AEI Consultants

August 27, 2018

SEMIANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT, SECOND SEMESTER 2018

Property Identification:
3635 13th Avenue
Oakland, California 94606

AEI Project No. 338841
ACHCSA Case No. RO0000159

Prepared for:
Mr. Kia Sumner
1069 Oak Hills Road
Lafayette, California 94549

Prepared by:
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Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction Consulting

Construction, Site Stabilization & Stormwater Services

August 27, 2018

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

Subject: Transmittal, Semiannual Groundwater Monitoring and Sampling Report, Second Semester 2018
3635 13th Avenue, Oakland, California 94610
Toxics Case No. RO0000159

Dear Ms. Detterman:

Enclosed is the *Semiannual Groundwater Monitoring and Sampling Report, Second Semester 2018,* prepared at your request for activities at the subject site.

I declare under penalty of perjury, that the information and/or recommendations contained in the attached report 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 do not hesitate to contact Mr. Trent Weise of AEI Consultants at (925) 746-6000.

Sincerely,

Mr. Kia Sumner

Enclosures

TABLE OF CONTENTS

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

Wayne Hung, P.E. (CA-87178)
Project Engineer

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

1. INTRODUCTION

On behalf of Mr. Kia Sumner, AEI Consultants (AEI) has prepared this Semiannual Groundwater Monitoring and Sampling Report for the Second Semester 2018 to document the recent monitoring event performed at 3635 13th Avenue in Oakland, California ("the Site"). Site assessment is being conducted in cooperation with the Alameda County Department of Environmental Health (ACDEH). The sampling activities and results are discussed in detail below.

2. BACKGROUND

The Site is located on the western corner of Excelsior and Thirteenth Avenues in an urban and primarily residential area of the City of Oakland. The Site is currently vacant pending the planned construction of a single-family home. Figure 1 presents the Site location and vicinity. The Site was formerly occupied by a gasoline service station, which ceased operation in 1992. In December 1992, one 250-gallon waste oil underground storage tank (UST), one 500-gallon gasoline UST, and one 1,000-gallon gasoline UST were removed from the Site. Investigation and remediation activities have been performed at the Site to address petroleum hydrocarbons released from the former USTs at the Site.

Seven groundwater monitoring wells have been installed at the Site, MW-1 through MW-7. Monitoring wells MW-1, MW-2, and MW-3 were installed in March 1994. In April 2007, four additional groundwater monitoring wells, MW-4 through MW-7, were installed. Figure 2 presents the Site plan, including the monitoring well locations. Table 1 presents a summary of groundwater monitoring well construction details. Periodic groundwater monitoring has been performed with the groundwater monitoring wells since their installation.

3. STATUS REPORT

This section provides a status report of activities conducted during the second semiannual monitoring event of 2018 and activities proposed for 2019.

3.1 Activities Conducted

Activities performed during the first and second semester of 2018 included:

- Meeting with Mr. Kia Sumner, ACDEH, and Joint Execution Team (JET) on June 27, 2018 to discusses the Project Execution Plan (PEP) for the year 2018-2019, request for a draft revised Corrective Action Plan (CAP) with Updated Site Conceptual Model (CSM), Work Plan for additional groundwater monitoring well installation, and request for continue semi-annual groundwater monitoring and sampling events.
- Performed the second semiannual groundwater monitoring on July 12, 2018.

3.2 Activities Proposed

Activities proposed for the remainder Second Semester of 2018 include:

- Submit a PEP for the year 2018-2019.
- Submit a draft revised CAP including additional groundwater monitoring well installation on or before September 21, 2018.

- Upon approval of the CAP, complete the groundwater well installation prior to the next semi-annual groundwater monitoring event.
- Upon approval of the revised CAP, implement the activities proposed in the CAP.

Activities proposed for the First Semester of 2019 include:

- Perform semi-annual groundwater monitoring in January 2019.

4. MONITORING ACTIVITIES

AEI performed the second semester groundwater sampling event on July 12, 2018, including measuring depth to water and collecting groundwater samples from each of the seven groundwater monitoring wells at the Site as described below.

On July 12, 2019, groundwater elevations were measured in each of the monitoring wells at the Site. The well caps were removed and the wells were allowed to equilibrate with the atmosphere. The depth to water was then measured in each well to ± 0.01 foot using an electronic depth to water meter. Table 2 presents the depth to water measurements collected and the calculated groundwater elevations.

Once depth to water measurements were recorded, groundwater samples were collected from each of the seven groundwater monitoring wells, MW-1 through MW-7. The wells were first purged using disposal bailers to a total volume of approximately three-well volumes. During well purging, groundwater parameters of temperature, pH, specific conductivity, dissolved oxygen (DO), and oxidation-reduction potential (ORP) were measured at approximately five-minute intervals. The wells were purged until either three-well volumes were achieved or significant well dewatering occurred. Visual estimates of turbidity were noted while purging the wells. Once three-well volumes were purged or significant well dewatering was achieved, groundwater samples were collected from each well using a disposal bailer. Samples for volatile analytes were collected into 40 milliliter (mL) hydrochloric acid (HCl) preserved volatile organic analysis (VOA) vials, with zero headspace (no air bubbles). Samples for semi-volatile analytes were collected into 1L amber glass container without preservative. Groundwater samples collected were entered onto the chain-of-custody record and placed in an ice chilled cooler pending transportation to the laboratory. Copies of the field forms for the groundwater monitoring event are included in Appendix A.

The collected groundwater 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 collected was analyzed for Volatile Organic Compounds (VOCs) including methyl-tertiary butyl ether (MTBE), benzene, toluene, ethylbenzene, and total xylenes (collectively "BTEX compounds"); total petroleum hydrocarbons as gasoline (TPH-g) using US EPA Testing Method 8260B, total petroleum hydrocarbons as diesel (TPH-d) and motor oil (TPH-mo) using US EPA Testing Method 8015M, with silica gel cleanup; and for Semi-Volatile Organic Compounds (SVOCs) using US EPA Testing Method SW8270C.

Purged groundwater generated during the sampling event was stored onsite in two sealed, labeled, department of transportation (DOT) approved 55-gallon drums.

5. SUMMARY OF RESULTS

This section provides a summary of the results of the groundwater monitoring performed during the second semester monitoring event.

5.1 Groundwater Level Elevations

Groundwater elevations measured during the event were generally consistent with previous monitoring events. Groundwater elevation data is summarized in Table 2. Groundwater elevation contours are shown on Figure 3. Groundwater elevations are generally consistent with previous monitoring events, with groundwater flow direction generally towards the south-southwest.

5.2 Groundwater Sample Results

Table 3 presents a summary of compounds detected in groundwater samples collected and analyzed during the second semester groundwater monitoring event for 2018. Table 4 presents a summary of current and historical results for select compounds. Petroleum hydrocarbons continue to be detected in five of the seven groundwater monitoring wells. Consistent with previous groundwater monitoring events, no petroleum hydrocarbons were detected at or above their respective laboratory method detection limits in MW-1 and MW-3. The concentrations of petroleum hydrocarbons detected were generally consistent with historical observations and can be summarized as follows:

- TPH-g was detected in five of the seven groundwater samples collected and analyzed, at concentrations ranging between 520 micrograms per liter (µg/L) to 5,000 µg/L.
- TPH-d was detected in five of the seven groundwater samples collected and analyzed, at concentrations ranging between 120 µg/L to 14,000 µg/L.
- Benzene was detected in five of the seven groundwater samples collected and analyzed, observed at concentrations ranging from 55 µg/L to 2,600 µg/L.
- Methyl tert butyl ether (MTBE) was detected in five of the seven groundwater samples collected and analyzed, observed at concentrations ranging between 0.72 µg/L to 110 µg/L.

During the meeting on June 27, 2018, ACDEH requested to run full-scan SVOCs for this groundwater monitoring event. The observed concentrations of SVOCs were compared to the Environmental Screening Levels (ESLs) promulgated by the San Francisco Bay Regional Water Quality Control Board. However, for many SVOCs there have not been an ESL nor a Risk Screening Level (RSL) developed by the US EPA. The SVOCs detections are presented in Table 3 and can be summarized as follow:

- Bis (2-ethylhexyl) phthalate was detected in the groundwater sample collected from monitoring well MW-2 at a concentration of 14 µg/L. The ESL value for bis (2-ethylhexyl) phthalate for residential shallow groundwater is not established. The RSL for tap water is 5.6 µg/L.
- 4-chloroaniline was detected in the groundwater sample collected from monitoring well MW 4 at a concentration of 45 µg/L. There is no ESL value for 4-chloroaniline for residential shallow groundwater. The RSL for tap water is 0.37 µg/L.

- Hexachloroethane was detected in the groundwater sample collected from monitoring well MW-4 at a concentration of 100 µg/L. There is no ESL nor RSL value for hexachloroethane.
- 2-Methyl naphthalene was detected in the groundwater sample collected from monitoring well MW-2 and MW-4 at concentrations of 4.3 and 6.1 µg/L, respectively. There is no ESL nor RSL value for 2-methyl naphthalene.
- Naphthalene was detected from in the groundwater samples collected from monitoring wells MW-2, MW4, and MW-6 at concentrations of 15, 140, and 33 µg/L, respectively. The ESL value for naphthalene for residential shallow groundwater is 20 µg/L for the protection of the vapor intrusion pathway. However, soil gas sampling has been performed at the Site and naphthalene was not detected at or above the residential ESL of 41 µg/m^3, for the protection of indoor air. Therefore, the naphthalene present in groundwater does not appear to pose an unacceptable risk to indoor air quality.
- Nitrobenzene was detected in the groundwater sample collected from monitoring well MW-4 at a concentration of 6.9 µg/L. The ESL value for nitrobenzene for residential shallow groundwater is not established. The RSL for tap waters is 0.14 µg/L.

Overall, the concentrations detected in SVOCs do not exceed their respective ESL values except naphthalene from MW-4 and MW-6. Some of the SVOCs exceeded the tap water RSL, although this is not a complete pathway at the Site. In the directive letter dated July 17, 2018, ACDEH requested groundwater samples collected from MW-1 and MW-7 be analyzed for full scan SVOCs and VOCs due to location of the two wells directly downgradient of the former waste oil UST. AEI will continue to monitor the VOCs and SVOCs concentrations in the groundwater samples collected from the two wells as requested in the future groundwater monitoring events.

Figures 4 and 5 present groundwater concentrations and isoconcentration contours for TPHg and benzene, respectively. In general, the extent of TPHg and benzene in groundwater is stable or decreasing. Laboratory analytical reports and chain of custody documentation are included in Appendix B.

6. REFERENCES

The regulatory record for this Site can be found on the State of California GeoTracker Website at https://geotracker.waterboards.ca.gov/esi/view_submittals.asp?global_id=T0600100274

TABLES

AEI Consultants

Table 1

Summary of Well Construction Details

3635 13th Avenue, Oakland, California

Well ID	Date Installed	Casing Elevation (feet NAVD 88)	Nominal Diameter (inch)	Total Depth (feet bgs)	Screen Interval (feet bgs)	Sand Pack Interval (feet bgs)	Bentonite Seal Interval (feet bgs)	Cement Grout Interval (feet bgs)	Casing Material
MW-1	03/24/94	197.33	2	25	12 - 25	11 - 25	10 - 11	0.5 - 10	SCH40 PVC
MW-2	03/24/94	199.01	2	36	16 - 36	15 - 36	14 - 15	0.5 - 14	SCH40 PVC
MW-3	03/24/94	201.57	2	36.5	15.5 - 36	14 - 36.5	13.5 - 14.5	0.5 - 13.5	SCH40 PVC
MW-4	09/07/07	200.29	2	22	17 - 22	16 - 22	15 - 16	0.5 - 15	SCH40 PVC
MW-5	09/07/07	198.61	2	22	17 - 22	16 - 22	15 - 16	0.5 - 15	SCH40 PVC
MW-6	09/07/07	200.29	2	22	17 - 22	16 - 22	15 - 16	0.5 - 15	SCH40 PVC
MW-7	11/03/08	197.67	2	22	17 - 22	16 - 22	15 - 16	1 - 15	SCH40 PVC

Notes/Abbreviations

bgs = below ground surface

SCH40 PVC = schedule 40 polyvinyl chloride

NM = Not Measured

NAVD 88 = North American Vertical Datum of 1988

*Monitoring Well elevation for MW-1 through MW-7 was resurveyed on 1/25/2017

Table 2

Summary of Groundwater Elevation Measurements

3635 13th Avenue, Oakland, California

Well ID	Date	Well TOC Elevation (feet NAVD 88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
MW-1	11/22/94	194.75	10.92	183.83
	02/23/95		10.58	184.17
	05/24/95		10.94	183.81
	08/18/95		14.52	180.23
	02/07/96		4.43	190.32
	09/06/96		13.60	181.15
	06/19/97		13.07	181.68
	01/24/02		9.53	185.22
	07/15/03		12.85	181.90
	10/10/03		14.58	180.17
	04/06/04		10.92	183.83
	07/09/04		14.34	180.41
	10/08/04		15.30	179.45
	04/02/07		12.19	182.56
	07/02/07		13.28	181.47
	10/03/07		17.05	177.70
	01/09/08	197.28	6.74	190.54
	04/04/08		13.16	184.12
	07/07/08		15.84	181.44
	10/16/08		17.54	179.74
	1/29/2013 [1]		11.36	185.92
	12/16/13		19.04	178.24
	04/17/14		10.11	187.17
	11/04/14		19.27	178.01
	05/29/15		16.07	181.21
	11/20/15		NM	NM
	05/24/16		13.79	183.49
	12/05/16	197.33	14.30	183.03
	05/30/17		12.89	184.44
	11/29/17		13.56	183.77
	07/12/18		**15.72**	**181.61**
MW-2	11/22/94	196.44	12.54	183.90
	02/23/95		12.35	184.09
	05/24/95		12.11	184.33
	08/18/95		16.25	180.19
	02/07/96		9.34	187.10
	09/06/96		15.22	181.22
	06/19/97		13.33	183.11
	01/24/02		9.72	186.72
	07/15/03		12.42	184.02
	10/10/03		13.79	182.65
	04/06/04		10.55	185.89
	07/09/04		13.78	182.66
	10/08/04		14.78	181.66
	04/02/07		11.32	185.12

Table 2

Summary of Groundwater Elevation Measurements

3635 13th Avenue, Oakland, California

Well ID	Date	Well TOC Elevation (feet NAVD 88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
MW-2	07/02/07		13.18	183.26
	10/03/07		16.71	179.73
	01/09/08	198.93	8.48	190.45
	04/04/08		12.60	186.33
	07/07/08		15.49	183.44
	10/16/08		17.22	181.71
	1/29/2013 [1]		12.89	186.04
	12/16/13		18.72	180.21
	04/17/14		10.30	188.63
	11/04/14		18.65	180.28
	05/29/15		15.57	183.36
	11/20/15		NM	NM
	05/24/16		13.32	185.61
	12/05/16	199.01	13.54	185.47
	05/30/17		12.40	186.61
	11/29/17		12.93	186.08
	07/12/18		**15.39**	**183.62**
MW-3	11/22/94	198.93	11.53	187.40
	02/23/95		11.89	187.04
	05/24/95		12.71	186.22
	08/18/95		16.14	182.79
	02/07/96		6.22	192.71
	09/06/96		13.51	185.42
	06/19/97		12.46	186.47
	01/24/02		10.08	188.85
	07/15/03		12.45	186.48
	10/10/03		14.00	184.93
	04/06/04		10.78	188.15
	07/09/04		14.14	184.79
	10/08/04		14.99	183.94
	04/02/07		11.87	187.06
	07/02/07		14.45	184.48
	10/03/07		17.10	181.83
	01/09/08	201.46	9.42	192.04
	04/04/08		15.16	186.30
	07/07/08		15.63	185.83
	10/16/08		17.53	183.93
	1/29/2013 [1]		12.15	189.31
	12/16/13		19.20	182.26
	04/17/14		12.56	188.90
	11/04/14		19.17	182.29
	05/29/15		16.33	185.13
	11/20/15		NM	NM
	05/24/16		13.98	187.48
	12/05/16	201.57	13.03	188.54
	05/30/17		12.48	189.09
	11/29/17		13.05	188.52
	07/12/18		**15.80**	**185.77**

