

**FIRST QUARTER - 2013**  
**GROUNDWATER MONITORING**

Mac's One Hour Cleaners  
10825 SE 176<sup>th</sup> Street  
Renton, Washington

**TRI WESTERN INVESTMENTS, LLC.**

# ENVIRONMENTAL ASSOCIATES, INC.

1380 - 112<sup>th</sup> Avenue Northeast, Suite 300  
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March 11, 2013

JN-20209-5

Mr. Colin Radford  
Tri Western Investments, LLC.  
10423 Main Street, Suite #4  
Bellevue, Washington 98004

**RE:           FIRST QUARTER - 2013 - GROUNDWATER MONITORING**  
**Mac's One Hour Cleaners**  
**10825 SE 176<sup>th</sup> Street**  
**Renton, Washington**

Dear Mr. Radford:

Environmental Associates, Inc. (EAI) has completed the first quarter of continued quarterly groundwater monitoring events scheduled for the year 2013 as provided for in accordance with our proposal, dated August 17, 2011 amended by Change Order #1, dated March 6, 2013. Monitoring wells MW-1 through MW-9 were sampled during this event.

## **Project Background**

A dry-cleaner has operated as a tenant on the subject property since the 1960s. In 2009, the Client / property owner (Tri-Western Syndicated Investments) received notice from the west/southwest adjacent property owner (Bayview) that dry-cleaning solvents (tetrachloroethene or "perc" / PCE) had been discovered on their parcel and that they (Bayview) suspected that the source was the dry-cleaner on the subject property. In January / February 2010, four (4) initial groundwater monitoring wells (MW-1 through MW-4) were installed on the subject parcel to make a preliminary assessment of subsurface environmental conditions. That exploration confirmed the presence of PCE in both soil and groundwater at the subject property at concentrations above Washington State Department of Ecology (WDOE) target compliance levels for unrestricted land use. That preliminary assessment also identified the on-site dry-cleaner as a potential source for the encountered contaminants.



Through the Spring / Summer of 2010, several additional phases of environmental investigation were performed on the Tri-Western parcel. These activities included geophysical surveys, sewer-line closed-circuit TV surveys, and additional phases of soil and groundwater assessment both within the dry-cleaners and in exterior areas of the property. These efforts identified two (2) suspected “source” areas of impacts by dry-cleaning solvent, including an area along a side sewer line along the western side of the building, and a less well defined area along a section of sewer pipe north-northeast of the subject building.

Prior to selection of a potential remediation approach, the next step in the remediation feasibility study process was to further assess the extent of the environmental impact. To facilitate this next phase of work, an access agreement was worked out between the two parcel owners over the Summer / Fall of 2010. One (1) additional monitoring well (MW-5) was installed on-site and four (4) monitoring wells (MW-6 through MW-9) were installed off-site on the adjoining “Bayview” parcel during November and December of 2010.

Following installation and sampling of the additional monitoring wells, the feasibility of several remediation and risk management approaches was evaluated. By mid Summer 2011, the approach favored by the Tri Western team was to initially perform active remediation by excavating a trench along the length of the western sanitary sewer line that served a floor drain inside of Mac’s Cleaners. Leakage along the sewer line was suspected to be a primary source for the groundwater plume. The trench was anticipated to both physically remove some of the PCE-impacted soil at the source area and to provide a means of applying remediation stimulating chemicals to hopefully reduce the mass of contamination, both at the source and in down-gradient areas on and off the subject property.

In October 2011, the above-referenced trench was constructed and an initial application of remediation products intended to stimulate and enhance anaerobic bio-degradation was applied to the open trench. A network of perforated piping was set within the trench during the backfilling process to allow for future re-application of remediation products. Details regarding the trench construction and remediation product application were previously presented to the client under separate cover.

Quarterly groundwater monitoring has been occurring since December 2011.

### **Scope of Work**

To evaluate the performance of the initial application of remediation products, the following scope of work has been adopted for execution on a quarterly basis (every three months) for four (4) consecutive quarters):

- Measure current depths to groundwater in all nine (9) study area monitoring wells (MW-1 through MW-9). Utilize the data to prepare an updated water table survey and groundwater flow interpretive map.

- Collect representative groundwater samples from each monitoring well using a low-flow micro-purging technique with a peristaltic pump. During well purging, a multi-parameter meter and flow-through cell is used to collect basic geochemical data on groundwater conditions such as pH, temperature, conductance, dissolved oxygen, and oxidation/reduction potential.
- Submit all recovered groundwater samples to the project laboratory with analysis for chlorinated volatile organic compounds (CVOCs) by EPA test method 8260. Groundwater samples from MW-3 and MW-5 (nearest to the remediation trench) may also be analyzed for other parameters of interest such as chemical and biological oxygen demand, dissolved gases, and inorganic chemistry such as dissolved iron, nitrogen, and sulfate concentrations, which can be used to evaluate the effectiveness and down-gradient influence of the remediation products applied at the trench.
- Prepare a written summary report documenting field methods, observations, findings, and conclusions. Reports for the first, second, and third quarters are intended to be brief with very little discussion and interpretation of the interim findings. At the conclusion of the fourth quarter, a more detailed report intended to provide an expanded in-depth data analysis and project review will be prepared.

### **Water Table Survey**

The current groundwater monitoring event was performed over a two-day period during January 31<sup>th</sup> and February 1<sup>st</sup>, 2013. Prior to micro-purging, the depth to groundwater below the top of each well casing was measured. These depths to groundwater along with the corresponding deduced elevations of the water table at each well location are presented in the Data Table for each monitoring well, Appendix-A.

During the prior sampling event in October 2012, groundwater table elevations appeared to be seasonably-low due to a protracted “dry” Summer and early Fall. During this current event water table elevations were observed to generally rise by over 2 feet (Chart-1 Hydrograph).

Plate 3, Water Table Survey presents a graphical representation of the shallow water table and deduced groundwater flow directions based upon the current geometry of monitoring wells. Examining Plate 3, groundwater flow appears to be westward with a southwesterly radial influence further south in the study area. A minor degree of northwesterly flow may also be occurring in the general vicinity between MW-6 and MW-7. The groundwater flow regime appears generally consistent with prior surveys.

### **Groundwater Sampling**

The nine (9) monitoring wells were sampled between January 31<sup>st</sup> and February 1<sup>st</sup>, 2013. Prior to that, the monitoring wells were last sampled in October 2012.

