SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

*Draft – Issued for Client Review*

May 16, 2017

Mr. Scott Koppelman
AMLI Residential Partners
425 Pontius Avenue North, Suite 400
Seattle, Washington 98109

**SUBJECT: FIRST QUARTER 2017 GROUNDWATER MONITORING REPORT**
**Former Avtech Property (AMLI Wallingford)**
**3400 Wallingford Avenue North, Seattle, Washington**
**Project Number: 0789-004-24**

Mr. Koppelman:

SoundEarth Strategies, Inc. (SoundEarth) has prepared this report to present the results of the First Quarter 2017 groundwater monitoring event (monitoring event) conducted at the AMLI Wallingford property located at 3400 Wallingford Avenue North in Seattle, Washington (the Property), as shown in Figure 1. The Property consists of 2.02 acres under redevelopment on the north and south sides of North 34th Street (North Block and South Block, respectively), as shown on Figure 2.

**BACKGROUND**

The Property was initially developed by the early 1900s with four single-family residences. A two-story factory/commercial building was constructed on the North Block in 1909. This building contained a shoe manufacturer from 1909 to the 1940s and Grandma's Cookies in the 1950s and 1960s. Avtech Corporation (Avtech), a manufacturer of aviation electronics, occupied the building from 1974 to 2011. Two furniture workshop buildings were constructed on the south side of North 34th Street in the 1930s (South Block), with an additional single-story warehouse constructed in 1965. Avtech occupied the South Block buildings from the 1980s to 2011.

Based on the results of previous subsurface investigations (2011 through 2014) and cleanup action activities performed during site redevelopment between November 2014 and April 2015, subsurface soil beneath the Property consists primarily of localized, near-surface anthropogenic fill overlying Vashon-age glacial till, which overlies glacial advance outwash deposits. Groundwater was encountered within the advance outwash deposits during subsurface exploration activities. This water-bearing zone was typically encountered at depths ranging from approximately 21.5 to 45 feet below the pre-construction ground surface and appeared to extend beyond the maximum depth explored of 55 feet below the pre-construction ground surface. The groundwater migration direction has been consistently toward the southeast.

The site is defined by the nature and extent of contamination associated with one or more releases of hazardous substances prior to any cleanup of that contamination (the Site). Based on the information gathered to date, the Site includes soil contaminated with trichloroethene (TCE), tetrachloroethene

(PCE), lead, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and groundwater contaminated with TCE. The TCE and PCE impacts likely resulted from past manufacturing activities at the former Avtech facility on the Property. Sampling conducted to date indicates that soil was impacted by TCE in the former loading dock area of the commercial building, formerly located on the North Block, at depths ranging from approximately 9 to 30 feet below grade. Groundwater containing TCE concentrations exceeding the Washington State Model Toxics Control Act (MTCA) Method A cleanup level was present on the southern half of the North Block and apparently migrated to the south across North 34th Street to the South Block, the adjacent Varsity Inn property, and beneath Burke Avenue North (east of North 34th Street). The results of previous groundwater sampling at the Site are summarized in Table 1.

The Site was accepted into the Washington State Department of Ecology's Voluntary Cleanup Program (VCP) Project No. NW2739 on June 11, 2013. An interim cleanup action was performed at the Site between November 2014 and February 2015, along with the installation of a soil vapor extraction system on the North Block and the installation of new injection wells and the injection events with potassium permanganate at the Site in March 2015. Approximately 5,414 tons of TCE-, petroleum hydrocarbon-, cPAH-, and lead-impacted soils were excavated from the Property in the course of mass excavation activities and disposed of at Waste Management's Columbia Ridge Landfill in Arlington, Oregon, between December 2, 2014, and February 18, 2015. In March 2015, SoundEarth injected 53,765 gallons of an aqueous potassium permanganate solution containing 18,480 pounds of potassium permanganate. The solution was injected into 56 wells on the North and South Blocks: 31,068 gallons were injected into 32 wells on the North Block and 22,697 gallons were injected into 24 wells on the South Block.

SoundEarth conducted additional injection events in July and December 2016. During the July 2016 injection event, SoundEarth set up a multipoint automated injection system and a single-point injection system to inject mixed batches of potassium permanganate solution into 14 injection wells. Over the course of the July 2016 injection event, approximately 12,000 gallons of 3 percent solution potassium permanganate and 4,000 gallons of rinse water were injected.

During the December 2016 injection event, SoundEarth injected batches of potassium permanganate solution into injection wells IW56 and IW57. Over the course of the injection event conducted on December 19 through 21, 2016, SoundEarth injected a total of 2,000 gallons of solution into injection wells IW56 and IW57. The purpose of the injection was to treat residual contamination in MW18.

## FIRST QUARTER FIELD ACTIVITIES

The groundwater monitoring event was conducted on March 21, 2017. The monitoring event was performed to evaluate the environmental quality, flow direction, and gradient of groundwater beneath the Property and Site.

### First Quarter 2017 Groundwater Sampling Event

Upon arrival at the Property on March 21, 2017, SoundEarth personnel opened monitoring wells MW05, MW12, MW16A, MW18, and IW08. Water levels were permitted to equilibrate with atmospheric pressure for a minimum of 15 minutes before groundwater level measurements were obtained. Groundwater levels were measured relative to the top of well casing to an accuracy of 0.01 feet using an electronic water level meter.

