Sampling and Analysis Plan
AS/SVE System
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, WA 98499

Prepared for: Mr. John Wiegenstein
Heller Wiegenstein PLLC
17791 Fjord Drive NE, Suite 126
Poulsbo, WA 98370

Prepared by: G-Logics, Inc.
40 2nd Avenue SE
Issaquah, WA 98027

Telephone: (425) 391-6874
Facsimile: (425) 313-3074

September 24, 2021

G-Logics Project 01-1064-H
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September 24, 2021
G-Logics Project 01-1064-H

Mr. John Wiegenstein
Heller Wiegenstein PLLC
17791 Fjord Drive NE, Suite 126
Poulsbo, WA 98370

Subject: Sampling and Analysis Plan
AS/SVE System
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, WA 98499

Dear Mr. Wiegenstein:

Presented in this document is G-Logics Sampling and Analysis Plan (SAP) to document the remedial work to be performed at the above-referenced property (the "Property"). The purpose of this SAP is to outline the procedures for sampling at the Property including sample locations, sampling equipment, sample collection and handling procedures, and sample analyses. These sampling procedures will be performed in general accordance with Ecology's guidelines and regulations.

We trust the information presented in this document meets your needs at this time. Should you require additional information or have any questions, please contact us at your convenience.

Sincerely,
G-Logics, Inc.

Rory L. Galloway, LG, LHG
Principal

Karis Vandehey, LG, WSLWD
Project Geologist

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

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LIST OF ABBREVIATIONS

AS	Air Sparge
CAP	Cleanup Action Plan
Ecology	Washington Department of Ecology
FFS	Focused Feasibility Study
IDW	Investigation Derived Waste
MTCA	Model Toxics Control Act
NFA	No Further Action
PCE	Tetrachloroethylene, Perchloroethylene
PDB	Passive Diffusion Bag
PQL	Practical Quantitation Limits
PSCAA	Puget Sound Clean Air Agency
QA/QC	Quality Assurance and Quality Control
RI	Remedial Investigation
SAP	Sampling and Analysis Plan
SVE	Soil Vapor Extraction
TCE	Trichloroethene
VOCs	Volatile Organic Contaminants

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1.0 INTRODUCTION

This Sampling and Analysis Plan (SAP) has been prepared for the Tacoma Dry Cleaners Site, located at 7502 Custer Road W in Lakewood, Washington (Property, Figure 1). This SAP has been requested by the Department of Ecology (Ecology), as presented in their Further Action letter dated September 23, 2020. This SAP describes planned sampling work to document that the on-site air-sparging/soil vapor extraction (AS/SVE) system is effective in remediating soil, soil-gas, and groundwater impacted by tetrachloroethylene (PCE).

1.1 Background

Soil, groundwater, and soil gas are impacted by one or more releases of PCE from a drycleaner and laundering business that historically operated on the Property. A review of historical records shows that the Property originally was developed in the 1950s as an automobile-service and retail gasoline station (Gull Industries). In the 1980s, the gasoline-station equipment was removed, and a drycleaner/laundering business subsequently operated until late 2015. Between 2015 and sometime in 2020 the business operated as a drop-off and pickup location for an off-site dry-cleaning facility. Beeyond Smoothie, a drive-up smoothie and espresso business, currently is located on the Property.

Several subsurface explorations have been conducted between 2007 and 2019 to assess for possible contamination related to both the former dry cleaner and gas station. Soil, groundwater, and soil-gas samples have been analyzed for petroleum hydrocarbons, volatile-organic compounds (VOCs), and/or lead (Tables 1-4, Figures 2-6 and Figure 8). Petroleum hydrocarbons, gasoline-related petroleum compounds, and lead were not detected at concentrations above applicable cleanup levels during the previous explorations. Of the analyzed VOCs, only PCE was detected above MTCA Method A cleanup levels.

Based on the exploration findings, the PCE contamination extends west from the Property into the Burgess Avenue West right of way. PCE impacts to soil and soil gas appear to be greatest primarily in the south and western portion of the Property (nearest the source area). However, concentrations of PCE in groundwater are highest near the western Property boundary. These areas are shown on Figure 5. The most recent soil-gas and groundwater sampling were conducted in March and August 2021.

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A Remedial Investigation (RI) and Focused Feasibility Study (FFS) were Completed by G-Logics in 2018 (report dated April 26, 2018). Based on the findings of the RI/FFS, air sparge (AS) and soil vapor extraction (SVE) were selected for further evaluation. A pilot study, conducted in 2019, confirmed that AS/SVE could be successfully implemented at the Site (report dated February 13, 2020).

In 2020 G-Logics submitted a Cleanup Action Plan (CAP dated August 6, 2020) to Ecology for review. In their letter dated September 23, 2020, Ecology agreed with the implementation of the AS/SVE system as discussed in the CAP. In 2021 G-Logics installed the AS/SVE system (Treatment System), with expected start up in October of 2021.

1.2 Treatment System Purpose and Objectives

The Treatment System has been installed to remove volatile organic contaminants (VOCs) from groundwater, saturated soil, vadose soil, and soil gas. To document that the treatment system is providing the intended benefits, samples of groundwater, soil gas, and indoor air periodically will be sampled, following the schedule listed in Section 1.5. Sampling results also will be used to evaluate system performance and to support system adjustments, as necessary. The anticipated radius of influence for the Treatment System in shown in Figure 7. Once confirmation sampling indicates active remediation is no longer needed to protect groundwater and mitigate vapor-intrusion risks, a property-specific No Further Action (NFA) determination could be requested.

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1.3 Project Organization

Personnel involved in this project and their respective roles are as follows:

- Karis Vandehey, G-Logics Project Manager, 425-761-9540, karisv@G-Logics.com
- Tiffany Querry, G-Logics Field Personnel, 509-607-6536, tiffanyq@G-Logics.com
- Jalyn Buckley, G-Logics Field Personnel, 206-406-9598, jalynb@G-Logics.com
- Jason Cook, Ecology Project Manager, jason.cook@ecy.wa.gov
- Michael Brown, Beyond Smoothie (Building Tenant), 253-365-0306, mrbrown0312@gmail.com, Calli Glockner, beeyondsmoothie@gmail.com
- John Wiegenstein - Heller Wiegenstein PLLC, Attorney for Property Owner, 360-930-8609, johnw@hellerwiegenstein.com

1.4 Contractor Support

For this project, contractors will be used for investigation-derived waste (IDW) disposal, AS/SVE system design/build, and laboratory analysis. The contractors are as follows:

- **Disposal Services and System Installation**
  DH Environmental, Inc.
  Scott St John
  206-327-0026
  scottstjohn@dhenviro.com

- **AS/SVE System Engineer**
  TRC, Environmental Partners, Inc.
  Adam Morine
  425-395-0028
  amorine@trccompanies.com

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- **Laboratory Services**

  Fremont Analytical, Inc.

  Mike Ridgeway

  206-352-3790

  mridgeway@fremontanalytical.com

1.5 Intended Schedule

Presented below is a preliminary schedule for the work discussed in the following sections.

- Collect groundwater samples (conducted August 9, 2021. See Table 1).
- Collect soil-gas samples (conducted on March 8 and August 12, 2021. See Table 2).
- Collect indoor-air samples (conducted on March 8 and August 12, 2021. See Table 3).
- Treatment system test and calibration, late September 2021 to early October 2021.
- Initiate VES components, early October 2021. Additional scheduling information regarding system startup is listed below.
    - Within one hour of startup, collect initial vapor samples from each SVE well and at exhaust stack.
    - Confirm radius of influence, using monitoring wells and soil-gas probes (Figure 7).
    - Allow VES to run for one day and collect additional vapor samples from SVE wells and exhaust stack (24-hour sample).
    - Measure groundwater levels in monitoring wells.
    - Initiate AS system. During the startup day, confirm vacuum readings, using monitoring wells and soil-gas probes.
    - Allow VES and AS systems to run for one day, collect additional vapor samples from SVE wells and exhaust stack.
    - Measure groundwater levels in monitoring wells.
    - Allow combined systems to run for one week (from startup) and collect additional vapor samples from SVE wells and exhaust stack. Measure groundwater levels.
    - Allow combined systems to run for one month (from startup) and collect additional vapor samples from SVE wells and exhaust stack. Measure groundwater levels.

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- Conduct monthly site visits to assess system operation. Confirm vacuum readings, using monitoring wells and soil-gas probes.
- Allow combined systems to run for three months (from startup) and collect additional vapor samples from SVE wells and exhaust stack. Measure groundwater levels in monitoring wells.
- Collect groundwater samples from monitoring wells (three-month operation).
- Prepare first-quarter memo.
- Allow combined systems to run for six months (from startup) and collect additional vapor samples from SVE wells and exhaust stack. Measure groundwater levels in monitoring wells.
- Collect groundwater samples from monitoring wells (six-month operation).
- Prepare second-quarter memo.
- Continue monthly checks to assess system operation. Confirm vacuum readings, using monitoring wells and soil-gas probes.
- Continue quarterly water-level measurements, groundwater sampling, and vapor sampling.
- Prepare quarterly memos.
- After one year of operation, continue with quarterly checks to assess system operation. Confirm vacuum readings, using monitoring wells and soil-gas probes.
- Reduce groundwater and vapor sampling to twice per year. Measure groundwater levels in monitoring wells.

2.0 FIELD SAMPLING ACTIVITIES

The following section describes the procedures to be used to document the progress of this remedial effort.

2.1 Groundwater-Monitoring Wells

Twelve existing groundwater-monitoring wells are located on the Site (locations shown on Figure 2) and will be used for compliance monitoring, as discussed below.

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2.1.1 Water-Level Measurements

Prior to groundwater sampling, a G-Logics employee will measure the depth of groundwater at each monitoring well. Measurements will be referenced to the top of the well casing. The static water level will be measured in each monitoring well using a conductivity type, water-level probe (e.g., Keck Model 1213, Flat Tape Water Level Meter). The water-level probe will be lowered into the well until the instrument detects water, at which point the depth-to-water will be recorded to within 0.01 feet.

2.1.2 Groundwater Sampling, No-Purge Passive Diffusion Bag Method

A G-Logics employee will sample groundwater wells using passive diffusion bags (PDBs) in accordance with the following protocol:

- Prior to sampling, G-Logics connected rubberized stainless-steel braded cable to the well expansion caps. The cables were cut to length so that the PDB is placed in the middle of each well screen.
- A minimum of two weeks prior to sampling the wells, PDBs (measuring 2 feet in length and 1.25-inches in diameter) will be attached to the cables and allowed to equilibrate with the surrounding groundwater.
- At the time of sampling, the PDBs will be recovered from the wells. The end of each PDB will be cut open using decontaminated scissors and the contents will be collected directly into laboratory-provided containers. Sample containers will be open only as long as necessary to collect the samples.
- The contract laboratory will prepare the sample containers to conform to EPA-recommended preservation techniques for the planned analyses.
- Collected samples will be labeled with a sample number, date, time, and sampler's name and stored in an ice chest containing frozen “blue ice”. Chain-of-custody procedures will be followed to document sample handling.
- In addition, once the PDBs are removed, geochemical parameter measurements (pH, conductivity, temperature, dissolved oxygen, and oxidation-reduction potential) will be collected using a YSI-556 downhole probe with a 10-meter cable. A field log will be maintained that includes parameter measurements and sample times.
- Groundwater well GLMW-05 is screened at a depth of 34-44 ft and is indicative of deeper groundwater conditions.

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2.2 Soil-Gas Sampling

Seven existing soil-gas probes are located on the Site and will be used for compliance monitoring. Two of these probes are sub-slab sampling ports located within the on-site business (locations shown on Figure 2). Soil-gas probes will be sampled using a one-liter SUMMA® canister (or similar) fitted with a 10-minute flow regulator.

2.2.1 Soil-Gas Probe Purging

Purging the soil-gas probe prior to sampling helps ensure a representative soil-gas sample is collected. Flow rates should be maintained at approximately 100 to 150 mL/min and should not exceed 200 mL/min.

2.2.2 Shut-In Procedure for Soil-Gas Sampling

Shut-in tests should be performed on the soil-gas sampling to verify that the tubing and connections used for sampling are airtight. Leaks into the sampling tubing could compromise the data by allowing ambient air to enter the sample, potentially diluting the sample and biasing results low. The following procedure should be performed prior to sampling.

- Verify the valve of the SUMMA® canister (or similar) is fully closed and note the vacuum reading.
- Connect an appropriate flow regulator to the canister using a quick connect.
- Tighten the brass cap (included with the canister) to the end of the flow regulator with a wrench. Once the flow regulator is secured, the shut-in test should be completed by quickly opening and closing the canister valve. If the needle on the vacuum gauge drops, the train was not airtight and the connections should be refitted. This process should be repeated until no significant leakage has been demonstrated.
- After successfully completing the previous steps, remove the brass cap from the end of the flow regulator. Connect the end of the Teflon-lined tubing to the flow regulator using a Swagelok-compression fitting.
- Connect the other end of the sample tubing to a hand-held vacuum pump (with gauge) using flexible silicon tubing.

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- With the canister valve closed and using the pump, increase the vacuum inside the sampling train to approximately 15 to 20-in Hg. This reading should be maintained for at least 30 seconds. If leakage is detected, the connections should be checked and reattached. This process should be repeated until no significant leakage has been demonstrated.

2.2.3 Soil-Gas Sampling

Soil-gas samples will be collected through the existing soil-gas probes in accordance with the following protocol:

- Once the soil-gas probe has been purged and the shut-in tests completed, the canister and flow regulator can be connected directly to the soil-gas probe via Teflon/Nylaflow tubing.
- The canister valve then will be opened, allowing the canister to fill for approximately 10 minutes.
- Samples will be noted with canister and flow regulator serial numbers, sample name, beginning and ending canister pressure readings, sampling duration, date, and time.
- The collected soil-gas samples should be submitted to an analytical laboratory for analysis within 48 hours of sampling. Chain-of-custody procedures will be followed to document sample handling.

2.3 Indoor-Air Sampling

To provide information of possible vapor intrusion into the structure at the property, indoor-air samples will be inside the building. Sampling also will include the collection of one outdoor/ambient air for comparison purposes to indoor-air results. Air samples will be collected in accordance with the following protocols.

- Samples will be collected in six-liter SUMMA® canisters fitted with an 8-hour flow regulator.
- Prior to sampling, a shut-in test will be performed on each canister.
- The canisters will generally be positioned at approximately five to six feet above the ground (breathing zone).
- After placing the canister in the sampling location, the valve on the canister will be opened, allowing the canister to slowly fill for approximately 8 hours.
- The canister will be allowed to pressurize to at least -10 in-Hg, at which point the valve will be turned off.

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- Samples will be noted with canister and flow regulator serial numbers, sample name, beginning and ending canister pressure readings, sampling duration, date, and time.
- The collected air samples will be submitted to an analytical laboratory for analysis within 48 hours of sampling. Chain-of-custody procedures should be followed to document sample handling.

2.4 Treatment-System Monitoring

During operation of the treatment system, flowrates, temperatures, pressures, and vacuums also would be periodically monitored to evaluate system performance and to support system adjustments, as necessary. A system schematic and as-built diagram are available in Figures 9 and 10, respectively. These results also would provide information to identify if air treatment is necessary to meet Puget Sound Clean Air Agency (PSCAA) requirements (not currently anticipated, given the identified baseline concentrations).

2.5 Analytical Methods

Contaminants of concern, sampling media, anticipated laboratory analyses, and the recommended PQLs (provided by the analytical laboratory) are summarized below. For this Site, groundwater analytical results will be compared to the MTCA Method A Cleanup Levels for unrestricted land use. Soil-gas analytical results will be compared to the MTCA Method B Screening Cleanup Levels for protection of indoor air, specifically as modified for an eight-hour commercial-exposure scenario (this assumes that the building will not be used for residential purposes). See Table 5.

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2.5.1 Groundwater Analyses

Confirmation groundwater samples will be analyzed for the following constituents.