Each monitoring well was first “micro-purged” utilizing a peristaltic pump equipped with a flow-through cell instrumented to monitor a variety of parameters including pH, water temperature, conductivity, dissolved oxygen, and redox-potential. Micro-purging continued until consecutive readings of the above parameters stabilized (i.e. varied less than 10 percent). The final readings for the above parameters for each monitoring well are presented in the individual Data Tables for each monitoring well in Appendix-A.

Once that the measured parameters suggested that the extracted groundwater was representative of ambient conditions, groundwater samples were then transferred directly to laboratory-prepared glassware.

### **Laboratory Results & Discussion**

The nine (9) groundwater samples were analyzed by the project laboratory for chlorinated volatile organic compounds by EPA test method 8260B. The current concentrations of PCE in groundwater are presented in the table below and graphically presented on Plate 4. Additionally, the current results for all contaminants tested for along with all prior laboratory results are presented in the Data Tables in Appendix-A. A copy of the laboratory report is included as Appendix-B.

***PCE Concentrations In Parts Per Billion (PPB) Prior & Current Sampling Events***

<b>Monitoring Well</b>	<b>Prior Event (Oct 2012)</b>	<b>Current Event (Jan/Feb 2013)</b>
MW-1	<1	<1
MW-2	<b>140</b>	<b>72</b>
MW-3	<b>130</b>	<b>120</b>
MW-4	2.6	3.2
MW-5	<b>13</b>	<b>33</b>
MW-6	<b>160</b>	<b>110</b>
MW-7	<b>170</b>	<b>150</b>
MW-8	1.5	<1
MW-9	4.3	<b>6.7</b>
Compliance Level	5	5

During this current sampling event, PCE was detected in seven (7) of the nine (9) samples. Six (6) contained PCE at concentrations above the Washington State Department of Ecology's 5 parts per billion (ppb) target compliance level. PCE was not detected in the groundwater sample recovered from MW-1 or MW-8 at concentrations above the laboratory's minimum detection limit. MW-4 continues to produce groundwater samples with detectable PCE, but at concentrations below the 5 ppb compliance level.

Referring to the Data Table for MW-5 in Appendix-A, the enhanced bio-degradation reaction appears to be continuing, although the detected concentration of PCE was slightly higher during this current event, the concentration of the degradation product cis-DCE continues to decline, and the degradation product vinyl chloride has also been detected for the first time. This scenario appears to continue to represent the "classic" anaerobic microbial degradation reaction sequence that the HRC product applied to the trench system is intended to stimulate. That reaction essentially strips chlorine atoms from the PCE molecule producing TCE (3-chlorine atoms) which in turn transitions through variations of DCE (2-chlorine atoms) followed by vinyl chloride (1-chlorine) and finally ethylene / ethane (0-chlorine). Inorganic aquifer properties such as dissolved oxygen and REDOX potential also suggest the formation of an electron "reducing environment" in the vicinity of MW-5, which is most likely due to the remediation products applied to the up-gradient, nearby trench system.

Monitoring wells MW-1 and MW-8 are both located along the southern margin of the study area. As such, monitoring wells MW-1 and MW-8 appear to continue to establish a partial southern limit of the PCE groundwater plume, as depicted on Plate 4, "PCE In Groundwater" as a red "dashed" line.

During the current sampling event, the highest concentrations of PCE were observed in the "core-of-the-plume" monitoring wells MW-2, MW-3, MW-6, and MW-7, in which concentrations of PCE in the groundwater ranged between 72 to 150 ppb.

In general, contaminant concentrations across the site appear to have fallen to levels consistent to those observed prior to the October 2012 "spike (rise) in PCE concentrations," speculated to have been due to the very low groundwater levels.

A more detailed analysis of the cumulative data is anticipated to be presented in the report for the fourth (4) quarter of 2013 sampling event.

#### **Next Sampling Event**

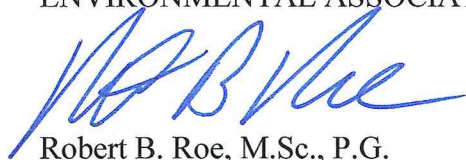
The next quarterly sampling event is tentatively scheduled to occur in late April / early May 2013.

## Limitations

This letter report has been prepared specific application to this project in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. This document is for the exclusive of Tri Western Investments, LLC., along with its members and appointed representatives. Discussion with respect to subsurface environmental conditions relies solely upon the results of sampling and testing conducted at separated sampling localities and environmental conditions may vary between those localities or at other locations, depths, and/or media. No other warranty, expressed or implied, is made here. If new information is acquired or developed in future site work Environmental Associates, Inc., must be retained to reevaluate the conclusions of this letter report and to provide amendments as required.

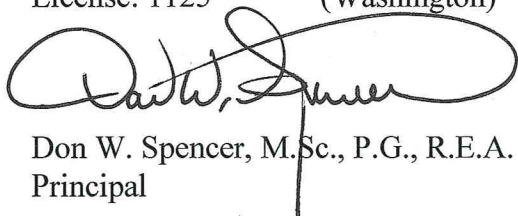
We appreciate the opportunity to be of service on this project and trust that the information provided here is fully responsive to your needs. If you have any questions or we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,  
ENVIRONMENTAL ASSOCIATES, INC.



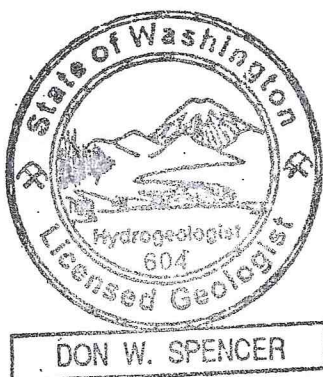
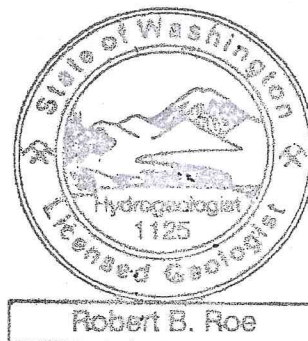
Robert B. Roe, M.Sc., P.G.  
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Principal

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License: 11464 (Oregon)  
License: 876 (California)  
License: 5195 (Illinois)  
License: 0327 (Mississippi)



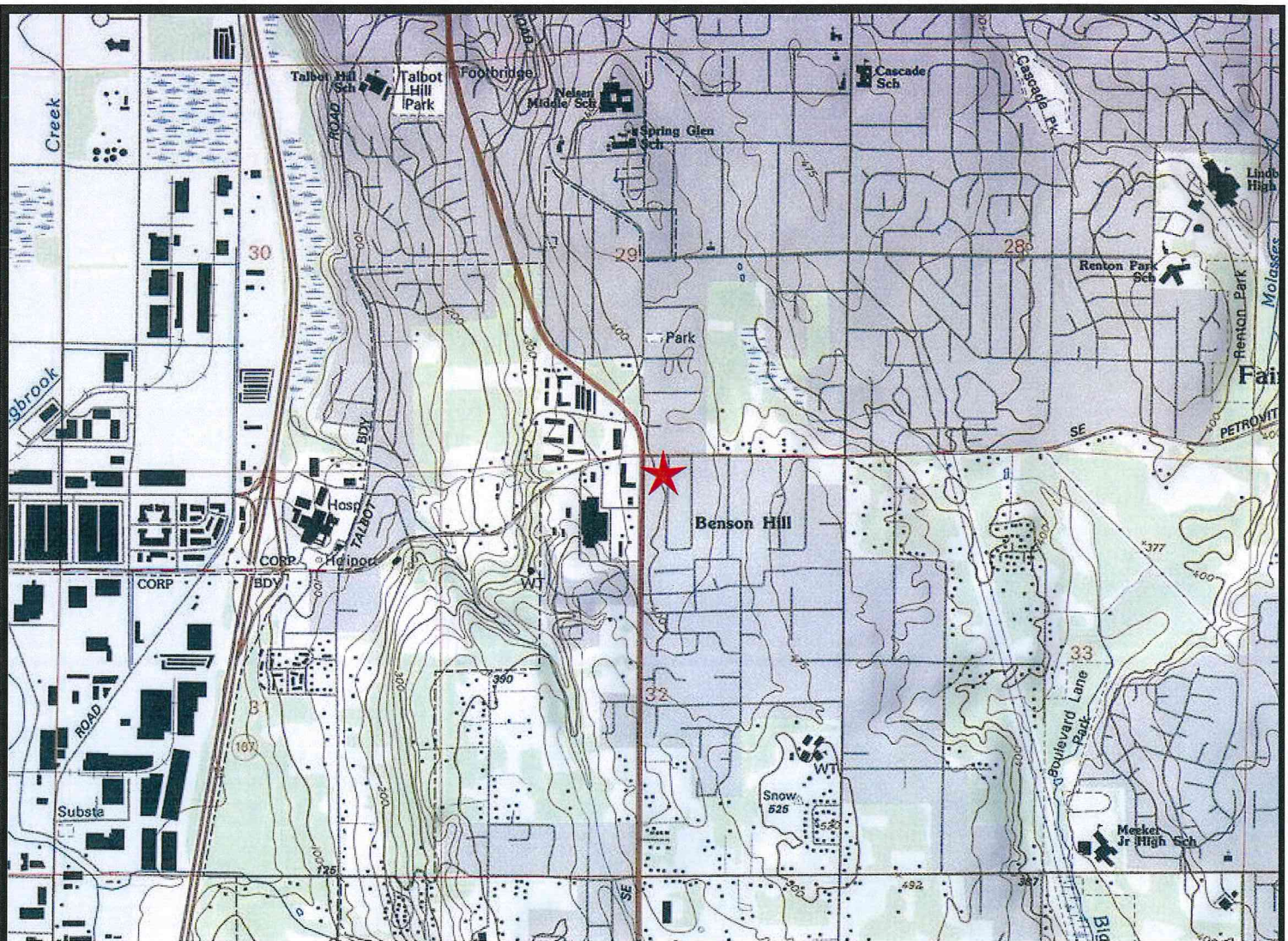
**Attachments:**

Plate 1 - Vicinity / Topographic Map  
Plate 2 - Study Area - Overview  
Plate 3 - Water Table Survey  
Plate 4 - PCE In Groundwater

Chart 1: Hydrograph  
Chart 2: PCE Concentration Trends

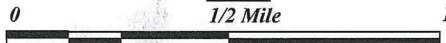
Appendix-A: Data Tables MW-1 Through MW-9  
Appendix-B: Laboratory Reports





USGS: 7.5 Minute Quadrangle: Renton, Washington  
Contour Interval: 25 feet

Scale



Subject Property Location



Inferred groundwater flow direction based upon the local topographical gradient in the vicinity of the subject property.



**ENVIRONMENTAL  
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1380 - 112th Avenue NE, Suite 300  
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## VICINITY / TOPOGRAPHIC MAP

Mac's One Hour Cleaners  
10825 SE 176th Street  
Renton, Washington

Job Number:

JN-20209-5

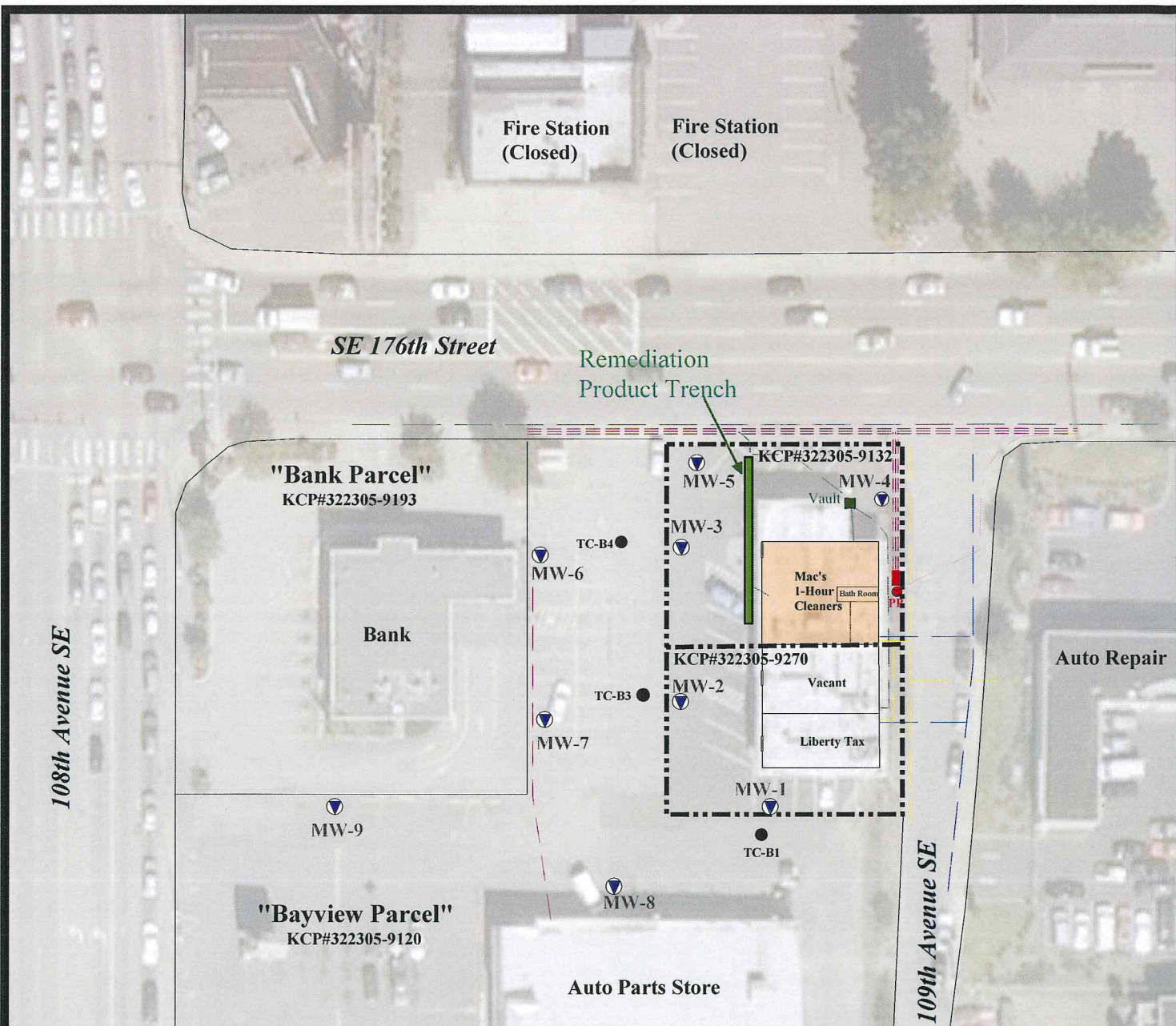
Date:

January 2013

Plate:

1





Approximate border of Subject Parcel.

KCP#: King County tax parcel numbers.



Existing Monitoring wells installed by EAI.



Approximate locations of borings made by Terracon (TC) on the adjacent property.



Approximate locations of underground utilities: Power (red), water (blue), natural gas (yellow), phone (orange), and sanitary sewer / storm drain (green).



## ENVIRONMENTAL ASSOCIATES, INC.

1380 112th Avenue N.E., Ste. 300  
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## STUDY AREA - OVERVIEW

Mac's One Hour Cleaners  
10825 SE 176th Street  
Renton, Washington

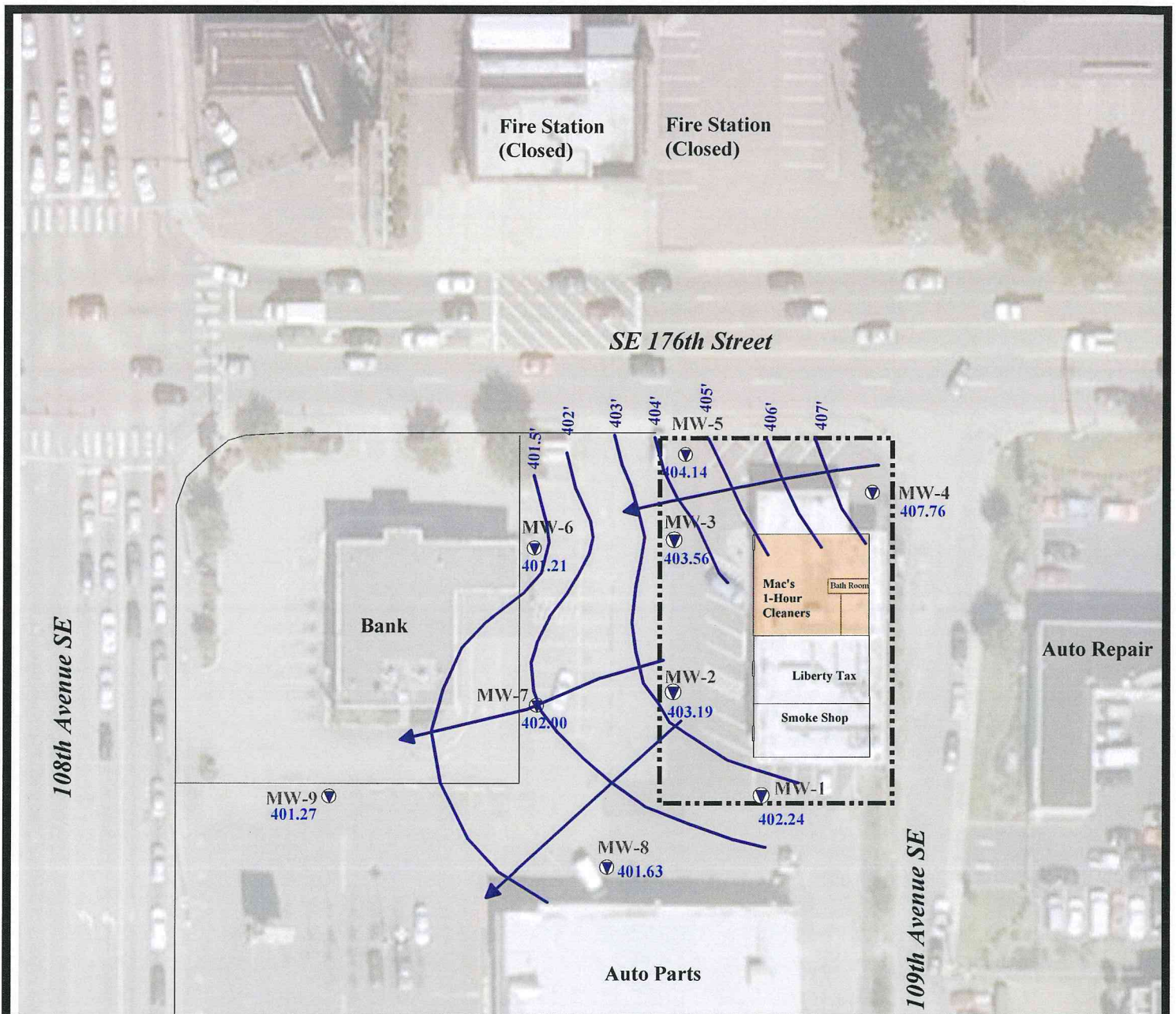
Job Number:  
JN-20209-5

Date:  
January 2013

Scale:  
1"=80'

Plate:  
2





Approximate border of Subject Property



Water Table equal elevation contour lines and inferred groundwater flow direction.



Existing monitoring well locations.



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## WATER TABLE SURVEY

Mac's One Hour Cleaners  
10825 SE 176th Street  
Renton, Washington

Job Number:

JN-20209-5

Date:

January 2013

Scale:

1"=80'

Plate:

3



Fire Station  
(Closed)

Fire Station  
(Closed)

SE 176th Street

Remediation Trench

108th Avenue SE

Bank

Auto Repair

109th Avenue SE

Auto Parts

MW-6  
110

MW-5  
33

MW-3  
120

MW-2  
72

MW-7  
150

MW-9  
6.7

MW-8  
<1

MW-4  
3.2

Suspected  
"Source Areas"  
Mac's  
1-Hour  
Cleaners  
Bath Room  
Hispanic  
Grocery  
Liberty Tax



Approximate border of Subject Property

Preliminary conceptualization of chlorinated solvent (PCE) groundwater plume. The WDOE target compliance level for PCE in groundwater is 5 parts per billion (ppb).



Existing monitoring well locations.



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## PCE IN GROUNDWATER

Mac's One Hour Cleaners  
10825 SE 176th Street  
Renton, Washington

Job Number:  
JN-20209-5

Date:  
January 2013

Scale:  
1"=80'

Plate:  
4

CHART 1: Hydrograph

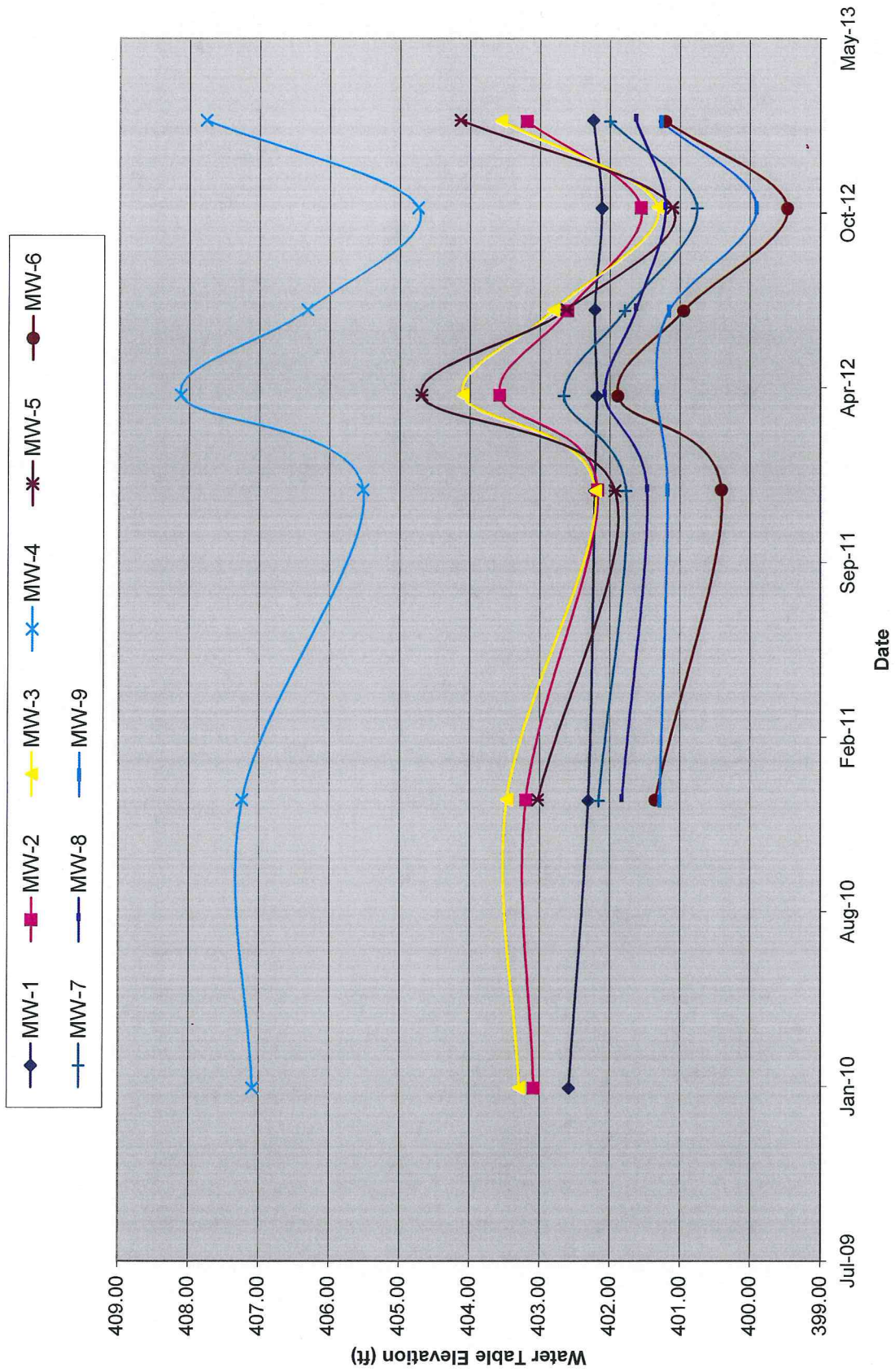
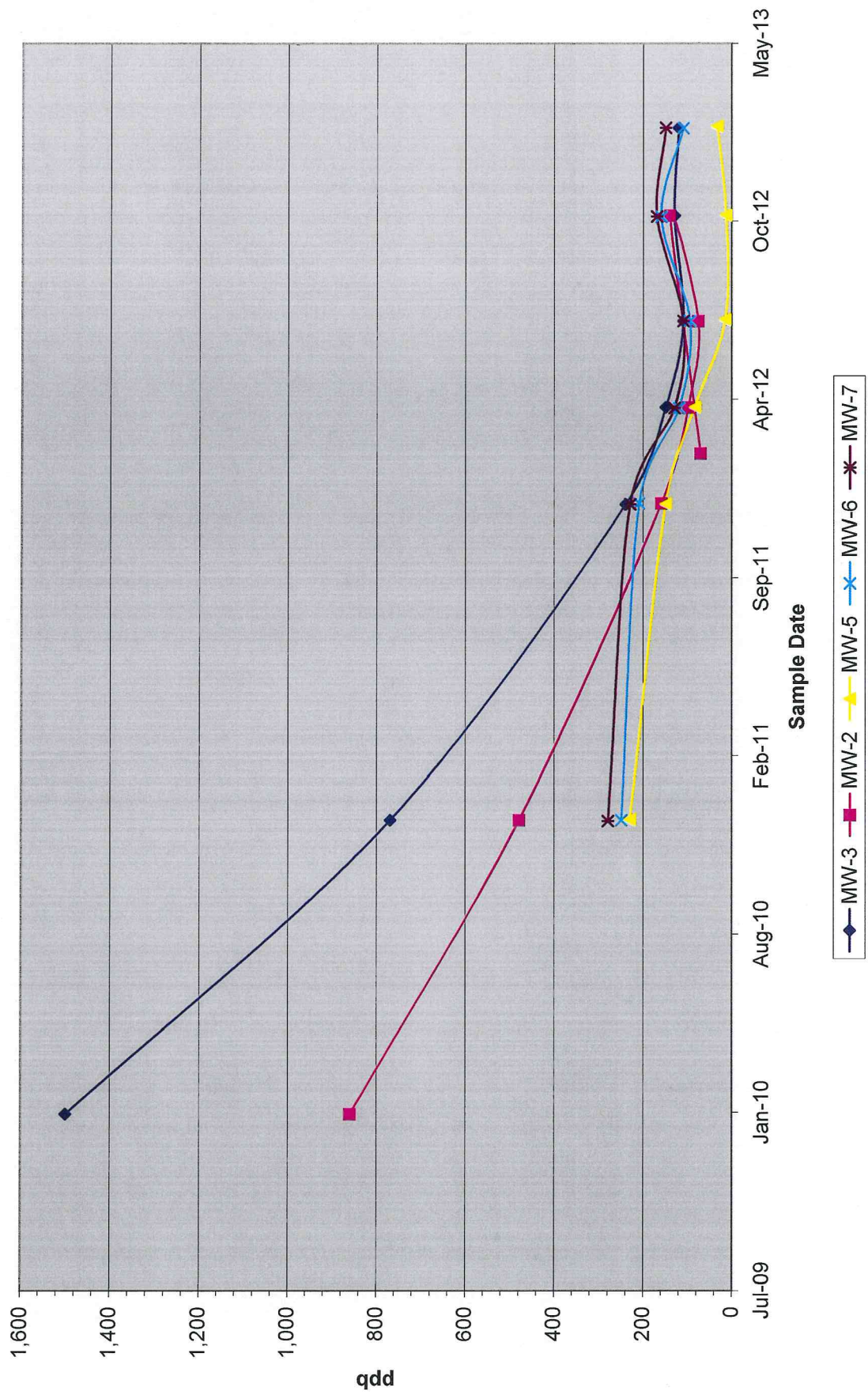




CHART 2: PCE Concentration Trends



## **APPENDIX-A**

**Data Tables  
MW-1 Through MW-9**

**DATA TABLE: MW-1**

**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-1													
1/20/2010	1.5	<1	<1	<1	<0.2	5.11		402.58	7.29	15.3	13.0	-93	3.69
12/15/2010	1.5	<1	<1	<1	<0.2	5.38	-0.27	402.31	5.9	9.1	12.6	110	7.12
12/5/2011	<1	<1	<1	<1	<0.2	5.47	-0.09	402.22	6.36	5.4	13.7	89	2.34
3/22/2012	<1	<1	<1	<1	<0.2	5.50	-0.03	402.19	6.16	8.1	9.87	321	8.76
6/29/2012	1.1	<1	<1	<1	<0.2	5.47	0.03	402.22	6.45	11.3	16.73	127	8.56
10/23/2012	<1	<1	<1	<1	<0.2	5.57	-0.10	402.12	6.29	3.7	15.7	446	2.97
2/1/2013	<1	<1	<1	<1	<0.2	5.45	0.12	402.24	6.09	10	10.7	182	6.65
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

**Notes:**

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.



**DATA TABLE: MW-2**  
**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-2													
1/20/2010	<b>860</b>	1.7	<1	<1	<0.2	5.36		403.08	6.55	12.2	14.3	37	2.52
12/16/2010	<b>480</b>	1.7	<1	<1	<0.2	5.24	0.12	403.20	5.43	12.7	14.9	223	6.64
12/6/2011	<b>160</b>	<1	<1	<1	<0.2	6.26	-1.02	402.18	6.35	7.5	15.5	209	5.17
3/23/2012	<b>100</b>	<1	<1	<1	<0.2	4.86	1.40	403.58	5.19	13.1	10.89	306	8.03
6/28/2012	<b>77</b>	<1	<1	<1	<0.2	5.83	-0.97	402.61	6.12	13.1	17.00	251	6.91
10/24/2012	<b>140</b>	<1	<1	<1	<0.2	6.88	-1.05	401.56	6.28	11.0	19.1	473	5.24
1/31/2013	<b>72</b>	<1	<1	<1	<0.2	5.25	1.63	403.19	5.94	11.7	12.7	215	6.28
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

**Notes:**

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCa) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCa Method A groundwater cleanup levels.

DATA TABLE: MW-3													
Groundwater Sampling Results in parts per billion (ppb)													
Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-3													
1/20/2010	<b>1,500</b>	1.4	<1	<1	<0.2	5.55		403.29	6.63	21.8	14.2	200	5.56
12/16/2010	<b>770</b>	1.7	<1	<1	<0.2	5.39	0.16	403.47	5.54	21.9	14.9	225	7.49
12/5/2011	<b>240</b>	<1	<1	<1	<0.2	6.65	-1.26	402.21	6.19	16.8	15.4	217	6.13
3/23/2012	<b>150</b>	<1	<1	<1	<0.2	4.76	1.89	404.10	5.71	23.7	11.47	311	7.91
6/28/2012	<b>110</b>	<1	<1	<1	<0.2	6.05	-1.29	402.81	5.95	28.8	16.82	269	8.22
10/24/2012	<b>130</b>	<1	<1	<1	<0.2	7.54	-1.49	401.32	6.24	25.0	18.3	473	5.06
1/31/2013	<b>120</b>	<1	<1	<1	<0.2	5.30	2.24	403.56	5.66	32.8	12.5	238	3.43
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

Notes:

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

DATA TABLE: MW-4													
Groundwater Sampling Results in parts per billion (ppb)													
Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-4													
1/20/2010	2.6	<1	<1	<1	<0.2	5.65		407.09	6.86	33.4	13.5	221	5.88
12/16/2010	<b>6.8</b>	<1	<1	<1	<0.2	5.53	0.12	407.24	5.64	31.1	14.0	216	6.64
12/6/2011	3.6	<1	<1	<1	<0.2	7.24	-1.71	405.53	6.31	20.3	14.1	220	5.05
3/23/2012	3.6	<1	<1	<1	<0.2	4.65	2.59	408.12	5.76	40.5	11.01	356	7.86
6/29/2012	2.9	<1	<1	<1	<0.2	6.45	-1.80	406.32	6.08	29.7	15.87	199	8.71
10/24/2012	2.6	<1	<1	<1	<0.2	8.03	-1.58	404.74	6.47	26.5	17.8	373	5.15
2/1/2013	3.2	<1	<1	<1	<0.2	5.01	3.02	407.76	5.86	29.7	12.6	222	5.01
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

Notes:

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

DATA TABLE: MW-5

## Groundwater Sampling Results in parts per billion (ppb)

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-5													
12/16/2010	<b>230</b>	1.9	<1	<1	<0.2	7.06		403.03	5.72	14.7	15.3	219	6.77
12/5/2011	<b>150</b>	<1	<1	<1	<0.2	8.16	-1.10	401.93	6.30	9.3	15.3	198	4.67
3/23/2012	<b>84</b>	<1	<1	<1	<0.2	5.40	2.76	404.69	5.81	31.7	11.08	261	4.13
6/29/2012	<b>15</b>	3	<b>120</b>	<1	<0.2	7.47	-2.07	402.62	6.49	180	15.35	-92	10.44
10/24/2012	<b>13</b>	<1	<b>90</b>	<1	<0.2	8.98	-1.51	401.11	6.74	9.8	17.7	-89	0.33
2/1/2013	<b>33</b>	1.4	29	<1	<b>0.22</b>	5.95	3.03	404.14	6.18	41.7	12.9	80	0.00
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

**DATA TABLE: MW-6**  
**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-6													
12/16/2010	<b>250</b>	1.1	<1	<1	<0.2	6.48		401.35	6.03	19.7	13.9	217	6.68
12/6/2011	<b>210</b>	<1	<1	<1	<0.2	7.42	-0.94	400.41	6.59	15.9	14.4	197	6.81
3/22/2012	<b>120</b>	<1	<1	<1	<0.2	5.94	1.48	401.89	5.35	16.6	10.35	323	7.97
6/28/2012	<b>95</b>	<1	<1	<1	<0.2	6.88	-0.94	400.95	6.24	18.8	15.41	251	8.78
10/23/2012	<b>160</b>	<1	<1	<1	<0.2	8.36	-1.48	399.47	6.53	19.8	15.8	422	8.93
1/31/2013	<b>110</b>	<1	<1	<1	<0.2	6.62	1.74	401.21	5.87	21.0	11.90	215	5.45
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

**Notes:**

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

**DATA TABLE: MW-7**  
**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-7													
12/15/2010	<b>280</b>	1.8	<1	<1	<0.2	5.25		402.16	6.15	23.0	13.7	139	7.22
12/5/2011	<b>230</b>	<1	<1	<1	<0.2	5.64	-0.39	401.77	6.68	14.0	13.3	164	5.51
3/22/2012	<b>130</b>	<1	<1	<1	<0.2	4.75	0.89	402.66	6.20	19.6	10.41	308	9.32
6/28/2012	<b>110</b>	<1	<1	<1	<0.2	5.62	-0.87	401.79	6.62	22.1	15.67	236	9.34
10/23/2012	<b>170</b>	1	<1	<1	<0.2	6.65	-1.03	400.76	6.59	20.0	16.4	437	8.63
1/31/2013	<b>150</b>	<1	<1	<1	<0.2	5.41	1.24	402.00	6.48	19.9	11.8	181	6.91
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

**Notes:**

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2 - "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

**DATA TABLE: MW-8**

**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
	1.8	<1	<1	<1	<0.2	4.39		401.83	5.74	27.9	12.7	191	6.16
	<1	<1	<1	<1	<0.2	4.75	-0.36	401.47	6.08	17.4	12.1	183	7.92
	<1	<1	<1	<1	<0.2	4.14	0.61	402.08	5.94	22.0	9.95	335	3.02
	<1	<1	<1	<1	<0.2	4.59	-0.45	401.63	6.33	24.7	16.35	285	7.67
	1.5	<1	<1	<1	<0.2	5.01	-0.42	401.21	6.41	23.6	16.8	446	3.24
	<1	<1	<1	<1	<0.2	4.59	0.42	401.63	6.22	28.6	11.2	225	1.57
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

Notes:

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

**Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.**

**DATA TABLE: MW-9**

**Groundwater Sampling Results in parts per billion (ppb)**

Monitoring Well	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride	Depth to Water	Net Change	Water Table Elevation	pH	Conductivity (mS/m)	Temperature (Celsius)	REDOX Potential (mV)	Dissolved Oxygen (mg/L)
MW-9													
12/15/2010	<b>50</b>	<1	<1	<1	<0.2	1.94		401.29	5.88	11.8	11.0	184	9.41
12/6/2011	<b>10</b>	<1	<1	<1	<0.2	2.05	-0.11	401.18	7.11	8.3	12.8	160	8.37
3/22/2012	<b>12</b>	<1	<1	<1	<0.2	1.90	0.15	401.33	6.14	7.1	9.43	322	10.97
6/28/2012	<b>15</b>	<1	<1	<1	<0.2	2.07	-0.17	401.16	6.55	12.6	17.04	242	6.35
10/24/2012	4.3	<1	<1	<1	<0.2	3.32	-1.25	399.91	6.59	4.70	17.50	439	8.39
1/31/2013	<b>6.7</b>	<1	<1	<1	<0.2	1.96	1.36	401.27	6.22	7.0	10.1	207	8.37
Reporting Limit <sup>3</sup>	1	1	1	1	0.2								
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	80 (B)	160 (B)	0.2 (A)								

**Notes:**

- 1- "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2- "NA" denotes sample not analyzed for specific analyte.
- 3- "Reporting Limit" represents the laboratory lower quantitation limit.
- 4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended 2/12/01.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.



## **APPENDIX-B**

### **Laboratory Reports**

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
e-mail: fbi@isomedia.com

February 12, 2013

Rob Roe, Project Manager  
Environmental Associates, Inc.  
1380 112th Ave. NE, 300  
Bellevue, WA 98004

Dear Mr. Roe:

Included are the results from the testing of material submitted on February 5, 2013 from the Tri-Western-Mac's Cleaners 20209-5, F&BI 302044 project. There are 14 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
EAI0212R.DOC

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on February 5, 2013 by Friedman & Bruya, Inc. from the Environmental Associates Tri-Western-Mac's Cleaners 20209-5, F&BI 302044 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Environmental Associates</u>
302044 -01	MW-1
302044 -02	MW-2
302044 -03	MW-3
302044 -04	MW-4
302044 -05	MW-5
302044 -06	MW-6
302044 -07	MW-7
302044 -08	MW-8
302044 -09	MW-9
302044 -10	Drum-2

All quality control requirements were acceptable.

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-1	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-01
Date Analyzed: 02/06/13	Data File: 020607.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	106	50	150

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

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-2	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-02
Date Analyzed: 02/06/13	Data File: 020613.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	106	50	150

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	72

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-3	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-03
Date Analyzed: 02/06/13	Data File: 020614.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	109	50	150

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	120

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-4	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-04
Date Analyzed: 02/06/13	Data File: 020608.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	105	50	150

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	3.2

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-5	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-05
Date Analyzed: 02/06/13	Data File: 020609.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	108	50	150

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.22
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	29
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	1.4
Tetrachloroethene	33



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-6	Client:	Environmental Associates
Date Received:	02/05/13	Project:	Tri-Western-Mac's Cleaners 20209-5
Date Extracted:	02/06/13	Lab ID:	302044-06
Date Analyzed:	02/06/13	Data File:	020615.D
Matrix:	Water	Instrument:	GCMS7
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	109	50	150

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	110

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-7	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-07
Date Analyzed: 02/06/13	Data File: 020616.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	106	50	150

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	150

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-8	Client:	Environmental Associates
Date Received:	02/05/13	Project:	Tri-Western-Mac's Cleaners 20209-5
Date Extracted:	02/06/13	Lab ID:	302044-08
Date Analyzed:	02/06/13	Data File:	020610.D
Matrix:	Water	Instrument:	GCMS7
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	105	50	150

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

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: MW-9	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-09
Date Analyzed: 02/06/13	Data File: 020611.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	107	50	150

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	6.7

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Drum-2	Client: Environmental Associates
Date Received: 02/05/13	Project: Tri-Western-Mac's Cleaners 20209-5
Date Extracted: 02/06/13	Lab ID: 302044-10
Date Analyzed: 02/06/13	Data File: 020612.D
Matrix: Water	Instrument: GCMS7
Units: ug/L (ppb)	Operator: JS

	% Recovery:	Lower Limit:	Upper Limit:
Surrogates:			
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	106	50	150

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	3.0

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Tri-Western-Mac's Cleaners 20209-5
Date Extracted:	02/06/13	Lab ID:	03-0129 mb
Date Analyzed:	02/06/13	Data File:	020606.D
Matrix:	Water	Instrument:	GCMS7
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	106	50	150

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

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 02/12/13

Date Received: 02/05/13

Project: Tri-Western-Mac's Cleaners 20209-5, F&BI 302044

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

Laboratory Code: 302044-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	50	<0.2	89	50-150
Chloroethane	ug/L (ppb)	50	<1	87	50-150
1,1-Dichloroethene	ug/L (ppb)	50	<1	89	50-150
Methylene chloride	ug/L (ppb)	50	<5	81	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	92	50-150
1,1-Dichloroethane	ug/L (ppb)	50	<1	95	50-150
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	95	50-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	97	50-150
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	94	50-150
Trichloroethene	ug/L (ppb)	50	<1	92	50-150
Tetrachloroethene	ug/L (ppb)	50	<1	94	50-150

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	89	93	70-130	4
Chloroethane	ug/L (ppb)	50	88	91	70-130	3
1,1-Dichloroethene	ug/L (ppb)	50	87	91	70-130	4
Methylene chloride	ug/L (ppb)	50	84	86	70-130	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	92	96	70-130	4
1,1-Dichloroethane	ug/L (ppb)	50	95	101	70-130	6
cis-1,2-Dichloroethene	ug/L (ppb)	50	92	97	70-130	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	95	99	70-130	4
1,1,1-Trichloroethane	ug/L (ppb)	50	93	98	70-130	5
Trichloroethene	ug/L (ppb)	50	91	97	70-130	6
Tetrachloroethene	ug/L (ppb)	50	93	96	70-130	3

### **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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

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. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

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

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is 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 compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

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.



Bill To 302044

SAMPLE CHAIN OF CUSTODY ME 02-05-13

Page # 1 of 1

Send Report To Environmental Associates, Inc.  
Company Tri Western Syndicated Investments  
Address 10423 Main Street, Suite Y  
City, State, ZIP Bellevue, WA 98004  
Phone # 425-455-9025 Fax # 425-455-2316

SAMPLERS (signature) <i>Michael A. Larson</i>		PO#
PROJECT NAME/NO.		20209-5
Tri-Western - Mac's Cleaners		
REMARKS		

TURNAROUND TIME
<input checked="" type="checkbox"/> Standard (2 Weeks)
<input type="checkbox"/> RUSH
Rush charges authorized by
SAMPLE DISPOSAL
<input type="checkbox"/> Dispose after 30 days
<input type="checkbox"/> Return samples
<input type="checkbox"/> Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HRS	
MW-1	01R-0	2/1/13		H <sub>2</sub> O	3				X			
MW-2	02	1/31/13			3				X			
MW-3	03	1/31/13			3				X			
MW-4	04	2/1/13			3				X			
MW-5	05	2/1/13			3				X			
MW-6	06	1/31/13			3				X			
MW-7	07	1/31/13			3				X			
MW-8	08	2/1/13			3				X			
MW-9	09	1/31/13			3				X			
DRUM-2	10	2/1/13			3				X			

SIGNATURE		PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>Michael A. Larson</i>		Michael A. Larson	EAT	2/5/13	1320
Received by:					
Relinquished by: <i>Blatt Langstaffer</i>		Blatt Langstaffer	FB Inc	2/5/13	1320
Received by:					
			Samples received at		15 °C

Friedman & Bruya, Inc.  
3012 16th Avenue West  
Seattle, WA 98119-2029  
Ph. (206) 285-8282  
Fax (206) 283-5044  
FORMS/COC/COC.BOC