On March 21, 2017, groundwater samples were collected from monitoring wells MW05, MW12, MW16A, MW18, and IW08. Groundwater samples from MW05, MW12, MW16A, and MW18 were collected in accordance with the U.S. Environmental Protection Agency (EPA) *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (April 1996). Purging and sampling of each monitoring well were performed using a bladder pump or peristaltic pump and dedicated polyethylene tubing at flow rates ranging from 60 to 125 milliliters per minute. The intake was placed approximately 2 to 3 feet below the surface of the groundwater or mid-screen in each monitoring well. During purging, water quality was monitored using a Quanta or YSI water quality meter equipped with a flow-through cell. The water quality parameters that were monitored and recorded included; temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential. Each monitoring well was purged until a minimum subset of pH, specific conductivity, and dissolved oxygen and/or turbidity stabilized. Due to the depth to groundwater and the limited water column, injection well IW08 was sampled using a water hand pump. No water quality parameters were recorded or measured from well IW08.

Following purging, groundwater samples were collected from the pump outlet tubing located upstream of the flow-through cell and placed directly into clean, laboratory-prepared sample containers. Each container was labeled with a unique sample identification number, placed on ice in a cooler, and transported to Friedman & Bruya, Inc., of Seattle, Washington, under standard chain-of-custody protocols for laboratory analysis.

The groundwater samples were submitted for analysis of chlorinated volatile organic compounds (CVOCs) by EPA Method 8260C. Purge water generated during the monitoring event was placed in an appropriately labeled 55-gallon steel drum and temporarily stored on the Property pending receipt of analytical data and proper disposal.

**Groundwater Results**

Groundwater levels measured on March 21, 2017, ranged from 22.95 (MW05) to 35.79 (IW08) feet below the top of the monitoring well casings (Table 1). Due to rerouting of the top of casings in several monitoring wells during construction activities, the groundwater elevations for the monitoring event were not calculated and contoured. Historically, the groundwater contours have indicated a general groundwater flow direction toward the southeast.

Groundwater analytical results from the monitoring event are summarized below (Figure 2; Table 1):

- Concentration for all CVOCs were below their respective laboratory reporting limits and/or MTCA Method A cleanup levels in the groundwater samples collected during the monitoring event.

**DATA QUALITY REVIEW**

SoundEarth performed a quality assurance/quality control (QA/QC) review of the analytical results, which included a review of accuracy and precision of the data supplied by the laboratory. All QA/QC criteria are acceptable for the groundwater samples, and the analytical results are considered usable to meet the project objectives. A copy of the laboratory analytical report is provided as Attachment A.

**CONCLUSIONS AND RECOMMENDATIONS**

The targeted chemical injection event in 2016 resulted in a decrease in TCE concentrations below the MTCA Method A cleanup level in groundwater monitoring wells across the Site. Concentrations of TCE in groundwater were below the MTCA Method A cleanup level for all wells sampled in the First Quarter 2017. SoundEarth recommends additional quarterly sampling, including a monitoring event at the Site in Second Quarter 2017, the results of which will be included in a groundwater monitoring report. Continued quarterly monitoring should be conducted during 2017 to evaluate the need for an additional injection of chemical oxidation compounds.

**CLOSING**

SoundEarth appreciates this opportunity to provide AMLI Residential Partners with environmental consulting services. Please call either of the undersigned at 206-306-1900 if you have any questions or comments regarding the content of this report.

