



# AEI Consultants

**RECEIVED**

By Alameda County Environmental Health 2:28 pm, Aug 22, 2016

Environmental & Engineering Services

August 11, 2016

Ms. Karel Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

**Subject: Perjury Statement and Report Transmittal**

Zimmerman Property  
3442 Adeline Street  
Oakland, California 94608  
ACEH Fuel Leak Case No. RO0002936  
AEI Project Number: 281939

Dear Ms. Detterman:

I declare under penalty of perjury that the information and/or recommendations contained in the attached report, *Report on Semi-Annual Groundwater Monitoring, Second Semester 2016*, dated August 11, 2016, for the above-referenced site are true and correct to the best of my knowledge.

If you have any questions or need additional information, please contact me at (925) 457-5607 or Mr. Adrian Angel at AEI Consultants at (408) 559-7600.

Sincerely,

*Sandra Lee Mouat, TTEE*

Steffi Zimmerman  
c/o Sandra Lee and Bill Mouat, Owner Representatives



# AEI Consultants

## Environmental & Engineering Services

August 11, 2016

### REPORT ON SEMI-ANNUAL MONITORING SECOND SEMESTER 2016

**Property Identification:**

3442 Adeline Street  
Oakland, California

AEI Project No. 281939  
ACEH Site No. 02936

**Prepared for:**

Ms. Steffi Zimmerman  
c/o Mr. Bill Moaut  
3289 Lomas Verdes Place  
Lafayette, California

**Prepared by:**

AEI Consultants  
3880 South Bascom Avenue, Suite 109  
San Jose, California 95124  
(408) 559-7600

Environmental &  
Engineering Due  
Diligence

Site Investigation &  
Remediation

Energy Performance  
& Benchmarking

Industrial Hygiene

Construction  
Consulting

Construction,  
Site Stabilization &  
Stormwater Services

National Presence

Regional Focus

Local Solutions



August 11, 2016

Ms. Karel Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway  
Alameda, California 94602

Subject: Transmittal, Semi-Annual Monitoring Report, Second Semester 2016  
3442 Adeline Street, Oakland, California 94608

Dear Ms. Detterman:

On behalf of Steffi Zimmerman, AEI Consultants is pleased to submit this Semi-Annual Monitoring Report, Second Semester 2016 of the 3442 Adeline Street site in Oakland, California ("the Site"). This report describes activities conducted in July 2016.

AEI appreciates the opportunity to work with the ACEH to address environmental issues at the Site and trust that the enclosed report meets with your approval. Please do not hesitate to contact me at (408) 559-7600 or [tweise@aeiconsultants.com](mailto:tweise@aeiconsultants.com) with any questions or comments.

Sincerely,

Trent A. Weise, P.E (C 64480)  
Principal Engineer

Enclosures

Copies:  
Mr. Bill Moaut

## TABLE OF CONTENTS

<b>SIGNATURES</b> .....	<b>V</b>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
<b>2.0 SITE DESCRIPTION AND BACKGROUND</b> .....	<b>1</b>
<b>3.0 MW-3 ACCESSIBILITY AND SURVEY OF WELLS BF-1 AND BF-5</b> .....	<b>2</b>
<b>4.0 MONITORING ACTIVITIES</b> .....	<b>2</b>
4.1 Groundwater Monitoring .....	2
<b>5.0 SUMMARY OF RESULTS</b> .....	<b>3</b>
5.1 Water Level Elevations.....	3
5.2 Groundwater Sample Analytical Data.....	3
<b>6. CONCLUSIONS AND RECOMMENDATIONS</b> .....	<b>4</b>

### TABLES

Table 1	Summary of Monitoring Well Construction Details
Table 2	Summary of Groundwater Elevation Data
Table 3	Summary of Groundwater Analytical Data (TPH and MBTEX)
Table 4	Summary of Groundwater Analytical Data (VOCs and SVOCs)

### FIGURES

Figure 1	Site Location Map
Figure 2	Site Vicinity Map
Figure 3	Site Plan
Figure 4	Groundwater Elevation Map (7/21-22/2016)
Figure 5	Benzene Isocontours – July 2016
Figure 6	TPHg Isocontours – July 2016
Figure 7	MW-1 Groundwater Elevation and Concentration
Figure 8	MW-2 Groundwater Elevation and Concentration
Figure 9	MW-3 Groundwater Elevation and Concentration
Figure 10	MW-4 Groundwater Elevation and Concentration
Figure 11	MW-5 Groundwater Elevation and Concentration
Figure 12	MW-6 Groundwater Elevation and Concentration
Figure 13	MW-7 Groundwater Elevation and Concentration
Figure 14	MW-7 Groundwater Elevation and Concentration

**Report on Semi-Annual Groundwater Monitoring**  
**Second Semester 2016**  
3442 Adeline Street, Oakland, California 94608

**APPEDICIES**

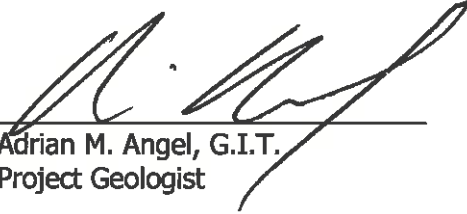
Appendix A Field Forms


Appendix B Laboratory Analytical Report and Chain of Custody Documentation


**Report on Semi-Annual Groundwater Monitoring  
Second Semester 2016**  
3442 Adeline Street, Oakland, California 94608

**SIGNATURES**

This document was prepared by, or under the direction, of the undersigned:

  
Adrian M. Angel, G.I.T.  
Project Geologist

  
Trent A. Weise, P.E.  
Principal Engineer



## Report on Semi-Annual Groundwater Monitoring

Second Semester 2016

3442 Adeline Street, Oakland, California 94608

### 1.0 INTRODUCTION

On behalf of Ms. Steffi Zimmerman, AEI Consultants (AEI) has prepared this report presenting the results of the semi-annual groundwater monitoring performed at 3442 Adeline Street in Oakland, California ("the Site"). Previous investigations performed at the Site have identified a release of gasoline from the former underground storage tank (UST). Groundwater monitoring activities were performed for the second semester of 2016 on July 21 and 22, 2016.

The sampling activities and the results are discussed in detail below.

### 2.0 SITE DESCRIPTION AND BACKGROUND

The Site is located on the northeast corner of 35th Street and Chestnut Street in an urban mixed commercial/industrial and residential area of Oakland. The warehouse building covers approximately 65% of the property and is currently being used as a warehouse and a sports facility. The balance of the Site is paved with concrete is used for parking and storage. Figure 1 presents the Site location and Vicinity. Figure 2 presents an aerial photo showing the Site vicinity. Figure 3 presents the Site plan.

On February 22, 2000, Clearwater Group (Clearwater) removed a reportedly steel single-wall 3,750-gallon underground storage tank (UST) from a location immediately adjacent to the eastern property boundary. Sidewall soil samples and a grab groundwater sample were collected from the tank excavation for chemical analysis. Each of the two sidewall soil samples and the one groundwater sample yielded elevated concentrations of petroleum hydrocarbons suggesting a release of petroleum hydrocarbons had occurred from the former UST.

Subsurface investigations to characterize the lateral and vertical extent of petroleum hydrocarbons released from the former UST commenced in 2006. The investigation activities have included:

- Between 2006 and 2009, a total of 43 soil borings have been advanced to collect 107 soil samples and 36 grab groundwater samples from locations across the Site, and off-site.
- In April 2009, seven groundwater monitoring wells, MW-1 through MW-7 were installed. Periodic groundwater monitoring of the groundwater in each of the monitoring wells has been performed, including a total of 11 monitoring events.
- In May 2009, one sparge well, IW-1, was installed within the former UST location to for potential remedial activities.

Table 1 presents a summary of well construction details. In March and April of 2009, an interim remedial excavation was performed on-site and immediately down-gradient of the former UST location and inside one of the on-site buildings. The excavation measured 35 feet by 75 feet by approximately 12 feet deep. The excavation was advanced until photoionization detector (PID) measurements were below 100 parts per million by volume (ppmv) and a yellowish brown soil layer. A total of 1,098.21 tons of petroleum-impacted soils were removed and property disposed. Dewatering during excavation generated approximately 5,000 gallons that was discharged under permit to the sanitary sewer.

As part of the excavation activities, dewatering wells were constructed to a total depth of thirteen-feet bgs in the backfill as the excavation progressed, identified as BF-1 through BF-5. During



## Report on Semi-Annual Groundwater Monitoring

Second Semester 2016

3442 Adeline Street, Oakland, California 94608

backfill of the excavation, three horizontal soil vapor extraction wells were installed at a depth of seven-feet bgs along the north, east, and south sides of the excavation identified as SVE-1, SVE-2, and SVE-3. Following evaluation of soil gas concentrations in the horizontal SVE wells along the north, south and east sides of the excavation the SVE wells SVE-1, SVE-2, SVE-3 and backfill well BF-4 were destroyed on January 19, 2010.

### 3.0 MW-3 ACCESSIBILITY AND SURVEY OF WELLS BF-1 AND BF-5

Groundwater monitoring well MW-3 was previously covered by tenant improvements performed and was inaccessible. On July 8, 2016, prior to groundwater sampling, AEI contacted a licensed land surveyor to locate the groundwater monitoring well MW-3 using the known horizontal coordinates. A thin layer of concrete was removed from an area of approximately two feet by two feet to expose the well. The well's condition was inspected and as it appeared undamaged, it was deemed functional.

As requested by the ACDEH, AEI contracted a licensed surveyor to survey the excavation backfill wells BF-1 and BF-5 in general accordance with GeoTracker upload requirements.

### 4.0 MONITORING ACTIVITIES

This section summarizes the monitoring activities performed during the second semester semi-annual monitoring performed on July 21 and 22, 2016.

#### 4.1 Groundwater Monitoring

AEI performed the second semester semi-annual groundwater sampling event on July 21 and 22, 2016, including measuring depth to water and collecting groundwater samples from each of the ten groundwater monitoring wells at the Site including MW-1 through MW-1, IW-1, BF-1, and BF-5.

Prior to purging and sampling the wells, the well caps were all removed and the wells were allowed to equilibrate with the atmosphere. The depth to water was then measured in each well to within 0.01 foot using an electronic depth to water meter. The wells were purged using low-flow purging techniques using a peristaltic pump at a rate of approximately 0.5-liter per minute. During well purging, groundwater parameters of temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured at one-minute intervals. The wells were purged until the three successive readings were within  $\pm 0.1$  for pH,  $\pm 3\%$  for conductivity,  $\pm 10$  mv for ORP, and  $\pm 10\%$  for temperature. Visual estimates of turbidity were noted while purging the wells. Once the groundwater parameters stabilized, groundwater samples were collected from each well using the peristaltic pump. Samples for volatile analytes were collected into 40 milliliter (mL) hydrochloric acid preserved volatile organic analysis (VOA) vials, with zero headspace (no air bubbles). Each sample container was sealed, labeled, and placed in an ice-chilled cooler pending transportation to the laboratory.

The samples were transported under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (Department of Health Services Certification #1644) for analyses. Each groundwater sample was analyzed for TPH-g, methyl tertiary butyl ether (MTBE), benzene, toluene, ethylbenzene, and total xylenes (collectively "BTEX compounds") using US EPA Testing Method 8015/8021. At the request of the ACDEH in their letter dated April 22, 2016, each groundwater sample was also analyzed for volatile organic compounds (VOCs) using US EPA



## Report on Semi-Annual Groundwater Monitoring

Second Semester 2016

3442 Adeline Street, Oakland, California 94608

Testing Method 8260B, and semi-volatile organic compounds (SVOCs) using US EPA Testing Method 8270C.

Copies of the field forms for the groundwater monitoring event are included in Appendix A.

### 5.0 SUMMARY OF RESULTS

This section provides a summary of the results of the groundwater monitoring performed.

#### 5.1 Water Level Elevations

Groundwater elevation data is summarized in Table 2. Figure 4 presents the contoured potentiometric groundwater surface along with a rose diagram. Groundwater elevations generally decreased across the Site, with wells exhibiting reduced groundwater elevations between approximately two to four feet. Groundwater elevations measured during the event indicated a generally westerly flow direction, which is consistent with previous monitoring events.

#### 5.2 Groundwater Sample Analytical Data

Table 3 presents a summary of the current and historical groundwater analytical data for petroleum hydrocarbons, and can be summarized as follows:

- TPH-g was detected in groundwater samples collected from wells MW-3 and MW-7 at concentrations of 16,000 micrograms per liter ( $\mu\text{g/L}$ ) and 6,700  $\mu\text{g/L}$ , respectively. TPH-g in MW-3 increased from a concentration of 4,900  $\mu\text{g/L}$  observed in December 2009. TPH-g in MW-7 increased from a concentration of 1,800  $\mu\text{g/L}$  observed in January 2016. Both detections remain within historical ranges.
- Benzene was detected in groundwater samples collected from wells MW-2, MW-3, and MW-7 at concentrations of 2.0  $\mu\text{g/L}$ , 5,100  $\mu\text{g/L}$ , and 1,400  $\mu\text{g/L}$ , respectively. The benzene concentration observed in MW-2 represents a decrease from a concentration of 97  $\mu\text{g/L}$  in January 2016. The benzene concentrations observed in groundwater samples from wells MW-3 and MW-7 represent increases from previously sampling events, 890  $\mu\text{g/L}$  in MW-3 in December 2009 and 400  $\mu\text{g/L}$  in MW-7 January 2016, and remain with in historical ranges.
- MTBE was not detected at or above the laboratory method detection limit in the groundwater samples collected and analyzed during the July 2016 groundwater monitoring event.

Figures 5 and 6 present isoconcentration maps prepared with the July 2016 benzene and TPH-g results, respectively. The isoconcentration maps show that the general concentration and extent of the dissolved petroleum hydrocarbons in groundwater is stable or decreasing.

Groundwater elevation and TPH-g and benzene concentration graphs are presented in Figures 7 through 14 for each of the groundwater monitoring wells. In general, as groundwater elevations increase petroleum hydrocarbon concentrations decrease. This may be the result of dilution due to an increased water column.

At the request of the ACDEH, groundwater samples collected were also analyzed for VOCs and SVOCs, the results are summarized in Table 4. The results can be summarized as follows:

## Report on Semi-Annual Groundwater Monitoring Second Semester 2016

3442 Adeline Street, Oakland, California 94608

- n-Propyl benzene was detected in groundwater samples collected from wells MW-1, MW-2, MW-3, and MW-7 at concentrations of 0.58 µg/L, 0.75 µg/L, 290 µg/L, and 110 µg/L, respectively.
- Acetone was detected in the groundwater sample collected from well MW-5 at a concentration of 14 µg/L.
- Chloroform was detected in the groundwater sample collected from well IW-1 at a concentration of 5.0 µg/L
- Naphthalene was detected in each of the groundwater samples collected and analyzed, observed at concentrations between 5.4 µg/L (MW-1) and 1,200 µg/L (BF-1).
- 2-Methylnaphthalene was detected in each of the groundwater samples collected and analyzed, observed at concentrations between 3.0 µg/L (MW-1) and 460 µg/L (BF-1).

Laboratory analytical reports and chain of custody documentation are included in Appendix B.

### 6. CONCLUSIONS AND RECOMMENDATIONS

Overall, groundwater results indicate that contaminants of concerns have decreased in wells MW-2, MW-5, and MW-6, while contaminants of concerns in wells MW-3 and MW-7 increased. The decreased concentrations in down-gradient well MW-6 indicate that the plume is stable and does not appear to be migrating off-site. In addition to the standard analytes, samples from the wells were analyzed for VOCs and SVOCs during this round; VOCs n-propyl benzene, acetone, and chloroform were detected in several wells, while SVOCs 2-methylnaphthalene and naphthalene were also detected in several wells. The detections of 2-methylnaphthalene and naphthalene do not exceed gross contamination ESLs.

The isoconcentration maps show that the general concentration and extent of the dissolved petroleum hydrocarbons in groundwater is stable or decreasing. The additional VOC and SVOC analyses requested by the ACDEH identified acetone, chloroform, n-propyl benzene, naphthalene, and 2-methylnaphthalene in groundwater beneath the Site.

- Acetone was detected in the groundwater collected from one well, MW-5, at a concentration of 14 µg/L, which is well below the maximum contaminant level (MCL) for acetone of 14,000 µg/L.
- Chloroform was detected in the groundwater collected from one well, IW-1, at a concentration of 5.0 µg/L, which is well below the MCL of 80 µg/L.
- n-Propyl benzene was detected in groundwater samples collected from four wells, observed at a maximum concentration of 290 µg/L, which is below the Regional Screening Level<sup>1</sup> (RSL) for tap water of 660 µg/L (propyl benzene).
- Naphthalene was detected in groundwater samples collected from each of the groundwater monitoring wells, observed at a maximum concentration of 1,200 µg/L, which is above both

---

<sup>1</sup> Regional Screening Level (RSL) prepared by the US EPA, Region 9 (May 2016).

## Report on Semi-Annual Groundwater Monitoring

Second Semester 2016

3442 Adeline Street, Oakland, California 94608

the residential and commercial Environmental Screening Levels<sup>2</sup> (ESLs) for the protection of vapor intrusion (Table W-3). The soil vapor sampling currently proposed will be used to assess whether the observed concentrations of naphthalene in groundwater present a potential unacceptable risk for vapor intrusion.

- 2-Methylnaphthalene was detected in each of the groundwater samples collected and analyzed, observed at a maximum concentration of 460 µg/L, which is above the MCL of 36 µg/L.

The next semi-annual groundwater monitoring event is scheduled for early January 2017. AEI recommends analyzing groundwater samples collected for the standard analytes including TPH-g, MTBE, BTEX, and SVOCs including naphthalene to further characterize naphthalene and 2-methylnaphthalene in groundwater beneath the Site.

---

<sup>2</sup> Environmental Screening Levels (ESLs) prepared by the California Regional Water Quality Control Board, San Francisco Bay Region (Interim-Final February 2016).



## TABLES

**Table 1: Summary of Monitoring Well Construction Details  
3442 Adeline Street St. Oakland, CA 94608**

Well ID	Date Installed	Top of Casing Elevation (ft)	Well Box Rim Elevation (ft)	Well Depth (ft bgs)	Casing Material	Casing Diameter (in)	Slotted Casing (ft)	Slot Size (in)	Sand Interval (ft)	Sand Size
BF-1	03/09/09	31.87	32.14	13	PVC	4	9-13	0.020	8-13	# 2/12
BF-2	03/09/09	NA	NA	13	PVC	4	9-13	0.020	8-13	# 2/12
BF-3	03/09/09	NA	NA	13	PVC	4	8-13	0.020	7-13	# 2/12
BF-5	03/09/09	32.28	32.59	13	PVC	4	8-13	0.020	7-13	# 2/12
MW-1	04/01/09	31.12	32.13	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-2	04/01/09	31.19	31.43	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-3	04/01/09	32.07	32.39	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-4	04/02/09	31.68	31.98	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-5	05/12/09	30.39	30.82	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-6	04/02/09	29.34	29.96	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-7	05/13/09	31.04	31.45	17	PVC	2	7-17	0.020	6-17	# 2/12
IW-1	05/12/09	31.66	31.90	15	stainless	2	13-15	40 mesh	12-15	# 2/12

Notes:

Elevations provided in reference to North American Vertical Datum 1988

NA = no available information

**Table 2: Summary of Groundwater Elevation Data  
3442 Adeline Street St. Oakland, CA 94608**

<b>Well ID</b> (Screen Interval)	<b>Date Collected</b>	<b>Top of Casing Elevation</b> (ft)	<b>Depth to Water</b> (ft)	<b>Groundwater Elevation</b> (ft )	<b>Elevation Change</b> (ft)
MW-1 (7-17)	6/10/09	31.12	7.01	24.11	----
	8/27/09	31.12	6.96	24.16	0.05
	12/15/09	31.12	5.96	25.16	1.00
	3/12/10	31.12	5.06	26.06	0.90
	10/21/10	31.12	7.00	24.12	-1.94
	5/5/11	31.12	5.88	25.24	1.12
	4/25/12	31.12	5.33	25.79	0.55
	12/12/12	31.12	5.35	25.77	-0.02
	4/4/13	31.12	6.63	24.49	-1.28
	4/30/14	31.12	5.42	25.70	1.21
	1/12/16	31.12	6.07	25.05	-0.65
	<b>7/22/16</b>	<b>31.12</b>	<b>8.85</b>	<b>22.27</b>	<b>-2.78</b>
MW-2 (7-17)	6/10/09	31.19	9.50	21.69	----
	8/27/09	31.19	10.50	20.69	-1.00
	12/15/09	31.19	8.68	22.51	1.82
	3/12/10	31.19	5.09	26.10	3.59
	10/21/10	31.19	7.51	23.68	-2.42
	5/5/11	31.19	6.68	24.51	0.83
	4/25/12	31.19	5.58	25.61	1.10
	12/12/12	31.19	6.47	24.72	-0.89
	4/4/13	31.19	7.56	23.63	-1.09
	4/30/14	31.19	6.62	24.57	0.94
	1/13/16	31.19	7.06	24.13	-0.44
	<b>7/22/16</b>	<b>31.19</b>	<b>9.94</b>	<b>21.25</b>	<b>-2.88</b>
MW-3 (7-17)	6/10/09	32.07	8.44	23.63	----
	8/27/09	32.07	8.59	23.48	-0.15
	12/15/09	32.07	7.66	24.41	0.93
	3/12/10	Well inaccessible	----	----	----
	10/21/10	Well inaccessible	----	----	----
	<b>7/22/16</b>	<b>32.07</b>	<b>9.98</b>	<b>22.09</b>	----
MW-4 (7-17)	6/10/09	31.68	9.45	22.23	----
	8/27/09	31.68	10.29	21.39	-0.84
	12/15/09	31.68	8.19	23.49	2.10
	3/12/10	31.68	5.45	26.23	2.74
	10/21/10	31.68	9.93	21.75	-4.48
	5/5/11	31.68	6.60	25.08	3.33
	4/25/12	31.68	5.73	25.95	0.87
	12/12/12	31.68	6.21	25.47	-0.48
	4/4/13	31.68	7.88	23.80	-1.67
	4/30/14	31.68	6.92	24.76	0.96
	1/13/16	31.68	6.34	25.34	0.58
	<b>7/22/16</b>	<b>31.68</b>	<b>10.50</b>	<b>21.18</b>	<b>-4.16</b>

**Table 2: Summary of Groundwater Elevation Data  
3442 Adeline Street St. Oakland, CA 94608**

<b>Well ID</b> (Screen Interval)	<b>Date Collected</b>	<b>Top of Casing Elevation</b> (ft)	<b>Depth to Water</b> (ft)	<b>Groundwater Elevation</b> (ft )	<b>Elevation Change</b> (ft)
MW-5 (7-17)	6/10/09	30.39	9.13	21.26	----
	8/27/09	30.39	9.54	20.85	-0.41
	12/15/09	30.39	8.33	22.06	1.21
	3/12/10	Well inaccessible	----	----	----
	10/21/10	30.39	6.85	23.54	1.48
	5/5/11	30.39	3.25	27.14	3.60
	4/25/12	30.39	4.50	25.89	-1.25
	12/12/12	30.39	5.43	24.96	-0.93
	4/4/13	30.39	7.25	23.14	-1.82
	4/30/14	Well inaccessible	----	----	----
	1/12/16	30.39	5.65	24.74	----
	<b>7/21/16</b>	<b>30.39</b>	<b>9.75</b>	<b>20.64</b>	<b>-4.10</b>
	MW-6 (7-17)	6/10/09	29.34	9.98	19.36
8/27/09		29.34	11.84	17.50	-1.86
12/15/09		29.34	8.33	21.01	3.51
3/12/10		29.34	4.66	24.68	3.67
10/21/10		29.34	10.00	19.34	-5.34
5/5/11		29.34	5.59	23.75	4.41
4/25/12		29.34	4.82	24.52	0.77
12/20/12		29.34	5.23	24.11	-0.41
4/4/13		29.34	7.37	21.97	-2.14
4/30/14		29.34	5.89	23.45	1.48
1/12/16		29.34	5.67	23.67	0.22
<b>7/21/16</b>		<b>29.34</b>	<b>10.40</b>	<b>18.94</b>	<b>-4.73</b>
MW-7 (7-17)		6/10/09	31.04	6.53	24.51
	8/27/09	31.04	6.19	24.85	0.34
	12/15/09	31.04	5.71	25.33	0.48
	3/12/10	31.04	5.34	25.70	0.37
	10/21/10	31.04	6.59	24.45	-1.25
	5/5/11	31.04	5.98	25.06	0.61
	4/25/12	31.04	5.71	25.33	0.27
	12/20/12	Well inaccessible	----	----	----
	4/4/13	31.04	6.18	24.86	-0.47
	4/30/14	31.04	6.29	24.75	-0.11
	1/12/16	31.04	5.61	25.43	0.68
	<b>7/21/16</b>	<b>31.04</b>	<b>7.36</b>	<b>23.68</b>	<b>-1.75</b>

**Table 2: Summary of Groundwater Elevation Data  
3442 Adeline Street St. Oakland, CA 94608**

<b>Well ID</b> (Screen Interval)	<b>Date Collected</b>	<b>Top of Casing Elevation</b> (ft)	<b>Depth to Water</b> (ft)	<b>Groundwater Elevation</b> (ft )	<b>Elevation Change</b> (ft)
IW-1 (13-15)	6/10/09	31.66	7.65	24.01	----
	8/27/09	31.66	7.70	23.96	-0.05
	12/15/09	31.66	10.99	20.67	-3.29
	3/12/10	31.66	6.00	25.66	4.99
	10/21/10	31.66	9.35	22.31	-3.35
	5/5/11	31.66	6.73	24.93	2.62
	4/25/12	31.66	8.05	23.61	-1.32
	12/20/12	31.66	12.88	18.78	-4.83
	4/4/13	31.66	12.81	18.85	0.07
	4/30/14	31.66	6.01	25.65	6.80
	1/12/16	31.66	6.33	25.33	-0.32
	<b>7/21/16</b>	<b>31.66</b>	<b>8.31</b>	<b>23.35</b>	<b>-1.98</b>
BF-1 (9-13)	<b>7/21/16</b>	<b>31.87</b>	<b>8.40</b>	<b>23.47</b>	----
BF-5 (9-13)	<b>7/21/16</b>	<b>32.28</b>	<b>8.95</b>	<b>23.33</b>	----

Notes:

Elevations provided in reference to North American Vertical Datum 1988



**Table 2a: Summary of Groundwater Elevation Data  
3442 Adeline Street St. Oakland, CA 94608**

Event	Date	Average Water	Change from	Flow Direction
		Table Elevation (ft)	Previous Episode (ft)	(gradient) (ft/ft)
1	6/10/2009	22.40	----	West (0.0186)
2	8/27/2009	21.85	-0.55	West (0.0186)
3	12/15/2009	23.42	1.58	West (0.0181)
4	3/12/2010	25.75	2.33	West (0.004)
5	10/21/2010	22.81	-2.94	North Northwest (0.041)
6	5/5/2011	25.13	2.32	West (0.01)
7	4/25/2012	25.52	0.38	West (0.01)
8	12/20/2012	25.01	-0.51	West (0.01)
9	4/4/2013	23.41	-1.60	West (0.01)
10	4/30/2014	24.62	1.21	West (0.01)
11	1/12-13/2016	24.55	-0.07	West (0.01)
11	7/21-22/2016	21.95	-2.60	West (0.01)