Table 2

Summary of Groundwater Elevation Measurements

3635 13th Avenue, Oakland, California

Well ID	Date	Well TOC Elevation (feet NAVD 88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
MW-4	10/03/07	200.23	17.21	183.02
	01/09/08		9.20	191.03
	04/04/08		13.63	186.60
	07/07/08		16.18	184.05
	10/16/08		17.81	182.42
	1/29/2013 [1]		11.66	188.57
	12/16/13		20.44	179.79
	04/17/14		10.97	189.26
	11/04/14		20.78	179.45
	05/29/15		16.53	183.70
	11/20/15		NM	NM
	05/24/16		15.30	184.93
	12/05/16	200.29	17.25	183.04
	05/30/17		13.55	186.74
	11/30/17		14.59	185.70
	07/12/18		**16.50**	**183.79**
MW-5	10/03/07	198.52	17.44	181.08
	01/09/08		10.01	188.51
	04/04/08		11.78	186.74
	07/07/08		15.53	182.99
	10/16/08		17.89	180.63
	1/29/2013 [1]		13.21	185.31
	12/16/13		18.65	179.87
	04/17/14		16.32	182.20
	11/04/14		19.53	178.99
	05/29/15		16.37	182.15
	11/20/15		NM	NM
	05/24/16		13.91	184.61
	12/05/16	198.61	14.48	184.13
	05/30/17		12.84	185.77
	11/29/17		13.82	184.79
	07/12/18		**15.99**	**182.62**
MW-6	10/03/07	200.20	18.46	181.74
	01/09/08		11.93	188.27
	04/04/08		15.69	184.51
	07/07/08		14.84	185.36
	10/16/08		18.95	181.25
	1/29/2013 [1]		17.62	182.58
	12/16/13		19.60	180.60
	04/17/14		17.38	182.82
	11/04/14		18.73	181.47
	05/29/15		15.26	184.94
	11/20/15		NM	NM
	05/24/16		13.36	186.84
	12/05/16	200.29	13.21	187.08
	05/30/17		12.56	187.73
	11/29/17		13.60	186.69
	07/12/18		**15.61**	**184.68**

Table 2

Summary of Groundwater Elevation Measurements

3635 13th Avenue, Oakland, California

Well ID	Date	Well TOC Elevation (feet NAVD 88)	Depth to Water (feet BTOC)	Groundwater Elevation (feet msl)
MW-7	1/29/2013 [1]	NM	19.07	NM
	12/16/13		19.49	NM
	04/17/14		10.54	NM
	11/04/14		20.32	NM
	05/29/15		15.71	NM
	11/20/15		NM	NM
	05/24/16		18.09	NM
	12/05/16	197.67	15.05	182.62
	05/30/17		12.48	185.19
	11/29/17		13.41	184.26
	07/12/18		**15.35**	**182.32**

Notes/Abbreviations

ft msl = feet above mean sea level

BTOC = Below top of well casing

NM = Not Measured

NAVD 88 = North American Vertical Datum of 1988

Table 3

Summary of Compounds Detected - July 2018

3635 13th Avenue, Oakland, California

Sample Location	Date	Analyte	Result	Units
MW-1	07/12/18	MTBE	0.72	µg/L
MW-2	07/12/18	Benzene	210	µg/L
		Ethylbenzene	50	µg/L
		Toluene	14	µg/L
		Xylenes	48	µg/L
		TPH-g	3,300	µg/L
		TPH-d	14,000	µg/L
MW-3	07/12/18	No analytes detected		
MW-4	07/12/18	Benzene	420	µg/L
		Ethylbenzene	480	µg/L
		Toluene	67	µg/L
		Xylenes	210	µg/L
		TPH-g	3,900	µg/L
		TPH-d	1,600	µg/L
MW-5	07/12/18	Benzene	55	µg/L
		Ethylbenzene	18	µg/L
		TPH-g	520	µg/L
		TPH-d	120	µg/L
MW-6	07/12/18	Benzene	140	µg/L
		Xylenes	19	µg/L
		TPH-g	3,800	µg/L
		TPH-d	360	µg/L
MW-7	07/12/18	Benzene	2,600	µg/L
		Ethylbenzene	150	µg/L
		TPH-g	5,000	µg/L
		TPH-d	590	µg/L
		t-Butyl alcohol (TBA)	650	µg/L

Abbreviations:

µg/L = micrograms per liter

TPH-g = Total Petroleum Hydrocarbons as gasoline

TPH-d = Total Petroleum Hydrocarbons as diesel

MTBE = Methyl tertiary butyl ether

Table 4

Summary of Groundwater Analytical Results

3635 13th Avenue, Oakland, California

Sample ID	Date Sampled	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	SVOCs					
									Bis (2-ethylhexyl) Phthalate (µg/L)	4-chloroaniline (µg/L)	Hexachloroethane (µg/L)	2-Methyl naphthalene (µg/L)	Naphthalene (µg/L)	Nitrobenzene (µg/L)
MW - 1	11/22/94	210	<50	-	<0.5	<0.5	<0.5	2.3	-	-	-	-	-	-
	02/23/95	140	<50	-	<0.5	<0.5	0.6	1.5	-	-	-	-	-	-
	05/24/95	<50	<50	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	08/18/95	2800	<50	-	25	6.2	22	30	-	-	-	-	-	-
	02/07/96	<50	<50	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	09/06/96	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	06/19/97	630	400	15	25	9.7	100	14	-	-	-	-	-	-
	01/24/02	60	<50	<5.0	3.3	2.8	2.0	6.0	-	-	-	-	-	-
	07/15/03	87	<50	<5.0	15	4.9	3.3	9.2	-	-	-	-	-	-
	10/10/03	81	110	<5.0	<0.5	0.62	0.57	0.5	-	-	-	-	-	-
	04/06/04	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	07/09/04	130	80	<35	<0.5	<0.5	2.8	0.78	-	-	-	-	-	-
	10/08/04	260	120	24	3.0	2.9	8.3	10	-	-	-	-	-	-
	04/02/07	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	07/02/07	150	79	<25	<0.5	1.0	<0.5	<0.5	-	-	-	-	-	-
	10/03/07	<50	<50	5.8	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	01/09/08	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	04/04/08	130	-	<10	<0.5	1.2	22	0.93	-	-	-	-	-	-
	07/07/08	<50	<50	11	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	10/16/08	70	<50	6.3	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	1/29/2013 [1]	<50	<50	<5.0	3.6	<0.5	<0.5	<0.5	-	-	-	-	-	-
	12/16/13	110	-	46	<0.5	1.2	0.7	<0.5	-	-	-	-	-	-
	04/17/14	<50	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	11/04/14	97	-	1.1	21	<0.5	3.2	2.3	-	-	-	-	-	-
	05/29/15	<50	-	<0.5	<0.5	<0.5	1.1	<0.5	-	-	-	-	-	-
	11/20/15	120	<50	0.62	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	05/24/16	180	68	5.8	<0.50	<0.50	12	2.7	-	-	-	-	-	-
	11/30/16	<50	<50	3.6	<0.50	<0.50	1.6	<0.50	-	-	-	-	-	-
	05/30/17	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	11/29/17	<50	<50	8.5	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	07/12/18	**<50**	**<50**	**0.72**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.43**	**<4.3**	**<2.1**	**<2.1**	**<2.1**	**<2.1**
MW - 2	11/22/94	11,000	<50	-	35	21	7	50	-	-	-	-	-	-
	02/23/95	4,000	<50	-	<0.5	<0.5	3	6	-	-	-	-	-	-
	05/24/95	8,600	<50	-	95	37	37	70	-	-	-	-	-	-
	08/18/95	7,200	<50	-	43	21	21	71	-	-	-	-	-	-
	02/07/96	11,000	<50	-	17	9	9	25	-	-	-	-	-	-
	09/06/96	15,000	1,900	ND	4,300	920	460	1,600	-	-	-	-	-	-
	06/19/97	26,000	2,900	<200	5,300	1,500	910	3,200	-	-	-	-	-	-
	01/24/02	34,000	5,300	<200	3,100	1,100	1,100	2,900	-	-	-	-	-	-
	07/15/03	18,000	6,600	<1000	2,300	310	690	1,600	-	-	-	-	-	-
	10/10/03	19,000	1,800	<500	2,700	460	850	1,800	-	-	-	-	-	-
	04/06/04	6,900	1,300	<200	1,100	100	380	780	-	-	-	-	-	-
	07/09/04	17,000	4,400	<450	2,800	240	710	1,300	-	-	-	-	-	-
	10/08/04	6,900	890	<150	1,500	240	340	670	-	-	-	-	-	-
	04/02/07	21,000	4,300	<450	2,000	300	1,000	1,700	-	-	-	-	-	-
	07/02/07	5,100	750	<180	260	21	320	370	-	-	-	-	-	-

Table 4

Summary of Groundwater Analytical Results

3635 13th Avenue, Oakland, California

Sample ID	Date Sampled	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	SVOCs					
									Bis (2-ethylhexyl) Phthalate (µg/L)	4-chloroaniline (µg/L)	Hexachloroethane (µg/L)	2-Methyl naphthalene (µg/L)	Naphthalene (µg/L)	Nitrobenzene (µg/L)
MW - 2	10/03/07	8,600	1,500	<300	1,700	140	520	790	-	-	-	-	-	-
	01/09/08	38,000	48,000	<400	3,000	380	1,200	1,900	-	-	-	-	-	-
	04/04/08	5,100	-	<130	1,000	72	120	330	-	-	-	-	-	-
	07/07/08	5,600	920	<130	930	52	250	320	-	-	-	-	-	-
	10/16/08	12,000	770	<250	1,400	110	400	470	-	-	-	-	-	-
	1/29/2013 [1]	6,600	1,100	<250	540	110	430	460	-	-	-	-	-	-
	12/16/13	3,600	-	20	160	20	120	129	-	-	-	-	-	-
	04/17/14	4,800	-	26	500	16	270	97	-	-	-	-	-	-
	11/04/14	2,100	-	25	150	27	120	84	-	-	-	-	-	-
	05/29/15	38,000	-	24	1,300	150	530	316	-	-	-	-	-	-
	11/20/15	780	290	12	17	2.8	28	22	-	-	-	-	-	-
	05/24/16	590	360	19	120	5.7	18	8.9	-	-	-	-	-	-
	11/30/16	2,400	3,900	10	270	12	140	57	-	-	-	-	-	-
	05/30/17	2,300	1,100	29	360	17	130	54	-	-	-	-	-	-
	11/29/17	1,500	980	16	120	3.6	36	13	-	-	-	-	-	-
	07/12/18	**3,300**	**14,000**	**19**	**210**	**14**	**50**	**48**	**14**	**<4.2**	**<2.1**	**4.3**	**15**	**<10**
MW - 3	11/22/94	200	<50	-	<0.5	<0.5	<0.5	2	-	-	-	-	-	-
	02/23/95	1500	<50	-	6.6	6.4	4.2	13	-	-	-	-	-	-
	05/24/95	710	<50	-	2.5	3.2	3.1	16	-	-	-	-	-	-
	08/18/95	310	<50	-	3.1	2.1	2.2	11	-	-	-	-	-	-
	02/07/96	400	<50	-	1.4	2.5	2.2	7	-	-	-	-	-	-
	09/06/96	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	06/19/97	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	01/24/02	58	<50	<5.0	4	2.7	2.3	6.7	-	-	-	-	-	-
	07/15/03	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	10/10/03	350	75	<5.0	14	16	23	60	-	-	-	-	-	-
	04/06/04	<50	<50	<5.0	<0.5	1.7	<0.5	1.7	-	-	-	-	-	-
	07/09/04	260	<50	<5.0	12	13	14	36	-	-	-	-	-	-
	10/08/04	450	76	<5.0	21	22	30	86	-	-	-	-	-	-
	04/02/07	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	07/02/07	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	10/03/07	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	01/09/08	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	04/04/08	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	07/07/08	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	10/16/08	<50	<50	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	1/29/2013 [1]	63	<50	<5.0	7.8	<0.5	3.1	2.1	-	-	-	-	-	-
	12/16/13	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	04/17/14	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	11/04/14	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	05/29/15	<50	-	<5.0	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-
	11/20/15	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	05/24/16	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	11/30/16	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	05/30/17	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	11/29/17	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-
	07/12/18	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<4.2**	**<4.2**	**<2.1**	**<2.1**	**<2.1**	**<2.1**