Respectfully,
**SoundEarth Strategies, Inc.**

***DRAFT***

Liz Forbes, LG
Project Geologist

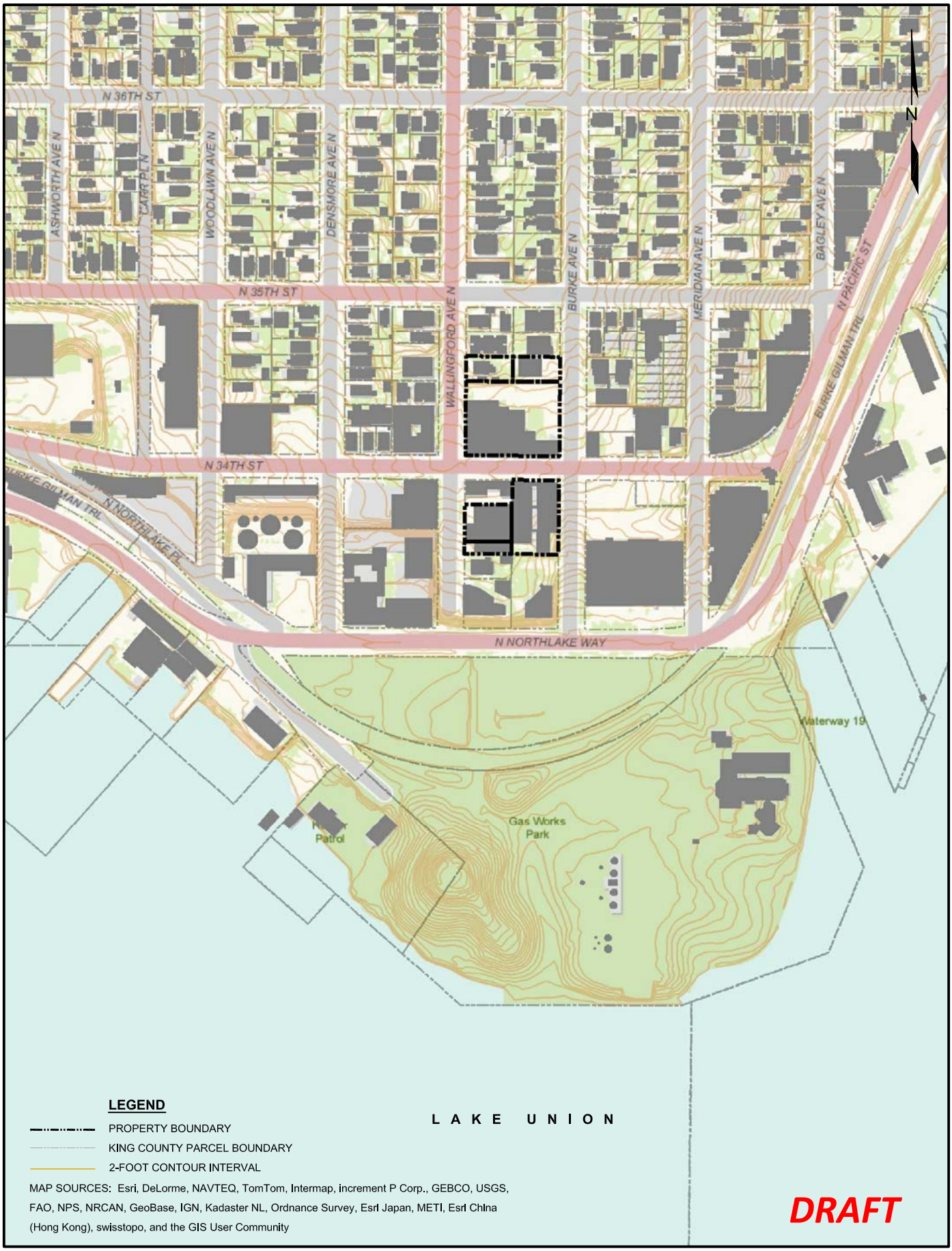
***DRAFT***

Rob Roberts
Senior Scientist

Attachments: Figure 1, Property Location Map
Figure 2, Post-Permanganate Injections Groundwater Analytical Results
Table 1, Summary of Groundwater Data
A, Laboratory Analytical Report
*Friedman & Bruya, Inc. #703357*

EBF/CER:rt

# FIGURES




**LEGEND**

PROPERTY BOUNDARY

KING COUNTY PARCEL BOUNDARY

2-FOOT CONTOUR INTERVAL

MAP SOURCES: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community

**DRAFT**

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DATE: 08/30/13
DRAWN BY: BLR
CHECKED BY: CER
CAD FILE: 0789-004_FIG1

PROJECT NAME: FORMER AVTECH PROPERTY (AMLI WALLINGFORD)
PROJECT NUMBER: 0789-004-10
STREET ADDRESS: 3400 WALLINGFORD AVENUE NORTH
CITY, STATE: SEATTLE, WASHINGTON

**FIGURE 1**
PROPERTY LOCATION MAP

4/27/2017

P:\0789 AMLI RESIDENTIAL\0789-004 AMLI AVTEC\TECHNICAL\CAD\FIGURE 1\0789-004_FIG1_F.DWG

4/13/2017

P:\0789 AMLI RESIDENTIAL\0789-004 AMLI AVTEC\TECHNICAL\CAD\2017 GW_Q1\0789-004-2017Q1_GD.DWG

N

0 25 50

APPROXIMATE SCALE IN FEET

WALLINGFORD AVENUE NORTH

BURKE AVENUE NORTH

NORTH 34TH STREET

VARSITY INN PROPERTY

SOUTH BLOCK

NORTH BLOCK

OFFICE PROPERTY

PARKING LOT

B04/ MW02

B13/ MW08

B11/ MW06

B12/ MW07

B17/ MW12

B19/ MW14

B15/ MW10

B01/ MW01

B06/ MW04

B16/ MW11

B18/ MW13

B14/ MW09

B05/ MW03

B07/ MW05

B20/ MW15

MW11D

MW16A

MW16

MW17

MW18

IW01 IW02 IW03 IW04 IW04A IW05 IW06 IW07 IW08 IW09 IW10 IW11 IW12 IW13 IW14 IW15 IW16 IW17 IW18 IW19 IW26 IW30 IW33 IW37 IW39 IW44 IW47 IW50 IW51 IW53 IW55 IW56 IW57

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW12 | 02/18/16 | 9 |
| | 05/27/16 | 9.2 |
| | 09/29/16 | <1 |
| | 12/27/16 | <1 |
| | 03/21/17 | <1 |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW11 | 12/03/15 | 16 |
| | 02/18/16 | -- |
| | 05/27/16 | -- |
| | 09/29/16 | -- |
| | 12/27/16 | -- |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW16A | 02/18/16 | <1 |
| | 05/27/16 | 9.7 |
| | 09/29/16 | 6.4 |
| | 12/27/16 | 20 |
| | 03/21/17 | 3.5 |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW05 | 02/22/16 | 23 |
| | 05/27/16 | 21 |
| | 09/29/16 | <1 |
| | 12/27/16 | 7.9 |
| | 03/21/17 | <1 |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| IW08 | 02/19/16 | 15.0 |
| | 05/27/16 | 7 |
| | 10/24/16 | <1 |
| | 12/27/16 | -- |
| | 03/21/17 | <1 |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW17 | 02/22/16 | <1 |
| | 05/27/16 | <1 |
| | 09/29/16 | -- |
| | 12/27/16 | -- |
| | 03/21/17 | -- |

| Sample ID | Sample Date | TCE (µg/L) |
|---|---|---|
| MW18 | 02/19/16 | 50 |
| | 05/27/16 | 36 |
| | 09/29/16 | 41 |
| | 12/27/16 | <1 |
| | 03/21/17 | <1 |

## LEGEND

| | |
|---|---|
| B07/ MW05 | MONITORING WELL |
| MW16A | COMPLIANCE WELL FOR PROPERTY NFA |
| | ABANDONED WELL |
| IW01 | INJECTION WELL |
| | CATCH BASIN |
| | PROPERTY BOUNDARY |
| | PARCEL BOUNDARY |
| ss | SEWER LINE (APPROXIMATE) |
| MTCA | WASHINGTON STATE MODEL TOXICS CONTROL ACT |
| RED | DENOTES TCE CONCENTRATION ABOVE THE MTCA METHOD A CLEANUP LEVEL |
| TCE | TRICHLOROETHENE |
| -- | NOT SAMPLED |
| < | NOT DETECTED AT A CONCENTRATION EXCEEDING THE LABORATORY REPORTING LIMIT |
| µg/L | MICROGRAMS PER LITER |

SoundEarth Strategies

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AMLI WALLINGFORD
3400 WALLINGFORD AVENUE NORTH
SEATTLE, WASHINGTON
SOUNDEARTH PROJECT #0789-004-23

DRAFT

**FIGURE 2**
POST-PERMANGANATE INJECTIONS
GROUNDWATER ANALYTICAL RESULTS

# TABLE

SoundEarth Strategies

**Table 1**
**Summary of Groundwater Data**
**Avtech Property**
**3400 Wallingford Avenue North**
**Seattle, Washington**

*Draft - Issued for Client Review*

| Sample ID and TOC Elevation | Sample Date | Depth to Groundwater[1] (feet) | Groundwater Elevation[2] (feet) | Analytical Results (µg/L) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **MW01** | 01/17/12 | 27.59 | 56.85 | <50 | <250 | <0.35 | <1 | <1 | <3 | <0.2[pr] | <1 | <1 | <1 | <1 | 1.58 | 1.43 | <1 | <1 | <1 | 3.94 | <1 | <0.1 | -- |
| 84.44 | 05/01/12 | 25.02 | 59.42 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 01/11/13 | 26.25 | 58.19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | 24.75 | 59.69 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 25.55 | 58.89 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 27.43 | 57.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 27.67 | 56.77 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.3 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Well Decommissioned On October 29, 2014 | | | | | | | | | | | | | | | | | | | | | | |
| **MW02** | 01/17/12 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 69.73 | 04/27/12 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 01/11/13 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Well Decommissioned On October 29, 2014 | | | | | | | | | | | | | | | | | | | | | | |
| **MW03** | 01/17/12 | DRY | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 75.48 | 04/27/12 | 31.18 | 44.30 | -- | -- | -- | -- | -- | -- | <0.2 | 2.2 | **83** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/08/12 | 31.06 | 44.42 | -- | -- | -- | -- | -- | -- | <0.2 | 1.9 | **64** | <1 | -- | 1.69 | 1.44 | <1 | <1 | <1 | 11.9 | <1 | <0.1 | -- |
| | 01/14/13 | 31.78 | 43.70 | -- | -- | -- | -- | -- | -- | <0.2 | 1.7 | **71** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 30.96 | 44.52 | -- | -- | -- | -- | -- | -- | <0.2 | 1.8 | **76** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | 10/10/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | 06/29/15 | 36.15 | 39.33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/02/15 | 31.72 | 43.76 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 31.10 | 44.38 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 32.55 | 42.93 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 34.48 | 41.00 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW04** | 01/17/12 | 36.70 | 42.77 | -- | -- | <0.35 | <1 | <1 | <3 | <0.2[pr] | <1 | **110** | <1 | <1 | 18.6 | <1 | <1 | <1 | <1 | 4.33 | <1 | <0.1 | -- |
| 79.47 | 04/27/12 | 36.09 | 43.38 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **170** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 01/11/13 | 36.44 | 43.03 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **85** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 35.93 | 43.54 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **290** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 36.15 | 43.32 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **150** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 36.90 | 42.57 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW04 (Field Dup)** | 01/17/12 | 36.70 | 42.77 | -- | -- | <0.35 | <1 | <1 | <3 | <0.2[pr] | <1 | **120** | <1 | <1 | 18.6 | <1 | <1 | <1 | <1 | 4.65 | <1 | <0.1 | -- |
| 79.47 | 04/27/12 | 36.09 | 43.38 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **170** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

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**Table 1**
**Summary of Groundwater Data**
**Avtech Property**
**3400 Wallingford Avenue North**
**Seattle, Washington**

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| Sample ID and TOC Elevation | Sample Date | Depth to Groundwater[1] (feet) | Groundwater Elevation[2] (feet) | Analytical Results (µg/L) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **MW05** | 01/17/12 | 24.90 | 30.71 | -- | -- | <0.35 | <1 | <1 | <3 | <0.2[pr] | <1 | 3.3 | <1 | <1 | <1 | 5.31 | 3.55 | <1 | <1 | 22.6 | <1 | <0.1 | -- |
| 55.61 | 05/01/12 | 23.40 | 32.21 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 1.9 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 01/14/13 | 24.34 | 31.27 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.3 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 22.86 | 32.75 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 23.71 | 31.90 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 1.9 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 25.57 | 30.04 | -- | -- | -- | -- | -- | -- | <0.2 | 1.1 | **8.2** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/28/13 | -- | -- | -- | -- | -- | -- | -- | -- | <0.2 | 1.1 | **8.4** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 25.77 | 29.84 | -- | -- | -- | -- | -- | -- | <0.2 | 2.1 | **9.9** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | 09/14/15 | 24.82 | 30.79 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 25.24 | 30.37 | -- | -- | -- | -- | -- | -- | <0.2 | 2.8 | **27** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/22/16 | 24.66 | 30.95 | -- | -- | -- | -- | -- | -- | <0.2 | 2.5 | **23** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 24.52 | 31.09 | -- | -- | -- | -- | -- | -- | <0.2 | 2.1 | **21** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/29/16 | 24.85 | 30.76 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 24.04 | 31.57 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **7.9** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/21/17 | 22.95 | 32.66 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW06** | 04/25/12 | 31.84 | 36.55 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.2 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 68.39 | 01/14/13 | 31.86 | 36.53 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.4 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/26/13 | 30.85 | 37.54 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 4.5 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/11/13 | 32.01 | 36.38 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.2 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/11/13 | 33.61 | 34.78 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/17/14 | -- | -- | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.9 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Decommissioned On October 29, 2014** | | | | | | | | | | | | | | | | | | | | | | |
| **MW07** | 04/25/12 | 37.43 | 39.35 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.3 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 76.78 | 01/11/13 | 37.59 | 39.19 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.5 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | 36.52 | 40.26 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **6.1** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/11/13 | 36.97 | 39.81 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **11** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 37.97 | 38.81 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **6.5** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 38.32 | 38.46 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **6.4** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Decommissioned On October 29, 2014** | | | | | | | | | | | | | | | | | | | | | | |
| **MW08** | 04/25/12 | 37.86 | 38.75 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 76.61 | 01/11/13 | 37.34 | 39.27 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | 07/10/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | 10/10/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | |
| | **Well Decommissioned On October 29, 2014** | | | | | | | | | | | | | | | | | | | | | | |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

SoundEarth Strategies

**Table 1**
**Summary of Groundwater Data**
**Avtech Property**
**3400 Wallingford Avenue North**
**Seattle, Washington**

*Draft - Issued for Client Review*

| Sample ID and TOC Elevation | Sample Date | Depth to Groundwater[1] (feet) | Groundwater Elevation[2] (feet) | Analytical Results (µg/L) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **MW09** | 05/01/12 | 23.19 | 57.98 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 81.17 | 01/14/13 | 24.00 | 57.17 | -- | -- | -- | -- | -- | -- | <0.2 | 1.5 | **42** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 22.87 | 58.30 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **24** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 23.65 | 57.52 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **36** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 25.52 | 55.65 | -- | -- | -- | -- | -- | -- | <0.2 | 1.5 | **43** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 25.72 | 55.45 | -- | -- | -- | -- | -- | -- | <0.2 | 2.4 | **51** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Well Decommissioned On October 29, 2014 | | | | | | | | | | | | | | | | | | | | | | | |
| **MW10** | 05/01/12 | 21.90 | 63.60 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 85.50 | 01/11/13 | 22.56 | 62.94 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | 21.49 | 64.01 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 22.63 | 62.87 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 24.75 | 60.75 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 24.82 | 60.68 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Well Decommissioned On October 29, 2014 | | | | | | | | | | | | | | | | | | | | | | | |
| **MW11** | 04/30/12 | 44.56 | 34.24 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **14** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 78.80 | 05/08/12 | 44.52 | 34.28 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **29** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 01/11/13 | 44.74 | 34.06 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **78** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | 43.56 | 35.24 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **39** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 43.90 | 34.90 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **56** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 44.59 | 34.21 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **35** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/25/14 | 44.86 | 33.94 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **48** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | 41.43 | 37.37 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | 42.24 | 36.56 | Inaccessible | | | | | | | | | | | | | | | | | | | | |
| | 12/03/15 | 42.40 | 36.40 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **16** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 41.15 | 37.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | -- | -- | Inaccessible | | | | | | | | | | | | | | | | | | | | |
| **MW11D** | 04/30/14 | 43.74 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 76.01 | 06/29/15 | 44.25 | 31.76 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/15/15 | 44.65 | 31.36 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 43.71 | 32.30 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 43.18 | 32.83 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 42.59 | 33.42 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

SoundEarth Strategies

**Table 1**
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**Avtech Property**
**3400 Wallingford Avenue North**
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*Draft - Issued for Client Review*

| Sample ID and TOC Elevation | Sample Date | Depth to Groundwater[1] (feet) | Groundwater Elevation[2] (feet) | Analytical Results (µg/L) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **MW12** | 04/27/12 | 32.81 | 49.02 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **14** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 81.83 | 01/14/13 | 33.30 | 48.53 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 5.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | 32.76 | 49.07 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **5.7** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 33.08 | 48.75 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **10** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 32.95 | 48.88 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | 32.89 | 48.94 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.9 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/15/15 | 33.70 | 48.13 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **13** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 33.74 | 48.09 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **15** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 31.96 | 49.87 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **9.1** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 32.36 | 49.47 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **9.2** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/29/16 | 34.10 | 47.73 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 33.09 | 48.74 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/21/17 | 32.03 | 49.80 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW13** | 04/27/12 | 34.97 | 43.97 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 1.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 78.94 | 05/07/12 | 34.94 | 44.00 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 34.88 | 44.06 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 2.5 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | 35.15 | 43.79 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **37** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 35.73 | 43.21 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 39.67 | 39.27 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW14** | 04/30/12 | 29.99 | 54.61 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 84.60 | 01/11/13 | 30.95 | 53.65 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/25/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | | |
| | 07/10/13 | 30.56 | 54.04 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/10/13 | 32.00 | 52.60 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | 32.00 | 52.60 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | 33.18 | 51.42 | Inaccessible | | | | | | | | | | | | | | | | | | | | |
| | 02/18/16 | -- | -- | Inaccessible | | | | | | | | | | | | | | | | | | | | |
| | 05/27/16 | 31.35 | 53.25 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **MW15** | 04/30/12 | 27.37 | 38.72 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 66.09 | 01/14/13 | 27.76 | 38.33 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/24/13 | 26.69 | 39.40 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 07/10/13 | Inaccessible | | | | | | | | | | | | | | | | | | | | | | |
| | 10/28/13 | 28.02 | 38.07 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 04/16/14 | 28.38 | 37.71 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 06/29/15 | 32.76 | 33.33 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/14/15 | 29.14 | 36.95 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 29.65 | 36.44 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 28.75 | 37.34 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 29.11 | 36.98 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 28.45 | 37.64 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW16** | 04/16/14 | 40.18 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Destroyed By Earthwork Construction: February 2015** | | | | | | | | | | | | | | | | | | | | | | | |
| **MW16A** | 06/29/15 | 34.78 | -- | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 81.97[8] | 09/30/15 | -- | -- | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.0 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 37.09 | 44.88 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/18/16 | 36.06 | 45.91 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 36.60 | 45.37 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **9.7** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/29/16 | 35.01 | 46.96 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **6.4** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 34.00 | 47.97 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **20** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/21/17 | 33.71 | 48.26 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 3.5 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MW17** | 06/29/15 | 12.51 | 31.44 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 43.95 | 07/17/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 276 |
| | 09/14/15 | 13.36 | 30.59 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | 1.2 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 8.10 |
| | 12/03/15 | 12.83 | 31.12 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 3.00 |
| | 02/22/16 | 11.15 | 32.80 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 12.00 | 31.95 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | Inaccessible | | | | | | | | | | | | | | | | | | | | | | |
| **MW18** | 06/29/15 | 32.76 | 39.67 | -- | -- | -- | -- | -- | -- | <0.2 | 4.9 | **46** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 72.43 | 07/16/15 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 251 |
| | 09/15/15 | 33.94 | 38.49 | -- | -- | -- | -- | -- | -- | <0.2 | 5.1 | **45** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 25.6 |
| | 12/03/15 | 34.00 | 38.43 | -- | -- | -- | -- | -- | -- | <0.2 | 8.2 | **69** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35.6 |
| | 02/19/16 | 33.31 | 39.12 | -- | -- | -- | -- | -- | -- | <0.2 | 5.1 | **50** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 31.98 | 40.45 | -- | -- | -- | -- | -- | -- | <0.2 | 4.2 | **36** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 09/29/16 | 33.06 | 39.37 | -- | -- | -- | -- | -- | -- | <0.2 | 4.4 | **41** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 32.18 | 40.25 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/21/17 | 31.82 | 40.61 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

SoundEarth Strategies

**Table 1**
**Summary of Groundwater Data**
**Avtech Property**
**3400 Wallingford Avenue North**
**Seattle, Washington**

*Draft - Issued for Client Review*

| Sample ID and TOC Elevation | Sample Date | Depth to Groundwater[1] (feet) | Groundwater Elevation[2] (feet) | Analytical Results (µg/L) | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | DRPH[3] | ORPH[3] | Benzene[4] | Toluene[4] | Ethylbenzene[4] | Total Xylenes[4] | Vinyl Chloride[4] | cis-1,2-DCE[4] | TCE[4] | PCE[4] | Naphthalene[4] | Dissolved Chromium[5] | Dissolved Arsenic[5] | Dissolved Selenium[5] | Dissolved Silver[5] | Dissolved Cadmium[5] | Dissolved Barium[5] | Dissolved Lead[5] | Dissolved Mercury[6] | Total Manganese[5] |
| **IW01** | 04/16/14 | 24.90 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Decommissioned On February 3, 2015** | | | | | | | | | | | | | | | | | | | | | | | |
| **IW02** | 04/16/14 | 36.91 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Destroyed By Earthwork Construction: February 2015** | | | | | | | | | | | | | | | | | | | | | | | |
| **IW03** | 04/16/14 | 33.20 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **17** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **IW04** | 04/16/14 | 30.05 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **44** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Decommissioned On March 9, 2015** | | | | | | | | | | | | | | | | | | | | | | | |
| **IW05** | 04/16/14 | 30.29 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **IW06** | 04/16/14 | 28.75 | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | **Well Decommissioned On February 5, 2015** | | | | | | | | | | | | | | | | | | | | | | | |
| **IW08** | 07/16/15 | -- | NS | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 75.90 | 09/15/15 | 35.54 | 40.36 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **5.7** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/03/15 | 35.34 | 40.56 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **16** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 02/19/16 | 35.00 | 40.90 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **15** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 05/27/16 | 35.55 | 40.35 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | **7.2** | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 10/24/16 | 38.73 | 37.17 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 12/27/16 | 35.99 | 39.91 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | 03/21/17 | 35.79 | 40.11 | -- | -- | -- | -- | -- | -- | <0.2 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| **MTCA Method A Cleanup Level for Groundwater[7]** | | | | **500** | **500** | **5** | **1,000** | **700** | **1,000** | **0.2** | **NE** | **5** | **5** | **160** | **50** | **5** | **NE** | **NE** | **5** | **NE** | **15** | **2** | **NE** |

NOTES:

**Red** denotes concentrations exceeding the MTCA Method A Cleanup Level.

Sample analyses conducted by Friedman & Bruya, Inc. of Seattle, Washington.

TOC elevations surveyed by Triad Associates on May 3, 2012.

[1]Measured in feet below a fixed spot on the top of the well casing rim.

[2]Elevation datum NAVD 88, Seattle BM#2609CC 58A at 60.344' and BM#2609CC 55A at 32.066'.

[3]Analyzed by Method NWTPH-Dx.

[4]Analyzed by EPA Method 8260C. All other 8260C analytes were not detected above the laboratory reporting limit.

[5]Analyzed by EPA Method 6020 or 200.8.

[6]Analyzed by EPA Method 1631E.

[7]MTCA Cleanup Regulation, Method A Cleanup Levels, Table 720-1 of Section 900 of Chapter 340 of Title 173 of the Washington Administrative Code, revised November 2007.

[8]Well casing was repaired, extended-up, and surveyed after the Third Quarter 2015 groundwater sampling event was performed.

Laboratory Note:

[pr]Sample received with incorrect preservation. Results should be considered an estimate.

-- = not analyzed/not measured

< = not detected at a concentration exceeding the laboratory reporting limit

µg/L = micrograms per liter

cis-1,2-DCE = cis-1,2-dichloroethene

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

NAVD = North American Vertical Datum

NE = no MTCA Method A cleanup level established for this analyte

NS = well casing not surveyed

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PCE = tetrachloroethene

TCE = trichloroethene

TOC = top of casing elevation

# ATTACHMENT A
# LABORATORY ANALYTICAL REPORT

***Friedman & Bruya, Inc. #703357***

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 29, 2017

Rob Roberts, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

Dear Mr Roberts:

Included are the results from the testing of material submitted on March 21, 2017 from the SOU_0789-004_ 20170321, F&BI 703357 project. There are 9 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Liz Forbes
SOU0329R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 21, 2017 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_0789-004_ 20170321, F&BI 703357 project. Samples were logged in under the laboratory ID's listed below.

| Laboratory ID | SoundEarth Strategies |
|---|---|
| 703357 -01 | MW12-20170321 |
| 703357 -02 | MW05-20170321 |
| 703357 -03 | MW16A-20170321 |
| 703357 -04 | IW08-20170321 |
| 703357 -05 | MW18-20170321 |

All quality control requirements were acceptable.

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | MW12-20170321 | Client: | SoundEarth Strategies |
| Date Received: | 03/21/17 | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 703357-01 |
| Date Analyzed: | 03/22/17 | Data File: | 032224.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 85 | 117 |
| Toluene-d8 | 99 | 91 | 108 |
| 4-Bromofluorobenzene | 99 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | <1 |
| Tetrachloroethene | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | MW05-20170321 | Client: | SoundEarth Strategies |
| Date Received: | 03/21/17 | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 703357-02 |
| Date Analyzed: | 03/22/17 | Data File: | 032225.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 85 | 117 |
| Toluene-d8 | 100 | 91 | 108 |
| 4-Bromofluorobenzene | 97 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | <1 |
| Tetrachloroethene | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | MW16A-20170321 | Client: | SoundEarth Strategies |
| Date Received: | 03/21/17 | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 703357-03 |
| Date Analyzed: | 03/22/17 | Data File: | 032226.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 85 | 117 |
| Toluene-d8 | 100 | 91 | 108 |
| 4-Bromofluorobenzene | 100 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | 3.5 |
| Tetrachloroethene | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | IW08-20170321 | Client: | SoundEarth Strategies |
| Date Received: | 03/21/17 | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 703357-04 |
| Date Analyzed: | 03/22/17 | Data File: | 032227.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 85 | 117 |
| Toluene-d8 | 99 | 91 | 108 |
| 4-Bromofluorobenzene | 101 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | <1 |
| Tetrachloroethene | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | MW18-20170321 cf | Client: | SoundEarth Strategies |
| Date Received: | 03/21/17 | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 703357-05 |
| Date Analyzed: | 03/22/17 | Data File: | 032228.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 85 | 117 |
| Toluene-d8 | 100 | 91 | 108 |
| 4-Bromofluorobenzene | 98 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | <1 |
| Tetrachloroethene | <1 |

## Analysis For Volatile Compounds By EPA Method 8260C

| | | | |
|---|---|---|---|
| Client Sample ID: | Method Blank | Client: | SoundEarth Strategies |
| Date Received: | Not Applicable | Project: | SOU_0789-004_ 20170321, F&BI 703357 |
| Date Extracted: | 03/22/17 | Lab ID: | 07-544 mb |
| Date Analyzed: | 03/22/17 | Data File: | 032223.D |
| Matrix: | Water | Instrument: | GCMS9 |
| Units: | ug/L (ppb) | Operator: | JS |

| Surrogates: | % Recovery: | Lower Limit: | Upper Limit: |
|---|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 85 | 117 |
| Toluene-d8 | 99 | 91 | 108 |
| 4-Bromofluorobenzene | 99 | 76 | 126 |

| Compounds: | Concentration ug/L (ppb) |
|---|---|
| Vinyl chloride | <0.2 |
| Chloroethane | <1 |
| 1,1-Dichloroethene | <1 |
| Methylene chloride | <5 |
| trans-1,2-Dichloroethene | <1 |
| 1,1-Dichloroethane | <1 |
| cis-1,2-Dichloroethene | <1 |
| 1,2-Dichloroethane (EDC) | <1 |
| 1,1,1-Trichloroethane | <1 |
| Trichloroethene | <1 |
| Tetrachloroethene | <1 |