Analytical Method	Method A Cleanup Level	Recommended Practical Quantitation Limit (PQL)
Vinyl Chloride (EPA Method 8260D)	0.2 ug/L	0.200 ug/L
1,1-Dichloroethene (EPA Method 8260D)	400 ug/L	0.500 ug/L
trans-1,2-Dichloroethene (EPA 8260D)	160 ug/L	0.500 ug/L
cis-1,2-Dichloroethene (EPA 8260D)	16 ug/L	0.500 ug/L
Trichloroethene (TCE) (EPA 8260D)	5 ug/L	0.500 ug/L
Tetrachloroethene (PCE) (EPA 8260D)	5 ug/L	0.400 ug/

2.5.2 Soil-Gas Analyses

Soil-gas samples will be analyzed for the following constituents.

Analytical Method	Method B Sub-Slab Screening Level – Commercial (1)	Recommended Practical Quantitation Limit (PQL)
Vinyl Chloride (TO-15)	49.1 µg/m^3	0.1024 µg/m^3
1,1-Dichloroethene (TO-15)	13,241 µg/m^3	0.1588 µg/m^3
trans-1,2-Dichloroethene (TO-15)	Not Established	0.792 µg/m^3
cis-1,2-Dichloroethene (TO-15)	Not Established	1.584 µg/m^3
Trichloroethene (TCE) (TO-15)	57.5 µg/m^3	0.2148 µg/m^3
Tetrachloroethene (PCE) (TO-15)	1,652 µg/m^3	0.2712 µg/m^3

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(1): Modified MTCA Method B Soil-Gas Screening Levels for Commercial Spaces. Calculated using Equation 750-2, Section 750 of Chapter 173-340 of MTCA and a modified exposure duration and frequency of 250 days per year, 8 hours per day (See Table 4).

2.5.3 Indoor-Air Analyses

Indoor-air samples will be analyzed for the following constituents.

Analytical Method	Method B Cleanup Levels – Commercial (1)	Recommended Practical Quantitation Limit (PQL)
Vinyl Chloride (TO-15)	1.47 µg/m^3	0.0256 µg/m^3
1,1-Dichloroethene (TO-15)	397 µg/m^3	0.0397 µg/m^3
trans-1,2-Dichloroethene (TO-15)	Not Established	0.198 µg/m^3
cis-1,2-Dichloroethene (TO-15)	Not Established	0.396 µg/m^3
Trichloroethene (TCE) (TO-15)	1.72 µg/m^3	0.0537 µg/m^3
Tetrachloroethene (PCE) (TO-15)	50.2 µg/m^3	0.0678 µg/m^3

(1): Modified MTCA Method B Indoor-Air Cleanup Levels for Commercial Spaces. Calculated using Equation 750-2, Section 750 of Chapter 173-340 of MTCA and a modified exposure duration and frequency of 250 days per year, 8 hours per day.

2.5.4 Treatment-System Air Analyses

Soil gas removed by the VES will be analyzed for the following constituents.

Analytical Method	Recommended Practical Quantitation Limit (PQL)
Vinyl Chloride (8260D)	0.035 ug/L
1,1-Dichloroethene (8260D)	0.05 ug/L
trans-1,2-Dichloroethene (8260D)	0.05 ug/L
cis-1,2-Dichloroethene (8260D)	0.05 ug/L
Trichloroethene (TCE) (8260D)	0.05 ug/L
Tetrachloroethene (PCE) (8260D)	0.04 ug/L

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2.6 Decontamination Procedures

Sampling equipment that is used between wells (expected only to be the water-level indicator and geochemical-parameter probe) would be washed with a liquinox solution or equivalent. A tap-water rinse, followed by a distilled-water rinse, will complete the wash. Sampling equipment wash solutions will be containerized.

2.7 IDW Handling and Disposal

With the use of the no-purge PDB groundwater-sampling method, IDW, specifically purge water, will not be generated. Any small amounts of PDB water, not utilized for samples, will be containerized.

IDW will be collected and placed into waste drums and temporarily stored onsite. All drums will be transported off-site for proper disposal, as determined by analytical results. DH Environmental will be contracted to manage and transport IDW generated during the planned sampling efforts.

3.0 QUALITY CONTROL AND QUALITY ASSURANCE

Field Quality Assurance and Quality Control (QA/QC) samples will be collected to estimate precision and accuracy of the analytical results and to examine the possible sources of error introduced by the field and laboratory practices. Specific information regarding sample containers and holding times will be confirmed with the selected laboratory. Additional information is presented below.

3.1 Groundwater QA/QC Sample Collection

QA/QC sampling for groundwater samples are described below.

- One field-duplicate sample will be collected for every 10 groundwater samples for each of the primary analytes (as listed in Section 2.5.1).
- Trip blanks will be included in each cooler containing samples for volatile analyses.

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3.2 Soil-Gas QA/QC Sample Collection

QA/QC sampling for soil-gas samples are described below.

- One field-duplicate sample will be collected for every 10 soil-gas samples (running total) for each of the primary analytes (as listed in Section 2.5.2).

3.3 Indoor-Air QA/QC Sample Collection

QA/QC sampling for indoor-air samples are described below.

- One field-duplicate sample will be collected for every 10 indoor-air samples (running total) for each of the primary analytes (as listed in Section 2.5.3).

3.4 Treatment System QA/QC Sample Collection

QA/QC sampling for air samples are described below.

- One field-duplicate sample will be collected for every 10 air samples (running total) collected from the treatment system, submitted for the primary analytes (as listed in Section 2.5.4).

3.4 Laboratory QA/QC

Laboratory quality-control samples, reporting limits, acceptance criteria, and corrective actions are laboratory-specific. A copy of the laboratory quality assurance manuals for the selected laboratory will be on file at the G-Logics office for review and reference and will be followed throughout the remedial efforts. Information relating to laboratory personnel, equipment and records pertaining to sample collection, transportation, and analysis also will be available.

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3.5 Data Validation

At this time, third-party data validation is not considered necessary for the Site.

4.0 DATA ANALYSIS AND REPORTING

Following the completion of laboratory analyses, the data will be reviewed, and our observations, findings and opinions presented, as discussed below.

4.1 LABORATORY REPORTS

Laboratory-data reports should consist of complete documentation of the analyzed samples. Each laboratory report should include the case narrative, analytical results, laboratory-reporting limits, applicable quality-control summary reports, and the chain-of-custody forms.

4.2 Periodic Reports

As per the schedule identified in Section 1.5, periodic reports will be prepared and will include the findings of the treatment effort. The report will include site diagrams showing sampling locations, analytical results, and a discussion of our findings.

5.0 LIMITATIONS

G-Logics has prepared this SAP in accordance with the generally accepted standards of care that exist in the state of Washington at the time of this work. G-Logics assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury which results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery/treatment of such hazardous materials.

No warranty, either express or implied, is made.

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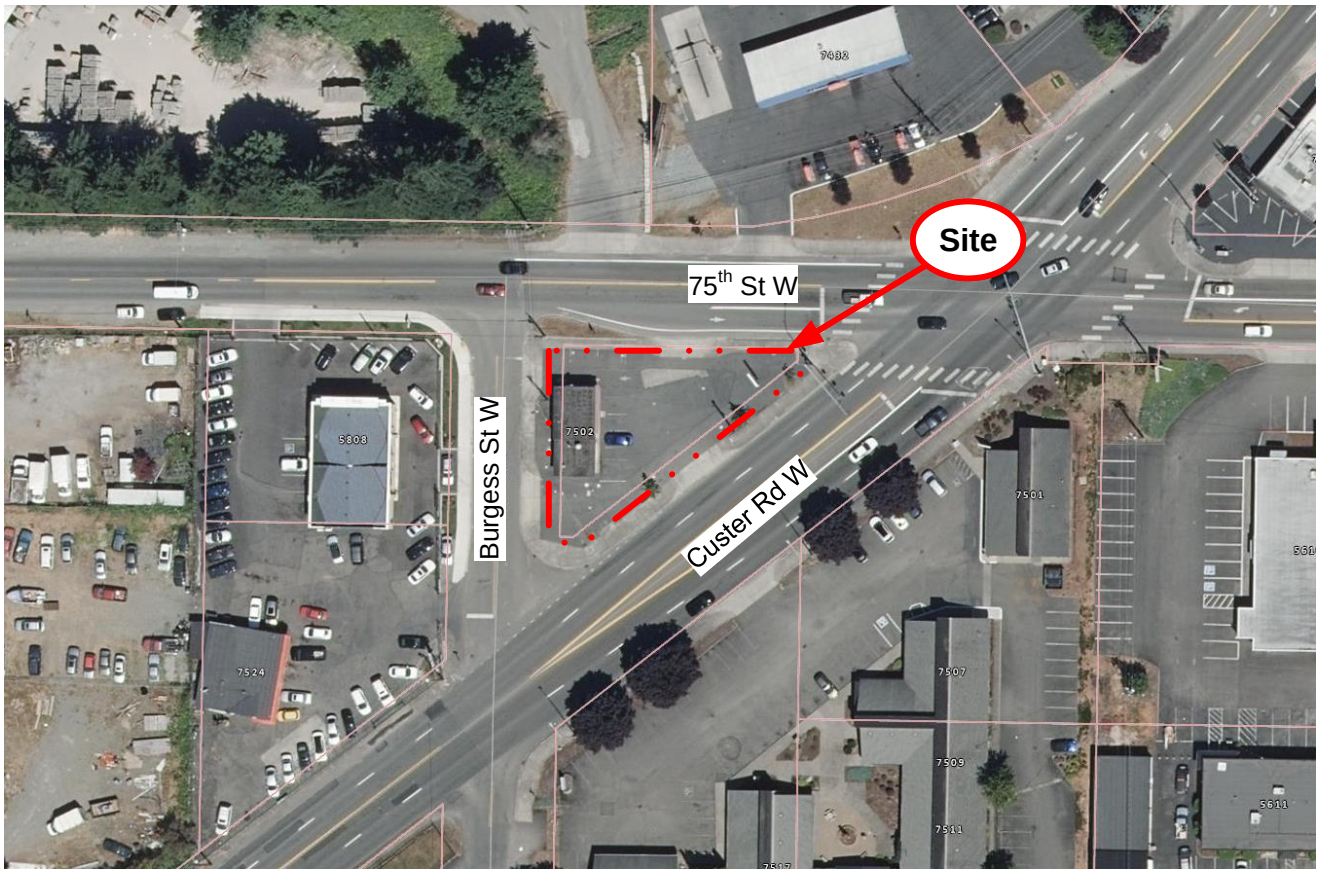
FIGURES



Project File: 01-1064-H-F1 SAP.vsd

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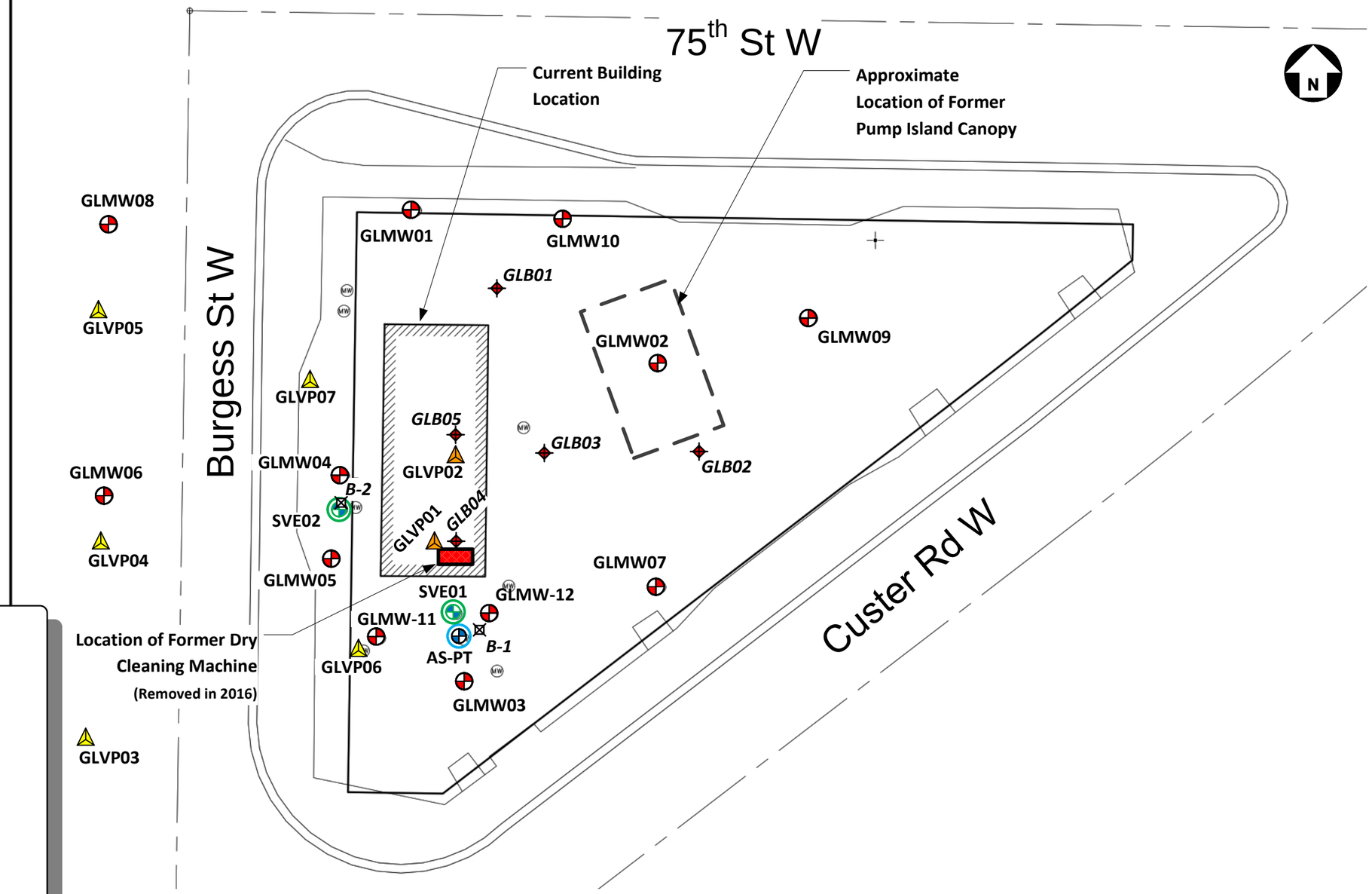
Site Location Maps
Tacoma Dry Cleanings
7502 Custer Road W
Lakewood, Washington

Figure
1

Mapping Reference: Delorme, Google Maps, Pierce County Public GIS, Apex Engineering Survey (March 2021)



G-Logics Legend

- G-Logics Soil Boring (2016-2017)
- Parametrix Soil Boring (2007)
- G-Logics Monitoring Well (2017)
- Sub-Slab Soil-Gas Probe (2017)
- Soil-Gas Probe (2019)
- Pilot Test Soil-Vapor Extraction Well (2019)
- Pilot Test Air Sparge Well (2019)

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

Approximate Drawing Scale: 1" = 20'

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

Exploration Locations and Former Site Features

Tacoma Dry Cleaners

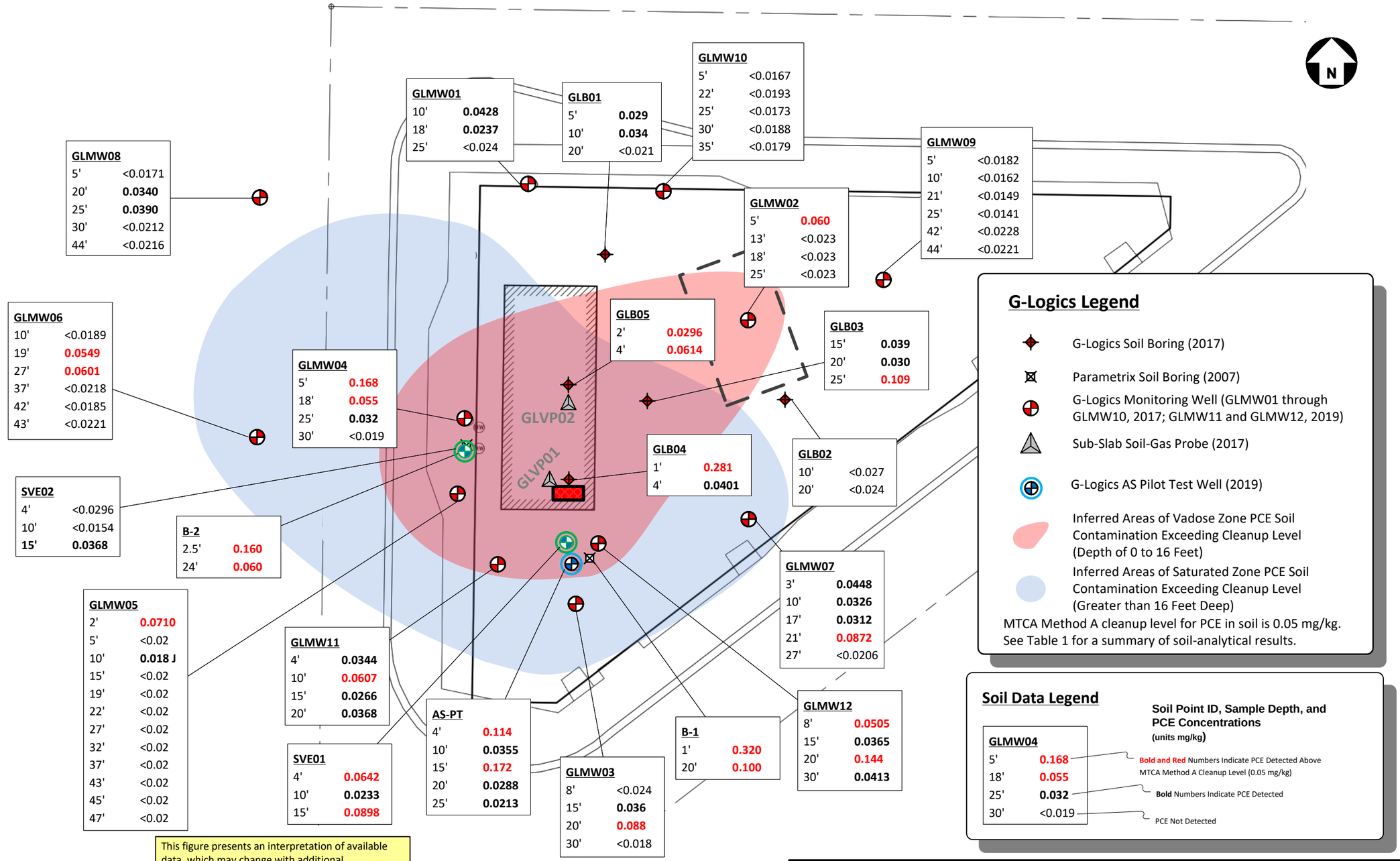
7502 Custer Road W

Lakewood, Washington

Figure 2

Project File: 01-1064-H-F2 SAP Expl Locs.vsd

Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017)



Project File: 01-1064-H-F3 SAP PCE in Soil.vsd

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Concentrations and Interpreted Extent of PCE in Soil

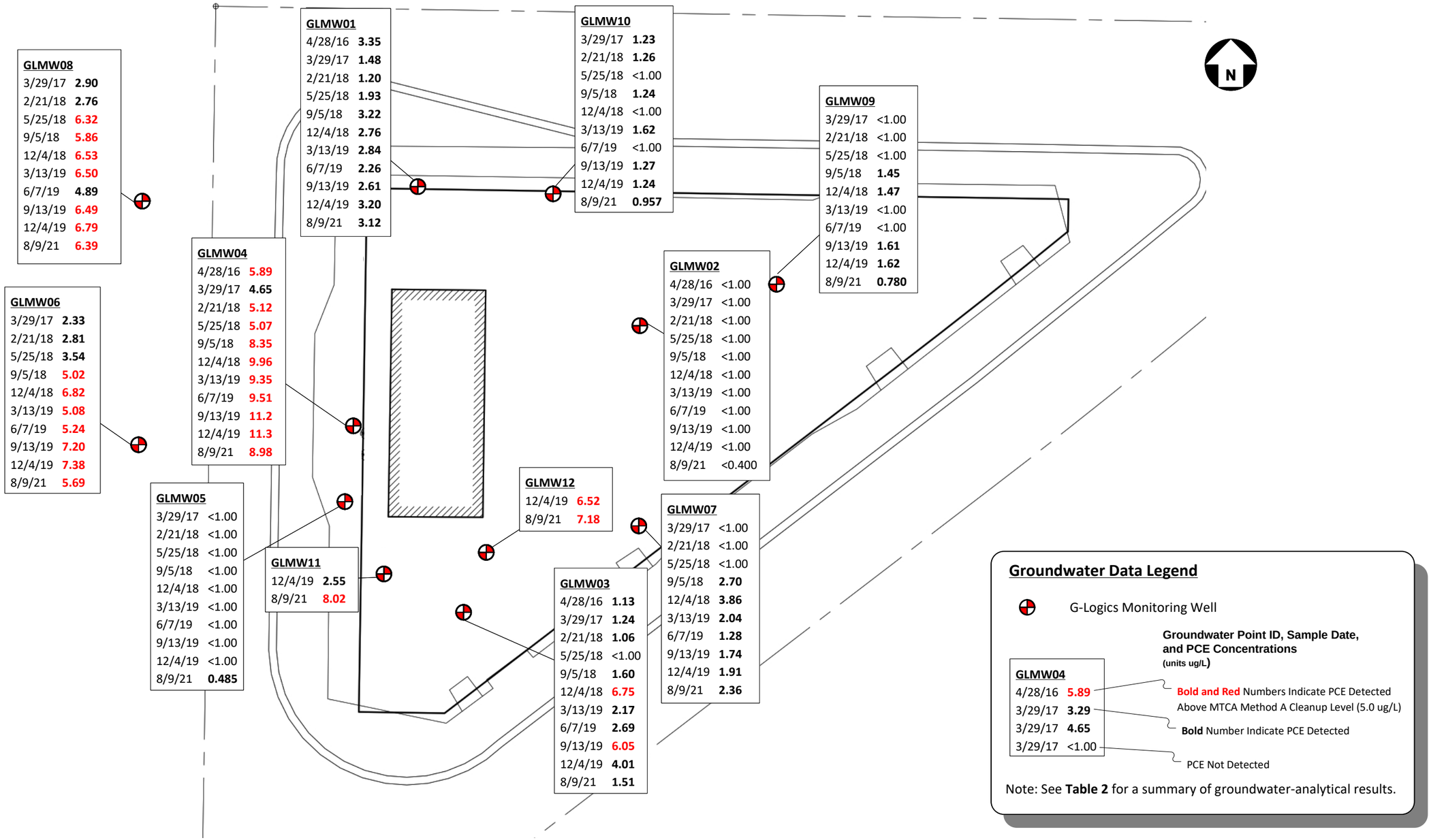
Tacoma Dry Cleaners

7502 Custer Road W

Lakewood, Washington

Figure 3

Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017)



Project File: 01-1064-H-F4 SAP PCE in GW.vsd

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Approximate Drawing Scale: 1" = 20'

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

Concentrations of PCE in Groundwater

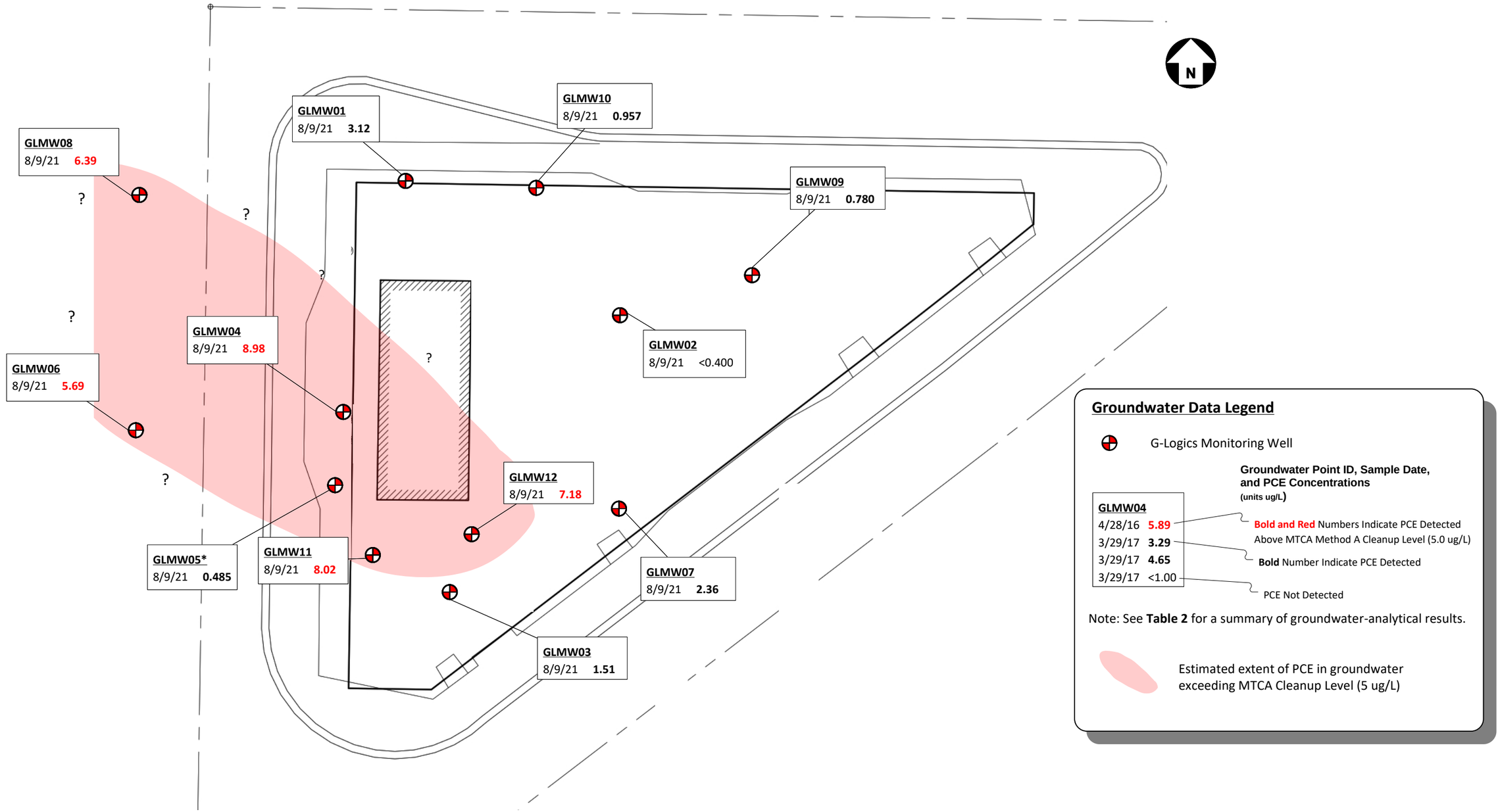
Tacoma Dry Cleaners

7502 Custer Road W

Lakewood, Washington

Figure 4

Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017)



Groundwater Data Legend

G-Logics Monitoring Well

Groundwater Point ID, Sample Date, and PCE Concentrations (units ug/L)

GLMW04	
4/28/16	**5.89**
3/29/17	**3.29**
3/29/17	**4.65**
3/29/17	<1.00

Bold and Red Numbers Indicate PCE Detected Above MTCA Method A Cleanup Level (5.0 ug/L)

Bold Number Indicate PCE Detected

PCE Not Detected

Note: See **Table 2** for a summary of groundwater-analytical results.

Estimated extent of PCE in groundwater exceeding MTCA Cleanup Level (5 ug/L)

* GLMW-05 Is screened at a depth of 34-44 feet and is indicative of deeper groundwater conditions

The isoconcentration contours represent an interpretation of available data, for the indicated date. These contours may change with additional measurements and/or data points, remedial efforts, natural attenuation, and/or other influences.

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

Approximate Drawing Scale: 1" = 20'

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

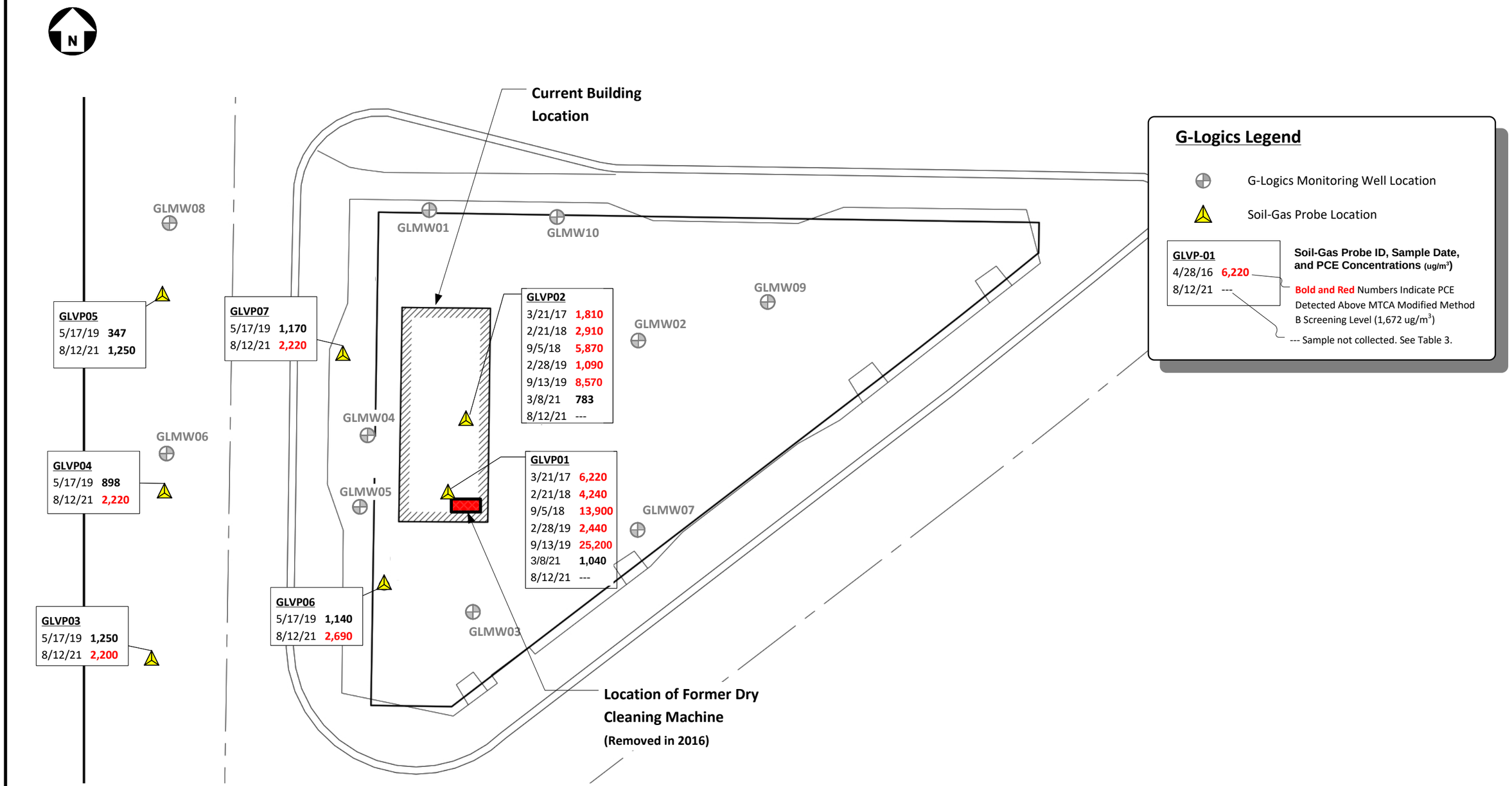
g-logics

PCE Groundwater Concentrations (August 2021)
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, Washington

Figure 5

Project File: *01-1064-H-F5 SAP PCE in GW Contoured.vsd*

Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017)



Project File: 01-1064-H-F6 SAP Soil Gas.vsd

g-logics

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

Approximate Drawing Scale: 1" = 20'