Table 4

Summary of Groundwater Analytical Results

3635 13th Avenue, Oakland, California

Sample ID	Date Sampled	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	SVOCs					
									Bis (2-ethylhexyl) Phthalate (µg/L)	4-chloroaniline (µg/L)	Hexachloroethane (µg/L)	2-Methyl naphthalene (µg/L)	Naphthalene (µg/L)	Nitrobenzene (µg/L)
MW - 4	10/03/07	11,000	2,000	<1,500	1,100	87	<17	1,300	-	-	-	-	-	-
	01/09/08	17,000	2,600	<900	1,300	120	580	790	-	-	-	-	-	-
	04/04/08	17,000	-	<1,500	1,600	200	500	1,300	-	-	-	-	-	-
	07/07/08	18,000	3,100	<1,200	1,400	190	930	1,200	-	-	-	-	-	-
	10/16/08	25,000	2,000	<1,500	1,200	110	490	890	-	-	-	-	-	-
	1/29/2013 [1]	18,000	3,200	<700	1,500	170	1,100	1,100	-	-	-	-	-	-
	12/16/13	4,200	-	43	370	26	130	100	-	-	-	-	-	-
	04/17/14	7,300	-	45	550	55	540	305	-	-	-	-	-	-
	11/04/14	4,800	-	33	220	21	190	66	-	-	-	-	-	-
	05/29/15	12,000	-	49	600	78	740	337	-	-	-	-	-	-
	11/20/15	740	120	17	45	<2.5	17	6.2	-	-	-	-	-	-
	05/24/16	870	410	56	<5.0	<5.0	<5.0	47	-	-	-	-	-	-
	11/30/16	2,100	810	57	280	13	73	20	-	-	-	-	-	-
	05/30/17	2,900	1,600	32	530	60	380	200	-	-	-	-	-	-
	11/29/17	4,100	630	23	360	35	190	76	-	-	-	-	-	-
	07/12/18	**3,900**	**1,600**	**20**	**420**	**67**	**480**	**210**	**<8.3**	**45**	**100**	**6.1**	**140**	**6.9**
MW - 5	10/03/07	8,800	680	<250	2,800	74	100	190	-	-	-	-	-	-
	01/09/08	7,400	580	<350	2,000	5.6	93	29	-	-	-	-	-	-
	04/04/08	43,000	-	<500	12,000	2,800	670	2,500	-	-	-	-	-	-
	07/07/08	20,000	1,000	<500	6,800	190	280	380	-	-	-	-	-	-
	10/16/08	13,000	490	<250	3,500	10	93	30	-	-	-	-	-	-
	1/29/2013 [1]	5,300	470	<130	1,300	11	170	14	-	-	-	-	-	-
	12/16/13	1,300	-	86	240	<2.5	5.7	<2.5	-	-	-	-	-	-
	04/17/14	2,100	-	91	400	<2.5	30	<2.5	-	-	-	-	-	-
	11/04/14	470	-	59	1.1	<0.5	0.9	<0.5	-	-	-	-	-	-
	05/29/15	2,200	-	39	480	<3.1	48	<3.1	-	-	-	-	-	-
	11/20/15	200	<50	74	<1.2	<1.2	<1.2	<1.2	-	-	-	-	-	-
	05/24/16	4,200	210	42	1,500	65	150	440	-	-	-	-	-	-
	11/30/16	99	<50	34	12	<0.50	<0.50	<0.50	-	-	-	-	-	-
	05/30/17	320	52	17	210	<0.50	9.2	6.3	-	-	-	-	-	-
	11/29/17	140	<50	13	4.6	<0.50	0.82	<0.50	-	-	-	-	-	-
	07/12/18	**520**	**120**	**36**	**55**	**<2.5**	**18**	**<2.5**	**<21**	**<21**	**<10**	**<10**	**<10**	**<10**
MW - 6	10/03/07	11,000	1,400	<1,200	1,400	64	74	320	-	-	-	-	-	-
	01/09/08	8,400	1,300	<400	790	17	210	51	-	-	-	-	-	-
	04/04/08	6,100	-	<500	630	52	430	130	-	-	-	-	-	-
	07/07/08	6,200	1,200	<300	500	11	250	53	-	-	-	-	-	-
	10/16/08	3,700	600	180	220	4.4	93	15	-	-	-	-	-	-
	1/29/2013 [1]	2,300	440	<130	180	18	79	40	-	-	-	-	-	-
	12/16/13	1,400	-	170	100	1.9	9.0	5.0	-	-	-	-	-	-
	04/17/14	740	-	97	49	1.1	22	0.9	-	-	-	-	-	-
	11/04/14	1,300	-	140	52	1.0	3.2	1.4	-	-	-	-	-	-
	05/29/15	2,600	-	140	310	13	25	42.7	-	-	-	-	-	-
	11/20/15	690	130	92	11	<5.0	<5.0	<5.0	-	-	-	-	-	-
	05/24/16	1,200	420	80	130	16	16	30	-	-	-	-	-	-
	11/30/16	390	110	73	41	<1.2	<1.2	<1.2	-	-	-	-	-	-
	05/30/17	370	140	140	33	<2.5	<2.5	<2.5	-	-	-	-	-	-
	11/29/17	940	130	100	150	6.4	<2.5	8.9	-	-	-	-	-	-
	07/12/18	**3,800**	**360**	**110**	**140**	**<10**	**<10**	**19**	**<8.3**	**<8.3**	**<4.2**	**<4.2**	**33**	**<4.2**

Table 4

Summary of Groundwater Analytical Results

3635 13th Avenue, Oakland, California

Sample ID	Date Sampled	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	SVOCs					
									Bis (2-ethylhexyl) Phthalate (µg/L)	4-chloroaniline (µg/L)	Hexachloroethane (µg/L)	2-Methyl naphthalene (µg/L)	Naphthalene (µg/L)	Nitrobenzene (µg/L)
MW - 7	1/29/2013 [1]	42,000	2,300	<900	14,000	140	1,100	800	-	-	-	-	-	-
	12/16/13	21,000	-	<50	7,200	<50	280	164	-	-	-	-	-	-
	04/17/14	11,000	-	23	3,900	22	290	157	-	-	-	-	-	-
	11/04/14	8,400	-	<25	4,100	<25	260	<25	-	-	-	-	-	-
	05/29/15	6,800	-	<20	2,700	<20	240	24	-	-	-	-	-	-
	11/20/15	5,600	390	<50	1,600	<50	<50	<50	-	-	-	-	-	-
	05/24/16	3,000	620	<250	4,600	<250	<250	<250	-	-	-	-	-	-
	11/30/16	5,500	870	<100	4,400	<100	170	<100	-	-	-	-	-	-
	05/30/17	2,200	320	<25	1,700	<25	96	<25	-	-	-	-	-	-
	11/29/17	5,400	690	<100	4,700	<100	230	<100	-	-	-	-	-	-
	07/12/18	**5,000**	**590**	**<25**	**2,600**	**<25**	**150**	**<25**	**<41**	**<41**	**<21**	**<21**	**<21**	**<21**

Notes / Abbreviations:

SVOCs - Semi-Volatile Organic Compounds

MTBE - Methyl tert butyl ether

TPH-d - Total petroleum hydrocarbons (TPH) as diesel

TPH-g - Total petroleum hydrocarbons (TPH) as gasoline

- = sample not analyzed by this method

< = Less than reporting limit

[1] = well additionally analyzed for TPH as motor oil and hexachrome; all below laboratory detection limits.

ug/L - micrograms per liter

Bold = Most recent sample

FIGURES

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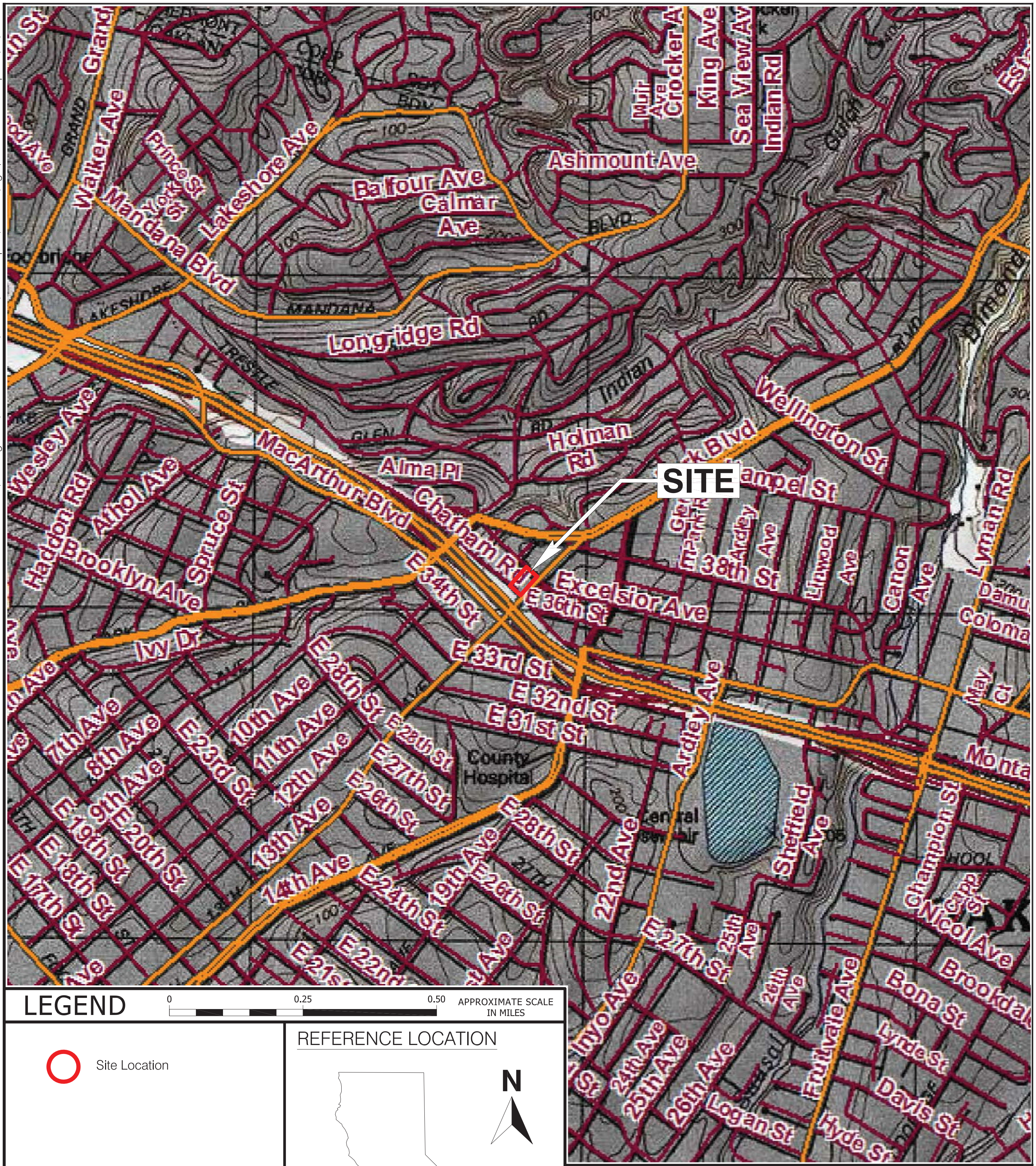
C:\Drawing Files\AEI Consultants\338841\GWM Report\2017-07\Fig 1, Site Location Map - 07/27/2017

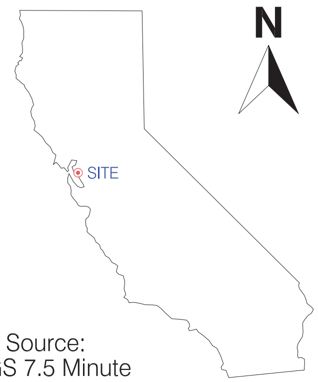


LEGEND

0 0.25 0.50 APPROXIMATE SCALE IN MILES

Site Location

REFERENCE LOCATION



Map Source:
USGS 7.5 Minute
Topographic Quadrangle Map,
Oakland East, CA - 1997

AEI Consultants

2500 Camino Diablo, Walnut Creek, California

SITE LOCATION MAP

Kia Sumner
3635 13th Avenue
Oakland, California

FIGURE 1
Project No. 338841

C:\Drawing Files\AEI Consultants\338841\GWM Report\2017-07\Fig 2, Site Map - 07/27/2017

ADJACENT
RESIDENTIAL APARTMENT

ADJACENT
RESIDENTIAL BUILDING

SIDEWALK

EXCELSIOR AVENUE

FORMER 250 GALLON
WASTE OIL UST

SG-2
SG-1
MW-3
MW-4
SG-9
SG-4
FORMER DISPENSER ISLAND
SG-6
SG-7
SG-5
MW-1
FORMER 1,000 GALLON UST
SG-8
MW-5
MW-6
SG-3
MW-7
MW-2

SIDEWALK

SB-12
SB-11
FORMER 500 GALLON UST

13th STREET

STOP

SB-15
SB-14
SB-13

SIDEWALK

SIDEWALK

OAKLAND FIRE DEPARTMENT
ENGINE No. 16

LEGEND

- MW-1 Monitoring Well Location
- SG-1 Soil Gas Probe Location
- SB-1 Soil Boring Location
- Proposed Building Location
- x Fence

0 15 30
APPROXIMATE SCALE
IN FEET

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

SITE MAP

Kia Sumner
3635 13th Avenue
Oakland, California

FIGURE 2
Project No. 338841

ADJACENT
RESIDENTIAL APARTMENT

ADJACENT
RESIDENTIAL BUILDING

SIDEWALK

EXCELSIOR AVENUE

FORMER 250 GALLON
WASTE OIL UST

SG-2
SG-1
SG-9
SG-4
SG-6
SG-7
SG-8
SG-5
SG-3

MW-1
(183.77)
MW-2
(183.62)
MW-3
(185.77)
MW-4
(183.79)
MW-5
(182.62)
MW-6
(184.68)
MW-7
(182.32)

182
183
184
185
188

0.053 ft/ft

FORMER DISPENSER ISLAND

FORMER 1,000 GALLON UST

FORMER 500 GALLON UST

SIDEWALK

SB-12
SB-11

13th STREET

STOP

SB-15
SB-14
SB-13

SIDEWALK

SIDEWALK

OAKLAND FIRE DEPARTMENT
ENGINE No. 16

N

LEGEND

- MW-1 — Monitoring Well Location
- SG-1 — Soil Gas Probe Location
- SB-1 — Soil Boring Location
- Proposed Building Location
- x — Fence
- Approximate Groundwater Flow Direction
- 185 — Groundwater Elevation Contour

0 15 30

APPROXIMATE SCALE
IN FEET

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

GROUNDWATER ELEVATION CONTOURS JULY 12, 2018

Kia Sumner
3635 13th Avenue
Oakland, California

FIGURE 3
Project No. 338841

C:\Drawing Files\AEI Consultants\338841\GWM & Sampling Report\2018 2nd Semester\Fig 4, TPHg Concentration In GW 2nd Semester 2018 - 08/24/2018

ADJACENT
RESIDENTIAL APARTMENT

ADJACENT
RESIDENTIAL BUILDING

SIDEWALK

EXCELSIOR AVENUE

FORMER 250 GALLON
WASTE OIL UST

FORMER DISPENSER ISLAND

FORMER 1,000 GALLON UST

FORMER 500 GALLON UST

SWN
HLN
HLS
SWW
EWE
SWS
EW12
EB19
SB-25
SB-24
SG-4
SG-5
SG-6
SG-7
SG-8
SG-9
SG-1
SG-2
SG-3
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
SB-7
SB-8
SB-9
SB-10
SB-11
SB-12
SB-13
SB-14
SB-14B
SB-15
SB-16
SB-17
SB-19
SB-20
MW-1
<50
MW-2
3,300
MW-3
<50
MW-4
(SB-18)
3,900
MW-5
(SB-22)
520
MW-6
(SB-21)
3,800
MW-7
(SB-23)
5,000

100
1,000
10,000

13th AVENUE

SIDEWALK

SIDEWALK

STOP

EXCELSIOR AVENUE

EXCELSIOR AVENUE

OAKLAND FIRE DEPARTMENT
ENGINE No. 16

N

LEGEND

- SB-24 — Soil Boring Location (September 13, 2017)
- MW-1 — Groundwater Monitoring Well Location
- SB-1 — Soil Boring Location (April 2007)
- SB-1 — Soil Boring Location (August 21 and October 9-10 2003)
- SB-1 — Soil Boring Location (November-1997 and January 1998)
- SG-1 — Soil Gas Probe Location
- SWS — Soil Sample Collected From Soil Excavation
- Approximate Excavation Limits
- Proposed Building Location
- x — Fence
- 1,000 — TPH-g Isoconcentration Contour in µg/L (Dashed Where Inferred)

Notes:

- All Concentrations in µg/L
- µg/L - micrograms per liter
- TPH-g - Total Petroleum Hydrocarbons as Gasoline
- Data for MW-1 through MW7 was collected during the July 2018 groundwater monitoring event

Base Map Sources:
Google Earth, Image Date 3/11/2017

0 15 30
APPROXIMATE SCALE
IN FEET

AEI Consultants
2500 Camino Diablo
Walnut Creek, California

TPHg CONCENTRATION IN GROUNDWATER SECOND SEMESTER 2018

Kia Sumner
3635 13th Avenue
Oakland, California

FIGURE 4
Project No. 338841

C:\Drawing Files\AEI Consultants\338841\GWM & Sampling Report\2018 2nd Semester\Fig 5. Benzene Concentration In GW 2nd Semester 2018 - 08/24/2018

ADJACENT
RESIDENTIAL APARTMENT

ADJACENT
RESIDENTIAL BUILDING

SIDEWALK

EXCELSIOR AVENUE

FORMER 250 GALLON
WASTE OIL UST

FORMER DISPENSER ISLAND

FORMER 1,000 GALLON UST

FORMER 500 GALLON UST

SWN
HLN
HLS
SWW
SWS
EWE
EW12
EB19
SB-25
SB-24
SG-1
SG-2
SG-3
SG-4
SG-5
SG-6
SG-7
SG-8
SG-9
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
SB-7
SB-8
SB-9
SB-10
SB-11
SB-12
SB-13
SB-14
SB-14B
SB-15
SB-16
SB-17
SB-19
SB-20
MW-1
<0.50
MW-2
210
MW-3
<0.50
MW-4
(SB-18)
420
MW-5
(SB-22)
55
MW-6
(SB-21)
140
MW-7
(SB-23)
2,600

1,000
100
10

13th AVENUE

STOP

SIDEWALK

SIDEWALK

OAKLAND FIRE DEPARTMENT
ENGINE No. 16

EXCELSIOR AVENUE

EXCELSIOR AVENUE

N

LEGEND

- SB-24 — Soil Boring Location (September 13, 2017)
- MW-1 — Groundwater Monitoring Well Location
- SB-1 — Soil Boring Location (April 2007)
- SB-1 — Soil Boring Location (August 21 and October 9-10 2003)
- SB-1 — Soil Boring Location (November-1997 and January 1998)
- SG-1 — Soil Gas Probe Location
- SWS — Soil Sample Collected From Soil Excavation
- Approximate Excavation Limits
- Proposed Building Location
- x — Fence
- -1,000- — Benzene Isoconcentration (µg/L)

Notes:

- All Concentrations in µg/L
- µg/L - micrograms per liter
- Data for MW-1 through MW7 was collected during the July 2018 groundwater monitoring event

Base Map Sources:
Google Earth, Image Date 3/11/2017

0 15 30
APPROXIMATE SCALE
IN FEET

AEI Consultants
2500 Camino Diablo
Walnut Creek, California

BENZENE CONCENTRATION IN GROUNDWATER SECOND SEMESTER

Kia Sumner
3635 13th Avenue
Oakland, California

FIGURE 5
Project No. 338841

APPENDIX A
Field Data Sheets

AEI Consultants

Water Level Field Data Sheet
3635 13th Avenue
Oakland, California

Project Name: Kia
Project No.: 338841
Field Personnel: W. Hung / A. Kittredge
Site Location: 3635 13th Avenue, Oakland, California
Date: 7/12/2018

Well ID	Screen Interval (ft BTOC)	Total Depth (ft BTOC)	Casing Diameter (in)	Time	Depth to Water (ft BTOC)	Depth to Bottom (ft BTOC)	Comments
MW-1	12-25	25.0	2	0924	15.72	24.29	
MW-2	16-36	36.0	2	0921	15.39	35.14	
MW-3	15.5-36	36.5	2	0930	15.80	35.67	
MW-4	17-22	22.0	2	09:18	16.50	22.40	
MW-5	17-22	22.0	2	09:02	15.99	22.16	
MW-6	17-22	22.0	2	09:13	~~22.1~~ 15.41	22.42	
MW-7	17-22	22.0	2	0928	15.35	21.30	

Note: BTOC = below top of casing
N/A = not available
NM = not measured

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	Good		
Elevation of Top of Casing (feet above msl)	197.28		
Depth of Well	24.29		
Depth to Water (from top of casing)	15.72		
Water Elevation (feet above msl)	8.57 ft		
Well Volumes Purged	4.11 gal		
Calculated ~~Gallons~~ Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	1.37 gal		
Actual Volume Purged (gallons)	4.25		
Appearance of Purge Water	Milky light brown		
Free Product Present?	NO	Thickness (ft):	—

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
1319	Start	—	—	—	—	—	—
~~14~~ 13:40	1.00	19.80	7.09	1247	2.09	85.6	Milky lt. brown
13:44	2.00	21.97	7.14	1275	1.73	92.7	" "
13:54	3.00	20.77	7.16	1254	1.74	95.2	" "
~~14~~:00	4.00	20.55	7.18	1239	2.32	99.7	" "
14:06	— Sample						

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

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2
Wellhead Condition	OK
Elevation of Top of Casing (feet above msl)	198.93
Depth of Well	35.74
Depth to Water (from top of casing)	15.39
Water Elevation (feet above msl)	20.35
Well Volumes Purged	~~9.768~~ 9.768
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	~~13.23~~ 3.26
Actual Volume Purged (gallons)	9.15
Appearance of Purge Water	dark gray
Free Product Present?	sheen — Thickness (ft): —

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
1145	—	Start purging					
1154	3.25	20.01	7.07	7.04	0.50	-90.8	
1210	7.50	20.40	7.15	1147	0.45	-95.3	
1226	9.75	20.10	7.15	1101	1.41	-42.1	
1229	—	Sampling					

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

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-3

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	201.46		
Depth of Well	35.67		
Depth to Water (from top of casing)	15.80		
Water Elevation (feet above msl)	19.87		
Well Volumes Purged	~~5~~ 9.53		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	3.18		
Actual Volume Purged (gallons)	9.50		
Appearance of Purge Water	light yellow		
Free Product Present?	No	Thickness (ft):	—

AK

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
1254	—	Start purging					
1310	3.25	20.00	7.45	585	3.16	11.3	—
1325	6.50	18.81	7.44	578	2.09	50.3	—
1340	9.50	18.80	7.51	589	4.21	63.4	—
1341	—	Sampling					

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

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)			
Depth of Well	22.40		
Depth to Water (from top of casing)	16.50		
Water Elevation (feet above msl)	5.90		
Well Volumes Purged	2.83		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	.944		
Actual Volume Purged (gallons)	1.25		
Appearance of Purge Water	clear		
Free Product Present?	No	Thickness (ft):	—

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
12:50	— Start	—	—	—	—	—	—
13:00	1.00	23.52	7.10	961	3.61	80.1	Gray Cloudy
13:15	— Well	dry	—	—	—	—	—
1420	—	Sampling	—	—	—	—	—

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

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-5

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	198.52		
Depth of Well	22.16		
Depth to Water (from top of casing)	15.99		
Water Elevation (feet above msl)	6.17		
Well Volumes Purged	2.96		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	.987		
Actual Volume Purged (gallons)	2.25		
Appearance of Purge Water	Cloudy		
Free Product Present?	No	Thickness (ft):	—

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
0955	—	Start purging	—	—	—	—	—
1002	1.00	21.30	6.88	1092	2.10	-7.3	—
1009	2.00	19.60	6.81	1148	2.87	-16.3	—
1016	2.25	—	—	dry	—	—	—
1108	—	Sample	—	—	—	—	—

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

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-6

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)			
Depth of Well	22.42		
Depth to Water (from top of casing)	15.61		
Water Elevation (feet above msl)	6.81		
Well Volumes Purged	3.27		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	1.09		
Actual Volume Purged (gallons)	3.30		
Appearance of Purge Water	Cloudy		
Free Product Present?		Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
11:26	Start						
11:35	1.0	21.85	7.02	1233	3.35	-47.3	
11:46	2.0	21.55	7.00	1241	2.61	-54.3	
12:10	3.0	20.12	7.13	1216	4.31	-47.7	
12:21		Sampling					

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

Cloudy white gray color

AEI CONSULTANTS

GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-7

Project Name:	Kia	Date of Sampling:	7/12/2018
Job Number:	338841	Name of Sampler:	Wayne Hung
Project Address:	3635 13th Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	200.20		
Depth of Well	21.30		
Depth to Water (from top of casing)	15.35		
Water Elevation (feet above msl)	5.95		
Well Volumes Purged	2.85 ✓		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	.952		
Actual Volume Purged (gallons)	3.00		
Appearance of Purge Water	cloudy		
Free Product Present?	No	Thickness (ft):	—

GROUNDWATER SAMPLES

Number of Samples/Container Size: 2 Amber VOAs, 4 HCl VOAs, 1 Liter Amber

Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (meV)	Comments
1027	Start	—	—	—	—	—	—
1031	1.00	19.29	6.62	1340	2.21	-13.7	—
1040	2.00	19.19	6.63	1539	1.91	-9.2	—
1046	3.00 ✓	19.06	6.66	1849	2.68	-20.6	—
1050	—	Sampling	—	—	—	—	—

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

APPENDIX B

Laboratory Analytical Reports and Chain-of-Custody Documentation

AEI Consultants

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1807570 **Amended:** 08/01/2018

Report Created for: AEI Consultants

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

Project Contact: Wayne Hung
Project P.O.: 166990
Project: 338841

Project Received: 07/12/2018

Analytical Report reviewed & approved for release on 07/19/2018 by:

Christine Askari
Project Manager

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033 ORELAP

McCampbell Analytical, Inc.
"When Quality Counts"
1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 338841
WorkOrder: 1807570

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
ERS	External reference sample. Second source calibration verification.
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)

McCampbell Analytical, Inc.
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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 338841
WorkOrder: 1807570

Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
a3	Sample diluted due to high organic content.
a19	Reporting limit near, but not identical to our standard reporting limit due to variable sample volume
b1	Aqueous sample that contains greater than ~1 vol. % sediment
b6	Lighter than water immiscible sheen/product is present
e2	Diesel range compounds are significant; no recognizable pattern
e4/e8	Gasoline range compounds are significant.; and/or Pattern resembles kerosene/kerosene range/jet fuel range
e4	Gasoline range compounds are significant.
e8	Pattern resembles kerosene/kerosene range/jet fuel range

Quality Control Qualifiers

F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/18/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	**1807570-001A**	**Water**	**07/12/2018 14:06**	**GC10 07161823.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	ND	0.50	1	07/16/2018 22:14
Ethylbenzene	ND	0.50	1	07/16/2018 22:14
Toluene	ND	0.50	1	07/16/2018 22:14
Xylenes, Total	ND	0.50	1	07/16/2018 22:14

Surrogates	REC (%)	Limits	
Dibromofluoromethane	103	78-134	07/16/2018 22:14
Toluene-d8	114	82-120	07/16/2018 22:14

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	**1807570-002A**	**Water**	**07/12/2018 12:29**	**GC16 07171825.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	**210**	10	20	07/18/2018 01:11
Ethylbenzene	**50**	10	20	07/18/2018 01:11
Methyl-t-butyl ether (MTBE)	**19**	10	20	07/18/2018 01:11
Toluene	**14**	10	20	07/18/2018 01:11
Xylenes, Total	**48**	10	20	07/18/2018 01:11

Surrogates	REC (%)	Limits	
Dibromofluoromethane	108	78-134	07/18/2018 01:11
Toluene-d8	108	82-120	07/18/2018 01:11

Analyst(s): KF Analytical Comments: b1

(Cont.)

McCampbell Analytical, Inc.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/18/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1807570-003A**	**Water**	**07/12/2018 13:41**	**GC10 07161816.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	ND	0.50	1	07/16/2018 17:09
Ethylbenzene	ND	0.50	1	07/16/2018 17:09
Methyl-t-butyl ether (MTBE)	ND	0.50	1	07/16/2018 17:09
Toluene	ND	0.50	1	07/16/2018 17:09
Xylenes, Total	ND	0.50	1	07/16/2018 17:09

Surrogates	REC (%)	Limits	
Dibromofluoromethane	110	78-134	07/16/2018 17:09
Toluene-d8	115	82-120	07/16/2018 17:09

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1807570-004A**	**Water**	**07/12/2018 14:20**	**GC16 07171826.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	**420**	10	20	07/18/2018 01:52
Ethylbenzene	**480**	10	20	07/18/2018 01:52
Methyl-t-butyl ether (MTBE)	**20**	10	20	07/18/2018 01:52
Toluene	**67**	10	20	07/18/2018 01:52
Xylenes, Total	**210**	10	20	07/18/2018 01:52

Surrogates	REC (%)	Limits	
Dibromofluoromethane	111	78-134	07/18/2018 01:52
Toluene-d8	108	82-120	07/18/2018 01:52

Analyst(s): KF Analytical Comments: b1

(Cont.)

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/18/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1807570-005A**	**Water**	**07/12/2018 11:08**	**GC10 07161826.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	**55**	2.5	5	07/17/2018 00:18
Ethylbenzene	**18**	2.5	5	07/17/2018 00:18
Methyl-t-butyl ether (MTBE)	**36**	2.5	5	07/17/2018 00:18
Toluene	ND	2.5	5	07/17/2018 00:18
Xylenes, Total	ND	2.5	5	07/17/2018 00:18

Surrogates	REC (%)	Limits	
Dibromofluoromethane	105	78-134	07/17/2018 00:18
Toluene-d8	115	82-120	07/17/2018 00:18

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1807570-006A**	**Water**	**07/12/2018 12:21**	**GC10 07161827.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	**140**	10	20	07/17/2018 00:59
Ethylbenzene	ND	10	20	07/17/2018 00:59
Methyl-t-butyl ether (MTBE)	**110**	10	20	07/17/2018 00:59
Toluene	ND	10	20	07/17/2018 00:59
Xylenes, Total	**19**	10	20	07/17/2018 00:59

Surrogates	REC (%)	Limits	
Dibromofluoromethane	103	78-134	07/17/2018 00:59
Toluene-d8	115	82-120	07/17/2018 00:59

Analyst(s): TK Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/18/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	**1807570-007A**	**Water**	**07/12/2018 10:50**	**GC16 07171827.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
Benzene	**2600**	100	200	07/18/2018 02:36
Ethylbenzene	**150**	25	50	07/17/2018 01:40
Toluene	ND	25	50	07/17/2018 01:40
Xylenes, Total	ND	25	50	07/17/2018 01:40

Surrogates	REC (%)	Limits	
Dibromofluoromethane	109	78-134	07/18/2018 02:36
Toluene-d8	106	82-120	07/18/2018 02:36

Analyst(s): KF, TK Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/17/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

TPH(g)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	**1807570-001A**	**Water**	**07/12/2018 14:06**	**GC10 07161823.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	07/16/2018 22:14

Surrogates	REC (%)	Limits	
Dibromofluoromethane	105	78-134	07/16/2018 22:14

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	**1807570-002A**	**Water**	**07/12/2018 12:29**	**GC10 07161824.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**3300**	250	5	07/16/2018 22:55

Surrogates	REC (%)	Limits	
Dibromofluoromethane	103	78-134	07/16/2018 22:55

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1807570-003A**	**Water**	**07/12/2018 13:41**	**GC10 07161816.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	07/16/2018 17:09

Surrogates	REC (%)	Limits	
Dibromofluoromethane	113	78-134	07/16/2018 17:09

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1807570-004A**	**Water**	**07/12/2018 14:20**	**GC10 07161825.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**3900**	250	5	07/16/2018 23:37

Surrogates	REC (%)	Limits	
Dibromofluoromethane	100	78-134	07/16/2018 23:37

Analyst(s): TK Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW5030B
Date Prepared:	7/16/18-7/17/18	**Analytical Method:**	SW8260B
Project:	338841	**Unit:**	µg/L

TPH(g)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1807570-005A**	**Water**	**07/12/2018 11:08**	**GC10 07161826.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**520**	250	5	07/17/2018 00:18

Surrogates	REC (%)	Limits	
Dibromofluoromethane	108	78-134	07/17/2018 00:18

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1807570-006A**	**Water**	**07/12/2018 12:21**	**GC10 07161813.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**3800**	250	5	07/16/2018 14:58

Surrogates	REC (%)	Limits	
Dibromofluoromethane	107	78-134	07/16/2018 14:58

Analyst(s): TK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	**1807570-007A**	**Water**	**07/12/2018 10:50**	**GC10 07161828.D**	**161566**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**5000**	2500	50	07/17/2018 01:40

Surrogates	REC (%)	Limits	
Dibromofluoromethane	103	78-134	07/17/2018 01:40

Analyst(s): TK Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1807570-001C	Water	07/12/2018 14:06	GC21 07131811.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.1	1	07/13/2018 15:20
Acenaphthylene	ND	2.1	1	07/13/2018 15:20
Acetochlor	ND	2.1	1	07/13/2018 15:20
Anthracene	ND	2.1	1	07/13/2018 15:20
Benzidine	ND	11	1	07/13/2018 15:20
Benzo (a) anthracene	ND	2.1	1	07/13/2018 15:20
Benzo (a) pyrene	ND	2.1	1	07/13/2018 15:20
Benzo (b) fluoranthene	ND	2.1	1	07/13/2018 15:20
Benzo (g,h,i) perylene	ND	2.1	1	07/13/2018 15:20
Benzo (k) fluoranthene	ND	2.1	1	07/13/2018 15:20
Benzyl Alcohol	ND	11	1	07/13/2018 15:20
1,1-Biphenyl	ND	2.1	1	07/13/2018 15:20
Bis (2-chloroethoxy) Methane	ND	2.1	1	07/13/2018 15:20
Bis (2-chloroethyl) Ether	ND	2.1	1	07/13/2018 15:20
Bis (2-chloroisopropyl) Ether	ND	2.1	1	07/13/2018 15:20
Bis (2-ethylhexyl) Adipate	ND	2.1	1	07/13/2018 15:20
Bis (2-ethylhexyl) Phthalate	ND	4.3	1	07/13/2018 15:20
4-Bromophenyl Phenyl Ether	ND	11	1	07/13/2018 15:20
Butylbenzyl Phthalate	ND	2.1	1	07/13/2018 15:20
4-Chloroaniline	ND	4.3	1	07/13/2018 15:20
4-Chloro-3-methylphenol	ND	11	1	07/13/2018 15:20
2-Chloronaphthalene	ND	2.1	1	07/13/2018 15:20
2-Chlorophenol	ND	2.1	1	07/13/2018 15:20
4-Chlorophenyl Phenyl Ether	ND	2.1	1	07/13/2018 15:20
Chrysene	ND	2.1	1	07/13/2018 15:20
Dibenzo (a,h) anthracene	ND	2.1	1	07/13/2018 15:20
Dibenzofuran	ND	2.1	1	07/13/2018 15:20
Di-n-butyl Phthalate	ND	2.1	1	07/13/2018 15:20
1,2-Dichlorobenzene	ND	2.1	1	07/13/2018 15:20
1,3-Dichlorobenzene	ND	2.1	1	07/13/2018 15:20
1,4-Dichlorobenzene	ND	2.1	1	07/13/2018 15:20
3,3-Dichlorobenzidine	ND	4.3	1	07/13/2018 15:20
2,4-Dichlorophenol	ND	2.1	1	07/13/2018 15:20
2,6-Dichlorophenol	ND	2.1	1	07/13/2018 15:20
Diethyl Phthalate	ND	2.1	1	07/13/2018 15:20
2,4-Dimethylphenol	ND	2.1	1	07/13/2018 15:20
Dimethyl Phthalate	ND	2.1	1	07/13/2018 15:20

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1807570-001C	Water	07/12/2018 14:06	GC21 07131811.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	11	1	07/13/2018 15:20
2,4-Dinitrophenol	ND	27	1	07/13/2018 15:20
2,4-Dinitrotoluene	ND	2.1	1	07/13/2018 15:20
2,6-Dinitrotoluene	ND	2.1	1	07/13/2018 15:20
Di-n-octyl Phthalate	ND	2.1	1	07/13/2018 15:20
1,2-Diphenylhydrazine	ND	2.1	1	07/13/2018 15:20
Fluoranthene	ND	2.1	1	07/13/2018 15:20
Fluorene	ND	2.1	1	07/13/2018 15:20
Hexachlorobenzene	ND	2.1	1	07/13/2018 15:20
Hexachlorobutadiene	ND	2.1	1	07/13/2018 15:20
Hexachlorocyclopentadiene	ND	11	1	07/13/2018 15:20
Hexachloroethane	ND	2.1	1	07/13/2018 15:20
Indeno (1,2,3-cd) pyrene	ND	2.1	1	07/13/2018 15:20
Isophorone	ND	2.1	1	07/13/2018 15:20
2-Methylnaphthalene	ND	2.1	1	07/13/2018 15:20
2-Methylphenol (o-Cresol)	ND	2.1	1	07/13/2018 15:20
3 & 4-Methylphenol (m,p-Cresol)	ND	2.1	1	07/13/2018 15:20
Naphthalene	ND	2.1	1	07/13/2018 15:20
2-Nitroaniline	ND	11	1	07/13/2018 15:20
3-Nitroaniline	ND	11	1	07/13/2018 15:20
4-Nitroaniline	ND	11	1	07/13/2018 15:20
Nitrobenzene	ND	2.1	1	07/13/2018 15:20
2-Nitrophenol	ND	11	1	07/13/2018 15:20
4-Nitrophenol	ND	11	1	07/13/2018 15:20
N-Nitrosodiphenylamine	ND	2.1	1	07/13/2018 15:20
N-Nitrosodi-n-propylamine	ND	2.1	1	07/13/2018 15:20
Pentachlorophenol	ND	11	1	07/13/2018 15:20
Phenanthrene	ND	2.1	1	07/13/2018 15:20
Phenol	ND	2.1	1	07/13/2018 15:20
Pyrene	ND	2.1	1	07/13/2018 15:20
Pyridine	ND	2.1	1	07/13/2018 15:20
1,2,4-Trichlorobenzene	ND	2.1	1	07/13/2018 15:20
2,4,5-Trichlorophenol	ND	2.1	1	07/13/2018 15:20
2,4,6-Trichlorophenol	ND	2.1	1	07/13/2018 15:20

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1807570-001C	Water	07/12/2018 14:06	GC21 07131811.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	50	8-130		07/13/2018 15:20
Phenol-d5	39	5-130		07/13/2018 15:20
Nitrobenzene-d5	87	20-140		07/13/2018 15:20
2-Fluorobiphenyl	81	40-140		07/13/2018 15:20
2,4,6-Tribromophenol	102	16-180		07/13/2018 15:20
4-Terphenyl-d14	91	40-170		07/13/2018 15:20

Analyst(s): REB Analytical Comments: a19,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1807570-002C	Water	07/12/2018 12:29	GC21 07131812.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.1	1	07/13/2018 15:47
Acenaphthylene	ND	2.1	1	07/13/2018 15:47
Acetochlor	ND	2.1	1	07/13/2018 15:47
Anthracene	ND	2.1	1	07/13/2018 15:47
Benzidine	ND	10	1	07/13/2018 15:47
Benzo (a) anthracene	ND	2.1	1	07/13/2018 15:47
Benzo (a) pyrene	ND	2.1	1	07/13/2018 15:47
Benzo (b) fluoranthene	ND	2.1	1	07/13/2018 15:47
Benzo (g,h,i) perylene	ND	2.1	1	07/13/2018 15:47
Benzo (k) fluoranthene	ND	2.1	1	07/13/2018 15:47
Benzyl Alcohol	ND	10	1	07/13/2018 15:47
1,1-Biphenyl	ND	2.1	1	07/13/2018 15:47
Bis (2-chloroethoxy) Methane	ND	2.1	1	07/13/2018 15:47
Bis (2-chloroethyl) Ether	ND	2.1	1	07/13/2018 15:47
Bis (2-chloroisopropyl) Ether	ND	2.1	1	07/13/2018 15:47
Bis (2-ethylhexyl) Adipate	ND	2.1	1	07/13/2018 15:47
Bis (2-ethylhexyl) Phthalate	**14**	4.2	1	07/13/2018 15:47
4-Bromophenyl Phenyl Ether	ND	10	1	07/13/2018 15:47
Butylbenzyl Phthalate	ND	2.1	1	07/13/2018 15:47
4-Chloroaniline	ND	4.2	1	07/13/2018 15:47
4-Chloro-3-methylphenol	ND	10	1	07/13/2018 15:47
2-Chloronaphthalene	ND	2.1	1	07/13/2018 15:47
2-Chlorophenol	ND	2.1	1	07/13/2018 15:47
4-Chlorophenyl Phenyl Ether	ND	2.1	1	07/13/2018 15:47
Chrysene	ND	2.1	1	07/13/2018 15:47
Dibenzo (a,h) anthracene	ND	2.1	1	07/13/2018 15:47
Dibenzofuran	ND	2.1	1	07/13/2018 15:47
Di-n-butyl Phthalate	ND	2.1	1	07/13/2018 15:47
1,2-Dichlorobenzene	ND	2.1	1	07/13/2018 15:47
1,3-Dichlorobenzene	ND	2.1	1	07/13/2018 15:47
1,4-Dichlorobenzene	ND	2.1	1	07/13/2018 15:47
3,3-Dichlorobenzidine	ND	4.2	1	07/13/2018 15:47
2,4-Dichlorophenol	ND	2.1	1	07/13/2018 15:47
2,6-Dichlorophenol	ND	2.1	1	07/13/2018 15:47
Diethyl Phthalate	ND	2.1	1	07/13/2018 15:47
2,4-Dimethylphenol	ND	2.1	1	07/13/2018 15:47
Dimethyl Phthalate	ND	2.1	1	07/13/2018 15:47

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1807570-002C	Water	07/12/2018 12:29	GC21 07131812.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	10	1	07/13/2018 15:47
2,4-Dinitrophenol	ND	26	1	07/13/2018 15:47
2,4-Dinitrotoluene	ND	2.1	1	07/13/2018 15:47
2,6-Dinitrotoluene	ND	2.1	1	07/13/2018 15:47
Di-n-octyl Phthalate	ND	2.1	1	07/13/2018 15:47
1,2-Diphenylhydrazine	ND	2.1	1	07/13/2018 15:47
Fluoranthene	ND	2.1	1	07/13/2018 15:47
Fluorene	ND	2.1	1	07/13/2018 15:47
Hexachlorobenzene	ND	2.1	1	07/13/2018 15:47
Hexachlorobutadiene	ND	2.1	1	07/13/2018 15:47
Hexachlorocyclopentadiene	ND	10	1	07/13/2018 15:47
Hexachloroethane	ND	2.1	1	07/13/2018 15:47
Indeno (1,2,3-cd) pyrene	ND	2.1	1	07/13/2018 15:47
Isophorone	ND	2.1	1	07/13/2018 15:47
2-Methylnaphthalene	**4.3**	2.1	1	07/13/2018 15:47
2-Methylphenol (o-Cresol)	ND	2.1	1	07/13/2018 15:47
3 & 4-Methylphenol (m,p-Cresol)	ND	2.1	1	07/13/2018 15:47
Naphthalene	**15**	2.1	1	07/13/2018 15:47
2-Nitroaniline	ND	10	1	07/13/2018 15:47
3-Nitroaniline	ND	10	1	07/13/2018 15:47
4-Nitroaniline	ND	10	1	07/13/2018 15:47
Nitrobenzene	ND	2.1	1	07/13/2018 15:47
2-Nitrophenol	ND	10	1	07/13/2018 15:47
4-Nitrophenol	ND	10	1	07/13/2018 15:47
N-Nitrosodiphenylamine	ND	2.1	1	07/13/2018 15:47
N-Nitrosodi-n-propylamine	ND	2.1	1	07/13/2018 15:47
Pentachlorophenol	ND	10	1	07/13/2018 15:47
Phenanthrene	ND	2.1	1	07/13/2018 15:47
Phenol	ND	2.1	1	07/13/2018 15:47
Pyrene	ND	2.1	1	07/13/2018 15:47
Pyridine	ND	2.1	1	07/13/2018 15:47
1,2,4-Trichlorobenzene	ND	2.1	1	07/13/2018 15:47
2,4,5-Trichlorophenol	ND	2.1	1	07/13/2018 15:47
2,4,6-Trichlorophenol	ND	2.1	1	07/13/2018 15:47

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1807570-002C	Water	07/12/2018 12:29	GC21 07131812.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	32	8-130		07/13/2018 15:47
Phenol-d5	31	5-130		07/13/2018 15:47
Nitrobenzene-d5	95	20-140		07/13/2018 15:47
2-Fluorobiphenyl	77	40-140		07/13/2018 15:47
2,4,6-Tribromophenol	77	16-180		07/13/2018 15:47
4-Terphenyl-d14	89	40-170		07/13/2018 15:47

Analyst(s): REB Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1807570-003C	Water	07/12/2018 13:41	GC21 07131813.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.1	1	07/13/2018 16:15
Acenaphthylene	ND	2.1	1	07/13/2018 16:15
Acetochlor	ND	2.1	1	07/13/2018 16:15
Anthracene	ND	2.1	1	07/13/2018 16:15
Benzidine	ND	10	1	07/13/2018 16:15
Benzo (a) anthracene	ND	2.1	1	07/13/2018 16:15
Benzo (a) pyrene	ND	2.1	1	07/13/2018 16:15
Benzo (b) fluoranthene	ND	2.1	1	07/13/2018 16:15
Benzo (g,h,i) perylene	ND	2.1	1	07/13/2018 16:15
Benzo (k) fluoranthene	ND	2.1	1	07/13/2018 16:15
Benzyl Alcohol	ND	10	1	07/13/2018 16:15
1,1-Biphenyl	ND	2.1	1	07/13/2018 16:15
Bis (2-chloroethoxy) Methane	ND	2.1	1	07/13/2018 16:15
Bis (2-chloroethyl) Ether	ND	2.1	1	07/13/2018 16:15
Bis (2-chloroisopropyl) Ether	ND	2.1	1	07/13/2018 16:15
Bis (2-ethylhexyl) Adipate	ND	2.1	1	07/13/2018 16:15
Bis (2-ethylhexyl) Phthalate	ND	4.2	1	07/13/2018 16:15
4-Bromophenyl Phenyl Ether	ND	10	1	07/13/2018 16:15
Butylbenzyl Phthalate	ND	2.1	1	07/13/2018 16:15
4-Chloroaniline	ND	4.2	1	07/13/2018 16:15
4-Chloro-3-methylphenol	ND	10	1	07/13/2018 16:15
2-Chloronaphthalene	ND	2.1	1	07/13/2018 16:15
2-Chlorophenol	ND	2.1	1	07/13/2018 16:15
4-Chlorophenyl Phenyl Ether	ND	2.1	1	07/13/2018 16:15
Chrysene	ND	2.1	1	07/13/2018 16:15
Dibenzo (a,h) anthracene	ND	2.1	1	07/13/2018 16:15
Dibenzofuran	ND	2.1	1	07/13/2018 16:15
Di-n-butyl Phthalate	ND	2.1	1	07/13/2018 16:15
1,2-Dichlorobenzene	ND	2.1	1	07/13/2018 16:15
1,3-Dichlorobenzene	ND	2.1	1	07/13/2018 16:15
1,4-Dichlorobenzene	ND	2.1	1	07/13/2018 16:15
3,3-Dichlorobenzidine	ND	4.2	1	07/13/2018 16:15
2,4-Dichlorophenol	ND	2.1	1	07/13/2018 16:15
2,6-Dichlorophenol	ND	2.1	1	07/13/2018 16:15
Diethyl Phthalate	ND	2.1	1	07/13/2018 16:15
2,4-Dimethylphenol	ND	2.1	1	07/13/2018 16:15
Dimethyl Phthalate	ND	2.1	1	07/13/2018 16:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1807570-003C	Water	07/12/2018 13:41	GC21 07131813.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	10	1	07/13/2018 16:15
2,4-Dinitrophenol	ND	26	1	07/13/2018 16:15
2,4-Dinitrotoluene	ND	2.1	1	07/13/2018 16:15
2,6-Dinitrotoluene	ND	2.1	1	07/13/2018 16:15
Di-n-octyl Phthalate	ND	2.1	1	07/13/2018 16:15
1,2-Diphenylhydrazine	ND	2.1	1	07/13/2018 16:15
Fluoranthene	ND	2.1	1	07/13/2018 16:15
Fluorene	ND	2.1	1	07/13/2018 16:15
Hexachlorobenzene	ND	2.1	1	07/13/2018 16:15
Hexachlorobutadiene	ND	2.1	1	07/13/2018 16:15
Hexachlorocyclopentadiene	ND	10	1	07/13/2018 16:15
Hexachloroethane	ND	2.1	1	07/13/2018 16:15
Indeno (1,2,3-cd) pyrene	ND	2.1	1	07/13/2018 16:15
Isophorone	ND	2.1	1	07/13/2018 16:15
2-Methylnaphthalene	ND	2.1	1	07/13/2018 16:15
2-Methylphenol (o-Cresol)	ND	2.1	1	07/13/2018 16:15
3 & 4-Methylphenol (m,p-Cresol)	ND	2.1	1	07/13/2018 16:15
Naphthalene	ND	2.1	1	07/13/2018 16:15
2-Nitroaniline	ND	10	1	07/13/2018 16:15
3-Nitroaniline	ND	10	1	07/13/2018 16:15
4-Nitroaniline	ND	10	1	07/13/2018 16:15
Nitrobenzene	ND	2.1	1	07/13/2018 16:15
2-Nitrophenol	ND	10	1	07/13/2018 16:15
4-Nitrophenol	ND	10	1	07/13/2018 16:15
N-Nitrosodiphenylamine	ND	2.1	1	07/13/2018 16:15
N-Nitrosodi-n-propylamine	ND	2.1	1	07/13/2018 16:15
Pentachlorophenol	ND	10	1	07/13/2018 16:15
Phenanthrene	ND	2.1	1	07/13/2018 16:15
Phenol	ND	2.1	1	07/13/2018 16:15
Pyrene	ND	2.1	1	07/13/2018 16:15
Pyridine	ND	2.1	1	07/13/2018 16:15
1,2,4-Trichlorobenzene	ND	2.1	1	07/13/2018 16:15
2,4,5-Trichlorophenol	ND	2.1	1	07/13/2018 16:15
2,4,6-Trichlorophenol	ND	2.1	1	07/13/2018 16:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1807570-003C	Water	07/12/2018 13:41	GC21 07131813.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	45	8-130		07/13/2018 16:15
Phenol-d5	36	5-130		07/13/2018 16:15
Nitrobenzene-d5	66	20-140		07/13/2018 16:15
2-Fluorobiphenyl	64	40-140		07/13/2018 16:15
2,4,6-Tribromophenol	105	16-180		07/13/2018 16:15
4-Terphenyl-d14	87	40-170		07/13/2018 16:15

Analyst(s): REB Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1807570-004C	Water	07/12/2018 14:20	GC21 07131814.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	4.2	2	07/13/2018 16:43
Acenaphthylene	ND	4.2	2	07/13/2018 16:43
Acetochlor	ND	4.2	2	07/13/2018 16:43
Anthracene	ND	4.2	2	07/13/2018 16:43
Benzidine	ND	21	2	07/13/2018 16:43
Benzo (a) anthracene	ND	4.2	2	07/13/2018 16:43
Benzo (a) pyrene	ND	4.2	2	07/13/2018 16:43
Benzo (b) fluoranthene	ND	4.2	2	07/13/2018 16:43
Benzo (g,h,i) perylene	ND	4.2	2	07/13/2018 16:43
Benzo (k) fluoranthene	ND	4.2	2	07/13/2018 16:43
Benzyl Alcohol	ND	21	2	07/13/2018 16:43
1,1-Biphenyl	ND	4.2	2	07/13/2018 16:43
Bis (2-chloroethoxy) Methane	ND	4.2	2	07/13/2018 16:43
Bis (2-chloroethyl) Ether	ND	4.2	2	07/13/2018 16:43
Bis (2-chloroisopropyl) Ether	ND	4.2	2	07/13/2018 16:43
Bis (2-ethylhexyl) Adipate	ND	4.2	2	07/13/2018 16:43
Bis (2-ethylhexyl) Phthalate	ND	8.3	2	07/13/2018 16:43
4-Bromophenyl Phenyl Ether	ND	21	2	07/13/2018 16:43
Butylbenzyl Phthalate	ND	4.2	2	07/13/2018 16:43
4-Chloroaniline	**45**	8.3	2	07/13/2018 16:43
4-Chloro-3-methylphenol	ND	21	2	07/13/2018 16:43
2-Chloronaphthalene	ND	4.2	2	07/13/2018 16:43
2-Chlorophenol	ND	4.2	2	07/13/2018 16:43
4-Chlorophenyl Phenyl Ether	ND	4.2	2	07/13/2018 16:43
Chrysene	ND	4.2	2	07/13/2018 16:43
Dibenzo (a,h) anthracene	ND	4.2	2	07/13/2018 16:43
Dibenzofuran	ND	4.2	2	07/13/2018 16:43
Di-n-butyl Phthalate	ND	4.2	2	07/13/2018 16:43
1,2-Dichlorobenzene	ND	4.2	2	07/13/2018 16:43
1,3-Dichlorobenzene	ND	4.2	2	07/13/2018 16:43
1,4-Dichlorobenzene	ND	4.2	2	07/13/2018 16:43
3,3-Dichlorobenzidine	ND	8.3	2	07/13/2018 16:43
2,4-Dichlorophenol	ND	4.2	2	07/13/2018 16:43
2,6-Dichlorophenol	ND	4.2	2	07/13/2018 16:43
Diethyl Phthalate	ND	4.2	2	07/13/2018 16:43
2,4-Dimethylphenol	ND	4.2	2	07/13/2018 16:43
Dimethyl Phthalate	ND	4.2	2	07/13/2018 16:43

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Analytical Report

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Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1807570-004C	Water	07/12/2018 14:20	GC21 07131814.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	21	2	07/13/2018 16:43
2,4-Dinitrophenol	ND	52	2	07/13/2018 16:43
2,4-Dinitrotoluene	ND	4.2	2	07/13/2018 16:43
2,6-Dinitrotoluene	ND	4.2	2	07/13/2018 16:43
Di-n-octyl Phthalate	ND	4.2	2	07/13/2018 16:43
1,2-Diphenylhydrazine	ND	4.2	2	07/13/2018 16:43
Fluoranthene	ND	4.2	2	07/13/2018 16:43
Fluorene	ND	4.2	2	07/13/2018 16:43
Hexachlorobenzene	ND	4.2	2	07/13/2018 16:43
Hexachlorobutadiene	ND	4.2	2	07/13/2018 16:43
Hexachlorocyclopentadiene	ND	21	2	07/13/2018 16:43
Hexachloroethane	**100**	4.2	2	07/13/2018 16:43
Indeno (1,2,3-cd) pyrene	ND	4.2	2	07/13/2018 16:43
Isophorone	ND	4.2	2	07/13/2018 16:43
2-Methylnaphthalene	**6.1**	4.2	2	07/13/2018 16:43
2-Methylphenol (o-Cresol)	ND	4.2	2	07/13/2018 16:43
3 & 4-Methylphenol (m,p-Cresol)	ND	4.2	2	07/13/2018 16:43
Naphthalene	**140**	4.2	2	07/13/2018 16:43
2-Nitroaniline	ND	21	2	07/13/2018 16:43
3-Nitroaniline	ND	21	2	07/13/2018 16:43
4-Nitroaniline	ND	21	2	07/13/2018 16:43
Nitrobenzene	**6.9**	4.2	2	07/13/2018 16:43
2-Nitrophenol	ND	21	2	07/13/2018 16:43
4-Nitrophenol	ND	21	2	07/13/2018 16:43
N-Nitrosodiphenylamine	ND	4.2	2	07/13/2018 16:43
N-Nitrosodi-n-propylamine	ND	4.2	2	07/13/2018 16:43
Pentachlorophenol	ND	21	2	07/13/2018 16:43
Phenanthrene	ND	4.2	2	07/13/2018 16:43
Phenol	ND	4.2	2	07/13/2018 16:43
Pyrene	ND	4.2	2	07/13/2018 16:43
Pyridine	ND	4.2	2	07/13/2018 16:43
1,2,4-Trichlorobenzene	ND	4.2	2	07/13/2018 16:43
2,4,5-Trichlorophenol	ND	4.2	2	07/13/2018 16:43
2,4,6-Trichlorophenol	ND	4.2	2	07/13/2018 16:43

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1807570-004C	Water	07/12/2018 14:20	GC21 07131814.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	33	8-130		07/13/2018 16:43
Phenol-d5	32	5-130		07/13/2018 16:43
Nitrobenzene-d5	97	20-140		07/13/2018 16:43
2-Fluorobiphenyl	93	40-140		07/13/2018 16:43
2,4,6-Tribromophenol	61	16-180		07/13/2018 16:43
4-Terphenyl-d14	105	40-170		07/13/2018 16:43

Analyst(s): REB Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1807570-005C	Water	07/12/2018 11:08	GC21 07131815.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	10	5	07/13/2018 17:10
Acenaphthylene	ND	10	5	07/13/2018 17:10
Acetochlor	ND	10	5	07/13/2018 17:10
Anthracene	ND	10	5	07/13/2018 17:10
Benzidine	ND	52	5	07/13/2018 17:10
Benzo (a) anthracene	ND	10	5	07/13/2018 17:10
Benzo (a) pyrene	ND	10	5	07/13/2018 17:10
Benzo (b) fluoranthene	ND	10	5	07/13/2018 17:10
Benzo (g,h,i) perylene	ND	10	5	07/13/2018 17:10
Benzo (k) fluoranthene	ND	10	5	07/13/2018 17:10
Benzyl Alcohol	ND	52	5	07/13/2018 17:10
1,1-Biphenyl	ND	10	5	07/13/2018 17:10
Bis (2-chloroethoxy) Methane	ND	10	5	07/13/2018 17:10
Bis (2-chloroethyl) Ether	ND	10	5	07/13/2018 17:10
Bis (2-chloroisopropyl) Ether	ND	10	5	07/13/2018 17:10
Bis (2-ethylhexyl) Adipate	ND	10	5	07/13/2018 17:10
Bis (2-ethylhexyl) Phthalate	ND	21	5	07/13/2018 17:10
4-Bromophenyl Phenyl Ether	ND	52	5	07/13/2018 17:10
Butylbenzyl Phthalate	ND	10	5	07/13/2018 17:10
4-Chloroaniline	ND	21	5	07/13/2018 17:10
4-Chloro-3-methylphenol	ND	52	5	07/13/2018 17:10
2-Chloronaphthalene	ND	10	5	07/13/2018 17:10
2-Chlorophenol	ND	10	5	07/13/2018 17:10
4-Chlorophenyl Phenyl Ether	ND	10	5	07/13/2018 17:10
Chrysene	ND	10	5	07/13/2018 17:10
Dibenzo (a,h) anthracene	ND	10	5	07/13/2018 17:10
Dibenzofuran	ND	10	5	07/13/2018 17:10
Di-n-butyl Phthalate	ND	10	5	07/13/2018 17:10
1,2-Dichlorobenzene	ND	10	5	07/13/2018 17:10
1,3-Dichlorobenzene	ND	10	5	07/13/2018 17:10
1,4-Dichlorobenzene	ND	10	5	07/13/2018 17:10
3,3-Dichlorobenzidine	ND	21	5	07/13/2018 17:10
2,4-Dichlorophenol	ND	10	5	07/13/2018 17:10
2,6-Dichlorophenol	ND	10	5	07/13/2018 17:10
Diethyl Phthalate	ND	10	5	07/13/2018 17:10
2,4-Dimethylphenol	ND	10	5	07/13/2018 17:10
Dimethyl Phthalate	ND	10	5	07/13/2018 17:10

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1807570-005C	Water	07/12/2018 11:08	GC21 07131815.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	52	5	07/13/2018 17:10
2,4-Dinitrophenol	ND	130	5	07/13/2018 17:10
2,4-Dinitrotoluene	ND	10	5	07/13/2018 17:10
2,6-Dinitrotoluene	ND	10	5	07/13/2018 17:10
Di-n-octyl Phthalate	ND	10	5	07/13/2018 17:10
1,2-Diphenylhydrazine	ND	10	5	07/13/2018 17:10
Fluoranthene	ND	10	5	07/13/2018 17:10
Fluorene	ND	10	5	07/13/2018 17:10
Hexachlorobenzene	ND	10	5	07/13/2018 17:10
Hexachlorobutadiene	ND	10	5	07/13/2018 17:10
Hexachlorocyclopentadiene	ND	52	5	07/13/2018 17:10
Hexachloroethane	ND	10	5	07/13/2018 17:10
Indeno (1,2,3-cd) pyrene	ND	10	5	07/13/2018 17:10
Isophorone	ND	10	5	07/13/2018 17:10
2-Methylnaphthalene	ND	10	5	07/13/2018 17:10
2-Methylphenol (o-Cresol)	ND	10	5	07/13/2018 17:10
3 & 4-Methylphenol (m,p-Cresol)	ND	10	5	07/13/2018 17:10
Naphthalene	ND	10	5	07/13/2018 17:10
2-Nitroaniline	ND	52	5	07/13/2018 17:10
3-Nitroaniline	ND	52	5	07/13/2018 17:10
4-Nitroaniline	ND	52	5	07/13/2018 17:10
Nitrobenzene	ND	10	5	07/13/2018 17:10
2-Nitrophenol	ND	52	5	07/13/2018 17:10
4-Nitrophenol	ND	52	5	07/13/2018 17:10
N-Nitrosodiphenylamine	ND	10	5	07/13/2018 17:10
N-Nitrosodi-n-propylamine	ND	10	5	07/13/2018 17:10
Pentachlorophenol	ND	52	5	07/13/2018 17:10
Phenanthrene	ND	10	5	07/13/2018 17:10
Phenol	ND	10	5	07/13/2018 17:10
Pyrene	ND	10	5	07/13/2018 17:10
Pyridine	ND	10	5	07/13/2018 17:10
1,2,4-Trichlorobenzene	ND	10	5	07/13/2018 17:10
2,4,5-Trichlorophenol	ND	10	5	07/13/2018 17:10
2,4,6-Trichlorophenol	ND	10	5	07/13/2018 17:10

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1807570-005C**	**Water**	**07/12/2018 11:08**	**GC21 07131815.D**	**161373**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	33	8-130		07/13/2018 17:10
Phenol-d5	38	5-130		07/13/2018 17:10
Nitrobenzene-d5	100	20-140		07/13/2018 17:10
2-Fluorobiphenyl	97	40-140		07/13/2018 17:10
2,4,6-Tribromophenol	38	16-180		07/13/2018 17:10
4-Terphenyl-d14	125	40-170		07/13/2018 17:10

Analyst(s): REB Analytical Comments: a3,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1807570-006C	Water	07/12/2018 12:21	GC21 07131816.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	4.2	2	07/13/2018 17:38
Acenaphthylene	ND	4.2	2	07/13/2018 17:38
Acetochlor	ND	4.2	2	07/13/2018 17:38
Anthracene	ND	4.2	2	07/13/2018 17:38
Benzidine	ND	21	2	07/13/2018 17:38
Benzo (a) anthracene	ND	4.2	2	07/13/2018 17:38
Benzo (a) pyrene	ND	4.2	2	07/13/2018 17:38
Benzo (b) fluoranthene	ND	4.2	2	07/13/2018 17:38
Benzo (g,h,i) perylene	ND	4.2	2	07/13/2018 17:38
Benzo (k) fluoranthene	ND	4.2	2	07/13/2018 17:38
Benzyl Alcohol	ND	21	2	07/13/2018 17:38
1,1-Biphenyl	ND	4.2	2	07/13/2018 17:38
Bis (2-chloroethoxy) Methane	ND	4.2	2	07/13/2018 17:38
Bis (2-chloroethyl) Ether	ND	4.2	2	07/13/2018 17:38
Bis (2-chloroisopropyl) Ether	ND	4.2	2	07/13/2018 17:38
Bis (2-ethylhexyl) Adipate	ND	4.2	2	07/13/2018 17:38
Bis (2-ethylhexyl) Phthalate	ND	8.3	2	07/13/2018 17:38
4-Bromophenyl Phenyl Ether	ND	21	2	07/13/2018 17:38
Butylbenzyl Phthalate	ND	4.2	2	07/13/2018 17:38
4-Chloroaniline	ND	8.3	2	07/13/2018 17:38
4-Chloro-3-methylphenol	ND	21	2	07/13/2018 17:38
2-Chloronaphthalene	ND	4.2	2	07/13/2018 17:38
2-Chlorophenol	ND	4.2	2	07/13/2018 17:38
4-Chlorophenyl Phenyl Ether	ND	4.2	2	07/13/2018 17:38
Chrysene	ND	4.2	2	07/13/2018 17:38
Dibenzo (a,h) anthracene	ND	4.2	2	07/13/2018 17:38
Dibenzofuran	ND	4.2	2	07/13/2018 17:38
Di-n-butyl Phthalate	ND	4.2	2	07/13/2018 17:38
1,2-Dichlorobenzene	ND	4.2	2	07/13/2018 17:38
1,3-Dichlorobenzene	ND	4.2	2	07/13/2018 17:38
1,4-Dichlorobenzene	ND	4.2	2	07/13/2018 17:38
3,3-Dichlorobenzidine	ND	8.3	2	07/13/2018 17:38
2,4-Dichlorophenol	ND	4.2	2	07/13/2018 17:38
2,6-Dichlorophenol	ND	4.2	2	07/13/2018 17:38
Diethyl Phthalate	ND	4.2	2	07/13/2018 17:38
2,4-Dimethylphenol	ND	4.2	2	07/13/2018 17:38
Dimethyl Phthalate	ND	4.2	2	07/13/2018 17:38

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1807570-006C	Water	07/12/2018 12:21	GC21 07131816.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	21	2	07/13/2018 17:38
2,4-Dinitrophenol	ND	52	2	07/13/2018 17:38
2,4-Dinitrotoluene	ND	4.2	2	07/13/2018 17:38
2,6-Dinitrotoluene	ND	4.2	2	07/13/2018 17:38
Di-n-octyl Phthalate	ND	4.2	2	07/13/2018 17:38
1,2-Diphenylhydrazine	ND	4.2	2	07/13/2018 17:38
Fluoranthene	ND	4.2	2	07/13/2018 17:38
Fluorene	ND	4.2	2	07/13/2018 17:38
Hexachlorobenzene	ND	4.2	2	07/13/2018 17:38
Hexachlorobutadiene	ND	4.2	2	07/13/2018 17:38
Hexachlorocyclopentadiene	ND	21	2	07/13/2018 17:38
Hexachloroethane	ND	4.2	2	07/13/2018 17:38
Indeno (1,2,3-cd) pyrene	ND	4.2	2	07/13/2018 17:38
Isophorone	ND	4.2	2	07/13/2018 17:38
2-Methylnaphthalene	ND	4.2	2	07/13/2018 17:38
2-Methylphenol (o-Cresol)	ND	4.2	2	07/13/2018 17:38
3 & 4-Methylphenol (m,p-Cresol)	ND	4.2	2	07/13/2018 17:38
Naphthalene	**33**	4.2	2	07/13/2018 17:38
2-Nitroaniline	ND	21	2	07/13/2018 17:38
3-Nitroaniline	ND	21	2	07/13/2018 17:38
4-Nitroaniline	ND	21	2	07/13/2018 17:38
Nitrobenzene	ND	4.2	2	07/13/2018 17:38
2-Nitrophenol	ND	21	2	07/13/2018 17:38
4-Nitrophenol	ND	21	2	07/13/2018 17:38
N-Nitrosodiphenylamine	ND	4.2	2	07/13/2018 17:38
N-Nitrosodi-n-propylamine	ND	4.2	2	07/13/2018 17:38
Pentachlorophenol	ND	21	2	07/13/2018 17:38
Phenanthrene	ND	4.2	2	07/13/2018 17:38
Phenol	ND	4.2	2	07/13/2018 17:38
Pyrene	ND	4.2	2	07/13/2018 17:38
Pyridine	ND	4.2	2	07/13/2018 17:38
1,2,4-Trichlorobenzene	ND	4.2	2	07/13/2018 17:38
2,4,5-Trichlorophenol	ND	4.2	2	07/13/2018 17:38
2,4,6-Trichlorophenol	ND	4.2	2	07/13/2018 17:38

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1807570-006C	Water	07/12/2018 12:21	GC21 07131816.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	20	8-130		07/13/2018 17:38
Phenol-d5	25	5-130		07/13/2018 17:38
Nitrobenzene-d5	93	20-140		07/13/2018 17:38
2-Fluorobiphenyl	89	40-140		07/13/2018 17:38
2,4,6-Tribromophenol	52	16-180		07/13/2018 17:38
4-Terphenyl-d14	98	40-170		07/13/2018 17:38

Analyst(s): REB Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1807570-007C	Water	07/12/2018 10:50	GC21 07131817.D	161373

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	21	10	07/13/2018 18:06
Acenaphthylene	ND	21	10	07/13/2018 18:06
Acetochlor	ND	21	10	07/13/2018 18:06
Anthracene	ND	21	10	07/13/2018 18:06
Benzidine	ND	100	10	07/13/2018 18:06
Benzo (a) anthracene	ND	21	10	07/13/2018 18:06
Benzo (a) pyrene	ND	21	10	07/13/2018 18:06
Benzo (b) fluoranthene	ND	21	10	07/13/2018 18:06
Benzo (g,h,i) perylene	ND	21	10	07/13/2018 18:06
Benzo (k) fluoranthene	ND	21	10	07/13/2018 18:06
Benzyl Alcohol	ND	100	10	07/13/2018 18:06
1,1-Biphenyl	ND	21	10	07/13/2018 18:06
Bis (2-chloroethoxy) Methane	ND	21	10	07/13/2018 18:06
Bis (2-chloroethyl) Ether	ND	21	10	07/13/2018 18:06
Bis (2-chloroisopropyl) Ether	ND	21	10	07/13/2018 18:06
Bis (2-ethylhexyl) Adipate	ND	21	10	07/13/2018 18:06
Bis (2-ethylhexyl) Phthalate	ND	41	10	07/13/2018 18:06
4-Bromophenyl Phenyl Ether	ND	100	10	07/13/2018 18:06
Butylbenzyl Phthalate	ND	21	10	07/13/2018 18:06
4-Chloroaniline	ND	41	10	07/13/2018 18:06
4-Chloro-3-methylphenol	ND	100	10	07/13/2018 18:06
2-Chloronaphthalene	ND	21	10	07/13/2018 18:06
2-Chlorophenol	ND	21	10	07/13/2018 18:06
4-Chlorophenyl Phenyl Ether	ND	21	10	07/13/2018 18:06
Chrysene	ND	21	10	07/13/2018 18:06
Dibenzo (a,h) anthracene	ND	21	10	07/13/2018 18:06
Dibenzofuran	ND	21	10	07/13/2018 18:06
Di-n-butyl Phthalate	ND	21	10	07/13/2018 18:06
1,2-Dichlorobenzene	ND	21	10	07/13/2018 18:06
1,3-Dichlorobenzene	ND	21	10	07/13/2018 18:06
1,4-Dichlorobenzene	ND	21	10	07/13/2018 18:06
3,3-Dichlorobenzidine	ND	41	10	07/13/2018 18:06
2,4-Dichlorophenol	ND	21	10	07/13/2018 18:06
2,6-Dichlorophenol	ND	21	10	07/13/2018 18:06
Diethyl Phthalate	ND	21	10	07/13/2018 18:06
2,4-Dimethylphenol	ND	21	10	07/13/2018 18:06
Dimethyl Phthalate	ND	21	10	07/13/2018 18:06

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1807570-007C	Water	07/12/2018 10:50	GC21 07131817.D	161373

Analytes	Result	RL	DF	Date Analyzed
4,6-Dinitro-2-methylphenol	ND	100	10	07/13/2018 18:06
2,4-Dinitrophenol	ND	260	10	07/13/2018 18:06
2,4-Dinitrotoluene	ND	21	10	07/13/2018 18:06
2,6-Dinitrotoluene	ND	21	10	07/13/2018 18:06
Di-n-octyl Phthalate	ND	21	10	07/13/2018 18:06
1,2-Diphenylhydrazine	ND	21	10	07/13/2018 18:06
Fluoranthene	ND	21	10	07/13/2018 18:06
Fluorene	ND	21	10	07/13/2018 18:06
Hexachlorobenzene	ND	21	10	07/13/2018 18:06
Hexachlorobutadiene	ND	21	10	07/13/2018 18:06
Hexachlorocyclopentadiene	ND	100	10	07/13/2018 18:06
Hexachloroethane	ND	21	10	07/13/2018 18:06
Indeno (1,2,3-cd) pyrene	ND	21	10	07/13/2018 18:06
Isophorone	ND	21	10	07/13/2018 18:06
2-Methylnaphthalene	ND	21	10	07/13/2018 18:06
2-Methylphenol (o-Cresol)	ND	21	10	07/13/2018 18:06
3 & 4-Methylphenol (m,p-Cresol)	ND	21	10	07/13/2018 18:06
Naphthalene	ND	21	10	07/13/2018 18:06
2-Nitroaniline	ND	100	10	07/13/2018 18:06
3-Nitroaniline	ND	100	10	07/13/2018 18:06
4-Nitroaniline	ND	100	10	07/13/2018 18:06
Nitrobenzene	ND	21	10	07/13/2018 18:06
2-Nitrophenol	ND	100	10	07/13/2018 18:06
4-Nitrophenol	ND	100	10	07/13/2018 18:06
N-Nitrosodiphenylamine	ND	21	10	07/13/2018 18:06
N-Nitrosodi-n-propylamine	ND	21	10	07/13/2018 18:06
Pentachlorophenol	ND	100	10	07/13/2018 18:06
Phenanthrene	ND	21	10	07/13/2018 18:06
Phenol	ND	21	10	07/13/2018 18:06
Pyrene	ND	21	10	07/13/2018 18:06
Pyridine	ND	21	10	07/13/2018 18:06
1,2,4-Trichlorobenzene	ND	21	10	07/13/2018 18:06
2,4,5-Trichlorophenol	ND	21	10	07/13/2018 18:06
2,4,6-Trichlorophenol	ND	21	10	07/13/2018 18:06

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	E625
Date Prepared:	7/13/18	**Analytical Method:**	SW8270C
Project:	338841	**Unit:**	µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1807570-007C	Water	07/12/2018 10:50	GC21 07131817.D	161373

Analytes	Result	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Limits**		
2-Fluorophenol	17	8-130		07/13/2018 18:06
Phenol-d5	32	5-130		07/13/2018 18:06
Nitrobenzene-d5	94	20-140		07/13/2018 18:06
2-Fluorobiphenyl	95	40-140		07/13/2018 18:06
2,4,6-Tribromophenol	43	16-180		07/13/2018 18:06
4-Terphenyl-d14	108	40-170		07/13/2018 18:06

Analyst(s): REB Analytical Comments: a3,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW3510C/3630C
Date Prepared:	7/12/18	**Analytical Method:**	SW8015B
Project:	338841	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/ Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	**1807570-001B**	**Water**	**07/12/2018 14:06**	**GC6B 07131885.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	50	1	07/14/2018 21:33
TPH-Motor Oil (C18-C36)	ND	250	1	07/14/2018 21:33

Surrogates	REC (%)	Limits	
C9	87	61-139	07/14/2018 21:33

Analyst(s): JIS Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	**1807570-002B**	**Water**	**07/12/2018 12:29**	**GC6B 07181827.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**14,000**	50	1	07/18/2018 19:05
TPH-Motor Oil (C18-C36)	ND	250	1	07/18/2018 19:05

Surrogates	REC (%)	Qualifiers	Limits	
C9	233	S	61-139	07/18/2018 19:05

Analyst(s): JIS Analytical Comments: e4,e8,e2,b6,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1807570-003B**	**Water**	**07/12/2018 13:41**	**GC9a 07161862.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	50	1	07/17/2018 08:16
TPH-Motor Oil (C18-C36)	ND	250	1	07/17/2018 08:16

Surrogates	REC (%)	Limits	
C9	91	61-139	07/17/2018 08:16

Analyst(s): JIS Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW3510C/3630C
Date Prepared:	7/12/18	**Analytical Method:**	SW8015B
Project:	338841	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/ Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1807570-004B**	**Water**	**07/12/2018 14:20**	**GC6B 07181821.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**1600**	50	1	07/18/2018 17:07
TPH-Motor Oil (C18-C36)	ND	250	1	07/18/2018 17:07

Surrogates	REC (%)	Limits	
C9	87	61-139	07/18/2018 17:07

Analyst(s): JIS Analytical Comments: e4,e8,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1807570-005B**	**Water**	**07/12/2018 11:08**	**GC6B 07181813.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**120**	50	1	07/18/2018 14:31
TPH-Motor Oil (C18-C36)	ND	250	1	07/18/2018 14:31

Surrogates	REC (%)	Limits	
C9	92	61-139	07/18/2018 14:31

Analyst(s): JIS Analytical Comments: e4/e8,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1807570-006B**	**Water**	**07/12/2018 12:21**	**GC6B 07181823.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**360**	50	1	07/18/2018 17:47
TPH-Motor Oil (C18-C36)	ND	250	1	07/18/2018 17:47

Surrogates	REC (%)	Limits	
C9	82	61-139	07/18/2018 17:47

Analyst(s): JIS Analytical Comments: e4,e8,e2,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Received:	7/12/18 20:17	**Extraction Method:**	SW3510C/3630C
Date Prepared:	7/12/18	**Analytical Method:**	SW8015B
Project:	338841	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/ Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	**1807570-007B**	**Water**	**07/12/2018 10:50**	**GC6B 07181825.D**	**161429**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**590**	50	1	07/18/2018 18:25
TPH-Motor Oil (C18-C36)	ND	250	1	07/18/2018 18:25

Surrogates	REC (%)	Limits	
C9	82	61-139	07/18/2018 18:25

Analyst(s): JIS

Analytical Comments: e4,e8,e2,b1

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/16/18	**BatchID:**	161566
Date Analyzed:	7/16/18	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161566

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Benzene	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-
Surrogate Recovery					
Dibromofluoromethane	24.4		25	97	91-133
Toluene-d8	28.9		25	116	87-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzene	9.45	9.93	10	95	99	74-121	4.94	20
Ethylbenzene	9.99	10.2	10	100	102	71-125	1.97	20
Methyl-t-butyl ether (MTBE)	8.40	8.85	10	84	88	64-118	5.22	20
Toluene	8.85	9.30	10	89	93	67-124	4.99	20
Xylenes, Total	30.3	29.4	30	101	98	68-128	2.96	20
Surrogate Recovery								
Dibromofluoromethane	25.5	25.4	25	102	101	91-133	0.467	20
Toluene-d8	28.8	29.3	25	115	117	87-127	1.76	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/16/18	**BatchID:**	161566
Date Analyzed:	7/16/18	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161566

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)	ND	50	-	-	-
Surrogate Recovery					
Dibromofluoromethane	25.0		25	100	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH(g) (C6-C12)	212	207	200	106	103	70-130	2.32	20
Surrogate Recovery								
Dibromofluoromethane	25.2	25.3	25	101	101	91-133	0	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/12/18	**BatchID:**	161373
Date Analyzed:	7/12/18	**Extraction Method:**	E625
Instrument:	GC17	**Analytical Method:**	SW8270C
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161373

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	-	-	-
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.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/12/18	**BatchID:**	161373
Date Analyzed:	7/12/18	**Extraction Method:**	E625
Instrument:	GC17	**Analytical Method:**	SW8270C
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161373

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-Nitrosodimethylamine	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	19.6		20	98	29-140
Phenol-d5	21.4		20	107	38-148
Nitrobenzene-d5	18.6		20	93	31-152
2-Fluorobiphenyl	17.2		20	86	40-140
2,4,6-Tribromophenol	24.0		20	120	39-150
Terphenyl-d14	17.5		20	88	38-147

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/12/18	**BatchID:**	161373
Date Analyzed:	7/12/18	**Extraction Method:**	E625
Instrument:	GC17	**Analytical Method:**	SW8270C
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161373

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	9.63	8.98	10	96	90	47-145	6.91	20
Acenaphthylene	10.2	9.63	10	102	96	33-145	5.38	20
Anthracene	10.1	9.41	10	101	94	27-133	6.86	20
Benzidine	50.6	48.4	50	101	97	43-106	4.56	20
Benzo (a) anthracene	9.30	8.68	10	93	87	33-143	6.91	20
Benzo (a) pyrene	12.2	11.3	10	123	113	17-163	8.16	20
Benzo (b) fluoranthene	11.5	10.9	10	115	109	24-159	5.27	20
Benzo (g,h,i) perylene	11.1	10.3	10	111	103	1-219	7.04	20
Benzo (k) fluoranthene	10.6	9.53	10	106	95	11-162	10.3	20
Bis (2-chloroethoxy) Methane	10.1	9.61	10	101	96	33-184	5.05	20
Bis (2-chloroethyl) Ether	10.3	9.73	10	103	97	12-158	5.44	20
Bis (2-chloroisopropyl) Ether	9.12	8.87	10	91	89	36-166	2.77	20
Bis (2-ethylhexyl) Adipate	9.70	8.82	10	97	88	55-122	9.52	20
Bis (2-ethylhexyl) Phthalate	9.88	9.07	10	99	91	8-158	8.60	20
4-Bromophenyl Phenyl Ether	9.72	9.06	10	97	91	53-127	7.03	20
Butylbenzyl Phthalate	10.5	9.63	10	105	96	1-152	9.01	20
4-Chloroaniline	11.9	11.4	10	119	114	63-120	4.89	20
4-Chloro-3-methylphenol	11.5	10.8	10	115	108	22-147	6.47	20
2-Chloronaphthalene	9.80	9.37	10	98	94	60-118	4.44	20
2-Chlorophenol	10.6	10.3	10	106	103	23-134	3.03	20
4-Chlorophenyl Phenyl Ether	10.0	9.35	10	100	94	25-158	7.17	20
Chrysene	9.64	8.84	10	96	88	17-168	8.63	20
Dibenzo (a,h) anthracene	11.4	10.6	10	114	106	1-227	7.17	20
Dibenzofuran	9.85	9.29	10	99	93	64-122	5.89	20
Di-n-butyl Phthalate	11.9	11.0	10	119, F2	110	1-118	7.68	20
1,2-Dichlorobenzene	8.99	8.84	10	90	88	32-129	1.75	20
1,3-Dichlorobenzene	8.93	8.73	10	89	87	1-172	2.24	20
1,4-Dichlorobenzene	8.70	8.57	10	87	86	20-124	1.47	20
3,3-Dichlorobenzidine	11.0	10.2	10	110	102	1-262	6.76	20
2,4-Dichlorophenol	10.2	9.76	10	102	98	39-135	4.09	20
Diethyl Phthalate	11.1	10.4	10	111	104	1-114	6.82	20
2,4-Dimethylphenol	10.4	10.1	10	104	101	32-119	3.12	20
Dimethyl Phthalate	10.7	9.96	10	107	100	1-112	7.42	20
4,6-Dinitro-2-methylphenol	50.9	47.6	50	102	95	59-123	6.67	20
2,4-Dinitrophenol	50.3	47.5	50	101	95	1-191	5.69	20
2,4-Dinitrotoluene	11.0	10.3	10	110	103	39-139	6.68	20
2,6-Dinitrotoluene	10.6	9.94	10	106	99	50-158	6.29	20
Di-n-octyl Phthalate	11.0	10.1	10	110	101	4-146	9.25	20

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/12/18	**BatchID:**	161373
Date Analyzed:	7/12/18	**Extraction Method:**	E625
Instrument:	GC17	**Analytical Method:**	SW8270C
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161373

QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,2-Diphenylhydrazine	9.27	8.54	10	93	85	66-128	8.23	20
Fluoranthene	10.9	10.2	10	109	101	26-137	6.93	20
Fluorene	10.8	9.96	10	108	100	59-121	7.99	20
Hexachlorobenzene	9.05	8.32	10	90	83	1-152	8.42	20
Hexachlorobutadiene	8.82	8.55	10	88	85	24-116	3.15	20
Hexachlorocyclopentadiene	33.9	34.3	50	68	69	36-109	1.21	20
Hexachloroethane	8.61	8.46	10	86	85	40-113	1.84	20
Indeno (1,2,3-cd) pyrene	11.5	10.7	10	115	107	1-171	7.03	20
Isophorone	10.5	9.92	10	105	99	21-196	5.30	20
2-Methylnaphthalene	11.1	10.6	10	111	106	58-122	4.81	20
2-Methylphenol (o-cresol)	11.7	11.2	10	117	112	55-121	4.42	20
3 & 4-Methylphenol (m,p-Cresol)	11.3	10.9	10	113	109	58-121	4.15	20
Naphthalene	9.36	9.02	10	94	90	21-133	3.73	20
2-Nitroaniline	53.8	49.9	50	108	100	65-124	7.52	20
3-Nitroaniline	58.6	54.4	50	117	109	67-125	7.44	20
4-Nitroaniline	60.4	56.7	50	121	113	65-124	6.30	20
Nitrobenzene	9.62	9.23	10	96	92	35-180	4.15	20
2-Nitrophenol	52.4	49.6	50	105	99	29-182	5.59	20
4-Nitrophenol	57.6	52.9	50	115	106	1-132	8.45	20
N-Nitrosodiphenylamine	9.66	8.87	10	97	89	67-132	8.50	20
N-Nitrosodi-n-propylamine	11.4	10.9	10	114	109	1-230	4.83	20
Pentachlorophenol	24.5	22.6	20	123	113	14-176	7.89	20
Phenanthrene	9.27	8.66	10	93	87	54-120	6.84	20
Phenol	10.8	10.4	10	108	104	5-112	3.73	20
Pyrene	9.19	8.41	10	92	84	52-115	8.91	20
1,2,4-Trichlorobenzene	9.01	8.94	10	90	89	44-142	0.750	20
2,4,5-Trichlorophenol	10.2	9.64	10	102	96	62-124	5.33	20
2,4,6-Trichlorophenol	9.86	9.38	10	99	94	37-144	5.02	20
Surrogate Recovery								
2-Fluorophenol	19.0	19.4	20	95	97	29-140	2.03	20
Phenol-d5	21.3	21.6	20	107	108	38-148	1.54	20
Nitrobenzene-d5	20.0	20.4	20	100	102	31-152	1.68	20
2-Fluorobiphenyl	18.4	18.7	20	92	94	40-140	1.59	20
2,4,6-Tribromophenol	22.2	21.7	20	111	108	39-150	2.52	20
Terphenyl-d14	19.7	18.9	20	98	94	38-147	4.14	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1807570
Date Prepared:	7/12/18	**BatchID:**	161429
Date Analyzed:	7/14/18 - 7/16/18	**Extraction Method:**	SW3510C/3630C
Instrument:	GC6A	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	338841	**Sample ID:**	MB/LCS/LCSD-161429

QC Report for SW8015B w/ Silica Gel Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	598		625	96	68-127

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1370	1270	1000	137	127	86-142	7.22	30
Surrogate Recovery								
C9	557	506	625	89	81	68-127	9.60	30

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1807570 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
Wayne Hung
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 478-9698 FAX: (925) 944-2895

Email: whung@aeiconsultants.com
cc/3rd Party: akittredge@aeiconsultants.com;
PO: 166990
Project: 338841

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

Requested TAT: 5 days;

Date Received: 07/12/2018
Date Logged: 07/12/2018

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
1807570-001	MW-1	Water	7/12/2018 14:06	☐	A	A	C	A	B							
1807570-002	MW-2	Water	7/12/2018 12:29	☐	A	A	C		B							
1807570-003	MW-3	Water	7/12/2018 13:41	☐	A	A	C		B							
1807570-004	MW-4	Water	7/12/2018 14:20	☐	A	A	C		B							
1807570-005	MW-5	Water	7/12/2018 11:08	☐	A	A	C		B							
1807570-006	MW-6	Water	7/12/2018 12:21	☐	A	A	C		B							
1807570-007	MW-7	Water	7/12/2018 10:50	☐	A	A	C		B							

Test Legend:

1	8260B_BTEX_W	2	8260GAS_W	3	8270_W	4	PREDF REPORT
5	TPH(DMO)WSG_W	6		7		8	
9		10		11		12	

Prepared by: Kena Ponce

The following SampIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A contain testgroup GBTEX8260_W.

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.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 338841 **Work Order:** 1807570
Client Contact: Wayne Hung **QC Level:** LEVEL 2
Contact's Email: whung@aeiconsultants.com **Comments:** **Date Logged:** 7/12/2018

☐ 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
1807570-001A	MW-1	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 14:06	5 days	1%+	☐	
1807570-001B	MW-1	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 14:06	5 days	1%+	☐	
1807570-001C	MW-1	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 14:06	5 days	1%+	☐	
1807570-002A	MW-2	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 12:29	5 days	1%+	☐	
1807570-002B	MW-2	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 12:29	5 days	1%+	☐	
1807570-002C	MW-2	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 12:29	5 days	1%+	☐	
1807570-003A	MW-3	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 13:41	5 days	1%+	☐	
1807570-003B	MW-3	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 13:41	5 days	1%+	☐	
1807570-003C	MW-3	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 13:41	5 days	1%+	☐	
1807570-004A	MW-4	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 14:20	5 days	1%+	☐	
1807570-004B	MW-4	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 14:20	5 days	1%+	☐	
1807570-004C	MW-4	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 14:20	5 days	1%+	☐	
1807570-005A	MW-5	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 11:08	5 days	1%+	☐	
1807570-005B	MW-5	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 11:08	5 days	1%+	☐	
1807570-005C	MW-5	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 11:08	5 days	1%+	☐	
1807570-006A	MW-6	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 12:21	5 days	1%+	☐	

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.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 338841 **Work Order:** 1807570
Client Contact: Wayne Hung **QC Level:** LEVEL 2
Contact's Email: whung@aeiconsultants.com **Comments:** **Date Logged:** 7/12/2018

☐ 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
1807570-006B	MW-6	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 12:21	5 days	1%+	☐	
1807570-006C	MW-6	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 12:21	5 days	1%+	☐	
1807570-007A	MW-7	Water	TPH(g) & BTEX by 8260B	4	VOA w/ HCl	☐	7/12/2018 10:50	5 days	1%+	☐	
1807570-007B	MW-7	Water	SW8015B (TPH-d,mo w/ S.G. Clean-Up)	2	aVOA, Unpres	☐	7/12/2018 10:50	5 days	1%+	☐	
1807570-007C	MW-7	Water	SW8270C (SVOCs)	1	1LA, Unpres	☐	7/12/2018 10:50	5 days	1%+	☐	

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.

MAI Work Order # 1807870

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD	X	Quote #	
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #	
Delivery Format:	PDF		GeoTracker EDF	X	EDD		Write On (DW)		EQuIS

Report To: Wayne Hung, Ariel Kittredge	Bill To: AEI Consultants
Company: AEI Consultants	
Email: whung@aeiconsultants.com	
Alt Email: akittredge@aeiconsultants.com	Tele: 925-478-9698
Project Name:	Project #: 338841
Project Location: 3635 13th Avenue, Oakland CA	PO # 166990
Sampler Signature: [signature]	

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	BTEX & TPH-g by 8260B	TPH-d & TPH-mo by 8015M with SGC	SVOC with 8270	
MW-1	7/12/18	14:06	7	Water	HCl/NP																X	X	X	
MW-2	↓	12:29	↓	↓	↓																↓	↓	↓	
MW-3	↓	13:41	↓	↓	↓																↓	↓	↓	
MW-4	↓	14:20	↓	↓	↓																↓	↓	↓	
MW-5	↓	11:08	↓	↓	↓																↓	↓	↓	
MW-6	↓	12:21	↓	↓	↓																↓	↓	↓	
MW-7	↓	10:50	↓	↓	↓																↓	↓	↓	

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	7/12/18	20:17	[signature]	7/12/18	2017

Comments / Instructions

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 5.8 °C Initials ____

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"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received	**7/12/2018 20:17**
Project:	**338841**	Date Logged:	**7/12/2018**
		Received by:	Kena Ponce
WorkOrder №:	**1807570** Matrix: Water	Logged by:	Kena Ponce
Carrier:	Client Drop-In		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	
COC agrees with Quote?	Yes	☐	No	☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Samples Received on Ice?	Yes	☑	No	☐	
(Ice Type: WET ICE)					
Sample/Temp Blank temperature	Temp: 5.8°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
UCMR Samples:					
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA ☑

Comments: