | | | | | Analysis Date: | **3/26/2018** | SeqNo: | **818592** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 529 | 1.75 | 500.0 | 9.911 | 104 | 70 | 130 | 533.9 | 0.913 | 30 | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **LCS-20158** SampType: **LCS** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **LCSW** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818972**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 18.8 | 1.00 | 20.00 | 0 | 94.0 | 69.3 | 132 | | | | |
| Toluene | 19.9 | 1.00 | 20.00 | 0 | 99.3 | 61.3 | 145 | | | | |
| Ethylbenzene | 19.0 | 1.00 | 20.00 | 0 | 94.8 | 72 | 130 | | | | |
| m,p-Xylene | 37.9 | 1.00 | 40.00 | 0 | 94.6 | 70.3 | 134 | | | | |
| o-Xylene | 19.3 | 1.00 | 20.00 | 0 | 96.4 | 72.1 | 131 | | | | |
| Surr: Dibromofluoromethane | 25.7 | | 25.00 | | 103 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 24.9 | | 25.00 | | 99.8 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.6 | | 25.00 | | 98.4 | 64.2 | 128 | | | | |

Sample ID **MB-20158** SampType: **MBLK** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **MBLKW** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818973**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | | | | |
| Toluene | ND | 1.00 | | | | | | | | | |
| Ethylbenzene | ND | 1.00 | | | | | | | | | |
| m,p-Xylene | ND | 1.00 | | | | | | | | | |
| o-Xylene | ND | 1.00 | | | | | | | | | |
| Surr: Dibromofluoromethane | 24.5 | | 25.00 | | 98.1 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 25.1 | | 25.00 | | 101 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 23.7 | | 25.00 | | 94.7 | 64.2 | 128 | | | | |

Sample ID **1803324-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **BATCH** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818963**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | 0 | | 30 | |
| Toluene | ND | 1.00 | | | | | | 0 | | 30 | |
| Ethylbenzene | ND | 1.00 | | | | | | 0 | | 30 | |
| m,p-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **1803324-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **BATCH** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818963**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |
| Surr: Dibromofluoromethane | 24.5 | | 25.00 | | 98.1 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 25.2 | | 25.00 | | 101 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 23.6 | | 25.00 | | 94.5 | 64.2 | 128 | | 0 | | |

Sample ID **1803325-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **BATCH** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **818967**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | 0 | | 30 | |
| Toluene | ND | 1.00 | | | | | | 0 | | 30 | |
| Ethylbenzene | ND | 1.00 | | | | | | 0 | | 30 | |
| m,p-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |
| o-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |
| Surr: Dibromofluoromethane | 23.6 | | 25.00 | | 94.2 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 24.0 | | 25.00 | | 95.9 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.2 | | 25.00 | | 96.7 | 64.2 | 128 | | 0 | | |

Sample ID **1803247-004AMS** SampType: **MS** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **GL-MW-4** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819536**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.5 | 1.00 | 20.00 | 0 | 102 | 65.4 | 138 | | | | |
| Toluene | 21.0 | 1.00 | 20.00 | 0 | 105 | 52 | 147 | | | | |
| Ethylbenzene | 20.6 | 1.00 | 20.00 | 0 | 103 | 64.5 | 136 | | | | |
| m,p-Xylene | 40.6 | 1.00 | 40.00 | 0 | 101 | 63.3 | 135 | | | | |
| o-Xylene | 20.7 | 1.00 | 20.00 | 0 | 103 | 64.8 | 150 | | | | |
| Surr: Dibromofluoromethane | 25.7 | | 25.00 | | 103 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 24.7 | | 25.00 | | 98.8 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 25.0 | | 25.00 | | 99.9 | 64.2 | 128 | | | | |

**Work Order:** 1803247
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **1803247-004AMS** SampType: **MS** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **GL-MW-4** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819536**

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

Sample ID **1803247-004AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **3/26/2018** RunNo: **42456**
Client ID: **GL-MW-4** Batch ID: **20158** Analysis Date: **3/27/2018** SeqNo: **819537**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 20.0 | 1.00 | 20.00 | 0 | 99.9 | 65.4 | 138 | 20.46 | 2.39 | 30 | |
| Toluene | 20.6 | 1.00 | 20.00 | 0 | 103 | 52 | 147 | 21.02 | 2.26 | 30 | |
| Ethylbenzene | 20.1 | 1.00 | 20.00 | 0 | 101 | 64.5 | 136 | 20.56 | 2.10 | 30 | |
| m,p-Xylene | 39.9 | 1.00 | 40.00 | 0 | 99.7 | 63.3 | 135 | 40.57 | 1.68 | 30 | |
| o-Xylene | 20.7 | 1.00 | 20.00 | 0 | 103 | 64.8 | 150 | 20.66 | 0.0892 | 30 | |
| Surr: Dibromofluoromethane | 25.3 | | 25.00 | | 101 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 24.8 | | 25.00 | | 99.0 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.6 | | 25.00 | | 98.2 | 64.2 | 128 | | 0 | | |

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **GL** | Work Order Number: | **1803247** |
| Logged by: | **Clare Griggs** | Date Received: | **3/21/2018 8:30:00 AM** |

## Chain of Custody

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

## Log In

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

## Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

**Item Information**

| Item # | Temp ºC |
|---|---|
| Cooler | 3.4 |
| Sample | 1.1 |
| Temp Blank | 1.8 |

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

# Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 3/20/18 Page: 1 of: 1

Laboratory Project No (internal): 1803247

Special Remarks: ~~HOLD~~ RUN AS DISSOLVED IF AS TOTAL IS ABOVE 5

Project Name: AUBURN PROPERTIES

Project No: 1140-E

Client: G-LOGICS

Address: 40 2ND AVE SE

City, State, Zip: ISSAQUAH WA

Telephone:

Fax:

Collected by: KAREN V.

Location: 3025 & 3109 AUBURN WAY N

Report To (PM): KAREN VANDERHEY

PM Email: KAREN V@G-LOGICS.COM

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D) AS | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GL-MW-1 | 3/20/18 | 1240 | H2O | | X | | | | X | | | | X | | | (3) VOAS, (1) AMBER, (2) POLY |
| 2 | GL-MW-2 | " | 1250 | " | | X | | | | X | | | | X | | | " " " |
| 3 | GL-MW-3 | " | 1835 | " | | X | | | | X | | | | X | | | " " " |
| 4 | GL-MW-4 | " | 1500 | " | | X | | | | X | | | | X | | | (7) VOA, (2) AMBER, (2) POLY |
| 5 | GL-MW-5 | " | 1110 | " | | X | | | | X | | | | X | | | (3) VOA (1) AMBER, (2) POLY |
| 6 | GL-MW-6 | " | 1055 | " | | X | | | | X | | | | X | | | " " " |
| 7 | GL-MW-A | " | | " | | X | | | | X | | | | X | | | " " " |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished | Date/Time | Received | Date/Time |
|---|---|---|---|
| x | 3/20/18 1930 | x | 3/21/18 0830 |
| Relinquished | Date/Time | Received | Date/Time |
| x | | x | |

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

# ATTACHMENTS

**Permission and Conditions for Use and Copying Form**

**Well Installation and Groundwater Sampling**
**Auburn Way Properties, 3025 and 3109 Auburn Way N**
**Auburn, WA 98002**

**G-Logics Project 01-1140-E**
**April 11, 2018**

G-Logics prepared the above-identified Document only for our Client and/or other user(s), as identified in the Document, for the purposes stated and subject to any identified and contractual limitations. Regulatory agencies may make additional "fair use" copies for internal and public use based on state and federal laws that do not violate copyright laws.

All other Requestors must obtain permission from G-Logics and our Client in order to avoid copyright violations. To request authorization for a copy of the Document, please read our conditions listed below, complete the Requestor section, and fax to G-Logics at 425-313-3074 for approval review.

- I recognize that G-Logics has prepared this Document only for their Client and/or other user(s), only for the purposes stated in the Document and subject to any identified and contractual limitations.
- My intended use of the Document is for general informational purposes only.
- I understand and accept that there may be limitations to the reliability of the Document's findings due to circumstances beyond the control of G-Logics, the limited scope of funding, and/or limitations inherent in the nature of the performed services.
- I agree not to rely on the Document as being comprehensive or inclusive of all possible site hazards and agree to defend, indemnify, and hold G-Logics harmless from and against any and all claims, damages, or liability which arise from or which are alleged to arise from my use of the Document. I also will compensate G-Logics for any time spent or expenses incurred by G-Logics in defense of any such claim.
- I agree not to provide the Document to any other person or organizations without prior authorization from G-Logics and their Client.

I, the Requestor, have reviewed the above-identified conditions for copying/use of the Document, am familiar with the presented limitations of the provided services, and acknowledge my understanding and concurrence, as indicated by my signature below.

Requestor's Company _____

Mailing Address _____

City, State, Zip Code _____

Contact Name & Title _____

Signature & Date _____

Telephone & Fax Numbers _____

Planned Use of Document _____

_____

_____

With your information and signature above, please fax to G-Logics (425-313-3074) for approval review. G-Logics will share your request with our Client for their approval.

**Client Review and Acknowledgment of Use and Copying Request**

Per the notification of G-Logics, I, the Client, have reviewed this request for copying/use of this Document, have discussed the request with G-Logics, and grant my consent as indicated by my signature below.

Client Company _____

Client Contact Name & Title _____

Signature & Date _____

Telephone & Fax Numbers _____

**G-Logics review and Acknowledgment of Use and Copying Request**

Based on your concurrence with the above-presented conditions, approval of our Client, and our review of the information, G-Logics allows the Requestor to copy/use the above referenced Document for purposes stated. Additional fees may apply.

G-Logics Signature _____

Title _____

Date _____

g-logics

February 13, 2018
G-Logics File Number 01-1140-E

M&M Ventures, LLC
Mr. Mike Scarff
33 Knights Lane
Friday Harbor, WA 98250

R&E Investments, LLC
Mr. Roger Vermazen
16932 SE 354th Street
Auburn, WA 98092

**SUBJECT: Updated Workplan to Conduct Well Installation and Groundwater Sampling Using Hollow-Stem Auger Equipment**
**Facility/Site No. 57361549**
**PTAP Project No. PNW030**
**Auburn Way Properties**
**3025 and 3109 Auburn Way N**
**Auburn, WA 98002**

Dear Mr. Scarff and Mr. Vermazen:

G-Logics Inc. is pleased to present this workplan to install groundwater monitoring wells at the Site (Figure 1). The Site is composed of two properties, 3025 and 3109 Auburn Way N. The 3025 property is identified as King County tax parcel number 0004000039. The 3109 property is identified as King County tax parcel number 0004000041.

We understand that M&M Ventures, LLC (M&M Ventures) and R&E Investments LLC (R&E Investments) intends to collaboratively conduct this work to verify the successful removal of petroleum contaminants at the Site, in order to request a No Further Action (NFA) Opinion from the State of Washington's Pollution Liability Insurance Agency (PLIA).

**G-Logics, Inc.**
40 2nd Avenue SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074

G-Logics workplan is based on our recent site-exploration and remediation work completed at the Site, and our experience with similar projects. Our workplan was developed after a meeting with PLIA on January 31, 2018, and has been written to reflect additional soil and water sampling requested by PLIA. G-Logics work is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017 and our *Environmental Media Management Report* dated December 4, 2017. This workplan was also developed after discussion with M&M Ventures (recent 3025 property owner), R&E Investments (recent 3109 property owner), and Rairdon Auto Group (Rairdon, current 3025 property owner).

If a portion of this workplan does not meet the needs of M&M Ventures, R&E Investments and Rairdon, G-Logics stands ready to consider appropriate modifications including changes in scope, methodology, and scheduling. These modifications may result in changes to the risks borne and may require adjustments to our fees.

**Background**

Since at least the early 1970s, an automobile dealership and a service garage historically occupied the northern portion of the 3025 property and the southern portion of the 3109 property (adjacent property to the north). As summarized in the G-Logics Phase I report dated July 18, 2017, a former 550-gallon used-oil underground storage tank (UST) was removed from west side of the former dealership building located on the 3025 property (Figure 2). Stemen Environmental, Inc. (SEI), as confirmed in a report dated December 20, 2012, conducted a Phase II exploration in this area. Soil and groundwater samples were collected on the 3025 property as well as the 3109 property (see Figure 2). None of the samples that Stemen analyzed from the 3025 property contained concentrations of gasoline (GRO), diesel (DRO), oil-range hydrocarbons (ORO), or volatile organic compounds (VOCs) at concentrations above MTCA Method A cleanup levels.

In the SEI Phase II exploration, GRO and ORO hydrocarbons were found exceeding the MTCA cleanup levels in soils along the southern property boundary of the 3109 property. SEI conducted additional sampling work on the 3109 property in June 2017 (see Figure 2). ORO in soil was detected but at concentrations below MTCA Method A cleanup levels. None of the analyzed groundwater samples contained concentrations of GRO, DRO, ORO, or VOCs. However one groundwater sample contained lead at the MTCA Method A cleanup level (15 ug/L).

To provide additional data for the former UST area, G-Logics conducted additional soil and groundwater sampling on the 3025 property in July 2017 (Figure 2). ORO hydrocarbons (understood to be associated with the former used-oil UST) were found exceeding the MTCA Method A cleanup level in soils along the northern property boundary. DRO/ORO was also found, above MTCA Method A cleanup level, in two grab-groundwater samples collected in this area. Total and dissolved concentrations of Arsenic also were reported above the MTCA cleanup level in two of the four grab-groundwater samples and in one monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information). Based on the conducted work, the source of the arsenic is not known, but may be related to the former tank or due to Areawide Sources (e.g., Asarco Smelter Plume, former-agricultural practices, and/or volcanic deposits from Mount Rainier).

Based on the findings of the August 13 report, G-Logics recommended the excavation of petroleum-contaminated media (soil and groundwater) assumed to be associated with the UST. Mr. Vermazen (3109 property owner) agreed that if petroleum-contaminated soil was found to extend onto his property, then those contaminated soils also should be removed. Accordingly, the remedial excavation planned for the 3025 property extended to the north onto the 3109 property.

In November 2017, petroleum-contaminated media (soil and groundwater) was removed from an area spanning the property line. The work consisted of the removal and disposal of approximately 384 tons of petroleum-contaminated soil and approximately 2,600 gallons of water (rain and groundwater). Analyzed confirmation samples indicated that all petroleum-contaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygen-release compound (ORC Advanced) was added to groundwater in the excavation, as well as the backfill material near the groundwater interface (see G-Logics *Environmental Media Management Report* dated December 4, 2017 for more information).

During the intake meeting with PLIA on January 31, 2018, PLIA offered that the two properties (3025 and 3109) be considered as one Site. PLIA requested additional sampling be conducted on both properties to address potential data gaps and to document that any residual contamination did not migrate beyond the Site boundaries. This additional sampling was requested by PLIA prior to requesting Site closure. PLIA also requested that the potential for vapor intrusion in nearby buildings also be assessed.

## Regulatory Background

The law that guides the remediation process at sites located within Washington State is the Model Toxics Control Act (MTCA). The regulations implementing MTCA are located in the Washington Administrative Code (WAC), Chapter 173-340. This regulation is administered by the Washington Department of Ecology (Ecology).

The property owners performed an independent remedial action for this site, in accordance with the Ecology guidance. Such remedial actions are specifically allowed by MTCA, also encouraged by Ecology and PLIA.

As of January 2, 2018 the Pollution Liability Insurance Agency (PLIA) has authority to respond and deliver opinions on qualifying petroleum-contaminated sites throughout Washington. This ability is called the Petroleum Technical Assistance Program (PTAP), as established under RCW 70.149.040(9). Base on the intake meeting with PLIA, the Site has been accepted into the PTAP program.

## Objective and Scope of Services

Based on the groundwater findings presented in our August 13, 2017 report as well as the PLIA intake meeting in January 2018, G-Logics recommends the installation of five additional groundwater-monitoring wells on the Site. This work is intended to further evaluate the presence of petroleum contaminants and arsenic in groundwater at the Site, as well as to support a request for a NFA Opinion through PLIA's PTAP authority. Planned monitoring well locations are shown on the attached Figure 2. To complete the objectives presented in the workplan, we propose to perform the following scope of services:

1. Review the location of subsurface-utilities.
2. Collect and analyze soil samples from five borings, completing them as groundwater-monitoring wells.
3. Conduct an elevation survey of the one existing and five new monitoring wells.
4. Measure groundwater levels in all wells.
5. Collect groundwater samples from all wells.
6. Summarize existing and collected data from this exploration.
7. Request an opinion from PLIA base on the findings from this exploration.

These tasks are discussed below.

## Underground Utility Clearance

Before conducting the site exploration, G-Logics will contact public and private utility-locating services. Subsurface utility locations will be identified by marking their inferred location on the ground surface. This information will be used to aid in identifying boring locations. Actual boring locations (described below) will be identified upon completion of the utility locate and confirmation of access availability.

## Soil Borings

Soil Borings will be complete using hollow-stem auger equipment. Soil samples will be collected at 5-foot intervals (where possible) using split-spoon sampling equipment. Soils will be field screened for odors, soil staining, and/or discoloration. Samples of the soils will be periodically screened for the presence of volatile-organic compounds by a photoionization detector (PID) with the readings noted on our boring logs. Representative samples from the borings will be submitted for laboratory analysis, as presented on the Soil Analysis Table.

## Groundwater Monitoring Wells

Two-inch PVC monitoring wells will be installed in the completed borings. Based on the previous work, depth to groundwater is expected to be between 5 to 10 feet. Wells will be installed to a depth of 15 feet. A ten foot length well screens will be installed across the water table. The wells will be used for the collection of groundwater samples at the exploration locations and for the measurement of groundwater depths.

## Groundwater Samples

Groundwater samples will be collected from one existing and five new wells. Development, purging, and sampling of the wells will be conducted using standard procedures. The collected samples will be submitted for analysis as summarized in the Groundwater Analysis Table.

### Elevation Survey, Monitoring Wells

Following completion of the monitoring wells, G-Logics will survey the elevation of each well casing. This data will be used to convert groundwater-depth measurements into elevation information such that potentiometric contours can be plotted to assess groundwater-flow directions.

### Groundwater Levels

Groundwater levels will be measured in all wells, with measurements referenced to the top of the well casing. The water level will be measured in the wells using a conductivity-type water level probe (Solinst Model 101, Flat Tape Water-Level Meter).

### Quality Assurance/Quality Control

Quality Assurance/Quality Control (QA/QC) for the presented scope of work will include generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment will be washed and rinsed before the collection of the samples. All samples will be labeled with a sample number, date, time, and sampler name, and will be stored in an ice chest containing frozen “blue ice”. Appropriate chain-of-custody documentation will be completed. A blind duplicate groundwater sample will be collected from one monitoring well.

### Report Preparation

A report will be prepared and will include the findings of the exploration. The report will include diagrams showing exploration locations, as well as current and identified site features. Boring logs, laboratory analytical results, and a discussion of our findings also will be included. Analytical results will be compared to the MTCA Method A Cleanup Levels.

G-Logics will prepare a final report following review and comment on the draft report. G-Logics then will present our findings and recommendations to PLIA which, if applicable, will include a request for an NFA Opinion.

**Project Parameters**

The schedule and budget estimate for the exploration, as described above, is based on the following assumptions:

- Site access (exterior locations) will be available to G-Logics personnel and all G-Logics subcontractors.
- Drilling at off-property locations, including streets and right-of-ways, will not be conducted as part of this project.
- Hollow-stem Auger sampling equipment can be successfully used at this site.
- On-site drilling, soil sampling, and well development will be completed within two twelve-hour day.
- Five soil borings will be drilled and complete as groundwater-monitoring wells.
- Groundwater samples will be collect from six monitoring wells.
- Monitoring well-elevation survey, groundwater-depth measurement, and groundwater-sampling activities will be completed in two additional eight-hour day.
- G-Logics will use a laser level to establish elevation control for all monitoring wells. A benchmark will be researched to provide elevation control.
- Weekend and/or night work will not be required.
- G-Logics will provide all sampling equipment and sample containers.
- Driller will provide 55-gallon drums for containing IDW soil cuttings and purge water generated during this work. Costs for the storage and disposal of contaminated soil or water (discovered and generated during the field effort) are **not included** in our estimate. However, we anticipate only be small volumes of soil (generated during drilling) and groundwater (generated before the collection of any groundwater samples). These materials will not designate as hazardous wastes and a representative of M&M Ventures and/or R&E Investments will sign any required shipping documentation.
- Sample analysis will be performed on a non-rush basis. If expedited analyses are required, G-Logics should be notified.
- G-Logics will attend one meeting with PLIA to present results of this exploration.
- If the collected data indicates that the previously-completed remedial work was successful, G-Logics will request an NFA Opinion from PLIA for the combined Site.