Date of Report: 03/29/17
Date Received: 03/21/17
Project: SOU_0789-004_ 20170321, F&BI 703357

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

Laboratory Code: 703357-01 (Matrix Spike)

| Analyte | Reporting Units | Spike Level | Sample Result | Percent Recovery MS | Acceptance Criteria |
|---|---|---|---|---|---|
| Vinyl chloride | ug/L (ppb) | 50 | <0.2 | 97 | 61-139 |
| Chloroethane | ug/L (ppb) | 50 | <1 | 100 | 55-149 |
| 1,1-Dichloroethene | ug/L (ppb) | 50 | <1 | 95 | 71-123 |
| Methylene chloride | ug/L (ppb) | 50 | <5 | 99 | 61-126 |
| trans-1,2-Dichloroethene | ug/L (ppb) | 50 | <1 | 98 | 72-122 |
| 1,1-Dichloroethane | ug/L (ppb) | 50 | <1 | 100 | 79-113 |
| cis-1,2-Dichloroethene | ug/L (ppb) | 50 | <1 | 101 | 63-126 |
| 1,2-Dichloroethane (EDC) | ug/L (ppb) | 50 | <1 | 94 | 70-119 |
| 1,1,1-Trichloroethane | ug/L (ppb) | 50 | <1 | 111 | 75-121 |
| Trichloroethene | ug/L (ppb) | 50 | <1 | 96 | 75-109 |
| Tetrachloroethene | ug/L (ppb) | 50 | <1 | 95 | 72-113 |

Laboratory Code: Laboratory Control Sample

| Analyte | Reporting Units | Spike Level | Percent Recovery LCS | Percent Recovery LCSD | Acceptance Criteria | RPD (Limit 20) |
|---|---|---|---|---|---|---|
| Vinyl chloride | ug/L (ppb) | 50 | 106 | 105 | 70-119 | 1 |
| Chloroethane | ug/L (ppb) | 50 | 108 | 103 | 66-149 | 5 |
| 1,1-Dichloroethene | ug/L (ppb) | 50 | 102 | 102 | 75-119 | 0 |
| Methylene chloride | ug/L (ppb) | 50 | 101 | 101 | 63-132 | 0 |
| trans-1,2-Dichloroethene | ug/L (ppb) | 50 | 100 | 101 | 76-118 | 1 |
| 1,1-Dichloroethane | ug/L (ppb) | 50 | 103 | 103 | 80-116 | 0 |
| cis-1,2-Dichloroethene | ug/L (ppb) | 50 | 102 | 101 | 80-112 | 1 |
| 1,2-Dichloroethane (EDC) | ug/L (ppb) | 50 | 96 | 96 | 79-109 | 0 |
| 1,1,1-Trichloroethane | ug/L (ppb) | 50 | 110 | 111 | 80-116 | 1 |
| Trichloroethene | ug/L (ppb) | 50 | 98 | 98 | 77-108 | 0 |
| Tetrachloroethene | ug/L (ppb) | 50 | 98 | 99 | 78-109 | 1 |

# Data Qualifiers & Definitions

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

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

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

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

cf - The sample was centrifuged prior to analysis.

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

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

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

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

vo - The value reported fell outside the control limits established for this analyte.

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

703357

# SAMPLE CHAIN OF CUSTODY

ME 03/21/17 VWG

Send Report to Rob Roberts, cc: Elizabeth Forbes

Company SoundEarth Strategies, Inc.

Address 2811 Fairview Avenue E, Suite 2000

City, State, ZIP Seattle, Washington 98102

Phone # 206-306-1900 Fax # 206-306-1907

SAMPLERS *(signature)*

PROJECT NAME/NO. AvTech / 0789-004

PO #

REMARKS

Page # ____ of ____

TURNAROUND TIME
Standard (2 Weeks)
RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
Dispose after 30 days
Return samples
Will call with instructions

| Sample ID | Sample Location | Sample Depth | Lab ID | Date Sampled | Time Sampled | Matrix | # of Jars | ANALYSES REQUESTED: NWTPH-Dx | NWTPH-Gx | BTEX by 8021B | CVOCs by 8260 | Total Manganese by 200.8 | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW12-20170321 | MW12 | 35 | 01 | 3/21/17 | 1046 | Water | 4 | | | | X | | | |
| MW05-20170321 | MW05 | 26 | 02 | | 1055 | | 4 | | | | X | | | |
| MW16A-20170321 | MW16A | 30 | 03 | | 1140 | | 4 | | | | X | | | |
| MW08-20170321 | MW08 | — | 04 | | 1155 | | 4 | | | | X | | | |
| MW18-20170321 | MW18 | 34 | 05 | | 1231 | | 4 | | | | X | | | |
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Samples received at 5

| SIGNATURE | PRINT NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| Relinquished by: | Liz Forbes | SET | 3/21/17 | 1315 |
| Received by: | Nham Pham | FEBT | 3/21/17 | 1315 |
| Relinquished by: | | | | |
| Received by: | | | | |

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