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

Concentrations of PCE in Soil Gas

Tacoma Dry Cleaners

7502 Custer Road W

Lakewood, Washington

Figure 6

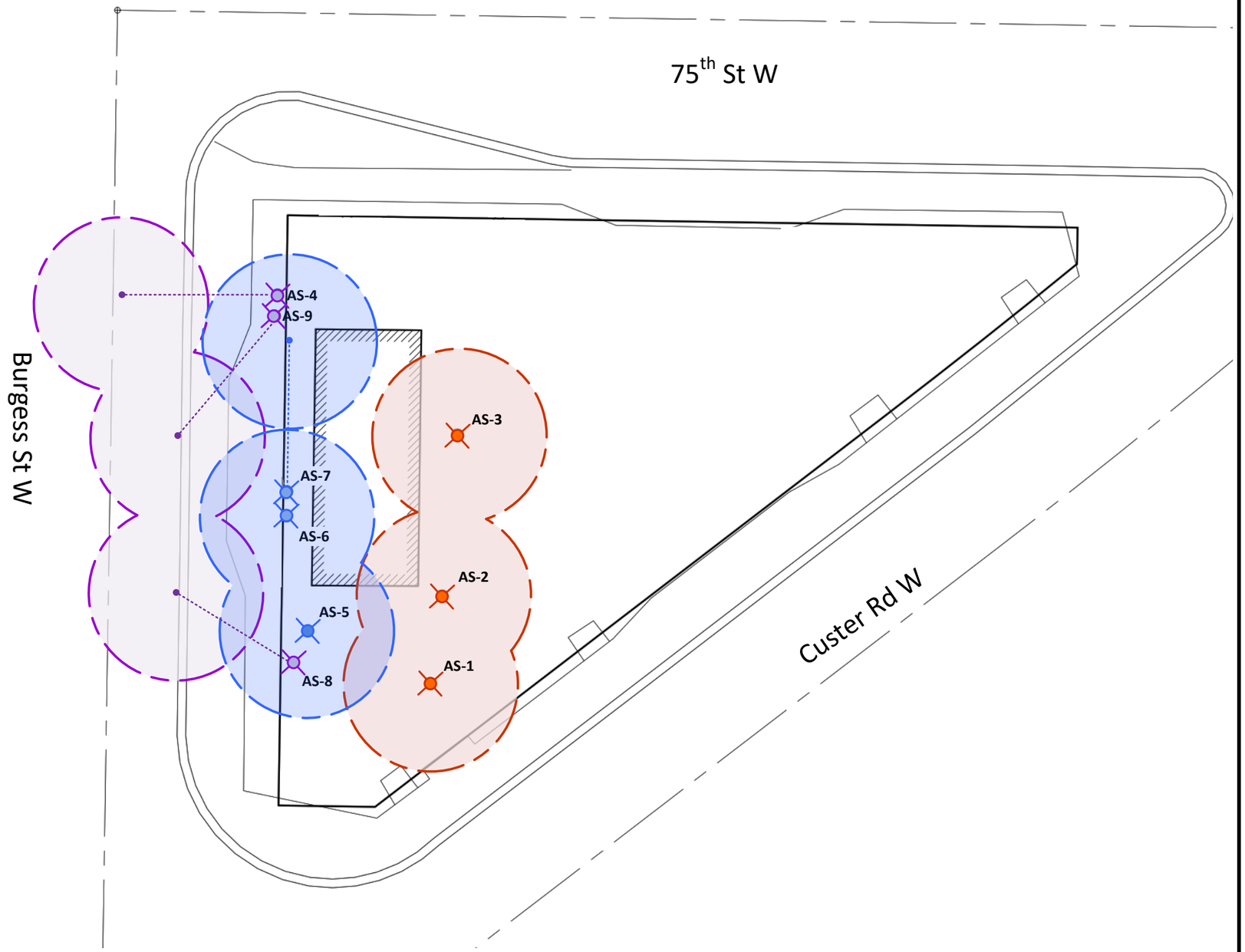
Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017)

N

Legend

- Zone 1 Air Sparge Well / Radius of Influence (ROI)*
- Zone 2 Air Sparge Well / ROI
- Zone 3 Air Sparge Well / ROI
- Sparge-well casing to be installed approximately 20-30 degrees from vertical. Dashed line shows surface trace of well casing.

*15 ft ROI estimated based on planned depth of sparge well (40 ft below ground surface) and pilot-test observations.



g-logics

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

Approximate Drawing Scale: 1" = 20'

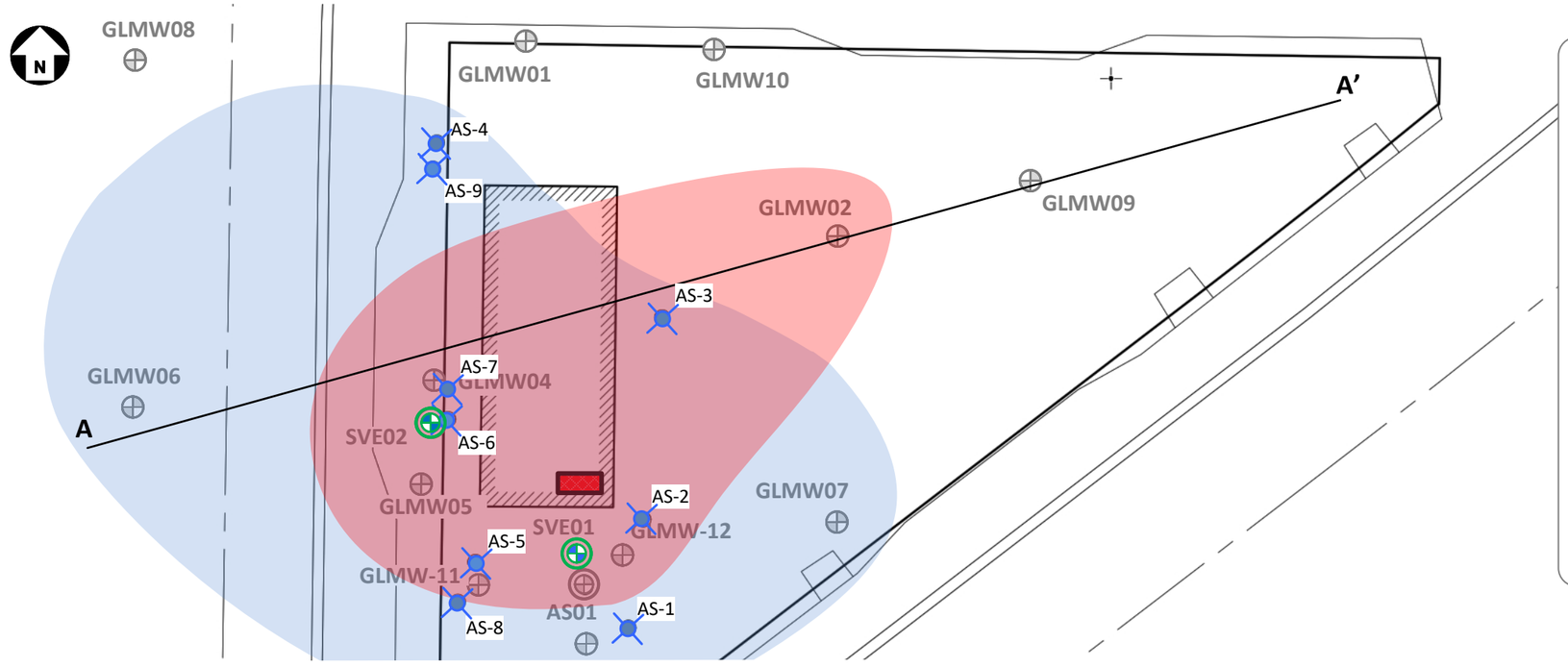
0 ft. 12 ft. 20 ft. 40 ft.

Location of Air-Sparge Wells and Anticipated Radius of Influence
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, Washington

Figure 7

Project File: 01-1064-H-F7 SAP AS ROI 15.vsd

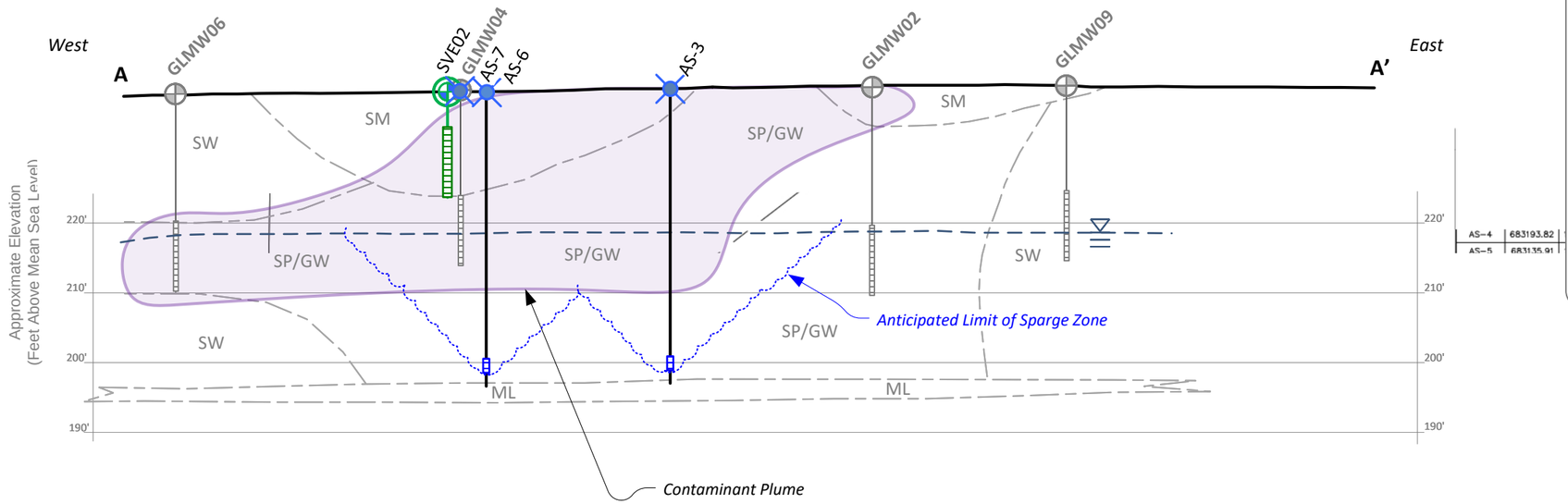
Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017), Apex Engineering Topographic Survey (March 22, 2021)



Legend

- G-Logics Groundwater-Monitoring Well
- Soil-Vapor Extraction Well
- Air-Sparge Well
- Former Dry Cleaning Machine (Removed 2016)
- A____A' Cross-Section Line
- Inferred Areas of Vadose Zone Soil with PCE Concentration Exceeding Cleanup Level (Depth of 0 to 16 Feet)
- Inferred Areas of Saturated Zone Soil with PCE Concentration Exceeding Cleanup Level (Greater than 16 Feet Deep)

MTCA Method A cleanup level for PCE in soil is 0.05 mg/kg. See Table 1 for a summary of soil-analytical results.



Cross-Section Legend

- Approximate Geologic Contact Based on USCS Soil Classification
- Approximate Water Table Elevation (Based on August 2021 Measurements)
- Inferred Area of Soil Containing PCE at Concentrations Exceeding Cleanup Level (0.05 mg/kg)

Note: See boring logs for details of stratigraphic formations

This figure presents an interpretation of available data, which may change with additional measurements and/or data points, remedial efforts, natural attenuation, and/or other influences.

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

Approximate Vertical and Horizontal Drawing
Scale: 1" = 20'

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

g-logics

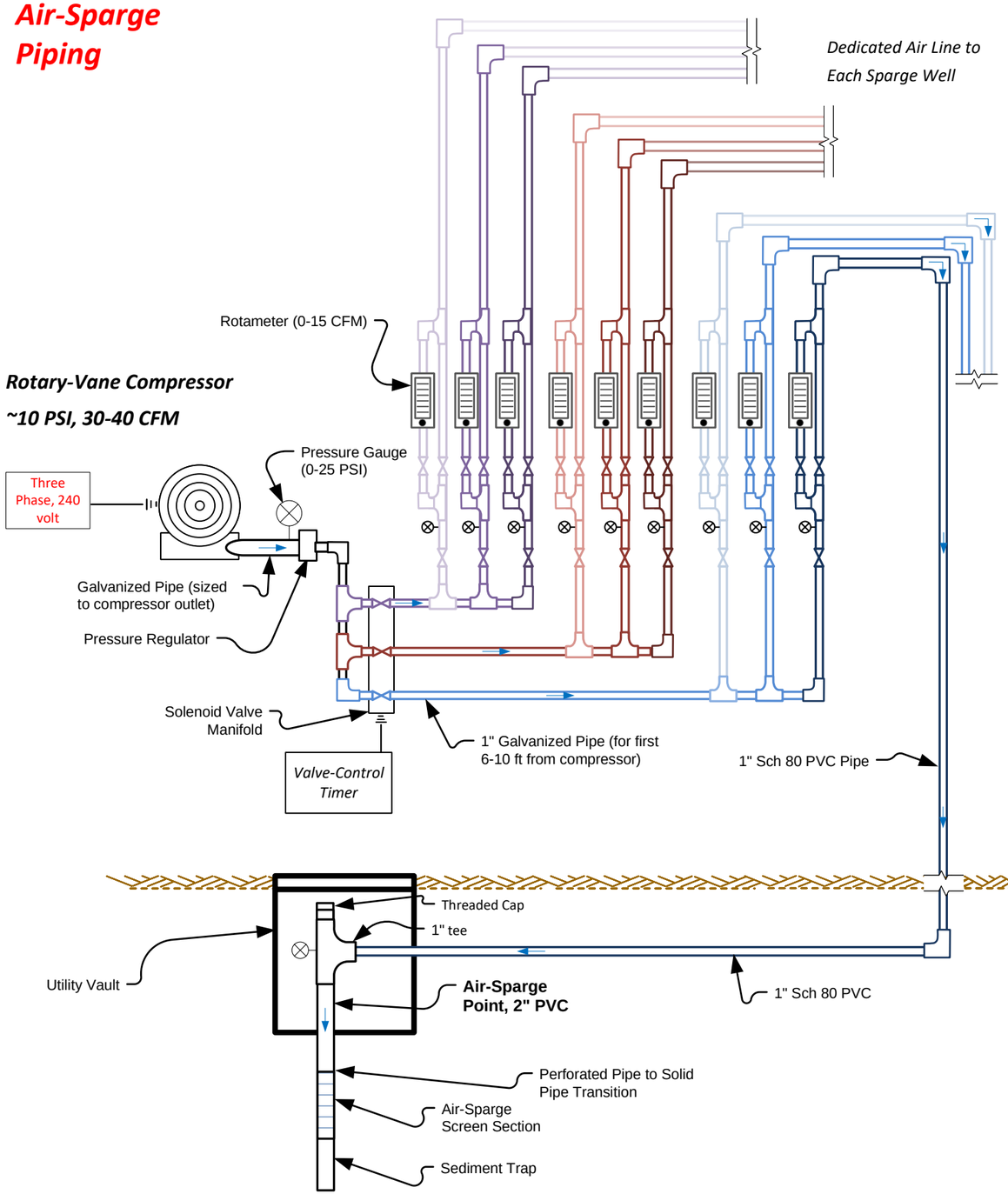
Cross Section A-A', AS/SVE Treatment Wells
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, Washington

Figure 8

Project File: 01-1064-H-F8 SAP A-A'.vsd

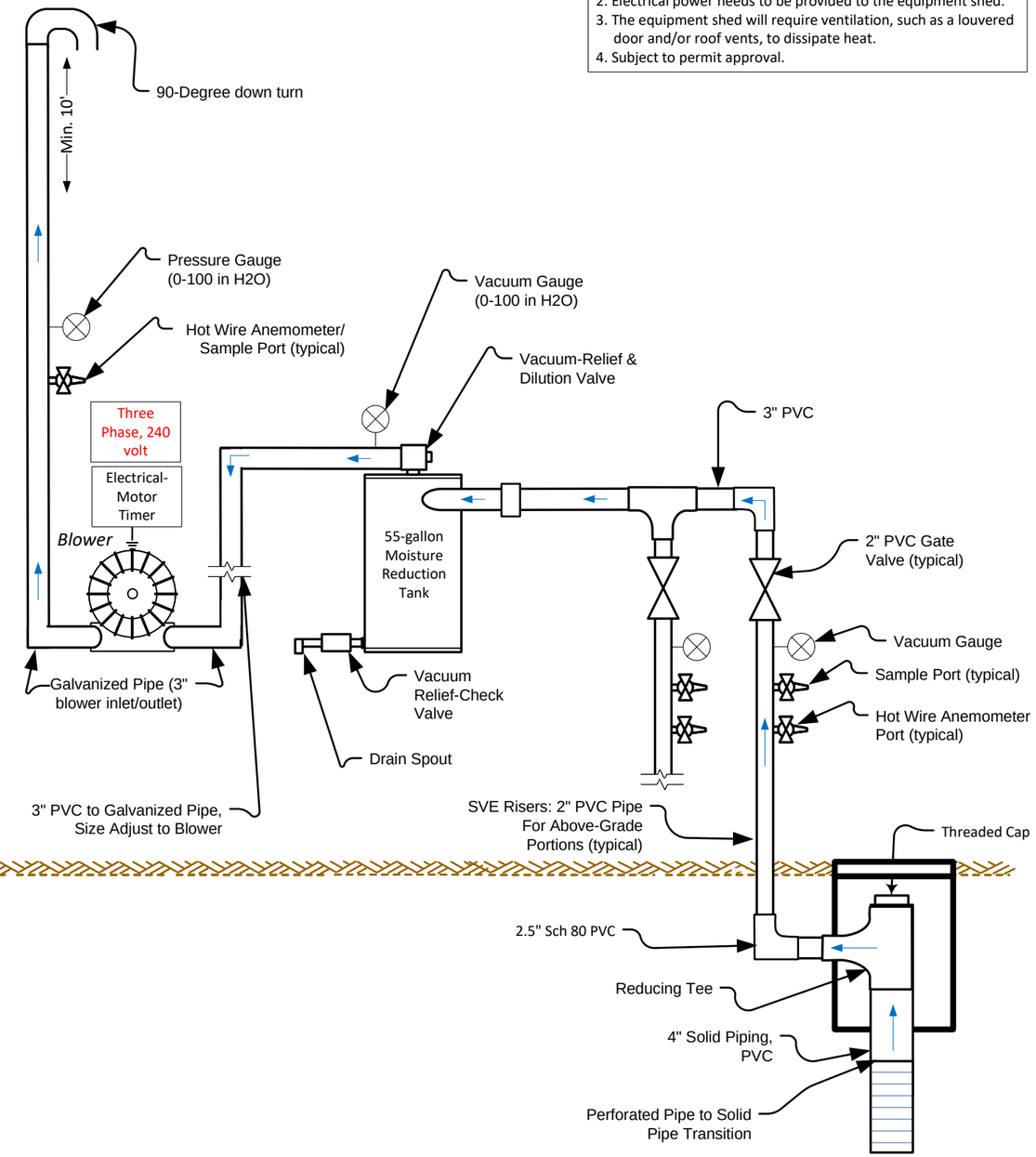
Mapping Reference: G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017), Apex Engineering Topographic Survey (March 22, 2021)

Air-Sparge Piping



Soil-Vapor Extraction Piping

Notes:
1. Locations and layout of piping is schematic only.
2. Electrical power needs to be provided to the equipment shed.
3. The equipment shed will require ventilation, such as a louvered door and/or roof vents, to dissipate heat.
4. Subject to permit approval.



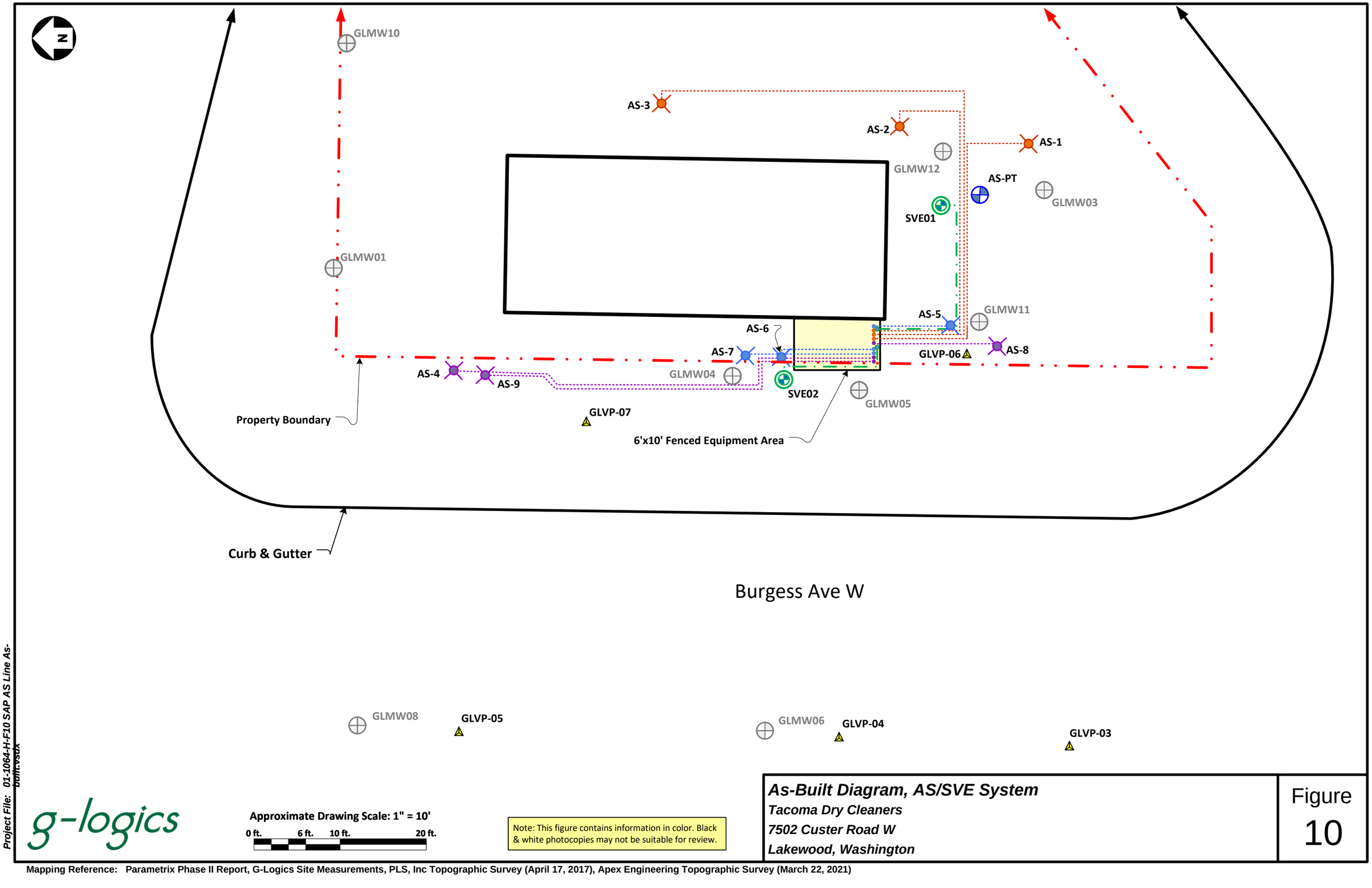
Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Schematic, Air-Sparge and SVE Systems
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, Washington

Figure 9

Project File: 01-1064-H-F9 SAP PI Diagram.vsd

g-logics



Project File: 01-1064-H-F10 SAP AS Line As-built.vsdx

g-logics

Approximate Drawing Scale: 1" = 10'

0 ft. 6 ft. 10 ft. 20 ft.

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

As-Built Diagram, AS/SVE System
Tacoma Dry Cleaners
7502 Custer Road W
Lakewood, Washington

Figure
10

Mapping Reference: Parametrix Phase II Report, G-Logics Site Measurements, PLS, Inc Topographic Survey (April 17, 2017), Apex Engineering Topographic Survey (March 22, 2021)

TABLES

TABLE 1
Soil Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Benzene	Toluene	Ethylbenzene	Xylenes	Other VOCs (1)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Lead
MTCA Cleanup Level (2)				0.67	4,000	1,600	160	0.03	0.05	0.03	7.0	6.0	9.0	various	100(a)/30(b)	2,000	2,000	250
Soil Samples (units in mg/kg)																		
Parametrix Phase II Site Assessment - March 2007*																		
B-1	3/31/2007	---	1	---	---	---	---	---	**0.320**	---	---	---	---	---	---	---	---	---
		---	20	---	---	---	---	---	**0.100**	---	---	---	---	---	---	---	---	---
B-2	3/31/2007	---	2.5	---	---	---	---	---	**0.160**	---	---	---	---	---	---	---	---	---
		---	24	---	---	---	---	---	**0.060**	---	---	---	---	---	---	---	---	---
G-Logics - April 2016																		
GLMW01	4/26/2016	GLMW01-5'	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW01-10'	10	---	---	---	---	---	**0.0428**	---	---	---	---	---	---	---	---	---
		GLMW01-18'	18	<0.00201	<0.0503	<0.0201	<0.0201	<0.0201	**0.0237**	<0.0201	<0.0201	<0.0302	<0.0201	nd	---	---	---	---
		GLMW01-25'	25	<0.00240	<0.0240	<0.0240	<0.0240	<0.0240	< 0.024	<0.0240	<0.0240	<0.0360	<0.0240	nd	---	---	---	---
		GLMW01-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLMW02	4/26/2016	GLMW02-5'	5	---	---	---	---	---	**0.060**	---	---	---	---	---	---	---	---	---
		GLMW02-13'	13	---	---	---	---	---	< 0.023	---	---	---	---	---	< 5.68	---	---	---
		GLMW02-18'	18	<0.00224	<0.0561	<0.0224	<0.0224	<0.0224	< 0.023	<0.0224	<0.0224	<0.0337	<0.0224	nd	< 5.61	< 19.5	< 48.8	---
		GLMW02-25'	25	<0.00234	<0.0585	<0.0234	<0.0234	<0.0234	< 0.023	<0.0234	<0.0234	<0.0351	<0.0234	nd	---	---	---	---
		GLMW02-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLMW03	4/27/2016	GLMW03-3'	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW03-8'	8	<0.00243	<0.0606	<0.0243	<0.0243	<0.0243	< 0.024	<0.0243	<0.0243	<0.0364	<0.0243	nd	---	---	---	---
		GLMW03-15'	15	<0.00233	<0.0584	<0.0233	<0.0233	<0.0233	**0.036**	<0.0233	<0.0233	<0.0311	<0.0233	nd	< 5.84	---	---	---
		GLMW03-20'	20	---	---	---	---	---	**0.088**	---	---	---	---	---	---	---	---	---
		GLMW03-30'	30	---	---	---	---	---	< 0.018	---	---	---	---	---	---	---	---	---
GLMW04	4/27/2016	GLMW04-5'	5	<0.00275	<0.0687	<0.0275	<0.0275	<0.0275	**0.168**	<0.0275	<0.0275	<0.0412	<0.0275	nd	---	---	---	---
		GLMW04-13'	13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW04-18'	18	<0.00251	<0.0251	<0.0251	<0.0251	<0.0251	**0.055**	<0.0251	<0.0251	<0.0376	<0.0251	nd	---	---	---	---
		GLMW04-25'	25	---	---	---	---	---	**0.032**	---	---	---	---	---	---	---	---	---
		GLMW04-30'	30	---	---	---	---	---	< 0.019	---	---	---	---	---	---	---	---	---
GLB01	4/26/2016	GLB01-5'	5	<0.00216	<0.0539	<0.216	<0.216	<0.216	**0.029**	<0.216	<0.216	<0.0324	<0.216	nd	---	---	---	---
		GLB01-10'	10	---	---	---	---	---	**0.034**	---	---	---	---	---	---	---	---	---
		GLB01-15'	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB01-20'	20	<0.00210	<0.0210	<0.0210	<0.0210	<0.0210	< 0.0210	<0.0210	<0.0210	<0.0315	<0.0210	nd	---	---	---	---
		GLB01-25'	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB01-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLB02	4/26/2016	GLB02-5'	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB02-10'	10	<0.00271	<0.0676	<0.0271	<0.0271	<0.0271	< 0.027	<0.0271	<0.0271	<0.406	<0.0271	nd	< 6.76	---	---	---
		GLB02-20'	20	<0.00241	<0.0602	<0.0241	<0.0241	<0.0241	< 0.024	<0.0241	<0.0241	<0.0361	<0.0241	nd	**6.76**	---	---	**3.36**
		GLB02-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB02-35'	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Benzene	Toluene	Ethylbenzene	Xylenes	Other VOCs (1)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Lead
MTCA Cleanup Level (2)				0.67	4,000	1,600	160	0.03	0.05	0.03	7.0	6.0	9.0	various	100(a)/30(b)	2,000	2,000	250
Soil Samples (units in mg/kg)																		
GLB03	4/27/2016	GLB03-3'	3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB03-10'	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLB03-15'	15	<0.00207	<0.0518	<0.0207	<0.0207	<0.0207	0.039	<0.0207	<0.0207	<0.0311	<0.0207	nd	---	---	---	---
		GLB03-20'	20	<0.00204	<0.0510	<0.0204	<0.0204	<0.0204	0.030	<0.0204	<0.0204	<0.0306	<0.0204	nd	< 5.10	---	---	---
		GLB03-25'	25	---	---	---	---	---	**0.109**	---	---	---	---	---	---	---	---	---
				---	---	---	---	---		---	---	---	---					
G-Logics - March 2017																		
GLMW05	3/13/2017	GLMW-05-2'	2	<0.02	<0.05	<0.02	<0.02	<0.03	**0.0710**	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-5'	5	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-10'	10	<0.02	<0.05	<0.02	<0.02	<0.03	**0.018 J**	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-15'	15	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-19'	19	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	<10	---	---	---
		GLMW-05-19' Dup**	19	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	<10	---	---	---
		GLMW-05-22'	22	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-27'	27	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	<10	---	---	---
		GLMW-05-32'	32	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-37'	37	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-43'	43	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-45'	45	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-47'	47	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
		GLMW-05-47' Dup**	47	<0.02	<0.05	<0.02	<0.02	<0.03	<0.02	<0.02	<0.10	<0.05	<0.15	---	---	---	---	---
GLMW06	3/14/2017	GLMW-06-5'	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-06-10'	10	<0.00189	<0.0474	<0.0189	<0.0189	<0.0189	<0.0189	---	---	---	---	---	---	---	---	---
		GLMW-06-15'	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-06-19'	19	<0.00240	<0.0600	<0.0240	<0.0240	<0.0240	**0.0549**	---	---	---	---	---	---	---	---	---
		GLMW-06-22'	22	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-06-27'	27	<0.00190	<0.00475	<0.0190	<0.0190	<0.0190	**0.0601**	---	---	---	---	---	---	---	---	---
		GLMW-06-32'	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-06-37'	37	<0.00218	<0.0546	<0.0218	<0.0218	<0.0218	<0.0218	---	---	---	---	---	---	---	---	---
		GLMW-06-42'	42	<0.00185	<0.0463	<0.0185	<0.0185	<0.0185	<0.0185	---	---	---	---	---	---	---	---	---
		GLMW-06-43'	43	<0.00221	<0.0553	<0.0221	<0.0221	<0.0221	<0.0221	---	---	---	---	---	---	---	---	---
GLMW07	3/14/2017	GLMW-07-3'	3	<0.00210	<0.0524	<0.0210	<0.0210	<0.0210	**0.0448**	---	---	---	---	---	---	---	---	---
		GLMW--07-Dup A (dup)	3	<0.00231	<0.0578	<0.0231	<0.0231	<0.0231	**0.0326**	---	---	---	---	---	---	---	---	---
		GLMW-07-10'	10	<0.00205	<0.0514	<0.0205	<0.0205	<0.0205	**0.0312**	---	---	---	---	---	---	---	---	---
		GLMW-07-17'	17	<0.00187	<0.0467	<0.0187	<0.0187	<0.0187	**0.0872**	<0.0187	<0.0187	<0.0280	<0.0187	---	<4.67	---	---	---
		GLMW-07-21'	21	<0.00235	<0.0588	<0.0235	<0.0235	<0.0235	**0.0379**	<0.0235	<0.0235	<0.0353	<0.0235	---	<5.88	---	---	---
		GLMW-07-27'	27	<0.00206	<0.514	<0.0206	<0.0206	<0.0206	<0.0206	---	---	---	---	---	---	---	---	---
		GLMW-07-32'	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-07-37'	37	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-07-40'	40	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-07-42'	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-07-44'	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Benzene	Toluene	Ethylbenzene	Xylenes	Other VOCs (1)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Lead
MTCA Cleanup Level (2)				0.67	4,000	1,600	160	0.03	0.05	0.03	7.0	6.0	9.0	various	100(a)/30(b)	2,000	2,000	250
Soil Samples (units in mg/kg)																		
GLMW08	3/14/2017	GLMW-08-5'	5	<0.00171	<0.0428	<0.0171	<0.0171	<0.0171	<0.0171	---	---	---	---	---	---	---	---	---
		GLMW-08-10'	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-08-15'	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-08-17'	17	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-08-20'	20	<0.00177	<0.0443	<0.0177	<0.0177	<0.0177	**0.0340**	---	---	---	---	---	---	---	---	---
		GLMW-08-25'	25	<0.00200	<0.0501	<0.0200	<0.0200	<0.0200	**0.0390**	---	---	---	---	---	---	---	---	---
		GLMW-08-30'	30	<0.00212	<0.0531	<0.0212	<0.0212	<0.0212	<0.0212	---	---	---	---	---	---	---	---	---
		GLMW-08-36'	36	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-08-44'	44	<0.00216	<0.0540	<0.0216	<0.0216	<0.0216	<0.0216	---	---	---	---	---	---	---	---	---
		GLMW-08-45'	45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLMW09	3/16/2017	GLMW-09-5'	5	<0.00182	<0.0456	<0.0182	<0.0182	<0.0182	<0.0182	<0.0182	<0.0182	<0.0273	<0.0182	---	<4.56	---	---	---
		GLMW-09-10'	10	<0.00162	<0.0405	<0.0162	<0.0162	<0.0162	<0.0162	---	---	---	---	---	---	---	---	---
		GLMW-09-16'	16	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-09-21'	21	<0.00149	<0.0372	<0.0149	<0.0149	<0.0149	<0.0149	<0.0149	<0.0149	<0.0223	<0.0149	---	<03.72	---	---	---
		GLMW-09-DupA (dup)	21	<0.00172	<0.0431	<0.0172	<0.0172	<0.0172	<0.0172	---	---	---	---	---	---	---	---	---
		GLMW-09-25'	25	<0.00141	<0.0352	<0.0141	<0.0141	<0.0141	<0.0141	<0.0141	<0.0141	<0.0211	<0.0141	---	<3.52	---	---	---
		GLMW-09-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-09-34'	34	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-09-42'	42	<0.0028	<0.0569	<0.0228	<0.0228	<0.0228	<0.0228	---	---	---	---	---	---	---	---	---
		GLMW-09-44'	44	<0.00221	<0.0551	<0.0221	<0.0221	<0.0221	<0.0221	---	---	---	---	---	---	---	---	---
		GLMW-09-45'	45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLMW10	3/16/2017	GLMW-10-5'	5	<0.00167	<0.0417	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167	<0.0167	<0.0250	<0.0167	---	<4.17	---	---	---
		GLMW-10-19'	19	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-10-22'	22	<0.00193	<0.0482	<0.0193	<0.0193	<0.0193	<0.0193	<0.0193	<0.0193	<0.0289	<0.0193	---	<4.82	---	---	---
		GLMW-10-25'	25	<0.00173	<0.0432	<0.0173	<0.0173	<0.0173	<0.0173	---	---	---	---	---	---	---	---	---
		GLMW-10-30'	30	<0.00188	<0.0469	<0.0188	<0.0188	<0.0188	<0.0188	---	---	---	---	---	---	---	---	---
		GLMW-10-35'	35	<0.00179	<0.0447	<0.0179	<0.0179	<0.0179	<0.0179	---	---	---	---	---	---	---	---	---
		GLMW-10-42'	42	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
		GLMW-10-44'	44	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Benzene	Toluene	Ethylbenzene	Xylenes	Other VOCs (1)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Lead
MTCA Cleanup Level (2)				0.67	4,000	1,600	160	0.03	0.05	0.03	7.0	6.0	9.0	various	100(a)/30(b)	2,000	2,000	250
Soil Samples (units in mg/kg)																		
GLB04	3/18/2017	GLB04-1	1	<0.00213	<0.0533	<0.0213	<0.0213	<0.0213	**0.281**	---	---	---	---	---	---	---	---	---
		GLB04-4	4	<0.00254	<0.0634	<0.0254	<0.0254	<0.0254	**0.0401**	---	---	---	---	---	---	---	---	---
GLB05	3/18/2017	GLB05-2	2	<0.00253	<0.0633	<0.0253	<0.0253	<0.0253	**0.296**	---	---	---	---	---	---	---	---	---
		GLB05-4	4	<0.00200	<0.0501	<0.0200	<0.0200	<0.0200	**0.0614**	---	---	---	---	---	---	---	---	---
G-Logics - November 2019																		
GLMW11	11/20/2019	GLMW-11-4'	4	<0.0154	<0.0123	<0.0123	<0.0123	<0.0123	**0.0344**	---	---	---	---	---	---	---	---	---
		GLMW-11-10'	10	<0.0144	<0.0116	<0.0116	<0.0116	<0.0116	**0.0607**	---	---	---	---	---	---	---	---	---
		GLMW-11-15'	15	<0.0139	<0.0111	<0.0111	<0.0111	<0.0111	**0.0266**	---	---	---	---	---	---	---	---	---
		GLMW-11-20'	20	<0.0253	<0.0202	<0.0202	<0.0202	<0.0202	**0.0368**	---	---	---	---	---	---	---	---	---
		GLMW-11-Dup A (dup)	20	<0.0229	<0.0183	<0.0183	<0.0183	<0.0183	**0.0300**	---	---	---	---	---	---	---	---	---
		GLMW-11-25'	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GLMW12	11/19/2019	GLMW-12-4'	4	<0.0335	<0.0268	<0.0268	<0.0268	<0.0268	**0.0505**	---	---	---	---	---	---	---	---	---
		GLMW-12-10'	10	<0.0257	<0.0206	<0.0206	<0.0206	<0.0206	**0.0365**	---	---	---	---	---	---	---	---	---
		GLMW-12-15'	15	<0.0209	<0.0167	<0.0167	<0.0167	<0.0167	**0.144**	---	---	---	---	---	---	---	---	---
		GLMW-12-20'	20	<0.0268	<0.0214	<0.0214	<0.0214	<0.0214	**0.0413**	---	---	---	---	---	---	---	---	---
		GLMW-12-25'	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
AS01 (AS-PT)	11/19/2019	AS-01-4'	4	<0.0144	<0.0115	<0.0115	<0.0115	<0.0115	**0.114**	---	---	---	---	---	---	---	---	---
		AS-01-10'	10	<0.0141	<0.0113	<0.0113	<0.0113	<0.0113	**0.0355**	---	---	---	---	---	---	---	---	---
		AS-01-15'	15	<0.0173	<0.0138	<0.0138	<0.0138	<0.0138	**0.172**	---	---	---	---	---	---	---	---	---
		AS-01-20'	20	<0.0154	<0.0123	<0.0123	<0.0123	<0.0123	**0.0228**	---	---	---	---	---	---	---	---	---
		AS-01-25'	25	<0.0164	<0.0131	<0.0131	<0.0131	<0.0131	**0.0213**	---	---	---	---	---	---	---	---	---
		AS-01-30'	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SVE01	11/20/2019	SVE-01-4'	4	<0.0307	<0.0246	<0.0246	<0.0246	<0.0246	**0.0642**	---	---	---	---	---	---	---	---	---
		SVE-01-10'	10	<0.0160	<0.0128	<0.0128	<0.0128	<0.0128	**0.0233**	---	---	---	---	---	---	---	---	---
		SVE-01-15'	15	<0.0144	<0.0116	<0.0128	<0.0128	<0.0128	**0.0898**	---	---	---	---	---	---	---	---	---
SVE02	11/20/2019	SVE-02-4'	4	<0.0296	<0.0237	<0.0237	<0.0237	<0.0237	<0.0296	---	---	---	---	---	---	---	---	---
		SVE-02-10'	10	<0.0154	<0.0123	<0.0123	<0.0123	<0.0123	<0.0154	---	---	---	---	---	---	---	---	---
		SVE-02-Dup B (dup)	10	<0.0166	<0.0133	<0.0133	<0.0133	<0.0133	<0.0166	---	---	---	---	---	---	---	---	---
		SVE-02-15'	15	<0.0155	<0.0124	<0.0124	<0.0124	<0.0124	**0.0368**	---	---	---	---	---	---	---	---	---
G-Logics - February 2021																		
AS-3	2/24/2021	AS-3-5	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-12	12	<0.0190	<0.0190	<0.0190	<0.0190	<0.0190	**0.0227**	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-18	18	<0.0214	<0.0214	<0.0214	<0.0214	<0.0214	**0.0257**	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-25	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-30	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-35	35	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-3-40	40	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	<0.0121	---	---	---	---	---	---	---	---	---
AS-4	2/24/2021	AS-4-10	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-15	15	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-25	25	<0.0275	<0.0275	<0.0275	<0.0275	<0.0275	<0.0275	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-30	30	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	**0.0219**	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-35	35	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-45	45	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	<0.0250	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-4-50	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Exploration Location	Sample Date	Sample Number	Sample Depth (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Benzene	Toluene	Ethylbenzene	Xylenes	Other VOCs (1)	Gasoline Range Organics	Diesel Range Organics	Heavy Oil Range Organics	Lead
MTCA Cleanup Level (2)				0.67	4,000	1,600	160	0.03	0.05	0.03	7.0	6.0	9.0	various	100(a)/30(b)	2,000	2,000	250
Soil Samples (units in mg/kg)																		
AS-5	2/24/2021	AS-5-10	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-5-20	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-5-30	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-5-35	35	<0.0208	<0.0208	<0.0208	<0.0208	<0.0208	<0.0208	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-5-40	40	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	<0.0215	---	---	---	---	---	---	---	---	---
AS-6	2/24/2021	AS-6-10	10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-6-20	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-6-30	30	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-6-35	35	<0.0230	<0.0230	<0.0230	<0.0230	<0.0230	<0.0230	---	---	---	---	---	---	---	---	---
	2/24/2021	AS-6-40	40	<0.0171	<0.0171	<0.0171	<0.0171	<0.0171	<0.0171	---	---	---	---	---	---	---	---	---
AS-7	2/25/2021	AS-7-15	15	<0.0229	<0.0229	<0.0229	<0.0229	<0.0229	**0.0289**	---	---	---	---	---	---	---	---	---
	2/25/2021	AS-7-25	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/25/2021	AS-7-35	35	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	---	---	---	---	---	---	---	---	---
	2/25/2021	AS-7-45	45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/25/2021	AS-7-50	50	<0.0160	<0.0160	<0.0160	<0.0160	<0.0160	<0.0160	---	---	---	---	---	---	---	---	---
AS-9	2/26/2021	AS-9-10	10	<0.0236	<0.0236	<0.0236	<0.0236	<0.0236	<0.0236	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-20	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-25	25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-35	35	<0.0223	<0.0223	<0.0223	<0.0223	<0.0223	<0.0223	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-40	40	<0.0146	<0.0146	<0.0146	<0.0146	<0.0146	<0.0146	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-45	45	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	2/26/2021	AS-9-50	50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Notes:

Refer to site diagram(s) for sampling locations.

(1) Analytes Not Listed were Not Detected Above Laboratory Reporting Limits

(2) Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels for Unrestricted Land Uses, MTCA, revised 2013.

Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA.

* Based on the Parametrix Report Dated April 17, 2007. Sample Identification Names/Numbers Were Not Indicated in the Report.

** Duplicate Samples Selected and Analyzed by the Mobile Laboratory.

(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.

(dup) Blind Field Duplicate Submitted to the Laboratory for QA/QC.

GLMW-10-44' Blue Shading Indicates a Soil Samples Collected in the Saturated Zone

--- Not Analyzed

nd Other Analyzed VOCs Not Detected Above Laboratory Reporting Limits (See Analytical Report For Applicable Reporting Limits).

<5.10 Analyte Not Detected Above the Specified Laboratory Reporting Limits

0.043 Bold Number(s) Indicates Contaminant Detected.

0.320 Bold Number(s) and Shading Indicates Concentration Exceeds MTCA Cleanup Level.

J Estimated concentration

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
Parametrix Phase II Site Assessment - March 2007 Grab-Groundwater Samples (2)											
B-1	3/31/2007	B-1	**	**	**	---	---	---	---	---	**11.0**
B-2	3/31/2007	B-2	**	**	**	---	---	---	---	---	**17.0**
G-Logics Groundwater Monitoring Well Sampling											
GLMW01	4/28/2016	GLMW01	Peristaltic Pump	22	16.34	<0.200	<1.00	<1.00	<1.00	<0.500	**3.35**
	3/29/2017	GLMW01-PDB	Passive Diffusion Bag	22	13.50	<0.200	<1.00	<1.00	<1.00	<0.500	**1.48**
	3/29/2017	GLMW01-SUB	Submersible Pump	22	13.50	<0.200	<1.00	<1.00	<1.00	<0.500	**1.44**
	2/21/2018	GLMW01-20180221	Passive Diffusion Bag	22	14.85	<0.200	<1.00	<1.00	<1.00	<0.500	**1.20**
	5/25/2018	GLMW01-05252018	Passive Diffusion Bag	22	**	<0.200	<1.00	<1.00	<1.00	<0.500	**1.93**
	9/5/2018	GLMW01-09052018	Passive Diffusion Bag	22	20.49	<0.200	<1.00	<1.00	<1.00	<0.500	**3.22**
	12/4/2018	GLMW01-20181204	Passive Diffusion Bag	22	20.51	<0.200	<1.00	<1.00	<1.00	<0.500	**2.76**
	3/13/2019	GLMW01-20190313	Passive Diffusion Bag	22	17.68	<0.200	<1.00	<1.00	<1.00	<0.500	**2.84**
	6/7/2019	GLMW01-20190607	Passive Diffusion Bag	22	19.27	<0.200	<1.00	<1.00	<1.00	<0.500	**2.26**
	9/13/2019	GLMW01-20190913	Passive Diffusion Bag	22	20.82	<0.200	<1.00	<1.00	<1.00	<0.500	**2.61**
	12/4/2019	GLMW01-20191204	Passive Diffusion Bag	22	20.81	<0.200	<1.00	<1.00	<1.00	<0.500	**3.20**
	8/9/2021	GLMW-1	Passive Diffusion Bag	22	20.51	<0.200	<0.500	<0.500	<0.500	<0.500	**3.12**
GLMW02	4/28/2016	GLMW02	Peristaltic Pump	22	16.32	<0.200	<1.00	<1.00	<1.00	<0.500	< 1.00
	3/29/2017	GLMW02	Submersible Pump	22	13.56	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	2/21/2018	GLMW02-20180221	Passive Diffusion Bag	23	14.91	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	5/25/2018	GLMW02-05252018	Passive Diffusion Bag	23	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW02-09052018	Passive Diffusion Bag	23	20.46	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	12/4/2018	GLMW02-20181204	Passive Diffusion Bag	23	20.54	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	3/13/2019	GLMW02-20190313	Passive Diffusion Bag	23	17.61	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	6/7/2019	GLMW02-20190607	Passive Diffusion Bag	23	19.29	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/13/2019	GLMW02-20190913	Passive Diffusion Bag	23	20.79	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	12/4/2019	GLMW02-20191204	Passive Diffusion Bag	23	20.81	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	8/9/2021	GLMW-2	Passive Diffusion Bag	23	20.48	<0.200	<0.500	<0.500	<0.500	<0.500	<0.400

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW03	4/28/2016	GLMW03	Peristaltic Pump	20	15.74	<0.200	<1.00	<1.00	<1.00	<0.500	**1.13**
	3/29/2017	GLMW03-PDB	Passive Diffusion Bag	22	12.98	<0.200	<1.00	<1.00	<1.00	<0.500	**1.24**
	3/29/2017	GLMW03-SUB	Submersible Pump	22	12.98	<0.200	<1.00	<1.00	<1.00	<0.500	**1.33**
	2/21/2018	GLMW03-20180221	Passive Diffusion Bag	22	14.33	<0.200	<1.00	<1.00	<1.00	<0.500	**1.06**
	5/25/2018	GLMW03-05252018	Passive Diffusion Bag	22	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW03-09052018	Passive Diffusion Bag	22	19.94	<0.200	<1.00	<1.00	<1.01	<0.500	**1.60**
	12/4/2018	GLMW03-20181204	Passive Diffusion Bag	22	19.97	<0.200	<1.00	<1.00	<1.01	<0.500	**6.75**
	3/13/2019	GLMW03-20190313	Passive Diffusion Bag	22	17.05	<0.200	<1.00	<1.00	<1.01	<0.500	**2.17**
	6/7/2019	GLMW03-20190607	Passive Diffusion Bag	22	18.77	<0.200	<1.00	<1.00	<1.01	<0.500	**2.69**
	9/13/2019	GLMW03-20190913	Passive Diffusion Bag	22	20.14	<0.200	<1.00	<1.00	<1.01	<0.500	**6.05**
	12/4/2019	GLMW03-20191204	Passive Diffusion Bag	22	20.28	<0.200	<1.00	<1.00	<1.01	<0.500	**4.01**
	8/9/2021	GLMW-3	Passive Diffusion Bag	22	19.56	<0.200	<0.500	<0.500	<0.500	<0.500	**1.51**
GLMW04	4/28/2016	GLMW04	Peristaltic Pump	21	16.08	<0.200	<1.00	<1.00	<1.00	<0.500	**5.89**
	3/29/2017	GLMW04-PDB	Passive Diffusion Bag	22	13.31	<0.200	<1.00	<1.00	<1.00	<0.500	**4.65**
	3/29/2017	GLMW04-SUB	Submersible Pump	22	13.31	<0.200	<1.00	<1.00	<1.00	<0.500	**4.51**
	2/21/2018	GLMW04-20180221	Passive Diffusion Bag	22	14.65	<0.200	<1.00	<1.00	<1.00	<0.500	**5.12**
	2/21/2018	GLMW99-20180221 (dup	Passive Diffusion Bag	22	14.65	<0.200	<1.00	<1.00	<1.00	<0.500	**5.30**
	5/25/2018	GLMW04-05252018	Passive Diffusion Bag	22	**	<0.200	<1.00	<1.00	<1.00	<0.500	**5.07**
	9/5/2018	GLMW04-09052018	Passive Diffusion Bag	22	20.23	<0.200	<1.00	<1.00	<1.00	<0.500	**8.35**
	12/4/2018	GLMW04-20181204	Passive Diffusion Bag	22	20.23	<0.200	<1.00	<1.00	<1.00	<0.500	**9.96**
	3/13/2019	GLMW04-20190313	Passive Diffusion Bag	22	17.39	<0.200	<1.00	<1.00	<1.00	<0.500	**9.35**
	3/13/2019	DUP-20190313 (dup)	Passive Diffusion Bag	22	17.39	<0.200	<1.00	<1.00	<1.00	<0.500	**9.31**
	6/7/2019	GLMW04-20190607	Passive Diffusion Bag	22	19.03	<0.200	<1.00	<1.00	<1.00	<0.500	**9.51**
	9/13/2019	GLMW04-20190913	Passive Diffusion Bag	22	20.49	<0.200	<1.00	<1.00	<1.00	<0.500	**11.2**
	12/4/2019	GLMW04-20191204	Passive Diffusion Bag	22	20.55	<0.200	<1.00	<1.00	<1.00	<0.500	**11.3**
	8/9/2021	GLMW-4	Passive Diffusion Bag	22	20.27	<0.200	<0.500	<0.500	<0.500	<0.500	**8.98**

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW05	3/29/2017	GLMW05	Submersible Pump	40	14.58	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	2/21/2018	GLMW05-20180221	Passive Diffusion Bag	40	15.77	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	5/25/2018	GLMW05-05252018	Passive Diffusion Bag	40	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW05-09052018	Passive Diffusion Bag	40	20.82	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	12/4/2018	GLMW05-20181204	Passive Diffusion Bag	40	20.74	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	3/13/2019	GLMW05-20190313	Passive Diffusion Bag	40	18.09	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	6/7/2019	GLMW05-20190607	Passive Diffusion Bag	40	19.62	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/13/2019	GLMW05-20190913	Passive Diffusion Bag	40	21.11	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	12/4/2019	GLMW05-20191204	Passive Diffusion Bag	40	21.01	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	8/9/2021	GLMW-5	Passive Diffusion Bag	40	20.75	<0.200	<0.500	<0.500	<0.500	<0.500	**0.485**
GLMW06	3/29/2017	GLMW06	Submersible Pump	24	13.24	<0.200	<1.00	<1.00	<1.00	<0.500	**2.33**
	2/21/2018	GLMW06-20180221	Passive Diffusion Bag	24	14.60	<0.200	<1.00	<1.00	<1.00	<0.500	**2.81**
	5/25/2018	GLMW06-05252018	Passive Diffusion Bag	24	**	<0.200	<1.00	<1.00	<1.00	<0.500	**3.54**
	9/5/2018	GLMW06-09052018	Passive Diffusion Bag	24	20.11	<0.200	<1.00	<1.00	<1.00	<0.500	**5.02**
	12/4/2018	GLMW06-20181204	Passive Diffusion Bag	24	20.02	<0.200	<1.00	<1.00	<1.00	<0.500	**6.82**
	12/4/2018	DUP-20181204	Passive Diffusion Bag	24	20.02	<0.200	<1.00	<1.00	<1.00	<0.500	**6.12**
	3/13/2019	GLMW06-20190313	Passive Diffusion Bag	24	17.26	<0.200	<1.00	<1.00	<1.00	<0.500	**5.08**
	6/7/2019	GLMW06-20190607	Passive Diffusion Bag	24	18.85	<0.200	<1.00	<1.00	<1.00	<0.500	**5.24**
	9/13/2019	GLMW06-20190913	Passive Diffusion Bag	24	20.31	<0.200	<1.00	<1.00	<1.00	<0.500	**7.20**
	12/4/2019	GLMW06-20191204	Passive Diffusion Bag	24	20.32	<0.200	<1.00	<1.00	<1.00	<0.500	**7.98**
	12/4/2019	DUP-A	Passive Diffusion Bag	24	20.32	<0.200	<1.00	<1.00	<1.00	<0.500	**7.38**
	8/9/2021	GLMW-6	Passive Diffusion Bag	24	20.06	<0.200	<0.500	<0.500	<0.500	<0.500	**5.69**

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW07	3/29/2017	GLMW07	Submersible Pump	22	13.04	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	3/29/2017	GLMW-DUPA (dup)	Submersible Pump	22	13.04	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	2/21/2018	GLMW07-20180221	Passive Diffusion Bag	22	14.38	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	5/25/2018	GLMW07-05252018	Passive Diffusion Bag	22	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW07-09052018	Passive Diffusion Bag	22	19.96	<0.200	<1.00	<1.00	<1.00	<0.500	**2.70**
	12/4/2018	GLMW07-20181204	Passive Diffusion Bag	22	20.00	<0.200	<1.00	<1.00	<1.00	<0.500	**3.86**
	3/13/2019	GLMW07-20190313	Passive Diffusion Bag	22	17.12	<0.200	<1.00	<1.00	<1.00	<0.500	**2.04**
	6/7/2019	GLMW07-20190607	Passive Diffusion Bag	22	18.77	<0.200	<1.00	<1.00	<1.00	<0.500	**1.28**
	9/13/2019	GLMW07-20190913	Passive Diffusion Bag	22	20.27	<0.200	<1.00	<1.00	<1.00	<0.500	**1.74**
	12/4/2019	GLMW07-20191204	Passive Diffusion Bag	22	20.31	<0.200	<1.00	<1.00	<1.00	<0.500	**1.91**
	8/9/2021	GLMW-7	Passive Diffusion Bag	22	19.99	<0.200	<0.500	<0.500	<0.500	<0.500	**2.36**
GLMW08	3/29/2017	GLMW08	Submersible Pump	23	14.07	<0.200	<1.00	<1.00	<1.00	<0.500	**2.90**
	2/21/2018	GLMW08-20180221	Passive Diffusion Bag	23	15.32	<0.200	<1.00	<1.00	<1.00	<0.500	**2.76**
	5/25/2018	GLMW08-05252018	Passive Diffusion Bag	23	**	<0.200	<1.00	<1.00	<1.00	<0.500	**6.32**
	5/25/2018	DUP-A (dup)	Passive Diffusion Bag	23	**	<0.200	<1.00	<1.00	<1.00	<0.500	**5.76**
	9/5/2018	GLMW08-09052018	Passive Diffusion Bag	23	20.68	<0.200	<1.00	<1.00	<1.00	<0.500	**5.86**
	9/5/2018	DUP-09052018	Passive Diffusion Bag	23	20.68	<0.200	<1.00	<1.00	<1.00	<0.500	**5.26**
	12/4/2018	GLMW08-20181204	Passive Diffusion Bag	23	20.64	<0.200	<1.00	<1.00	<1.00	<0.500	**6.53**
	3/13/2019	GLMW08-20190313	Passive Diffusion Bag	23	17.96	<0.200	<1.00	<1.00	<1.00	<0.500	**6.50**
	6/7/2019	GLMW08-20190607	Passive Diffusion Bag	23	19.46	<0.200	<1.00	<1.00	<1.00	<0.500	**4.89**
	6/7/2019	DUP-20190607	Passive Diffusion Bag	23	19.46	<0.200	<1.00	<1.00	<1.00	<0.500	**6.17**
	9/13/2019	GLMW08-20190913	Passive Diffusion Bag	23	20.96	<0.200	<1.00	<1.00	<1.00	<0.500	**6.87**
	9/13/2019	GLMW99-20190913	Passive Diffusion Bag	23	20.96	<0.200	<1.00	<1.00	<1.00	<0.500	**6.49**
	12/4/2019	GLMW08-20191204	Passive Diffusion Bag	23	20.91	<0.200	<1.00	<1.00	<1.00	<0.500	**6.79**
	8/9/2021	GLMW-8	Passive Diffusion Bag	23	20.65	<0.200	<0.500	<0.500	<0.500	<0.500	**6.39**

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW09	3/29/2017	GLMW09	Submersible Pump	21	13.42	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	2/21/2018	GLMW09-20180221	Passive Diffusion Bag	21	14.76	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	5/25/2018	GLMW09-05252018	Passive Diffusion Bag	21	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW09-09052018	Passive Diffusion Bag	21	20.35	<0.200	<1.00	<1.00	<1.00	<0.500	**1.45**
	12/4/2018	GLMW09-20181204	Passive Diffusion Bag	21	20.42	<0.200	<1.00	<1.00	<1.00	<0.500	**1.47**
	3/13/2019	GLMW09-20190313	Passive Diffusion Bag	21	17.49	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	6/7/2019	GLMW09-20190607	Passive Diffusion Bag	21	19.16	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/13/2019	GLMW09-20190913	Passive Diffusion Bag	21	20.72	<0.200	<1.00	<1.00	<1.00	<0.500	**1.61**
	12/4/2019	GLMW09-20191204	Passive Diffusion Bag	21	20.71	<0.200	<1.00	<1.00	<1.00	<0.500	**1.62**
	8/9/2021	GLMW-09	Passive Diffusion Bag	21	20.36	<0.200	<0.500	<0.500	<0.500	<0.500	**0.780**
GLMW10	3/29/2017	GLMW10	Submersible Pump	23	13.76	<0.200	<1.00	<1.00	<1.00	<0.500	**1.23**
	2/21/2018	GLMW10-20180221	Passive Diffusion Bag	23	15.13	<0.200	<1.00	<1.00	<1.00	<0.500	**1.26**
	5/25/2018	GLMW10-05252018	Passive Diffusion Bag	23	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/5/2018	GLMW10-09052018	Passive Diffusion Bag	23	20.68	<0.200	<1.00	<1.00	<1.00	<0.500	**1.24**
	12/4/2018	GLMW10-20181204	Passive Diffusion Bag	23	20.73	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	3/13/2019	GLMW10-20190313	Passive Diffusion Bag	23	17.86	<0.200	<1.00	<1.00	<1.00	<0.500	**1.62**
	6/7/2019	GLMW10-20190607	Passive Diffusion Bag	23	19.49	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
	9/13/2019	GLMW10-20190913	Passive Diffusion Bag	23	21.01	<0.200	<1.00	<1.00	<1.00	<0.500	**1.27**
	12/4/2019	GLMW10-20191204	Passive Diffusion Bag	23	21.01	<0.200	<1.00	<1.00	<1.00	<0.500	**1.24**
	8/9/2021	GLMW-10	Passive Diffusion Bag	23	20.71	<0.200	<0.500	<0.500	<0.500	<0.500	**0.957**

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW11	12/4/2019	GLMW11-20191204	Peristalic Pump	20	20.89	<0.200	<1.00	<1.00	<1.00	<0.500	**2.55**
	8/9/2021	GLMW-11	Passive Diffusion Bag	20	20.11	<0.200	<0.500	<0.500	<0.500	<0.500	**8.02**
GLMW12	12/4/2019	GLMW12-20191204	Peristalic Pump	20	20.27	<0.200	<1.00	<1.00	<1.00	<0.500	**6.52**
	8/9/2021	GLMW-12	Passive Diffusion Bag	20	19.96	<0.200	<0.500	<0.500	<0.500	<0.500	**7.32**
	8/9/2021	Dup-A	Passive Diffusion Bag	20	19.96	<0.200	<0.500	<0.500	<0.500	<0.500	**7.18**
AS01 (AS-PT)	12/4/2019	AS01-20191204	Peristalic Pump	27	20.49	<0.200	<1.00	<1.00	<1.00	<0.500	**1.04**
G-Logics - Grab-Groundwater Samples, March 2017 (3)											
GLMW05	3/14/2017	GLMW-05-19W	Submersible Pump	19	**	<0.2	<2.0	<1.0	<1.0	<1.0	**1.1**
		GLMW-05-27W	Submersible Pump	27	**	<0.2	<2.0	<1.0	<1.0	<1.0	**1.2**
		GLMW-05-37W	Submersible Pump	37	**	<0.2	<2.0	<1.0	<1.0	<1.0	<1.0
		GLMW-05-37 Dup	Submersible Pump	37	**	<0.2	<2.0	<1.0	<1.0	<1.0	<1.0
		GLMW-05-47W	Submersible Pump	47	**	<0.2	<2.0	<1.0	<1.0	<1.0	<1.0
GLMW06	3/14/2017	GLMW-06-19W	Submersible Pump	19	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-06-27W	Submersible Pump	27	**	<0.200	<1.00	<1.00	<1.00	<0.500	**10.3**
		GLMW-06-37W	Submersible Pump	37	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-06-42W	Submersible Pump	42	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
GLMW07	3/14/2017	GLMW-07-21W	Submersible Pump	21	**	<0.200	<1.00	<1.00	<1.00	<0.500	**1.47**
		GLMW-07-27W	Submersible Pump	27	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-07-37W	Submersible Pump	37	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-07-42W	Submersible Pump	42	**	---	---	---	---	---	---

TABLE 2
Groundwater Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Identification	Sampling Device	Sample Depth (ft)	Depth to Water (ft)	Vinyl Chloride	1,1-Dichloroethene	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene (TCE)	Tetrachloroethene (PCE)
MTCA Cleanup Level (1)						0.2	400	160	16	5	5
Groundwater Samples (units in ug/L)											
GLMW08	3/14/2017	GLMW-08-20W	Submersible Pump	20	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-08-25W	Submersible Pump	25	**	<0.200	<1.00	<1.00	<1.00	<0.500	**1.40**
		GLMW-08-36W	Submersible Pump	36	**	---	---	---	---	---	---
		GLMW-08-45W	Submersible Pump	45	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
GLMW09	3/16/2017	GLMW-09-21W	Submersible Pump	21	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-09-25W	Submersible Pump	25	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-09-34W	Submersible Pump	34	**	---	---	---	---	---	---
		GLMW-09-45W	Submersible Pump	45	**	---	---	---	---	---	---
GLMW10	3/16/2017	GLMW-10-22W	Submersible Pump	22	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-10-25W	Submersible Pump	25	**	---	---	---	---	---	---
		GLMW-10-35W	Submersible Pump	35	**	<0.200	<1.00	<1.00	<1.00	<0.500	<1.00
		GLMW-10-44W	Submersible Pump	44	**	---	---	---	---	---	---

Notes:
Refer to site diagram(s) for sampling locations.
(1) Available Method A Cleanup Levels or Most Conservative Method B Cleanup Levels for Unrestricted Land Uses, MTCA, revised 2013.
Exceeding Cleanup Levels does not necessarily trigger requirements for Cleanup Actions under MTCA.
(2) Based on the Parametrix Report Dated April 17, 2007. Sample Identification Names/Numbers Were Not Indicated in the Report.
(3) Grab-Groundwater Samples Were Collected By G-Logics Concurrent With Soil Samples During Drilling
(dup) Blind Field Duplicate Submitted to the Laboratory for QA/QC.
** No Data Available
--- Not Analyzed
<50.0 Analyte Not Detected Above the Specified Laboratory Reporting Limits
3.35 Bold Number(s) Indicates Contaminant Detected.
11.0 Bold Number(s) and Shading Indicates Concentration Exceeds MTCA Cleanup Level.
5/25/2018 Blue Highlight Indicates the Most Recent Sampling Event

TABLE 3
Soil-Gas Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth	1,1-Dichloroethene	cis-1,2-dichloroethene	Tetrachloroethene (PCE)	trans-1,2-Dichloroethene	Trichloroethene (TCE)	Vinyl Chloride
MTCA Method B Sub-Slab Soil Gas Screening Level (1)				3,050	na	321	na	12.3	9.33
MTCA Modified Method B Sub-Slab Screening Level, Commercial (2)				13,241	*	1,652	*	57.5	49.1
(units in ug/m^3)									
GLVP01	3/21/2017	GLVP-01-20170321	Sub-Slab	<0.793	<0.793	**6,220 E**	<0.793	**2.62**	<0.511
	2/21/2018	GLVP01-20180221	Sub-Slab	<0.0357	<0.0793	**4,240 IE**	<0.0238	**1.76**	<0.217
	2/21/2018	GLVP88-20180221 (dup)	Sub-Slab	<0.0357	<0.0793	**4,910 IE**	<0.0238	**1.76**	<0.217
	9/5/2018	GLVP-01	Sub-Slab	<0.0357	<0.0793	**13,900 E**	<0.0238	**8.50**	<0.217
	2/28/2019	GLVP-01-20190228	Sub-Slab	<0.793	<0.793	**2,440 E**	<0.793	**1.74**	<0.511
	2/28/2019	GLVP-88-20190228 (dup)	Sub-Slab	<0.793	<0.793	**1,150**	<0.793	<1.07	<0.511
	9/13/2019	GLVP01-20190913	Sub-Slab	<0.0357	<0.0793	**25,200 E**	**0.0607**	**7.69**	<0.217
	3/8/2021	GLVP-1	Sub-Slab	<0.159	<1.59	**1,040**	<0.793	**0.743**	<0.102
	8/12/2021*	GLVP-1	Sub-Slab	---	---	---	---	---	---
GLVP02	3/21/2017	GLVP-02-20170321	Sub-Slab	<0.793	<0.793	**1,810 E**	<0.793	<1.07	<0.511
	2/21/2018	GLVP02-20180221	Sub-Slab	<0.0357	<0.0793	**2,910 E**	<0.0238	**0.422**	<0.217
	9/5/2018	GLVP-02	Sub-Slab	<0.0357	<0.0793	**5,870 E**	<0.0238	**1.06**	<0.217
	9/5/2018	GLVP-DUP (dup)	Sub-Slab	<0.0357	**0.0897**	**2,240 E**	<0.0238	**0.934**	<0.217
	2/28/2019	GLVP-02-20190228	Sub-Slab	<0.793	**1.52**	**1,090**	<0.793	**3.05**	<0.511
	9/13/2019	GLVP02-20190913	Sub-Slab	<0.0357	<0.0793	**8,570 E**	<0.0238	**0.744**	<0.217
	9/13/2019	GLVP99-20190913 (dup)	Sub-Slab	<0.0357	**0.298**	**4,330 E**	<0.0238	**0.790**	<0.217
	3/8/2021	GLVP-2	Sub-Slab	<0.159	<1.59	**783**	<0.793	<0.215	<0.102
	8/12/2021*	GLVP-2	Sub-Slab	---	---	---	---	---	---
GLVP03	5/17/2019	GLVP03-20190517	5	<0.793	<0.793	**1,250**	<0.793	**1.53**	<0.511
	8/12/2021	GLVP03	5	<0.159	<1.59	**2,200**	<0.793	**1.45**	<0.102
GLVP04	5/17/2019	GLVP04-20190517	5	<0.793	<0.793	**898**	<0.793	<1.07	<0.511
	8/12/2021	GLVP04	5	<0.159	<1.59	**2,220**	<0.793	**0.581**	<0.102
GLVP05	5/17/2019	GLVP05-20190517	5	<0.793	<0.793	**347**	<0.793	<1.07	<0.511
	8/12/2021	GLVP05	5	<0.159	<1.59	**1,250**	<0.793	<0.215	<0.102
GLVP06	5/17/2019	GLVP06-20190517	5	<0.793	<0.793	**1,140**	<0.793	<1.07	<0.511
	8/12/2021	GLVP06	5	<0.159	<1.59	**2,690**	<0.793	**1.61**	<0.102
GLVP07	5/17/2019	GLVP07-20190517	5	<0.793	<0.793	**1,170**	<0.793	<1.07	<0.511
	5/17/2019	GLVPA-20190517 (dup)	5	<0.793	<0.793	**988**	<0.793	<1.07	<0.511
	8/12/2021	GLVP07	5	<0.159	<1.59	**2,220**	<0.793	<0.215	<0.102

Notes: Refer to site diagram(s) for sampling locations.

(1) Most Conservative MTCA Method B Soil-Gas Screening Levels for Samples Collected Below Building Foundations to a Depth of 15 feet. Provided in the Ecology *Cleanup Levels and Risk Calculation (CLARC)* Database, Updated July 2015

(2) Modified MTCA Method B Sub-Slab Soil Gas Screening Levels Based on Commercial Use and 8-Hour Exposure. Calculations Shown in Table 1a.

na Cleanup/Screening Level Not Established

* Sample not collected. Sampling point destroyed during renovation of the property.

<1.07 The analyte was not detected at a concentration above the indicated reporting limit.

2.62 Bold Number(s) Indicates Contaminant Detected.

1,881 Bold Number(s) and Yellow Shading Indicates Concentration Exceeds Applicable Screening Level.

3/8/2021 Blue Highlight Indicates the Most Recent Sampling Event

dup Bind Field Duplicate Analyzed for QA/QC.

E Value Above Quantitation Limit

I Analyte with an internal standard that does not meet established aceptance criteria

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TABLE 4
Indoor-Air Sample Analyses
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

Exploration Location	Sample Date	Sample Number	Sample Depth	Approximate Time Duration (hr:min)	1,1-Dichloroethene	cis-1,2-dichloroethene	Tetrachloroethene (PCE)	trans-1,2-Dichloroethene	Trichloroethene (TCE)	Vinyl Chloride
MTCA Standard Method B Indoor-Air Cleanup Level, Residential (1)					91.4	*	9.62	18.3	0.334	0.284
MTCA Modified Method B Indoor-Air Cleanup Level, Commercial (2)					397	*	50.2	*	1.72	1.47
Ecology Short-Term TCE Indoor-Air Action Levels, Residential, Non cancer (3)					*	*	*	*	2.0	*
Ecology Short-Term TCE Indoor-Air Action Levels, Non Residential, Non cancer (4)					*	*	*	*	7.5	*
(units in ug/m^3)										
GLIA-01	3/8/2021	GLIA-1	Indoor Air	8:00	<0.0397	<0.396	**0.819**	<0.198	<0.0537	<0.0256
	8/12/2021	GLIA-1	Indoor Air	8:00	<0.397	<0.396	**0.169**	<0.198	<0.0537	<0.0256
GLIA-02	3/8/2021	GLIA-2	Indoor Air	8:00	<0.0397	<0.396	**0.773**	<0.198	<0.0537	<0.0256
	8/12/2021	GLIA-2	Indoor Air	8:00	<0.0397	<0.396	**0.143**	<0.195	<0.0537	<0.0256
GLAA-01 (5)	3/8/2021	GLAA-1	Outdoor Air	8:00	<0.0397	<0.396	**3.68**	<0.198	**0.0622**	<0.0256
	8/12/2021	GLAA-1	Outdoor Air	8:00	<0.0397	<0.396	<0.0678	<0.198	<0.0537	<0.0256

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

(1) MTCA Standard Method B Indoor-Air Cleanup Levels for Indoor Air Based on Residential Use, Provided in the Ecology Cleanup Levels and Risk Calculation (CLARC) Database (report as of DATE).

(2) Modified MTCA Method B Indoor-Air Cleanup Levels for Indoor Air Based on Commercial Use and 8-Hour Exposure. Calculations Shown in Table 4.

(3) Residential indoor-air action levels based on Ecology's Implementation Memorandum No. 22, Vapor Intrusion (VI) Investigations and Short-Term Trichloroethene (TCE) Toxicity (October 1, 2019).

(4) Non-residential indoor-air action levels based on Ecology's Implementation Memorandum No. 22, Vapor Intrusion (VI) Investigations and Short-Term Trichloroethene (TCE) Toxicity (October 1, 2019).

(5) Outdoor/Ambient Air Samples Collected to Assess Background Concentrations. Sample Concentrations Not Compared to Cleanup Levels.

* Cleanup/Screening Level Not Established.

--- Sample not analyzed.

<1.07 The analyte was not detected at a concentration above the indicated reporting limit.

12.0 Bold Number(s) indicates contaminant detected.

419 Bold Number(s) and Yellow Shading indicates concentration exceeds applicable cleanup level.

8/12/2021 Blue shading indicates the most recent sampling event

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TABLE 5
MTCA Modified Method B Screening-Level and Cleanup-Level Calculations
Tacoma Dry Cleaners
7502 Custer Road West
Lakewood, Washington

750-2 Carcinogens

		Units	PCE	Vinyl Chloride
Carcinogenic Risk	RISK	unitless	1.00E-06	1.00E-06
Inhalation Cancer Potency Factor (1)	CPFi	kg-day/mg	9.10E-04	3.10E-02
Avg Body Wt.	ABW	kg	70	70
Averaging Time	AT	years	75	75
Exposure Duration (2)	ED	years	25	25
Exposure Frequency (3)	EF	unitless	0.23	0.23
Air Breathing Rate	BR	m^3/day	20	20
Inhalation Absorption Fraction	ABS1	unitless	1	1
Unit Conversion Factor	UCF	µg/mg	1,000	1,000
Standard Method B Indoor-Air Cleanup Level (Residential)	**CUL**	**µg/m^3**	**9.62**	**0.280**
Standard Method B Sub-Slab Screening Level, 0.03 Attenuation (Residential)(4)	**SL**	**µg/m^3**	**321**	**9.33**
Modified Method B Indoor-Air Cleanup Level (Commercial)	**CUL**	**µg/m^3**	**50.2**	**1.47**
Modified Sub-Slab Soil Gas Screening Level, 0.03 Attenuation (Commercial)(4)	**SL**	**µg/m^3**	**1,672**	**49.1**

CUL = (RISK*ABW*AT*UCF)/(CPFi*BR*ABS*ED*EF) (Equation 750-2, Section 750 of Chapter 173-340 of MTCA)

750-1 Non-carcinogens

		Units	1, 1 Dichloroethene
Inhalation Reference Dose (1)	RfDi	mg/kg-day	5.71E-02
Avg Body Wt.	ABW	kg	16
Unit Conversion Factor	UCF	ug/mg	1000
Air Breathing Rate	BR	m^3/day	10
Inhalation Absorption Fraction	ABS	unitless	1
Hazard Quotient	HQ	unitless	1
Averaging Time	AT	years	6
Exposure Duration	ED	years	6
Exposure Frequency (3)	EF	unitless	0.23
Standard Method B Indoor-Air Cleanup Level (Residential)	**CUL**	**µg/m^3**	**91.4**
Standard Method B Sub-Slab Screening Level, 0.03 Attenuation (Residential)(4)	**SL**	**µg/m^3**	**3,050**
Modified Method B Indoor-Air Cleanup Level (Commercial)	**CUL**	**µg/m^3**	**397**
Modified Sub-Slab Soil Gas Screening Level, 0.03 Attenuation (Commercial)(4)	**SL**	**µg/m^3**	**13,241**

CUL = (RfD*ABW*UCF*HQ*AT)/(BR*ABS*ED*EF) (Equation 750-1, Section 750 of Chapter 173-340 of MTCA)

Modified Method B Indoor Air Cleanup Levels
Commercial Exposure Scenario

TCE CUL Calculations

		Units	TCE Kidney	TCE Lymphoma	TCE Liver	Total TCE
Carcinogenic Risk	RISK	unitless	1.00E-06	1.00E-06	1.00E-06	---
Inhalation Cancer Potency Factor	CPFi	kg-day/mg	3.50E-03	7.00E-03	3.50E-03	---
Avg Body Wt.	ABW	kg	70	70	70	---
Averaging Time	AT	years	75	75	75	---
Exposure Duration (3)	ED	years	25	25	25	---
Exposure Frequency (2)	EF	unitless	0.23	0.23	0.23	---
Air Breathing Rate	BR	m^3/day	20	20	20	---
Inhalation Absorption Fraction	ABS1	unitless	1	1	1	---
Unit Conversion Factor	UCF	µg/mg	1,000	1,000	1,000	---
Early Life Exposure Adjustment Factor	ELE	ug-year/kg-day	32.6	---	---	---
Standard Method B Indoor-Air Cleanup Level (Residential)	**CUL**	**µg/m^3**	**---**	**---**	**---**	**0.37**
Standard Method B Sub-Slab Screening Level, 0.03 Attenuation (Residential)(4)	**SL**	**µg/m^3**	**---**	**---**	**---**	**12.3**
Modified Method B Indoor-Air Cleanup Level (Commercial)	**CUL**	**µg/m^3**	**2.86**	**6.52**	**13.0**	**1.72**
Modified Sub-Slab Soil Gas Screening Level, 0.03 Attenuation (Commercial)(4)	**SL**	**µg/m^3**	**---**	**---**	**---**	**57.5**

TCE Kidney Cancer CUL = (RISK*AT*UCF)/(CPFi*ELE*ABS*EF) (CLARC Guidance, September 2012)
TCE Lymphoma and Liver Cancer CUL = (RISK*ABW*AT*UCF)/(CPFi*BR*ABS*ED*EF) (Equation 750-2, Section 750 of Chapter 173-340 of MTCA)
TCE Final CUL = 1/[(1/CUL for Kidney)+(1/CUL for Lymphoma)+(1/CUL for Liver)]

Notes:

(1) Compound-specific parameters, such as RfDi and CPFi, are provided in Ecology Implementation Memo #18, Publication No. 17-09-043

(2) **Standard Exposure Frequency**: default = 1 = 365 days assumed accupancy at 24 hours per day = 8,760
Modified Exposure Frequency: 250 days per year at 8 hours/day = 2,000; therefore Modified EF = 2,000/8760 = 0.23

(3) **Exposure duration**: default = 30 years for residential occupant; modify to 25 years for occupational worker

(4) Sub-Slab Soil Gas Screening Levels calculated from Indoor-Air Screening Levels Using an Attenuation Factor of 0.03

EF Green Shading Indicates an Equation Parameter that has been Modified for the Commercial-Exposure Scenario