## Project Costs

The estimates of fees required to complete the exploration are presented below. The task budgets are shown to illustrate the relative complexity of each task. Although we have listed, discussed, and estimated each task separately, the tasks must be considered as part of an integrated study and cannot be performed individually.

| Task Activity | Estimate |
|---|---|
| Workplan Preparation (this document) | $500 |
| Health and Safety Plan Preparation | $500 |
| Project Management (Communications, Setup, and Coordination) | $3,000 |
| Field Labor (two 12-hour days, and two 8-hour days) | $4,000 |
| Field Equipment and Mileage | $1,200 |
| Site Visit (Mark Boring Locations) | $400 |
| Utility Locate | $350 |
| Driller | $11,200 |
| Investigation-Derived Waste (IDW) Disposal * | $0 |
| Soil Sample Analyses **(see cost detail below)** | $1,230 |
| Groundwater Sample Analyses **(see cost detail below)** | $1,638 |
| Report Preparation | $6,000 |
| Ecology Data Submission (Ecology's EIM Database) | $2,000 |
| PLIA Communications and Meeting | $3,000 |
| **Estimated TOTAL (including the lab fees detailed below)** | **$35,018** |

*The presented costs for the contractor do not include a services markup or sales tax as G-Logics assumes that these costs will be paid directly by M&M Ventures and R&E Investments. If G-Logics is to retain the contractor, an additional outside-services markup of 20 percent would apply to these estimates and applicable taxes would be added.

Collected soil samples will be submitted for the following analyses. **These costs are included in our project estimate above**. Other collected soil samples will be archived and analyzed only if additional site information is found to be necessary (as authorized by M&M Ventures and R&E Investments).

| Soil Analyses | Quantity | $/Sample | Cost |
|---|---|---|---|
| Diesel / Heavy Oil Range Organics (NWTPH-Dx) | 10 | $78 | $ 780 |
| Arsenic (As) | 15 | $30 | $ 450 |
| **Total Soil Analytical** | **(costs are included in summary table above)** | | **$1,230** |

Collected groundwater samples will be submitted for the following analyses. **These costs are included in our project estimate above**. Other sampling and analysis will be conducted if additional site information is found to be necessary and as authorized by M&M Ventures and R&E Investments.

| Groundwater Analyses | Quantity | $/Sample | Cost |
|---|---|---|---|
| Diesel / Heavy Oil Range Organics (NWTPH-Dx)* | 7 | $78 | $ 546 |
| Gasoline and BTEX (NWTPH-GX & EPA 8021B)* | 7 | $96 | $ 672 |
| Arsenic (As) Total and Dissolved* | 14 | $30 | $ 420 |
| **Total Water Analytical** | **(costs are included in summary table above)** | | **$1,638** |

*A blind duplicate will be collected from one monitoring well.

The costs presented above are based on our current understanding of site conditions. The presented costs do not include, attorney fees, or other items not specifically identified in this document.

All charges for our services will be on a time-and-materials basis, in accordance with our Environmental Services Fee Schedule. G-Logics will split the project cost 50/50 between M&M Ventures and R&E Investments. Both parties will be invoiced for their half of the project cost. Our total fee for this project will not exceed our estimate without a change in the presented scope of services and only with client authorization. Invoices will be submitted to M&M Ventures and R&E Investments on a monthly basis, payable in full upon receipt of the invoice.

## Project Schedule

Fieldwork is anticipated to begin approximately two to three weeks following you're authorization and PLIA's acceptance of this workplan. We anticipate receipt of draft laboratory results approximately one to two weeks after sample submittal (non-rush basis), followed by a draft report within two to three week of analytical laboratory results. We will prepare a final report within approximately five days of receipt of your comments on the draft report. Additionally, we will keep you informed of conditions as they develop and will provide periodic verbal summary reports during our work.

## Limitations

The proposed scope of services is intended to provide an additional assessment of possible contamination of soil and groundwater on the Site. However, this assessment is not designed to identify all potential concerns or to eliminate all risk associated with the Site. Even the most rigorous of professional assessments may fail to identify all existing conditions. This assessment will not provide a guarantee regarding site contamination and may not generate sufficient data to accurately define the lateral and vertical extent of contamination, if present. This assessment will not include other services not specifically described above.

Land use, site conditions (both on-site and off-site), and other factors will change over time. Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the prepared report.

No warranty, express or implied, is made.

## Authorization

The proposed scope of services, presented limitations, and our existing agreements with M&M Ventures, LLC and R&E Investments are the basis for the proposed fee. A signed copy of this workplan, a work order, or similar document, returned to us, will serve as a formal authorization to proceed. We will return an executed copy to you for your records. Your signed authorization will document your concurrence with the presented scope of services, assumptions, schedule, estimated fees, and limitations of this assessment.

## Closing

We appreciate this opportunity to provide our services to M&M Ventures and R&E Investments. Please contact us if you have questions regarding the scope of services, the work schedule, or costs described in this workplan.

Sincerely,
**G-Logics, Inc.**

Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Staff Geologist

_____ _____

Workplan accepted by (signature)
M&M Ventures, LLC

Date

_____ _____

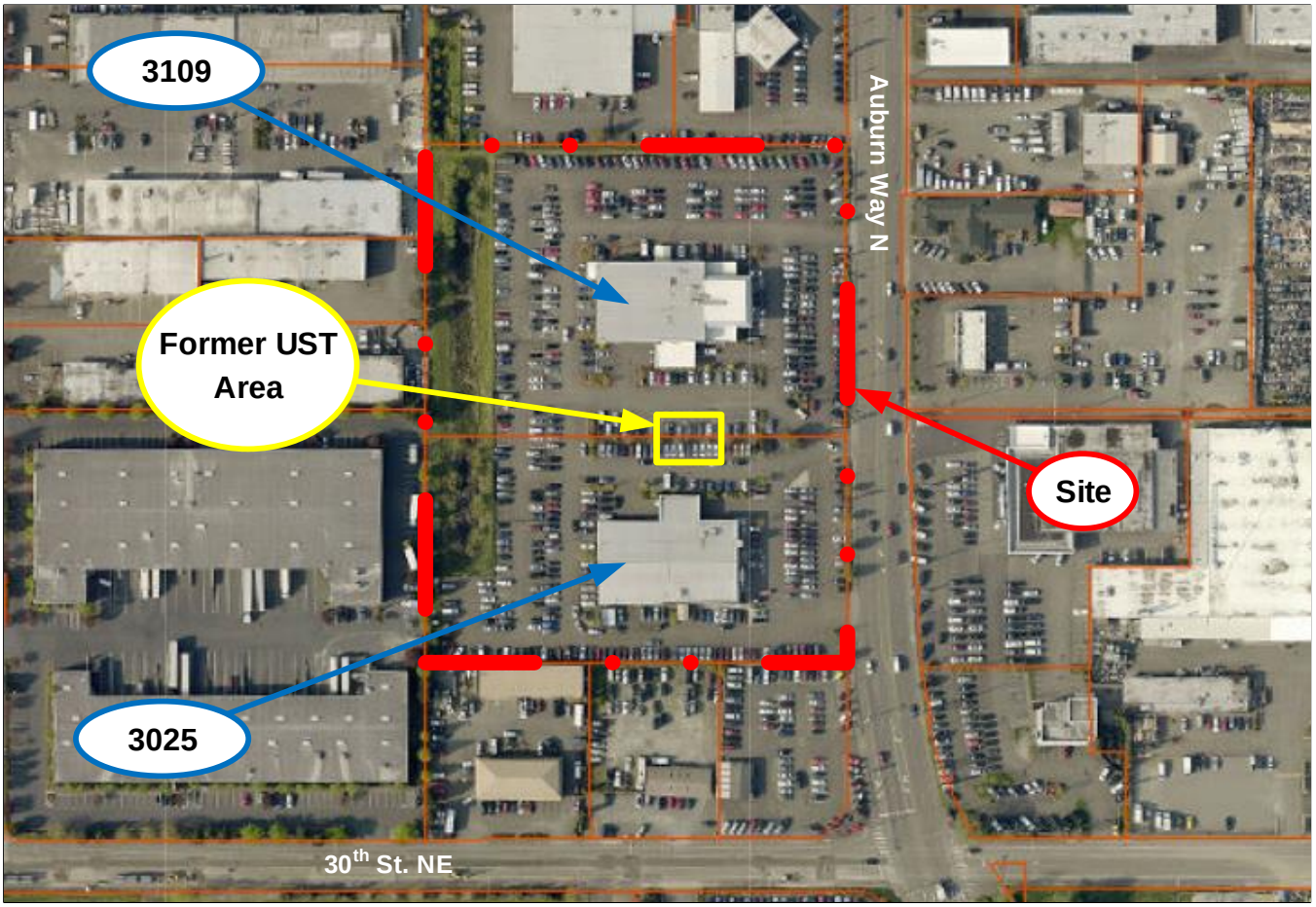
Workplan accepted by (signature)
R&E Investments

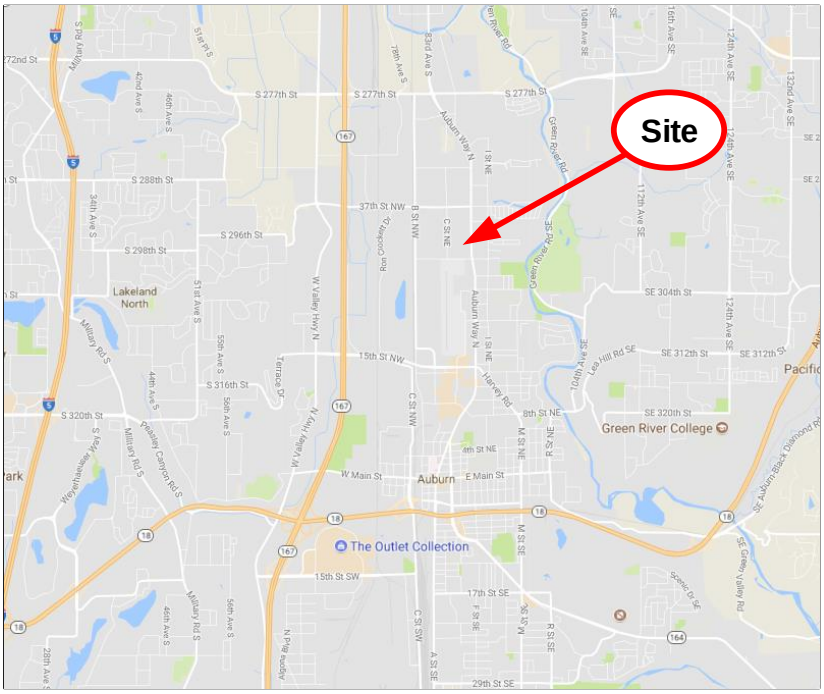
Date

cc Greg Rairdon
Ken Lederman

Attachments Figure 1, Site Location Maps
Figure 2, Exploration Locations and Proposed Monitoring Well Locations

# ATTACHMENTS





Project File: 01-1140-E-WP-F1.vsd

g-logics

***Site Location Maps***

***Auburn Way Property***

***3025 and 3109 Auburn Way North***

***Auburn, Washington***

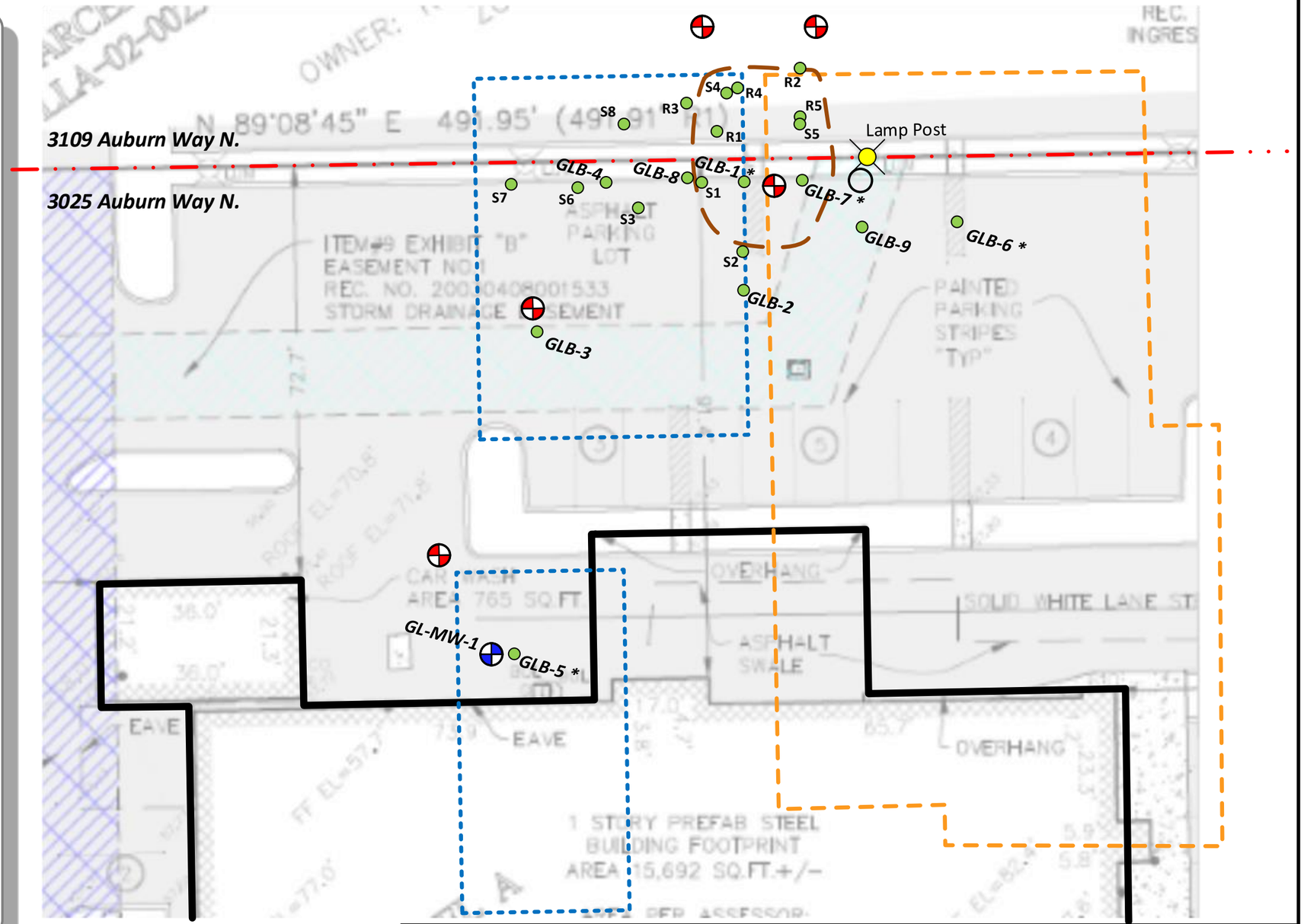
Figure 1

Mapping Reference: King County iMap, Delorme, Google Maps, and G-Logics Site Visit Observations

N

## Legend

- Parcel Boundary
- Existing Building
- GLB-1 — G-Logics Boring Locations
- GL-MW-1 — G-Logics Monitoring Well
- S4/R4 — Soil Boring (Stemen, 2012 and 2017)
- Proposed Monitoring Well Location
- GLB-1 * — Grab Groundwater Sample
- G-Logics Boring, Refusal at 3'
- Area Of 11-2017 Excavation
- Former Auto Dealership, 1990
- 1998 and 2000 Bldg. Additions




Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Exploration Locations and Proposed Monitoring Well Locations***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

Figure 2

*Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, King County iMap Aerials 1990, 1998, 2000, Riley Phase I, Stemen Phase II 2012, Stemen Sample Location Map 2017, and G-Logics Site Visit Observations and Measurements*

*Project File: 01-1140-E-WP-F2.vsd*

August 20, 2018
G-Logics Project Number 01-1140-F

M&M Ventures, LLC
Mr. Mike Scarff
33 Knights Lane
Friday Harbor, WA 98250

R&E Investments, LLC
Mr. Roger Vermazen
16932 SE 354th Street
Auburn, WA 98092

**Subject:** **Groundwater-Sampling Report, June 2018**
**Second Quarter Groundwater Sampling Results**
**Facility/Site No. 57361549**
**PTAP Project No. PNW030**
**Auburn Way Properties**
**3025 and 3109 Auburn Way N**
**Auburn, WA 98002**

Dear Mr. Scarff and Mr. Vermazen:

G-Logics was authorized by M&M Ventures (recent 3025 property owner) and M&M Ventures (recent 3109 property owner) to conduct three additional quarters of groundwater monitoring at the Site (Figure 1). This work is a collaborative effort to verify the successful removal of petroleum contaminants at the Site in order to request a No Further Action (NFA) Opinion from the State of Washington's Pollution Liability Insurance Agency (PLIA).

G-Logics performed this work as described in our workplan dated June 27, 2018. Pervious G-Logics site-exploration and remediation work completed at the Site is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017, our *Environmental Media Management Report* dated December 4, 2017, and our *Well Installation and Groundwater Sampling* report dated April 12, 2018.

**G-Logics, Inc.**
40 2nd Avenue SE
Issaquah, WA 98027
T: 425-391-6874
F: 425-313-3074

## 1.0 Site Background

The Site is composed of two properties, 3025 and 3109 Auburn Way N. The 3025 property is identified as King County tax parcel number 0004000039. The 3109 property is identified as King County tax parcel number 0004000041.

As summarized in the G-Logics Phase I report dated July 18, 2017, this area was primarily agricultural land prior to the 1970s. A review of aerial photographs appears to show row crops throughout the area, with occasional small orchards.

Since at least the early 1970s, an automobile dealership and a service garage historically occupied the northern portion of the 3025 property and the southern portion of the 3109 property (adjacent property to the north). A former 550-gallon used-oil underground storage tank (UST) was removed from west side of the former dealership building located on the 3025 property.

### *1.1 Exploration Background*

Stemen Environmental, Inc. (SEI) conducted a Phase II exploration in this area (report dated December 20, 2012). Soil and groundwater samples were collected on both the 3025 and the 3109 properties. None of the samples that SEI analyzed from the 3025 property contained concentrations of gasoline (GRO), diesel (DRO), oil-range hydrocarbons (ORO), or volatile organic compounds (VOCs) at concentrations above MTCA Method A cleanup levels.

In the SEI Phase II exploration, GRO and ORO hydrocarbons were found exceeding MTCA Method A cleanup levels in soils along the southern boundary of the 3109 property. SEI conducted additional sampling work in June 2017. ORO in soil was detected but at concentrations below MTCA Method A cleanup levels. None of the analyzed groundwater samples contained concentrations of GRO, DRO, ORO, or VOCs. However one groundwater sample contained lead at the MTCA Method A cleanup level (15 ug/L) (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

To provide additional data for the former UST area, G-Logics conducted soil and groundwater sampling in July 2017. On the 3025 property, the ORO hydrocarbons were found exceeding the MTCA Method A cleanup level in soils along the northern property boundary. DRO and ORO also were found above MTCA Method A cleanup levels in two

grab-groundwater samples collected in this area. Total and dissolved concentrations of arsenic also were reported above the MTCA Method A cleanup level in two of the four grab-groundwater samples and in one monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

The arsenic is likely due to area-wide sources, based on location and lack of relevant operations and activities on the properties. This area is located within the Tacoma Smelter plume. Other off-property sources may include former-agricultural practices in the area, and/or volcanic deposits from Mount Rainier. Specifically, the Osceola Mudflow buried a large portion this area with volcanic material, originating during eruptions approximately 5,600 years ago.

