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January 2, 2018 G-Logics File Number 01-1140-D

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

# SUBJECT: Workplan to Conduct Well Installation and Groundwater Sampling By Using Hollow-Stem Auger Equipment Auburn Way Property 3025 Auburn Way N Auburn, WA 98002

Dear Mr. Scarff:

G-Logics Inc. is pleased to present this workplan to install groundwater monitoring wells at the subject property. We understand that M&M Ventures, LLC (M&M Ventures) requires an additional review of possible subsurface contamination following the removal of petroleum contaminated soils on the subject property (Figure 1). We understand that M&M Ventures intends to conduct this work 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. We also believe this work will help support the request for a No Further Action (NFA) Opinion from the State of Washington's Pollution Liability Insurance Agency (PLIA).

G-Logics workplan is based on our recent site-exploration, remediation work completed at the subject property, and our experience with similar projects. G-Logics work is documented in our *Additional Soil and Groundwater Sampling* report dated August 13, 2017, and *Environmental Media Management Report* dated December 4, 2017. This

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workplan was also developed after discussion with M&M Ventures (recent property owner) and Rairdon Auto Group (Rairdon, current property owner).

If a portion of this workplan does not meet the needs of M&M Ventures 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

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monitoring well-sample (see G-Logics *Additional Soil and Groundwater Sampling* report dated August 13, 2017 for more information).

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 petroleumcontaminated soils above MTCA Method A cleanup levels were successfully removed from this area. After the remedial excavation had been completed, 200 pounds of an oxygenrelease 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).

#### **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 and encouraged by Ecology.

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).

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#### **Objective and Scope of Services**

Based on the groundwater findings presented in our August 13, 2017 report, G-Logics recommends the installation of three additional groundwater-monitoring wells on the subject property. This work is intended to further evaluate the presence of petroleum contaminants and arsenic in groundwater at the property, 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. File a PTAP application with PLIA and attend an Intake Meeting.
- 2. Review the location of subsurface-utilities.
- 3. Collect and analyze soil samples from up to three borings, completing them as groundwater-monitoring wells.
- 4. Conduct an elevation survey of the existing and new monitoring wells.
- 5. Measure groundwater levels in the existing and new monitoring wells.
- 6. Collect groundwater samples from the existing and new monitoring wells.
- 7. Summarize existing and collected data from this exploration.
- 8. Following the findings from this exploration, G-Logics will request an opinion from PLIA.

These tasks are discussed below.

#### **File PTAP Application**

Starting January 2, 2018 PLIA will accept applications for qualifying sites. G-Logics will file the PTAP application. PLIA charges a onetime service fee for their services. Payment will be due before PLIA will provide technical assistance or opinions. Once the application has been accepted, an Intake Meeting will be scheduled with the Site Manager (PLIA) to review the application and "develop a feasible timeline for closure". PLIA's stated goal is to issue a written opinion letter within 45 days of the Intake Meeting.

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#### **Underground Utility Clearance**

Before conducting the site exploration, G-Logics will contact public and private utilitylocating 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 three 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.

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# **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 from one existing and three new wells. Water level measurements will be referenced to the top of the well casing. The static 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 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 site diagrams showing exploration locations, as well as current and identified former 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 will then present our findings and recommendations to PLIA which, if applicable, will include a request for an NFA Opinion.

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# **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 one twelve-hour day.
- Three soil borings will be drilled and complete as groundwater-monitoring wells.
- Groundwater samples will be collect from the existing and new monitoring wells.
- Monitoring well-elevation survey, groundwater-depth measurement, and groundwater-sampling activities will be completed in one additional twelve-hour day.
- G-Logics will use a laser level to establish elevation control for the existing and new 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 <u>not included</u> 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 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 two meetings with PLIA, an Intake Meeting, and a meeting to present results of this exploration.
- If applicable, G-Logics will request an NFA Opinion from PLIA.

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### **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
Project Management (Communications, Setup, and Coordination)	\$3,000
Field Labor (two, 12-hour days)	\$2,400
Field Equipment and Mileage	\$700
Site Visit (Mark Boring Locations)	\$400
Utility Locate	\$350
*Driller	\$6,000
*Investigation-Derived Waste (IDW) Disposal	\$0
Soil Sample Analyses (see cost detail below)	\$738
Groundwater Sample Analyses (see cost detail below)	\$1,170
Report Preparation	\$5,000
Ecology Data Submission (Ecology's EIM Database)	\$2,000
*PTAP Service Fee	\$7,500
PLIA Communications and Meeting	\$3,000
PTAP Application Submittal	\$500
Estimated TOTAL (including the lab fees detailed below)	\$33,258

\*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. 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.

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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).

Soil Analyses		Quantity	\$/Sample	Cost
Diesel / Heavy Oil Range Organics (NWTPH-Dx)		6	\$78	\$ 468
Arsenic (As)		9	\$30	\$ 270
Total Soil Analytical	(costs are included in summary table above)			\$ 738

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.

Groundwater Analyses	Quantity	\$/Sample	Cost	
Diesel / Heavy Oil Range Organics (NWTPH-Dx)*	5	\$78	\$ 390	
Gasoline and BTEX (NWTPH-GX & EPA 8021B)*	5	\$96	\$ 480	
Arsenic (As) Total and Dissolved*	10	\$30	\$ 300	
Total Water Analytical (costs are incl	(costs are included in summary table above)			

\*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. Our total fee for this project will not exceed our estimate without a change in the presented scope of services and only with M&M Ventures's authorization. Invoices will be submitted to M&M Ventures on a monthly basis, payable in full upon receipt of the invoice.

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### **Project Schedule**

Fieldwork is anticipated to begin approximately two to three weeks following you're authorization and after the PLIA Intake Meeting. 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 property. However, this assessment is not designed to identify all potential concerns or to eliminate all risk associated with the subject property. 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.

Washington law requires that we inform the state if a situation is encountered that can be considered an immediate endangerment to the environment or to the public's health or welfare. All information gathered during G-Logics review is considered confidential and will be released only upon written authorization of the client or as required by law.

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 visit.

No warranty, express or implied, is made.



#### Authorization

The proposed scope of services, presented limitations, and our existing agreement with M&M Ventures, LLC 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. 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.

Kon Gallozoa

Rory L. Gallowaý, LG, LHG Principal

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Karis Vandehey, LG, WSLWD Staff Geologist

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

Date

cc Greg Rairdon

Attachments

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

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# ATTACHMENTS



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

Project File: 01-1140-D-WP-F1.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