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Alameda County
Environmental Health

November 4, 2010

Paresh Khatri
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Authorization To Sign On Behalf of Ms. Kanwaljit Sappal
6211 San Pablo Avenue
Oakland, California
AEI Project # 280346
Fuel Leak Case RO0000127

Dear Mr. Khatri:

This letter has been submitted to inform you that I (Ms. Kanwaljit K. Sappal) am the owner of the property located at 6211 San Pablo Avenue in San Pablo, California, and that Jeremy Smith of AEI Consultants is authorized to sign reports and correspondence submitted to the Alameda County Health Care Services Agency on my behalf. I declare, to the best of my knowledge, that the information and/or recommendations contained in the attached document are true and correct.

If you have any additional questions or require additional information, please contact me at (707) 553-1200.

Best Regards,



Kanwaljit Sappal

cc: Mr. Jeremy Smith – AEI Consultants



AEI Consultants

Environmental & Engineering Services

March 30, 2011

GROUNDWATER MONITORING REPORT- 1st SEMESTER 2011

Property Identification:

6211 San Pablo Avenue
Oakland, California 94608

AEI Project No. 280346
ACHCS Case No. RO0000127

Prepared for:

Mr. Pritpaul Sappal
1811 Bell Rio Drive
Lafayette, CA 94549

Prepared by:

AEI Consultants
2500 Camino Diablo
Walnut Creek, CA 94597
(925) 746-6000

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March 30, 2011

Mr. Pritpaul Sappal
1811 Bell Rio Drive
Lafayette, CA 94549

Subject: Semi-Annual Groundwater Monitoring Report – 1st Semester, 2011
6211 San Pablo Avenue,
Oakland, California
AEI Project No. 280346
ACHCS Case No. RO0000127

Dear Mr. Sappal:

AEI Consultants (AEI) has prepared this report on behalf of Mr. Pritpaul Sappal (client), owner of the subject site, located at 6211 San Pablo Avenue, Oakland, California (Figure 1: Site Location Plan). This report has been prepared at the request of the client, as required by the Alameda County Health Care Services Agency (ACHCSA), and presents the findings of the 1st Semester 2011 groundwater monitoring and sampling event conducted on February 17, 2011.

Background

The subject property is located at 6211 San Pablo Avenue, northwest of the intersection of San Pablo Avenue and 62nd Street in a mixed residential and light commercial area of Oakland, California (Figure 1 and 2). The site currently consists of a retail gasoline station with three underground storage tanks (USTs) dispensing gasoline fuel through six dual-sided fuel dispensing islands. Site features are included in Figure 3.

Between 1999 and 2007, Herschy Environmental, Inc. (Herschy) advanced sixteen soil borings (B-1 through B-14, DP-1, and DP-3), installed six monitoring wells (MW-1 through MW-6), five air sparge wells (AS-1 through AS-5), thirteen vapor extraction wells (VE-1 through VE-13), one groundwater extraction well (EX-1), and replaced MW-1 with MW-1R. In addition, three 10,000 gallon USTs and associated product piping were removed and replaced (with the current UST system) at the site. A soil vapor extraction system was operated at the site between 2006 and 2007, however is no longer present.

In September 2008, consulting responsibilities were transferred to AEI Consultants. Between 2008 and 2010, AEI advanced ten shallow soil borings (DP-4, SB-5, SB-7 to SB-14), four deep soil borings (DDP-1 to DDP-4), three nested soil vapor probes (SG-1 through SG-3), four offsite monitoring wells (MW-7 through MW-10), and five soil vapor wells (SG-4 through SG-8) to further evaluate the extent of contamination. From February 17, 2010 through April 16, 2010, AEI conducted pilot testing activities to investigate the possibility of using Bioventing and/or ozone sparging as a remedial option for the adsorbed and dissolved phase contamination.

Please refer to AEI's Well Installation and Feasibility Study Report dated October 5, 2010 for a detailed description of historical site activities. The remainder of this report describes the findings of the recent monitoring and sampling event for the subject property.

Summary of Activities

AEI measured the depth to groundwater in the well network (MW-1R, MW-2 through MW-10, and EX-1) on February 17, 2011. The wells caps were first removed from each well, allowing the groundwater to equilibrate with the atmosphere. The depth to water from the top of each well casing was measured with an electric water level indicator prior to sampling. The wells were also checked for the presence of light non-aqueous phase liquid (LNAPL) using an oil/water interface meter, however LNAPL was not detected in any of the wells. The wells were then purged by using a submersible pump and groundwater samples were collected using clean, unused disposable plastic bailers. The following parameters were measured during purging: temperature, pH, specific conductivity, dissolved oxygen (DO) and oxidation-reduction potential (ORP). At least three well volumes of water were removed from the wells that were sampled. Once the wells had recharged to at least 90% of the original water level, a water sample was collected. Groundwater field sampling forms are included in Appendix A.

Groundwater was collected into 40 ml volatile organic analysis (VOA) vials and capped so that neither headspace nor air bubbles were visible within the sample containers. Samples were transported on ice under proper chain of custody protocol to McCampbell Analytical, Inc. of Pittsburg, California (Department of Health Services Certification #1644).

The groundwater samples were collected and analyzed for total petroleum hydrocarbons as gasoline (TPHg) (EPA Method 8015Cm), and benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX) and methyl tert-butyl ether (MTBE), by EPA Method 8021B. The groundwater samples were also analyzed for tert-Amyl Methyl Ether (TAME), tert-Butanol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), 1,2-Dichloroethane (1,2-DCA), ethylene dibromide (EDB), and MTBE by EPA method 8260.

Field Results

No free product was encountered during monitoring activities during the recent sampling events. Groundwater elevations during the current monitoring episode ranged from 26.97 to 31.52 feet above mean sea level (amsl). The groundwater was on average 2.50 feet higher than during the previous sampling event. The direction of the groundwater flow during the February 17, 2011 sampling event was towards the west/southwest with an estimated overall hydraulic gradient of 0.01 feet/foot, relatively consistent with historical groundwater flow data. Groundwater elevation data is summarized in Table 1 and 2, and a groundwater elevation map is included as Figure 4.

Groundwater Quality

Select dissolved hydrocarbons were detected in the groundwater samples as follows:

- Monitoring well MW-1R was reported to contain TPHg and benzene at a concentration of 210 micrograms per liter ($\mu\text{g/L}$) and $4.0 \mu\text{g/L}$, respectively. MTBE was not reported at or above the laboratory detection limit for the second straight time. These concentrations are lower than the previous sampling event, and generally lower than historical concentrations.
- Monitoring well MW-2 was reported to contain MTBE at a concentration of $8.3 \mu\text{g/L}$. TPHg was not reported at or above the laboratory detection limit for the second straight time and benzene was not detected for the first time. The MTBE concentration represent a slight increase since the previous event, however much lower than historical concentrations.
- Monitoring well MW-3 was reported to contain TPHg, benzene, MTBE, and TBA at concentrations of $290 \mu\text{g/L}$, $1.0 \mu\text{g/L}$, $73 \mu\text{g/L}$, and $8,500 \mu\text{g/L}$, respectively. These concentrations are significantly lower than previous data and are all time lows for each of the constituents.
- Monitoring well MW-4 was reported to contain TPHg, benzene, MTBE, and TBA at concentrations of $7,600 \mu\text{g/L}$, $190 \mu\text{g/L}$, $130 \mu\text{g/L}$, and $790 \mu\text{g/L}$, respectively. These concentrations are each lower than what was reported during the previous period and are all time lows for each of the constituents.
- Monitoring well MW-5 was reported to contain MTBE at a concentration of $3.7 \mu\text{g/L}$. The remaining petroleum hydrocarbons were not detected at or above the laboratory detection limit.
- Petroleum hydrocarbons were not detected at or above the laboratory detection limit in the groundwater sample analyzed from well MW-6.
- Monitoring well MW-7 was reported to contain TPHg, benzene, MTBE, and TBA at a concentration of $2,400 \mu\text{g/L}$, $35 \mu\text{g/L}$, $670 \mu\text{g/L}$, and $1,300 \mu\text{g/L}$, respectively. TPHg and benzene were slightly higher than during the previous sampling event, however MTBE and TBA were significantly lower than during the previous sampling event.
- Monitoring well MW-8 was reported to contain TPHg, benzene, MTBE, and TBA at a concentration of $500 \mu\text{g/L}$, $3.6 \mu\text{g/L}$, $1,300 \mu\text{g/L}$, and $25,000 \mu\text{g/L}$, respectively. These concentrations are relatively consistent with the previous sampling events.
- Monitoring well MW-9 was reported to contain MTBE and TBA at a concentration of $160 \mu\text{g/L}$ and $1,300 \mu\text{g/L}$, respectively. These concentrations are relatively consistent with the previous sampling events.
- Monitoring well MW-10 was reported to contain TPHg and MTBE at a concentration of $150 \mu\text{g/L}$ and $6.9 \mu\text{g/L}$, respectively. Benzene and TBA were not detected at or above the laboratory detection limit. MTBE decreased significantly from the previous sampling event, however TPHg slightly increased.
- Well EX-1 was reported to contain TPHg, benzene, MTBE, and TBA at concentrations of $33,000 \mu\text{g/L}$, $1,700 \mu\text{g/L}$, $720 \mu\text{g/L}$, and $600 \mu\text{g/L}$, respectively. With the exception of TBA, these concentrations, are higher than the last sampling event.

Complete groundwater sample analytical data from the sampling event is included in Table 3 and select data is displayed on Figure 5. Laboratory results and chain of custody documents are included in Appendix B.

Summary

Groundwater during the February 2011 monitoring and sampling event was calculated to flow towards the west/southwest with an estimated overall hydraulic gradient of 0.01 feet/foot, relatively consistent with historical data. Groundwater levels increased during the recent event by 2.50 feet on average. Although hydrocarbons remain elevated in several wells, many of the wells have exhibited a decrease in hydrocarbon concentrations. Trends have not yet been established in offsite wells. AEI's request for case closure, documented in the recent Well Installation and Feasibility Study Report, dated October 5, 2010, was rejected by the ACHCSA. Furthermore, the ACHCSA has requested the completion of a corrective action plan for the site, which AEI completed on March 25, 2011 and subsequently submitted to the ACHCSA. AEI plans to continue monitoring the existing well network on a semi-annual basis with the next semi-annual sampling event currently scheduled for August 2011 (2nd Semester 2011 Event).

Report Limitations and signatures

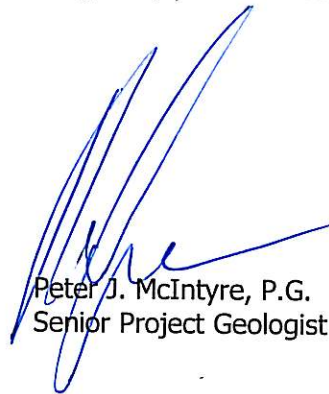
This report presents a summary of work completed by AEI Consultants. The completed work includes observations and descriptions of site conditions encountered. Where appropriate, it includes analytical results for samples taken during the course of the work. The number and location of samples are chosen to provide the requested information, but it cannot be assumed that they are representative of areas not sampled. All conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document.

These services were performed in accordance with generally accepted practices, in the environmental engineering and consulting field, which existed at the time and location of the work. If you have any questions regarding our investigation, please do not hesitate to contact one of us at (925) 746-6000.

Sincerely,
AEI Consultants



Jeremy Smith, REA II
Senior Project Manager



Peter J. McIntyre, P.G.
Senior Project Geologist



Figures

- Figure 1: Site Location Plan
- Figure 2: Extended Site Plan
- Figure 3: Site Plan
- Figure 4: Groundwater Elevation Map
- Figure 5: Groundwater Analytical Map

Tables

- Table 1: Groundwater Elevation Data
- Table 2: Groundwater Flow Data
- Table 3: Groundwater Analytical Data

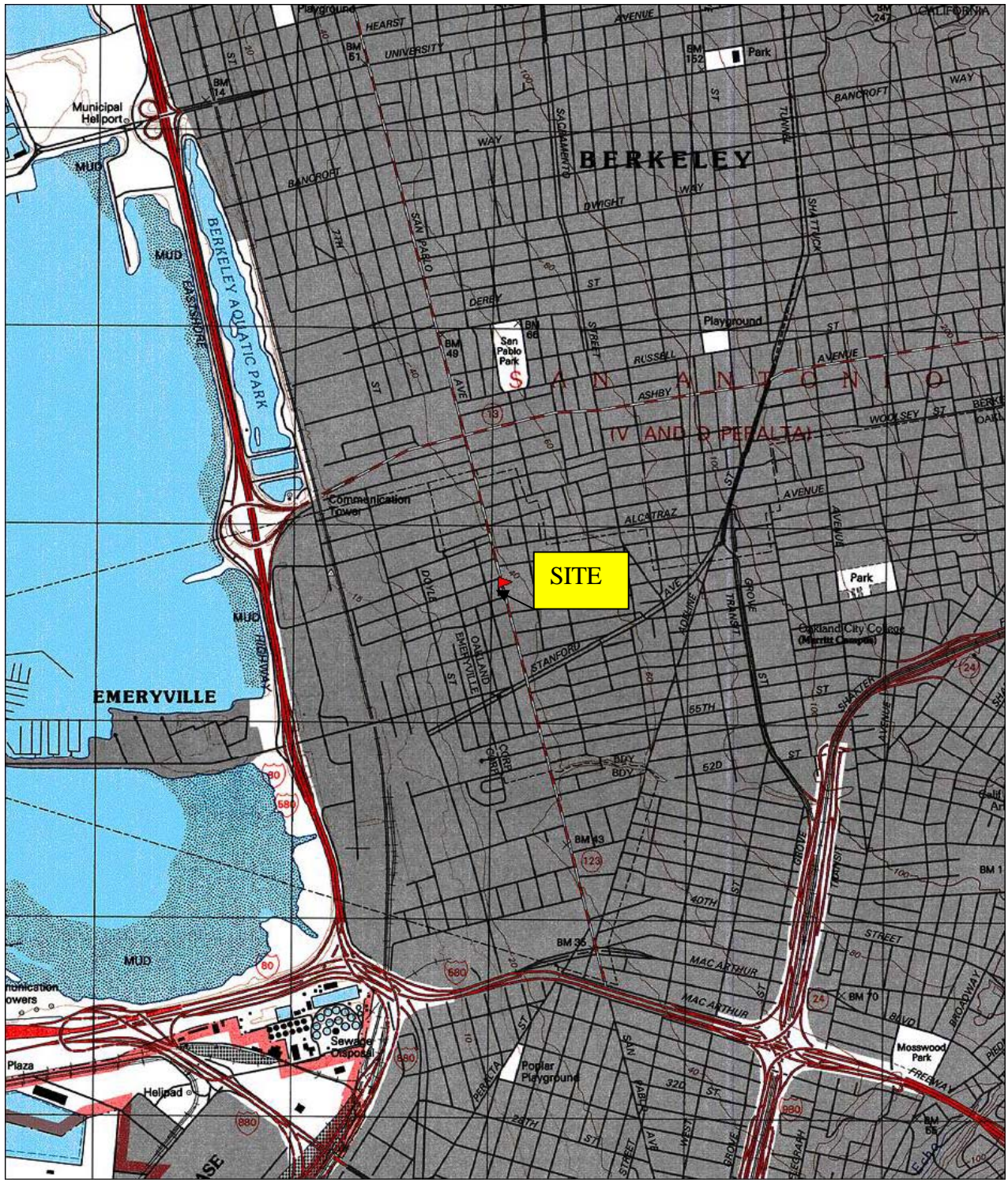
Appendix A: Groundwater Monitoring Well Field Sampling Forms

Appendix B: Laboratory Analyses with Chain of Custody Documentation

Distribution:

- Mr. Pritpaul Sappal, 1811 Bell Rio Drive, Lafayette, CA 94549
- Mr. Paresh Khatri, ACHCSA, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502 (electronic upload)
- Mr. Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612
- Geotracker (electronic upload)

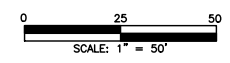
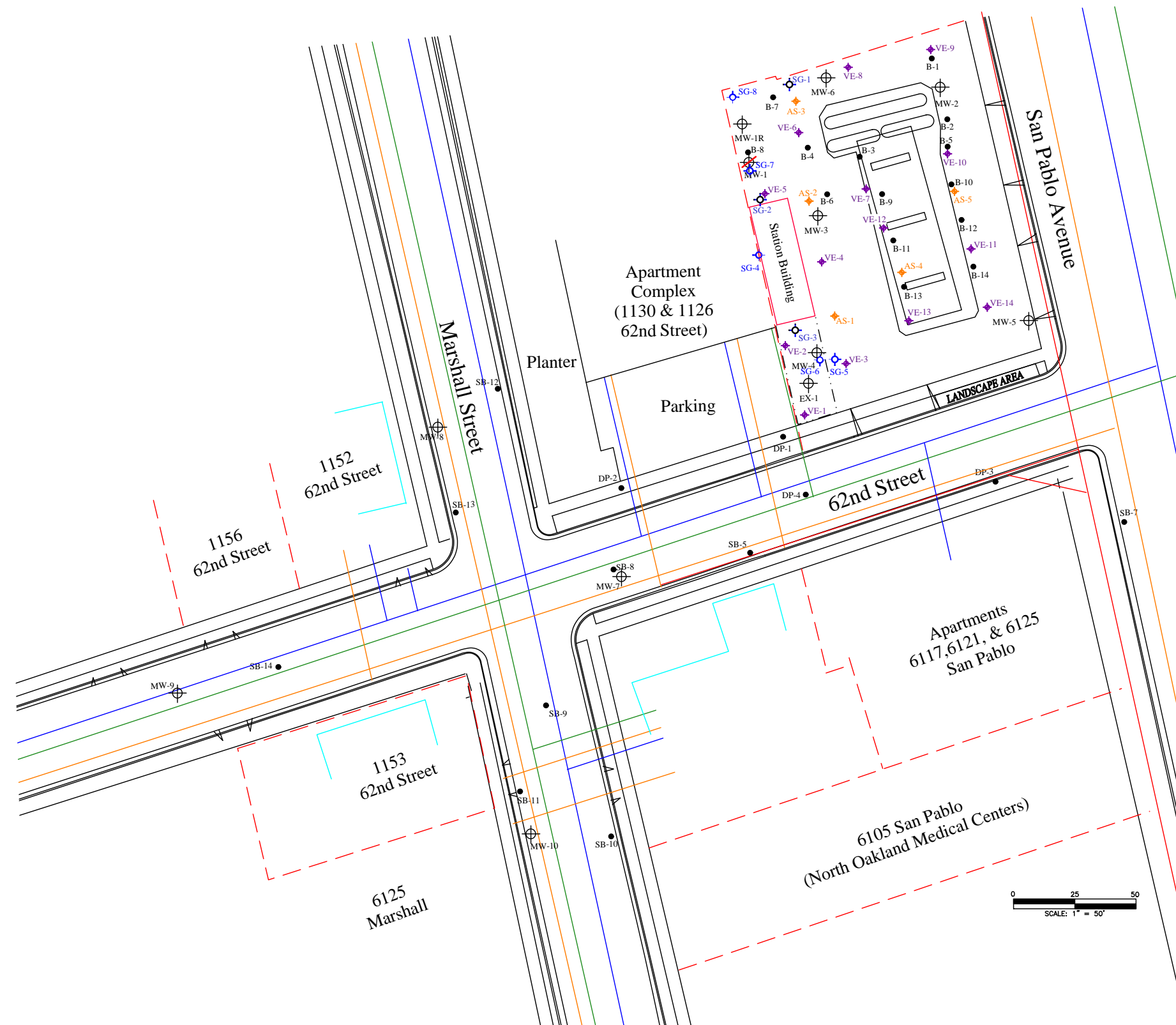
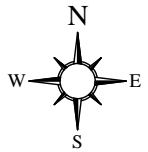
FIGURES











TN \nearrow MN
15°

0 5 1 MILE
0 1000 FEET 0 500 1000 METERS
Map created with TOPO! © 2003 National Geographic (www.nationalgeographic.com/topo)

AEI CONSULTANTS	
SITE LOCATION PLAN	
6211 SAN PABLO AVENUE OAKLAND, CALIFORNIA	FIGURE 1 PROJECT NO. 280346



LEGEND

-  MONITORING WELL
-  SOIL BORING
-  ABANDONED WELL
-  NESTED VAPOR PROBE
-  VAPOR EXTRACTION WELL
-  AIR SPARGE WELL
-  APPROXIMATE PROPERTY BOUNDARY
-  WATER LINE
-  NATURAL GAS LINE
-  ELECTRIC LINE
-  SEWER LINE

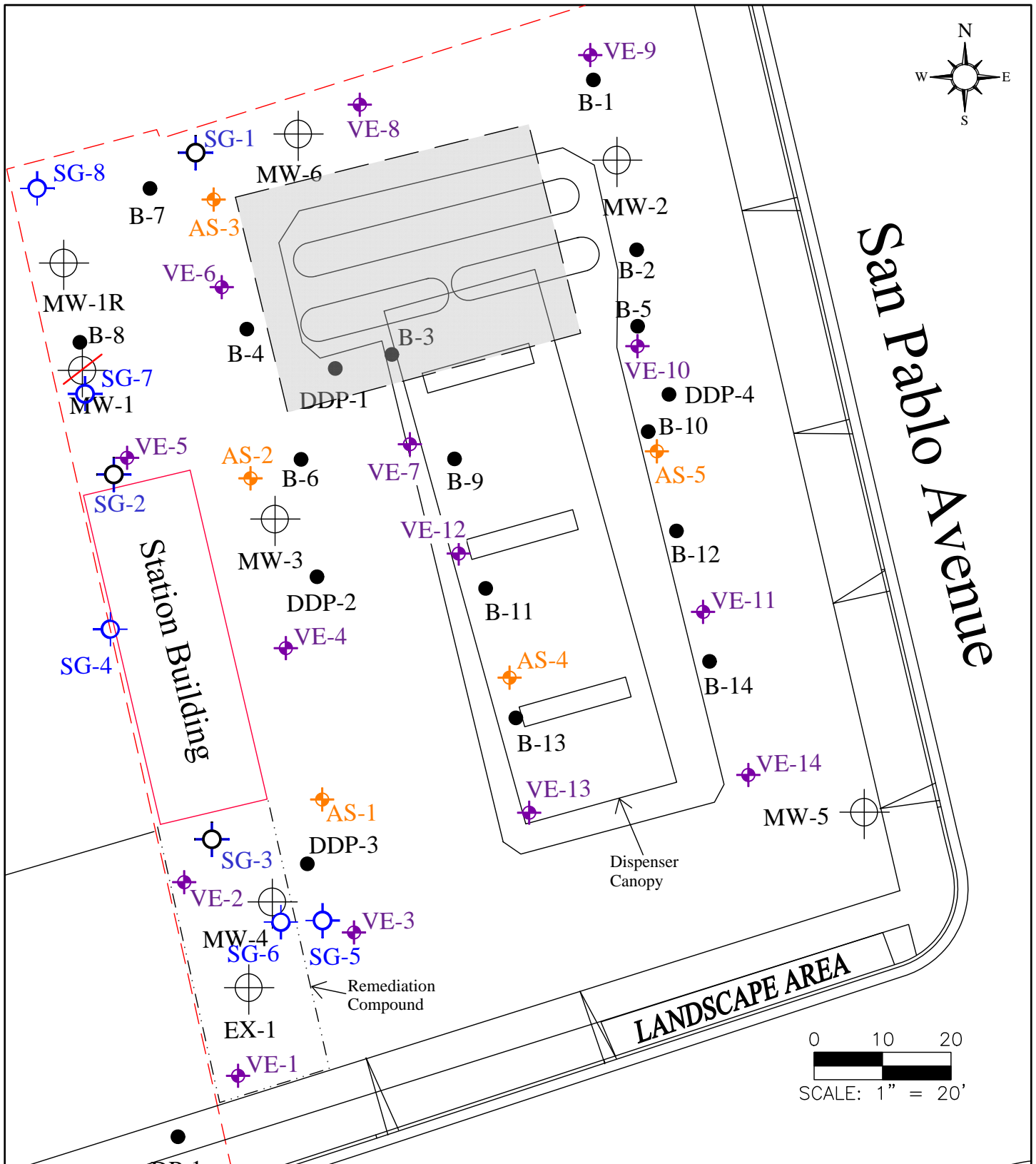
DRAFTED BY JAS 9/10/08
 REVISED BY JAS 9/26/08

AEI CONSULTANTS
 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

EXTENDED SITE PLAN

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 2
 PROJECT NO. 280346



LEGEND

- | | | | |
|--|------------------|--|--------------------------|
| | MONITORING WELL | | VAPOR EXTRACTION WELL |
| | SOIL BORING | | AIR SPARGE WELL |
| | ABANDONED WELL | | UNDERGROUND STORAGE TANK |
| | SOIL VAPOR PROBE | | DISPENSER ISLAND |
| | | | FORMER UST EXCAVATION |

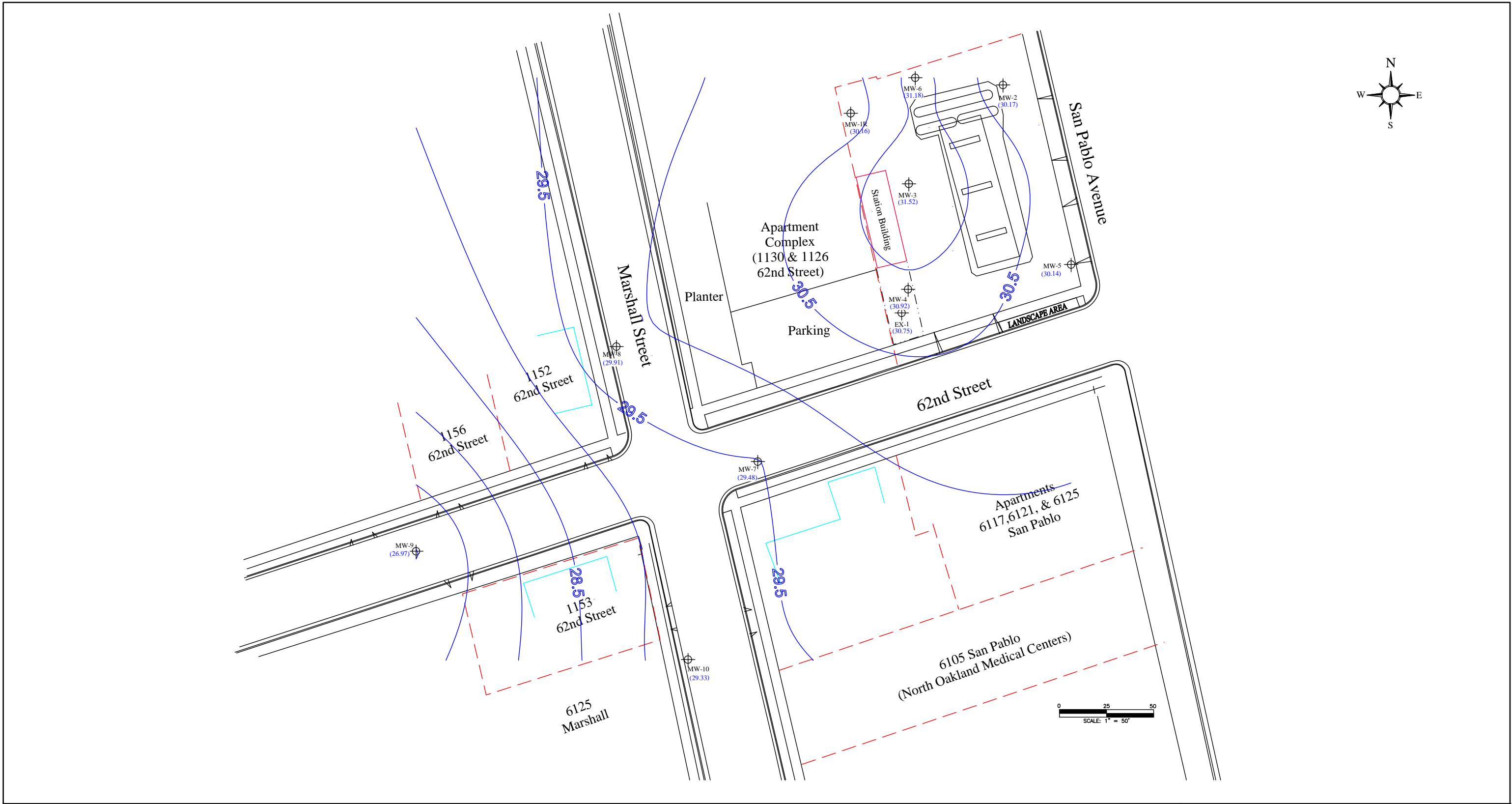
DRAFTED BY JAS 09-10-08
 REVISED BY JAS 09-26-08

AEI CONSULTANTS
 2500 CAMINO DIABLO, WALNUT CREEK

SITE PLAN

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 2
 PROJECT NO. 280346



LEGEND


⊕ MONITORING WELL

(28.68) = Groundwater Elevation Mean Sea Level

Depth to Groundwater Collected on February 17, 2011

Contour Line Gradient = 0.50 Feet

Contour Lines by Surfer® Version 7


 Groundwater Flow Direction
 Groundwater Gradient
 Approximately 0.01 ft/ft

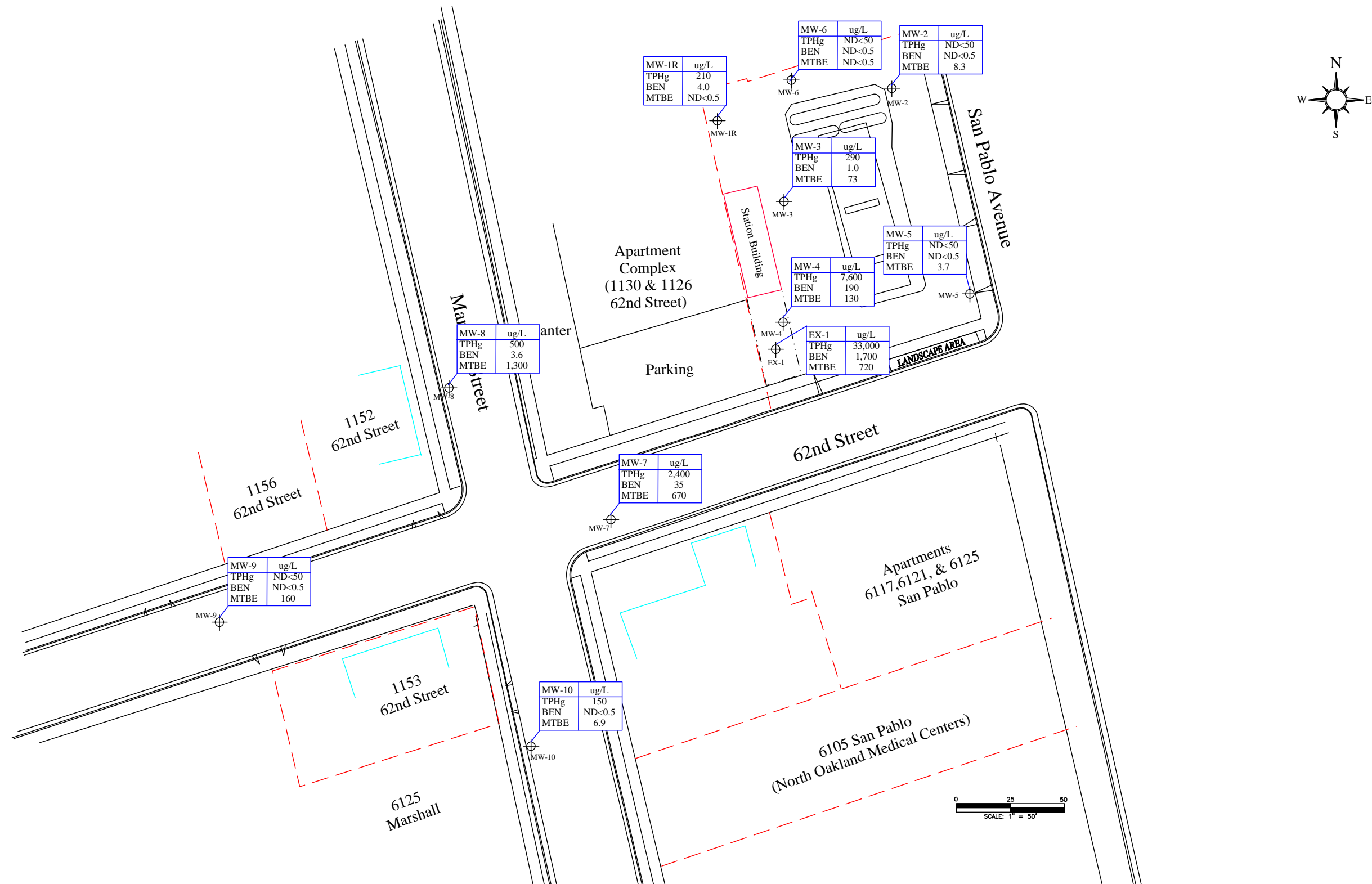
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 REVISED BY JAS 5/10/10

AEI CONSULTANTS
 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK

**GROUNDWATER
 ELEVATION MAP**

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 4
 PROJECT NO. 280346



LEGEND

⊕ MONITORING WELL

TPHg = Total Petroleum Hydrocarbons as Gasoline
 BEN = Benzene
 MTBE = Methyl Ter-butyl Ether
 ug/L = Micrograms per Liter (ppb)

DRAFTED BY JAS 9/10/08
 REVISED BY JAS 5/10/10

AEI CONSULTANTS
 2500 CAMINO DIABLO, SUITE 200, WALNUT CREEK
GROUNDWATER ANALYTICAL
MAP - February 17, 2011

6211 SAN PABLO AVENUE
 OAKLAND, CALIFORNIA

FIGURE 5
 PROJECT NO. 280346

TABLES

Table 1, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346
Groundwater Elevation Data

Well ID (Screen Interval)	Date Collected	Well Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
MW-1R (3-23)	5/15/2008	36.67	8.53	28.14
	9/10/2008	36.67	9.36	27.31
	11/18/2008	36.67	8.82	27.85
	2/17/2009	36.67	5.67	31.00
	5/15/2009	36.67	7.79	28.88
	8/13/2009	36.67	9.20	27.47
	2/23/2010	36.67	6.67	30.00
	8/12/2010	36.67	8.74	27.93
	2/17/2011	36.67	6.51	30.16
MW-2 (6-21)	5/15/2008	36.33	7.63	28.70
	9/10/2008	36.33	8.43	27.90
	11/18/2008	36.33	7.83	28.50
	2/17/2009	36.33	4.92	31.41
	5/15/2009	36.33	6.81	29.52
	8/13/2009	36.33	8.23	28.10
	2/23/2010	36.33	6.06	30.27
	8/12/2010	36.33	7.70	28.63
	2/17/2011	36.33	6.16	30.17
MW-3 (6-21)	5/15/2008	35.12	7.23	27.89
	9/10/2008	35.12	8.08	27.04
	11/18/2008	35.12	7.52	27.60
	2/17/2009	35.12	4.36	30.76
	5/15/2009	35.12	6.50	28.62
	8/13/2009	35.12	7.96	27.16
	2/23/2010	35.12	5.10	30.02
	8/12/2010	35.12	7.40	27.72
	2/17/2011	35.12	3.60	31.52
MW-4 (5-20)	5/15/2008	34.11	5.43	28.68
	9/10/2008	34.11	7.26	26.85
	11/18/2008	34.11	5.84	28.27
	2/17/2009	34.11	2.67	31.44
	5/15/2009	34.11	4.90	29.21
	8/13/2009	34.11	6.02	28.09
	2/23/2010	34.11	3.84	30.27
	8/12/2010	34.11	5.65	28.46
	2/17/2011	34.11	3.19	30.92

Well ID (Screen Interval)	Date Collected	Well Elevation (ft amsl)	Depth to Water (ft)	Groundwater Elevation (ft amsl)
MW-5 (5-25)	5/15/2008	35.17	6.29	28.88
	9/10/2008	35.17	6.99	28.18
	11/18/2008	35.17	6.41	28.76
	2/17/2009	35.17	4.07	31.10
	5/15/2009	35.17	5.59	29.58
	8/13/2009	35.17	6.81	28.36
	2/23/2010	35.17	5.05	30.12
	8/12/2010	35.17	6.61	28.56
	2/17/2011	35.17	5.03	30.14
MW-6 (5-25)	5/15/2008	36.07	7.51	28.56
	9/10/2008	36.07	8.32	27.75
	11/18/2008	36.07	7.73	28.34
	2/17/2009	36.07	4.64	31.43
	5/15/2009	36.07	6.89	29.18
	8/13/2009	36.07	8.26	27.81
	2/23/2010	36.07	5.76	30.31
	8/12/2010	36.07	7.71	28.36
	2/17/2011	36.07	4.89	31.18
MW-7 (6-16)	2/23/2010	31.16	2.09	29.07
	8/12/2010	31.16	4.14	27.02
	2/17/2011	31.16	1.68	29.48
MW-8 (5-15)	2/23/2010	30.92	2.66	28.26
	8/12/2010	30.92	4.16	26.76
	2/17/2011	30.92	1.01	29.91
MW-9 (5-15)	2/23/2010	28.90	2.84	26.06
	8/12/2010	28.90	4.53	24.37
	2/17/2011	28.90	1.93	26.97
MW-10 (5-15)	2/23/2010	30.28	0.98	29.30
	8/12/2010	30.28	3.47	26.81
	2/17/2011	30.28	0.95	29.33
EX-1 (5-30)	5/15/2008	33.28	4.69	28.59
	9/10/2008	33.28	5.46	27.82
	11/18/2008	33.28	4.79	28.49
	2/17/2009	33.28	1.86	31.42
	5/15/2009	33.28	4.16	29.12
	8/13/2009	33.28	8.36	24.92
	2/23/2010	33.28	3.09	30.19
	8/12/2010	33.28	4.91	28.37
	2/17/2011	33.28	2.53	30.75

Table 2, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346
Groundwater Flow Data

Event #	Date	Average Water Table Elevation (ft amsl)	Change from Previous Episode (ft)	Gradient (Flow Direction) (ft/ft)
1	11/7/1999	NA	NA	0.0068 (SW)
2	3/8/2001	NA	NA	0.0092 (SW)
3	11/17/2001	NA	NA	0.0091 (SW)
4	3/31/2002	NA	NA	0.0108 (SSW)
5	9/9/2003	NA	NA	0.0031 (SW)
6	12/9/2003	NA	NA	0.0031 (SW)
7	2/19/2004	NA	NA	0.0154 (SW)
8	5/24/2004	NA	NA	0.0081 (WSW)
9	9/3/2004	NA	NA	0.0075 (SW)
10	11/2/2004	NA	NA	0.0083 (WSW)
11	2/17/2005	NA	NA	0.0036 (SW)
12	5/24/2005	NA	NA	0.0097 (SSW)
13	8/15/2005	NA	NA	0.013 (SW)
14	11/17/2005	NA	NA	0.010 (SW)
15	2/8/2006	NA	NA	0.010 (SW)
16	5/5/2006	NA	NA	0.013 (SSW)
17	8/18/2006	NA	NA	0.0125 (SSW)
18	12/1/2006	NA	NA	0.03 (S)
19	2/23/2007	NA	NA	0.012 (SW)
20	5/10/2007	NA	NA	0.013 (SW)
21	8/16/2007	NA	NA	0.022 (SW)
22	11/8/2007	NA	NA	0.012 (WSW)
23	2/14/2008	NA	NA	0.013 (SW)
24	5/15/2008	28.49	NA	0.01 (W)
25	9/10/2008	27.55	-0.94	0.015 (SW)
26	11/18/2008	28.26	0.71	0.012 (W)
27	2/17/2009	31.22	2.96	0.01 (SW)
28	5/15/2009	29.16	-2.06	0.01 (WSW)
29	8/13/2009	27.42	-1.74	0.01 (W)
30 ¹	2/23/2010	29.44	2.03	0.01 (W)
31	8/12/2010	27.54	-1.90	0.01 (WSW)
32	2/17/2011	30.05	2.50	0.01 (WSW)

ft amsl = feet above mean sea level

All water level depths are measured from the top of casing

NA = not available

¹ = Includes data from newly installed monitoring wells MW-7 through MW-10.

Table 3, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data

Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-1	11/7/1999	5,700	170	59	22	85	20,000	NA	NA	NA	NA	NA	NA
	3/8/2001	17,000	480	150	52	170	38,000	NA	NA	NA	NA	NA	NA
	11/17/2001	10,000	230	210	60	250	22,000	NA	NA	NA	NA	NA	NA
	3/31/2002	12,000	61	ND	ND	29	35,000	NA	NA	NA	NA	NA	NA
	11/9/2003	19,000	ND	ND	ND	ND	50,000	NA	NA	NA	NA	NA	NA
	12/9/2003	22,000	150	ND	ND	ND	66,000	NA	NA	NA	NA	NA	NA
MW-1R	11/17/2001	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	3/31/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/9/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	12/9/2003	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/19/2004	1,800	95	130	44	200	220	NA	NA	NA	NA	NA	NA
	5/24/2004	210	12	10	5.4	23	79	ND	ND	2.1	37	ND	ND
	9/3/2004	300	1.5	7.1	9.4	42	81	ND	ND	1.6	ND	ND	ND
	11/2/2004	290	14	30	9.5	45	45	ND	ND	1.1	ND	NA	NA
	2/17/2005	530	3.4	ND	ND	2.6	1,000	ND	ND	100	ND	NA	NA
	5/24/2005	NA	NA	NA	NA	NA	NA	ND	ND	610	ND	ND	ND
	8/15/2005	2,500	64	240	61	210	2,300	ND	ND	210	ND	ND	ND
	11/17/2005	2,500	66	290	75	290	1,300	ND	ND	110	1,600	ND	ND
	2/8/2006	3,300	100	310	86	470	1,400	ND	ND	130	1,400	ND	ND
	5/5/2006	3,400	170	350	97	550	1,100	ND	ND	100	2,400	ND	ND
	8/18/2006	5,800	190	1,000	230	1,000	490	ND	ND	36	2,900	ND	ND
	12/1/2006	410	1.7	6.3	1.2	47	100	ND	ND	4.7	100	ND	ND
	2/23/2007	ND	ND	0.51	ND	1.4	3	ND	ND	ND	ND	ND	ND
	5/10/2007	ND	ND	ND	ND	2.0	5.9	ND	ND	ND	ND	ND	ND
	8/16/2007	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11/8/2007	1,300	11	82	54	270	1.4	ND	ND	ND	ND	ND	ND
	2/14/2008	800	7.6	31	23	150	1.7	ND	ND	ND	ND	ND	ND
	5/15/2008	3,200	20	200	110	550	4.2	ND<0.50	ND<0.50	1.0	ND<20	ND<0.50	ND<0.50
	9/10/2008	1,000	6.5	22	19	120	2.3	ND<0.50	ND<0.50	ND<0.50	4.0	ND<0.50	ND<0.50
	11/18/2008	430	4.1	18	12	100	1.8	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	2/17/2009	220	3.6	6.1	2.0	41	1.3	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	5/15/2009	890	6.0	17	27	110	1.8	ND<0.50	ND<0.50	ND<0.50	3.9	ND<0.50	ND<0.50
	8/13/2009	2,000	17	23	73	350	2.1	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	2/23/2010	3,200	31	77	120	810	3.9	ND<1.7	ND<1.7	ND<1.7	ND<6.7	ND<1.7	ND<1.7
	8/12/2010	1,300	13	16	40	280	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<4.0	ND<1.0	ND<1.0
	2/17/2011	210	4.0	1.7	13	21	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5

Table 3, 6211 San Pablo Avenue, Oakland, CA - AEI Project # 280346

Groundwater Analytical Data

Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-2	11/7/1999	6,000	1,300	92	50	400	6,800	NA	NA	NA	NA	NA	NA
	3/8/2001	41,000	8,100	870	2,000	4,100	26,000	NA	NA	NA	NA	NA	NA
	11/17/2001	18,000	3,700	180	610	640	16,000	NA	NA	NA	NA	NA	NA
	3/31/2002	32,000	6,500	270	1,700	2,700	19,000	NA	NA	NA	NA	NA	NA
	9/9/2003	24,000	4,600	ND	1,200	440	19,000	NA	NA	NA	NA	NA	NA
	12/9/2003	31,000	6,200	170	1,600	2,700	19,000	NA	NA	NA	NA	NA	NA
	2/19/2004	21,000	4,600	120	970	2,000	15,000	NA	NA	NA	NA	NA	NA
	5/24/2004	1,200	120	3	63	67	1,900	ND	ND	ND	ND	ND	ND
	9/3/2004	2,300	120	ND	51	70	1,700	ND	ND	26	ND	ND	ND
	11/2/2004	530	35	ND	17	30	520	ND	ND	28	100	NA	NA
	2/17/2005	18,000	2,100	31	800	680	20,000	ND	ND	1,000	ND	NA	NA
	5/24/2005	22,000	3,200	52	1,400	1,700	16,000	ND	ND	NS	NS	ND	ND
	8/15/2005	2,000	66	ND	46	47	2,400	ND	ND	95	880	ND	ND
	11/17/2005	760	19	0.64	15	13	1,000	ND	ND	26	810	ND	ND
	2/8/2006	10,000	1,500	8	660	380	4,300	ND	ND	120	2,800	ND	ND
	5/5/2006	15,000	1,800	ND	1,200	1,200	5,800	ND	ND	150	4,300	ND	ND
	8/18/2006	360	11	ND	13	9.7	160	ND	ND	4.6	600	ND	ND
	12/1/2006	11,000	1,000	ND	990	910	2,100	ND	ND	87	2,000	ND	ND
	2/23/2007	3,200	210	ND	270	85	900	ND	ND	33	1,400	ND	ND
	5/10/2007	590	31	ND	39	22	200	ND	ND	5.9	250	ND	ND
	8/16/2007	650	49	ND	71	49	100	ND	ND	3.5	82	ND	ND
	11/8/2007	110	1.6	ND	1.9	1.6	23	ND	ND	0.64	48	ND	ND
	2/14/2008	350	24	ND	12	5.9	190	ND	ND	7.7	320	ND	ND
	5/15/2008	81	0.59	ND<0.50	0.71	0.66	38	ND<0.50	ND<0.50	1.4	54	ND<0.50	ND<0.50
	9/10/2008	150	6.4	ND<0.50	8.4	5.1	14	ND<0.50	ND<0.50	0.55	38	ND<0.50	ND<0.50
	11/18/2008	420	25	0.70	46	47	29	ND<0.50	ND<0.50	1.3	60	ND<0.50	ND<0.50
	2/17/2009	460	23	0.96	51	37	26	ND<0.50	ND<0.50	1.4	61	ND<0.50	ND<0.50
	5/15/2009	220	13	0.93	26	13	21	ND<0.50	ND<0.50	0.87	60	ND<0.50	ND<0.50
	8/13/2009	110	7.0	ND<0.50	13	5.0	7.7	ND<0.50	ND<0.50	ND<0.50	26	ND<0.50	ND<0.50
	2/23/2010	170	9.4	0.65	27	5.6	14	ND<0.50	ND<0.50	ND<0.50	36	ND<0.50	ND<0.50
8/12/2010	ND<50	1.1	ND<0.50	1.8	0.63	3.7	ND<0.50	ND<0.50	ND<0.50	6.3	ND<0.50	ND<0.50	
2/17/2011	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.3	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50

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Groundwater Analytical Data

Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-3	11/7/1999	43,000	860	70	ND	65	120,000	NA	NA	NA	NA	NA	NA
	3/8/2001	90,000	1,800	ND	ND	ND	210,000	NA	NA	NA	NA	NA	NA
	11/17/2001	110,000	1,600	ND	ND	ND	300,000	NA	NA	NA	NA	NA	NA
	3/31/2002	130,000	2,400	670	300	390	300,000	NA	NA	NA	NA	NA	NA
	9/9/2003	190,000	1,600	ND	ND	ND	420,000	NA	NA	NA	NA	NA	NA
	12/9/2003	170,000	2,000	ND	ND	ND	4,500,000	NA	NA	NA	NA	NA	NA
	2/19/2004	86,000	1,800	630	ND	ND	160,000	NA	NA	NA	NA	NA	NA
	5/24/2004	120,000	2,200	ND	180	220	400,000	ND	ND	15,000	ND	ND	ND
	9/3/2004	180,000	2,000	ND	ND	ND	510,000	ND	ND	14,000	ND	ND	ND
	11/2/2004	150,000	1,700	ND	ND	ND	350,000	ND	ND	31,000	140,000	NA	NA
	2/17/2005	130,000	2,100	420	210	730	290,000	ND	ND	11,000	ND	NA	NA
	5/24/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/15/2005	110,000	1,500	ND	ND	ND	260,000	ND	ND	21,000	25,000	ND	ND
	11/17/2005	200,000	2,400	ND	ND	ND	580,000	ND	ND	24,000	49,000	ND	ND
	2/8/2006	470,000	3,800	660	ND	790	490,000	ND	ND	26,000	49,000	ND	ND
	5/5/2006	400,000	3,300	ND	ND	ND	590,000	ND	ND	21,000	86,000	ND	ND
	8/18/2006	310,000	1,800	ND	ND	ND	440,000	ND	ND	23,000	79,000	ND	ND
	12/1/2006	270,000	ND	ND	ND	ND	290,000	ND	ND	11,000	90,000	ND	ND
	2/23/2007	220,000	ND	ND	ND	ND	260,000	ND	ND	15,000	33,000	ND	ND
	5/10/2007	140,000	ND	ND	ND	ND	180,000	ND	ND	7,100	80,000	ND	ND
	8/16/2007	69,000	ND	ND	ND	ND	85,000	ND	ND	3,400	180,000	ND	ND
	11/8/2007	34,000	ND	ND	ND	ND	38,000	ND	ND	1,400	140,000	ND	ND
	2/14/2008	41,000	ND	ND	ND	ND	44,000	ND	ND	1,900	110,000	ND	ND
	5/15/2008	43,000	ND<100	ND<100	ND<100	ND<100	62,000	ND<100	ND<100	1,100	200,000	ND<100	ND<100
	9/10/2008	1,600	14	8.6	7.7	23	21,000	ND<1,000	ND<1,000	ND<1,000	290,000	ND<1,000	ND<1,000
	11/18/2008	4,500	86	150	100	590	29,000	ND<1,000	ND<1,000	ND<1,000	290,000	ND<1,000	ND<1,000
	2/17/2009	2,500	45	53	35	160	16,000	ND<1,000	ND<1,000	ND<1,000	190,000	ND<1,000	ND<1,000
	5/15/2009	2,000	15	21	13	35	13,000	ND<1,000	ND<1,000	ND<1,000	260,000	ND<1,000	ND<1,000
	8/13/2009	1,300	10	11	4.1	14	7,900	ND<1,200	ND<1,200	ND<1,200	250,000	ND<1,200	ND<1,200
	2/23/2010	1,700	22	21	11	38	4,700	ND<1,700	ND<1,700	ND<1,700	260,000	ND<1,700	ND<1,700
8/12/2010	1,600	5.8	16	5.8	16	4,200	ND<1,200	ND<1,200	ND<1,200	250,000	ND<1,200	ND<1,200	
2/17/2011	290	1.0	5.5	6.5	8.1	73	ND<50	ND<50	ND<50	8,500	ND<50	ND<50	

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Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-4	11/17/2001	64,000	960	1,400	360	1,600	140,000	NA	NA	NA	NA	NA	NA
	3/31/2002	78,000	4,400	4,700	690	2,700	150,000	NA	NA	NA	NA	NA	NA
	9/6/2007	49,000	710	840	ND	10,000	3,600	ND	ND	510	32,000	ND	ND
	11/8/2007	64,000	1,300	2,600	1,000	8,500	1,500	ND	ND	360	14,000	ND	ND
	2/14/2008	60,000	390	460	230	2,000	52,000	ND	ND	2,000	58,000	ND	ND
	5/15/2008	22,000	670	130	740	2,700	3,300	ND<5.0	ND<5.0	340	35,000	ND<5.0	ND<5.0
	9/10/2008	16,000	500	150	730	2,500	2,000	ND<250	ND<250	ND<250	65,000	ND<250	ND<250
	11/18/2008	24,000	820	190	1,200	5,000	1,400	ND<50	ND<50	260	9,300	ND<50	ND<50
	2/17/2009	17,000	350	170	620	2,600	360	ND<10	ND<10	82	2,100	ND<10	ND<10
	5/15/2009	32,000	300	190	880	3,200	470	ND<10	ND<10	95	380	ND<10	ND<10
	8/13/2009	29,000	320	250	980	3,400	350	ND<50	ND<50	61	10,000	ND<50	ND<50
	2/23/2010	15,000	250	77	580	2,200	180	ND<5.0	ND<5.0	41	400	ND<5.0	ND<5.0
	8/12/2010	17,000	200	47	580	1,400	150	ND<10	ND<10	28	1,800	ND<10	ND<10
	2/17/2011	7,600	190	15	260	440	130	ND<5.0	ND<5.0	29	790	ND<5.0	ND<5.0
MW-5	11/17/2001	210	15	12	11	23	4.8	NA	NA	NA	NA	NA	NA
	3/31/2002	120	11	7.4	6.1	16	4.2	NA	NA	NA	NA	NA	NA
	9/9/2003	ND	1.5	ND	ND	ND	1.7	NA	NA	NA	NA	NA	NA
	12/9/2003	130	32	ND	2.6	0.57	5	NA	NA	NA	NA	NA	NA
	2/19/2004	ND	ND	ND	ND	ND	1.5	NA	NA	NA	NA	NA	NA
	5/24/2004	ND	ND	ND	ND	ND	0.55	ND	ND	ND	ND	ND	ND
	9/3/2004	100	6.4	ND	ND	0.79	4.2	ND	ND	ND	ND	ND	ND
	11/2/2004	ND	2.6	ND	1.7	0.87	1	ND	ND	ND	ND	ND	ND
	2/17/2005	51	0.74	ND	0.94	ND	1.5	ND	ND	ND	ND	ND	ND
	5/24/2005	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	8/15/2005	ND	ND	ND	ND	ND	0.88	ND	ND	ND	ND	ND	ND
	11/17/2005	71	0.81	ND	1.1	ND	1.4	ND	ND	ND	ND	ND	ND
	2/8/2006	50	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	5/5/2006	ND	ND	ND	ND	ND	0.93	ND	ND	ND	ND	ND	ND
	8/18/2006	ND	ND	ND	ND	ND	1	ND	ND	ND	ND	ND	ND
	12/1/2006	ND	0.69	ND	ND	0.52	0.97	ND	ND	ND	ND	ND	ND
	2/23/2007	73	ND	ND	ND	ND	1.7	ND	ND	ND	ND	ND	ND
	5/10/2007	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND
	8/16/2007	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND
	11/8/2007	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND
2/14/2008	ND	ND	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	
5/15/2008	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.7	ND<0.50	ND<0.50	ND<0.50	ND<20	ND<0.50	ND<0.50	
9/10/2008	480	17	1.8	2.7	0.59	12	ND<0.50	ND<0.50	ND<0.50	4.4	ND<0.50	ND<0.50	

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Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-5 (cont.)	11/18/2008	130	2.3	1.6	ND<0.50	ND<0.50	7.3	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	2/17/2009	170	ND<0.50	2.7	ND<0.50	ND<0.50	4.2	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	5/15/2009	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	7.6	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	8/13/2009	380	19	2.1	3.8	0.88	11	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	2/23/2010	ND<50	ND<0.50	0.87	ND<0.50	ND<0.50	1.9	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	8/12/2010	120	1.5	2.9	0.74	3.5	13	ND<0.50	ND<0.50	ND<0.50	3.0	ND<0.50	ND<0.50
	2/17/2011	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.7	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5
MW-6	11/17/2001	3,500	160	260	95	420	1,500	NA	NA	NA	NA	NA	NA
	3/31/2002	3,200	410	170	82	280	3,000	NA	NA	NA	NA	NA	NA
	9/9/2003	800	49	ND	7.4	ND	1,700	NA	NA	NA	NA	NA	NA
	12/9/2003	970	150	9.9	31	83	1,200	NA	NA	NA	NA	NA	NA
	2/19/2004	1,900	280	58	17	160	2,700	NA	NA	NA	NA	NA	NA
	9/3/2004	1,100	27	ND	14	27	2,200	ND	ND	85	ND	ND	ND
	11/2/2004	1,800	32	ND	5	11	4,100	ND	ND	170	270	ND	ND
	2/17/2005	5,600	190	34	41	110	10,000	ND	ND	780	2,000	ND	ND
	8/15/2005	1,800	27	ND	6	23	3,800	ND	ND	300	3,500	ND	ND
	11/17/2005	1,100	30	ND	4	9	2,400	ND	ND	190	9,500	ND	ND
	2/8/2006	3,600	220	43	66	160	2,700	ND	ND	180	7,800	ND	ND
	5/5/2006	1,600	130	21	37	65	1,400	ND	ND	53	3,100	ND	ND
	8/18/2006	270	27	ND	3	4	240	ND	ND	11	2,400	ND	ND
	12/1/2006	1,700	ND	ND	ND	ND	1,700	ND	ND	92	800	ND	ND
	2/23/2007	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	ND
	5/10/2007	ND	3.0	ND	ND	1.9	26	ND	ND	2	48	ND	ND
	8/16/2007	ND	ND	ND	ND	ND	1.4	ND	ND	ND	ND	ND	ND
	11/8/2007	ND	ND	ND	ND	ND	5.3	ND	ND	ND	ND	ND	ND
	2/14/2008	ND	ND	ND	ND	ND	11	ND	ND	0.94	220	ND	ND
	5/15/2008	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	13	ND<0.50	ND<0.50	1.0	130	ND<0.50	ND<0.50
	9/10/2008	78	1.4	0.60	0.94	1.3	71	ND<1.0	ND<1.0	6.2	160	ND<1.0	ND<1.0
	11/18/2008	ND<50	2.4	ND<0.50	ND<0.50	0.70	72	ND<1.2	ND<1.2	7.2	180	ND<1.2	ND<1.2
	2/17/2009	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
5/15/2009	53	3.2	ND<0.50	ND<0.50	1.7	44	ND<1.0	ND<1.0	4.3	89	ND<1.0	ND<1.0	
8/13/2009	74	5.9	0.57	0.97	5.0	27	ND<0.50	ND<0.50	2.2	140	ND<0.50	ND<0.50	
2/23/2010	ND<50	0.66	ND<0.50	ND<0.50	0.57	5.7	ND<0.50	ND<0.50	ND<0.50	15	ND<0.50	ND<0.50	
8/12/2010	92	7.5	0.94	ND<0.50	1.0	32	ND<1.0	ND<1.0	2.7	180	ND<1.0	ND<1.0	
2/17/2011	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5	

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Sample ID	Date	TPHg µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	MTBE µg/L	DIPE µg/L	ETBE µg/L	TAME µg/L	TBA µg/L	1,2-DCA µg/L	EDB µg/L
MW-7	2/23/2010	29,000	410	380	2,100	6,100	410	ND<10	ND<10	19	1,500	ND<10	ND<10
	8/12/2010	2,000	26	17	140	250	2,400	ND<50	ND<50	75	9,600	ND<50	ND<50
	2/17/2011	2,400	35	17	160	190	670	ND<10	ND<10	24	1,300	ND<10	ND<10
MW-8	2/23/2010	690	3.5	2.8	29	40	1,600	ND<100	ND<100	ND<100	24,000	ND<100	ND<100
	8/12/2010	260	4.1	1.4	6.9	7.2	2,100	ND<170	ND<170	ND<170	25,000	ND<170	ND<170
	2/17/2011	500	3.6	5.1	7.8	2.1	1,300	ND<100	ND<100	ND<100	25,000	ND<100	ND<100
MW-9	2/23/2010	ND<50	ND<0.50	0.70	ND<0.50	ND<0.50	260	ND<10	ND<10	ND<10	1,600	ND<10	ND<10
	8/12/2010	ND<50	ND<0.50	1.6	ND<0.50	ND<0.50	85	ND<10	ND<10	ND<10	880	ND<10	ND<10
	2/17/2011	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	160	ND<5.0	ND<5.0	ND<5.0	1,300	ND<5.0	ND<5.0
MW-10	2/23/2010	1,300	ND<0.50	11	3.1	2.6	2.8	ND<0.50	ND<0.50	ND<0.50	ND<2.0	ND<0.50	ND<0.50
	8/12/2010	61	ND<0.50	0.72	ND<0.50	ND<0.50	39	ND<0.50	ND<0.50	1.8	ND<2.0	ND<0.50	ND<0.50
	2/17/2011	150	ND<0.5	1.6	ND<0.5	ND<0.5	6.9	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<0.5	ND<0.5
EX-1	2/19/2004	120,000	9,500	4,300	840	3,900	150,000	NA	NA	NA	NA	NA	NA
	2/14/2008	84,000	2,300	4,900	1,800	14,000	3,900	ND	ND	610	10,000	ND	ND
	5/15/2008	24,000	2,100	750	640	2,100	1,800	ND<0.50	ND<0.50	380	11,000	ND<0.50	ND<0.50
	9/10/2008	9,200	1,000	160	300	1,000	780	ND<100	ND<100	180	22,000	ND<100	ND<100
	11/18/2008	8,900	1,400	290	360	1,300	840	ND<100	ND<100	230	20,000	ND<100	ND<100
	2/17/2009	70,000	2,700	3,600	1,900	13,000	1,400	ND<25	ND<25	480	1,500	ND<25	ND<25
	5/15/2009	18,000	1,400	250	530	1,700	640	ND<25	ND<25	200	5,500	ND<25	ND<25
	8/13/2009	10,000	1,100	150	410	940	520	ND<25	ND<25	120	5,200	ND<25	ND<25
	2/23/2010	39,000	1,300	1,100	1,100	7,700	880	ND<25	ND<25	250	670	ND<25	ND<25
	8/12/2010	12,000	1,000	160	470	1,200	660	ND<17	ND<17	160	1,000	ND<17	ND<17
	2/17/2011	33,000	1,700	600	1,100	6,500	720	ND<12	ND<12	220	600	ND<12	ND<12

Notes:

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8015

Benzene, toluene, ethylbenzene, and xylenes using EPA Method 8021B

MTBE = methyl-tertiary butyl ether using EPA Method 8021B; EPA Method 8260B Beginning in May 2008

TBA = tert-butyl alcohol using EPA Method 8260B

TAME = tert-amyl methyl ether using EPA Method 8260B

DIPE = diisopropyl ether using EPA Method 8260B

ETBE = ethyl tert-butyl ether using EPA Method 8260B

1,2-DCA = 1,2-dichloroethane using EPA Method 8260B

EDB = Ethylene dibromide using EPA Method 8260B

µg/L= micrograms per liter

ND = non detect at respective reporting limit

NA - not analyzed

APPENDIX A

**GROUNDWATER MONITORING WELL
FIELD SAMPLING FORMS**

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-1R

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	36.67		
Depth of Well	22.75		
Depth to Water (from top of casing)	6.51		
Water Elevation (feet above msl)	30.16		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.8		
Actual Volume Purged (gallons)	8.0		
Appearance of Purge Water	Initially grey, clearing by 2 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
10:19	1	16.80	7.45	693	6.64	-94.7	Grey
	2	18.39	7.40	687	2.61	-113.6	Clear
	3	18.45	7.46	674	1.51	-131.6	Clear
	4	18.43	7.48	665	1.11	-141.5	Clear
	5	18.42	7.49	659	1.04	-147.7	Clear
	6	18.45	7.49	654	0.95	-152.6	Clear
	7	18.56	7.50	649	1.74	-161.7	Clear
10:23	8	18.58	7.50	649	1.33	-164.7	Clear

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-2

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	36.33		
Depth of Well	20.70		
Depth to Water (from top of casing)	6.16		
Water Elevation (feet above msl)	30.17		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.0		
Actual Volume Purged (gallons)	7.0		
Appearance of Purge Water	Initially Cloudy, clearing by 4 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
9:43	1	18.33	7.52	689	2.21	-68.7	Cloudy
	2	18.51	7.51	688	1.25	-90.9	Cloudy
	3	18.05	7.48	682	1.01	-103.7	Clear
	4	18.03	7.42	703	0.81	-117.4	Clear
	5	18.31	7.40	722	0.74	-121.7	Clear
	6	18.57	7.39	737	0.68	-127.7	Clear
9:46	7	18.78	7.40	726	0.65	-131.4	Clear

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:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	35.12		
Depth of Well	20.82		
Depth to Water (from top of casing)	3.60		
Water Elevation (feet above msl)	31.52		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	8.3		
Actual Volume Purged (gallons)	8.0		
Appearance of Purge Water	Initially grey, clearing by 4 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
11:27	1	12.03	7.65	21	11.34	-122.3	Grey
	2	11.52	7.61	22	10.26	-120.2	Light grey
	3	12.14	7.51	24	8.45	-115.2	Cloudy
	4	13.50	7.39	27	6.01	-110.2	Clear
	5	14.71	7.37	36	4.21	-112.8	Clear
	6	15.57	7.46	53	2.96	-118.1	Clear
	7	16.35	7.46	66	1.96	-122.4	Clear
11:32	8	16.78	7.51	88	1.52	-129.4	Clear

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-4

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	34.11		
Depth of Well	19.75		
Depth to Water (from top of casing)	3.19		
Water Elevation (feet above msl)	30.92		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	7.9		
Actual Volume Purged (gallons)	8.0		
Appearance of Purge Water	Initially grey, clearing by 2 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
11:52	1	17.28	7.47	790	2.11	-147.4	Grey
	2	17.71	7.57	779	1.13	-169.9	Clear
	3	17.69	7.65	783	0.88	-181.3	Clear
	4	17.78	7.71	797	0.78	-188.0	Clear
	5	17.84	7.75	814	0.71	-194.2	Clear
	6	17.91	7.76	830	0.64	-199.5	Clear
	7	17.97	7.78	840	0.60	-204.1	Clear
11:57	8	18.06	7.78	850	0.55	-206.3	Clear

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-5

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	35.17		
Depth of Well	24.31		
Depth to Water (from top of casing)	5.03		
Water Elevation (feet above msl)	30.14		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	9.3		
Actual Volume Purged (gallons)	9.0		
Appearance of Purge Water	Initially light brown, cloudy at 2 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
9:24	1	19.47	7.40	821	2.09	-54.1	Light Brown
	2	19.55	7.41	822	1.69	-65.8	Cloudy
	3	19.18	7.44	826	1.33	-80.7	Cloudy
	4	18.61	7.48	829	1.06	-95.7	Cloudy
	5	18.54	7.49	829	0.93	-103.3	Cloudy
	6	18.60	7.51	829	0.82	-109.5	Cloudy
	7	18.65	7.51	829	0.76	-113.2	Cloudy
	8	18.72	7.51	828	0.68	-118.1	Cloudy
9:29	9	18.85	7.51	828	0.65	-120.7	Cloudy

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-6

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	36.07		
Depth of Well	23.45		
Depth to Water (from top of casing)	4.89		
Water Elevation (feet above msl)	31.18		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	8.9		
Actual Volume Purged (gallons)	9.0		
Appearance of Purge Water	Initially light brown, clearing by 7 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
10:04	1	10.47	8.15	59	10.64	-61.1	Light Brown
	2	10.41	8.42	67	10.20	-79.7	Light Brown
	3	10.84	8.41	77	9.87	-88.9	Cloudy
	4	11.79	8.16	103	9.89	-101.6	Cloudy
	5	12.62	8.09	114	8.58	-107.1	Cloudy
	6	13.04	7.97	125	8.31	-107.0	Cloudy
	7	13.27	7.87	131	8.14	-110.5	Clear
	8	13.48	7.83	143	7.92	-113.6	Clear
10:08	9	13.42	7.86	146	7.83	-113.2	Clear

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-7

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	31.16		
Depth of Well	16.00		
Depth to Water (from top of casing)	1.68		
Water Elevation (feet above msl)	29.48		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.9		
Actual Volume Purged (gallons)	7.0		
Appearance of Purge Water	Initially light brown, cloudy at 2 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
11:07	1	17.22	7.57	696	6.04	-111.1	Light Brown
	2	17.56	7.60	697	3.14	-129.9	Cloudy
	3	17.52	7.65	702	1.95	-140.1	Cloudy
	4	17.43	7.69	712	1.43	-136.0	Cloudy
	5	17.57	7.70	737	1.13	-136.8	Cloudy
	6	17.73	7.78	748	0.94	-150.1	Cloudy
11:11	7	17.83	7.83	741	0.85	-151.6	Cloudy

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

--

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-8

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	30.92		
Depth of Well	15.00		
Depth to Water (from top of casing)	1.01		
Water Elevation (feet above msl)	29.91		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.7		
Actual Volume Purged (gallons)	7.0		
Appearance of Purge Water	Cloudy		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
10:48	1	16.51	7.49	951	5.32	-79.6	Cloudy
	2	15.62	7.80	880	7.60	-98.5	Cloudy
	3	14.49	7.61	766	6.25	-107.4	Cloudy
	4	15.92	7.59	1090	2.92	-111.2	Cloudy
	5	16.48	7.63	1138	1.96	-113.5	Cloudy
	6	16.80	7.62	1163	1.57	-113.0	Cloudy
10:52	7	17.13	7.60	1181	1.37	-111.9	Cloudy

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-9

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	28.90		
Depth of Well	15.00		
Depth to Water (from top of casing)	1.93		
Water Elevation (feet above msl)	26.97		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.3		
Actual Volume Purged (gallons)	6.0		
Appearance of Purge Water	Initially grey, turning light grey		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
8:25	1	16.90	7.33	766	2.07	-83.7	Grey
	2	16.93	7.30	753	1.43	-103.2	Grey
	3	16.97	7.60	765	1.19	-124.5	Grey
	4	17.16	7.65	767	1.10	-126.1	Grey
	5	17.35	7.62	764	1.03	-123.9	light grey
8:30	6	17.49	7.58	769	0.98	-122.6	cloudy

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

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AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: MW-10

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"		
Wellhead Condition	OK ▼		
Elevation of Top of Casing (feet above msl)	30.28		
Depth of Well	15.00		
Depth to Water (from top of casing)	0.95		
Water Elevation (feet above msl)	29.33		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	6.7		
Actual Volume Purged (gallons)	7.0		
Appearance of Purge Water	Cloudy, clearing around 6 gallons		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
8:58	1	15.91	7.51	331	2.81	-59.4	Cloudy
	2	15.50	7.46	331	1.81	-69.3	Cloudy
	3	15.25	7.44	349	1.32	-80.4	Cloudy
	4	15.31	7.46	358	1.08	-89.5	Cloudy
	5	15.41	7.46	362	0.90	-95.4	Cloudy
	6	15.53	7.44	365	0.75	-103.4	Clear
9:01	7	15.63	7.46	367	0.64	-112.2	Clear

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

--

AEI CONSULTANTS
GROUNDWATER MONITORING WELL FIELD SAMPLING FORM

Monitoring Well Number: EX-1

Project Name:	Alaska Gas	Date of Sampling:	2/17/2011
Job Number:	280346	Name of Sampler:	J. Sigg
Project Address:	6211 San Pablo Avenue, Oakland		

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	4"		
Wellhead Condition	OK		
Elevation of Top of Casing (feet above msl)	33.28		
Depth of Well	27.50		
Depth to Water (from top of casing)	2.53		
Water Elevation (feet above msl)	30.75		
Well Volumes Purged	3		
Gallons Purged: formula valid only for casing sizes of 2" (.16 gal/ft), 4" (.65 gal/ft), and 6" (1.44 gal/ft)	48.7		
Actual Volume Purged (gallons)	49.0		
Appearance of Purge Water	Clear		
Free Product Present?	No	Thickness (ft):	

GROUNDWATER SAMPLES

Number of Samples/Container Size				4 Voas			
Time	Vol Removed (gal)	Temperature (deg C)	pH	Conductivity (μ sec/cm)	DO (mg/L)	ORP (meV)	Comments
12:08	5	18.79	7.86	680	3.82	-189.3	Clear
	10	17.97	7.88	592	1.77	-191.3	Clear
	15	17.34	7.85	596	1.49	-192.7	Clear
	20	17.31	7.78	674	0.82	-198.6	Clear
	25	17.33	7.76	717	0.51	-204.7	Clear
	30	17.31	7.75	750	0.39	-209.0	Clear
	35	17.25	7.69	770	0.36	-213.8	Clear
	40	17.22	7.60	779	0.37	-216.6	Clear
	45	17.17	7.51	787	0.40	-217.8	Clear
12:36	49	17.13	7.49	794	0.44	-220.6	Clear

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

--

APPENDIX B

**LABORATORY ANALYTICAL REPORT WITH CHAIN OF
CUSTODY DOCUMENTATION**



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #280346; Alaska Gas	Date Sampled: 02/17/11
		Date Received: 02/18/11
	Client Contact: Jeremy Smith	Date Reported: 02/28/11
	Client P.O.: #WC082911	Date Completed: 02/28/11

WorkOrder: 1102603

February 28, 2011

Dear Jeremy:

Enclosed within are:

- 1) The results of the **11** analyzed samples from your project: **#280346; Alaska Gas,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.

McC Campbell Analytical, Inc.



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1102603

ClientCode: AEL

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:	Jeremy Smith	Email: jasmith@aeiconsultants.com	Bill to:	Jeanette Brown	Requested TAT: 5 days
	AEI Consultants	cc:		AEI Consultants	Date Received: 02/18/2011
	2500 Camino Diablo, Ste. #200	PO: #WC082911		2500 Camino Diablo, Ste. #200	Date Printed: 02/18/2011
	Walnut Creek, CA 94597	ProjectNo: #280346; Alaska Gas		Walnut Creek, CA 94597	
	(925) 283-6000 FAX (925) 944-2895			jbrown@aeiconsultants.com	

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	
1102603-001	MW-1R	Water	2/17/2011 10:23	<input type="checkbox"/>	B	A	A										
1102603-002	MW-2	Water	2/17/2011 9:46	<input type="checkbox"/>	B	A											
1102603-003	MW-3	Water	2/17/2011 11:32	<input type="checkbox"/>	B	A											
1102603-004	MW-4	Water	2/17/2011 11:57	<input type="checkbox"/>	B	A											
1102603-005	MW-5	Water	2/17/2011 9:29	<input type="checkbox"/>	B	A											
1102603-006	MW-6	Water	2/17/2011 10:08	<input type="checkbox"/>	B	A											
1102603-007	MW-7	Water	2/17/2011 11:11	<input type="checkbox"/>	B	A											
1102603-008	MW-8	Water	2/17/2011 10:52	<input type="checkbox"/>	B	A											
1102603-009	MW-9	Water	2/17/2011 8:30	<input type="checkbox"/>	B	A											
1102603-010	MW-10	Water	2/17/2011 9:01	<input type="checkbox"/>	B	A											
1102603-011	EX-1	Water	2/17/2011 12:36	<input type="checkbox"/>	B	A											

Test Legend:

1	5-OXYS+PBSCV_W	2	G-MBTEX_W	3	PREF REPORT	4		5	
6		7		8		9		10	
11		12							

Prepared by: Melissa Valles

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.



Sample Receipt Checklist

Client Name: **AEI Consultants**

Date and Time Received: **2/18/2011 4:23:23 PM**

Project Name: **#280346; Alaska Gas**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **1102603** Matrix Water

Carrier: EnviroTech (MTZ)

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

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
 - Container/Temp Blank temperature Cooler Temp: 3.6°C NA
 - Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 - Sample labels checked for correct preservation? Yes No
 - Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 - Samples Received on Ice? Yes No
- (Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

Client contacted:

Date contacted:

Contacted by:

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #280346; Alaska Gas	Date Sampled: 02/17/11
		Date Received: 02/18/11
	Client Contact: Jeremy Smith	Date Extracted: 02/24/11-02/25/11
	Client P.O.: #WC082911	Date Analyzed: 02/24/11-02/25/11

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1102603

Lab ID	1102603-001B	1102603-002B	1102603-003B	1102603-004B	Reporting Limit for DF =1	
Client ID	MW-1R	MW-2	MW-3	MW-4		
Matrix	W	W	W	W		
DF	1	1	100	10		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND<50	29	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	8500	790	NA	2.0
1,2-Dibromoethane (EDB)	ND	ND	ND<50	ND<5.0	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND<50	ND<5.0	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND<50	ND<5.0	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND<50	ND<5.0	NA	0.5
Methyl-t-butyl ether (MTBE)	ND	8.3	73	130	NA	0.5

Surrogate Recoveries (%)

%SS1:	86	87	88	87	
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Comments

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



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AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #280346; Alaska Gas	Date Sampled: 02/17/11
		Date Received: 02/18/11
	Client Contact: Jeremy Smith	Date Extracted: 02/24/11-02/25/11
	Client P.O.: #WC082911	Date Analyzed: 02/24/11-02/25/11

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1102603

Lab ID	1102603-005B	1102603-006B	1102603-007B	1102603-008B	Reporting Limit for DF =1	
Client ID	MW-5	MW-6	MW-7	MW-8		
Matrix	W	W	W	W		
DF	1	1	20	200		

Compound	Concentration				ug/kg	µg/L
	tert-Amyl methyl ether (TAME)	ND	ND	24	ND<100	NA
t-Butyl alcohol (TBA)	ND	ND	1300	25,000	NA	2.0
1,2-Dibromoethane (EDB)	ND	ND	ND<10	ND<100	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND<10	ND<100	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND<10	ND<100	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND	ND	ND<10	ND<100	NA	0.5
Methyl-t-butyl ether (MTBE)	3.7	ND	670	1300	NA	0.5

Surrogate Recoveries (%)

%SS1:	87	88	88	87	
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Comments

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



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AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #280346; Alaska Gas	Date Sampled: 02/17/11
		Date Received: 02/18/11
	Client Contact: Jeremy Smith	Date Extracted: 02/24/11-02/25/11
	Client P.O.: #WC082911	Date Analyzed: 02/24/11-02/25/11

Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1102603

Lab ID	1102603-009B	1102603-010B	1102603-011B		Reporting Limit for DF =1	
Client ID	MW-9	MW-10	EX-1			
Matrix	W	W	W			
DF	10	1	25			

Compound	Concentration				ug/kg	µg/L
	tert-Amyl methyl ether (TAME)	ND<5.0	ND	220		NA
t-Butyl alcohol (TBA)	1300	ND	600		NA	2.0
1,2-Dibromoethane (EDB)	ND<5.0	ND	ND<12		NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<5.0	ND	ND<12		NA	0.5
Diisopropyl ether (DIPE)	ND<5.0	ND	ND<12		NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND	ND<12		NA	0.5
Methyl-t-butyl ether (MTBE)	160	6.9	720		NA	0.5

Surrogate Recoveries (%)

%SS1:	88	87	87		
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Comments

* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit/method detection limit; N/A means analyte not applicable to this analysis; %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.



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AEI Consultants 2500 Camino Diablo, Ste. #200 Walnut Creek, CA 94597	Client Project ID: #280346; Alaska Gas	Date Sampled: 02/17/11
		Date Received: 02/18/11
	Client Contact: Jeremy Smith	Date Extracted: 02/23/11-02/26/11
	Client P.O.: #WC082911	Date Analyzed: 02/23/11-02/26/11

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1102603

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1R	W	210	ND	4.0	1.7	13	21	1	120	d1
002A	MW-2	W	ND	9.5	ND	ND	ND	ND	1	106	
003A	MW-3	W	290	79	1.0	5.5	6.5	8.1	1	105	d1
004A	MW-4	W	7600	170	190	15	260	440	10	108	d1
005A	MW-5	W	ND	ND	ND	ND	ND	ND	1	104	
006A	MW-6	W	ND	ND	ND	ND	ND	ND	1	104	
007A	MW-7	W	2400	660	35	17	160	190	1	110	d1
008A	MW-8	W	500	1300	3.6	5.1	7.8	2.1	1	116	d1
009A	MW-9	W	ND	170	ND	ND	ND	ND	1	104	
010A	MW-10	W	150	8.5	ND	1.6	ND	ND	1	111	d2
011A	EX-1	W	33,000	890	1700	600	1100	6500	50	109	d1

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts in mg/L.

cluttered chromatogram; sample peak coelutes w/surrogate peak; low surrogate recovery due to matrix interference. %SS = Percent Recovery of Surrogate Standard; DF = Dilution Factor

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant
d2) heavier gasoline range compounds are significant (aged gasoline?)



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56387

WorkOrder 1102603

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1102576-022A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) ^f	ND	60	98.5	92.8	5.99	94.5	93.6	0.954	70 - 130	20	70 - 130	20
MTBE	ND	10	119	111	6.93	109	112	3.18	70 - 130	20	70 - 130	20
Benzene	ND	10	120	122	1.59	116	118	2.00	70 - 130	20	70 - 130	20
Toluene	ND	10	107	107	0	102	105	2.74	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	108	107	0.959	101	106	4.20	70 - 130	20	70 - 130	20
Xylenes	ND	30	121	116	4.54	114	120	4.36	70 - 130	20	70 - 130	20
%SS:	124	10	106	109	3.23	106	107	0.816	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 56387 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102603-001A	02/17/11 10:23 AM	02/23/11	02/23/11 6:31 AM	1102603-002A	02/17/11 9:46 AM	02/23/11	02/23/11 7:02 AM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56398

WorkOrder 1102603

Analyte	Extraction SW5030B								Spiked Sample ID: 1102603-006B			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
tert-Amyl methyl ether (TAME)	ND	10	92.8	93.3	0.506	80.7	77.2	4.51	70 - 130	30	70 - 130	30
t-Butyl alcohol (TBA)	ND	50	94.1	100	6.46	78.5	80.7	2.77	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	10	91.4	92.7	1.40	92.6	93.7	1.17	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	10	115	116	0.614	97.7	97.3	0.397	70 - 130	30	70 - 130	30
Diisopropyl ether (DIPE)	ND	10	119	118	1.56	107	105	1.55	70 - 130	30	70 - 130	30
Ethyl tert-butyl ether (ETBE)	ND	10	110	109	0.687	98.4	97.5	0.982	70 - 130	30	70 - 130	30
Methyl-t-butyl ether (MTBE)	ND	10	109	111	2.54	108	108	0	70 - 130	30	70 - 130	30
%SS1:	88	25	85	86	0.121	89	90	1.10	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 56398 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102603-001B	02/17/11 10:23 AM	02/24/11	02/24/11 12:54 PM	1102603-002B	02/17/11 9:46 AM	02/24/11	02/24/11 1:34 PM
1102603-003B	02/17/11 11:32 AM	02/25/11	02/25/11 8:21 PM	1102603-004B	02/17/11 11:57 AM	02/25/11	02/25/11 1:06 AM
1102603-005B	02/17/11 9:29 AM	02/25/11	02/25/11 1:45 AM	1102603-006B	02/17/11 10:08 AM	02/25/11	02/25/11 2:24 AM
1102603-007B	02/17/11 11:11 AM	02/25/11	02/25/11 8:59 PM	1102603-008B	02/17/11 10:52 AM	02/25/11	02/25/11 11:33 PM
1102603-009B	02/17/11 8:30 AM	02/25/11	02/25/11 10:16 PM	1102603-010B	02/17/11 9:01 AM	02/25/11	02/25/11 4:59 AM
1102603-011B	02/17/11 12:36 PM	02/25/11	02/25/11 10:55 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR SW8021B/8015Bm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 56400

WorkOrder 1102603

Analyte	EPA Method SW8021B/8015Bm		Extraction SW5030B						Spiked Sample ID: 1102603-006A			
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) [£]	ND	60	97.2	98.1	0.928	96.7	97.6	0.870	70 - 130	20	70 - 130	20
MTBE	ND	10	118	117	0.934	118	118	0	70 - 130	20	70 - 130	20
Benzene	ND	10	116	119	2.82	119	121	1.64	70 - 130	20	70 - 130	20
Toluene	ND	10	103	106	2.44	106	107	0.906	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	105	107	1.58	107	109	1.45	70 - 130	20	70 - 130	20
Xylenes	ND	30	120	121	1.34	121	124	1.83	70 - 130	20	70 - 130	20
%SS:	104	10	104	105	0.536	105	106	0.684	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 56400 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1102603-003A	02/17/11 11:32 AM	02/25/11	02/25/11 4:17 AM	1102603-004A	02/17/11 11:57 AM	02/25/11	02/25/11 9:29 PM
1102603-005A	02/17/11 9:29 AM	02/24/11	02/24/11 3:38 AM	1102603-006A	02/17/11 10:08 AM	02/23/11	02/23/11 8:06 AM
1102603-007A	02/17/11 11:11 AM	02/25/11	02/25/11 8:01 AM	1102603-007A	02/17/11 11:11 AM	02/26/11	02/26/11 12:41 AM
1102603-008A	02/17/11 10:52 AM	02/25/11	02/25/11 8:34 AM	1102603-008A	02/17/11 10:52 AM	02/25/11	02/25/11 11:37 PM
1102603-009A	02/17/11 8:30 AM	02/25/11	02/25/11 8:56 PM	1102603-010A	02/17/11 9:01 AM	02/25/11	02/25/11 9:39 AM
1102603-011A	02/17/11 12:36 PM	02/25/11	02/25/11 11:29 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.