**Notes:**

Elevations provided in reference to North American Vertical Datum 1988

**Table 3: Summary of Groundwater Analytical Data (TPH and MBTEX)  
3442 Adeline Street St. Oakland, CA 94608**

Sample ID	Date	Depth to Water (ft)	TPH-d	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes		
			<i>Method 8015C</i>			<i>Method 8021B</i>					
			(µg/L)								
<b>MW-1</b>	04/17/09	7.01	97	220	<5.0	10	<0.5	3.0	5.4		
	08/27/09	6.96	----	7,000	<180	610	10	320	220		
	09/17/09	----	----	92	<15	0.91	0.70	<0.5	<0.5		
	12/15/09	5.96	----	2500	<50	170	6.4	66	120		
	03/12/10	5.06	----	500	<5.0	4.0	1.1	0.6	0.7		
	10/21/10	7.00	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	05/05/11	5.88	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/25/12	5.33	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	12/20/12	5.35	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/04/13	6.63	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/30/14	5.42	----	83	<5.0	<0.5	0.53	<0.5	<0.5		
	01/12/16	6.07	----	<50	<5.0	<0.5	<0.5	<0.5	<1.5		
<b>07/22/16</b>	<b>8.85</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>			
<b>MW-2</b>	04/17/09	9.50	2,200	7,000	<100	850	19	93	470		
	08/27/09	10.50	----	26,000	<1,200	3,600	<25	1,200	3,000		
	12/15/09	8.68	----	25,000	<250	2,900	70	1,500	2,400		
	03/12/10	5.69	----	7,300	<350	590	7.0	6.4	680		
	10/21/10	7.51	----	1,900	<15	140	1.4	28	140		
	05/05/11	6.68	----	27,000	<180	2,300	13	1,700	2,600		
	04/25/12	5.58	----	9,600	<120	440	8.8	260	920		
	12/20/12	6.47	----	2,900	<35	63	2.6	21	85		
	04/04/13	7.56	----	7,900	<150	960	10	380	690		
	04/30/14	6.62	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	01/13/16	7.06	----	330	<5.0	97	<0.5	2.5	14		
	<b>07/22/16</b>	<b>9.94</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>1.9/2.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>		
<b>MW-3</b>	04/17/09	8.44	2,200	10,000	<110	930	5.6	270	920		
	08/27/09	8.59	----	17,000	<250	3,800	38	730	710		
	09/17/09	----	----	260	<15	1.8	1.0	<0.5	2.1		
	10/14/09	----	----	1,800	<30	220	13	37	130		
	12/15/09	7.66	----	4,900	<50	890	13	160	130		
	03/12/10	Well inaccessible									
	10/21/10	Well inaccessible									
	<b>07/22/16</b>	<b>9.98</b>	----	<b>16,000</b>	<b>&lt;150</b>	<b>4,800/5,100</b>	<b>28</b>	<b>52</b>	<b>42</b>		

**Table 3: Summary of Groundwater Analytical Data (TPH and MBTEX)  
3442 Adeline Street St. Oakland, CA 94608**

Sample ID	Date	Depth to Water (ft)	TPH-d	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes		
			Method 8015C			Method 8021B					
						(µg/L)					
<b>MW-4</b>	04/17/09	9.45	1,200	4,700	<30	140	2.0	28	18		
	08/27/09	10.29	----	4,300	<25	75	11	8.6	3.4		
	12/15/09	8.19	----	3,000	<15	64	11	5.6	3.3		
	03/12/10	5.45	----	6,100	<35	1,200	14	170	6.2		
	10/21/10	9.93	----	1,900	<15	120	4.7	5.7	1.8		
	05/05/11	6.60	----	4,900	<25	560	2.6	41	17		
	04/25/12	5.73	----	330	<5.0	23	1.4	2.0	4.2		
	12/20/12	6.21	----	150	<5.0	5.8	<0.5	<0.5	<0.5		
	04/04/13	7.88	----	1,000	<5.0	30	4.6	0.61	0.65		
	04/30/14	6.92	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	01/13/16	6.34	----	<50	<5.0	<0.5	<0.5	<0.5	<1.5		
<b>07/22/16</b>	<b>10.50</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>			
<b>MW-5</b>	05/22/09	9.13	2,800	14,000	<100	3,000	12	340	420		
	08/27/09	9.54	----	25,000	<400	3,300	36	110	160		
	12/15/09	8.33	----	8,200	<250	1,200	6.9	300	610		
	03/12/10	Well inaccessible									
	10/21/10	6.85	----	<50	<5.0	1.3	<0.5	<0.5	<0.5		
	05/05/11	3.25	----	790	<20	140	1.0	29	30		
	04/25/12	4.51	----	67	<5.0	3.4	<0.5	1.4	0.83		
	12/20/12	5.43	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/04/13	7.25	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/30/14	Well inaccessible		----	----	----	----	----	----		
	01/12/16	5.65	----	110	<5.0	2.7	<0.5	<0.5	<1.5		
<b>07/21/16</b>	<b>9.75</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>			
<b>MW-6</b>	04/17/09	9.98	1,000	5,600	<300	210	3.0	180	160		
	08/27/09	11.84	----	2,200	<120	98	7.9	20	1.1		
	12/15/09	8.59	----	4,700	<250	370	6.9	260	300		
	03/12/10	4.66	----	9,300	<90	210	12	250	110		
	10/21/10	10.00	----	380	<5.0	35	1.2	4.6	3.8		
	05/05/11	5.59	----	7,000	<75	80	2.9	120	28		
	04/25/12	4.82	----	7,400	<150	99	11.0	100	27		
	12/20/12	5.23	----	5,500	<50	81	3.1	78	16		
	04/04/13	7.37	----	5,300	<70	76	5.7	50	12		
	04/30/14	5.89	----	670	<5.0	12	2.4	2.3	0.77		
	01/12/16	5.67	----	63	<5.0	1.8	<0.5	<0.5	<1.5		
<b>07/21/16</b>	<b>10.40</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>			

**Table 3: Summary of Groundwater Analytical Data (TPH and MBTEX)  
3442 Adeline Street St. Oakland, CA 94608**

Sample ID	Date	Depth to Water (ft)	TPH-d	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes		
			Method 8015C			Method 8021B					
									(µg/L)		
<b>MW-7</b>	04/17/09	6.53	3,700	12,000	<120	1,000	37	100	36		
	08/27/09	6.19	----	12,000	<100	550	30	130	33		
	12/15/09	5.71	----	9,600	<100	620	26	140	20		
	03/12/10	5.34	----	10,000	<25	850	33	87	28		
	10/21/10	6.59	----	7,900	<180	1,100	22	44	21		
	05/05/11	5.98	----	9,300	<200	690	23	42	21		
	04/25/12	5.71	----	8,600	<75	1,000	31	10	20		
	12/20/12	Well inaccessible due to parked car									
	04/04/13	6.18	----	12,000	<210	2,800	51	96	37		
	04/30/14	6.29	----	220	<5.0	39	0.75	0.53	<0.5		
	01/12/16	5.61	----	1,800	31	400	6.8	9.7	7.6		
	<b>07/21/16</b>	<b>7.36</b>	----	<b>6,700</b>	<b>&lt;400</b>	<b>1,400/1,400</b>	<b>29</b>	<b>36</b>	<b>28</b>		
	<b>IW-1</b>	05/22/09	7.65	680	1,200	<15	58	2.7	2.3	18	
08/27/09		7.70	----	160	<5.0	4.1	0.5	0.8	1.6		
09/17/09		----	----	300	<5.0	8.0	1.5	1.4	0.85		
12/15/09		10.99	----	220	<5.0	5.4	1.4	0.65	0.7		
03/12/10		6.00	----	<50	<5.0	1.9	<0.5	<0.5	<0.5		
10/21/10		9.35	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
05/05/11		6.73	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
04/25/12		8.05	----	<50	<5.0	0.91	<0.5	<0.5	0.57		
12/20/12		12.88	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
04/04/13		12.81	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
04/30/14		6.01	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
01/12/16		6.33	----	<50	<5.0	<0.5	<0.5	<0.5	<1.5		
<b>07/21/16</b>		<b>6.33</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>		
<b>BF-1</b> post H <sub>2</sub> O <sub>2</sub> pre-aeration post aeration	03/27/09	----	----	19,000	<250	890	27	460	1,200		
	06/17/09	----	----	6,700	<150	840	19	170	150		
	08/10/09	----	----	11,000	<120	710	14	440	290		
	08/27/09	----	----	9,600	<90	590	14	350	220		
	09/13/09	----	----	<50	<5.0	1.2	<0.5	<0.5	<0.5		
	10/14/09	----	----	2,400	<10	83	1.9	5.0	120		
	12/11/09	6.70	----	200	<5.0	12	<0.5	2.2	9.6		
	03/12/10	5.61	----	<50	<0.5	2.9	<0.5	<0.5	<0.5		
	10/21/10	7.95	----	560	<5.0	68	1.5	6.7	25		
	05/05/11	6.25	----	<50	<5.0	0.65	<0.5	<0.5	<0.5		
	04/25/12	5.85	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	12/20/12	5.82	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/04/13	6.78	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/30/14	5.36	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	01/12/16	6.58	----	<50	<5.0	<0.5	<0.5	<0.5	<1.5		
	<b>07/22/16</b>	<b>8.40</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>		

**Table 3: Summary of Groundwater Analytical Data (TPH and MBTEX)  
3442 Adeline Street St. Oakland, CA 94608**

Sample ID	Date	Depth to Water (ft)	TPH-d	TPH-g	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes		
			<i>Method 8015C</i>			<i>Method 8021B</i>					
			(µg/L)								
<b>BF-5</b>	08/27/09	----	----	170	<25	32	0.55	4.2	220		
	10/14/09	----	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	12/11/09	7.25	----	130	<5.0	40	<0.5	0.91	<0.5		
	03/12/10	6.09	----	<50	<5.0	4.3	<0.5	0.91	<0.5		
	10/21/10	8.62	----	80	<5.0	8.8	<0.5	1.4	4.5		
	05/05/11	6.75	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/25/12	6.37	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	12/20/12	6.33	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/04/13	7.25	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	04/30/14	5.83	----	<50	<5.0	<0.5	<0.5	<0.5	<0.5		
	01/12/16	7.09	----	<50	<5.0	<0.5	<0.5	<0.5	<1.5		
	<b>07/22/16</b>	<b>8.95</b>	----	<b>&lt;50</b>	<b>&lt;5.0</b>	<b>&lt;0.5/0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;1.5</b>		

Notes:

µg/L = micrograms per liter

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

MTBE = methyl tert-butyl ether

<0.5/<0.5 = represents results from two separate analyses - 8021B/8260B in July 2016

**Bold Value** = most recent sample

**Table 4: Summary of Groundwater Analytical Data (VOCs and SVOCs)  
3442 Adeline Street St. Oakland, CA 94608**

Sample ID	Date	Depth to Water (ft)	n-propyl benzene	Acetone	Chloroform	Other Target VOCs	2-methyl-naphthalene	Naphthalene	Other Target SVOCs
			<i>EPA Method 8260B</i>				<i>Method 8270C</i>		
MW-1	07/22/16	8.85	0.58	<10	<0.5	<MRL	3.0	5.4	<MRL
MW-2	07/22/16	9.94	0.75	<10	<0.5	<MRL	93	470	<MRL
MW-3	07/22/16	9.98	290	<10	<0.5	<MRL	270	920	<MRL
MW-4	07/22/16	10.50	<0.5	<10	<0.5	<MRL	28	18	<MRL
MW-5	07/21/16	9.75	<0.5	14	<0.5	<MRL	340	420	<MRL
MW-6	07/21/16	10.40	<0.5	<10	<0.5	<MRL	180	160	<MRL
MW-7	07/21/16	7.36	110	<1,000	<50	<MRL	100	36	<MRL
IW-1	07/21/16	8.31	<0.5	<10	5.0	<MRL	2.3	18	<MRL
BF-1	07/22/16	8.40	<0.5	<10	<0.5	<MRL	460	1,200	<MRL
BF-5	07/22/16	8.95	<0.5	<10	<0.5	<MRL	4.2	220	<MRL

Notes:

µg/L = micrograms per liter

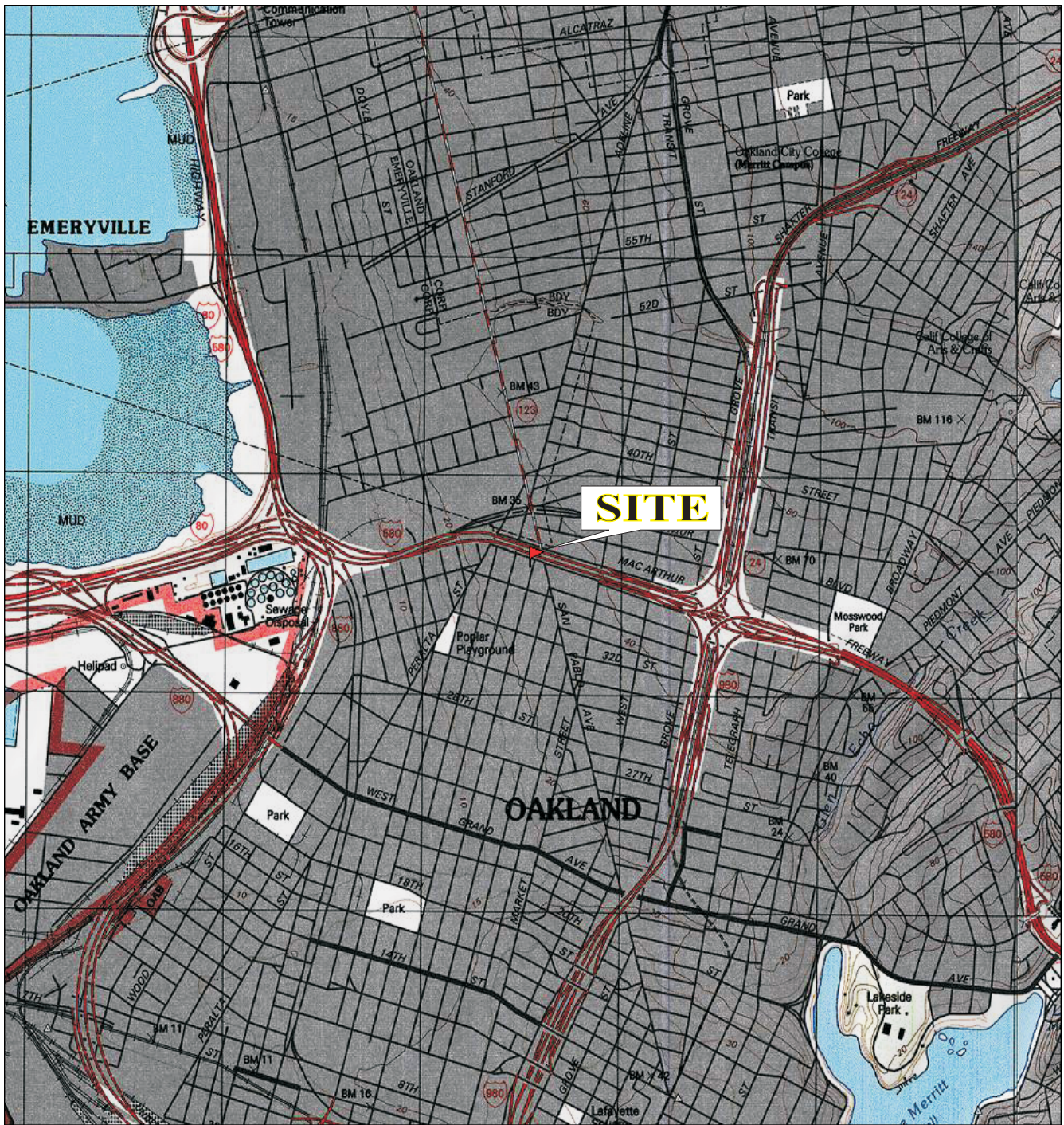
VOCs = volatile organic compounds

SVOCs = semi-volatile organic compounds

MRL = method reporting limit

## FIGURES







TN  $\nearrow$  MN  
15°

0 5 1 MILE  
0 1000 FEET 0 500 1000 METERS  
Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)


<b>AEI CONSULTANTS</b> 2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597	
<b>Site Location Map</b>	
3442 Adeline Street Oakland, CA 94608	<b>FIGURE 1</b> Job No: 281939





-  Property Boundary
-  Former UST Area

Approximate Scale:  
1 inch = 55 feet



<b>AEI CONSULTANTS</b> 2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597	
<b>Site Vicinity Map</b>	
3442 Adeline Street Oakland, CA 94608	<b>FIGURE 2</b> Job No: 281939



**LEGEND**

- Subject Property Boundary
- Monitoring Well/Backfill Casings (Installed in 2009)
- Excavation Confirmation Sample (2009)
- AEI Soil Boring (2007 - 2008)
- Soil Vapor Sample (2007)
- Clear Water Soil Boring (2006)
- UST Removal Soil Sample (2000)

- Former Gasoline UST
- Interim Source Removal Excavation (to 13 feet bgs)

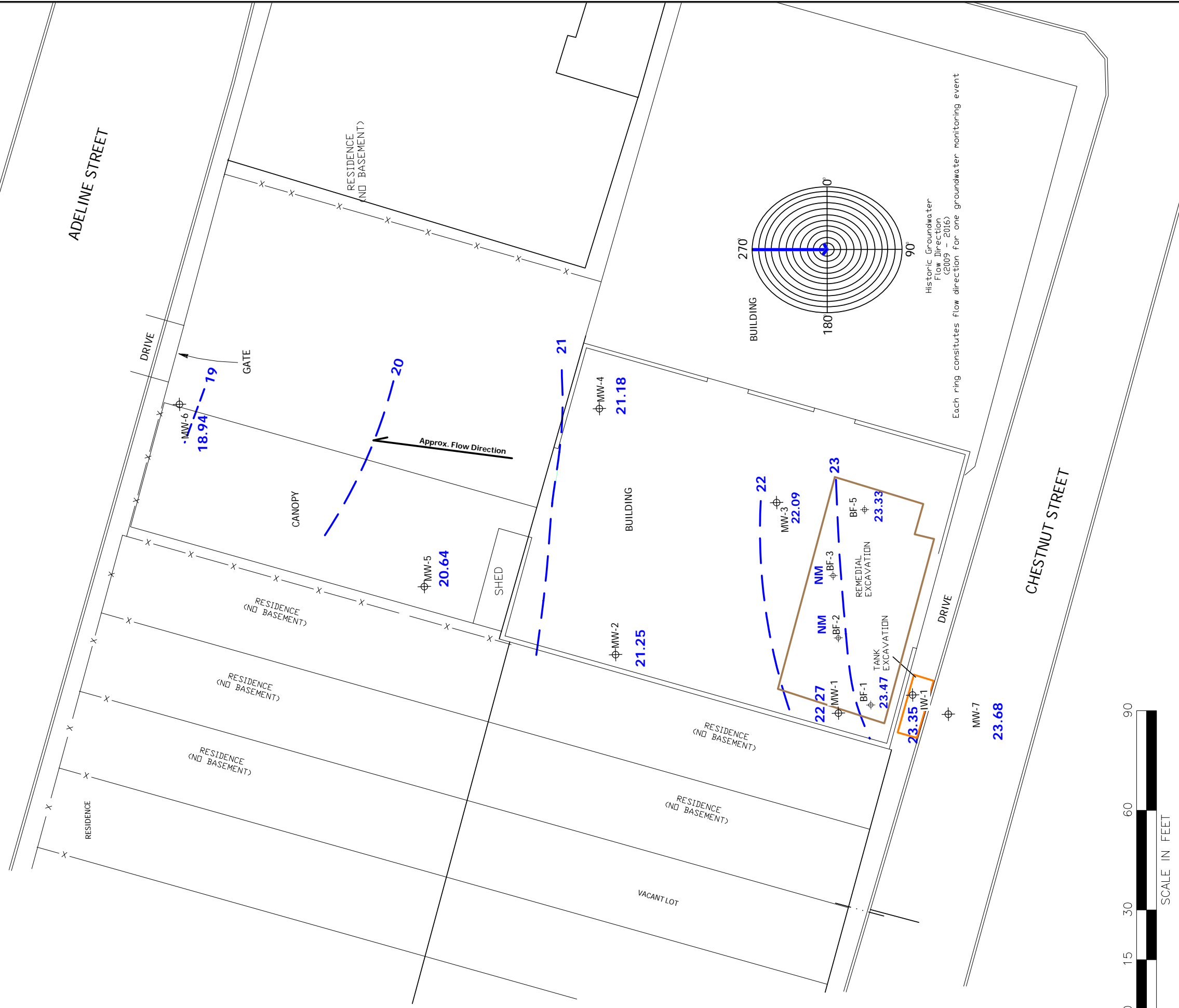
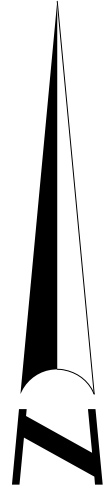
DRAFTED BY RFF

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, WALNUT CREEK

**SITE PLAN**

3442 ADELINE STREET  
OAKLAND, CALIFORNIA

FIGURE 3  
PROJECT NO. 281939



**LEGEND**

- Monitoring Well/Backfill Casing
- Groundwater Elevation Feet Above Mean Sea Level (MSL)
- Groundwater Elevation Contour
- Former Gasoline UST
- Interim Source Removal Excavation

NM = Not Measured

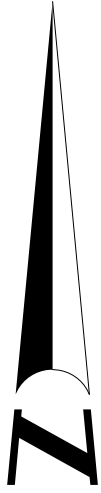
**AEI CONSULTANTS**  
2500 CAMINO DIABLO, WALNUT CREEK

Groundwater Elevation Map (7/21-22/2016)

3442 ADELINE STREET  
OAKLAND, CALIFORNIA

FIGURE 4  
PROJECT NO. 281939





**LEGEND**

- Monitoring Well
- NS Not Sampled
- backfill casing
- Former Gasoline UST
- Interim Source Removal Excavation
- Benzene Isocontour Line
- 1,000 ug/L

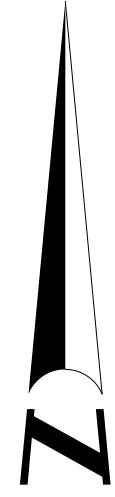
**B < 0.5** Benzene (Units µg/L) / EPA Method 8260B  
 < 0.5 = not reported at or above the stated detection limit

**AEI CONSULTANTS**  
 2500 CAMINO DIABLO, WALNUT CREEK

**BENZENE ISOCONTOURS (JULY 2016)**

3442 ADELINE STREET  
 OAKLAND, CALIFORNIA

FIGURE 5  
 PROJECT NO. 281939



**LEGEND**

- ⊕ Monitoring Well
- ⊕ Backfill Casing
- NS Not Sampled
- ▭ Former Gasoline UST
- ▭ Interim Source Removal Excavation
- TPHg Isocontour Line
- 1,000 ug/L

G <0.5 TPHg (Units µg/L) / EPA Method 8260B  
<0.5 = not reported at or above the stated detection limit

**AEI CONSULTANTS**  
2500 CAMINO DIABLO, WALNUT CREEK

TPHg ISOCONTOURS (JULY 2016)