To address the petroleum-contamination, G-Logics recommended a remedial excavation. Mr. Vermazen (3109 property owner) agreed that if petroleum-contaminated soil was found to extend onto his property, then those contaminated soils also should be removed. Accordingly, the remedial excavation planned for the 3025 property extended to the north onto the 3109 property.

### *1.2 Remediation Background*

In November 2017, petroleum-contaminated media (soil and groundwater) was removed from an area spanning the property line. The work consisted of the removal and disposal of approximately 384 tons of petroleum-contaminated soil and approximately 2,600 gallons of water (rain and groundwater). Analyzed confirmation samples indicated that all petroleum-contaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygen-release compound (ORC Advanced) was added to groundwater in the excavation, as well as the backfill material near the groundwater interface (see G-Logics *Environmental Media Management Report* dated December 4, 2017 for more information).

### *1.3 Regulatory Background*

The law that guides the remediation process at sites located within Washington State is the Model Toxics Control Act (MTCA). The regulations implementing MTCA are located in the Washington Administrative Code (WAC), Chapter 173-340. This regulation is administered by the Washington Department of Ecology (Ecology).

The property owners performed an independent remedial action for this Site, in accordance with the Ecology guidance. Such remedial actions are specifically allowed by MTCA, also encouraged by Ecology and PLIA.

### *1.4 PLIA Background*

As of January 2, 2018 the Pollution Liability Insurance Agency (PLIA) has authority to respond and deliver opinions on qualifying petroleum-contaminated sites throughout Washington. This ability is called the Petroleum Technical Assistance Program (PTAP), as established under RCW 70.149.040(9).

During the intake meeting with PLIA on January 31, 2018, PLIA offered that the two properties (3025 and 3109) be considered as one Site. PLIA requested additional sampling be conducted on both properties to address potential data gaps and to document that any residual contamination did not migrate beyond the Site boundaries. PLIA also requested that the potential for vapor intrusion in nearby buildings be assessed. The Site was accepted into the PTAP program in February, 2018 (letter date February 5, 2018).

To satisfy PLIA's request, additional well installation and sampling was conducted in March 2018 (see G-Logics *Well Installation and Groundwater Sampling* report dated April 12, 2018 for more information). Following their review of this report, PLIA issued a Further Action Letter for the Site, dated May 31, 2018. During a follow-up meeting with PLIA on June 13, 2018, it was determined that the potential for vapor intrusion in nearby buildings was not an issue and that soil contamination associated with a former used-oil UST had been successfully removed (revised Further Action Letter, dated July 13, 2018). However, in order to obtain an NFA Opinion from PLIA, quarterly groundwater monitoring of GRO, DRO, ORO, BTEX (benzene, toluene, ethylbenzene, and xylenes), and arsenic would need to be conducted. Specifically, PLIA requested that groundwater-monitoring continue for four consecutive quarters.

### *1.5 Quarterly Groundwater-Monitoring Background*

In March 2018 (first quarter) six groundwater-monitoring wells were sampled. GRO and BTEX were not detected in any of the analyzed groundwater samples. All detected concentrations of DRO and ORO were below MTCA Method A Cleanup Levels. Total arsenic was found above MTCA Method A Cleanup Levels in all wells except GL-MW-5. Dissolved arsenic was below MTCA Method A Cleanup Levels in all wells except GL-MW-2 and GL-MW-4. The highest dissolved arsenic concentration was 14.1 ug/L in GL-MW-2. Historical groundwater analytical results are summarized in Table 1. The information for the second quarter of monitoring is presented below.

## 2.0 Groundwater Sampling

G-Logics conducted the second quarter of groundwater sampling on June 26, 2018. Six groundwater-monitoring wells (MW-1 through MW-6, Figures 2) were sampled to obtain information regarding groundwater contaminants. Seven groundwater samples were collected (including a field duplicate) from the six wells. Collected samples from each well were submitted to the analytical laboratory (Fremont Analytical). These seven water samples were analyzed for GRO, DRO, ORO, BTEX, and arsenic (total and dissolved). Results of these analyses are presented in Section 5.0 of this report. Field exploration methods are described in Appendix A.

## 3.0 Elevation Survey-Monitoring Wells

The elevations of the well casings were surveyed by G-Logics. The survey was based on a backsight shot to the concrete floor at the north entrance of the auto shop. A previous survey by Terrane, dated 8/3/2017, identified the floor elevation at this location to be 57.7'.

## 4.0 Groundwater-Depth Measurement

On June 26, 2018, groundwater depths were measured in the six monitoring wells. Information regarding groundwater depths, elevations, and well construction is summarized in Table 2. Depth measurements were made from the top of the PVC well casing, prior to well sampling. Groundwater was found at depths ranging from 7.75 to 9.67 feet below top of PVC casing. Groundwater elevations are shown on Figure 3. Contours and inferred-flow directions were not depicted due to the flat gradient.

## 5.0 Groundwater Analytical Results

In the analyzed samples, DRO and ORO were detected in GL-MW-1, GL-MW-4, and GL-MW-6. ORO was also detected in GL-MW-2 and GL-MW-3. ORO was detected above MTCA Method A Cleanup Levels in GL-MW-4 and GL-MW-6. To assess if biological factors such as bacteria (resulting from the treatment compound added at the completion of the 2017 excavation) may result in a false positive for ORO concentrations in groundwater, the water samples from GL-MW-4 and GL-MW-6 also were analyzed using silica-gel methods. Based on the analytical results, ORO concentration dropped below the cleanup level, leaving all detected petroleum concentrations below MTCA Method A Cleanup Levels. Total arsenic was found above MTCA Method A Cleanup Levels in all wells except GL-MW-4 and GL-MW-5. Dissolved arsenic was below MTCA Method A Cleanup Levels in all wells. GRO and BTEX were not detected in any of the analyzed groundwater samples.

Results of these analyses are presented in Table 1 of this report. Appendix A presents field-exploration methods, while Appendix B includes the laboratory reports and chain-of-custody forms.

## 6.0 Quality Assurance/Quality Control Findings

Laboratory duplicate samples, as well as one blind-duplicate groundwater sample (GL-MW-6), were analyzed for data repeatability. The detected concentrations were within acceptable limits for laboratory-repeatability information. The laboratory also conducted matrix spike, matrix-spike duplicate, and method blank analyses. Laboratory QA/QC information is included (with the laboratory report) in Appendix B.

## 7.0 Conclusions

Petroleum contaminated soils and groundwater were removed through the remedial excavation conducted in November 2017. Confirmation samples collected during the excavation, as well as the additional sampling, conducted during the March 2018 exploration, has confirmed that the petroleum-contaminated soils (associated with the former UST) have been successfully removed and did not migrate beyond the remedial-excavation boundaries (see G-Logics *Well Installation and Groundwater Sampling* report dated April 12, 2018 for more information).

Based on the information gathered during this sampling event, GRO and BTEX were not detected in any of the analyzed groundwater samples. All detected concentrations of DRO and ORO remain below MTCA Method A Cleanup Levels in groundwater. Dissolved arsenic was below MTCA Method A Cleanup Levels in all wells.

## 8.0 Recommendations

Analytical results documents that GRO and BTEX have never been detected in groundwater samples collected at this Site and are therefore not a contaminant of concern. Based on these findings, G-Logics recommends that GRO and BTEX be removed from the list of analytes for the remaining two sampling events.

G-Logics recommends continued groundwater sampling, for DRO, ORO, and arsenic, on a quarterly basis with upcoming sampling events planned for September and December 2018. If sampling results from the 3rd and 4th quarter events are consistent with results from the 1st and 2nd quarter events, G-Logics will prepare a final report for the Auburn Way Properties in early 2019. The report will be submitted to PLIA with the request for a No Further Action determination.

## 9.0 Limitations

The scope of work on this project was presented in our identified workplan and subsequently approved by M&M Ventures and R&E Investments. Please be aware our scope of work was limited to those items specifically identified in the workplan. Other activities not specifically included in the presented scope of work (in a workplan, correspondence, or this report) are excluded and are therefore not part of our services.

The provided scope of services was intended to provide a quarterly assessment of groundwater conditions at the Site. This work was not designed to identify all potential concerns or to eliminate all risk. This work only included services specifically described above.

Land use, site conditions (both on-site and off-site), and other factors will change over time. Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the site sampling.

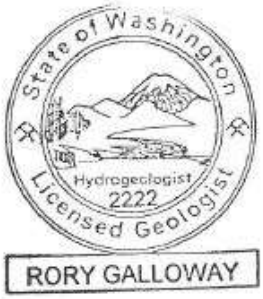
This report is prepared for the sole use of our client and reviewing regulatory agencies. The scope of services performed during this assessment may not be appropriate for the needs of other users. Re-use of this document or the findings, conclusions, or recommendations presented herein, are at the sole risk of said user(s). Any party other than our client who would like to use this report shall notify G-Logics of such intended use by executing the "Permission and Conditions for Use and Copying" contained in this document. Based on the intended use of the report, G-Logics may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements will release G-Logics from any liability resulting from the use of this report by any unauthorized party.

No warranty, either express or implied, is made.

## 10.0 Closing

We appreciate this opportunity to provide our services on this project. Please contact us at your convenience with any questions regarding our work or findings.

Sincerely,
**G-Logics, Inc.**




Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Staff Geologist

cc Greg Rairdon
Ken Lederman
Li Ma

**FIGURES**



**TABLES**

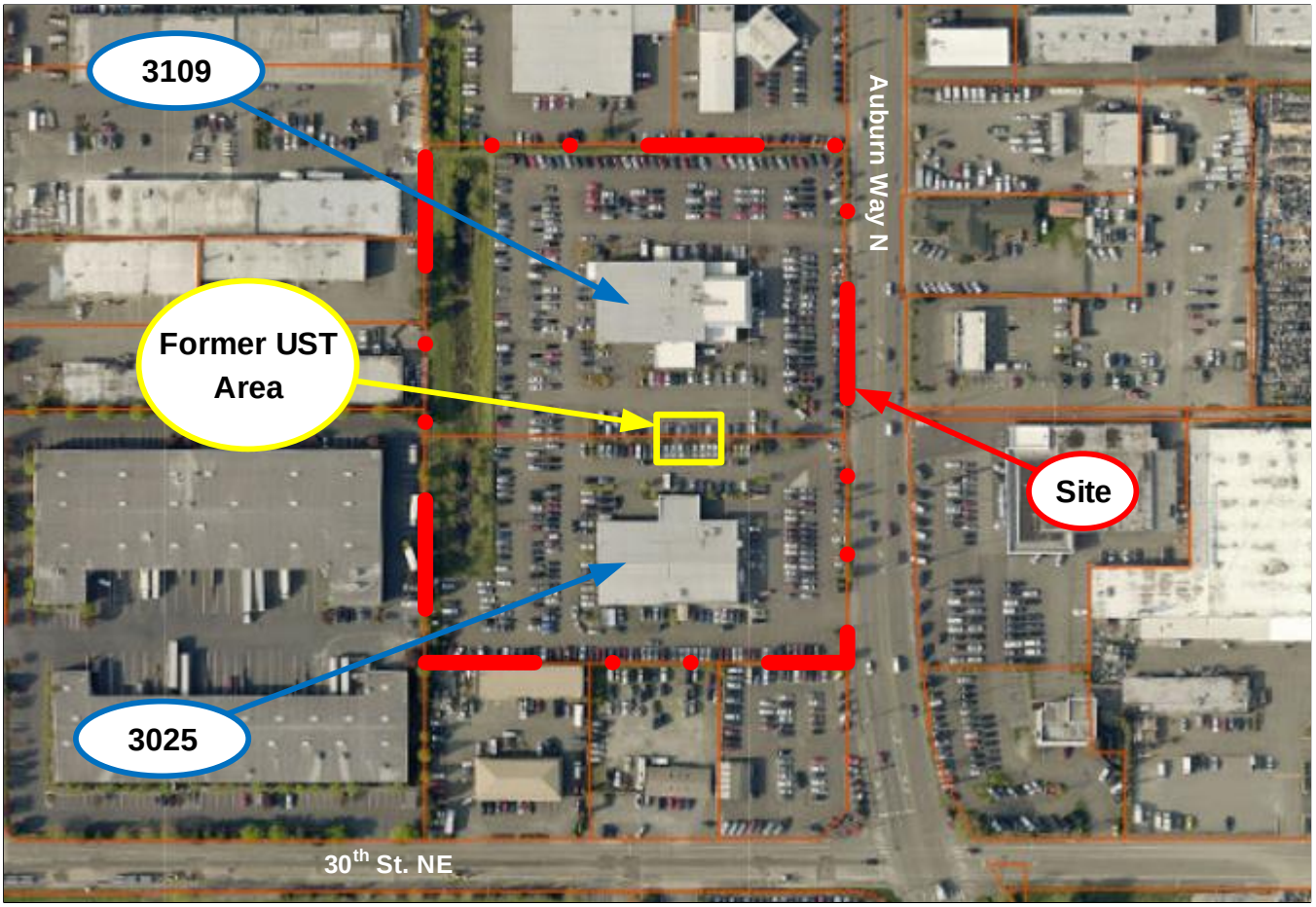


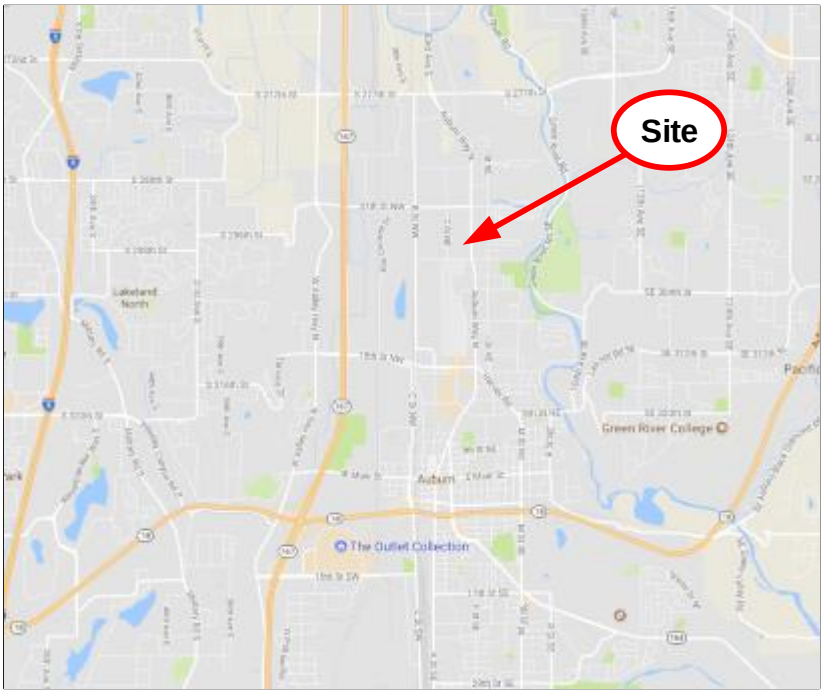
**APPENDICES**



**ATTACHMENTS**

# FIGURES





Project File: 01-1140-F-F1.vsd

g-logics

***Site Location Maps***

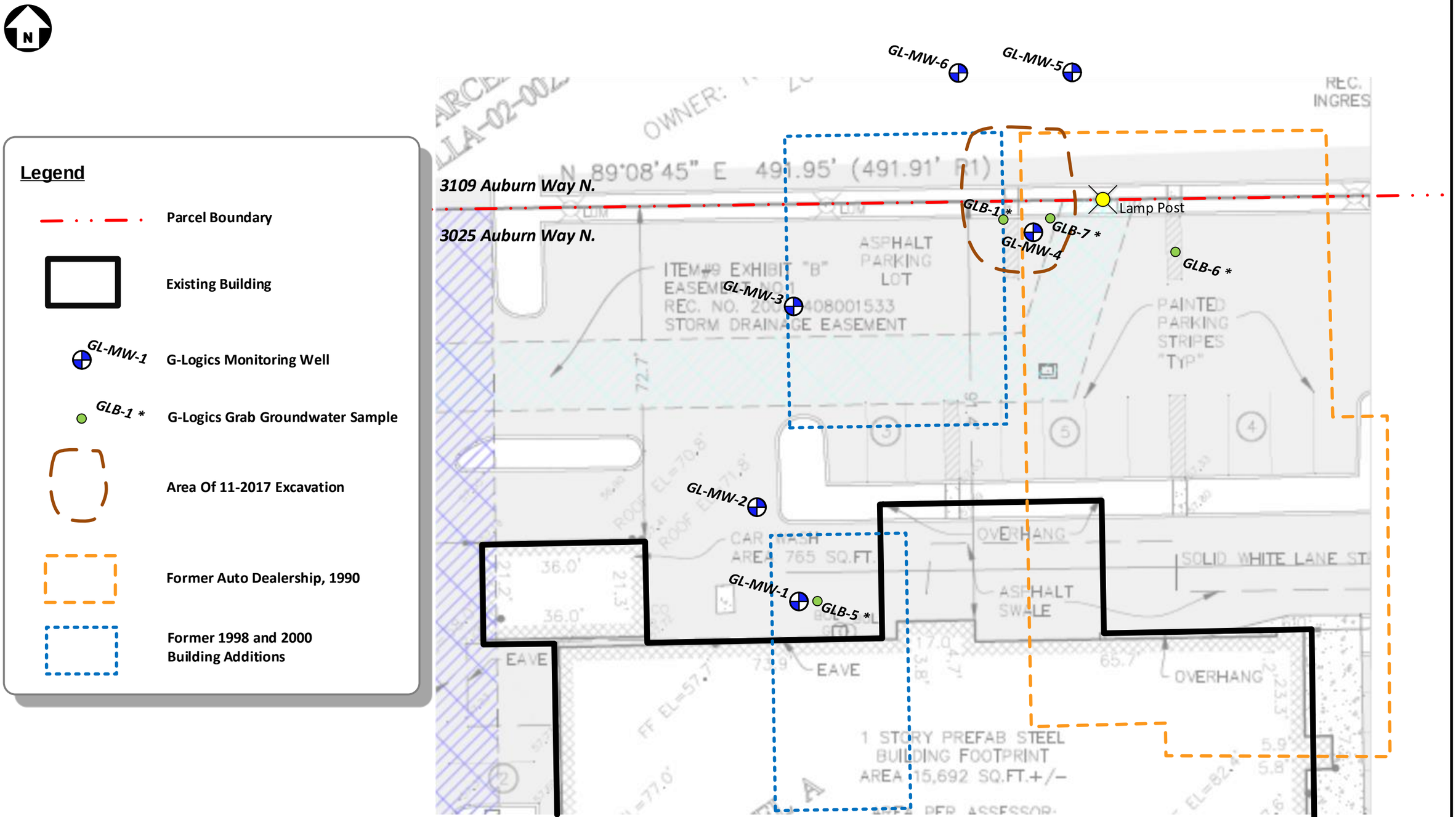
***Auburn Way Property***

***3025 and 3109 Auburn Way North***

***Auburn, Washington***

Figure 1

Mapping Reference: King County iMap, Delorme, Google Maps, and G-Logics Site Visit Observations




Project File: 01-1140-F-F2.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Site Diagram, Groundwater Sample Locations***

***Auburn Way Properties***

***3025 and 3109 Auburn Way North***

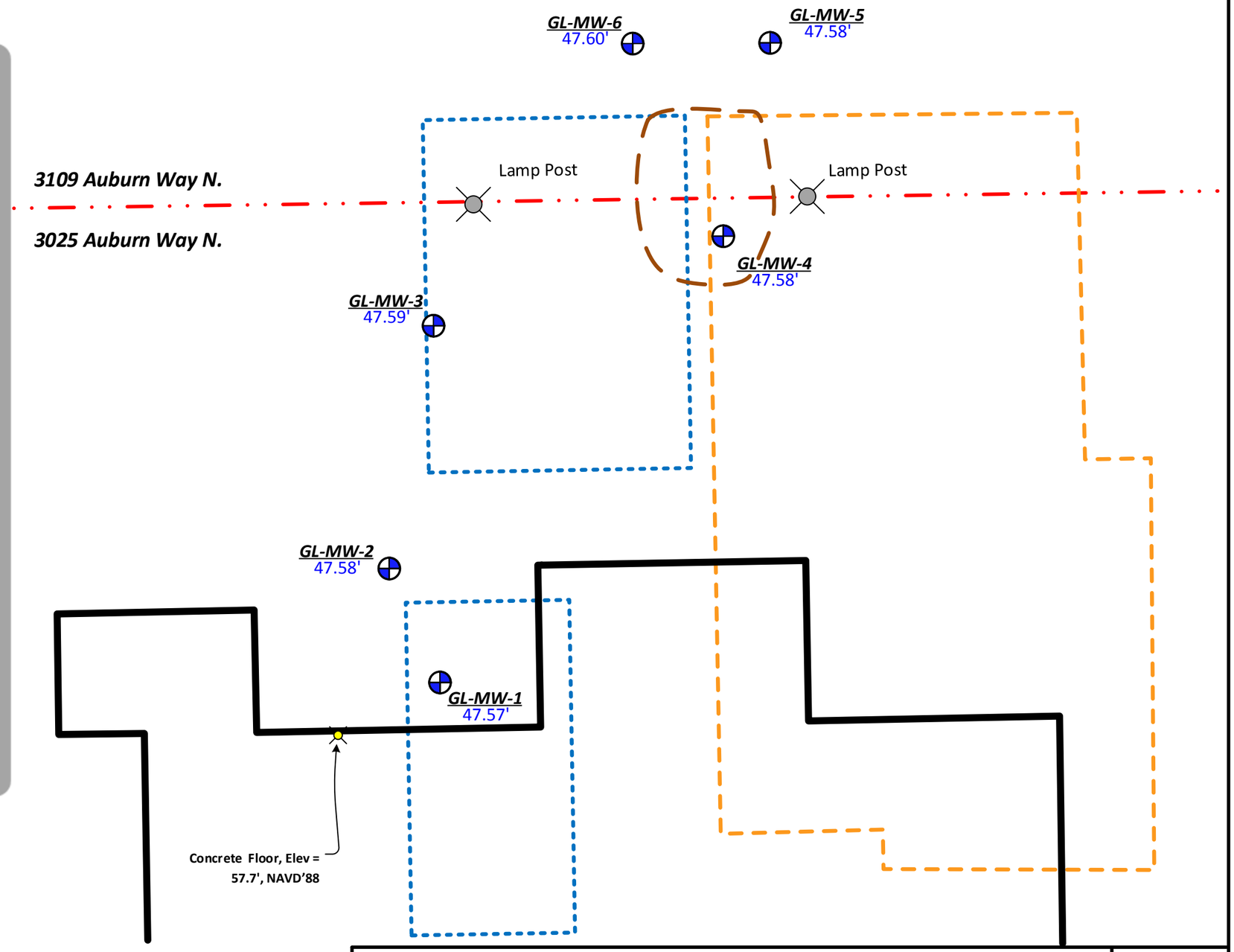
***Auburn, Washington***

Figure 2

*Mapping Reference: ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, and G-Logics Site Visit Observations and Measurements*

## Legend

- Parcel Boundary
- Existing Building
- GL-MW-1 49.09' — G-Logics Well Elevation
- 47.60' — Inferred groundwater elevation contour (not shown given flat gradient)
- Inferred groundwater flow direction (not shown given flat gradient)
- Area Of 11-2017 Excavation
- Former Auto Dealership, 1990
- Former 1998 and 2000 Building Additions




**Notes**

1. Vertical datum: NAVD88.
2. The contours represent an interpretation of available data, for the indicated date. Site groundwater contours may change with additional measurements and/or data points, weather changes, construction activities, and/or other influences.

Project File: 01-1140-F-F3.vsd

g-logics

Approximate Drawing Scale: 1" = 20'

0 ft. 12 ft. 20 ft. 40 ft.

Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

***Groundwater Elevations (6/26/2018)***
***Auburn Way Properties***
***3025 and 3109 Auburn Way North***
***Auburn, Washington***

Figure 3

*Mapping Reference: Terrane ALTA/NSPS Land Title Survey 8/3/2017, Riley Phase I, and G-Logics Site Visit Observations and Measurements*

# TABLES

**TABLE 1 (1)**
**Groundwater Sample Analyses**
**Auburn Way Property**
**3025 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft) | Gasoline Range Organics (no detectable benzene) | Diesel Range Organics | Diesel Range Organics (SGT) | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Arsenic (Total) | Arsenic (Dissolved) | Cadmium | Chromium (Total) | Lead | Mercury | Total PCBs (a) | VOCs (a) | 2-Methylnaphthalene | cPAHs (a) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | 1,000 | 500 | 500 | 500 | 500 | 5.00 | 1,000 | 700 | 1,000 | 5 | 5 | 5 | 50 | 15 | 2 | 0.100 | Various | 32* | 0.1 |
| **(units in ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | |
| **December, 2012** | | | | | | | | | | | | | | | | | | | | | | |
| **S1** | 12/12/2012 | S1-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | nd | --- | --- |
| **S4 (b)** | 12/12/2012 | S4-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S6** | 12/12/2012 | S6-W | 8 | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Stemen Environmental Inc.** | | | | | | | | | | | | | | | | | | | | | | |
| **December, 2012** | | | | | | | | | | | | | | | | | | | | | | |
| **R2 (b)** | 6/2/2017 | R2-W | | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | **15** | --- | --- | nd | --- | --- |
| **R5 (b)** | 6/2/2017 | R5-W | | <100 | <250 | --- | <500 | --- | <1 | <1 | <1 | <3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | |
| **July, 2017 (Pre Remedial Eacvation)** | | | | | | | | | | | | | | | | | | | | | | |
| **GLB-1-W (4)** | 7/21/2017 | GLB-1-W | 9-14ft | <50 | <49.9 | --- | **1,670** | **1,210** | <1 | <1 | <1 | <1 | **2.44** | --- | <0.200 | **1.79** | **2.06** | <0.100 | <0.100 | nd | <0.0997 | nd |
| **GLB-5-W (4)** | 7/21/2017 | GLB-5-W | 9-14ft | <50 | <49.9 | --- | **700** | **599** | <1 | <1 | <1 | <1 | **20.7** | **5.19** | <0.200 | **8.68** | **0.592** | <0.100 | --- | nd | --- | --- |
| **GLB-6-W (4)** | 7/21/2017 | GLB-6-W | 9-14ft | <50 | <49.9 | --- | **161** | --- | <1 | <1 | <1 | <1 | **6.25** | --- | <0.200 | **2.00** | **1.32** | <0.100 | --- | nd | --- | --- |
| **GLB-7-W (4)** | 7/21/2017 | GLB-7-W | 9-14ft | <50 | **1,200** | **857** | **4,370** | **3,090** | <1 | <1 | <1 | <1 | **19.0** | **6.94** | <0.200 | **1.87** | **1.89** | <0.100 | <0.999 | nd | **0.143** | nd |
| **GL-MW-1** | 7/31/2017 | GL-MW-1 | 5-15ft | --- | <49.9 | --- | **426** | --- | --- | --- | --- | --- | **25.0** | **20.7** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 7/31/2017 | GL-MW-100 | Field Dup. | --- | <49.8 | --- | **375** | --- | --- | --- | --- | --- | **27.9** | **21.1** | --- | --- | --- | --- | --- | --- | --- | --- |

**TABLE 1 (1)**
**Groundwater Sample Analyses**
**Auburn Way Property**
**3025 Auburn Way North**
**Auburn, Washington**

| Exploration Location | Sample Date | Sample Number | Sample Depth (ft) | Gasoline Range Organics (no detectable benzene) | Diesel Range Organics | Diesel Range Organics (SGT) | Heavy Oil Range Organics | Heavy Oil Range Organics (SGT) | Benzene | Toluene | Ethylbenzene | Xylenes | Arsenic (Total) | Arsenic (Dissolved) | Cadmium | Chromium (Total) | Lead | Mercury | Total PCBs (a) | VOCs (a) | 2-Methylnaphthalene | cPAHs (a) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MTCA Cleanup Level (2)(3)** | | | | 1,000 | 500 | 500 | 500 | 500 | 5.00 | 1,000 | 700 | 1,000 | 5 | 5 | 5 | 50 | 15 | 2 | 0.100 | Various | 32* | 0.1 |
| **(units in ug/L)** | | | | | | | | | | | | | | | | | | | | | | |
| **G-Logics** | | | | | | | | | | | | | | | | | | | | | | |
| **Post Remedial Excavation** | | | | | | | | | | | | | | | | | | | | | | |
| **GL-MW-1** | 3/20/2018 | GL-MW-1 | 5-15ft | <50 | **119** | --- | **219** | --- | <1 | <1 | <1 | <1 | **26.0** | **4.31** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 3/20/2018 | GL-MW-A | Field Dup. | <50 | **78.1** | --- | **291** | --- | <1 | <1 | <1 | <1 | **27.0** | **4.61** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-1 | 5-15ft | <50 | **78.9** | **63.3** | **307** | **232** | <1 | <1 | <1 | <1 | **30.8** | **3.00** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-2** | 3/20/2018 | GL-MW-2 | 5-15ft | <50 | <49.9 | --- | **161** | --- | <1 | <1 | <1 | <1 | **44.3** | **14.1** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-2 | 5-15ft | <50 | <50 | <50 | **209** | **156** | <1 | <1 | <1 | <1 | **100** | **4.24** | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-3** | 3/20/2018 | GL-MW-3 | 5-15ft | <50 | <49.9 | --- | <99.9 | --- | <1 | <1 | <1 | <1 | **25.7** | **4.56** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-3 | 5-15ft | <50 | <49.8 | <49.8 | **125** | <99.7 | <1 | <1 | <1 | <1 | **24.2** | <1.75 | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-4** | 3/20/2018 | GL-MW-4 | 5-15ft | <50 | **152** | --- | **259** | --- | <1 | <1 | <1 | <1 | **6.16** | **6.15** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-4 | 5-15ft | <50 | **152** | **148** | **798** | **461** | <1 | <1 | <1 | <1 | **2.9** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-5** | 3/20/2018 | GL-MW-5 | 5-15ft | <50 | <50 | --- | <100 | --- | <1 | <1 | <1 | <1 | **1.80** | <1.75 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-5 | 5-15ft | <50 | <49.9 | --- | <99.8 | --- | <1 | <1 | <1 | <1 | **2.54** | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GL-MW-6** | 3/20/2018 | GL-MW-6 | 5-15ft | <50 | **69.8** | --- | **346** | --- | <1 | <1 | <1 | <1 | **11.1** | **2.57** | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-6 | 5-15ft | <50 | **102** | **81.3** | **608** | **438** | <1 | <1 | <1 | <1 | **8.96** | <1.75 | --- | --- | --- | --- | --- | --- | --- | --- |
| | 6/26/2018 | GL-MW-A | Field Dup. | <50 | **58.7** | <49.9 | **658** | **441** | <1 | <1 | <1 | <1 | **8.82** | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Notes:

(1) Refer to site diagram(s) for sampling locations. Refer to laboratory reports for analytical methods.

(2) Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels, MTCA, revised 2015. Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA. Refer to site diagram(s) for sampling locations.

(3) Gasoline Analyses by Method NWTPH-Gx, Diesel and Heavy Oil by NWTPH-Dx/Dx Ext., MTCA 5 Metals by 200.8/245.1, VOCs by 8260C, PAH by 8270 (SIM), PCB by 8082.

(4) Grab Groundwater Sample

(a) Analytes were not detected. See attached analytical laboratory reports for details.

(b) No analytical laboratory report included in the Stemen Environmental report to verify analytical data.

* Method B Cleanup Level.

** Not researched, no available data.

--- Sample not analyzed.

nd Not Detected

Dup. Duplicate Sample for QA/QC.

<50.0 Sample concentration below laboratory reporting limit.

**27** Bold number(s) indicates contaminant detected, below cleanup level.

**160** Bold number(s) and yellow shading indicates concentration exceeds MTCA Cleanup Level.

**SGT** Silica Gel Treatment

6/26/2018 Indicates most recent sampling event.

Important Note: This Table Contains Information in color.
Black & white photocopies may not be suitable for review.

## TABLE 2

## Groundwater Elevation Measurements
## Auburn Way Properties

| Well Designation | Well Installation Date | Elevation Top of PVC Casing (ft.)* (1) | Depth to Top of Screen (ft.) | Depth to Bottom of Screen (ft.) | Well Diam. (in.) | Date Measured | Depth to Water (ft.) | Calculated GW Elevations (ft.) |
|---|---|---|---|---|---|---|---|---|
| **GL-MW-01** | 7/31/18 | 57.20 | 5 | 15 | 2 | 03/14/18 | 8.11 | 49.09 |
| | | | | | | 03/20/18 | 8.29 | 48.91 |
| | | 57.24 | | | | 06/26/18 | 9.67 | 47.57 |
| **GL-MW-02** | 3/12/18 | 56.64 | 5 | 15 | 2 | 03/14/18 | 7.53 | 49.11 |
| | | | | | | 03/20/18 | 7.68 | 48.96 |
| | | 56.66 | | | | 06/26/18 | 9.08 | 47.58 |
| **GL-MW-03**** | 3/12/18 | 56.09 | 5 | 15 | 2 | 03/14/18 | 7.03 | 49.06 |
| | 3/20/18 | | 5 | 15 | 2 | 03/20/18 | 7.21 | 48.88 |
| | | 56.13 | | | | 06/26/18 | 8.54 | 47.59 |
| **GL-MW-04** | 3/12/18 | 55.87 | 5 | 15 | 2 | 03/14/18 | 6.85 | 49.02 |
| | | | | | | 03/20/18 | 7.02 | 48.85 |
| | | 55.97 | | | | 06/26/18 | 8.39 | 47.58 |
| **GL-MW-05** | 3/12/18 | 55.18 | 5 | 15 | 2 | 03/14/18 | 6.19 | 48.99 |
| | | | | | | 03/20/18 | 6.35 | 48.83 |
| | | 55.33 | | | | 06/26/18 | 7.75 | 47.58 |
| **GL-MW-06** | 3/13/18 | 55.53 | 5 | 15 | 2 | 03/14/18 | 6.52 | 49.01 |
| | | | | | | 03/20/18 | 6.7 | 48.83 |
| | | 55.67 | | | | 06/26/18 | 8.07 | 47.60 |

Notes:

(1) Original survey was completed on 3/13/2018, prior to the reinstallation of GL-MW-3. Updated survey of all wells was completed on 6/26/2018.

* Elevations based on a backsight to the concrete floor at the north entrance of the auto shop. The floor elevation at this location is 57.7' (Figure 2).

** GL-MW-3 was installed on 3/12/18. Due to drillers sand continually coming into the well durring development (broken screen?), the original well was decommissioned and reinstalled on 3/20/18.

\# Depth not recorded.

-- Not Applicable.

# APPENDIX A

# FIELD EXPLORATION METHODS

G-Logics performed shallow groundwater sampling during the assessment conducted on the subject property. The sampling activities were conducted in general accordance with Washington Department of Ecology (Ecology) guidelines and regulations.

## Quality Assurance Quality Control

Quality Assurance/Quality Control (QA/QC) for the presented scope of work included generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment was washed and rinsed before the collection of the samples. All samples were labeled with a sample number, date, time, and sampler name, and were stored in an ice chest containing frozen "blue ice". Appropriate chain-of-custody documentation was completed.

## Water-Level Measurements in Wells

Water-level measurements were referenced to the top of the well casing. The static water level was measured in each monitoring-well using a conductivity type, water-level probe (Keck Model 1213, Flat Tape Water Level Meter). The conductivity probe was lowered into the well until the instrument detected water. The tape on the probe was used to obtain a depth-to-water measurement, from the reference point, to within 0.01 feet.

## Vertical Survey

The tops of the well casings were surveyed to determine their relative elevations. The wells were surveyed using a LaserMark LMH laser level and graduated survey rod using standard elevation-leveling techniques.

**Monitoring-Well Sampling, Peristaltic-Pump Method**

A G-Logics employee sampled groundwater wells in accordance with the following protocol.

- The height of the water column within the well was calculated by subtracting the depth to water from the total depth of the well. The volume of this water column was calculated using the relationship $V=3.14r^2h$. Where V is the volume of water in cubic feet, r is the radius of the well in feet and h is the height of the water column in feet.
- Based on these calculations, 3 to 5 volumes of water were removed from the well casing prior to collection of samples.
- All purge water was collected and placed into an onsite oil-water separator located inside the car wash area.
- The contract laboratory prepared the sample containers to conform to EPA-recommended preservation techniques for the analytes of concern.
- Groundwater samples were collected with a peristaltic pump. Sample containers were open only as long as necessary to collect the samples.
- Sample bottles were labeled with a sample number, date, time, and G-Logics employee's name, and were stored in an ice chest containing frozen "blue ice". Chain-of-custody procedures were followed to document sample handling.
- Dedicated tubing was used at each sampling location.

# APPENDIX B

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

**G-Logics**
Karis Vandehey
40 Second Ave. SE
Issaquah, WA 98027

**RE: Auburn Properties**
**Work Order Number: 1806329**

July 19, 2018

**Attention Karis Vandehey:**

Fremont Analytical, Inc. received 7 sample(s) on 6/26/2018 for the analyses presented in the following report.

***Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.***
***Dissolved Metals by EPA Method 200.8***
***Gasoline by NWTPH-Gx***
***Total Metals by EPA Method 200.8***
***Volatile Organic Compounds by EPA Method 8260C***

This report consists of the following:

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

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

Thank you for using Fremont Analytical.

Sincerely,

Mike Ridgeway
Laboratory Director

**Date:** *07/19/2018*

**CLIENT:** G-Logics
**Project:** Auburn Properties
**Work Order:** 1806329

# Work Order Sample Summary

| Lab Sample ID | Client Sample ID | Date/Time Collected | Date/Time Received |
|---|---|---|---|
| 1806329-001 | GL-MW-1 | 06/26/2018 2:35 PM | 06/26/2018 6:40 PM |
| 1806329-002 | GL-MW-2 | 06/26/2018 2:20 PM | 06/26/2018 6:40 PM |
| 1806329-003 | GL-MW-3 | 06/26/2018 1:30 PM | 06/26/2018 6:40 PM |
| 1806329-004 | GL-MW-4 | 06/26/2018 1:15 PM | 06/26/2018 6:40 PM |
| 1806329-005 | GL-MW-5 | 06/26/2018 11:45 AM | 06/26/2018 6:40 PM |
| 1806329-006 | GL-MW-6 | 06/26/2018 11:25 AM | 06/26/2018 6:40 PM |
| 1806329-007 | GL-MW-A | 06/26/2018 12:00 AM | 06/26/2018 6:40 PM |



Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

# Case Narrative

WO#: **1806329**

Date: **7/19/2018**

**CLIENT:** G-Logics

**Project:** Auburn Properties

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

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

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

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

Qualifiers:

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

Acronyms:

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

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018 2:35:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-001 **Matrix:** Water
**Client Sample ID:** **GL-MW-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 6/29/2018 7:46:07 PM |
| Diesel (Fuel Oil) | ND | 49.9 | SGT | µg/L | 1 | 7/10/2018 4:35:52 PM |
| Diesel Range Organics C12-C24 | 63.3 | 49.9 | SGT | µg/L | 1 | 7/10/2018 4:35:52 PM |
| Diesel Range Organics C12-C24 | 78.9 | 49.9 | | µg/L | 1 | 6/29/2018 7:46:07 PM |
| Heavy Oil | 307 | 99.8 | | µg/L | 1 | 6/29/2018 7:46:07 PM |
| Heavy Oil | 232 | 99.8 | SGT | µg/L | 1 | 7/10/2018 4:35:52 PM |
| Surr: 2-Fluorobiphenyl | 95.7 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 4:35:52 PM |
| Surr: 2-Fluorobiphenyl | 89.1 | 50 - 150 | | %Rec | 1 | 6/29/2018 7:46:07 PM |
| Surr: o-Terphenyl | 102 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 4:35:52 PM |
| Surr: o-Terphenyl | 93.1 | 50 - 150 | | %Rec | 1 | 6/29/2018 7:46:07 PM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
SGT - Silica Gel Treatment

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| Surr: Toluene-d8 | 99.0 | 65 - 135 | | %Rec | 1 | 7/2/2018 3:16:20 PM |
| Surr: 4-Bromofluorobenzene | 102 | 65 - 135 | | %Rec | 1 | 7/2/2018 3:16:20 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 3:16:20 PM |
| Surr: Dibromofluoromethane | 107 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 3:16:20 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 3:16:20 PM |
| Surr: 1-Bromo-4-fluorobenzene | 98.3 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 3:16:20 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21168 | | Analyst: WC |
| Arsenic | 31.2 | 1.75 | | µg/L | 1 | 7/6/2018 10:56:42 AM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21252 | | Analyst: WC |
| Arsenic | 3.00 | 1.75 | H | µg/L | 1 | 7/16/2018 11:53:18 AM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics
**Collection Date:** 6/26/2018 2:35:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-001
**Matrix:** Water
**Client Sample ID:** **GL-MW-1**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21252 | | Analyst: WC |
| **NOTES:** Analysis of non field filtered bottle | | | | | | |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 30.8 | 1.75 | | µg/L | 1 | 6/29/2018 12:35:09 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018 2:20:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-002 **Matrix:** Water
**Client Sample ID:** **GL-MW-2**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 50.0 | | µg/L | 1 | 6/29/2018 9:46:16 PM |
| Diesel (Fuel Oil) | ND | 50.0 | SGT | µg/L | 1 | 7/10/2018 5:06:23 PM |
| Heavy Oil | 156 | 100 | SGT | µg/L | 1 | 7/10/2018 5:06:23 PM |
| Heavy Oil | 209 | 100 | | µg/L | 1 | 6/29/2018 9:46:16 PM |
| Surr: 2-Fluorobiphenyl | 86.8 | 50 - 150 | | %Rec | 1 | 6/29/2018 9:46:16 PM |
| Surr: 2-Fluorobiphenyl | 96.8 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 5:06:23 PM |
| Surr: o-Terphenyl | 90.1 | 50 - 150 | | %Rec | 1 | 6/29/2018 9:46:16 PM |
| Surr: o-Terphenyl | 101 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 5:06:23 PM |
| **NOTES:** | | | | | | |
| SGT - Silica Gel Treatment | | | | | | |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| Surr: Toluene-d8 | 98.5 | 65 - 135 | | %Rec | 1 | 7/2/2018 7:17:07 PM |
| Surr: 4-Bromofluorobenzene | 106 | 65 - 135 | | %Rec | 1 | 7/2/2018 7:17:07 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:17:07 PM |
| Surr: Dibromofluoromethane | 108 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 7:17:07 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 7:17:07 PM |
| Surr: 1-Bromo-4-fluorobenzene | 102 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 7:17:07 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21168 | | Analyst: WC |
| Arsenic | 102 | 1.75 | 1 | µg/L | 1 | 7/6/2018 11:20:54 AM |
| Arsenic | 102 | 1.75 | 2 | µg/L | 1 | 7/11/2018 3:08:25 PM |
| **NOTES:** | | | | | | |
| 1 - Indicates initial analysis with field filtered bottle | | | | | | |
| 2 - Indicates second analysis of field filtered bottle | | | | | | |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21207 | | Analyst: WC |
| Arsenic | 4.24 | 1.75 | 3 H | µg/L | 1 | 7/11/2018 3:24:31 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics
**Collection Date:** 6/26/2018 2:20:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-002
**Matrix:** Water
**Client Sample ID:** **GL-MW-2**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21207 | | Analyst: WC |
| **NOTES:** 3 - Indicates analysis of non field filtered bottle | | | | | | |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 100 | 1.75 | | µg/L | 1 | 6/29/2018 12:39:11 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018 1:30:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-003 **Matrix:** Water
**Client Sample ID:** **GL-MW-3**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.8 | | µg/L | 1 | 6/29/2018 10:16:14 PM |
| Diesel (Fuel Oil) | ND | 49.8 | SGT | µg/L | 1 | 7/10/2018 5:36:44 PM |
| Heavy Oil | ND | 99.7 | SGT | µg/L | 1 | 7/10/2018 5:36:44 PM |
| Heavy Oil | 125 | 99.7 | | µg/L | 1 | 6/29/2018 10:16:14 PM |
| Surr: 2-Fluorobiphenyl | 90.0 | 50 - 150 | | %Rec | 1 | 6/29/2018 10:16:14 PM |
| Surr: 2-Fluorobiphenyl | 94.0 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 5:36:44 PM |
| Surr: o-Terphenyl | 93.5 | 50 - 150 | | %Rec | 1 | 6/29/2018 10:16:14 PM |
| Surr: o-Terphenyl | 99.7 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 5:36:44 PM |
| **NOTES:** SGT - Silica Gel Treatment | | | | | | |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| Surr: Toluene-d8 | 101 | 65 - 135 | | %Rec | 1 | 7/2/2018 7:47:14 PM |
| Surr: 4-Bromofluorobenzene | 105 | 65 - 135 | | %Rec | 1 | 7/2/2018 7:47:14 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 7:47:14 PM |
| Surr: Dibromofluoromethane | 113 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 7:47:14 PM |
| Surr: Toluene-d8 | 100 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 7:47:14 PM |
| Surr: 1-Bromo-4-fluorobenzene | 104 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 7:47:14 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21168 | | Analyst: WC |
| Arsenic | 22.9 | 1.75 | | µg/L | 1 | 7/6/2018 11:24:55 AM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21252 | | Analyst: WC |
| Arsenic | ND | 1.75 | H | µg/L | 1 | 7/16/2018 12:17:27 PM |
| **NOTES:** Analysis of non field filtered bottle | | | | | | |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics
**Collection Date:** 6/26/2018 1:30:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-003
**Matrix:** Water
**Client Sample ID:** **GL-MW-3**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 24.2 | 1.75 | | µg/L | 1 | 6/29/2018 12:43:13 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018 1:15:00 PM
**Project:** Auburn Properties
**Lab ID:** 1806329-004 **Matrix:** Water
**Client Sample ID:** **GL-MW-4**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 6/29/2018 6:15:45 PM |
| Diesel (Fuel Oil) | ND | 49.9 | SGT | µg/L | 1 | 7/10/2018 9:34:44 AM |
| Diesel Range Organics C12-C24 | 152 | 49.9 | | µg/L | 1 | 6/29/2018 6:15:45 PM |
| Diesel Range Organics C12-C24 | 148 | 49.9 | SGT | µg/L | 1 | 7/10/2018 9:34:44 AM |
| Heavy Oil | 461 | 99.8 | SGT | µg/L | 1 | 7/10/2018 9:34:44 AM |
| Heavy Oil | 798 | 99.8 | | µg/L | 1 | 6/29/2018 6:15:45 PM |
| Surr: 2-Fluorobiphenyl | 69.8 | 50 - 150 | | %Rec | 1 | 6/29/2018 6:15:45 PM |
| Surr: 2-Fluorobiphenyl | 75.3 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 9:34:44 AM |
| Surr: o-Terphenyl | 68.4 | 50 - 150 | | %Rec | 1 | 6/29/2018 6:15:45 PM |
| Surr: o-Terphenyl | 74.6 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 9:34:44 AM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
SGT - Silica Gel Treatment

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| Surr: Toluene-d8 | 98.9 | 65 - 135 | | %Rec | 1 | 7/2/2018 4:16:41 PM |
| Surr: 4-Bromofluorobenzene | 102 | 65 - 135 | | %Rec | 1 | 7/2/2018 4:16:41 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 4:16:41 PM |
| Surr: Dibromofluoromethane | 107 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 4:16:41 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 4:16:41 PM |
| Surr: 1-Bromo-4-fluorobenzene | 99.8 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 4:16:41 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 2.90 | 1.75 | | µg/L | 1 | 6/29/2018 12:47:14 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics
**Collection Date:** 6/26/2018 11:45:00 AM
**Project:** Auburn Properties
**Lab ID:** 1806329-005
**Matrix:** Water
**Client Sample ID:** **GL-MW-5**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 6/29/2018 10:46:19 PM |
| Heavy Oil | ND | 99.8 | | µg/L | 1 | 6/29/2018 10:46:19 PM |
| Surr: 2-Fluorobiphenyl | 85.9 | 50 - 150 | | %Rec | 1 | 6/29/2018 10:46:19 PM |
| Surr: o-Terphenyl | 86.4 | 50 - 150 | | %Rec | 1 | 6/29/2018 10:46:19 PM |
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| Surr: Toluene-d8 | 101 | 65 - 135 | | %Rec | 1 | 7/2/2018 8:17:16 PM |
| Surr: 4-Bromofluorobenzene | 96.9 | 65 - 135 | | %Rec | 1 | 7/2/2018 8:17:16 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:17:16 PM |
| Surr: Dibromofluoromethane | 106 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 8:17:16 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 8:17:16 PM |
| Surr: 1-Bromo-4-fluorobenzene | 95.4 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 8:17:16 PM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 2.45 | 1.75 | | µg/L | 1 | 6/29/2018 12:51:16 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018 11:25:00 AM
**Project:** Auburn Properties
**Lab ID:** 1806329-006 **Matrix:** Water
**Client Sample ID:** **GL-MW-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 6/29/2018 11:16:12 PM |
| Diesel (Fuel Oil) | ND | 49.9 | SGT | µg/L | 1 | 7/10/2018 10:04:31 AM |
| Diesel Range Organics C12-C24 | 81.3 | 49.9 | SGT | µg/L | 1 | 7/10/2018 10:04:31 AM |
| Diesel Range Organics C12-C24 | 102 | 49.9 | | µg/L | 1 | 6/29/2018 11:16:12 PM |
| Heavy Oil | 608 | 99.8 | | µg/L | 1 | 6/29/2018 11:16:12 PM |
| Heavy Oil | 438 | 99.8 | SGT | µg/L | 1 | 7/10/2018 10:04:31 AM |
| Surr: 2-Fluorobiphenyl | 79.8 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 10:04:31 AM |
| Surr: 2-Fluorobiphenyl | 74.0 | 50 - 150 | | %Rec | 1 | 6/29/2018 11:16:12 PM |
| Surr: o-Terphenyl | 80.9 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 10:04:31 AM |
| Surr: o-Terphenyl | 74.1 | 50 - 150 | | %Rec | 1 | 6/29/2018 11:16:12 PM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
SGT - Silica Gel Treatment

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| Surr: Toluene-d8 | 101 | 65 - 135 | | %Rec | 1 | 7/2/2018 8:47:21 PM |
| Surr: 4-Bromofluorobenzene | 98.9 | 65 - 135 | | %Rec | 1 | 7/2/2018 8:47:21 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 8:47:21 PM |
| Surr: Dibromofluoromethane | 107 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 8:47:21 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 8:47:21 PM |
| Surr: 1-Bromo-4-fluorobenzene | 95.5 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 8:47:21 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21168 | | Analyst: WC |
| Arsenic | 8.66 | 1.75 | | µg/L | 1 | 7/6/2018 11:28:57 AM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21252 | | Analyst: WC |
| Arsenic | ND | 1.75 | H | µg/L | 1 | 7/16/2018 12:21:28 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics
**Collection Date:** 6/26/2018 11:25:00 AM
**Project:** Auburn Properties
**Lab ID:** 1806329-006
**Matrix:** Water
**Client Sample ID:** **GL-MW-6**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Dissolved Metals by EPA Method 200.8** | | | | | Batch ID: 21252 | Analyst: WC |
| **NOTES:** Analysis of non field filtered bottle | | | | | | |
| **Total Metals by EPA Method 200.8** | | | | | Batch ID: 21095 | Analyst: WC |
| Arsenic | 8.96 | 1.75 | | µg/L | 1 | 6/29/2018 12:55:18 PM |

# Analytical Report

Work Order: **1806329**
Date Reported: **7/19/2018**

**Client:** G-Logics **Collection Date:** 6/26/2018
**Project:** Auburn Properties
**Lab ID:** 1806329-007 **Matrix:** Water
**Client Sample ID:** **GL-MW-A**

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.** | | | | Batch ID: 21100 | | Analyst: SG |
| Diesel (Fuel Oil) | ND | 49.9 | | µg/L | 1 | 6/29/2018 11:46:09 PM |
| Diesel (Fuel Oil) | ND | 49.9 | SGT | µg/L | 1 | 7/10/2018 10:34:18 AM |
| Diesel Range Organics C12-C24 | 58.7 | 49.9 | | µg/L | 1 | 6/29/2018 11:46:09 PM |
| Heavy Oil | 441 | 99.9 | SGT | µg/L | 1 | 7/10/2018 10:34:18 AM |
| Heavy Oil | 658 | 99.9 | | µg/L | 1 | 6/29/2018 11:46:09 PM |
| Surr: 2-Fluorobiphenyl | 81.3 | 50 - 150 | | %Rec | 1 | 6/29/2018 11:46:09 PM |
| Surr: 2-Fluorobiphenyl | 85.0 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 10:34:18 AM |
| Surr: o-Terphenyl | 90.3 | 50 - 150 | | %Rec | 1 | 6/29/2018 11:46:09 PM |
| Surr: o-Terphenyl | 95.3 | 50 - 150 | SGT | %Rec | 1 | 7/10/2018 10:34:18 AM |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).
SGT - Silica Gel Treatment

| | | | | | | |
|---|---|---|---|---|---|---|
| **Gasoline by NWTPH-Gx** | | | | Batch ID: 21132 | | Analyst: MW |
| Gasoline | ND | 50.0 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| Surr: Toluene-d8 | 104 | 65 - 135 | | %Rec | 1 | 7/2/2018 9:17:30 PM |
| Surr: 4-Bromofluorobenzene | 102 | 65 - 135 | | %Rec | 1 | 7/2/2018 9:17:30 PM |
| **Volatile Organic Compounds by EPA Method 8260C** | | | | Batch ID: 21132 | | Analyst: MW |
| Benzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| Toluene | ND | 1.00 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| Ethylbenzene | ND | 1.00 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| m,p-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| o-Xylene | ND | 1.00 | | µg/L | 1 | 7/2/2018 9:17:30 PM |
| Surr: Dibromofluoromethane | 117 | 45.4 - 152 | | %Rec | 1 | 7/2/2018 9:17:30 PM |
| Surr: Toluene-d8 | 101 | 40.1 - 139 | | %Rec | 1 | 7/2/2018 9:17:30 PM |
| Surr: 1-Bromo-4-fluorobenzene | 98.6 | 64.2 - 128 | | %Rec | 1 | 7/2/2018 9:17:30 PM |
| **Dissolved Metals by EPA Method 200.8** | | | | Batch ID: 21168 | | Analyst: WC |
| Arsenic | 8.95 | 1.75 | | µg/L | 1 | 7/6/2018 11:32:59 AM |
| **Total Metals by EPA Method 200.8** | | | | Batch ID: 21095 | | Analyst: WC |
| Arsenic | 8.82 | 1.75 | | µg/L | 1 | 6/29/2018 1:07:25 PM |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

| Sample ID **MB-21100** | SampType: **MBLK** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **MBLKW** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859778** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 50.0 | | | | | | | | | |
| Heavy Oil | ND | 100 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 62.7 | | 80.00 | | 78.4 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 65.7 | | 80.00 | | 82.2 | 50 | 150 | | | | |

| Sample ID **LCS-21100** | SampType: **LCS** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **LCSW** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859779** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 701 | 50.0 | 1,000 | 0 | 70.1 | 65 | 135 | | | | |
| Surr: 2-Fluorobiphenyl | 70.0 | | 80.00 | | 87.6 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 69.7 | | 80.00 | | 87.1 | 50 | 150 | | | | |

| Sample ID **1806322-001ADUP** | SampType: **DUP** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **BATCH** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859781** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 49.8 | | | | | | 0 | | 30 | |
| Diesel Range Organics C12-C24 | 54.6 | 49.8 | | | | | | 49.89 | 8.95 | 30 | |
| Heavy Oil | 156 | 99.7 | | | | | | 101.4 | 42.7 | 30 | |
| Surr: 2-Fluorobiphenyl | 73.0 | | 79.74 | | 91.6 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 58.9 | | 79.74 | | 73.8 | 50 | 150 | | 0 | | |

**NOTES:**
DRO - Indicates the presence of unresolved compounds eluting from dodecane through tetracosane (~C12-C24).

| Sample ID **1806329-004BMS** | SampType: **MS** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **GL-MW-4** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859785** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 606 | 49.9 | 998.0 | 152.0 | 45.5 | 65 | 135 | | | | S |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

| Sample ID **1806329-004BMS** | SampType: **MS** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **GL-MW-4** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859785** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 2-Fluorobiphenyl | 69.7 | | 79.84 | | 87.3 | 50 | 150 | | | | |
| Surr: o-Terphenyl | 61.5 | | 79.84 | | 77.0 | 50 | 150 | | | | |

**NOTES:**
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

| Sample ID **1806329-004BMSD** | SampType: **MSD** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **GL-MW-4** | Batch ID: **21100** | | Analysis Date: **6/29/2018** | SeqNo: **859786** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | 679 | 49.9 | 997.5 | 152.0 | 52.8 | 65 | 135 | 605.6 | 11.4 | 30 | S |
| Surr: 2-Fluorobiphenyl | 57.8 | | 79.80 | | 72.4 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 53.5 | | 79.80 | | 67.1 | 50 | 150 | | 0 | | |

**NOTES:**
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed with similar results indicating a possible matrix effect.

| Sample ID **1806336-001BDUP** | SampType: **DUP** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **BATCH** | Batch ID: **21100** | | Analysis Date: **6/30/2018** | SeqNo: **859796** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 50.0 | | | | | | 0 | | 30 | |
| Heavy Oil | ND | 99.9 | | | | | | 0 | | 30 | |
| Surr: 2-Fluorobiphenyl | 66.7 | | 79.94 | | 83.4 | 50 | 150 | | 0 | | |
| Surr: o-Terphenyl | 71.0 | | 79.94 | | 88.8 | 50 | 150 | | 0 | | |

| Sample ID **MB-21100** | SampType: **MBLK** | Units: **µg/L** | Prep Date: **6/28/2018** | RunNo: **44410** |
|---|---|---|---|---|
| Client ID: **MBLKW** | Batch ID: **21100** | | Analysis Date: **7/10/2018** | SeqNo: **863186** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Diesel (Fuel Oil) | ND | 50.0 | | | | | | | | | |
| Heavy Oil | ND | 100 | | | | | | | | | |
| Surr: 2-Fluorobiphenyl | 72.6 | | 80.00 | | 90.7 | 50 | 150 | | | | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | **MB-21100** | SampType: | **MBLK** | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44410** | |
| Client ID: | **MBLKW** | Batch ID: | **21100** | | | | Analysis Date: | **7/10/2018** | SeqNo: | **863186** | |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Surr: o-Terphenyl | 77.7 | | 80.00 | | 97.2 | 50 | 150 | | | | |

**NOTES:**
SGT - Silica Gel Treatment

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

| Sample ID | **MB-21252** | SampType: | **MBLK** | | | Units: | **µg/L** | Prep Date: | **7/16/2018** | RunNo: | **44722** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **21252** | | | | | Analysis Date: | **7/16/2018** | SeqNo: | **864889** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

| Sample ID | **LCS-21252** | SampType: | **LCS** | | | Units: | **µg/L** | Prep Date: | **7/16/2018** | RunNo: | **44722** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **21252** | | | | | Analysis Date: | **7/16/2018** | SeqNo: | **864890** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 97.6 | 1.75 | 100.0 | 0 | 97.6 | 85 | 115 | | | | |

| Sample ID | **1806329-001EDUP** | SampType: | **DUP** | | | Units: | **µg/L** | Prep Date: | **7/16/2018** | RunNo: | **44722** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21252** | | | | | Analysis Date: | **7/16/2018** | SeqNo: | **864892** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 3.25 | 1.75 | | | | | | 2.996 | 8.04 | 30 | H |

| Sample ID | **1806329-001EMS** | SampType: | **MS** | | | Units: | **µg/L** | Prep Date: | **7/16/2018** | RunNo: | **44722** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21252** | | | | | Analysis Date: | **7/16/2018** | SeqNo: | **864895** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 520 | 1.75 | 500.0 | 2.996 | 103 | 70 | 130 | | | | H |

| Sample ID | **1806329-001EMSD** | SampType: | **MSD** | | | Units: | **µg/L** | Prep Date: | **7/16/2018** | RunNo: | **44722** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21252** | | | | | Analysis Date: | **7/16/2018** | SeqNo: | **864896** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 531 | 1.75 | 500.0 | 2.996 | 106 | 70 | 130 | 520.4 | 2.09 | 30 | H |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