3442 ADELINE STREET  
OAKLAND, CALIFORNIA

FIGURE 6  
PROJECT NO. 281939

FIGURE 7  
MW-1 GROUNDWATER ELEVATION AND CONCENTRATION

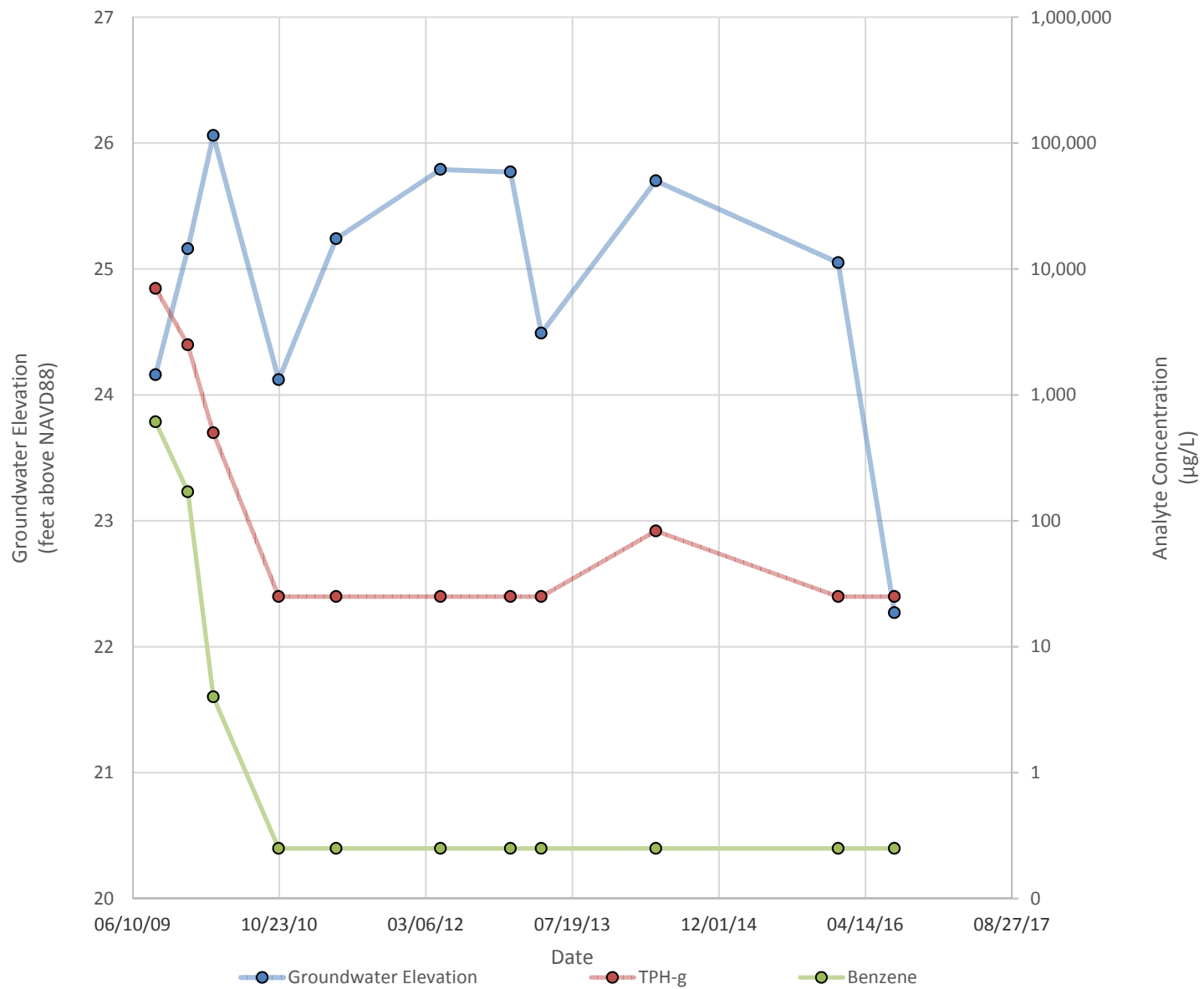


FIGURE 8  
MW-2 GROUNDWATER ELEVATION AND CONCENTRATION

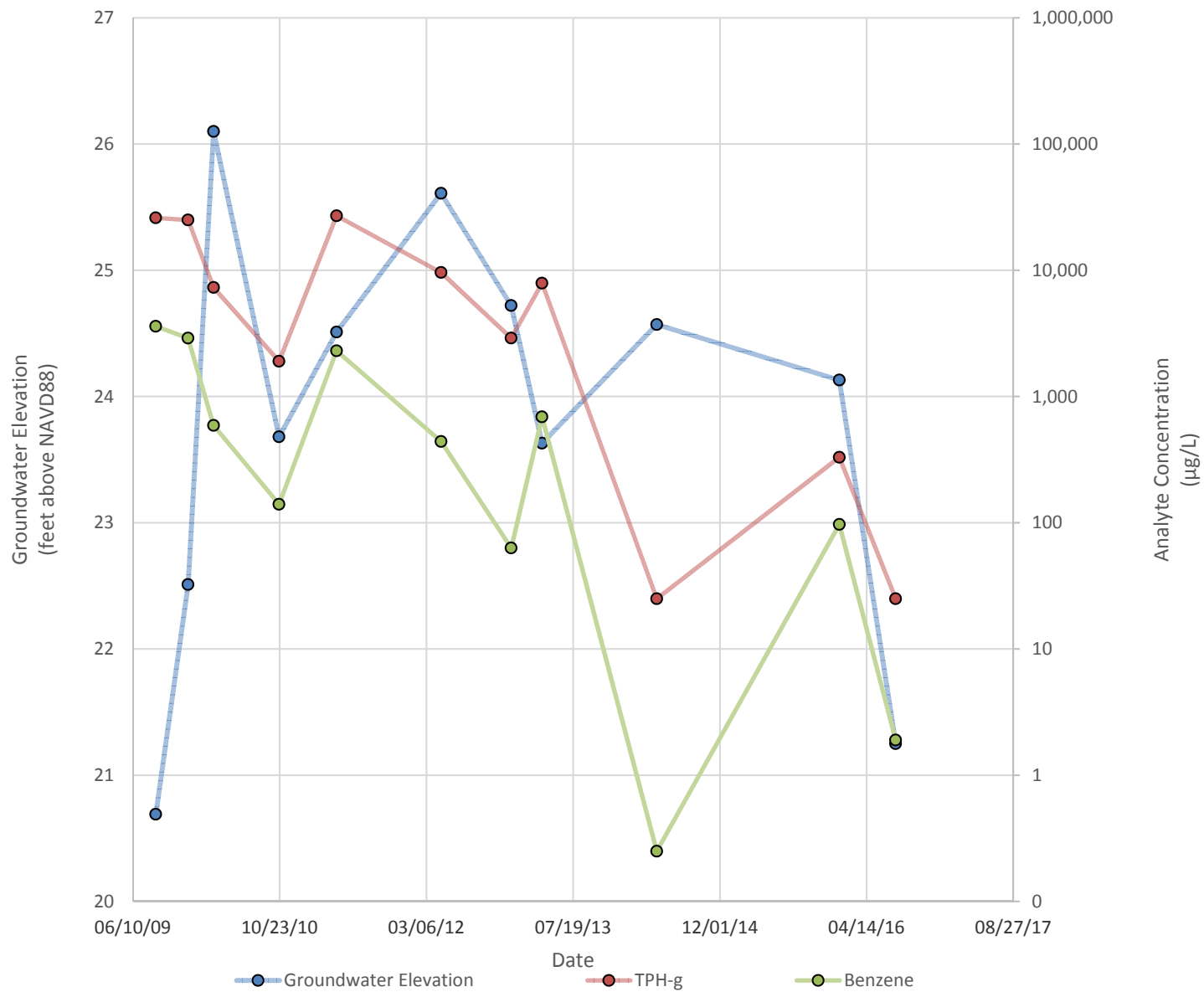


FIGURE 9  
MW-3 GROUNDWATER ELEVATION AND CONCENTRATION

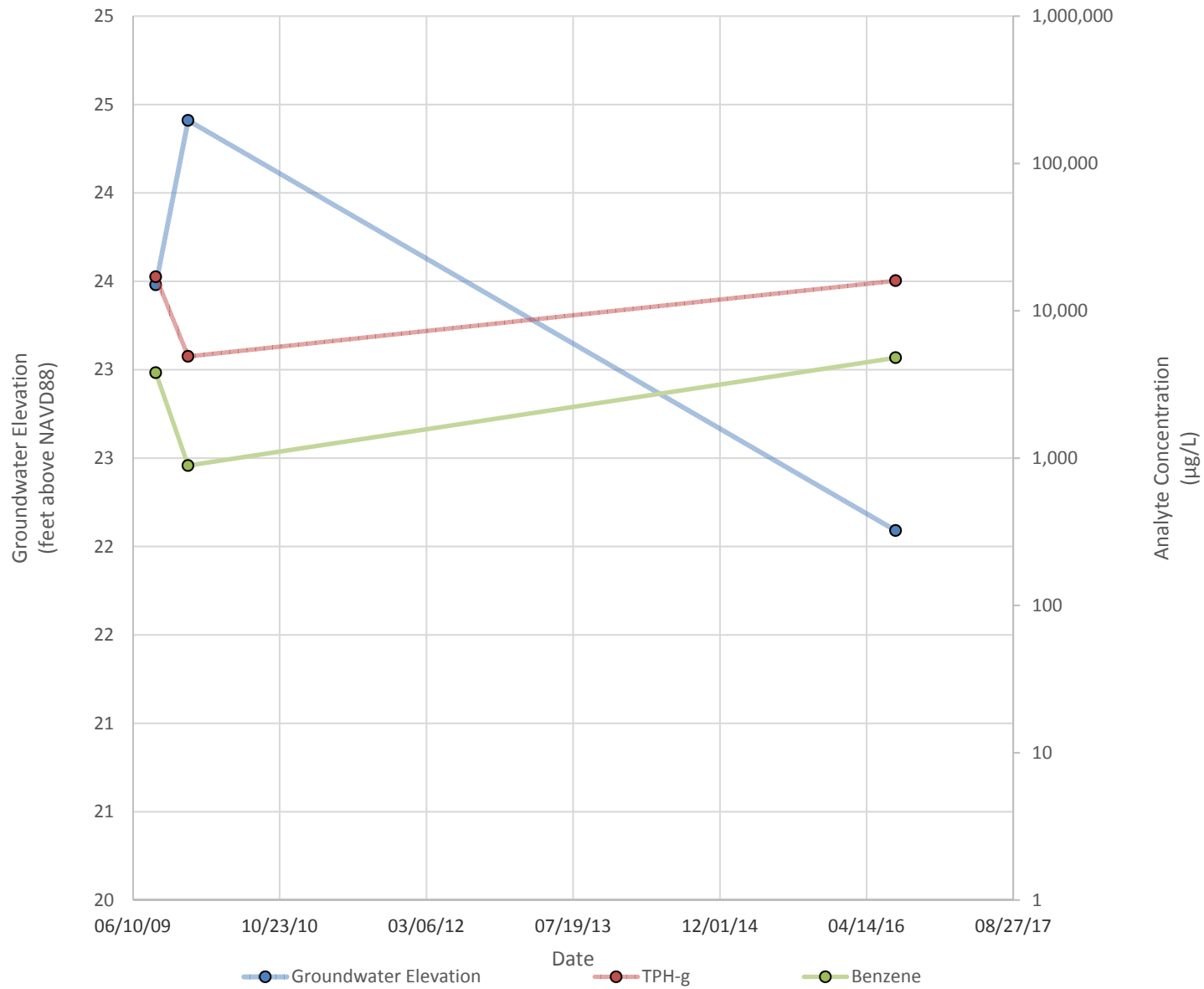




FIGURE 10  
MW-4 GROUNDWATER ELEVATION AND CONCENTRATION

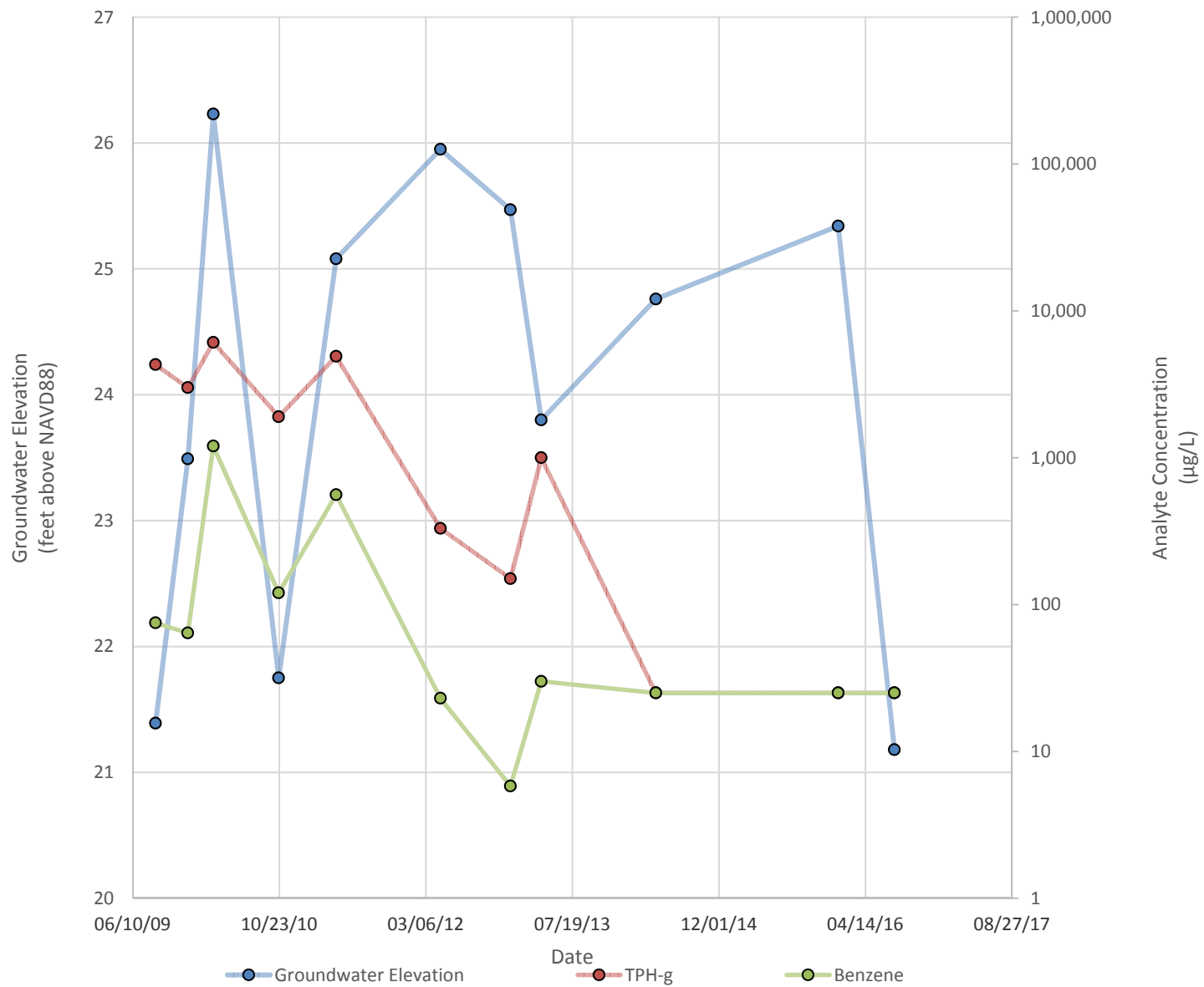


FIGURE 11  
MW-5 GROUNDWATER ELEVATION AND CONCENTRATION

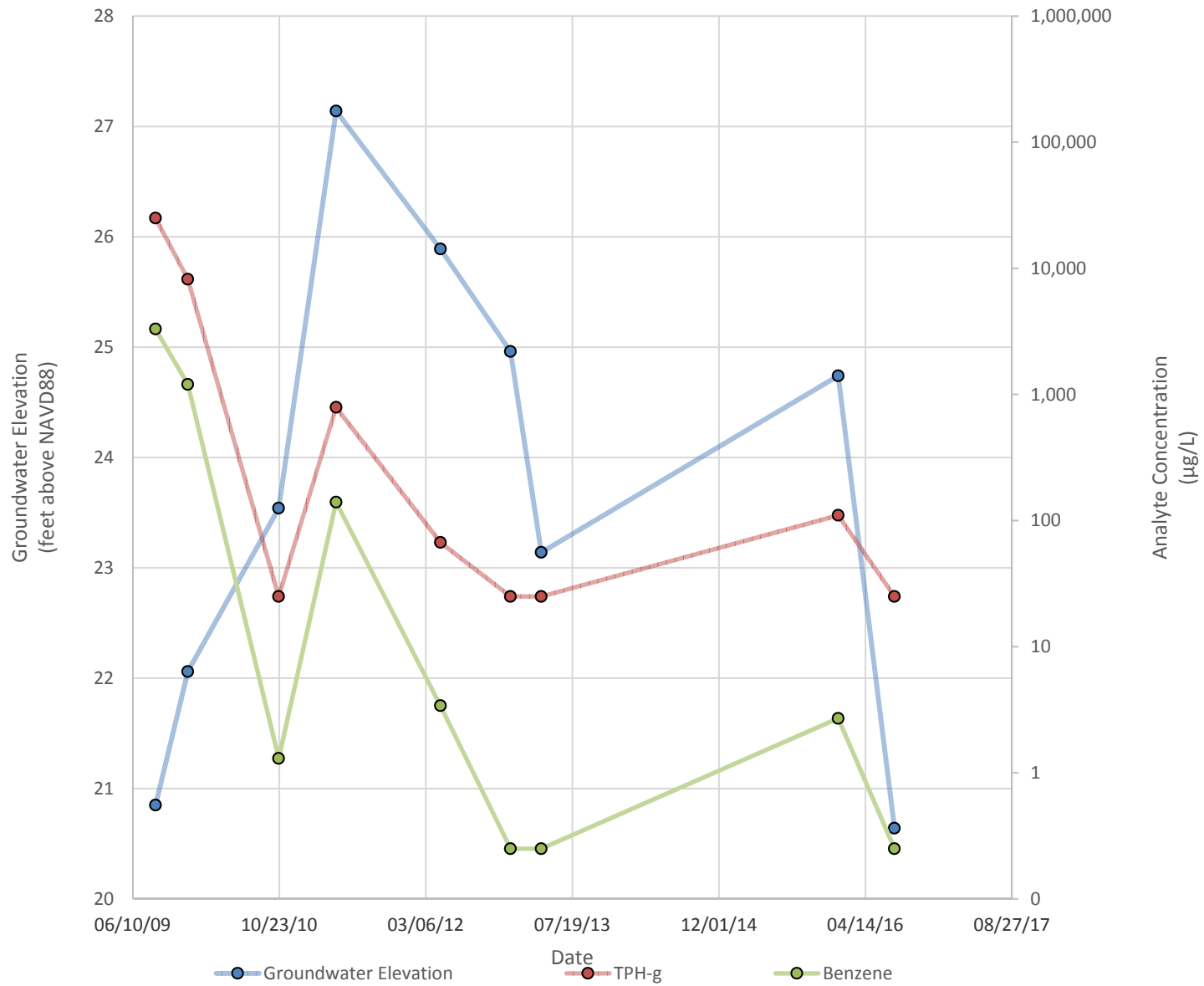


FIGURE 12  
 MW-6 GROUNDWATER ELEVATION AND CONCENTRATION

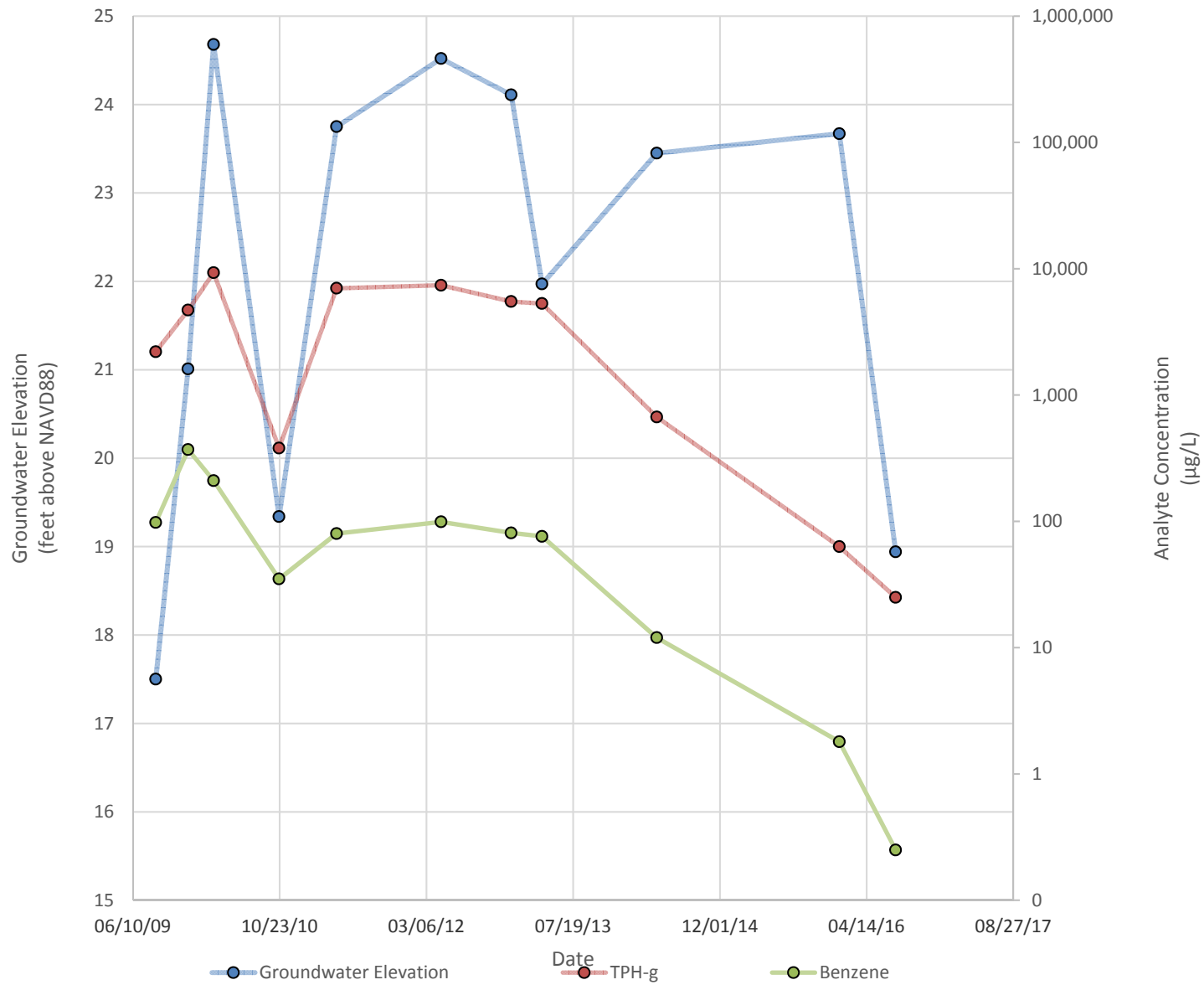


FIGURE 13  
MW-7 GROUNDWATER ELEVATION AND CONCENTRATION

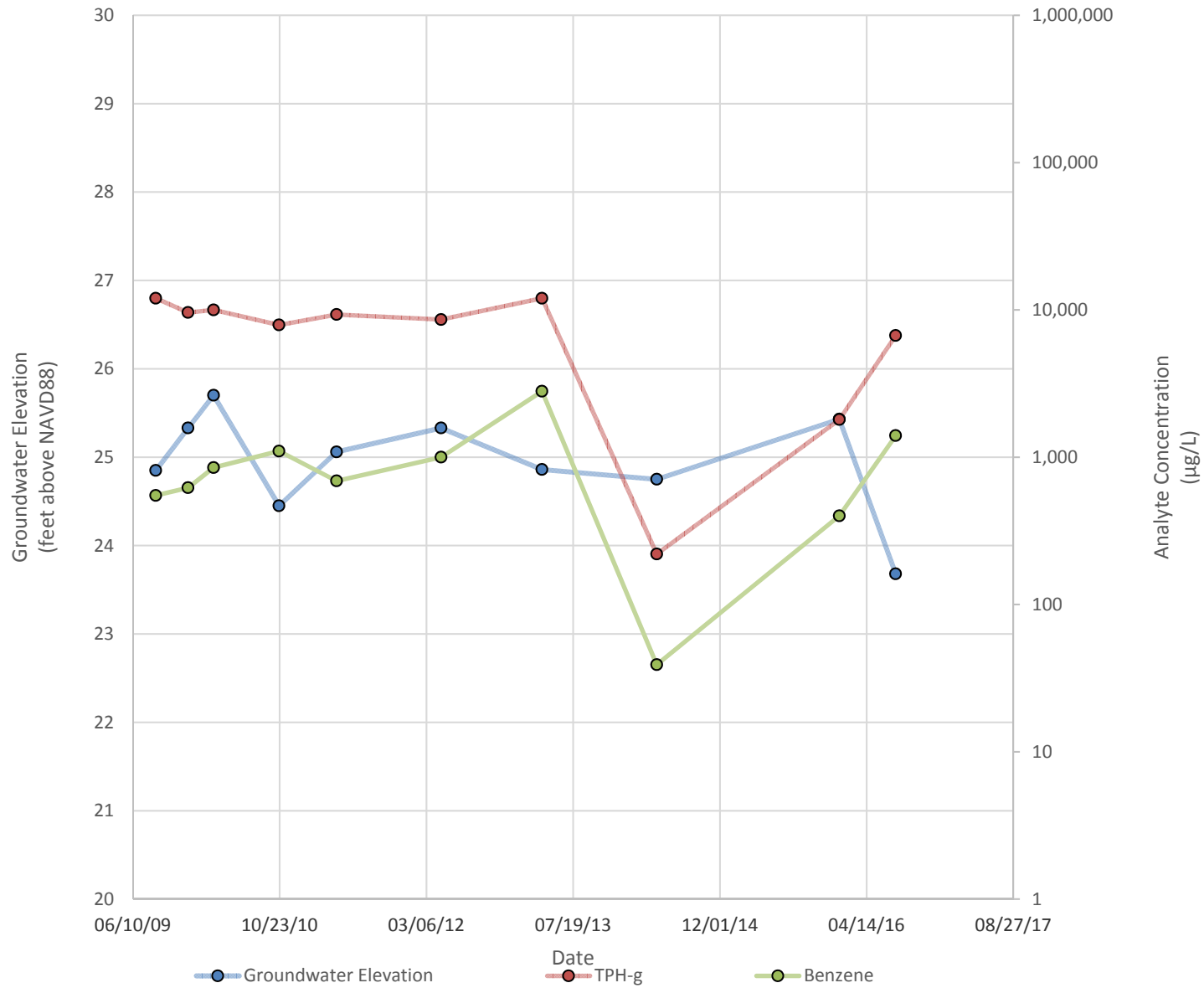
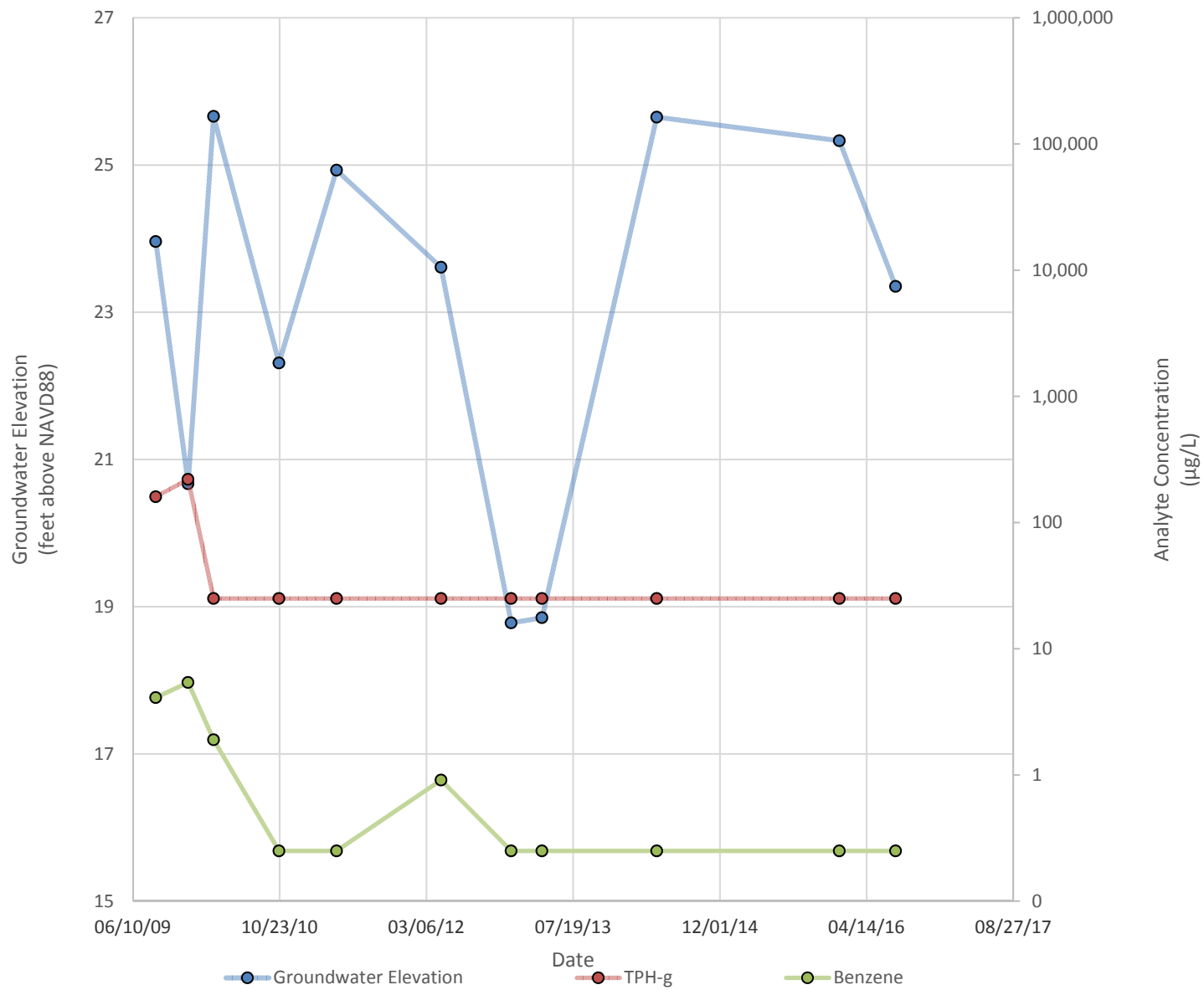


FIGURE 14  
IW-1 GROUNDWATER ELEVATION AND CONCENTRATION



**APPENDIX A**

**GROUNDWATER MONITORING WELL  
FIELD SAMPLING FORMS**

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-1**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	31.12		
Depth of Well	17.00		
Depth to Water (from top of casing)	8.85		
Water Elevation (feet above msl)	22.27		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	6750		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
13:05	Start Purge						
13:24	3000	19.25	7.15	763	41.00	41.5	Visually Clear
13:29	3750	19.38	7.14	769	37.60	40.2	Visually Clear
13:34	4500	19.45	7.26	763	36.11	40.7	Visually Clear
13:39	5250	19.53	7.17	763	35.90	40.6	Visually Clear
13:44	6000	19.61	7.25	763	35.83	41.2	Visually Clear
13:49	6750	19.30	7.22	762	35.64	40.9	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 13.0 feet bgs. Purge rate 0.15 liters per minute. No odor.
No Drawdown

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-2**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	31.19		
Depth of Well	17.00		
Depth to Water (from top of casing)	9.94		
Water Elevation (feet above msl)	21.25		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	8,250		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
11:40	Start Purge						
12:00	3,000	18.66	6.62	553	32.86	51.0	Visually Clear
12:05	3,750	18.67	6.63	544	31.81	51.9	Visually Clear
12:10	4,500	18.68	6.63	537	31.11	52.5	Visually Clear
12:15	5,250	18.67	6.62	531	30.21	54.3	Visually Clear
12:20	6,000	18.69	6.60	523	29.43	56.8	Visually Clear
12:25	6,750	18.70	6.61	521	28.95	54.7	Visually Clear
12:30	7,500	18.69	6.63	523	27.62	54.4	Visually Clear
12:35	8,250	18.68	6.63	524	28.53	54.5	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 13.5 feet bgs. Purge rate 0.15 liters per minute. No odor.
Drawdown at a rate of 0.03 feet per minute on lowest pump setting.



**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-3**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	32.07		
Depth of Well	17.00		
Depth to Water (from top of casing)	9.98		
Water Elevation (feet above msl)	22.09		
Well Volumes Purged	Micropurged		
Actual Volume Purged (liters)	5250.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				Conductivity	DO	ORP	Comments
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	(μS/cm)	(mg/L)	(meV)	
10:35	Start Purge						
10:50	2,250	20.02	6.97	1347	1.19	-106.3	Visually Clear
10:55	3,000	20.03	6.97	1348	0.69	-103.7	Visually Clear
11:00	3,750	20.05	6.97	1348	0.54	-101.3	Visually Clear
11:05	4,500	20.04	6.97	1347	0.45	-100.1	Visually Clear
11:10	5,250	20.06	6.97	1346	0.42	-98.3	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 13.0 feet bgs. Purge rate 0.15 liters per minute. Strong petrol odor.
Minimal drawdown

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-4**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	31.68		
Depth of Well	17.00		
Depth to Water (from top of casing)	10.50		
Water Elevation (feet above msl)	21.18		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	4,800		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (Liters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
9:00	Start Purge						
9:20	2,400	19.10	6.31	395	33.14	82.3	Visually Clear
9:25	3,000	19.19	6.31	394	32.66	81.1	Visually Clear
9:30	3,600	19.24	6.33	396	32.64	80.3	Visually Clear
9:35	4,200	19.30	6.34	398	32.60	79.3	Visually Clear
9:40	4,800	19.30	6.33	399	32.61	79.5	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 14.0 feet bgs. Purge rate 0.12 liters per minute. No odor.
Drawdown at rate of 0.04 feet per minute on lowest pump setting.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-5**

Project Name:	Zimmerman	Date of Sampling:	1/12/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	30.39		
Depth of Well	17.00		
Depth to Water (from top of casing)	9.75		
Water Elevation (feet above msl)	20.64		
Well Volumes Purged	1		
Actual Volume Purged (milliliters)	4,476.62		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (Liters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
13:03	Start Purge						
13:14		18.37	6.71	12.05	31.2	124.8	Visually Clear
13:19		18.11	6.73	12.05	31.81	91.3	Visually Clear
13:25		17.89	6.87	12.36	32.62	75.1	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Drawdown at a rapid rate, purged entire well and allowed to recharge before taking a grab sample.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-6**

Project Name:	Zimmerman	Date of Sampling:	7/21/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	29.34		
Depth of Well	17.00		
Depth to Water (from top of casing)	10.40		
Water Elevation (feet above msl)	18.94		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	9000		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
14:16	Start Purge						
14:29	1,950	19.54	6.66	627	23.61	55.3	Visually Clear
14:34	3,000	19.34	6.71	624	22.80	54.5	Visually Clear
14:39	3,450	20.02	6.74	624	22.69	54.8	Visually Clear
14:45	4,500	19.79	6.79	615	22.39	55.4	Visually Clear
14:56	6,000	19.40	6.82	601	24.71	55.0	Visually Clear
15:02	9,000	19.41	6.81	605	24.9	55.4	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 14.5 feet bgs. Purge rate 0.15 liters per minute.
Drawdown at rate of 0.01 feet per minute at lowest pump setting.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: MW-7**

Project Name:	Zimmerman	Date of Sampling:	7/21/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.04		
Depth of Well	17.00		
Depth to Water (from top of casing)	7.36		
Water Elevation (feet above msl)	23.68		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	7,200		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
10:17	Start Purge						
10:35	2,700	21.59	6.80	1,095	0.85	-115.0	Visually Clear
10:41	3,600	21.60	6.80	1,097	0.68	-108.7	Visually Clear
10:46	4,350	21.67	6.79	1,097	0.59	-102.4	Visually Clear
10:51	5,100	21.74	6.78	1,098	0.52	-97.6	Visually Clear
10:56	5,850	21.68	6.77	1,096	0.48	-92.4	Visually Clear
11:01	6,600	21.63	6.76	1,096	0.48	-88.9	Visually Clear
11:05	7,200	21.73	6.77	1,099	0.44	-83.5	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 12.0 feet bgs. Purge rate 0.15 liters per minute. Strong hydrocarbon odor.
Drawdown at 0.02 feet per minute on lowest pump setting.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: IW-1**

Project Name:	Zimmerman	Date of Sampling:	7/21/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.66		
Depth of Well	15.00		
Depth to Water (from top of casing)	8.31		
Water Elevation (feet above msl)	23.35		
Well Volumes Purged	Micropurged		
Actual Volume Purged (liters)	3900.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
11:30	Start Purge						
11:40		22.35	6.59	824	16.65	32.6	Visually Clear
11:45		22.20	6.38	794	15.30	37.5	Visually Clear
11:51		22.13	6.61	780	14.22	31.8	Visually Clear
11:56		22.13		762	12.57	28.7	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 13.0 feet bgs. Purge rate 0.15 liters per minute. No odor.
Grab sample taken at 11:58 due to high drawdown.

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: BF-1**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK <span style="float:right">▼</span>		
Elevation of Top of Casing (feet above msl)	31.87		
Depth of Well	13.00		
Depth to Water (from top of casing)	8.40		
Water Elevation (feet above msl)	23.47		
Well Volumes Purged	Micropurged		
Actual Volume Purged (milliliters)	6,250		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (milliliters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
15:55	Start of Purge						
16:15	3,000	20.65	7.25	1170	1.31	13.8	Visually Clear
16:20	3,750	20.54	7.26	1170	1.18	13.8	Visually Clear
16:25	4,500	20.55	7.27	1170	1.08	13.2	Visually Clear
16:30	4,250	20.46	7.27	1170	1.01	13.0	Visually Clear
16:35	6,000	20.41	7.27	1170	0.92	12.3	Visually Clear
16:40	3,250	20.40	7.28	1170	0.89	12.2	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 11.0 feet bgs. Purge rate 0.15 liters per minute. No odor.
No Drawdown

**AEI CONSULTANTS**  
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

**Monitoring Well Number: BF-5**

Project Name:	Zimmerman	Date of Sampling:	7/22/2016
Job Number:	281939	Name of Sampler:	N. Bricker
Project Address:	3442 Adeline St. Oakland Cal		

**MONITORING WELL DATA**

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK <span style="float:right">▼</span>		
Elevation of Top of Casing (feet above msl)	32.28		
Depth of Well	17.00		
Depth to Water (from top of casing)	8.95		
Water Elevation (feet above msl)	23.33		
Well Volumes Purged	Micropurged		
Actual Volume Purged (liters)	6,000		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	----

**GROUNDWATER SAMPLES**

Number of Samples/Container Size				3 VOAs and 1 amber Liter			
Time	Vol Removed (Liters)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
15:04	Purge Start						
15:15	1,500	20.83	7.08	1173	1.70	21.0	Visually Clear
15:20	2,250	20.67	7.21	1172	1.13	18.4	Visually Clear
15:25	3,000	20.62	7.18	1171	0.69	15.4	Visually Clear
15:30	3,750	20.77	7.20	1171	0.63	14.7	Visually Clear
15:35	4,500	20.52	7.20	1169	0.55	14.6	Visually Clear
15:40	5,250	20.50	7.21	1168	0.49	12.7	Visually Clear
15:45	6,000	20.63	7.21	1168	0.50	12.2	Visually Clear

**COMMENTS (i.e., sample odor, well recharge time & percent, etc.)**

Bottom of drop tube at 11.0 feet bgs. Purge rate 0.15 liters per minute. No odor.
No Drawdown



**APPENDIX B**  
**LABORATORY ANALYTICAL REPORTS**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1607A60

**Report Created for:** AEI Consultants

2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597

**Project Contact:** Nate Bricker

**Project P.O.:** 113475

**Project Name:** 281939; Zimmerman

**Project Received:** 07/25/2016

Analytical Report reviewed & approved for release on 08/02/2016 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** AEI Consultants  
**Project:** 281939; Zimmerman  
**WorkOrder:** 1607A60

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** AEI Consultants  
**Project:** 281939; Zimmerman  
**WorkOrder:** 1607A60

### Analytical Qualifiers

S Surrogate spike recovery outside accepted recovery limits  
a3 sample diluted due to high organic content.  
c2 surrogate recovery outside of the control limits due to matrix interference.  
c4 surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.  
d1 weakly modified or unmodified gasoline is significant  
d17 Reporting limit for MTBE raised due to co-elution with non-target peaks.



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001B	Water	07/21/2016 11:05	GC16	124435
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		1000	100	07/29/2016 14:10
tert-Amyl methyl ether (TAME)	ND		50	100	07/29/2016 14:10
Benzene	<b>1400</b>		50	100	07/29/2016 14:10
Bromobenzene	ND		50	100	07/29/2016 14:10
Bromochloromethane	ND		50	100	07/29/2016 14:10
Bromodichloromethane	ND		50	100	07/29/2016 14:10
Bromoform	ND		50	100	07/29/2016 14:10
Bromomethane	ND		50	100	07/29/2016 14:10
2-Butanone (MEK)	ND		200	100	07/29/2016 14:10
t-Butyl alcohol (TBA)	ND		200	100	07/29/2016 14:10
n-Butyl benzene	ND		50	100	07/29/2016 14:10
sec-Butyl benzene	ND		50	100	07/29/2016 14:10
tert-Butyl benzene	ND		50	100	07/29/2016 14:10
Carbon Disulfide	ND		50	100	07/29/2016 14:10
Carbon Tetrachloride	ND		50	100	07/29/2016 14:10
Chlorobenzene	ND		50	100	07/29/2016 14:10
Chloroethane	ND		50	100	07/29/2016 14:10
Chloroform	ND		50	100	07/29/2016 14:10
Chloromethane	ND		50	100	07/29/2016 14:10
2-Chlorotoluene	ND		50	100	07/29/2016 14:10
4-Chlorotoluene	ND		50	100	07/29/2016 14:10
Dibromochloromethane	ND		50	100	07/29/2016 14:10
1,2-Dibromo-3-chloropropane	ND		20	100	07/29/2016 14:10
1,2-Dibromoethane (EDB)	ND		50	100	07/29/2016 14:10
Dibromomethane	ND		50	100	07/29/2016 14:10
1,2-Dichlorobenzene	ND		50	100	07/29/2016 14:10
1,3-Dichlorobenzene	ND		50	100	07/29/2016 14:10
1,4-Dichlorobenzene	ND		50	100	07/29/2016 14:10
Dichlorodifluoromethane	ND		50	100	07/29/2016 14:10
1,1-Dichloroethane	ND		50	100	07/29/2016 14:10
1,2-Dichloroethane (1,2-DCA)	ND		50	100	07/29/2016 14:10
1,1-Dichloroethene	ND		50	100	07/29/2016 14:10
cis-1,2-Dichloroethene	ND		50	100	07/29/2016 14:10
trans-1,2-Dichloroethene	ND		50	100	07/29/2016 14:10
1,2-Dichloropropane	ND		50	100	07/29/2016 14:10
1,3-Dichloropropane	ND		50	100	07/29/2016 14:10
2,2-Dichloropropane	ND		50	100	07/29/2016 14:10

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001B	Water	07/21/2016 11:05	GC16	124435
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		50	100	07/29/2016 14:10
cis-1,3-Dichloropropene	ND		50	100	07/29/2016 14:10
trans-1,3-Dichloropropene	ND		50	100	07/29/2016 14:10
Diisopropyl ether (DIPE)	ND		50	100	07/29/2016 14:10
Ethylbenzene	ND		50	100	07/29/2016 14:10
Ethyl tert-butyl ether (ETBE)	ND		50	100	07/29/2016 14:10
Freon 113	ND		50	100	07/29/2016 14:10
Hexachlorobutadiene	ND		50	100	07/29/2016 14:10
Hexachloroethane	ND		50	100	07/29/2016 14:10
2-Hexanone	ND		50	100	07/29/2016 14:10
Isopropylbenzene	ND		50	100	07/29/2016 14:10
4-Isopropyl toluene	ND		50	100	07/29/2016 14:10
Methyl-t-butyl ether (MTBE)	ND		50	100	07/29/2016 14:10
Methylene chloride	ND		50	100	07/29/2016 14:10
4-Methyl-2-pentanone (MIBK)	ND		50	100	07/29/2016 14:10
Naphthalene	ND		50	100	07/29/2016 14:10
n-Propyl benzene	<b>110</b>		50	100	07/29/2016 14:10
Styrene	ND		50	100	07/29/2016 14:10
1,1,1,2-Tetrachloroethane	ND		50	100	07/29/2016 14:10
1,1,2,2-Tetrachloroethane	ND		50	100	07/29/2016 14:10
Tetrachloroethene	ND		50	100	07/29/2016 14:10
Toluene	ND		50	100	07/29/2016 14:10
1,2,3-Trichlorobenzene	ND		50	100	07/29/2016 14:10
1,2,4-Trichlorobenzene	ND		50	100	07/29/2016 14:10
1,1,1-Trichloroethane	ND		50	100	07/29/2016 14:10
1,1,2-Trichloroethane	ND		50	100	07/29/2016 14:10
Trichloroethene	ND		50	100	07/29/2016 14:10
Trichlorofluoromethane	ND		50	100	07/29/2016 14:10
1,2,3-Trichloropropane	ND		50	100	07/29/2016 14:10
1,2,4-Trimethylbenzene	ND		50	100	07/29/2016 14:10
1,3,5-Trimethylbenzene	ND		50	100	07/29/2016 14:10
Vinyl Chloride	ND		50	100	07/29/2016 14:10
Xylenes, Total	ND		50	100	07/29/2016 14:10

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001B	Water	07/21/2016 11:05	GC16	124435

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	101	70-130		07/29/2016 14:10
Toluene-d8	100	70-130		07/29/2016 14:10
4-BFB	84	70-130		07/29/2016 14:10

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002B	Water	07/21/2016 11:56	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		10	1	07/28/2016 01:28
tert-Amyl methyl ether (TAME)	ND		0.50	1	07/28/2016 01:28
Benzene	ND		0.50	1	07/28/2016 01:28
Bromobenzene	ND		0.50	1	07/28/2016 01:28
Bromochloromethane	ND		0.50	1	07/28/2016 01:28
Bromodichloromethane	ND		0.50	1	07/28/2016 01:28
Bromoform	ND		0.50	1	07/28/2016 01:28
Bromomethane	ND		0.50	1	07/28/2016 01:28
2-Butanone (MEK)	ND		2.0	1	07/28/2016 01:28
t-Butyl alcohol (TBA)	ND		2.0	1	07/28/2016 01:28
n-Butyl benzene	ND		0.50	1	07/28/2016 01:28
sec-Butyl benzene	ND		0.50	1	07/28/2016 01:28
tert-Butyl benzene	ND		0.50	1	07/28/2016 01:28
Carbon Disulfide	ND		0.50	1	07/28/2016 01:28
Carbon Tetrachloride	ND		0.50	1	07/28/2016 01:28
Chlorobenzene	ND		0.50	1	07/28/2016 01:28
Chloroethane	ND		0.50	1	07/28/2016 01:28
Chloroform	<b>5.0</b>		0.50	1	07/28/2016 01:28
Chloromethane	ND		0.50	1	07/28/2016 01:28
2-Chlorotoluene	ND		0.50	1	07/28/2016 01:28
4-Chlorotoluene	ND		0.50	1	07/28/2016 01:28
Dibromochloromethane	ND		0.50	1	07/28/2016 01:28
1,2-Dibromo-3-chloropropane	ND		0.20	1	07/28/2016 01:28
1,2-Dibromoethane (EDB)	ND		0.50	1	07/28/2016 01:28
Dibromomethane	ND		0.50	1	07/28/2016 01:28
1,2-Dichlorobenzene	ND		0.50	1	07/28/2016 01:28
1,3-Dichlorobenzene	ND		0.50	1	07/28/2016 01:28
1,4-Dichlorobenzene	ND		0.50	1	07/28/2016 01:28
Dichlorodifluoromethane	ND		0.50	1	07/28/2016 01:28
1,1-Dichloroethane	ND		0.50	1	07/28/2016 01:28
1,2-Dichloroethane (1,2-DCA)	ND		0.50	1	07/28/2016 01:28
1,1-Dichloroethene	ND		0.50	1	07/28/2016 01:28
cis-1,2-Dichloroethene	ND		0.50	1	07/28/2016 01:28
trans-1,2-Dichloroethene	ND		0.50	1	07/28/2016 01:28
1,2-Dichloropropane	ND		0.50	1	07/28/2016 01:28
1,3-Dichloropropane	ND		0.50	1	07/28/2016 01:28
2,2-Dichloropropane	ND		0.50	1	07/28/2016 01:28

(Cont.)





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002B	Water	07/21/2016 11:56	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 01:28
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 01:28
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 01:28
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 01:28
Ethylbenzene	ND		0.50	1	07/28/2016 01:28
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 01:28
Freon 113	ND		0.50	1	07/28/2016 01:28
Hexachlorobutadiene	ND		0.50	1	07/28/2016 01:28
Hexachloroethane	ND		0.50	1	07/28/2016 01:28
2-Hexanone	ND		0.50	1	07/28/2016 01:28
Isopropylbenzene	ND		0.50	1	07/28/2016 01:28
4-Isopropyl toluene	ND		0.50	1	07/28/2016 01:28
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 01:28
Methylene chloride	ND		0.50	1	07/28/2016 01:28
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 01:28
Naphthalene	ND		0.50	1	07/28/2016 01:28
n-Propyl benzene	ND		0.50	1	07/28/2016 01:28
Styrene	ND		0.50	1	07/28/2016 01:28
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 01:28
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 01:28
Tetrachloroethene	ND		0.50	1	07/28/2016 01:28
Toluene	ND		0.50	1	07/28/2016 01:28
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 01:28
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 01:28
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 01:28
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 01:28
Trichloroethene	ND		0.50	1	07/28/2016 01:28
Trichlorofluoromethane	ND		0.50	1	07/28/2016 01:28
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 01:28
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 01:28
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 01:28
Vinyl Chloride	ND		0.50	1	07/28/2016 01:28
Xylenes, Total	ND		0.50	1	07/28/2016 01:28

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002B	Water	07/21/2016 11:56	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	99	70-130		07/28/2016 01:28
Toluene-d8	105	70-130		07/28/2016 01:28
4-BFB	85	70-130		07/28/2016 01:28

**Analyst(s):** MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003B	Water	07/21/2016 15:02	GC16	124384
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	10	1	07/28/2016 02:08	
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/28/2016 02:08	
Benzene	ND	0.50	1	07/28/2016 02:08	
Bromobenzene	ND	0.50	1	07/28/2016 02:08	
Bromochloromethane	ND	0.50	1	07/28/2016 02:08	
Bromodichloromethane	ND	0.50	1	07/28/2016 02:08	
Bromoform	ND	0.50	1	07/28/2016 02:08	
Bromomethane	ND	0.50	1	07/28/2016 02:08	
2-Butanone (MEK)	ND	2.0	1	07/28/2016 02:08	
t-Butyl alcohol (TBA)	ND	2.0	1	07/28/2016 02:08	
n-Butyl benzene	ND	0.50	1	07/28/2016 02:08	
sec-Butyl benzene	ND	0.50	1	07/28/2016 02:08	
tert-Butyl benzene	ND	0.50	1	07/28/2016 02:08	
Carbon Disulfide	ND	0.50	1	07/28/2016 02:08	
Carbon Tetrachloride	ND	0.50	1	07/28/2016 02:08	
Chlorobenzene	ND	0.50	1	07/28/2016 02:08	
Chloroethane	ND	0.50	1	07/28/2016 02:08	
Chloroform	ND	0.50	1	07/28/2016 02:08	
Chloromethane	ND	0.50	1	07/28/2016 02:08	
2-Chlorotoluene	ND	0.50	1	07/28/2016 02:08	
4-Chlorotoluene	ND	0.50	1	07/28/2016 02:08	
Dibromochloromethane	ND	0.50	1	07/28/2016 02:08	
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/28/2016 02:08	
1,2-Dibromoethane (EDB)	ND	0.50	1	07/28/2016 02:08	
Dibromomethane	ND	0.50	1	07/28/2016 02:08	
1,2-Dichlorobenzene	ND	0.50	1	07/28/2016 02:08	
1,3-Dichlorobenzene	ND	0.50	1	07/28/2016 02:08	
1,4-Dichlorobenzene	ND	0.50	1	07/28/2016 02:08	
Dichlorodifluoromethane	ND	0.50	1	07/28/2016 02:08	
1,1-Dichloroethane	ND	0.50	1	07/28/2016 02:08	
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/28/2016 02:08	
1,1-Dichloroethene	ND	0.50	1	07/28/2016 02:08	
cis-1,2-Dichloroethene	ND	0.50	1	07/28/2016 02:08	
trans-1,2-Dichloroethene	ND	0.50	1	07/28/2016 02:08	
1,2-Dichloropropane	ND	0.50	1	07/28/2016 02:08	
1,3-Dichloropropane	ND	0.50	1	07/28/2016 02:08	
2,2-Dichloropropane	ND	0.50	1	07/28/2016 02:08	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003B	Water	07/21/2016 15:02	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 02:08
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 02:08
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 02:08
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 02:08
Ethylbenzene	ND		0.50	1	07/28/2016 02:08
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 02:08
Freon 113	ND		0.50	1	07/28/2016 02:08
Hexachlorobutadiene	ND		0.50	1	07/28/2016 02:08
Hexachloroethane	ND		0.50	1	07/28/2016 02:08
2-Hexanone	ND		0.50	1	07/28/2016 02:08
Isopropylbenzene	ND		0.50	1	07/28/2016 02:08
4-Isopropyl toluene	ND		0.50	1	07/28/2016 02:08
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 02:08
Methylene chloride	ND		0.50	1	07/28/2016 02:08
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 02:08
Naphthalene	ND		0.50	1	07/28/2016 02:08
n-Propyl benzene	ND		0.50	1	07/28/2016 02:08
Styrene	ND		0.50	1	07/28/2016 02:08
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 02:08
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 02:08
Tetrachloroethene	ND		0.50	1	07/28/2016 02:08
Toluene	ND		0.50	1	07/28/2016 02:08
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 02:08
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 02:08
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 02:08
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 02:08
Trichloroethene	ND		0.50	1	07/28/2016 02:08
Trichlorofluoromethane	ND		0.50	1	07/28/2016 02:08
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 02:08
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 02:08
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 02:08
Vinyl Chloride	ND		0.50	1	07/28/2016 02:08
Xylenes, Total	ND		0.50	1	07/28/2016 02:08

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003B	Water	07/21/2016 15:02	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	98	70-130		07/28/2016 02:08
Toluene-d8	109	70-130		07/28/2016 02:08
4-BFB	87	70-130		07/28/2016 02:08

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004B	Water	07/21/2016 13:25	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Acetone	14	10	1	07/28/2016 02:47
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/28/2016 02:47
Benzene	ND	0.50	1	07/28/2016 02:47
Bromobenzene	ND	0.50	1	07/28/2016 02:47
Bromochloromethane	ND	0.50	1	07/28/2016 02:47
Bromodichloromethane	ND	0.50	1	07/28/2016 02:47
Bromoform	ND	0.50	1	07/28/2016 02:47
Bromomethane	ND	0.50	1	07/28/2016 02:47
2-Butanone (MEK)	ND	2.0	1	07/28/2016 02:47
t-Butyl alcohol (TBA)	ND	2.0	1	07/28/2016 02:47
n-Butyl benzene	ND	0.50	1	07/28/2016 02:47
sec-Butyl benzene	ND	0.50	1	07/28/2016 02:47
tert-Butyl benzene	ND	0.50	1	07/28/2016 02:47
Carbon Disulfide	ND	0.50	1	07/28/2016 02:47
Carbon Tetrachloride	ND	0.50	1	07/28/2016 02:47
Chlorobenzene	ND	0.50	1	07/28/2016 02:47
Chloroethane	ND	0.50	1	07/28/2016 02:47
Chloroform	ND	0.50	1	07/28/2016 02:47
Chloromethane	ND	0.50	1	07/28/2016 02:47
2-Chlorotoluene	ND	0.50	1	07/28/2016 02:47
4-Chlorotoluene	ND	0.50	1	07/28/2016 02:47
Dibromochloromethane	ND	0.50	1	07/28/2016 02:47
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/28/2016 02:47
1,2-Dibromoethane (EDB)	ND	0.50	1	07/28/2016 02:47
Dibromomethane	ND	0.50	1	07/28/2016 02:47
1,2-Dichlorobenzene	ND	0.50	1	07/28/2016 02:47
1,3-Dichlorobenzene	ND	0.50	1	07/28/2016 02:47
1,4-Dichlorobenzene	ND	0.50	1	07/28/2016 02:47
Dichlorodifluoromethane	ND	0.50	1	07/28/2016 02:47
1,1-Dichloroethane	ND	0.50	1	07/28/2016 02:47
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/28/2016 02:47
1,1-Dichloroethene	ND	0.50	1	07/28/2016 02:47
cis-1,2-Dichloroethene	ND	0.50	1	07/28/2016 02:47
trans-1,2-Dichloroethene	ND	0.50	1	07/28/2016 02:47
1,2-Dichloropropane	ND	0.50	1	07/28/2016 02:47
1,3-Dichloropropane	ND	0.50	1	07/28/2016 02:47
2,2-Dichloropropane	ND	0.50	1	07/28/2016 02:47

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004B	Water	07/21/2016 13:25	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 02:47
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 02:47
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 02:47
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 02:47
Ethylbenzene	ND		0.50	1	07/28/2016 02:47
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 02:47
Freon 113	ND		0.50	1	07/28/2016 02:47
Hexachlorobutadiene	ND		0.50	1	07/28/2016 02:47
Hexachloroethane	ND		0.50	1	07/28/2016 02:47
2-Hexanone	ND		0.50	1	07/28/2016 02:47
Isopropylbenzene	ND		0.50	1	07/28/2016 02:47
4-Isopropyl toluene	ND		0.50	1	07/28/2016 02:47
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 02:47
Methylene chloride	ND		0.50	1	07/28/2016 02:47
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 02:47
Naphthalene	ND		0.50	1	07/28/2016 02:47
n-Propyl benzene	ND		0.50	1	07/28/2016 02:47
Styrene	ND		0.50	1	07/28/2016 02:47
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 02:47
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 02:47
Tetrachloroethene	ND		0.50	1	07/28/2016 02:47
Toluene	ND		0.50	1	07/28/2016 02:47
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 02:47
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 02:47
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 02:47
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 02:47
Trichloroethene	ND		0.50	1	07/28/2016 02:47
Trichlorofluoromethane	ND		0.50	1	07/28/2016 02:47
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 02:47
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 02:47
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 02:47
Vinyl Chloride	ND		0.50	1	07/28/2016 02:47
Xylenes, Total	ND		0.50	1	07/28/2016 02:47

(Cont.)