Sample ID **MB-21237FB** SampType: **MBLK** Units: **µg/L** Prep Date: **7/16/2018** RunNo: **44722**
Client ID: **MBLKW** Batch ID: **21252** Analysis Date: **7/16/2018** SeqNo: **864902**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

**NOTES:**
Filter Blank

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

| Sample ID | **MB-21207** | SampType: | **MBLK** | | | Units: | **µg/L** | Prep Date: | **7/11/2018** | RunNo: | **44623** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **21207** | | | | | Analysis Date: | **7/11/2018** | SeqNo: | **863319** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

| Sample ID | **LCS-21207** | SampType: | **LCS** | | | Units: | **µg/L** | Prep Date: | **7/11/2018** | RunNo: | **44623** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **21207** | | | | | Analysis Date: | **7/11/2018** | SeqNo: | **863320** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 106 | 1.75 | 100.0 | 0 | 106 | 85 | 115 | | | | |

| Sample ID | **1806329-002DDUP** | SampType: | **DUP** | | | Units: | **µg/L** | Prep Date: | **7/11/2018** | RunNo: | **44623** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-2** | Batch ID: | **21207** | | | | | Analysis Date: | **7/11/2018** | SeqNo: | **863322** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 112 | 1.75 | | | | | | 102.5 | 8.88 | 30 | |

| Sample ID | **1806329-002DMS** | SampType: | **MS** | | | Units: | **µg/L** | Prep Date: | **7/11/2018** | RunNo: | **44623** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-2** | Batch ID: | **21207** | | | | | Analysis Date: | **7/11/2018** | SeqNo: | **863323** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 658 | 1.75 | 500.0 | 102.5 | 111 | 70 | 130 | | | | |

| Sample ID | **1806329-002DMSD** | SampType: | **MSD** | | | Units: | **µg/L** | Prep Date: | **7/11/2018** | RunNo: | **44623** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-2** | Batch ID: | **21207** | | | | | Analysis Date: | **7/11/2018** | SeqNo: | **863324** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 670 | 1.75 | 500.0 | 102.5 | 114 | 70 | 130 | 657.9 | 1.88 | 30 | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | **MB-21199FB** | SampType: | **MBLK** | | Units: | **µg/L** | Prep Date: | **7/11/2018** | | RunNo: | **44623** |
| Client ID: | **MBLKW** | Batch ID: | **21207** | | | | Analysis Date: | **7/11/2018** | | SeqNo: | **863326** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

**NOTES:**
Filter Blank

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Dissolved Metals by EPA Method 200.8

| Sample ID | **MB-21168** | SampType: | **MBLK** | | | Units: | **µg/L** | Prep Date: | **7/6/2018** | RunNo: | **44524** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **21168** | | | | | Analysis Date: | **7/6/2018** | SeqNo: | **861539** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

| Sample ID | **LCS-21168** | SampType: | **LCS** | | | Units: | **µg/L** | Prep Date: | **7/6/2018** | RunNo: | **44524** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **21168** | | | | | Analysis Date: | **7/6/2018** | SeqNo: | **861540** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 97.1 | 1.75 | 100.0 | 0 | 97.1 | 85 | 115 | | | | |

| Sample ID | **1806329-001DDUP** | SampType: | **DUP** | | | Units: | **µg/L** | Prep Date: | **7/6/2018** | RunNo: | **44524** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21168** | | | | | Analysis Date: | **7/6/2018** | SeqNo: | **861542** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 32.8 | 1.75 | | | | | | 31.23 | 4.78 | 30 | |

| Sample ID | **1806329-001DMS** | SampType: | **MS** | | | Units: | **µg/L** | Prep Date: | **7/6/2018** | RunNo: | **44524** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21168** | | | | | Analysis Date: | **7/6/2018** | SeqNo: | **861543** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 546 | 1.75 | 500.0 | 31.23 | 103 | 70 | 130 | | | | |

| Sample ID | **1806329-001DMSD** | SampType: | **MSD** | | | Units: | **µg/L** | Prep Date: | **7/6/2018** | RunNo: | **44524** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **GL-MW-1** | Batch ID: | **21168** | | | | | Analysis Date: | **7/6/2018** | SeqNo: | **861544** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 548 | 1.75 | 500.0 | 31.23 | 103 | 70 | 130 | 546.2 | 0.273 | 30 | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Gasoline by NWTPH-Gx

Sample ID **MB-21132** SampType: **MBLK** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **MBLKW** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860588**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | 50.0 | | | | | | | | | |
| Surr: Toluene-d8 | 24.9 | | 25.00 | | 99.8 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 24.6 | | 25.00 | | 98.2 | 65 | 135 | | | | |

Sample ID **LCS-21132** SampType: **LCS** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **LCSW** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860587**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 470 | 50.0 | 500.0 | 0 | 94.1 | 65 | 135 | | | | |
| Surr: Toluene-d8 | 25.2 | | 25.00 | | 101 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 25.0 | | 25.00 | | 100 | 65 | 135 | | | | |

Sample ID **1806329-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **GL-MW-1** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860560**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | ND | 50.0 | | | | | | 0 | | 30 | |
| Surr: Toluene-d8 | 24.9 | | 25.00 | | 99.4 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 24.7 | | 25.00 | | 98.7 | 65 | 135 | | 0 | | |

Sample ID **1806352-006ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **BATCH** Batch ID: **21132** Analysis Date: **7/3/2018** SeqNo: **860574**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 3,810 | 50.0 | | | | | | 3,551 | 7.03 | 30 | E |
| Surr: Toluene-d8 | 25.9 | | 25.00 | | 104 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 28.2 | | 25.00 | | 113 | 65 | 135 | | 0 | | |

**NOTES:**
E - Estimated value. The amount exceeds the linear working range of the instrument.

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Gasoline by NWTPH-Gx

Sample ID **1806362-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **BATCH** Batch ID: **21132** Analysis Date: **7/3/2018** SeqNo: **860576**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 396 | 50.0 | 500.0 | 0 | 79.2 | 65 | 135 | | | | |
| Surr: Toluene-d8 | 24.9 | | 25.00 | | 99.8 | 65 | 135 | | | | |
| Surr: 4-Bromofluorobenzene | 25.7 | | 25.00 | | 103 | 65 | 135 | | | | |

Sample ID **1806362-001AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44473**
Client ID: **BATCH** Batch ID: **21132** Analysis Date: **7/3/2018** SeqNo: **860577**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline | 424 | 50.0 | 500.0 | 0 | 84.8 | 65 | 135 | 395.9 | 6.86 | 30 | |
| Surr: Toluene-d8 | 25.0 | | 25.00 | | 99.9 | 65 | 135 | | 0 | | |
| Surr: 4-Bromofluorobenzene | 26.1 | | 25.00 | | 104 | 65 | 135 | | 0 | | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Total Metals by EPA Method 200.8

| Sample ID | **MB-21095** | SampType: | **MBLK** | | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44376** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **MBLKW** | Batch ID: | **21095** | | | | | Analysis Date: | **6/29/2018** | SeqNo: | **859032** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | | | | |

| Sample ID | **LCS-21095** | SampType: | **LCS** | | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44376** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSW** | Batch ID: | **21095** | | | | | Analysis Date: | **6/29/2018** | SeqNo: | **859033** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 92.9 | 1.75 | 100.0 | 0 | 92.9 | 85 | 115 | | | | |

| Sample ID | **1806294-001DDUP** | SampType: | **DUP** | | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44376** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **21095** | | | | | Analysis Date: | **6/29/2018** | SeqNo: | **859035** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND | 1.75 | | | | | | 0 | | 30 | |

| Sample ID | **1806294-001DMS** | SampType: | **MS** | | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44376** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **21095** | | | | | Analysis Date: | **6/29/2018** | SeqNo: | **859036** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 481 | 1.75 | 500.0 | 0 | 96.3 | 70 | 130 | | | | |

| Sample ID | **1806294-001DMSD** | SampType: | **MSD** | | | Units: | **µg/L** | Prep Date: | **6/28/2018** | RunNo: | **44376** |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **BATCH** | Batch ID: | **21095** | | | | | Analysis Date: | **6/29/2018** | SeqNo: | **859039** |

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 500 | 1.75 | 500.0 | 0 | 100 | 70 | 130 | 481.3 | 3.89 | 30 | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **MB-21132** SampType: **MBLK** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **MBLKW** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860507**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | | | | |
| Toluene | ND | 1.00 | | | | | | | | | |
| Ethylbenzene | ND | 1.00 | | | | | | | | | |
| m,p-Xylene | ND | 1.00 | | | | | | | | | |
| o-Xylene | ND | 1.00 | | | | | | | | | |
| Surr: Dibromofluoromethane | 25.3 | | 25.00 | | 101 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 25.2 | | 25.00 | | 101 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.2 | | 25.00 | | 96.7 | 64.2 | 128 | | | | |

Sample ID **LCS-21132** SampType: **LCS** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **LCSW** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860506**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 22.1 | 1.00 | 20.00 | 0 | 110 | 69.3 | 132 | | | | |
| Toluene | 21.8 | 1.00 | 20.00 | 0 | 109 | 61.3 | 145 | | | | |
| Ethylbenzene | 21.2 | 1.00 | 20.00 | 0 | 106 | 72 | 130 | | | | |
| m,p-Xylene | 42.4 | 1.00 | 40.00 | 0 | 106 | 70.3 | 134 | | | | |
| o-Xylene | 21.0 | 1.00 | 20.00 | 0 | 105 | 72.1 | 131 | | | | |
| Surr: Dibromofluoromethane | 28.6 | | 25.00 | | 115 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 25.7 | | 25.00 | | 103 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.6 | | 25.00 | | 98.2 | 64.2 | 128 | | | | |

Sample ID **1806329-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **GL-MW-1** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860482**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | 0 | | 30 | |
| Toluene | ND | 1.00 | | | | | | 0 | | 30 | |
| Ethylbenzene | ND | 1.00 | | | | | | 0 | | 30 | |
| m,p-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **1806329-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **GL-MW-1** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860482**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| o-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |
| Surr: Dibromofluoromethane | 26.4 | | 25.00 | | 106 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 25.1 | | 25.00 | | 101 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.2 | | 25.00 | | 97.0 | 64.2 | 128 | | 0 | | |

Sample ID **1806329-004AMS** SampType: **MS** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **GL-MW-4** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860485**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 21.7 | 1.00 | 20.00 | 0 | 108 | 65.4 | 138 | | | | |
| Toluene | 21.7 | 1.00 | 20.00 | 0 | 109 | 52 | 147 | | | | |
| Ethylbenzene | 21.7 | 1.00 | 20.00 | 0 | 109 | 64.5 | 136 | | | | |
| m,p-Xylene | 43.0 | 1.00 | 40.00 | 0 | 107 | 63.3 | 135 | | | | |
| o-Xylene | 20.9 | 1.00 | 20.00 | 0 | 105 | 64.8 | 150 | | | | |
| Surr: Dibromofluoromethane | 28.7 | | 25.00 | | 115 | 45.4 | 152 | | | | |
| Surr: Toluene-d8 | 25.4 | | 25.00 | | 102 | 40.1 | 139 | | | | |
| Surr: 1-Bromo-4-fluorobenzene | 23.9 | | 25.00 | | 95.4 | 64.2 | 128 | | | | |

Sample ID **1806329-004AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **GL-MW-4** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860486**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 22.7 | 1.00 | 20.00 | 0 | 113 | 65.4 | 138 | 21.66 | 4.55 | 30 | |
| Toluene | 22.6 | 1.00 | 20.00 | 0 | 113 | 52 | 147 | 21.74 | 3.86 | 30 | |
| Ethylbenzene | 22.6 | 1.00 | 20.00 | 0 | 113 | 64.5 | 136 | 21.74 | 4.07 | 30 | |
| m,p-Xylene | 45.1 | 1.00 | 40.00 | 0 | 113 | 63.3 | 135 | 42.99 | 4.74 | 30 | |
| o-Xylene | 22.4 | 1.00 | 20.00 | 0 | 112 | 64.8 | 150 | 20.92 | 6.88 | 30 | |
| Surr: Dibromofluoromethane | 28.8 | | 25.00 | | 115 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 25.5 | | 25.00 | | 102 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 24.2 | | 25.00 | | 96.8 | 64.2 | 128 | | 0 | | |

**Work Order:** 1806329
**CLIENT:** G-Logics
**Project:** Auburn Properties

# QC SUMMARY REPORT

## Volatile Organic Compounds by EPA Method 8260C

Sample ID **1806329-004AMSD** SampType: **MSD** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **GL-MW-4** Batch ID: **21132** Analysis Date: **7/2/2018** SeqNo: **860486**

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

Sample ID **1806352-006ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **7/2/2018** RunNo: **44469**
Client ID: **BATCH** Batch ID: **21132** Analysis Date: **7/3/2018** SeqNo: **860496**

| Analyte | Result | RL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | RPD Ref Val | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 1.00 | | | | | | 0 | | 30 | |
| Toluene | ND | 1.00 | | | | | | 0 | | 30 | |
| Ethylbenzene | 9.77 | 1.00 | | | | | | 8.517 | 13.7 | 30 | |
| m,p-Xylene | 2.22 | 1.00 | | | | | | 2.059 | 7.52 | 30 | |
| o-Xylene | ND | 1.00 | | | | | | 0 | | 30 | |
| Surr: Dibromofluoromethane | 29.6 | | 25.00 | | 118 | 45.4 | 152 | | 0 | | |
| Surr: Toluene-d8 | 25.4 | | 25.00 | | 102 | 40.1 | 139 | | 0 | | |
| Surr: 1-Bromo-4-fluorobenzene | 27.0 | | 25.00 | | 108 | 64.2 | 128 | | 0 | | |

# Sample Log-In Check List

| | | | |
|---|---|---|---|
| Client Name: | **GL** | Work Order Number: | **1806329** |
| Logged by: | **Clare Griggs** | Date Received: | **6/26/2018 6:40:00 PM** |

## *Chain of Custody*

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

## *Log In*

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

## *Special Handling (if applicable)*

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

**Item Information**

| Item # | Temp ºC |
|---|---|
| Cooler 2 | 5.9 |
| Sample 1 | 5.1 |
| Sample 2 | 2.6 |

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

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

# Chain of Custody Record & Laboratory Services Agreement

Date: 6/26/18 Page: 1 of: 1

Laboratory Project No (internal): 1806329

Special Remarks: RUN AS DISSOLVED IF AS IS ABOVE 5

Client: G-LOGICS

Address: 40 2nd AVE SE

City, State, Zip: ISSAQUAH WA

Telephone:

Fax:

Project Name: AUBURN PROPERTIES

Project No: 21140-F

Collected by: KARIS V

Location: 3025 & 3109 AUBURN WAY N.

Report To (PM): KARIS VANDEHEY

PM Email: KARISV@G-LOGICS.com

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) | Total (T) / Dissolved (D) | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GL-MW-1 | 6/26/18 | 1435 | H2O | | X | | | X | | | | | X | | | | 3 VOAs, 1 AMB, 3 POLY |
| 2 | GL-MW-2 | | 1420 | | | X | | | X | | | | | X | | | | " " " " |
| 3 | GL-MW-3 | | 1330 | | | X | | | X | | | | | X | | | | " " " |
| 4 | GL-MW-4 | | 1315 | | | X | | | X | | | | | X | | | | 5 VOAs, 2 AMB, 3 POLY |
| 5 | GL-MW-5 | | 1145 | | | X | | | X | | | | | X | | | | 3 VOAs, 1 AMB, 3 POLY |
| 6 | GL-MW-6 | | 1125 | | | X | | | X | | | | | X | | | | " " " |
| 7 | GL-MW-A | | | | | X | | | X | | | | | X | | | | " " " |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

AS

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

| Relinquished | Date/Time | Received | Date/Time |
|---|---|---|---|
| x | 6/26/18 1840 | x | 6/26/18 1840 |
| Relinquished | Date/Time | Received | Date/Time |
| x | | x | |

**Turn-around Time:**

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

# Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 6/26/18 Page: 1 of: 1

Project Name: AUBURN PROPERTIES

Project No: 0Y-1140-F

Collected by: KARIS V

Location: 3025 & 3109 AUBURN WAY N.

Report To (PM): KARIS VANDIEMEN

PM Email: KARISV@G-LOGICS.COM

Laboratory Project No (internal): 1806329

Special Remarks: RUN AS DISSOLVED IF AS IS ABOVE 5

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

Client: G-LOGICS

Address: 40 2ND AVE SE

City, State, Zip: ISSAQUAH WA

Telephone:

Fax:

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) | Total (T) Dissolved (D) AS | Anions (IC)*** | EDB (8011) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GL-MW-1 | 6/26/18 | 1435 | H2O | | X | | | | X | | | | X | | | | 3 VOAS, 1 AMB, 3 POLY |
| 2 | GL-MW-2 | | 1420 | | | X | | | | X | | | | X | | | | " " " |
| 3 | GL-MW-3 | | 1330 | | | X | | | | X | | | | X | | | | " " " |
| 4 | GL-MW-4 | | 1315 | | | X | | | | X | | | | X | | | | 5 VOAS, 2 AMB, 3 POLY |
| 5 | GL-MW-5 | | 1145 | | | X | | | | X | | | | X | | | | 3 VOAS, 1 AMB, 3 POLY |
| 6 | GL-MW-6 | | 1125 | | | X | | | | X | | | | X | | | | " " " |
| 7 | GL-MW-A | | | | | X | | | | X | | | | X | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

Comments: ⑦Add Dissolved As 7/6/18 CW

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

Relinquished x — Date/Time 6/26/18 1840

Relinquished x — Date/Time

Received x — Date/Time 6/26/18 1840

Received x — Date/Time

**Turn-around Time:**

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

# Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 6/26/18 Page: 1 of: 1

Laboratory Project No (internal): 1806329

Project Name: AUBURN PROPERTIES

Special Remarks: RUN AS DISSOLVED IF AS IS ABOVE 5 edits per KV 7/9/18 BB

Project No: N-1140-F

Client: G-LOGICS

Collected by: KARIS V

Address: 40 2nd AVE SE

Location: 3025 & 3109 AUBURN WASH.

City, State, Zip: ISSAQUAH WA

Report To (PM): KARIS VANDIEMEN

Telephone:

PM Email: KARISV@G-LOGICS.COM

Fax:

Sample Disposal: ☐ Return to client ☐ Disposal by lab (after 30 days)

| | Sample Name | Sample Date | Sample Time | Sample Type (Matrix)* | VOCs (EPA 8260 / 624) | GX/BTEX | BTEX | Gasoline Range Organics (GX) | Hydrocarbon Identification (HCID) | Diesel/Heavy Oil Range Organics (DX) | SVOCs (EPA 8270 / 625) | PAHs (EPA 8270 - SIM) | PCBs (EPA 8082 / 608) | Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D) AS | Anions (IC)*** | EDB (8011) | Silica Gel Cleanup (Heavy Oil) | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GL-MW-1 | 6/26/18 | 1435 | AQ | X | | | X | | | | | | X | | | | | | 3 VOAs, 1 AMB, 3 POLY |
| 2 | GL-MW-2 | | 1420 | | X | | | X | | | | | | X | | | | | | " " " " " " |
| 3 | GL-MW-3 | | 1330 | | X | | | X | | | | | | X | | | | | | |
| 4 | GL-MW-4 | | 1315 | | X | | | X | | | | | | X | | X | | | | 5 VOAs, 2 AMB, 3 POLY |
| 5 | GL-MW-5 | | 1145 | | X | | | X | | | | | | X | | | | | | 3 VOAs, 1 AMB, 3 POLY |
| 6 | GL-MW-6 | | 1125 | | X | | | X | | | | | | X | | X | | | | " " " " " " |
| 7 | GL-MW-A | ↓ | | ↓ | X | | | X | | | | | | X | | X | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | Add Dissolved As 7/9/18 BB |
| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, (GW) = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al (As) B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

**I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.**

Relinquished x — Date/Time 6/26/18 1840

Relinquished x — Date/Time

Received x — Date/Time 6/26/18 1840

Received x — Date/Time

**Turn-around Time:**

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day (specify)

# ATTACHMENTS

**Permission and Conditions for Use and Copying Form**

**Groundwater-Sampling Report, June 2018**
**Auburn Way Properties, 3025 and 3109 Auburn Way N**
**Auburn, WA 98002**

**G-Logics Project 01-1140-F**
**August 20, 2018**

G-Logics prepared the above-identified Document only for our Client and/or other user(s), as identified in the Document, for the purposes stated and subject to any identified and contractual limitations. Regulatory agencies may make additional "fair use" copies for internal and public use based on state and federal laws that do not violate copyright laws.

All other Requestors must obtain permission from G-Logics and our Client in order to avoid copyright violations. To request authorization for a copy of the Document, please read our conditions listed below, complete the Requestor section, and fax to G-Logics at 425-313-3074 for approval review.

- I recognize that G-Logics has prepared this Document only for their Client and/or other user(s), only for the purposes stated in the Document and subject to any identified and contractual limitations.
- My intended use of the Document is for general informational purposes only.
- I understand and accept that there may be limitations to the reliability of the Document's findings due to circumstances beyond the control of G-Logics, the limited scope of funding, and/or limitations inherent in the nature of the performed services.
- I agree not to rely on the Document as being comprehensive or inclusive of all possible site hazards and agree to defend, indemnify, and hold G-Logics harmless from and against any and all claims, damages, or liability which arise from or which are alleged to arise from my use of the Document. I also will compensate G-Logics for any time spent or expenses incurred by G-Logics in defense of any such claim.
- I agree not to provide the Document to any other person or organizations without prior authorization from G-Logics and their Client.

I, the Requestor, have reviewed the above-identified conditions for copying/use of the Document, am familiar with the presented limitations of the provided services, and acknowledge my understanding and concurrence, as indicated by my signature below.

Requestor's Company _____

Mailing Address _____

City, State, Zip Code _____

Contact Name & Title _____

Signature & Date _____

Telephone & Fax Numbers _____

Planned Use of Document _____

_____

_____

With your information and signature above, please fax to G-Logics (425-313-3074) for approval review. G-Logics will share your request with our Client for their approval.

**Client Review and Acknowledgment of Use and Copying Request**

Per the notification of G-Logics, I, the Client, have reviewed this request for copying/use of this Document, have discussed the request with G-Logics, and grant my consent as indicated by my signature below.

Client Company _____

Client Contact Name & Title _____

Signature & Date _____

Telephone & Fax Numbers _____

**G-Logics review and Acknowledgment of Use and Copying Request**

Based on your concurrence with the above-presented conditions, approval of our Client, and our review of the information, G-Logics allows the Requestor to copy/use the above referenced Document for purposes stated. Additional fees may apply.

G-Logics Signature _____

Title _____

Date _____

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Friday, August 24, 2018 9:15 AM
**To:** Ma, Li (PLIA)
**Cc:** Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon (grairdon@rairdon.com); 'Ken Lederman' (ken.lederman@foster.com); Rory Galloway; Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); Trujillo, Shanyese (PLIA)
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030
**Attachments:** 01-1140-F-QR-June 2018-All.pdf

Hi Li,

Please find our June 2018 groundwater sampling report attached for your review. During this sampling event and all previous groundwater sampling events, gasoline and BTEX have never been detected. Considering this information (two quarters with non-detectable concentrations), would it now be possible to eliminate both gasoline and BTEX form our list of analytes going forward? Please let me if you have any questions or concerns. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Monday, May 7, 2018 1:06 PM
**To:** Ma, Li (PLIA)
**Cc:** Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); Rory Galloway; Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon; 'Ken Lederman'
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030
**Attachments:** 01-1140-E-RT-All-Final.pdf

Dr. Ma,

First of all welcome! Kristin speaks highly of you and we look forward to working with you. Second, I have attached our report which documents the additional well installation and sampling work we have conducted on the Auburn Site. Please let me know if you have any questions, we look forward to your review and response. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Friday, April 13, 2018 3:23 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Subject:** New PLIA Site Manager

Hi Karis,

I hope you are well. PLIA has recently welcomed Dr. Li Ma (cc'd) to our technical team. We are happy to have Li because, in addition to being a nice person to work with, he has over 20 years of experience as a hydrogeologist. He will be taking over as the Site Manager for the Auburn/Volkswagon Site.

Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Friday, February 16, 2018 12:53 PM
**To:** Evered, Kristin (PLIA)
**Cc:** Madakor, Nnamdi (PLIA); Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Rory Galloway; 'Greg Rairdon'; 'ken.lederman@foster.com'
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030
**Attachments:** 01-1140-E-WP-All.pdf

Kristin,

Thanks for accepting us into the program. I have attached an updated workplan which we believe address the data gaps discussed in our January 31, 2018 meeting. The acceptance letter also requested that the site mapping depict the two property boundaries as "parcel A and parcel B". We decided to identify them by site address on the mapping as well as throughout the text in hopes of eliminating any confusion. Please let me know your thoughts on this matter or any other questions you may have. We look forward to hearing from you and thanks again.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Tuesday, February 6, 2018 9:45 AM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>
**Subject:** Auburn Volkswagon/Subaru; PTAP PNW030

Hi Karis,

Please find attached the PTAP acceptance letter for the Auburn Volkswagon/Subaru site . A hard copy of the acceptance letter has been mailed to you.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Kaiser, Caleb (PLIA)
**Sent:** Tuesday, April 16, 2019 4:17 PM
**To:** Karis Vandehey
**Cc:** Ma, Li (PLIA); Trujillo, Shanyese (PLIA); Evered, Kristin (PLIA)
**Subject:** Auburn Way Properties PNW030 Clarification

Hi Karis,

We are currently finalizing our NFA opinion letter for the Auburn Way Properties site and it does not appear that EIM data has been uploaded yet. If this is a mistake, please provide confirmation of the successful upload. If you haven't already uploaded to EIM, please do so at your earliest convenience.

Thank you,

*Caleb Kaiser M.S. | Environmental Specialist | Pollution Liability Insurance Agency*
*caleb.kaiser@plia.wa.gov | (360) 407-0528 | PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov | @PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Monday, January 29, 2018 11:19 AM
**To:** Evered, Kristin (PLIA)
**Cc:** Rory Galloway
**Subject:** Intake Meetings 1/31: 3025 and 3109 Auburn Way North

Hi Kristin,

I was able to touch base with Donna last week and following our conversation she was going to follow up with you on our Auburn Way N. properties. I'm just checking to find out if there is any other information you may need from us prior to the intake meeting. It is my understanding that we need to bring 11×17 site maps printed in color, as well as the service fee payment of $7,500 (per property) to the intake meeting. Is there anything else we should bring to leave with you (report hardcopies)? Please feel free to contact me with any questions or concerns. Thanks!

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Thursday, January 18, 2018 4:02 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Subject:** FSID

Hi Karis,

I contacted Ecology's Remediation Coordinator and he said that the 3025 site does need a FSID for a property specific letter. He suggested that you contact Donna Musa at ECY's NW regional office at 425-649-7136.

Thanks,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Evered, Kristin (PLIA)
**Sent:** Friday, April 13, 2018 3:23 PM
**To:** Karis Vandehey
**Cc:** Ma, Li (PLIA)
**Subject:** New PLIA Site Manager

Hi Karis,

I hope you are well. PLIA has recently welcomed Dr. Li Ma (cc'd) to our technical team. We are happy to have Li because, in addition to being a nice person to work with, he has over 20 years of experience as a hydrogeologist. He will be taking over as the Site Manager for the Auburn/Volkswagon Site.

Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** PLIA <pliamail@plia.wa.gov>
**Sent:** Monday, January 8, 2018 4:37 PM
**To:** PLIAMail (PLIA)
**Subject:** New submission from PTAP Application Form - ApproveMe eSignature

### A. Funding Factors

**Is the site funded by a PLIA Loan or Grant and/or insured by either Colony Group, Crum and Forster Specialty Insurance Company or Great American E&S Insurance Company?**

No

**If "No" or "Unknown" to the above, is the site remediation funded by The Department of Ecology?**

No

### B. Site Type Factors

**Is surface water or sediment contamination present?**

No

**If "No" or "Unknown" to the above, are co-mingled, non-petroleum contaminants present at the site?**

No, or only incidental non-petroleum contaminants

### C. Location Factors

**Please select all that apply. The site is within the bounds of or impacts the following:**

- None of the above apply.

### D. Legal Factors

**Please select all that apply. The following legal factors apply to the site:**

- None of the above.

### A. Customer Information.

**Name**

Mike Scarff

**Title**

Mr.

**Company Name**

M&M Ventures, LLC.

**Address**

33 Knights Lane
Friday Harbor, WA 98250
USAB
Map It

**Phone**

(206) 819-2850

**Email**

mscarff@MandMVentures.net

**What is the Customer's relationship to the Site? (Please check all that apply)**

- Past property owner

## B. Project Manager Information

**Name**

Karis Vandehey

**Title**

Ms.

**Company Name**

G-Logics

**Address**

40 2nd Ave. SE
Issaquah, WA 98027
USAB
Map It

**Phone**

(425) 391-6874

**Fax**

(425) 313-3074

**Email**

KarisV@g-logics.com

## C. Property Owner Information

**Name**

Greg Rairdon

**Title**

Mr.

**Company Name**

Rairdon Auto Group

**Address**

13009 NE 126th Pl
Kirkland, WA 98034
USAB
Map It

**Phone**

(425) 821-1777

**Email**

grairdon@rairdon.com

**What type of entity is the property owner?**

Private

## A. Name of the Site

**Name**

Auburn Subaru

## B. Location of Property where the Release(s) Occurred (Source Property and/or Property Where Cleanup Will Occur)

**Do you know on which property the release(s) occurred?**

Yes

**Address**

3025 Auburn Way N
Auburn, WA 98002
USAB
Map It

**Latitude**

| Degrees | Minutes | Seconds |
|---|---|---|
| N 47° | 20' | 5.4528" |

**Longitude**

| Degrees | Minutes | Seconds |
|---|---|---|
| W 122° | 13' | 23.9196" |

**Tax Parcel #(s)**

000400-0039

**Township**

21N

**Range**

5E

**Section**

6

**Quarter-Quarter**

NE of the SW

**Does the release(s) affect any properties adjacent to the source property?**

Yes

**If "Yes" to the above, please enter the county and tax parcel information of properties affected by the release.**

| County | Tax Parcel #(s) |
|---|---|
| King | 000400-0041 |

## C. Identification of Public Right-of-Ways Affected by the Release(s)

**Does the release(s) affect any public right-of-ways (for example, streets)**

No

## D. Hazardous Substances and Affected Media

| Hazardous Substance | Soil | Ground Water | Air |
|---|---|---|---|
| Diesel | Confirmed, Below Cleanup Level | Confirmed, Above Cleanup Level | Not Suspected |
| Heavy Oil | Confirmed, Above Cleanup Level | Confirmed, Above Cleanup Level | Not Suspected |
| Gasoline | Confirmed, Below Cleanup Level | Confirmed, Not Present | Not Suspected |
| Arsenic | Confirmed, Below Cleanup Level | Confirmed, Above Cleanup Level | Not Suspected |

## E. Indoor Air

**Are contaminant odors present in any buildings, manholes, or other confined spaces?**

No

## A. Scope of Remedial Actions

**Briefly describe your proposed remedial actions and clean up goals at the site**

In July 2017, G-Logics conduct soil and groundwater sampling at the property as documented in G-Logics Additional Soil and Groundwater Sampling report dated August 13, 2017. Petroleum contaminants were detected in the area of a former Used-Oil UST.

In November 2017, G-Logics documented the removal of petroleum-contaminated soil and water at this property and the adjacent property to the north (3109 Auburn Way North). This documentation can be found in G-Logics Environmental Media Management Report dated December 4, 2017.

G-Logics has prepared a workplan for additional well installation and groundwater sampling at this property to verify the successful removal of petroleum contaminants on the northern portion of the subject property, as well as to close potential data gaps between the excavation area and the buildings to the south. Ultimately the goal is to obtain an NFA opinion from PLIA.

## A. Documentation of Remedial Actions

**Please list all known remedial action plans or reports produced for the site in the table below, and note whether or not they are being uploaded along with this form**

| Title | Author | Date | Submitted to PLIA (Yes/No)? |
|---|---|---|---|
| Additional Soil and Groundwater Sampling | G-Logics | August 13, 2017 | Yes |
| Environmental Media Management Report | G-Logics | December 4, 2017 | Yes |
| Workplan to Conduct Well Installation and Groundwater Sampling | G-Logics | January 2, 2018 | Yes |
| Terrestrial Ecological Evaluation Form | G-Logis | January 8, 2018 | Yes |

**Name**

Karis Vandehey

**Submitter/Signatory Email**

karisv@g-logics.com

**What is the signatory's involvement at the site? Please check all that apply.**

- Consultant

**Schlesser, Schellie (PLIA)**

**From:** Fot, Erica (ECY)
**Sent:** Friday, May 3, 2019 10:06 AM
**To:** Halli Pringle
**Cc:** PLIAMail (PLIA)
**Subject:** PLIA EIM Submission Email-Study ID FS57361549- Auburn Volkswagen

Recently submitted files have been successfully loaded into EIM for the following study.

FS ID: 57361549

Study ID: FS57361549

Study Name: Auburn Volkswagen

Locations: 55

Results: 1110

You can view the data by using the following link:
https://apps.ecology.wa.gov/eim/search/Map/Map.aspx?MapType=EIM&StudyUserIdSearchType=Equals&StudyUserIds=FS57361549&MapLocationExtent=-13605856.0604075%2c5996929.65283154%2c-13605812.645791%2c5996982.21561739&CustomMap=y&BBox=-13606133,5996806,-13605535,5997105&Layers=0,1,2,3,4,5,6,7,8,9&Opacity=0.95&Basemap=bmHybrid&Options=v,h,h,h,h,h,h

Both the PLIA manager and the submitter should verify study, result, and location information.

Erica Fot | *EIM Data Coordinator- Toxics Cleanup Program*
Washington Department of Ecology-HQ
Environmental Assessment Program
PO Box 47710
Olympia, WA 98504-7710
Efot461@ecy.wa.gov | Phone: 360-407-6692

## Schlesser, Schellie (PLIA)

**From:** Matt Welch <mwelch@auburnvw.com>
**Sent:** Friday, March 9, 2018 4:11 PM
**To:** Evered, Kristin (PLIA)
**Cc:** Karis Vandehey
**Subject:** Project #PNW030

Hello Kristin and Karis!

Got your letter accepting the PTAP Application for Facility Site ID 57361549.
In the cc'd at the bottom just wanted to let you know that my name is Welch not the Welsh that is listed.
No biggie, but thought I'd let you know for future communications.

Have a wonderful weekend!

Best regards,

**Matthew Welch**
**General Manager & C.R.O.**
**Auburn Volkswagen**
**253-833-4940 ext 7233**
**mwelch@auburnvw.com**

## Schlesser, Schellie (PLIA)

**From:** no-reply@timetrade.com
**Sent:** Monday, January 8, 2018 4:55 PM
**To:** PLIAMail (PLIA)
**Subject:** PTAP Intake Meeting Appointment Confirmation
**Attachments:** TTAppointment.ics


# Appointment Confirmation

| | |
|---|---|
| **Invitee:** | Karis Vandehey ( karisv@g-logics.com ) |
| **Phone:** | 425-761-9540 |
| **Company:** | G-Logics |
| **Activity:** | PTAP Intake Meeting |
| **Date:** | Wednesday, January 31, 2018 |
| **Time:** | 12:00pm PST (45 minutes) |
| **Location::** | 300 Desmond Dr. SE Lacey, WA 98503 |
| **Confirmation #:** | 9293512 |
| **Question:** | The FSID# or the address of the property/site for which you are applying to PTAP is: |
| **Response:** | 3025 Auburn Way N |
| **Message from Karis Vandehey:** | This site is adjacent to 3109 Auburn Way N which G-logics has also submitted an application for. The two site shared the cleanup activity. |

**Powered by TimeTrade**

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Tuesday, June 5, 2018 12:32 PM
**To:** Ma, Li (PLIA)
**Cc:** Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); Rory Galloway; Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon; 'Ken Lederman'; Trujillo, Shanyese (PLIA)
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Li,

Thank you for your quick response on our project. Upon review of your Further Action Letter dated May 31, 2018, we would like to further discuss PLIA's concerns regarding vapor intrusion, arsenic in groundwater, and reporting expectations. In order for us to address PLIA's concerns, would it be possible to schedule a meeting at your office next week to discuss? Rory Galloway will be in Seattle at that time and would like to attend. It would be greatly appreciated if we could meet with you sometime Monday-Thursday (11th-14th). Please let us know what would work best for you. Thanks!

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Ma, Li (PLIA) [mailto:li.ma@plia.wa.gov]
**Sent:** Thursday, May 31, 2018 4:22 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>; Trujillo, Shanyese (PLIA) <shanyese.trujillo@plia.wa.gov>
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Attached please find a copy of the Further Action Letter for Auburn Way Properties Site. Please feel free to contact me if there is any question.

Thanks,
Li

**From:** Ma, Li (PLIA)
**Sent:** Tuesday, May 8, 2018 8:48 AM
**To:** 'Karis Vandehey' <KarisV@g-logics.com>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for the welcome and I am looking forward to working with you on your projects. We have received your report on Auburn Site. PLIA will review your report asap and will provide response on your report within 45 days, if not sooner.

Thank you,
Li

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Monday, May 7, 2018 1:06 PM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030

Dr. Ma,

First of all welcome! Kristin speaks highly of you and we look forward to working with you. Second, I have attached our report which documents the additional well installation and sampling work we have conducted on the Auburn Site. Please let me know if you have any questions, we look forward to your review and response. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Friday, April 13, 2018 3:23 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Subject:** New PLIA Site Manager

Hi Karis,

I hope you are well. PLIA has recently welcomed Dr. Li Ma (cc'd) to our technical team. We are happy to have Li because, in addition to being a nice person to work with, he has over 20 years of experience as a hydrogeologist. He will be taking over as the Site Manager for the Auburn/Volkswagon Site.

Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Ma, Li (PLIA)
**Sent:** Tuesday, May 8, 2018 8:49 AM
**To:** Karis Vandehey
**Cc:** Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); Rory Galloway; Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon; 'Ken Lederman'
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for the welcome and I am looking forward to working with you on your projects. We have received your report on Auburn Site. PLIA will review your report asap and will provide response on your report within 45 days, if not sooner.

Thank you,
Li

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

---

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Monday, May 7, 2018 1:06 PM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030

Dr. Ma,

First of all welcome! Kristin speaks highly of you and we look forward to working with you. Second, I have attached our report which documents the additional well installation and sampling work we have conducted on the Auburn Site. Please let me know if you have any questions, we look forward to your review and response. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Friday, April 13, 2018 3:23 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Subject:** New PLIA Site Manager

Hi Karis,

I hope you are well. PLIA has recently welcomed Dr. Li Ma (cc'd) to our technical team. We are happy to have Li because, in addition to being a nice person to work with, he has over 20 years of experience as a hydrogeologist. He will be taking over as the Site Manager for the Auburn/Volkswagon Site.

Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Tuesday, February 5, 2019 10:59 AM
**To:** Ma, Li (PLIA)
**Cc:** Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon (grairdon@rairdon.com); 'Ken Lederman' (ken.lederman@foster.com); Rory Galloway; Evered, Kristin (PLIA)
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Thanks!

Regards,

Karis Vandehey, LG, WSLD | Environmental Geologist
Cell: 425-761-9540 | KarisV@G-Logics.com

G-Logics, Inc. | 40 2nd Avenue SE | Issaquah, WA 98027-3452
Office: 425-391-6874 | Fax: 425-313-3074 | www.G-Logics.com

-------- Original message --------
From: "Ma, Li (PLIA)" <li.ma@plia.wa.gov>
Date: 2/5/19 10:50 AM (GMT-08:00)
To: Karis Vandehey <KarisV@g-logics.com>
Cc: "Mike Scarff (mscarff@mandmventures.net)" <mscarff@mandmventures.net>, "Roger Vermazen (rjvermazen@yahoo.com)" <rjvermazen@yahoo.com>, "Greg Rairdon (grairdon@rairdon.com)" <grairdon@rairdon.com>, "'Ken Lederman' (ken.lederman@foster.com)" <ken.lederman@foster.com>, Rory Galloway <RoryG@g-logics.com>, "Evered, Kristin (PLIA)" <kristin.evered@plia.wa.gov>
Subject: RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you submitting the Groundwater-Sampling Report. We will review the report soon.

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*



---

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Tuesday, February 5, 2019 9:44 AM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Cc:** Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon (grairdon@rairdon.com) <grairdon@rairdon.com>; 'Ken Lederman' (ken.lederman@foster.com) <ken.lederman@foster.com>; Rory Galloway <RoryG@g-logics.com>;

Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030

Hi Li,

I have attached a copy of our *Groundwater-Sampling Report, December 2018.* This report represents the culmination of four quarters of groundwater sampling. With the information gathered over the past year, we would like to request an NFA for the Site. Once you have read our report and reviewed the information, if you disagree with our request, please let me know prior to issuing an opinion. Also if you feel an NFA is not possible at this time, we then would like to request a meeting to discuss our options for the Site. Please let me know if you have any questions or concerns. Thanks in advance for your assistance.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

## Schlesser, Schellie (PLIA)

**From:** Kaiser, Caleb (PLIA)
**Sent:** Wednesday, March 27, 2019 8:31 AM
**To:** Karis Vandehey
**Cc:** Trujillo, Shanyese (PLIA); Rory Galloway; Ma, Li (PLIA); Evered, Kristin (PLIA)
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for sending the Ecology report. We will review it and get back to you as soon as possible regarding our final opinion.

Please let me know if you have any other questions.

*Caleb Kaiser M.S. | Environmental Specialist | Pollution Liability Insurance Agency*
*caleb.kaiser@plia.wa.gov | (360) 407-0528 | PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov | @PLIAWA*



---

**From:** Karis Vandehey [mailto:KarisV@g-logics.com]
**Sent:** Monday, March 25, 2019 4:25 PM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>; Kaiser, Caleb (PLIA) <caleb.kaiser@plia.wa.gov>
**Cc:** Trujillo, Shanyese (PLIA) <shanyese.trujillo@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Li,

I have attached a copy of the draft Ecology document per your request. Thanks again.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Ma, Li (PLIA) [mailto:li.ma@plia.wa.gov]
**Sent:** Thursday, March 21, 2019 1:11 PM
**To:** Karis Vandehey <KarisV@g-logics.com>; Kaiser, Caleb (PLIA) <caleb.kaiser@plia.wa.gov>
**Cc:** Trujillo, Shanyese (PLIA) <shanyese.trujillo@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for your reply. Could you please send us a copy of the draft report (*Natural Background Groundwater Arsenic Concentration in Washington State, May 2018)* that you referenced? PLIA will likely accept the draft report. For future correspondences, please continue to include Caleb, Shanyese, and me as your points of contact. Although I am the manager for this site, Caleb is working with me. Our NFA determination is pending upon the review of the requested arsenic background information.

Thank you,

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Monday, May 6, 2019 12:21 PM
**To:** Kaiser, Caleb (PLIA)
**Cc:** Ma, Li (PLIA); Trujillo, Shanyese (PLIA); Evered, Kristin (PLIA); Rory Galloway
**Subject:** RE: Auburn Way Properties PNW030 Clarification

Hi Caleb,

The EIM data, for the Auburn Way properties, has been uploaded and should be available to view by following the link below. Please let me know if you have any questions. Thanks!

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

Karis,

Can you please forward this on to the PLIA manager for Auburn Volkswagen? Thank you and let me know if you have any questions.

**Regards,**

**Halli Pringle** | Project Environmental Scientist
*Cell*: 253-405-4366 | HalliP@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

**From:** Fot, Erica (ECY) [mailto:efot461@ECY.WA.GOV]
**Sent:** Friday, May 03, 2019 10:06 AM
**To:** Halli Pringle
**Cc:** PLIAMail (PLIA)
**Subject:** PLIA EIM Submission Email-Study ID FS57361549- Auburn Volkswagen

Recently submitted files have been successfully loaded into EIM for the following study.

FS ID: 57361549

Study ID: FS57361549

Study Name: Auburn Volkswagen

Locations: 55

Results: 1110

You can view the data by using the following link:
https://apps.ecology.wa.gov/eim/search/Map/Map.aspx?MapType=EIM&StudyUserIdSearchType=Equals&StudyUserIds=FS57361549&MapLocationExtent=-13605856.0604075%2c5996929.65283154%2c-13605812.645791%2c5996982.21561739&CustomMap=y&BBox=-13606133,5996806,-13605535,5997105&Layers=0,1,2,3,4,5,6,7,8,9&Opacity=0.95&Basemap=bmHybrid&Options=v,h,h,h,h,h,h

Both the PLIA manager and the submitter should verify study, result, and location information.

Erica Fot | *EIM Data Coordinator- Toxics Cleanup Program*
Washington Department of Ecology-HQ
Environmental Assessment Program
PO Box 47710
Olympia, WA 98504-7710
Efot461@ecy.wa.gov | Phone: 360-407-6692



**From:** Kaiser, Caleb (PLIA) [mailto:caleb.kaiser@plia.wa.gov]
**Sent:** Tuesday, April 16, 2019 4:17 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Ma, Li (PLIA) <li.ma@plia.wa.gov>; Trujillo, Shanyese (PLIA) <shanyese.trujillo@plia.wa.gov>; Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>
**Subject:** Auburn Way Properties PNW030 Clarification

Hi Karis,

We are currently finalizing our NFA opinion letter for the Auburn Way Properties site and it does not appear that EIM data has been uploaded yet. If this is a mistake, please provide confirmation of the successful upload. If you haven't already uploaded to EIM, please do so at your earliest convenience.

Thank you,

*Caleb Kaiser M.S. | Environmental Specialist | Pollution Liability Insurance Agency*
*caleb.kaiser@plia.wa.gov | (360) 407-0528 | PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov | @PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Thursday, January 18, 2018 4:46 PM
**To:** Evered, Kristin (PLIA)
**Cc:** Rory Galloway
**Subject:** RE: FSID

Hi Kristin,

Thanks for the contact information. I have called and left a message for Donna. Sounds like she is out of the office today, so hopefully I will hear back from her tomorrow or Monday. If you have any other questions regarding these two properties, please feel free to call my cell phone or e-mail me. Thanks again.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Thursday, January 18, 2018 4:02 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Subject:** FSID

Hi Karis,

I contacted Ecology's Remediation Coordinator and he said that the 3025 site does need a FSID for a property specific letter. He suggested that you contact Donna Musa at ECY's NW regional office at 425-649-7136.

Thanks,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Willoughby, Mark (ECY)
**Sent:** Monday, January 29, 2018 8:53 AM
**To:** Evered, Kristin (PLIA)
**Subject:** RE: Question

Hey Kristin, the site without the FSID would not need a CSID. The 3109 Auburn address was the source of the contamination, and the other address is part of the contaminated site. The NFA letter can specify that the 3025 Auburn address is covered by the NFA.

The North West Regional office will follow up with the consultant from Sound Earth Strategies. Hope this answers the questions.

---

**From:** Evered, Kristin (PLIA)
**Sent:** Monday, January 29, 2018 8:15 AM
**To:** Willoughby, Mark (ECY) <marw461@ECY.WA.GOV>
**Subject:** RE: Question

Hi Mark,

1. Thank for the clearing up the FSID question. The consultant did express that both clients want a property specific letter. In that case, would the site without the FSID (3025 N Auburn Way) need a CSID?
2. If you are able to issue the NFA at the II stage then it doesn't make sense for us to duplicate the effort. I will call Rob and let him know that he can receive the NFA from Ecology. Who should he follow-up with?

Thanks,

Kristin

---

**From:** Willoughby, Mark (ECY)
**Sent:** Thursday, January 25, 2018 4:52 PM
**To:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>
**Subject:** Question

Hello Kristin, there are two issues that came up today that I need to discuss.

1. Last week you called about an applicant that wanted to clean up two properties in Auburn through PTAP. Both properties were impacted by the same release, and I said that they should have two different FSIDs. I was wrong. Since both sites are being impacted by the same release, and all the contamination is being cleaned up, only one FSID is needed. Sorry for any confusion this may have caused on your end.

2. Rob Roberts of Sound Earth Strategies contacted Ecology to report an ERTS. The site had a hydraulic press that leaked through a foundation into the soil, and a heating oil UST that leaked. All impacted soil was removed during redevelopment. Groundwater was deeper than the impacted soil and GW samples were clean. Rob is sending the report in for the site. An Initial Investigation (II) is done after we receive an ERTS. This site may

receive an NFA during this process. Rob has an intake meeting scheduled with PLIA on January 31, 2018. Since all the work appears to be done, and an NFA can be issued in our II stage, should he still do an intake meeting? Please let me know what is decided.

Thanks,
Mark.

## Schlesser, Schellie (PLIA)

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Friday, March 2, 2018 9:24 AM
**To:** Evered, Kristin (PLIA)
**Cc:** Rory Galloway; Madakor, Nnamdi (PLIA); Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); 'Greg Rairdon'; 'ken.lederman@foster.com'
**Subject:** RE: Work Plan Approval

Kristin,

Thank you. We have scheduled the drilling for the week of March 12th. I will be in touch when we have more information. Thanks again.

Regards,

Karis Vandehey, LG, WSLD | Environmental Geologist
Cell: 425-761-9540 | KarisV@G-Logics.com

G-Logics, Inc. | 40 2nd Avenue SE | Issaquah, WA 98027-3452
Office: 425-391-6874 | Fax: 425-313-3074 | www.G-Logics.com

-------- Original message --------
From: "Evered, Kristin (PLIA)" <kristin.evered@plia.wa.gov>
Date: 3/2/18 9:15 AM (GMT-08:00)
To: Karis Vandehey <KarisV@g-logics.com>
Cc: Rory Galloway <RoryG@g-logics.com>, "Madakor, Nnamdi (PLIA)" <nnamdi.madakor@plia.wa.gov>, "Mike Scarff (mscarff@mandmventures.net)" <mscarff@mandmventures.net>, "Roger Vermazen (rjvermazen@yahoo.com)" <rjvermazen@yahoo.com>, 'Greg Rairdon' <grairdon@rairdon.com>, "'ken.lederman@foster.com'" <ken.lederman@foster.com>
Subject: RE: Work Plan Approval

Hi Karis,

The proposed boring location indicated on the revised Figure 2 is acceptable.

Thank you,

Kristin

---

**From:** Karis Vandehey [mailto:KarisV@g-logics.com]
**Sent:** Thursday, March 1, 2018 3:44 PM
**To:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>
**Cc:** Rory Galloway <RoryG@g-logics.com>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; 'Greg Rairdon' <grairdon@rairdon.com>; 'ken.lederman@foster.com' <ken.lederman@foster.com>
**Subject:** RE: Work Plan Approval

Kristin,

Per our phone conversation on Tuesday, I have attached a revised Figure 2 which includes an additional soil boring location. At the time of drilling, I will locate the boring as close to our point of refusal as safely possible without compromising the storm drain. Please let me know if this location is acceptable.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Monday, February 26, 2018 2:50 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Rory Galloway <RoryG@g-logics.com>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; 'Greg Rairdon' <grairdon@rairdon.com>; 'ken.lederman@foster.com' <ken.lederman@foster.com>
**Subject:** RE: Work Plan Approval

Hi Karis,

Thank you for the further explanation of the area east of GLB-7 and your willingness to add the supplemental boring. The extent of the plume east of GLB-7 needs to be refined between the boring refusal and GLB-9. If utilities are an issue closer to the boring refusal, please provide a utility overlay as rationale for sample location.

Please let us know if you have any additional questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

---

**From:** Karis Vandehey [mailto:KarisV@g-logics.com]
**Sent:** Thursday, February 22, 2018 2:02 PM
**To:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>
**Cc:** Rory Galloway <RoryG@g-logics.com>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; 'Greg Rairdon' <grairdon@rairdon.com>; 'ken.lederman@foster.com' <ken.lederman@foster.com>
**Subject:** RE: Work Plan Approval

Hi Kristin,

Thank you so much for your quick response and approval of our Updated Workplan.

In your approval letter, you stated that there needs to be a soil boring to the east of GLB-7 to bound the plume. We just wanted to confirm the necessity for this additional soil boring as we previously had completed two borings to the east of GLB-7. Specifically, during our July 2017 sampling event, we attempted a boring approximately 10 feet east of GLB-7, but hit refusal at a depth of approximately three feet (believed to be the mapped storm drain line). This location is marked on Figure 2 by an open circle just south of the lamp post. We then stepped out and drilled GLB-9, which is approximately 10 feet east and 8 feet south of GLB-7. At the time of drilling, there were no obvious signs of contamination observed and the soil sample analyzed contained no detectable concentrations of petroleum hydrocarbons. We also drilled GLB-6 approximately 25 feet further east and 7 feet south of GLB-7, again with no detectable concentrations of petroleum hydrocarbons in soil. We did have detectable concentrations of oil in the grab groundwater sample collected from GLB-6, however it was below the cleanup level. Both of these borings indicate that the contamination has been defined in this area, well inside the eastern-property boundary. However, if after reading this explanation you believe that these two borings are not sufficient, we can add one additional soil boring to our scope of work.

Please let me know your thoughts and thanks again.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Thursday, February 22, 2018 10:44 AM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Rory Galloway <RoryG@g-logics.com>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>
**Subject:** Work Plan Approval

Hi Karis,

Please find attached PLIA's approval for the Auburn Volkswagon/Subaru Updated Work Plan that was submitted on February 16, 2018 . Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance Agency*
*kristin.evered@plia.wa.gov* | *(360) 407-0523*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

## Schlesser, Schellie (PLIA)

**From:** Ma, Li (PLIA)
**Sent:** Tuesday, August 28, 2018 2:16 PM
**To:** 'Karis Vandehey'
**Cc:** Mike Scarff (mscarff@mandmventures.net); Roger Vermazen (rjvermazen@yahoo.com); Greg Rairdon (grairdon@rairdon.com); 'Ken Lederman' (ken.lederman@foster.com); Rory Galloway; Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); Trujillo, Shanyese (PLIA)
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for submitting the June 2018 groundwater sampling report. Based on the ND results for the last 2 quarters, PLIA agrees that gasoline and BTEX can be eliminated from the future analysis.

Thank you,
Li

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524* | *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*



---

**From:** Karis Vandehey <KarisV@g-logics.com>
**Sent:** Friday, August 24, 2018 9:15 AM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Cc:** Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon (grairdon@rairdon.com) <grairdon@rairdon.com>; 'Ken Lederman' (ken.lederman@foster.com) <ken.lederman@foster.com>; Rory Galloway <RoryG@g-logics.com>; Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Trujillo, Shanyese (PLIA) <shanyese.trujillo@plia.wa.gov>
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030

Hi Li,

Please find our June 2018 groundwater sampling report attached for your review. During this sampling event and all previous groundwater sampling events, gasoline and BTEX have never been detected. Considering this information (two quarters with non-detectable concentrations), would it now be possible to eliminate both gasoline and BTEX form our list of analytes going forward? Please let me if you have any questions or concerns. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452

*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com

***Please consider the environment before printing this e-mail and/or attachments.***

| | |
|---|---|
| **From:** | Ma, Li (PLIA) |
| **To:** | "Karis Vandehey" |
| **Cc:** | Evered, Kristin (PLIA); Madakor, Nnamdi (PLIA); "Rory Galloway"; "Mike Scarff (mscarff@mandmventures.net)"; "Roger Vermazen (rjvermazen@yahoo.com)"; "Greg Rairdon"; "Ken Lederman"; Trujillo, Shanyese (PLIA) |
| **Subject:** | RE: Auburn Volkswagen/Subaru; PTAP PNW030 |
| **Date:** | Thursday, May 31, 2018 4:21:00 PM |
| **Attachments:** | FA_letter_05312018_Auburn_PNW030.pdf<br>image001.png<br>image003.png<br>image004.png |

Hi Karis,

Attached please find a copy of the Further Action Letter for Auburn Way Properties Site. Please feel free to contact me if there is any question.

Thanks,
Li

---

**From:** Ma, Li (PLIA)
**Sent:** Tuesday, May 8, 2018 8:48 AM
**To:** 'Karis Vandehey' <KarisV@g-logics.com>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>
**Subject:** RE: Auburn Volkswagen/Subaru; PTAP PNW030

Hi Karis,

Thank you for the welcome and I am looking forward to working with you on your projects. We have received your report on Auburn Site. PLIA will review your report asap and will provide response on your report within 45 days, if not sooner.

Thank you,
Li

Li Ma, PHD, LHG, CGWP | *Hydrogeologist* | *Pollution Liability Insurance Agency*
li.ma@plia.wa.gov | *(360) 407-0524*| *PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov* | *@PLIAWA*

---

**From:** Karis Vandehey <KarisV@g-logics.com>

**Sent:** Monday, May 7, 2018 1:06 PM
**To:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Cc:** Evered, Kristin (PLIA) <kristin.evered@plia.wa.gov>; Madakor, Nnamdi (PLIA) <nnamdi.madakor@plia.wa.gov>; Rory Galloway <RoryG@g-logics.com>; Mike Scarff (mscarff@mandmventures.net) <mscarff@mandmventures.net>; Roger Vermazen (rjvermazen@yahoo.com) <rjvermazen@yahoo.com>; Greg Rairdon <grairdon@rairdon.com>; 'Ken Lederman' <ken.lederman@foster.com>
**Subject:** Auburn Volkswagen/Subaru; PTAP PNW030

Dr. Ma,

First of all welcome! Kristin speaks highly of you and we look forward to working with you. Second, I have attached our report which documents the additional well installation and sampling work we have conducted on the Auburn Site. Please let me know if you have any questions, we look forward to your review and response. Thanks.

**Regards,**

**Karis Vandehey,** LG, WSLD | Environmental Geologist
*Cell*: 425-761-9540 | KarisV@G-Logics.com

**G-Logics, Inc.** | 40 2nd Avenue SE | Issaquah, WA 98027-3452
*Office*: 425-391-6874 | *Fax*: 425-313-3074 | www.G-Logics.com



---

**From:** Evered, Kristin (PLIA) [mailto:kristin.evered@plia.wa.gov]
**Sent:** Friday, April 13, 2018 3:23 PM
**To:** Karis Vandehey <KarisV@g-logics.com>
**Cc:** Ma, Li (PLIA) <li.ma@plia.wa.gov>
**Subject:** New PLIA Site Manager

Hi Karis,

I hope you are well. PLIA has recently welcomed Dr. Li Ma (cc'd) to our technical team. We are happy to have Li because, in addition to being a nice person to work with, he has over 20 years of experience as a hydrogeologist. He will be taking over as the Site Manager for the Auburn/Volkswagon Site.

Please let me know if you have any questions.

Best,

Kristin Evered, M.S. | *Technical Assistance Program Coordinator* | *Pollution Liability Insurance*

*Agency*
*kristin.evered@plia.wa.gov | (360) 407-0523| PO Box 40930, Olympia, WA 98504*
*www.plia.wa.gov | @PLIAWA*