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004B	Water	07/21/2016 13:25	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		07/28/2016 02:47
Toluene-d8	104	70-130		07/28/2016 02:47
4-BFB	86	70-130		07/28/2016 02:47

Analyst(s): MW





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005B	Water	07/22/2016 09:40	GC16	124384
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	10	1	07/28/2016 03:27	
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/28/2016 03:27	
Benzene	ND	0.50	1	07/28/2016 03:27	
Bromobenzene	ND	0.50	1	07/28/2016 03:27	
Bromochloromethane	ND	0.50	1	07/28/2016 03:27	
Bromodichloromethane	ND	0.50	1	07/28/2016 03:27	
Bromoform	ND	0.50	1	07/28/2016 03:27	
Bromomethane	ND	0.50	1	07/28/2016 03:27	
2-Butanone (MEK)	ND	2.0	1	07/28/2016 03:27	
t-Butyl alcohol (TBA)	ND	2.0	1	07/28/2016 03:27	
n-Butyl benzene	ND	0.50	1	07/28/2016 03:27	
sec-Butyl benzene	ND	0.50	1	07/28/2016 03:27	
tert-Butyl benzene	ND	0.50	1	07/28/2016 03:27	
Carbon Disulfide	ND	0.50	1	07/28/2016 03:27	
Carbon Tetrachloride	ND	0.50	1	07/28/2016 03:27	
Chlorobenzene	ND	0.50	1	07/28/2016 03:27	
Chloroethane	ND	0.50	1	07/28/2016 03:27	
Chloroform	ND	0.50	1	07/28/2016 03:27	
Chloromethane	ND	0.50	1	07/28/2016 03:27	
2-Chlorotoluene	ND	0.50	1	07/28/2016 03:27	
4-Chlorotoluene	ND	0.50	1	07/28/2016 03:27	
Dibromochloromethane	ND	0.50	1	07/28/2016 03:27	
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/28/2016 03:27	
1,2-Dibromoethane (EDB)	ND	0.50	1	07/28/2016 03:27	
Dibromomethane	ND	0.50	1	07/28/2016 03:27	
1,2-Dichlorobenzene	ND	0.50	1	07/28/2016 03:27	
1,3-Dichlorobenzene	ND	0.50	1	07/28/2016 03:27	
1,4-Dichlorobenzene	ND	0.50	1	07/28/2016 03:27	
Dichlorodifluoromethane	ND	0.50	1	07/28/2016 03:27	
1,1-Dichloroethane	ND	0.50	1	07/28/2016 03:27	
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/28/2016 03:27	
1,1-Dichloroethene	ND	0.50	1	07/28/2016 03:27	
cis-1,2-Dichloroethene	ND	0.50	1	07/28/2016 03:27	
trans-1,2-Dichloroethene	ND	0.50	1	07/28/2016 03:27	
1,2-Dichloropropane	ND	0.50	1	07/28/2016 03:27	
1,3-Dichloropropane	ND	0.50	1	07/28/2016 03:27	
2,2-Dichloropropane	ND	0.50	1	07/28/2016 03:27	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005B	Water	07/22/2016 09:40	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 03:27
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 03:27
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 03:27
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 03:27
Ethylbenzene	ND		0.50	1	07/28/2016 03:27
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 03:27
Freon 113	ND		0.50	1	07/28/2016 03:27
Hexachlorobutadiene	ND		0.50	1	07/28/2016 03:27
Hexachloroethane	ND		0.50	1	07/28/2016 03:27
2-Hexanone	ND		0.50	1	07/28/2016 03:27
Isopropylbenzene	ND		0.50	1	07/28/2016 03:27
4-Isopropyl toluene	ND		0.50	1	07/28/2016 03:27
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 03:27
Methylene chloride	ND		0.50	1	07/28/2016 03:27
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 03:27
Naphthalene	ND		0.50	1	07/28/2016 03:27
n-Propyl benzene	ND		0.50	1	07/28/2016 03:27
Styrene	ND		0.50	1	07/28/2016 03:27
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 03:27
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 03:27
Tetrachloroethene	ND		0.50	1	07/28/2016 03:27
Toluene	ND		0.50	1	07/28/2016 03:27
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 03:27
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 03:27
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 03:27
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 03:27
Trichloroethene	ND		0.50	1	07/28/2016 03:27
Trichlorofluoromethane	ND		0.50	1	07/28/2016 03:27
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 03:27
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 03:27
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 03:27
Vinyl Chloride	ND		0.50	1	07/28/2016 03:27
Xylenes, Total	ND		0.50	1	07/28/2016 03:27

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005B	Water	07/22/2016 09:40	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		07/28/2016 03:27
Toluene-d8	111	70-130		07/28/2016 03:27
4-BFB	83	70-130		07/28/2016 03:27

Analyst(s): MW



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006B	Water	07/22/2016 11:10	GC16	124435
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		2500	250	07/29/2016 13:28
tert-Amyl methyl ether (TAME)	ND		120	250	07/29/2016 13:28
Benzene	<b>5100</b>		120	250	07/29/2016 13:28
Bromobenzene	ND		120	250	07/29/2016 13:28
Bromochloromethane	ND		120	250	07/29/2016 13:28
Bromodichloromethane	ND		120	250	07/29/2016 13:28
Bromoform	ND		120	250	07/29/2016 13:28
Bromomethane	ND		120	250	07/29/2016 13:28
2-Butanone (MEK)	ND		500	250	07/29/2016 13:28
t-Butyl alcohol (TBA)	ND		500	250	07/29/2016 13:28
n-Butyl benzene	ND		120	250	07/29/2016 13:28
sec-Butyl benzene	ND		120	250	07/29/2016 13:28
tert-Butyl benzene	ND		120	250	07/29/2016 13:28
Carbon Disulfide	ND		120	250	07/29/2016 13:28
Carbon Tetrachloride	ND		120	250	07/29/2016 13:28
Chlorobenzene	ND		120	250	07/29/2016 13:28
Chloroethane	ND		120	250	07/29/2016 13:28
Chloroform	ND		120	250	07/29/2016 13:28
Chloromethane	ND		120	250	07/29/2016 13:28
2-Chlorotoluene	ND		120	250	07/29/2016 13:28
4-Chlorotoluene	ND		120	250	07/29/2016 13:28
Dibromochloromethane	ND		120	250	07/29/2016 13:28
1,2-Dibromo-3-chloropropane	ND		50	250	07/29/2016 13:28
1,2-Dibromoethane (EDB)	ND		120	250	07/29/2016 13:28
Dibromomethane	ND		120	250	07/29/2016 13:28
1,2-Dichlorobenzene	ND		120	250	07/29/2016 13:28
1,3-Dichlorobenzene	ND		120	250	07/29/2016 13:28
1,4-Dichlorobenzene	ND		120	250	07/29/2016 13:28
Dichlorodifluoromethane	ND		120	250	07/29/2016 13:28
1,1-Dichloroethane	ND		120	250	07/29/2016 13:28
1,2-Dichloroethane (1,2-DCA)	ND		120	250	07/29/2016 13:28
1,1-Dichloroethene	ND		120	250	07/29/2016 13:28
cis-1,2-Dichloroethene	ND		120	250	07/29/2016 13:28
trans-1,2-Dichloroethene	ND		120	250	07/29/2016 13:28
1,2-Dichloropropane	ND		120	250	07/29/2016 13:28
1,3-Dichloropropane	ND		120	250	07/29/2016 13:28
2,2-Dichloropropane	ND		120	250	07/29/2016 13:28

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006B	Water	07/22/2016 11:10	GC16	124435
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		120	250	07/29/2016 13:28
cis-1,3-Dichloropropene	ND		120	250	07/29/2016 13:28
trans-1,3-Dichloropropene	ND		120	250	07/29/2016 13:28
Diisopropyl ether (DIPE)	ND		120	250	07/29/2016 13:28
Ethylbenzene	ND		120	250	07/29/2016 13:28
Ethyl tert-butyl ether (ETBE)	ND		120	250	07/29/2016 13:28
Freon 113	ND		120	250	07/29/2016 13:28
Hexachlorobutadiene	ND		120	250	07/29/2016 13:28
Hexachloroethane	ND		120	250	07/29/2016 13:28
2-Hexanone	ND		120	250	07/29/2016 13:28
Isopropylbenzene	ND		120	250	07/29/2016 13:28
4-Isopropyl toluene	ND		120	250	07/29/2016 13:28
Methyl-t-butyl ether (MTBE)	ND		120	250	07/29/2016 13:28
Methylene chloride	ND		120	250	07/29/2016 13:28
4-Methyl-2-pentanone (MIBK)	ND		120	250	07/29/2016 13:28
Naphthalene	ND		120	250	07/29/2016 13:28
n-Propyl benzene	<b>290</b>		120	250	07/29/2016 13:28
Styrene	ND		120	250	07/29/2016 13:28
1,1,1,2-Tetrachloroethane	ND		120	250	07/29/2016 13:28
1,1,2,2-Tetrachloroethane	ND		120	250	07/29/2016 13:28
Tetrachloroethene	ND		120	250	07/29/2016 13:28
Toluene	ND		120	250	07/29/2016 13:28
1,2,3-Trichlorobenzene	ND		120	250	07/29/2016 13:28
1,2,4-Trichlorobenzene	ND		120	250	07/29/2016 13:28
1,1,1-Trichloroethane	ND		120	250	07/29/2016 13:28
1,1,2-Trichloroethane	ND		120	250	07/29/2016 13:28
Trichloroethene	ND		120	250	07/29/2016 13:28
Trichlorofluoromethane	ND		120	250	07/29/2016 13:28
1,2,3-Trichloropropane	ND		120	250	07/29/2016 13:28
1,2,4-Trimethylbenzene	ND		120	250	07/29/2016 13:28
1,3,5-Trimethylbenzene	ND		120	250	07/29/2016 13:28
Vinyl Chloride	ND		120	250	07/29/2016 13:28
Xylenes, Total	ND		120	250	07/29/2016 13:28

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006B	Water	07/22/2016 11:10	GC16	124435

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	99	70-130		07/29/2016 13:28
Toluene-d8	99	70-130		07/29/2016 13:28
4-BFB	82	70-130		07/29/2016 13:28

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007B	Water	07/22/2016 12:35	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		10	1	07/28/2016 04:06
tert-Amyl methyl ether (TAME)	ND		0.50	1	07/28/2016 04:06
Benzene	<b>2.0</b>		0.50	1	07/28/2016 04:06
Bromobenzene	ND		0.50	1	07/28/2016 04:06
Bromochloromethane	ND		0.50	1	07/28/2016 04:06
Bromodichloromethane	ND		0.50	1	07/28/2016 04:06
Bromoform	ND		0.50	1	07/28/2016 04:06
Bromomethane	ND		0.50	1	07/28/2016 04:06
2-Butanone (MEK)	ND		2.0	1	07/28/2016 04:06
t-Butyl alcohol (TBA)	ND		2.0	1	07/28/2016 04:06
n-Butyl benzene	ND		0.50	1	07/28/2016 04:06
sec-Butyl benzene	ND		0.50	1	07/28/2016 04:06
tert-Butyl benzene	ND		0.50	1	07/28/2016 04:06
Carbon Disulfide	ND		0.50	1	07/28/2016 04:06
Carbon Tetrachloride	ND		0.50	1	07/28/2016 04:06
Chlorobenzene	ND		0.50	1	07/28/2016 04:06
Chloroethane	ND		0.50	1	07/28/2016 04:06
Chloroform	ND		0.50	1	07/28/2016 04:06
Chloromethane	ND		0.50	1	07/28/2016 04:06
2-Chlorotoluene	ND		0.50	1	07/28/2016 04:06
4-Chlorotoluene	ND		0.50	1	07/28/2016 04:06
Dibromochloromethane	ND		0.50	1	07/28/2016 04:06
1,2-Dibromo-3-chloropropane	ND		0.20	1	07/28/2016 04:06
1,2-Dibromoethane (EDB)	ND		0.50	1	07/28/2016 04:06
Dibromomethane	ND		0.50	1	07/28/2016 04:06
1,2-Dichlorobenzene	ND		0.50	1	07/28/2016 04:06
1,3-Dichlorobenzene	ND		0.50	1	07/28/2016 04:06
1,4-Dichlorobenzene	ND		0.50	1	07/28/2016 04:06
Dichlorodifluoromethane	ND		0.50	1	07/28/2016 04:06
1,1-Dichloroethane	ND		0.50	1	07/28/2016 04:06
1,2-Dichloroethane (1,2-DCA)	ND		0.50	1	07/28/2016 04:06
1,1-Dichloroethene	ND		0.50	1	07/28/2016 04:06
cis-1,2-Dichloroethene	ND		0.50	1	07/28/2016 04:06
trans-1,2-Dichloroethene	ND		0.50	1	07/28/2016 04:06
1,2-Dichloropropane	ND		0.50	1	07/28/2016 04:06
1,3-Dichloropropane	ND		0.50	1	07/28/2016 04:06
2,2-Dichloropropane	ND		0.50	1	07/28/2016 04:06

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007B	Water	07/22/2016 12:35	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 04:06
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 04:06
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 04:06
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 04:06
Ethylbenzene	ND		0.50	1	07/28/2016 04:06
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 04:06
Freon 113	ND		0.50	1	07/28/2016 04:06
Hexachlorobutadiene	ND		0.50	1	07/28/2016 04:06
Hexachloroethane	ND		0.50	1	07/28/2016 04:06
2-Hexanone	ND		0.50	1	07/28/2016 04:06
Isopropylbenzene	ND		0.50	1	07/28/2016 04:06
4-Isopropyl toluene	ND		0.50	1	07/28/2016 04:06
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 04:06
Methylene chloride	ND		0.50	1	07/28/2016 04:06
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 04:06
Naphthalene	ND		0.50	1	07/28/2016 04:06
n-Propyl benzene	<b>0.75</b>		0.50	1	07/28/2016 04:06
Styrene	ND		0.50	1	07/28/2016 04:06
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 04:06
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 04:06
Tetrachloroethene	ND		0.50	1	07/28/2016 04:06
Toluene	ND		0.50	1	07/28/2016 04:06
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 04:06
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 04:06
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 04:06
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 04:06
Trichloroethene	ND		0.50	1	07/28/2016 04:06
Trichlorofluoromethane	ND		0.50	1	07/28/2016 04:06
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 04:06
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 04:06
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 04:06
Vinyl Chloride	ND		0.50	1	07/28/2016 04:06
Xylenes, Total	ND		0.50	1	07/28/2016 04:06

(Cont.)





# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007B	Water	07/22/2016 12:35	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		07/28/2016 04:06
Toluene-d8	109	70-130		07/28/2016 04:06
4-BFB	82	70-130		07/28/2016 04:06

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008B	Water	07/22/2016 13:49	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		10	1	07/28/2016 04:46
tert-Amyl methyl ether (TAME)	ND		0.50	1	07/28/2016 04:46
Benzene	ND		0.50	1	07/28/2016 04:46
Bromobenzene	ND		0.50	1	07/28/2016 04:46
Bromochloromethane	ND		0.50	1	07/28/2016 04:46
Bromodichloromethane	ND		0.50	1	07/28/2016 04:46
Bromoform	ND		0.50	1	07/28/2016 04:46
Bromomethane	ND		0.50	1	07/28/2016 04:46
2-Butanone (MEK)	ND		2.0	1	07/28/2016 04:46
t-Butyl alcohol (TBA)	ND		2.0	1	07/28/2016 04:46
n-Butyl benzene	ND		0.50	1	07/28/2016 04:46
sec-Butyl benzene	ND		0.50	1	07/28/2016 04:46
tert-Butyl benzene	ND		0.50	1	07/28/2016 04:46
Carbon Disulfide	ND		0.50	1	07/28/2016 04:46
Carbon Tetrachloride	ND		0.50	1	07/28/2016 04:46
Chlorobenzene	ND		0.50	1	07/28/2016 04:46
Chloroethane	ND		0.50	1	07/28/2016 04:46
Chloroform	ND		0.50	1	07/28/2016 04:46
Chloromethane	ND		0.50	1	07/28/2016 04:46
2-Chlorotoluene	ND		0.50	1	07/28/2016 04:46
4-Chlorotoluene	ND		0.50	1	07/28/2016 04:46
Dibromochloromethane	ND		0.50	1	07/28/2016 04:46
1,2-Dibromo-3-chloropropane	ND		0.20	1	07/28/2016 04:46
1,2-Dibromoethane (EDB)	ND		0.50	1	07/28/2016 04:46
Dibromomethane	ND		0.50	1	07/28/2016 04:46
1,2-Dichlorobenzene	ND		0.50	1	07/28/2016 04:46
1,3-Dichlorobenzene	ND		0.50	1	07/28/2016 04:46
1,4-Dichlorobenzene	ND		0.50	1	07/28/2016 04:46
Dichlorodifluoromethane	ND		0.50	1	07/28/2016 04:46
1,1-Dichloroethane	ND		0.50	1	07/28/2016 04:46
1,2-Dichloroethane (1,2-DCA)	ND		0.50	1	07/28/2016 04:46
1,1-Dichloroethene	ND		0.50	1	07/28/2016 04:46
cis-1,2-Dichloroethene	ND		0.50	1	07/28/2016 04:46
trans-1,2-Dichloroethene	ND		0.50	1	07/28/2016 04:46
1,2-Dichloropropane	ND		0.50	1	07/28/2016 04:46
1,3-Dichloropropane	ND		0.50	1	07/28/2016 04:46
2,2-Dichloropropane	ND		0.50	1	07/28/2016 04:46

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008B	Water	07/22/2016 13:49	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 04:46
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 04:46
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 04:46
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 04:46
Ethylbenzene	ND		0.50	1	07/28/2016 04:46
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 04:46
Freon 113	ND		0.50	1	07/28/2016 04:46
Hexachlorobutadiene	ND		0.50	1	07/28/2016 04:46
Hexachloroethane	ND		0.50	1	07/28/2016 04:46
2-Hexanone	ND		0.50	1	07/28/2016 04:46
Isopropylbenzene	ND		0.50	1	07/28/2016 04:46
4-Isopropyl toluene	ND		0.50	1	07/28/2016 04:46
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 04:46
Methylene chloride	ND		0.50	1	07/28/2016 04:46
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 04:46
Naphthalene	ND		0.50	1	07/28/2016 04:46
n-Propyl benzene	<b>0.58</b>		0.50	1	07/28/2016 04:46
Styrene	ND		0.50	1	07/28/2016 04:46
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 04:46
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 04:46
Tetrachloroethene	ND		0.50	1	07/28/2016 04:46
Toluene	ND		0.50	1	07/28/2016 04:46
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 04:46
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 04:46
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 04:46
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 04:46
Trichloroethene	ND		0.50	1	07/28/2016 04:46
Trichlorofluoromethane	ND		0.50	1	07/28/2016 04:46
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 04:46
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 04:46
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 04:46
Vinyl Chloride	ND		0.50	1	07/28/2016 04:46
Xylenes, Total	ND		0.50	1	07/28/2016 04:46

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008B	Water	07/22/2016 13:49	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		07/28/2016 04:46
Toluene-d8	107	70-130		07/28/2016 04:46
4-BFB	79	70-130		07/28/2016 04:46

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009B	Water	07/22/2016 15:45	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	07/28/2016 05:25
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/28/2016 05:25
Benzene	ND	0.50	1	07/28/2016 05:25
Bromobenzene	ND	0.50	1	07/28/2016 05:25
Bromochloromethane	ND	0.50	1	07/28/2016 05:25
Bromodichloromethane	ND	0.50	1	07/28/2016 05:25
Bromoform	ND	0.50	1	07/28/2016 05:25
Bromomethane	ND	0.50	1	07/28/2016 05:25
2-Butanone (MEK)	ND	2.0	1	07/28/2016 05:25
t-Butyl alcohol (TBA)	ND	2.0	1	07/28/2016 05:25
n-Butyl benzene	ND	0.50	1	07/28/2016 05:25
sec-Butyl benzene	ND	0.50	1	07/28/2016 05:25
tert-Butyl benzene	ND	0.50	1	07/28/2016 05:25
Carbon Disulfide	ND	0.50	1	07/28/2016 05:25
Carbon Tetrachloride	ND	0.50	1	07/28/2016 05:25
Chlorobenzene	ND	0.50	1	07/28/2016 05:25
Chloroethane	ND	0.50	1	07/28/2016 05:25
Chloroform	ND	0.50	1	07/28/2016 05:25
Chloromethane	ND	0.50	1	07/28/2016 05:25
2-Chlorotoluene	ND	0.50	1	07/28/2016 05:25
4-Chlorotoluene	ND	0.50	1	07/28/2016 05:25
Dibromochloromethane	ND	0.50	1	07/28/2016 05:25
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/28/2016 05:25
1,2-Dibromoethane (EDB)	ND	0.50	1	07/28/2016 05:25
Dibromomethane	ND	0.50	1	07/28/2016 05:25
1,2-Dichlorobenzene	ND	0.50	1	07/28/2016 05:25
1,3-Dichlorobenzene	ND	0.50	1	07/28/2016 05:25
1,4-Dichlorobenzene	ND	0.50	1	07/28/2016 05:25
Dichlorodifluoromethane	ND	0.50	1	07/28/2016 05:25
1,1-Dichloroethane	ND	0.50	1	07/28/2016 05:25
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/28/2016 05:25
1,1-Dichloroethene	ND	0.50	1	07/28/2016 05:25
cis-1,2-Dichloroethene	ND	0.50	1	07/28/2016 05:25
trans-1,2-Dichloroethene	ND	0.50	1	07/28/2016 05:25
1,2-Dichloropropane	ND	0.50	1	07/28/2016 05:25
1,3-Dichloropropane	ND	0.50	1	07/28/2016 05:25
2,2-Dichloropropane	ND	0.50	1	07/28/2016 05:25

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009B	Water	07/22/2016 15:45	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	07/28/2016 05:25
cis-1,3-Dichloropropene	ND	0.50	1	07/28/2016 05:25
trans-1,3-Dichloropropene	ND	0.50	1	07/28/2016 05:25
Diisopropyl ether (DIPE)	ND	0.50	1	07/28/2016 05:25
Ethylbenzene	ND	0.50	1	07/28/2016 05:25
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	07/28/2016 05:25
Freon 113	ND	0.50	1	07/28/2016 05:25
Hexachlorobutadiene	ND	0.50	1	07/28/2016 05:25
Hexachloroethane	ND	0.50	1	07/28/2016 05:25
2-Hexanone	ND	0.50	1	07/28/2016 05:25
Isopropylbenzene	ND	0.50	1	07/28/2016 05:25
4-Isopropyl toluene	ND	0.50	1	07/28/2016 05:25
Methyl-t-butyl ether (MTBE)	ND	0.50	1	07/28/2016 05:25
Methylene chloride	ND	0.50	1	07/28/2016 05:25
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	07/28/2016 05:25
Naphthalene	ND	0.50	1	07/28/2016 05:25
n-Propyl benzene	ND	0.50	1	07/28/2016 05:25
Styrene	ND	0.50	1	07/28/2016 05:25
1,1,1,2-Tetrachloroethane	ND	0.50	1	07/28/2016 05:25
1,1,2,2-Tetrachloroethane	ND	0.50	1	07/28/2016 05:25
Tetrachloroethene	ND	0.50	1	07/28/2016 05:25
Toluene	ND	0.50	1	07/28/2016 05:25
1,2,3-Trichlorobenzene	ND	0.50	1	07/28/2016 05:25
1,2,4-Trichlorobenzene	ND	0.50	1	07/28/2016 05:25
1,1,1-Trichloroethane	ND	0.50	1	07/28/2016 05:25
1,1,2-Trichloroethane	ND	0.50	1	07/28/2016 05:25
Trichloroethene	ND	0.50	1	07/28/2016 05:25
Trichlorofluoromethane	ND	0.50	1	07/28/2016 05:25
1,2,3-Trichloropropane	ND	0.50	1	07/28/2016 05:25
1,2,4-Trimethylbenzene	ND	0.50	1	07/28/2016 05:25
1,3,5-Trimethylbenzene	ND	0.50	1	07/28/2016 05:25
Vinyl Chloride	ND	0.50	1	07/28/2016 05:25
Xylenes, Total	ND	0.50	1	07/28/2016 05:25

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009B	Water	07/22/2016 15:45	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	96	70-130		07/28/2016 05:25
Toluene-d8	110	70-130		07/28/2016 05:25
4-BFB	85	70-130		07/28/2016 05:25

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010B	Water	07/22/2016 16:40	GC16	124384
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	10	1	07/28/2016 06:04	
tert-Amyl methyl ether (TAME)	ND	0.50	1	07/28/2016 06:04	
Benzene	ND	0.50	1	07/28/2016 06:04	
Bromobenzene	ND	0.50	1	07/28/2016 06:04	
Bromochloromethane	ND	0.50	1	07/28/2016 06:04	
Bromodichloromethane	ND	0.50	1	07/28/2016 06:04	
Bromoform	ND	0.50	1	07/28/2016 06:04	
Bromomethane	ND	0.50	1	07/28/2016 06:04	
2-Butanone (MEK)	ND	2.0	1	07/28/2016 06:04	
t-Butyl alcohol (TBA)	ND	2.0	1	07/28/2016 06:04	
n-Butyl benzene	ND	0.50	1	07/28/2016 06:04	
sec-Butyl benzene	ND	0.50	1	07/28/2016 06:04	
tert-Butyl benzene	ND	0.50	1	07/28/2016 06:04	
Carbon Disulfide	ND	0.50	1	07/28/2016 06:04	
Carbon Tetrachloride	ND	0.50	1	07/28/2016 06:04	
Chlorobenzene	ND	0.50	1	07/28/2016 06:04	
Chloroethane	ND	0.50	1	07/28/2016 06:04	
Chloroform	ND	0.50	1	07/28/2016 06:04	
Chloromethane	ND	0.50	1	07/28/2016 06:04	
2-Chlorotoluene	ND	0.50	1	07/28/2016 06:04	
4-Chlorotoluene	ND	0.50	1	07/28/2016 06:04	
Dibromochloromethane	ND	0.50	1	07/28/2016 06:04	
1,2-Dibromo-3-chloropropane	ND	0.20	1	07/28/2016 06:04	
1,2-Dibromoethane (EDB)	ND	0.50	1	07/28/2016 06:04	
Dibromomethane	ND	0.50	1	07/28/2016 06:04	
1,2-Dichlorobenzene	ND	0.50	1	07/28/2016 06:04	
1,3-Dichlorobenzene	ND	0.50	1	07/28/2016 06:04	
1,4-Dichlorobenzene	ND	0.50	1	07/28/2016 06:04	
Dichlorodifluoromethane	ND	0.50	1	07/28/2016 06:04	
1,1-Dichloroethane	ND	0.50	1	07/28/2016 06:04	
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	07/28/2016 06:04	
1,1-Dichloroethene	ND	0.50	1	07/28/2016 06:04	
cis-1,2-Dichloroethene	ND	0.50	1	07/28/2016 06:04	
trans-1,2-Dichloroethene	ND	0.50	1	07/28/2016 06:04	
1,2-Dichloropropane	ND	0.50	1	07/28/2016 06:04	
1,3-Dichloropropane	ND	0.50	1	07/28/2016 06:04	
2,2-Dichloropropane	ND	0.50	1	07/28/2016 06:04	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

### Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010B	Water	07/22/2016 16:40	GC16	124384
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		0.50	1	07/28/2016 06:04
cis-1,3-Dichloropropene	ND		0.50	1	07/28/2016 06:04
trans-1,3-Dichloropropene	ND		0.50	1	07/28/2016 06:04
Diisopropyl ether (DIPE)	ND		0.50	1	07/28/2016 06:04
Ethylbenzene	ND		0.50	1	07/28/2016 06:04
Ethyl tert-butyl ether (ETBE)	ND		0.50	1	07/28/2016 06:04
Freon 113	ND		0.50	1	07/28/2016 06:04
Hexachlorobutadiene	ND		0.50	1	07/28/2016 06:04
Hexachloroethane	ND		0.50	1	07/28/2016 06:04
2-Hexanone	ND		0.50	1	07/28/2016 06:04
Isopropylbenzene	ND		0.50	1	07/28/2016 06:04
4-Isopropyl toluene	ND		0.50	1	07/28/2016 06:04
Methyl-t-butyl ether (MTBE)	ND		0.50	1	07/28/2016 06:04
Methylene chloride	ND		0.50	1	07/28/2016 06:04
4-Methyl-2-pentanone (MIBK)	ND		0.50	1	07/28/2016 06:04
Naphthalene	ND		0.50	1	07/28/2016 06:04
n-Propyl benzene	ND		0.50	1	07/28/2016 06:04
Styrene	ND		0.50	1	07/28/2016 06:04
1,1,1,2-Tetrachloroethane	ND		0.50	1	07/28/2016 06:04
1,1,2,2-Tetrachloroethane	ND		0.50	1	07/28/2016 06:04
Tetrachloroethene	ND		0.50	1	07/28/2016 06:04
Toluene	ND		0.50	1	07/28/2016 06:04
1,2,3-Trichlorobenzene	ND		0.50	1	07/28/2016 06:04
1,2,4-Trichlorobenzene	ND		0.50	1	07/28/2016 06:04
1,1,1-Trichloroethane	ND		0.50	1	07/28/2016 06:04
1,1,2-Trichloroethane	ND		0.50	1	07/28/2016 06:04
Trichloroethene	ND		0.50	1	07/28/2016 06:04
Trichlorofluoromethane	ND		0.50	1	07/28/2016 06:04
1,2,3-Trichloropropane	ND		0.50	1	07/28/2016 06:04
1,2,4-Trimethylbenzene	ND		0.50	1	07/28/2016 06:04
1,3,5-Trimethylbenzene	ND		0.50	1	07/28/2016 06:04
Vinyl Chloride	ND		0.50	1	07/28/2016 06:04
Xylenes, Total	ND		0.50	1	07/28/2016 06:04

(Cont.)



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/28/16-7/29/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010B	Water	07/22/2016 16:40	GC16	124384

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		07/28/2016 06:04
Toluene-d8	110	70-130		07/28/2016 06:04
4-BFB	82	70-130		07/28/2016 06:04

Analyst(s): MW



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001C	Water	07/21/2016 11:05	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	3.8	2	07/27/2016 10:42	
Acenaphthylene	ND	3.8	2	07/27/2016 10:42	
Acetochlor	ND	3.8	2	07/27/2016 10:42	
Anthracene	ND	3.8	2	07/27/2016 10:42	
Benzidine	ND	19	2	07/27/2016 10:42	
Benzo (a) anthracene	ND	3.8	2	07/27/2016 10:42	
Benzo (a) pyrene	ND	3.8	2	07/27/2016 10:42	
Benzo (b) fluoranthene	ND	3.8	2	07/27/2016 10:42	
Benzo (g,h,i) perylene	ND	3.8	2	07/27/2016 10:42	
Benzo (k) fluoranthene	ND	3.8	2	07/27/2016 10:42	
Benzyl Alcohol	ND	19	2	07/27/2016 10:42	
1,1-Biphenyl	ND	3.8	2	07/27/2016 10:42	
Bis (2-chloroethoxy) Methane	ND	3.8	2	07/27/2016 10:42	
Bis (2-chloroethyl) Ether	ND	3.8	2	07/27/2016 10:42	
Bis (2-chloroisopropyl) Ether	ND	3.8	2	07/27/2016 10:42	
Bis (2-ethylhexyl) Adipate	ND	3.8	2	07/27/2016 10:42	
Bis (2-ethylhexyl) Phthalate	ND	7.6	2	07/27/2016 10:42	
4-Bromophenyl Phenyl Ether	ND	19	2	07/27/2016 10:42	
Butylbenzyl Phthalate	ND	3.8	2	07/27/2016 10:42	
4-Chloroaniline	ND	7.6	2	07/27/2016 10:42	
4-Chloro-3-methylphenol	ND	19	2	07/27/2016 10:42	
2-Chloronaphthalene	ND	3.8	2	07/27/2016 10:42	
2-Chlorophenol	ND	3.8	2	07/27/2016 10:42	
4-Chlorophenyl Phenyl Ether	ND	3.8	2	07/27/2016 10:42	
Chrysene	ND	3.8	2	07/27/2016 10:42	
Dibenzo (a,h) anthracene	ND	3.8	2	07/27/2016 10:42	
Dibenzofuran	ND	3.8	2	07/27/2016 10:42	
Di-n-butyl Phthalate	ND	3.8	2	07/27/2016 10:42	
1,2-Dichlorobenzene	ND	3.8	2	07/27/2016 10:42	
1,3-Dichlorobenzene	ND	3.8	2	07/27/2016 10:42	
1,4-Dichlorobenzene	ND	3.8	2	07/27/2016 10:42	
3,3-Dichlorobenzidine	ND	7.6	2	07/27/2016 10:42	
2,4-Dichlorophenol	ND	3.8	2	07/27/2016 10:42	
Diethyl Phthalate	ND	3.8	2	07/27/2016 10:42	
2,4-Dimethylphenol	ND	3.8	2	07/27/2016 10:42	
Dimethyl Phthalate	ND	3.8	2	07/27/2016 10:42	
4,6-Dinitro-2-methylphenol	ND	19	2	07/27/2016 10:42	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001C	Water	07/21/2016 11:05	GC21	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrophenol	ND		48	2	07/27/2016 10:42
2,4-Dinitrotoluene	ND		3.8	2	07/27/2016 10:42
2,6-Dinitrotoluene	ND		3.8	2	07/27/2016 10:42
Di-n-octyl Phthalate	ND		3.8	2	07/27/2016 10:42
1,2-Diphenylhydrazine	ND		3.8	2	07/27/2016 10:42
Fluoranthene	ND		3.8	2	07/27/2016 10:42
Fluorene	ND		3.8	2	07/27/2016 10:42
Hexachlorobenzene	ND		3.8	2	07/27/2016 10:42
Hexachlorobutadiene	ND		3.8	2	07/27/2016 10:42
Hexachlorocyclopentadiene	ND		19	2	07/27/2016 10:42
Hexachloroethane	ND		3.8	2	07/27/2016 10:42
Indeno (1,2,3-cd) pyrene	ND		3.8	2	07/27/2016 10:42
Isophorone	ND		3.8	2	07/27/2016 10:42
2-Methylnaphthalene	<b>5.4</b>		3.8	2	07/27/2016 10:42
2-Methylphenol (o-Cresol)	ND		3.8	2	07/27/2016 10:42
3 & 4-Methylphenol (m,p-Cresol)	ND		3.8	2	07/27/2016 10:42
Naphthalene	<b>16</b>		3.8	2	07/27/2016 10:42
2-Nitroaniline	ND		19	2	07/27/2016 10:42
3-Nitroaniline	ND		19	2	07/27/2016 10:42
4-Nitroaniline	ND		19	2	07/27/2016 10:42
Nitrobenzene	ND		3.8	2	07/27/2016 10:42
2-Nitrophenol	ND		19	2	07/27/2016 10:42
4-Nitrophenol	ND		19	2	07/27/2016 10:42
N-Nitrosodiphenylamine	ND		3.8	2	07/27/2016 10:42
N-Nitrosodi-n-propylamine	ND		3.8	2	07/27/2016 10:42
Pentachlorophenol	ND		19	2	07/27/2016 10:42
Phenanthrene	ND		3.8	2	07/27/2016 10:42
Phenol	ND		3.8	2	07/27/2016 10:42
Pyrene	ND		3.8	2	07/27/2016 10:42
1,2,4-Trichlorobenzene	ND		3.8	2	07/27/2016 10:42
2,4,5-Trichlorophenol	ND		3.8	2	07/27/2016 10:42
2,4,6-Trichlorophenol	ND		3.8	2	07/27/2016 10:42

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001C	Water	07/21/2016 11:05	GC21	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	10	8-130		07/27/2016 10:42
Phenol-d5	9	5-130		07/27/2016 10:42
Nitrobenzene-d5	72	20-140		07/27/2016 10:42
2-Fluorobiphenyl	74	40-140		07/27/2016 10:42
2,4,6-Tribromophenol	33	16-180		07/27/2016 10:42
4-Terphenyl-d14	82	40-170		07/27/2016 10:42

Analyst(s): REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002C	Water	07/21/2016 11:56	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	19	10	07/27/2016 11:10	
Acenaphthylene	ND	19	10	07/27/2016 11:10	
Acetochlor	ND	19	10	07/27/2016 11:10	
Anthracene	ND	19	10	07/27/2016 11:10	
Benzidine	ND	95	10	07/27/2016 11:10	
Benzo (a) anthracene	ND	19	10	07/27/2016 11:10	
Benzo (a) pyrene	ND	19	10	07/27/2016 11:10	
Benzo (b) fluoranthene	ND	19	10	07/27/2016 11:10	
Benzo (g,h,i) perylene	ND	19	10	07/27/2016 11:10	
Benzo (k) fluoranthene	ND	19	10	07/27/2016 11:10	
Benzyl Alcohol	ND	95	10	07/27/2016 11:10	
1,1-Biphenyl	ND	19	10	07/27/2016 11:10	
Bis (2-chloroethoxy) Methane	ND	19	10	07/27/2016 11:10	
Bis (2-chloroethyl) Ether	ND	19	10	07/27/2016 11:10	
Bis (2-chloroisopropyl) Ether	ND	19	10	07/27/2016 11:10	
Bis (2-ethylhexyl) Adipate	ND	19	10	07/27/2016 11:10	
Bis (2-ethylhexyl) Phthalate	ND	38	10	07/27/2016 11:10	
4-Bromophenyl Phenyl Ether	ND	95	10	07/27/2016 11:10	
Butylbenzyl Phthalate	ND	19	10	07/27/2016 11:10	
4-Chloroaniline	ND	38	10	07/27/2016 11:10	
4-Chloro-3-methylphenol	ND	95	10	07/27/2016 11:10	
2-Chloronaphthalene	ND	19	10	07/27/2016 11:10	
2-Chlorophenol	ND	19	10	07/27/2016 11:10	
4-Chlorophenyl Phenyl Ether	ND	19	10	07/27/2016 11:10	
Chrysene	ND	19	10	07/27/2016 11:10	
Dibenzo (a,h) anthracene	ND	19	10	07/27/2016 11:10	
Dibenzofuran	ND	19	10	07/27/2016 11:10	
Di-n-butyl Phthalate	ND	19	10	07/27/2016 11:10	
1,2-Dichlorobenzene	ND	19	10	07/27/2016 11:10	
1,3-Dichlorobenzene	ND	19	10	07/27/2016 11:10	
1,4-Dichlorobenzene	ND	19	10	07/27/2016 11:10	
3,3-Dichlorobenzidine	ND	38	10	07/27/2016 11:10	
2,4-Dichlorophenol	ND	19	10	07/27/2016 11:10	
Diethyl Phthalate	ND	19	10	07/27/2016 11:10	
2,4-Dimethylphenol	ND	19	10	07/27/2016 11:10	
Dimethyl Phthalate	ND	19	10	07/27/2016 11:10	
4,6-Dinitro-2-methylphenol	ND	95	10	07/27/2016 11:10	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002C	Water	07/21/2016 11:56	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	240	10	07/27/2016 11:10	
2,4-Dinitrotoluene	ND	19	10	07/27/2016 11:10	
2,6-Dinitrotoluene	ND	19	10	07/27/2016 11:10	
Di-n-octyl Phthalate	ND	19	10	07/27/2016 11:10	
1,2-Diphenylhydrazine	ND	19	10	07/27/2016 11:10	
Fluoranthene	ND	19	10	07/27/2016 11:10	
Fluorene	ND	19	10	07/27/2016 11:10	
Hexachlorobenzene	ND	19	10	07/27/2016 11:10	
Hexachlorobutadiene	ND	19	10	07/27/2016 11:10	
Hexachlorocyclopentadiene	ND	95	10	07/27/2016 11:10	
Hexachloroethane	ND	19	10	07/27/2016 11:10	
Indeno (1,2,3-cd) pyrene	ND	19	10	07/27/2016 11:10	
Isophorone	ND	19	10	07/27/2016 11:10	
2-Methylnaphthalene	ND	19	10	07/27/2016 11:10	
2-Methylphenol (o-Cresol)	ND	19	10	07/27/2016 11:10	
3 & 4-Methylphenol (m,p-Cresol)	ND	19	10	07/27/2016 11:10	
Naphthalene	ND	19	10	07/27/2016 11:10	
2-Nitroaniline	ND	95	10	07/27/2016 11:10	
3-Nitroaniline	ND	95	10	07/27/2016 11:10	
4-Nitroaniline	ND	95	10	07/27/2016 11:10	
Nitrobenzene	ND	19	10	07/27/2016 11:10	
2-Nitrophenol	ND	95	10	07/27/2016 11:10	
4-Nitrophenol	ND	95	10	07/27/2016 11:10	
N-Nitrosodiphenylamine	ND	19	10	07/27/2016 11:10	
N-Nitrosodi-n-propylamine	ND	19	10	07/27/2016 11:10	
Pentachlorophenol	ND	95	10	07/27/2016 11:10	
Phenanthrene	ND	19	10	07/27/2016 11:10	
Phenol	ND	19	10	07/27/2016 11:10	
Pyrene	ND	19	10	07/27/2016 11:10	
1,2,4-Trichlorobenzene	ND	19	10	07/27/2016 11:10	
2,4,5-Trichlorophenol	ND	19	10	07/27/2016 11:10	
2,4,6-Trichlorophenol	ND	19	10	07/27/2016 11:10	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002C	Water	07/21/2016 11:56	GC21	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorophenol	19	8-130		07/27/2016 11:10
Phenol-d5	15	5-130		07/27/2016 11:10
Nitrobenzene-d5	41	20-140		07/27/2016 11:10
2-Fluorobiphenyl	61	40-140		07/27/2016 11:10
2,4,6-Tribromophenol	89	16-180		07/27/2016 11:10
4-Terphenyl-d14	87	40-170		07/27/2016 11:10

Analyst(s): REB

Analytical Comments: a3





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003C	Water	07/21/2016 15:02	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	1.9	1	07/27/2016 11:39	
Acenaphthylene	ND	1.9	1	07/27/2016 11:39	
Acetochlor	ND	1.9	1	07/27/2016 11:39	
Anthracene	ND	1.9	1	07/27/2016 11:39	
Benzidine	ND	9.5	1	07/27/2016 11:39	
Benzo (a) anthracene	ND	1.9	1	07/27/2016 11:39	
Benzo (a) pyrene	ND	1.9	1	07/27/2016 11:39	
Benzo (b) fluoranthene	ND	1.9	1	07/27/2016 11:39	
Benzo (g,h,i) perylene	ND	1.9	1	07/27/2016 11:39	
Benzo (k) fluoranthene	ND	1.9	1	07/27/2016 11:39	
Benzyl Alcohol	ND	9.5	1	07/27/2016 11:39	
1,1-Biphenyl	ND	1.9	1	07/27/2016 11:39	
Bis (2-chloroethoxy) Methane	ND	1.9	1	07/27/2016 11:39	
Bis (2-chloroethyl) Ether	ND	1.9	1	07/27/2016 11:39	
Bis (2-chloroisopropyl) Ether	ND	1.9	1	07/27/2016 11:39	
Bis (2-ethylhexyl) Adipate	ND	1.9	1	07/27/2016 11:39	
Bis (2-ethylhexyl) Phthalate	ND	3.8	1	07/27/2016 11:39	
4-Bromophenyl Phenyl Ether	ND	9.5	1	07/27/2016 11:39	
Butylbenzyl Phthalate	ND	1.9	1	07/27/2016 11:39	
4-Chloroaniline	ND	3.8	1	07/27/2016 11:39	
4-Chloro-3-methylphenol	ND	9.5	1	07/27/2016 11:39	
2-Chloronaphthalene	ND	1.9	1	07/27/2016 11:39	
2-Chlorophenol	ND	1.9	1	07/27/2016 11:39	
4-Chlorophenyl Phenyl Ether	ND	1.9	1	07/27/2016 11:39	
Chrysene	ND	1.9	1	07/27/2016 11:39	
Dibenzo (a,h) anthracene	ND	1.9	1	07/27/2016 11:39	
Dibenzofuran	ND	1.9	1	07/27/2016 11:39	
Di-n-butyl Phthalate	ND	1.9	1	07/27/2016 11:39	
1,2-Dichlorobenzene	ND	1.9	1	07/27/2016 11:39	
1,3-Dichlorobenzene	ND	1.9	1	07/27/2016 11:39	
1,4-Dichlorobenzene	ND	1.9	1	07/27/2016 11:39	
3,3-Dichlorobenzidine	ND	3.8	1	07/27/2016 11:39	
2,4-Dichlorophenol	ND	1.9	1	07/27/2016 11:39	
Diethyl Phthalate	ND	1.9	1	07/27/2016 11:39	
2,4-Dimethylphenol	ND	1.9	1	07/27/2016 11:39	
Dimethyl Phthalate	ND	1.9	1	07/27/2016 11:39	
4,6-Dinitro-2-methylphenol	ND	9.5	1	07/27/2016 11:39	

(Cont.)



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003C	Water	07/21/2016 15:02	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	24	1	07/27/2016 11:39	
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 11:39	
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 11:39	
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 11:39	
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 11:39	
Fluoranthene	ND	1.9	1	07/27/2016 11:39	
Fluorene	ND	1.9	1	07/27/2016 11:39	
Hexachlorobenzene	ND	1.9	1	07/27/2016 11:39	
Hexachlorobutadiene	ND	1.9	1	07/27/2016 11:39	
Hexachlorocyclopentadiene	ND	9.5	1	07/27/2016 11:39	
Hexachloroethane	ND	1.9	1	07/27/2016 11:39	
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 11:39	
Isophorone	ND	1.9	1	07/27/2016 11:39	
2-Methylnaphthalene	ND	1.9	1	07/27/2016 11:39	
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 11:39	
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 11:39	
Naphthalene	ND	1.9	1	07/27/2016 11:39	
2-Nitroaniline	ND	9.5	1	07/27/2016 11:39	
3-Nitroaniline	ND	9.5	1	07/27/2016 11:39	
4-Nitroaniline	ND	9.5	1	07/27/2016 11:39	
Nitrobenzene	ND	1.9	1	07/27/2016 11:39	
2-Nitrophenol	ND	9.5	1	07/27/2016 11:39	
4-Nitrophenol	ND	9.5	1	07/27/2016 11:39	
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 11:39	
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 11:39	
Pentachlorophenol	ND	9.5	1	07/27/2016 11:39	
Phenanthrene	ND	1.9	1	07/27/2016 11:39	
Phenol	ND	1.9	1	07/27/2016 11:39	
Pyrene	ND	1.9	1	07/27/2016 11:39	
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 11:39	
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 11:39	
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 11:39	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003C	Water	07/21/2016 15:02	GC21	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	20	8-130		07/27/2016 11:39
Phenol-d5	13	5-130		07/27/2016 11:39
Nitrobenzene-d5	109	20-140		07/27/2016 11:39
2-Fluorobiphenyl	100	40-140		07/27/2016 11:39
2,4,6-Tribromophenol	68	16-180		07/27/2016 11:39
4-Terphenyl-d14	114	40-170		07/27/2016 11:39

Analyst(s): REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004C	Water	07/21/2016 13:25	GC21	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		1.9	1	07/27/2016 12:07
Acenaphthylene	ND		1.9	1	07/27/2016 12:07
Acetochlor	ND		1.9	1	07/27/2016 12:07
Anthracene	ND		1.9	1	07/27/2016 12:07
Benzidine	ND		9.5	1	07/27/2016 12:07
Benzo (a) anthracene	ND		1.9	1	07/27/2016 12:07
Benzo (a) pyrene	ND		1.9	1	07/27/2016 12:07
Benzo (b) fluoranthene	ND		1.9	1	07/27/2016 12:07
Benzo (g,h,i) perylene	ND		1.9	1	07/27/2016 12:07
Benzo (k) fluoranthene	ND		1.9	1	07/27/2016 12:07
Benzyl Alcohol	ND		9.5	1	07/27/2016 12:07
1,1-Biphenyl	ND		1.9	1	07/27/2016 12:07
Bis (2-chloroethoxy) Methane	ND		1.9	1	07/27/2016 12:07
Bis (2-chloroethyl) Ether	ND		1.9	1	07/27/2016 12:07
Bis (2-chloroisopropyl) Ether	ND		1.9	1	07/27/2016 12:07
Bis (2-ethylhexyl) Adipate	ND		1.9	1	07/27/2016 12:07
Bis (2-ethylhexyl) Phthalate	ND		3.8	1	07/27/2016 12:07
4-Bromophenyl Phenyl Ether	ND		9.5	1	07/27/2016 12:07
Butylbenzyl Phthalate	ND		1.9	1	07/27/2016 12:07
4-Chloroaniline	ND		3.8	1	07/27/2016 12:07
4-Chloro-3-methylphenol	ND		9.5	1	07/27/2016 12:07
2-Chloronaphthalene	ND		1.9	1	07/27/2016 12:07
2-Chlorophenol	ND		1.9	1	07/27/2016 12:07
4-Chlorophenyl Phenyl Ether	ND		1.9	1	07/27/2016 12:07
Chrysene	ND		1.9	1	07/27/2016 12:07
Dibenzo (a,h) anthracene	ND		1.9	1	07/27/2016 12:07
Dibenzofuran	ND		1.9	1	07/27/2016 12:07
Di-n-butyl Phthalate	ND		1.9	1	07/27/2016 12:07
1,2-Dichlorobenzene	ND		1.9	1	07/27/2016 12:07
1,3-Dichlorobenzene	ND		1.9	1	07/27/2016 12:07
1,4-Dichlorobenzene	ND		1.9	1	07/27/2016 12:07
3,3-Dichlorobenzidine	ND		3.8	1	07/27/2016 12:07
2,4-Dichlorophenol	ND		1.9	1	07/27/2016 12:07
Diethyl Phthalate	ND		1.9	1	07/27/2016 12:07
2,4-Dimethylphenol	ND		1.9	1	07/27/2016 12:07
Dimethyl Phthalate	ND		1.9	1	07/27/2016 12:07
4,6-Dinitro-2-methylphenol	ND		9.5	1	07/27/2016 12:07

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004C	Water	07/21/2016 13:25	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	24	1	07/27/2016 12:07	
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 12:07	
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 12:07	
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 12:07	
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 12:07	
Fluoranthene	ND	1.9	1	07/27/2016 12:07	
Fluorene	ND	1.9	1	07/27/2016 12:07	
Hexachlorobenzene	ND	1.9	1	07/27/2016 12:07	
Hexachlorobutadiene	ND	1.9	1	07/27/2016 12:07	
Hexachlorocyclopentadiene	ND	9.5	1	07/27/2016 12:07	
Hexachloroethane	ND	1.9	1	07/27/2016 12:07	
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 12:07	
Isophorone	ND	1.9	1	07/27/2016 12:07	
2-Methylnaphthalene	ND	1.9	1	07/27/2016 12:07	
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 12:07	
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 12:07	
Naphthalene	ND	1.9	1	07/27/2016 12:07	
2-Nitroaniline	ND	9.5	1	07/27/2016 12:07	
3-Nitroaniline	ND	9.5	1	07/27/2016 12:07	
4-Nitroaniline	ND	9.5	1	07/27/2016 12:07	
Nitrobenzene	ND	1.9	1	07/27/2016 12:07	
2-Nitrophenol	ND	9.5	1	07/27/2016 12:07	
4-Nitrophenol	ND	9.5	1	07/27/2016 12:07	
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 12:07	
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 12:07	
Pentachlorophenol	ND	9.5	1	07/27/2016 12:07	
Phenanthrene	ND	1.9	1	07/27/2016 12:07	
Phenol	ND	1.9	1	07/27/2016 12:07	
Pyrene	ND	1.9	1	07/27/2016 12:07	
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 12:07	
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 12:07	
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 12:07	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004C	Water	07/21/2016 13:25	GC21	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorophenol	29	8-130		07/27/2016 12:07
Phenol-d5	19	5-130		07/27/2016 12:07
Nitrobenzene-d5	70	20-140		07/27/2016 12:07
2-Fluorobiphenyl	69	40-140		07/27/2016 12:07
2,4,6-Tribromophenol	75	16-180		07/27/2016 12:07
4-Terphenyl-d14	84	40-170		07/27/2016 12:07

Analyst(s): REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005C	Water	07/22/2016 09:40	GC21	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	1.9	1	07/27/2016 12:36	
Acenaphthylene	ND	1.9	1	07/27/2016 12:36	
Acetochlor	ND	1.9	1	07/27/2016 12:36	
Anthracene	ND	1.9	1	07/27/2016 12:36	
Benzidine	ND	9.5	1	07/27/2016 12:36	
Benzo (a) anthracene	ND	1.9	1	07/27/2016 12:36	
Benzo (a) pyrene	ND	1.9	1	07/27/2016 12:36	
Benzo (b) fluoranthene	ND	1.9	1	07/27/2016 12:36	
Benzo (g,h,i) perylene	ND	1.9	1	07/27/2016 12:36	
Benzo (k) fluoranthene	ND	1.9	1	07/27/2016 12:36	
Benzyl Alcohol	ND	9.5	1	07/27/2016 12:36	
1,1-Biphenyl	ND	1.9	1	07/27/2016 12:36	
Bis (2-chloroethoxy) Methane	ND	1.9	1	07/27/2016 12:36	
Bis (2-chloroethyl) Ether	ND	1.9	1	07/27/2016 12:36	
Bis (2-chloroisopropyl) Ether	ND	1.9	1	07/27/2016 12:36	
Bis (2-ethylhexyl) Adipate	ND	1.9	1	07/27/2016 12:36	
Bis (2-ethylhexyl) Phthalate	ND	3.8	1	07/27/2016 12:36	
4-Bromophenyl Phenyl Ether	ND	9.5	1	07/27/2016 12:36	
Butylbenzyl Phthalate	ND	1.9	1	07/27/2016 12:36	
4-Chloroaniline	ND	3.8	1	07/27/2016 12:36	
4-Chloro-3-methylphenol	ND	9.5	1	07/27/2016 12:36	
2-Chloronaphthalene	ND	1.9	1	07/27/2016 12:36	
2-Chlorophenol	ND	1.9	1	07/27/2016 12:36	
4-Chlorophenyl Phenyl Ether	ND	1.9	1	07/27/2016 12:36	
Chrysene	ND	1.9	1	07/27/2016 12:36	
Dibenzo (a,h) anthracene	ND	1.9	1	07/27/2016 12:36	
Dibenzofuran	ND	1.9	1	07/27/2016 12:36	
Di-n-butyl Phthalate	ND	1.9	1	07/27/2016 12:36	
1,2-Dichlorobenzene	ND	1.9	1	07/27/2016 12:36	
1,3-Dichlorobenzene	ND	1.9	1	07/27/2016 12:36	
1,4-Dichlorobenzene	ND	1.9	1	07/27/2016 12:36	
3,3-Dichlorobenzidine	ND	3.8	1	07/27/2016 12:36	
2,4-Dichlorophenol	ND	1.9	1	07/27/2016 12:36	
Diethyl Phthalate	ND	1.9	1	07/27/2016 12:36	
2,4-Dimethylphenol	ND	1.9	1	07/27/2016 12:36	
Dimethyl Phthalate	ND	1.9	1	07/27/2016 12:36	
4,6-Dinitro-2-methylphenol	ND	9.5	1	07/27/2016 12:36	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005C	Water	07/22/2016 09:40	GC21	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrophenol	ND		24	1	07/27/2016 12:36
2,4-Dinitrotoluene	ND		1.9	1	07/27/2016 12:36
2,6-Dinitrotoluene	ND		1.9	1	07/27/2016 12:36
Di-n-octyl Phthalate	ND		1.9	1	07/27/2016 12:36
1,2-Diphenylhydrazine	ND		1.9	1	07/27/2016 12:36
Fluoranthene	ND		1.9	1	07/27/2016 12:36
Fluorene	ND		1.9	1	07/27/2016 12:36
Hexachlorobenzene	ND		1.9	1	07/27/2016 12:36
Hexachlorobutadiene	ND		1.9	1	07/27/2016 12:36
Hexachlorocyclopentadiene	ND		9.5	1	07/27/2016 12:36
Hexachloroethane	ND		1.9	1	07/27/2016 12:36
Indeno (1,2,3-cd) pyrene	ND		1.9	1	07/27/2016 12:36
Isophorone	ND		1.9	1	07/27/2016 12:36
2-Methylnaphthalene	ND		1.9	1	07/27/2016 12:36
2-Methylphenol (o-Cresol)	ND		1.9	1	07/27/2016 12:36
3 & 4-Methylphenol (m,p-Cresol)	ND		1.9	1	07/27/2016 12:36
Naphthalene	ND		1.9	1	07/27/2016 12:36
2-Nitroaniline	ND		9.5	1	07/27/2016 12:36
3-Nitroaniline	ND		9.5	1	07/27/2016 12:36
4-Nitroaniline	ND		9.5	1	07/27/2016 12:36
Nitrobenzene	ND		1.9	1	07/27/2016 12:36
2-Nitrophenol	ND		9.5	1	07/27/2016 12:36
4-Nitrophenol	ND		9.5	1	07/27/2016 12:36
N-Nitrosodiphenylamine	ND		1.9	1	07/27/2016 12:36
N-Nitrosodi-n-propylamine	ND		1.9	1	07/27/2016 12:36
Pentachlorophenol	ND		9.5	1	07/27/2016 12:36
Phenanthrene	ND		1.9	1	07/27/2016 12:36
Phenol	ND		1.9	1	07/27/2016 12:36
Pyrene	ND		1.9	1	07/27/2016 12:36
1,2,4-Trichlorobenzene	ND		1.9	1	07/27/2016 12:36
2,4,5-Trichlorophenol	ND		1.9	1	07/27/2016 12:36
2,4,6-Trichlorophenol	ND		1.9	1	07/27/2016 12:36

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005C	Water	07/22/2016 09:40	GC21	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	28	8-130		07/27/2016 12:36
Phenol-d5	24	5-130		07/27/2016 12:36
Nitrobenzene-d5	71	20-140		07/27/2016 12:36
2-Fluorobiphenyl	68	40-140		07/27/2016 12:36
2,4,6-Tribromophenol	71	16-180		07/27/2016 12:36
4-Terphenyl-d14	82	40-170		07/27/2016 12:36

Analyst(s): REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006C	Water	07/22/2016 11:10	GC17	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		9.5	5	07/27/2016 10:47
Acenaphthylene	ND		9.5	5	07/27/2016 10:47
Acetochlor	ND		9.5	5	07/27/2016 10:47
Anthracene	ND		9.5	5	07/27/2016 10:47
Benzidine	ND		47	5	07/27/2016 10:47
Benzo (a) anthracene	ND		9.5	5	07/27/2016 10:47
Benzo (a) pyrene	ND		9.5	5	07/27/2016 10:47
Benzo (b) fluoranthene	ND		9.5	5	07/27/2016 10:47
Benzo (g,h,i) perylene	ND		9.5	5	07/27/2016 10:47
Benzo (k) fluoranthene	ND		9.5	5	07/27/2016 10:47
Benzyl Alcohol	ND		47	5	07/27/2016 10:47
1,1-Biphenyl	ND		9.5	5	07/27/2016 10:47
Bis (2-chloroethoxy) Methane	ND		9.5	5	07/27/2016 10:47
Bis (2-chloroethyl) Ether	ND		9.5	5	07/27/2016 10:47
Bis (2-chloroisopropyl) Ether	ND		9.5	5	07/27/2016 10:47
Bis (2-ethylhexyl) Adipate	ND		9.5	5	07/27/2016 10:47
Bis (2-ethylhexyl) Phthalate	ND		19	5	07/27/2016 10:47
4-Bromophenyl Phenyl Ether	ND		47	5	07/27/2016 10:47
Butylbenzyl Phthalate	ND		9.5	5	07/27/2016 10:47
4-Chloroaniline	ND		19	5	07/27/2016 10:47
4-Chloro-3-methylphenol	ND		47	5	07/27/2016 10:47
2-Chloronaphthalene	ND		9.5	5	07/27/2016 10:47
2-Chlorophenol	ND		9.5	5	07/27/2016 10:47
4-Chlorophenyl Phenyl Ether	ND		9.5	5	07/27/2016 10:47
Chrysene	ND		9.5	5	07/27/2016 10:47
Dibenzo (a,h) anthracene	ND		9.5	5	07/27/2016 10:47
Dibenzofuran	ND		9.5	5	07/27/2016 10:47
Di-n-butyl Phthalate	ND		9.5	5	07/27/2016 10:47
1,2-Dichlorobenzene	ND		9.5	5	07/27/2016 10:47
1,3-Dichlorobenzene	ND		9.5	5	07/27/2016 10:47
1,4-Dichlorobenzene	ND		9.5	5	07/27/2016 10:47
3,3-Dichlorobenzidine	ND		19	5	07/27/2016 10:47
2,4-Dichlorophenol	ND		9.5	5	07/27/2016 10:47
Diethyl Phthalate	ND		9.5	5	07/27/2016 10:47
2,4-Dimethylphenol	ND		9.5	5	07/27/2016 10:47
Dimethyl Phthalate	ND		9.5	5	07/27/2016 10:47
4,6-Dinitro-2-methylphenol	ND		47	5	07/27/2016 10:47

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006C	Water	07/22/2016 11:10	GC17	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrophenol	ND		120	5	07/27/2016 10:47
2,4-Dinitrotoluene	ND		9.5	5	07/27/2016 10:47
2,6-Dinitrotoluene	ND		9.5	5	07/27/2016 10:47
Di-n-octyl Phthalate	ND		9.5	5	07/27/2016 10:47
1,2-Diphenylhydrazine	ND		9.5	5	07/27/2016 10:47
Fluoranthene	ND		9.5	5	07/27/2016 10:47
Fluorene	ND		9.5	5	07/27/2016 10:47
Hexachlorobenzene	ND		9.5	5	07/27/2016 10:47
Hexachlorobutadiene	ND		9.5	5	07/27/2016 10:47
Hexachlorocyclopentadiene	ND		47	5	07/27/2016 10:47
Hexachloroethane	ND		9.5	5	07/27/2016 10:47
Indeno (1,2,3-cd) pyrene	ND		9.5	5	07/27/2016 10:47
Isophorone	ND		9.5	5	07/27/2016 10:47
2-Methylnaphthalene	<b>26</b>		9.5	5	07/27/2016 10:47
2-Methylphenol (o-Cresol)	ND		9.5	5	07/27/2016 10:47
3 & 4-Methylphenol (m,p-Cresol)	ND		9.5	5	07/27/2016 10:47
Naphthalene	<b>26</b>		9.5	5	07/27/2016 10:47
2-Nitroaniline	ND		47	5	07/27/2016 10:47
3-Nitroaniline	ND		47	5	07/27/2016 10:47
4-Nitroaniline	ND		47	5	07/27/2016 10:47
Nitrobenzene	ND		9.5	5	07/27/2016 10:47
2-Nitrophenol	ND		47	5	07/27/2016 10:47
4-Nitrophenol	ND		47	5	07/27/2016 10:47
N-Nitrosodiphenylamine	ND		9.5	5	07/27/2016 10:47
N-Nitrosodi-n-propylamine	ND		9.5	5	07/27/2016 10:47
Pentachlorophenol	ND		47	5	07/27/2016 10:47
Phenanthrene	ND		9.5	5	07/27/2016 10:47
Phenol	ND		9.5	5	07/27/2016 10:47
Pyrene	ND		9.5	5	07/27/2016 10:47
1,2,4-Trichlorobenzene	ND		9.5	5	07/27/2016 10:47
2,4,5-Trichlorophenol	ND		9.5	5	07/27/2016 10:47
2,4,6-Trichlorophenol	ND		9.5	5	07/27/2016 10:47

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006C	Water	07/22/2016 11:10	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	22	8-130		07/27/2016 10:47
Phenol-d5	24	5-130		07/27/2016 10:47
Nitrobenzene-d5	95	20-140		07/27/2016 10:47
2-Fluorobiphenyl	96	40-140		07/27/2016 10:47
2,4,6-Tribromophenol	57	16-180		07/27/2016 10:47
4-Terphenyl-d14	108	40-170		07/27/2016 10:47

Analyst(s): REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007C	Water	07/22/2016 12:35	GC17	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	1.9	1	07/27/2016 11:16	
Acenaphthylene	ND	1.9	1	07/27/2016 11:16	
Acetochlor	ND	1.9	1	07/27/2016 11:16	
Anthracene	ND	1.9	1	07/27/2016 11:16	
Benzidine	ND	9.5	1	07/27/2016 11:16	
Benzo (a) anthracene	ND	1.9	1	07/27/2016 11:16	
Benzo (a) pyrene	ND	1.9	1	07/27/2016 11:16	
Benzo (b) fluoranthene	ND	1.9	1	07/27/2016 11:16	
Benzo (g,h,i) perylene	ND	1.9	1	07/27/2016 11:16	
Benzo (k) fluoranthene	ND	1.9	1	07/27/2016 11:16	
Benzyl Alcohol	ND	9.5	1	07/27/2016 11:16	
1,1-Biphenyl	ND	1.9	1	07/27/2016 11:16	
Bis (2-chloroethoxy) Methane	ND	1.9	1	07/27/2016 11:16	
Bis (2-chloroethyl) Ether	ND	1.9	1	07/27/2016 11:16	
Bis (2-chloroisopropyl) Ether	ND	1.9	1	07/27/2016 11:16	
Bis (2-ethylhexyl) Adipate	ND	1.9	1	07/27/2016 11:16	
Bis (2-ethylhexyl) Phthalate	ND	3.8	1	07/27/2016 11:16	
4-Bromophenyl Phenyl Ether	ND	9.5	1	07/27/2016 11:16	
Butylbenzyl Phthalate	ND	1.9	1	07/27/2016 11:16	
4-Chloroaniline	ND	3.8	1	07/27/2016 11:16	
4-Chloro-3-methylphenol	ND	9.5	1	07/27/2016 11:16	
2-Chloronaphthalene	ND	1.9	1	07/27/2016 11:16	
2-Chlorophenol	ND	1.9	1	07/27/2016 11:16	
4-Chlorophenyl Phenyl Ether	ND	1.9	1	07/27/2016 11:16	
Chrysene	ND	1.9	1	07/27/2016 11:16	
Dibenzo (a,h) anthracene	ND	1.9	1	07/27/2016 11:16	
Dibenzofuran	ND	1.9	1	07/27/2016 11:16	
Di-n-butyl Phthalate	ND	1.9	1	07/27/2016 11:16	
1,2-Dichlorobenzene	ND	1.9	1	07/27/2016 11:16	
1,3-Dichlorobenzene	ND	1.9	1	07/27/2016 11:16	
1,4-Dichlorobenzene	ND	1.9	1	07/27/2016 11:16	
3,3-Dichlorobenzidine	ND	3.8	1	07/27/2016 11:16	
2,4-Dichlorophenol	ND	1.9	1	07/27/2016 11:16	
Diethyl Phthalate	ND	1.9	1	07/27/2016 11:16	
2,4-Dimethylphenol	ND	1.9	1	07/27/2016 11:16	
Dimethyl Phthalate	ND	1.9	1	07/27/2016 11:16	
4,6-Dinitro-2-methylphenol	ND	9.5	1	07/27/2016 11:16	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007C	Water	07/22/2016 12:35	GC17	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	24	1	07/27/2016 11:16	
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 11:16	
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 11:16	
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 11:16	
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 11:16	
Fluoranthene	ND	1.9	1	07/27/2016 11:16	
Fluorene	ND	1.9	1	07/27/2016 11:16	
Hexachlorobenzene	ND	1.9	1	07/27/2016 11:16	
Hexachlorobutadiene	ND	1.9	1	07/27/2016 11:16	
Hexachlorocyclopentadiene	ND	9.5	1	07/27/2016 11:16	
Hexachloroethane	ND	1.9	1	07/27/2016 11:16	
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 11:16	
Isophorone	ND	1.9	1	07/27/2016 11:16	
2-Methylnaphthalene	ND	1.9	1	07/27/2016 11:16	
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 11:16	
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 11:16	
Naphthalene	ND	1.9	1	07/27/2016 11:16	
2-Nitroaniline	ND	9.5	1	07/27/2016 11:16	
3-Nitroaniline	ND	9.5	1	07/27/2016 11:16	
4-Nitroaniline	ND	9.5	1	07/27/2016 11:16	
Nitrobenzene	ND	1.9	1	07/27/2016 11:16	
2-Nitrophenol	ND	9.5	1	07/27/2016 11:16	
4-Nitrophenol	ND	9.5	1	07/27/2016 11:16	
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 11:16	
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 11:16	
Pentachlorophenol	ND	9.5	1	07/27/2016 11:16	
Phenanthrene	ND	1.9	1	07/27/2016 11:16	
Phenol	ND	1.9	1	07/27/2016 11:16	
Pyrene	ND	1.9	1	07/27/2016 11:16	
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 11:16	
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 11:16	
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 11:16	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007C	Water	07/22/2016 12:35	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	13		8-130	07/27/2016 11:16
Phenol-d5	9		5-130	07/27/2016 11:16
Nitrobenzene-d5	41		20-140	07/27/2016 11:16
2-Fluorobiphenyl	44		40-140	07/27/2016 11:16
2,4,6-Tribromophenol	77		16-180	07/27/2016 11:16
4-Terphenyl-d14	93		40-170	07/27/2016 11:16

**Analyst(s):** REB



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008C	Water	07/22/2016 13:49	GC17	124272
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		1.9	1	07/27/2016 11:45
Acenaphthylene	ND		1.9	1	07/27/2016 11:45
Acetochlor	ND		1.9	1	07/27/2016 11:45
Anthracene	ND		1.9	1	07/27/2016 11:45
Benzidine	ND		9.5	1	07/27/2016 11:45
Benzo (a) anthracene	ND		1.9	1	07/27/2016 11:45
Benzo (a) pyrene	ND		1.9	1	07/27/2016 11:45
Benzo (b) fluoranthene	ND		1.9	1	07/27/2016 11:45
Benzo (g,h,i) perylene	ND		1.9	1	07/27/2016 11:45
Benzo (k) fluoranthene	ND		1.9	1	07/27/2016 11:45
Benzyl Alcohol	ND		9.5	1	07/27/2016 11:45
1,1-Biphenyl	ND		1.9	1	07/27/2016 11:45
Bis (2-chloroethoxy) Methane	ND		1.9	1	07/27/2016 11:45
Bis (2-chloroethyl) Ether	ND		1.9	1	07/27/2016 11:45
Bis (2-chloroisopropyl) Ether	ND		1.9	1	07/27/2016 11:45
Bis (2-ethylhexyl) Adipate	ND		1.9	1	07/27/2016 11:45
Bis (2-ethylhexyl) Phthalate	ND		3.8	1	07/27/2016 11:45
4-Bromophenyl Phenyl Ether	ND		9.5	1	07/27/2016 11:45
Butylbenzyl Phthalate	ND		1.9	1	07/27/2016 11:45
4-Chloroaniline	ND		3.8	1	07/27/2016 11:45
4-Chloro-3-methylphenol	ND		9.5	1	07/27/2016 11:45
2-Chloronaphthalene	ND		1.9	1	07/27/2016 11:45
2-Chlorophenol	ND		1.9	1	07/27/2016 11:45
4-Chlorophenyl Phenyl Ether	ND		1.9	1	07/27/2016 11:45
Chrysene	ND		1.9	1	07/27/2016 11:45
Dibenzo (a,h) anthracene	ND		1.9	1	07/27/2016 11:45
Dibenzofuran	ND		1.9	1	07/27/2016 11:45
Di-n-butyl Phthalate	ND		1.9	1	07/27/2016 11:45
1,2-Dichlorobenzene	ND		1.9	1	07/27/2016 11:45
1,3-Dichlorobenzene	ND		1.9	1	07/27/2016 11:45
1,4-Dichlorobenzene	ND		1.9	1	07/27/2016 11:45
3,3-Dichlorobenzidine	ND		3.8	1	07/27/2016 11:45
2,4-Dichlorophenol	ND		1.9	1	07/27/2016 11:45
Diethyl Phthalate	ND		1.9	1	07/27/2016 11:45
2,4-Dimethylphenol	ND		1.9	1	07/27/2016 11:45
Dimethyl Phthalate	ND		1.9	1	07/27/2016 11:45
4,6-Dinitro-2-methylphenol	ND		9.5	1	07/27/2016 11:45

(Cont.)





# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008C	Water	07/22/2016 13:49	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	24	1	07/27/2016 11:45
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 11:45
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 11:45
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 11:45
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 11:45
Fluoranthene	ND	1.9	1	07/27/2016 11:45
Fluorene	ND	1.9	1	07/27/2016 11:45
Hexachlorobenzene	ND	1.9	1	07/27/2016 11:45
Hexachlorobutadiene	ND	1.9	1	07/27/2016 11:45
Hexachlorocyclopentadiene	ND	9.5	1	07/27/2016 11:45
Hexachloroethane	ND	1.9	1	07/27/2016 11:45
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 11:45
Isophorone	ND	1.9	1	07/27/2016 11:45
2-Methylnaphthalene	ND	1.9	1	07/27/2016 11:45
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 11:45
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 11:45
Naphthalene	ND	1.9	1	07/27/2016 11:45
2-Nitroaniline	ND	9.5	1	07/27/2016 11:45
3-Nitroaniline	ND	9.5	1	07/27/2016 11:45
4-Nitroaniline	ND	9.5	1	07/27/2016 11:45
Nitrobenzene	ND	1.9	1	07/27/2016 11:45
2-Nitrophenol	ND	9.5	1	07/27/2016 11:45
4-Nitrophenol	ND	9.5	1	07/27/2016 11:45
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 11:45
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 11:45
Pentachlorophenol	ND	9.5	1	07/27/2016 11:45
Phenanthrene	ND	1.9	1	07/27/2016 11:45
Phenol	ND	1.9	1	07/27/2016 11:45
Pyrene	ND	1.9	1	07/27/2016 11:45
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 11:45
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 11:45
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 11:45

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008C	Water	07/22/2016 13:49	GC17	124272

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorophenol	7	S	8-130		07/27/2016 11:45
Phenol-d5	7		5-130		07/27/2016 11:45
Nitrobenzene-d5	59		20-140		07/27/2016 11:45
2-Fluorobiphenyl	57		40-140		07/27/2016 11:45
2,4,6-Tribromophenol	53		16-180		07/27/2016 11:45
4-Terphenyl-d14	75		40-170		07/27/2016 11:45

**Analyst(s):** REB

**Analytical Comments:** c2



# Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009C	Water	07/22/2016 15:45	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	1.9	1	07/27/2016 12:15
Acenaphthylene	ND	1.9	1	07/27/2016 12:15
Acetochlor	ND	1.9	1	07/27/2016 12:15
Anthracene	ND	1.9	1	07/27/2016 12:15
Benzidine	ND	9.4	1	07/27/2016 12:15
Benzo (a) anthracene	ND	1.9	1	07/27/2016 12:15
Benzo (a) pyrene	ND	1.9	1	07/27/2016 12:15
Benzo (b) fluoranthene	ND	1.9	1	07/27/2016 12:15
Benzo (g,h,i) perylene	ND	1.9	1	07/27/2016 12:15
Benzo (k) fluoranthene	ND	1.9	1	07/27/2016 12:15
Benzyl Alcohol	ND	9.4	1	07/27/2016 12:15
1,1-Biphenyl	ND	1.9	1	07/27/2016 12:15
Bis (2-chloroethoxy) Methane	ND	1.9	1	07/27/2016 12:15
Bis (2-chloroethyl) Ether	ND	1.9	1	07/27/2016 12:15
Bis (2-chloroisopropyl) Ether	ND	1.9	1	07/27/2016 12:15
Bis (2-ethylhexyl) Adipate	ND	1.9	1	07/27/2016 12:15
Bis (2-ethylhexyl) Phthalate	ND	3.8	1	07/27/2016 12:15
4-Bromophenyl Phenyl Ether	ND	9.4	1	07/27/2016 12:15
Butylbenzyl Phthalate	ND	1.9	1	07/27/2016 12:15
4-Chloroaniline	ND	3.8	1	07/27/2016 12:15
4-Chloro-3-methylphenol	ND	9.4	1	07/27/2016 12:15
2-Chloronaphthalene	ND	1.9	1	07/27/2016 12:15
2-Chlorophenol	ND	1.9	1	07/27/2016 12:15
4-Chlorophenyl Phenyl Ether	ND	1.9	1	07/27/2016 12:15
Chrysene	ND	1.9	1	07/27/2016 12:15
Dibenzo (a,h) anthracene	ND	1.9	1	07/27/2016 12:15
Dibenzofuran	ND	1.9	1	07/27/2016 12:15
Di-n-butyl Phthalate	ND	1.9	1	07/27/2016 12:15
1,2-Dichlorobenzene	ND	1.9	1	07/27/2016 12:15
1,3-Dichlorobenzene	ND	1.9	1	07/27/2016 12:15
1,4-Dichlorobenzene	ND	1.9	1	07/27/2016 12:15
3,3-Dichlorobenzidine	ND	3.8	1	07/27/2016 12:15
2,4-Dichlorophenol	ND	1.9	1	07/27/2016 12:15
Diethyl Phthalate	ND	1.9	1	07/27/2016 12:15
2,4-Dimethylphenol	ND	1.9	1	07/27/2016 12:15
Dimethyl Phthalate	ND	1.9	1	07/27/2016 12:15
4,6-Dinitro-2-methylphenol	ND	9.4	1	07/27/2016 12:15

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009C	Water	07/22/2016 15:45	GC17	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	24	1	07/27/2016 12:15	
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 12:15	
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 12:15	
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 12:15	
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 12:15	
Fluoranthene	ND	1.9	1	07/27/2016 12:15	
Fluorene	ND	1.9	1	07/27/2016 12:15	
Hexachlorobenzene	ND	1.9	1	07/27/2016 12:15	
Hexachlorobutadiene	ND	1.9	1	07/27/2016 12:15	
Hexachlorocyclopentadiene	ND	9.4	1	07/27/2016 12:15	
Hexachloroethane	ND	1.9	1	07/27/2016 12:15	
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 12:15	
Isophorone	ND	1.9	1	07/27/2016 12:15	
2-Methylnaphthalene	ND	1.9	1	07/27/2016 12:15	
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 12:15	
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 12:15	
Naphthalene	ND	1.9	1	07/27/2016 12:15	
2-Nitroaniline	ND	9.4	1	07/27/2016 12:15	
3-Nitroaniline	ND	9.4	1	07/27/2016 12:15	
4-Nitroaniline	ND	9.4	1	07/27/2016 12:15	
Nitrobenzene	ND	1.9	1	07/27/2016 12:15	
2-Nitrophenol	ND	9.4	1	07/27/2016 12:15	
4-Nitrophenol	ND	9.4	1	07/27/2016 12:15	
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 12:15	
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 12:15	
Pentachlorophenol	ND	9.4	1	07/27/2016 12:15	
Phenanthrene	ND	1.9	1	07/27/2016 12:15	
Phenol	ND	1.9	1	07/27/2016 12:15	
Pyrene	ND	1.9	1	07/27/2016 12:15	
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 12:15	
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 12:15	
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 12:15	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009C	Water	07/22/2016 15:45	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
2-Fluorophenol	5	S	8-130	07/27/2016 12:15
Phenol-d5	6		5-130	07/27/2016 12:15
Nitrobenzene-d5	60		20-140	07/27/2016 12:15
2-Fluorobiphenyl	65		40-140	07/27/2016 12:15
2,4,6-Tribromophenol	48		16-180	07/27/2016 12:15
4-Terphenyl-d14	91		40-170	07/27/2016 12:15

Analyst(s): REB

Analytical Comments: c2



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010C	Water	07/22/2016 16:40	GC17	124272
Analytes	Result	RL	DF	Date Analyzed	
Acenaphthene	ND	1.9	1	07/27/2016 12:44	
Acenaphthylene	ND	1.9	1	07/27/2016 12:44	
Acetochlor	ND	1.9	1	07/27/2016 12:44	
Anthracene	ND	1.9	1	07/27/2016 12:44	
Benzidine	ND	9.5	1	07/27/2016 12:44	
Benzo (a) anthracene	ND	1.9	1	07/27/2016 12:44	
Benzo (a) pyrene	ND	1.9	1	07/27/2016 12:44	
Benzo (b) fluoranthene	ND	1.9	1	07/27/2016 12:44	
Benzo (g,h,i) perylene	ND	1.9	1	07/27/2016 12:44	
Benzo (k) fluoranthene	ND	1.9	1	07/27/2016 12:44	
Benzyl Alcohol	ND	9.5	1	07/27/2016 12:44	
1,1-Biphenyl	ND	1.9	1	07/27/2016 12:44	
Bis (2-chloroethoxy) Methane	ND	1.9	1	07/27/2016 12:44	
Bis (2-chloroethyl) Ether	ND	1.9	1	07/27/2016 12:44	
Bis (2-chloroisopropyl) Ether	ND	1.9	1	07/27/2016 12:44	
Bis (2-ethylhexyl) Adipate	ND	1.9	1	07/27/2016 12:44	
Bis (2-ethylhexyl) Phthalate	ND	3.8	1	07/27/2016 12:44	
4-Bromophenyl Phenyl Ether	ND	9.5	1	07/27/2016 12:44	
Butylbenzyl Phthalate	ND	1.9	1	07/27/2016 12:44	
4-Chloroaniline	ND	3.8	1	07/27/2016 12:44	
4-Chloro-3-methylphenol	ND	9.5	1	07/27/2016 12:44	
2-Chloronaphthalene	ND	1.9	1	07/27/2016 12:44	
2-Chlorophenol	ND	1.9	1	07/27/2016 12:44	
4-Chlorophenyl Phenyl Ether	ND	1.9	1	07/27/2016 12:44	
Chrysene	ND	1.9	1	07/27/2016 12:44	
Dibenzo (a,h) anthracene	ND	1.9	1	07/27/2016 12:44	
Dibenzofuran	ND	1.9	1	07/27/2016 12:44	
Di-n-butyl Phthalate	ND	1.9	1	07/27/2016 12:44	
1,2-Dichlorobenzene	ND	1.9	1	07/27/2016 12:44	
1,3-Dichlorobenzene	ND	1.9	1	07/27/2016 12:44	
1,4-Dichlorobenzene	ND	1.9	1	07/27/2016 12:44	
3,3-Dichlorobenzidine	ND	3.8	1	07/27/2016 12:44	
2,4-Dichlorophenol	ND	1.9	1	07/27/2016 12:44	
Diethyl Phthalate	ND	1.9	1	07/27/2016 12:44	
2,4-Dimethylphenol	ND	1.9	1	07/27/2016 12:44	
Dimethyl Phthalate	ND	1.9	1	07/27/2016 12:44	
4,6-Dinitro-2-methylphenol	ND	9.5	1	07/27/2016 12:44	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010C	Water	07/22/2016 16:40	GC17	124272
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	24	1	07/27/2016 12:44	
2,4-Dinitrotoluene	ND	1.9	1	07/27/2016 12:44	
2,6-Dinitrotoluene	ND	1.9	1	07/27/2016 12:44	
Di-n-octyl Phthalate	ND	1.9	1	07/27/2016 12:44	
1,2-Diphenylhydrazine	ND	1.9	1	07/27/2016 12:44	
Fluoranthene	ND	1.9	1	07/27/2016 12:44	
Fluorene	ND	1.9	1	07/27/2016 12:44	
Hexachlorobenzene	ND	1.9	1	07/27/2016 12:44	
Hexachlorobutadiene	ND	1.9	1	07/27/2016 12:44	
Hexachlorocyclopentadiene	ND	9.5	1	07/27/2016 12:44	
Hexachloroethane	ND	1.9	1	07/27/2016 12:44	
Indeno (1,2,3-cd) pyrene	ND	1.9	1	07/27/2016 12:44	
Isophorone	ND	1.9	1	07/27/2016 12:44	
2-Methylnaphthalene	ND	1.9	1	07/27/2016 12:44	
2-Methylphenol (o-Cresol)	ND	1.9	1	07/27/2016 12:44	
3 & 4-Methylphenol (m,p-Cresol)	ND	1.9	1	07/27/2016 12:44	
Naphthalene	ND	1.9	1	07/27/2016 12:44	
2-Nitroaniline	ND	9.5	1	07/27/2016 12:44	
3-Nitroaniline	ND	9.5	1	07/27/2016 12:44	
4-Nitroaniline	ND	9.5	1	07/27/2016 12:44	
Nitrobenzene	ND	1.9	1	07/27/2016 12:44	
2-Nitrophenol	ND	9.5	1	07/27/2016 12:44	
4-Nitrophenol	ND	9.5	1	07/27/2016 12:44	
N-Nitrosodiphenylamine	ND	1.9	1	07/27/2016 12:44	
N-Nitrosodi-n-propylamine	ND	1.9	1	07/27/2016 12:44	
Pentachlorophenol	ND	9.5	1	07/27/2016 12:44	
Phenanthrene	ND	1.9	1	07/27/2016 12:44	
Phenol	ND	1.9	1	07/27/2016 12:44	
Pyrene	ND	1.9	1	07/27/2016 12:44	
1,2,4-Trichlorobenzene	ND	1.9	1	07/27/2016 12:44	
2,4,5-Trichlorophenol	ND	1.9	1	07/27/2016 12:44	
2,4,6-Trichlorophenol	ND	1.9	1	07/27/2016 12:44	

(Cont.)



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/25/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010C	Water	07/22/2016 16:40	GC17	124272

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	10	8-130		07/27/2016 12:44
Phenol-d5	8	5-130		07/27/2016 12:44
Nitrobenzene-d5	66	20-140		07/27/2016 12:44
2-Fluorobiphenyl	69	40-140		07/27/2016 12:44
2,4,6-Tribromophenol	75	16-180		07/27/2016 12:44
4-Terphenyl-d14	84	40-170		07/27/2016 12:44

Analyst(s): REB





## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/27/16-7/30/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1607A60-001A	Water	07/21/2016 11:05	GC3	124309

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	6700	250	5	07/27/2016 06:49
MTBE	ND	400	5	07/27/2016 06:49
Benzene	1400	2.5	5	07/27/2016 06:49
Toluene	29	2.5	5	07/27/2016 06:49
Ethylbenzene	36	2.5	5	07/27/2016 06:49
Xylenes	28	7.5	5	07/27/2016 06:49

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	134	S	70-130	07/27/2016 06:49

Analyst(s): IA

Analytical Comments: d1,d17,c4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	1607A60-002A	Water	07/21/2016 11:56	GC3	124309

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/27/2016 06:18
MTBE	ND	5.0	1	07/27/2016 06:18
Benzene	ND	0.50	1	07/27/2016 06:18
Toluene	ND	0.50	1	07/27/2016 06:18
Ethylbenzene	ND	0.50	1	07/27/2016 06:18
Xylenes	ND	1.5	1	07/27/2016 06:18

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	100	70-130	07/27/2016 06:18

Analyst(s): IA



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/27/16-7/30/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1607A60-003A	Water	07/21/2016 15:02	GC3	124309

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/27/2016 07:20
MTBE	ND	5.0	1	07/27/2016 07:20
Benzene	ND	0.50	1	07/27/2016 07:20
Toluene	ND	0.50	1	07/27/2016 07:20
Ethylbenzene	ND	0.50	1	07/27/2016 07:20
Xylenes	ND	1.5	1	07/27/2016 07:20
Surrogates	REC (%)	Limits		Date Analyzed
aaa-TFT	93	70-130		07/27/2016 07:20

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1607A60-004A	Water	07/21/2016 13:25	GC3	124309

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/27/2016 05:48
MTBE	ND	5.0	1	07/27/2016 05:48
Benzene	ND	0.50	1	07/27/2016 05:48
Toluene	ND	0.50	1	07/27/2016 05:48
Ethylbenzene	ND	0.50	1	07/27/2016 05:48
Xylenes	ND	1.5	1	07/27/2016 05:48
Surrogates	REC (%)	Limits		Date Analyzed
aaa-TFT	98	70-130		07/27/2016 05:48

Analyst(s): IA



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/27/16-7/30/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1607A60-005A	Water	07/22/2016 09:40	GC3	124447
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		50	1	07/29/2016 02:48
MTBE	ND		5.0	1	07/29/2016 02:48
Benzene	ND		0.50	1	07/29/2016 02:48
Toluene	ND		0.50	1	07/29/2016 02:48
Ethylbenzene	ND		0.50	1	07/29/2016 02:48
Xylenes	ND		1.5	1	07/29/2016 02:48
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
aaa-TFT	96		70-130		07/29/2016 02:48

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1607A60-006A	Water	07/22/2016 11:10	GC3	124447
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	16,000		250	5	07/29/2016 03:19
MTBE	ND		150	5	07/29/2016 03:19
Benzene	4800		50	100	07/30/2016 06:30
Toluene	28		2.5	5	07/29/2016 03:19
Ethylbenzene	52		2.5	5	07/29/2016 03:19
Xylenes	42		7.5	5	07/29/2016 03:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
aaa-TFT	171	S	70-130		07/29/2016 03:19

Analyst(s): IA      Analytical Comments: d1,d17,c4



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/27/16-7/30/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1607A60-007A	Water	07/22/2016 12:35	GC3	124447

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/30/2016 00:55
MTBE	ND	5.0	1	07/30/2016 00:55
Benzene	1.9	0.50	1	07/30/2016 00:55
Toluene	ND	0.50	1	07/30/2016 00:55
Ethylbenzene	ND	0.50	1	07/30/2016 00:55
Xylenes	ND	1.5	1	07/30/2016 00:55

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	95	70-130	07/30/2016 00:55

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1607A60-008A	Water	07/22/2016 13:49	GC3	124447

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/29/2016 04:20
MTBE	ND	5.0	1	07/29/2016 04:20
Benzene	ND	0.50	1	07/29/2016 04:20
Toluene	ND	0.50	1	07/29/2016 04:20
Ethylbenzene	ND	0.50	1	07/29/2016 04:20
Xylenes	ND	1.5	1	07/29/2016 04:20

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	97	70-130	07/29/2016 04:20

Analyst(s): IA



## Analytical Report

**Client:** AEI Consultants  
**Date Received:** 7/25/16 15:00  
**Date Prepared:** 7/27/16-7/30/16  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1607A60-009A	Water	07/22/2016 15:45	GC3	124447

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/29/2016 04:51
MTBE	ND	5.0	1	07/29/2016 04:51
Benzene	ND	0.50	1	07/29/2016 04:51
Toluene	ND	0.50	1	07/29/2016 04:51
Ethylbenzene	ND	0.50	1	07/29/2016 04:51
Xylenes	ND	1.5	1	07/29/2016 04:51

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	99	70-130	07/29/2016 04:51

Analyst(s): IA

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	1607A60-010A	Water	07/22/2016 16:40	GC7	124406

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	50	1	07/28/2016 22:39
MTBE	ND	5.0	1	07/28/2016 22:39
Benzene	ND	0.50	1	07/28/2016 22:39
Toluene	ND	0.50	1	07/28/2016 22:39
Ethylbenzene	ND	0.50	1	07/28/2016 22:39
Xylenes	ND	1.5	1	07/28/2016 22:39

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	103	70-130	07/28/2016 22:39

Analyst(s): IA



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/27/16  
**Date Analyzed:** 7/27/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman


**WorkOrder:** 1607A60  
**BatchID:** 124384  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124384  
 1607905-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	9.80	0.50	10	-	98	54-140
Benzene	ND	10.6	0.50	10	-	106	47-158
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	32.7	2.0	40	-	82	42-140
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	9.90	0.50	10	-	99	43-157
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	9.81	0.50	10	-	98	44-155
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	9.46	0.50	10	-	95	66-125
1,1-Dichloroethene	ND	9.77	0.50	10	-	98	47-149
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-

(Cont.)

NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/27/16  
**Date Analyzed:** 7/27/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124384  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124384  
 1607905-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
Diisopropyl ether (DIPE)	ND	10.3	0.50	10	-	103	57-136
Ethanol	ND	-	50	-	-	-	-
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	10.0	0.50	10	-	100	55-137
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	9.59	0.50	10	-	96	53-139
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	10.7	0.50	10	-	107	52-137
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	10.4	0.50	10	-	104	43-157
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/27/16  
**Date Analyzed:** 7/27/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124384  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124384  
 1607905-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	25.0	25.1		25	100	100	70-130
Toluene-d8	27.0	25.8		25	108	103	70-130
4-BFB	1.94	2.67		2.5	78	107	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	10.9	10.5	10	ND	109	105	69-139	4.10	20
Benzene	10.4	9.51	10	ND	104	95	69-141	8.50	20
t-Butyl alcohol (TBA)	42.7	42.6	40	ND	107	106	41-152	0.311	20
Chlorobenzene	9.53	8.93	10	ND	95	89	77-120	6.54	20
1,2-Dibromoethane (EDB)	9.72	9.48	10	ND	97	95	76-135	2.41	20
1,2-Dichloroethane (1,2-DCA)	9.89	9.40	10	ND	99	94	73-139	5.10	20
1,1-Dichloroethene	9.35	8.51	10	ND	94	85	59-140	9.44	20
Diisopropyl ether (DIPE)	11.0	10.2	10	ND	110	102	72-140	8.16	20
Ethyl tert-butyl ether (ETBE)	11.0	10.4	10	ND	110	104	71-140	5.20	20
Methyl-t-butyl ether (MTBE)	10.9	10.6	10	ND	108	104	73-139	3.38	20
Toluene	9.70	8.97	10	ND	96	89	71-128	7.82	20
Trichloroethene	10.0	9.12	10	ND	100	91	64-132	9.60	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	25.7	25.7	25		103	103	73-131	0	20
Toluene-d8	24.4	24.5	25		98	98	72-117	0	20
4-BFB	2.14	2.23	2.5		85	89	74-116	4.32	20





## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/28/16  
**Date Analyzed:** 7/28/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman


**WorkOrder:** 1607A60  
**BatchID:** 124435  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124435  
 1607A71-003AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	10.4	0.50	10	-	105	54-140
Benzene	ND	11.2	0.50	10	-	112	47-158
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	35.5	2.0	40	-	89	42-140
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	10.3	0.50	10	-	103	43-157
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	10.0	0.50	10	-	100	44-155
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	10.2	0.50	10	-	102	66-125
1,1-Dichloroethene	ND	9.88	0.50	10	-	99	47-149
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-

(Cont.)

NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/28/16  
**Date Analyzed:** 7/28/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124435  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124435  
 1607A71-003AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
Diisopropyl ether (DIPE)	ND	11.2	0.50	10	-	112	57-136
Ethanol	ND	-	50	-	-	-	-
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	10.8	0.50	10	-	108	55-137
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	10.4	0.50	10	-	104	53-139
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	10.6	0.50	10	-	107	52-137
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	10.8	0.50	10	-	108	43-157
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/28/16  
**Date Analyzed:** 7/28/16  
**Instrument:** GC16  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124435  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124435  
 1607A71-003AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	24.5	25.0		25	98	100	70-130
Toluene-d8	26.7	24.7		25	107	99	70-130
4-BFB	1.95	2.27		2.5	78	91	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	10.8	11.3	10	ND	108	113	69-139	4.80	20
Benzene	10.7	10.6	10	ND	105	104	69-141	0.640	20
t-Butyl alcohol (TBA)	39.7	43.1	40	ND	99	108	41-152	8.31	20
Chlorobenzene	9.82	9.79	10	ND	98	98	77-120	0	20
1,2-Dibromoethane (EDB)	9.85	9.99	10	ND	98	100	76-135	1.43	20
1,2-Dichloroethane (1,2-DCA)	10.2	10.5	10	ND	102	105	73-139	2.50	20
1,1-Dichloroethene	9.46	9.41	10	ND	95	94	59-140	0.611	20
Diisopropyl ether (DIPE)	11.3	11.4	10	ND	113	114	72-140	1.01	20
Ethyl tert-butyl ether (ETBE)	11.0	11.3	10	ND	110	113	71-140	2.64	20
Methyl-t-butyl ether (MTBE)	10.8	11.4	10	ND	104	110	73-139	5.58	20
Toluene	9.98	9.96	10	ND	97	97	71-128	0	20
Trichloroethene	10.4	10.3	10	ND	104	103	64-132	1.78	20
<b>Surrogate Recovery</b>									
Dibromofluoromethane	25.7	26.0	25		103	104	73-131	0.995	20
Toluene-d8	24.4	24.4	25		98	98	72-117	0	20
4-BFB	2.11	2.25	2.5		84	90	74-116	6.38	20



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/25/16  
**Date Analyzed:** 7/26/16  
**Instrument:** GC21  
**Matrix:** Water  
**Project:** 281939; Zimmerman


**WorkOrder:** 1607A60  
**BatchID:** 124272  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-124272

### QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	1.0	-	-	-
Acenaphthylene	ND	1.0	-	-	-
Anthracene	ND	1.0	-	-	-
Benzidine	ND	5.0	-	-	-
Benzo (a) anthracene	ND	1.0	-	-	-
Benzo (a) pyrene	ND	1.0	-	-	-
Benzo (b) fluoranthene	ND	1.0	-	-	-
Benzo (g,h,i) perylene	ND	1.0	-	-	-
Benzo (k) fluoranthene	ND	1.0	-	-	-
Benzyl Alcohol	ND	5.0	-	-	-
Bis (2-chloroethoxy) Methane	ND	1.0	-	-	-
Bis (2-chloroethyl) Ether	ND	1.0	-	-	-
Bis (2-chloroisopropyl) Ether	ND	1.0	-	-	-
Bis (2-ethylhexyl) Adipate	ND	1.0	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	2.0	-	-	-
4-Bromophenyl Phenyl Ether	ND	1.0	-	-	-
Butylbenzyl Phthalate	ND	1.0	-	-	-
4-Chloroaniline	ND	2.0	-	-	-
4-Chloro-3-methylphenol	ND	1.0	-	-	-
2-Chloronaphthalene	ND	1.0	-	-	-
2-Chlorophenol	ND	1.0	-	-	-
4-Chlorophenyl Phenyl Ether	ND	1.0	-	-	-
Chrysene	ND	1.0	-	-	-
Dibenzo (a,h) anthracene	ND	1.0	-	-	-
Dibenzofuran	ND	1.0	-	-	-
Di-n-butyl Phthalate	ND	1.0	-	-	-
1,2-Dichlorobenzene	ND	1.0	-	-	-
1,3-Dichlorobenzene	ND	1.0	-	-	-
1,4-Dichlorobenzene	ND	1.0	-	-	-
3,3-Dichlorobenzidine	ND	2.0	-	-	-
2,4-Dichlorophenol	ND	1.0	-	-	-
Diethyl Phthalate	ND	1.0	-	-	-
2,4-Dimethylphenol	ND	1.0	-	-	-
Dimethyl Phthalate	ND	1.0	-	-	-
4,6-Dinitro-2-methylphenol	ND	5.0	-	-	-
2,4-Dinitrophenol	ND	5.0	-	-	-
2,4-Dinitrotoluene	ND	1.0	-	-	-
2,6-Dinitrotoluene	ND	1.0	-	-	-
Di-n-octyl Phthalate	ND	2.0	-	-	-

(Cont.)

NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/25/16  
**Date Analyzed:** 7/26/16  
**Instrument:** GC21  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124272  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-124272

### QC Summary Report for SW8270C


Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
1,2-Diphenylhydrazine	ND	1.0	-	-	-
Fluoranthene	ND	1.0	-	-	-
Fluorene	ND	1.0	-	-	-
Hexachlorobenzene	ND	1.0	-	-	-
Hexachlorobutadiene	ND	1.0	-	-	-
Hexachlorocyclopentadiene	ND	5.0	-	-	-
Hexachloroethane	ND	1.0	-	-	-
Indeno (1,2,3-cd) pyrene	ND	1.0	-	-	-
Isophorone	ND	1.0	-	-	-
2-Methylnaphthalene	ND	1.0	-	-	-
2-Methylphenol (o-cresol)	ND	1.0	-	-	-
3 & 4-Methylphenol (m,p-Cresol)	ND	1.0	-	-	-
Naphthalene	ND	1.0	-	-	-
2-Nitroaniline	ND	5.0	-	-	-
3-Nitroaniline	ND	5.0	-	-	-
4-Nitroaniline	ND	5.0	-	-	-
Nitrobenzene	ND	1.0	-	-	-
2-Nitrophenol	ND	5.0	-	-	-
4-Nitrophenol	ND	5.0	-	-	-
N-Nitrosodiphenylamine	ND	1.0	-	-	-
N-Nitrosodi-n-propylamine	ND	1.0	-	-	-
Pentachlorophenol	ND	5.0	-	-	-
Phenanthrene	ND	1.0	-	-	-
Phenol	ND	1.0	-	-	-
Pyrene	ND	1.0	-	-	-
1,2,4-Trichlorobenzene	ND	1.0	-	-	-
2,4,5-Trichlorophenol	ND	1.0	-	-	-
2,4,6-Trichlorophenol	ND	1.0	-	-	-

#### Surrogate Recovery

2-Fluorophenol	19.9		20	100	29-140
Phenol-d5	20.9		20	105	38-148
Nitrobenzene-d5	19.0		20	95	31-152
2-Fluorobiphenyl	18.2		20	91	40-140
2,4,6-Tribromophenol	19.2		20	96	39-150
Terphenyl-d14	17.7		20	89	38-147

(Cont.)

NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/25/16  
**Date Analyzed:** 7/26/16  
**Instrument:** GC21  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124272  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-124272

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	8.24	7.77	10	82	78	47-145	5.81	20
4-Chloro-3-methylphenol	9.25	8.80	10	92	88	22-147	4.93	20
2-Chlorophenol	8.43	8.08	10	84	81	23-134	4.20	20
1,4-Dichlorobenzene	8.31	7.81	10	83	78	20-124	6.21	20
2,4-Dinitrotoluene	8.51	8.06	10	85	81	39-139	5.38	20
4-Nitrophenol	44.7	44.1	50	89	88	1-132	1.41	20
N-Nitrosodi-n-propylamine	8.62	8.73	10	86	87	1-230	1.33	20
Pentachlorophenol	18.0	18.5	20	90	92	14-176	2.92	20
Phenol	8.54	8.02	10	85	80	5-112	6.34	20
Pyrene	8.34	8.07	10	83	81	52-115	3.32	20
1,2,4-Trichlorobenzene	8.74	8.24	10	87	82	44-142	5.79	20
<b>Surrogate Recovery</b>								
2-Fluorophenol	19.6	20.1	20	98	100	29-140	2.50	20
Phenol-d5	21.2	21.9	20	106	109	38-148	3.01	20
Nitrobenzene-d5	21.0	21.1	20	105	106	31-152	0.777	20
2-Fluorobiphenyl	19.6	19.8	20	98	99	40-140	0.812	20
2,4,6-Tribromophenol	19.9	20.9	20	99	104	39-150	4.95	20
Terphenyl-d14	19.5	20.5	20	98	102	38-147	4.84	20



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/26/16  
**Date Analyzed:** 7/26/16  
**Instrument:** GC3  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124309  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124309  
 1607A54-022AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	60.2	40	60	-	100	70-130
MTBE	ND	10.8	5.0	10	-	108	70-130
Benzene	ND	9.44	0.50	10	-	94	70-130
Toluene	ND	9.73	0.50	10	-	97	70-130
Ethylbenzene	ND	10.1	0.50	10	-	101	70-130
Xylenes	ND	30.2	1.5	30	-	101	70-130
<b>Surrogate Recovery</b>							
aaa-TFT	9.18	9.00		10	92	90	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	57.4	57.1	60	ND	96	95	70-130	0.536	20
MTBE	10.5	10.2	10	ND	105	102	70-130	3.09	20
Benzene	9.19	9.48	10	ND	92	95	70-130	3.16	20
Toluene	9.42	9.76	10	ND	94	98	70-130	3.58	20
Ethylbenzene	9.73	10.2	10	ND	97	102	70-130	4.71	20
Xylenes	29.0	30.2	30	ND	97	101	70-130	3.94	20
<b>Surrogate Recovery</b>									
aaa-TFT	9.14	9.29	10		91	93	70-130	1.67	20



## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/27/16  
**Date Analyzed:** 7/27/16  
**Instrument:** GC7  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124406  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124406  
 1607A55-013AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	52.0	40	60	-	87	70-130
MTBE	ND	8.51	5.0	10	-	85	70-130
Benzene	ND	8.44	0.50	10	-	84	70-130
Toluene	ND	8.13	0.50	10	-	81	70-130
Ethylbenzene	ND	8.54	0.50	10	-	85	70-130
Xylenes	ND	26.2	1.5	30	-	87	70-130
<b>Surrogate Recovery</b>							
aaa-TFT	9.92	10.0		10	99	101	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	56.6	56.4	60	ND	94	94	70-130	0	20
MTBE	9.21	8.74	10	ND	92	87	70-130	5.24	20
Benzene	8.81	8.77	10	ND	87	86	70-130	0.463	20
Toluene	8.40	8.60	10	ND	84	86	70-130	2.29	20
Ethylbenzene	8.85	8.84	10	ND	89	88	70-130	0.117	20
Xylenes	27.0	27.1	30	ND	90	90	70-130	0	20
<b>Surrogate Recovery</b>									
aaa-TFT	10.1	9.98	10		101	100	70-130	1.55	20





## Quality Control Report

**Client:** AEI Consultants  
**Date Prepared:** 7/28/16  
**Date Analyzed:** 7/28/16  
**Instrument:** GC3  
**Matrix:** Water  
**Project:** 281939; Zimmerman

**WorkOrder:** 1607A60  
**BatchID:** 124447  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L  
**Sample ID:** MB/LCS-124447  
 1607A71-003BMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	60.0	40	60	-	100	70-130
MTBE	ND	10.5	5.0	10	-	105	70-130
Benzene	ND	9.33	0.50	10	-	93	70-130
Toluene	ND	9.75	0.50	10	-	97	70-130
Ethylbenzene	ND	10.2	0.50	10	-	102	70-130
Xylenes	ND	30.3	1.5	30	-	101	70-130
<b>Surrogate Recovery</b>							
aaa-TFT	9.51	9.27		10	95	93	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	57.9	59.9	60	ND	97	100	70-130	3.36	20
MTBE	9.86	9.92	10	ND	95	95	70-130	0	20
Benzene	9.15	9.20	10	ND	90	91	70-130	0.532	20
Toluene	9.50	9.63	10	ND	93	94	70-130	1.30	20
Ethylbenzene	9.69	10.0	10	ND	97	100	70-130	3.13	20
Xylenes	28.8	29.9	30	ND	96	100	70-130	4.04	20
<b>Surrogate Recovery</b>									
aaa-TFT	9.13	9.26	10		91	93	70-130	1.34	20



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1607A60

ClientCode: AEL

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

**Report to:**

Nate Bricker  
AEI Consultants  
2500 Camino Diablo, Ste.#200  
Walnut Creek, CA 94597  
(925) 283-6000    FAX: (925) 944-2895

Email: nbricker@aeiconsultants.com  
cc/3rd Party: aangel@aeiconsultants.com;  
PO: 113475  
ProjectNo: 281939; Zimmerman

**Bill to:**

Accounts Payable  
AEI Consultants  
2500 Camino Diablo, Ste. #200  
Walnut Creek, CA 94597  
AccountsPayable@AEIConsultants.com

**Requested TAT: 5 days;**

**Date Received: 07/25/2016**

**Date Logged: 07/25/2016**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1607A60-001	MW-7	Water	7/21/2016 11:05	<input type="checkbox"/>	B	C	A										
1607A60-002	IW-1	Water	7/21/2016 11:56	<input type="checkbox"/>	B	C	A										
1607A60-003	MW-6	Water	7/21/2016 15:02	<input type="checkbox"/>	B	C	A										
1607A60-004	MW-5	Water	7/21/2016 13:25	<input type="checkbox"/>	B	C	A										
1607A60-005	MW-4	Water	7/22/2016 9:40	<input type="checkbox"/>	B	C	A										
1607A60-006	MW-3	Water	7/22/2016 11:10	<input type="checkbox"/>	B	C	A										
1607A60-007	MW-2	Water	7/22/2016 12:35	<input type="checkbox"/>	B	C	A										
1607A60-008	MW-1	Water	7/22/2016 13:49	<input type="checkbox"/>	B	C	A										
1607A60-009	BF-5	Water	7/22/2016 15:45	<input type="checkbox"/>	B	C	A										
1607A60-010	BF-1	Water	7/22/2016 16:40	<input type="checkbox"/>	B	C	A										

**Test Legend:**

1	8260B_W	2	8270_W	3	G-MBTEX_W	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Briana Cutino**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



## WORK ORDER SUMMARY

**Client Name:** AEI CONSULTANTS

**QC Level:** LEVEL 2

**Work Order:** 1607A60

**Project:** 281939; Zimmerman

**Client Contact:** Nate Bricker

**Date Logged:** 7/25/2016

**Comments:**

**Contact's Email:** nbricker@aeiconsultants.com

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607A60-001A	MW-7	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 11:05	5 days	Trace	<input type="checkbox"/>	
1607A60-001B	MW-7	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 11:05	5 days	Trace	<input type="checkbox"/>	
1607A60-001C	MW-7	Water	SW8270C (SVOCs)	1	ILA	<input type="checkbox"/>	7/21/2016 11:05	5 days	Trace	<input type="checkbox"/>	
1607A60-002A	IW-1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 11:56	5 days	Trace	<input type="checkbox"/>	
1607A60-002B	IW-1	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 11:56	5 days	Trace	<input type="checkbox"/>	
1607A60-002C	IW-1	Water	SW8270C (SVOCs)	1	ILA	<input type="checkbox"/>	7/21/2016 11:56	5 days	Trace	<input type="checkbox"/>	
1607A60-003A	MW-6	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 15:02	5 days	Trace	<input type="checkbox"/>	
1607A60-003B	MW-6	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 15:02	5 days	Trace	<input type="checkbox"/>	
1607A60-003C	MW-6	Water	SW8270C (SVOCs)	1	ILA	<input type="checkbox"/>	7/21/2016 15:02	5 days	Trace	<input type="checkbox"/>	
1607A60-004A	MW-5	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 13:25	5 days	Trace	<input type="checkbox"/>	
1607A60-004B	MW-5	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/21/2016 13:25	5 days	Trace	<input type="checkbox"/>	
1607A60-004C	MW-5	Water	SW8270C (SVOCs)	1	ILA	<input type="checkbox"/>	7/21/2016 13:25	5 days	Trace	<input type="checkbox"/>	
1607A60-005A	MW-4	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 9:40	5 days	Trace	<input type="checkbox"/>	
1607A60-005B	MW-4	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 9:40	5 days	Trace	<input type="checkbox"/>	
1607A60-005C	MW-4	Water	SW8270C (SVOCs)	1	ILA	<input type="checkbox"/>	7/22/2016 9:40	5 days	Trace	<input type="checkbox"/>	
1607A60-006A	MW-3	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 11:10	5 days	Trace	<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



## WORK ORDER SUMMARY

**Client Name:** AEI CONSULTANTS

**QC Level:** LEVEL 2

**Work Order:** 1607A60

**Project:** 281939; Zimmerman

**Client Contact:** Nate Bricker

**Date Logged:** 7/25/2016

**Comments:**

**Contact's Email:** nbricker@aeiconsultants.com

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1607A60-006B	MW-3	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 11:10	5 days	Trace	<input type="checkbox"/>	
1607A60-006C	MW-3	Water	SW8270C (SVOCs)	1	1LA	<input type="checkbox"/>	7/22/2016 11:10	5 days	Trace	<input type="checkbox"/>	
1607A60-007A	MW-2	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 12:35	5 days	Trace	<input type="checkbox"/>	
1607A60-007B	MW-2	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 12:35	5 days	Trace	<input type="checkbox"/>	
1607A60-007C	MW-2	Water	SW8270C (SVOCs)	1	1LA	<input type="checkbox"/>	7/22/2016 12:35	5 days	Trace	<input type="checkbox"/>	
1607A60-008A	MW-1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 13:49	5 days	Trace	<input type="checkbox"/>	
1607A60-008B	MW-1	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 13:49	5 days	Trace	<input type="checkbox"/>	
1607A60-008C	MW-1	Water	SW8270C (SVOCs)	1	1LA	<input type="checkbox"/>	7/22/2016 13:49	5 days	Trace	<input type="checkbox"/>	
1607A60-009A	BF-5	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 15:45	5 days	Trace	<input type="checkbox"/>	
1607A60-009B	BF-5	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 15:45	5 days	Trace	<input type="checkbox"/>	
1607A60-009C	BF-5	Water	SW8270C (SVOCs)	1	1LA	<input type="checkbox"/>	7/22/2016 15:45	5 days	Trace	<input type="checkbox"/>	
1607A60-010A	BF-1	Water	SW8021B/8015Bm (G/MBTEX)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 16:40	5 days	Trace	<input type="checkbox"/>	
1607A60-010B	BF-1	Water	SW8260B (VOCs)	1	VOA w/ HCl	<input type="checkbox"/>	7/22/2016 16:40	5 days	Trace	<input type="checkbox"/>	
1607A60-010C	BF-1	Water	SW8270C (SVOCs)	1	1LA	<input type="checkbox"/>	7/22/2016 16:40	5 days	Trace	<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.





### Sample Receipt Checklist

Client Name:	<b>AEI Consultants</b>	Date and Time Received:	<b>7/25/2016 15:00</b>
Project Name:	<b>281939; Zimmerman</b>	Date Logged:	<b>7/25/2016</b>
WorkOrder №:	<b>1607A60</b>	Received by:	Briana Cutino
Carrier:	<u>Client Drop-In</u>	Logged by:	Briana Cutino
	Matrix: <u>Water</u>		

#### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

#### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample/Temp Blank temperature	Temp: 2.1°C		NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

(Ice Type: WET ICE )

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

-----  
 Comments: