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**Xtra OIL COMPANY**

2307 PACIFIC AVENUE  
ALAMEDA, CA 94501  
(510) 865-9503 FAX (510) 865-1889

June 6, 2013

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

SUBJECT: SEMI-ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT  
CERTIFICATION  
County Case # RO 191  
Xtra Oil Company  
1701 Park Street  
Alameda, CA

Dear Ms. Detterman:

P&D Environmental, Inc. has prepared the following document:

- Semi-Annual Groundwater Monitoring and Sampling Report (January Through June 2013) dated June 6, 2013 (document 0058.R23).

I declare under penalty of perjury that the contents and conclusions in the document are true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact me at (510) 865-9506.

Sincerely,  
Xtra Oil Company

  
Keith Simas

0058.L52

# **P&D ENVIRONMENTAL, INC.**

**55 Santa Clara Avenue, Suite 240**

**Oakland, CA 94610**

**(510) 658-6916**

June 6, 2013  
Report 0058.R23

Mr. Ted Simas  
Mr. Keith Simas  
Xtra Oil Company  
2307 Pacific Ave.  
Alameda, CA 94501

**SUBJECT: SEMI-ANNUAL GROUNDWATER MONITORING AND SAMPLING REPORT  
(JANUARY THROUGH JUNE 2013)**  
County Case # RO 191  
Xtra Oil Company  
1701 Park Street  
Alameda, CA

Gentlemen:

P&D Environmental, Inc. (P&D) has prepared this report documenting the semi-annual monitoring and sampling of the four historical groundwater monitoring wells (MW1 through MW4), and the monitoring and sampling of four wells installed for proposed site remediation (EW2, EW4, EW5, and OW2) at the subject site. Wells EW2, EW4, EW5, and OW2 were installed on May 18 and 19, 2011 in accordance with P&D's Groundwater Extraction Feasibility Test Work Plan dated April 15, 2011 (document 0058.W4). Well monitoring and sampling was performed for all of the wells on May 16, 2013. The reporting period is for January through June 2013.

In a letter from the Alameda County Department of Environmental Health (ACDEH) dated July 24, 2009 P&D was asked to review historical monitoring and sampling results, determine during which quarters contaminant concentrations were at their highest, and conduct semi-annual monitoring and sampling during those quarters (during either the first and third or the second and fourth quarters). Based on our review, semi-annual monitoring and sampling events are to be scheduled during the second and fourth quarters starting in 2009. Also at the request of the ACDEH analysis of the groundwater samples was performed for fuel oxygenates including TBA and lead scavengers using EPA Method 8260B. A Site Location Map (Figure 1) and Site Vicinity Map (Figure 2) are attached with this report. In the second half of 2011 the case was assigned to caseworker Karel Detterman.

## BACKGROUND

A detailed discussion of the site background, historical monitoring and sampling, and historical investigations are provided in P&D's Remedial Action Work Plan (RAWP) dated October 24, 2007 (document 0058.W2), P&D's Corrective Action Plan (CAP) dated October 11, 2010 (document 0058.W3), and P&D's Site Conceptual Model Report dated October 8, 2010 (document 0058.R10). As an interim step for implementation of the CAP, P&D prepared a

Groundwater Extraction Feasibility Work Plan dated April 15, 2011 (document 0058.W4) to verify the feasibility of groundwater extraction at the site with a selected number of wells identified in the RAWP. On May 18 and 19, 2011 P&D oversaw the installation of dual phase extraction wells EW2, EW4, and EW5 and observation well OW2 at the subject site. The wells were installed in accordance with procedures identified in P&D's October 24, 2007 RAWP and P&D's April 15, 2011 Groundwater Extraction Feasibility Work Plan. P&D subsequently submitted a Chemical Oxidation Injection Feasibility Test Work Plan dated December 19, 2011 (document 0058.W5).

### FIELD ACTIVITIES

Water levels were measured in monitoring wells MW1 through MW4, and wells EW2, EW4, EW5, and OW2 once during the reporting period. The wells were monitored for depth to water to the nearest 0.01 foot using an electric water level indicator. Monitoring and sampling were performed on May 16, 2013. The monitoring data obtained during the reporting period is summarized in Table 1. Historical monitoring and sampling data obtained by others for the subject site are attached with this report as Appendix A.

Prior to sampling, wells MW1 through MW4, EW2, EW4, EW5, and OW2 were purged using low flow purge procedures in accordance with U.S. EPA 1996 guidelines. Purging was performed with a peristaltic pump and new polyethylene tubing for a minimum of fifteen minutes at each sampling location. New silicone tubing was used in the pump rollers at each well. The bottom of the tubing was set at a depth of approximately three to five feet above the bottom of each well, with the exception of MW4, where it was set near the bottom as the well has historically dewatered during purging. Purging was performed at a low flow rate of approximately 300 milliliters per minute to minimize turbulence and to minimize the likelihood of sediments in the samples. During purging operations, the field parameters of electrical conductivity, temperature, pH, dissolved oxygen, oxidation/reduction potential, turbidity, and depth to water were monitored and recorded on a groundwater monitoring/well purging data sheet for each well.

Petroleum hydrocarbon sheen was detected on the purge water from wells MW2 and EW4. Strong petroleum hydrocarbon odors were detected on the purge water from wells MW1, EW2, and EW5; moderate to strong petroleum hydrocarbon odors were detected on the purge water from wells MW2 and EW4; moderate petroleum hydrocarbon odors were detected on the purge water from well MW4; very slight petroleum hydrocarbon odors were detected on the purge water from well OW2; and no petroleum hydrocarbon odors were detected on the purge water from well MW3.

Once the wells had been purged for a minimum of fifteen minutes and the field parameters were observed to have stabilized, water samples were collected directly from the discharge tubing of the pump into 40-milliliter glass Volatile Organic Analysis (VOA) vials which were sealed with Teflon-lined screw caps. The VOA vials were overturned and tapped to ensure that no air bubbles were present, and were then transferred to a cooler with ice, pending transport to the laboratory. New tubing was used for each sample collection location. Chain of custody documentation accompanied the samples to the laboratory. Records of the field parameters measured during well purging are attached with this report.

## HYDROGEOLOGY

Water levels were measured in monitoring wells MW1 through MW4, and wells EW2, EW4, EW5, and OW2 once during the reporting period. The measured depth to water for groundwater monitoring wells MW1 through MW4 on May 16, 2013 ranged from 6.72 to 7.42 feet. The measured depth to groundwater on May 16, 2013 in wells EW2, EW4, EW5, and OW2 was 6.70, 5.49, 5.61, and 5.69 feet, respectively. Groundwater level data collected during the monitoring period are presented in Table 1.

Monitoring wells MW1, MW2, and MW3 were installed in 1994, and well MW4 was installed in 1997. These four wells were surveyed in 1997, however the datum used for the survey is unknown. In June 2011 these four wells were resurveyed relative to the North American Vertical Datum of 1988 (NAVD 88) along with the new wells (EW2, EW4, EW5, and OW2). All of the calculated groundwater surface elevations in Table 1 beginning in 2011 are relative to the NAVD 88 datum. All of the calculated groundwater surface elevations for wells MW1 through MW4 prior to 2011 are relative to the unknown datum, which is presumed to be relative to the North American Geodetic Vertical Datum of 1929 (NGVD 29).

Based on the water levels measured in wells MW1, MW2 and MW3 on May 16, 2013 the calculated groundwater flow direction was to the east-southeast with a gradient of 0.0076. Since the previous monitoring and sampling event on December 11, 2012 the groundwater flow direction has shifted slightly east and the gradient has decreased from 0.0086. The calculated groundwater surface elevation contours based on the measured depth to the water surface in all of the wells at the subject site and the calculated groundwater flow direction based on the groundwater surface elevations in wells MW1, MW2 and MW3 are shown on Figure 2. The calculated groundwater flow direction on May 16, 2013 was not consistent with the historical northeasterly groundwater flow direction obtained using the groundwater surface elevation information from the nearby 1725 Park Street Exxon/Valero site in conjunction with groundwater surface elevation data from the subject site.

The locations of the subject site and the nearby 1725 Park Street Exxon/Valero site are shown in Figure 3. Historical groundwater flow direction information for both sites is shown in rose diagrams in the figure. In addition, the approximate historical northeasterly groundwater flow direction obtained using the groundwater surface elevation information from the 1725 Park Street Exxon/Valero site in conjunction with groundwater surface elevation data from the subject site is shown in Figure 3.

Comparison of the May 16, 2013 and December 11, 2012 water levels in the wells shows that the water levels were higher on December 11, 2012 in all of the wells by amounts ranging from 0.59 to 0.91 feet. Well MW4 is located in the landscaping on the north-northeast side of the property along the fence line. Historical smaller changes in water level in well MW4 relative to the other wells may have been the result of landscape irrigation water preferentially draining to groundwater in the immediate vicinity of the well MW4 location.

## LABORATORY RESULTS

The groundwater samples collected from wells MW1, MW2, MW3, MW4, EW2, EW4, EW5, and OW2 at the subject site were analyzed for Total Petroleum Hydrocarbons as Diesel (TPH-D) and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) using EPA Method 3510C and EPA Method 3630C in conjunction with EPA Method 8015B with silica gel cleanup; Total Petroleum Hydrocarbons as Gasoline (TPH-G) and methyl tertiary-butyl ether (MTBE), benzene, toluene, ethylbenzene, total xylenes (BTEX) using EPA Method 5030B in conjunction with modified EPA Method 8015B and EPA Method 8021B; and for Fuel Oxygenates and Lead Scavengers by EPA Method 5030B in conjunction with EPA Method 8260B.

No analytes were detected in the groundwater sample collected from well MW3. In the remaining wells, TPH-D was not detected in wells EW4 and OW2 and was detected in the groundwater samples collected from wells MW1, MW2, MW4, EW2, and EW5 at concentrations of 1,800, 2,300, 1,500, 210, and 2,500 micrograms per liter (ug/L), respectively; TPH-G was detected in the groundwater samples collected from wells MW1, MW2, MW4, EW2, EW4, EW5, and OW2 at concentrations of 18,000, 4,700, 6,700, 2,000, 76, 19,000, and 85 ug/L, respectively; and benzene was detected in the same wells at concentrations of 4,400, 360, 310, 580, 4.0, 1,500, and 0.57 ug/L, respectively. The remaining BTEX compounds were detected at concentrations ranging from 0.54 to 2,100 ug/L. MTBE was detected using EPA Method 8021B in the groundwater samples collected from wells EW2 and EW4 at concentrations of 83 and 14 ug/L, respectively, and was detected using EPA Method 8260B in the groundwater samples collected from wells MW1, MW2, MW4, EW2, EW4, EW5, and OW2 at concentrations of 240, 62, 21, 63, 13, 41, and 0.99 ug/L, respectively. Tert-Butyl Alcohol (TBA) was detected in the groundwater samples collected from wells MW1, MW2, MW4, EW2, EW4, EW5, and OW2 at concentrations of 180, 200, 43, 55, 11, 180, and 7.6 ug/L, respectively.

Review of the laboratory analytical report shows that the laboratory described the detected TPH-D results for the samples from wells MW1, MW4, EW2, EW5 and OW2 as consisting of gasoline-range compounds, and the sample from well MW2 as consisting of both gasoline-range compounds and aged diesel-range compounds. The laboratory analytical results are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

Since the previous sampling event on December 11, 2012 all analyte concentrations in well MW3 have remained not detected, all analyte concentrations in well EW4 remained not detected or decreased, and all analyte concentrations have decreased or remained not detected in wells MW4, EW5, and OW2 with the following exceptions that increased:

- in well MW4 benzene, TBA, and MTBE (by EPA Method 8260B),
- in well EW5 benzene, and MTBE (by EPA Method 8260B),
- in well OW2 TPH-G, and toluene

Since the previous sampling event on December 11, 2012 all analyte concentrations have increased in wells MW1, MW2, and EW2 with the following exceptions which decreased:

- in well MW1 TPH-D, toluene, and TBA,
- in well MW2 TPH-D, TPH-MO, MTBE (by EPA Method 8260B),
- in well EW2 TPH-G, TBA, and MTBE (by EPA Method 8260B)

### DISCUSSION AND RECOMMENDATIONS

The four historical groundwater monitoring wells at the subject site (MW1, MW2, MW3, and MW4) and the four wells related to proposed site remediation (EW2, EW4, EW5, and OW2) were monitored and sampled on May 16, 2013. Monitoring and sampling historically was performed at the subject site in conjunction with the monitoring and sampling event performed by ERI for the Exxon/Valero facility located at 1725 Park Street. However the case for the Exxon/Valero facility located at 1725 Park Street was closed October 25, 2012.

Based on the sample results of the most recent well sampling event and the results of historical investigations at and near the site, P&D recommends that the site be reviewed for conformance with ACDEH criteria for SWRCB 2012 Low Threat Closure Policy closure eligibility.

### DISTRIBUTION

A copy of this report will be uploaded to the ACDEH website, in accordance with ACDEH requirements. In addition, a copy of this report will be uploaded to the GeoTracker database.

### LIMITATIONS

This report was prepared solely for the use of Xtra Oil Company. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a

June 6, 2013  
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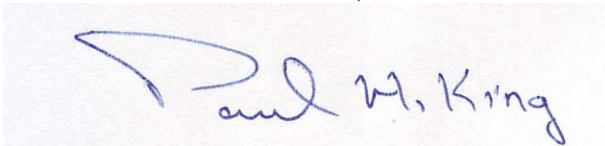
similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities, which are used in this report.

This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

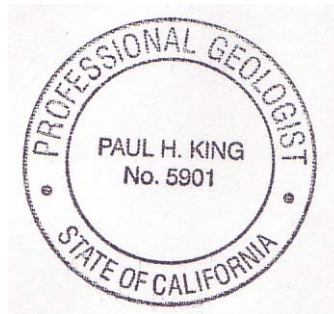
Should you have any questions or comments, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King  
Professional Geologist #5901  
Expires 12/31/13



Attachments:

Table 1 - Well Monitoring Data  
Table 2 - Summary of Laboratory Analytical Results  
Figure 1 - Site Location Map  
Figure 2 - Site Plan Showing Well Locations and Groundwater Surface Elevations  
Figure 3 - Site Vicinity Map Showing Groundwater Surface Elevations  
Groundwater Monitoring/Well Purging Data Sheets  
Laboratory Analytical Reports and Chain of Custody Documentation  
Appendix A - Historical Water Level and Water Quality Data for the Subject Site

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0058.R23

# **TABLES**



**Table 1. Well Monitoring Data**

Well Number	Date Monitored	Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-MSL.)
MW1	5/16/2013	22.36*	6.95	15.41
	12/11/2012		6.30	16.06
	6/21/2012		6.66	15.70
	11/28/2011		7.11	15.25
	6/16/2011		6.41	15.95
	5/26/2011	19.60**	5.86	16.50
	5/24/2011		6.43	15.93
	11/18/2010		7.78	11.82
	4/28/2010		6.35	13.25
	12/3/2009		7.84	11.76
	2/25/2009		6.07	13.53
	11/25/2008		7.91	11.69
	8/27/2008		8.03	11.57
	5/28/2008		7.28	12.32
	2/27/2008		6.15	13.45
	11/29/2007		7.82	11.78
	8/29/2007		8.29	11.31
	5/29/2007		7.44	12.16
	3/12/2007		6.34	13.26
11/6/2006	7.99	11.61		
MW2	5/16/2013	23.10*	7.42	15.68
	12/11/2012		6.83	16.27
	6/21/2012		7.18	15.92
	11/28/2011		7.61	15.49
	6/16/2011		6.89	16.21
	5/26/2011	20.31**	6.90	16.20
	5/24/2011		6.90	16.20
	11/18/2010		8.17	12.14
	4/28/2010		6.76	13.55
	12/3/2009		8.23	12.08
	2/25/2009		6.37	13.94
	11/25/2008		8.21	12.10
	8/27/2008		8.40	11.91
	5/28/2008		7.72	12.59
	2/27/2008		6.49	13.82
	11/29/2007		8.15	12.16
	8/29/2007		8.55	11.76
	5/29/2007		7.79	12.52
	3/12/2007		6.82	13.49
11/6/2006	8.25	12.06		
MW3	5/16/2013	23.35*	6.72	16.63
	12/11/2012		6.03	17.32
	6/21/2012		6.42	16.93
	11/28/2011		7.19	16.16
	6/16/2011		6.17	17.18
	5/26/2011	20.57**	6.19	17.16
	5/24/2011		6.16	17.19
	11/18/2010		7.93	12.64
	4/28/2010		6.00	14.57
	12/3/2009		7.83	12.74
	2/25/2009		5.42	15.15
	11/25/2008		7.83	12.74
	8/27/2008		8.23	12.34
	5/28/2008		7.36	13.21
	2/27/2008		5.75	14.82
	11/29/2007		7.88	12.69
	8/29/2007		8.31	12.26
	5/29/2007		7.26	13.31
	3/12/2007		6.03	14.54
11/6/2006	8.09	12.48		

<b>Table 1. Well Monitoring Data</b>					
Well Number	Date Monitored	Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-MSL.)	
MW4	5/16/2013	22.48*	6.77	15.71	
	12/11/2012		5.86	16.62	
	6/21/2012		6.00	16.48	
	11/28/2011		6.62	15.86	
	6/16/2011		5.79	16.69	
	5/26/2011		6.41	16.07	
	5/24/2011		5.82	16.66	
	11/18/2010		19.69**	7.69	12.00
	4/28/2010			5.82	13.87
	12/3/2009			7.60	12.09
	2/25/2009	5.32		14.37	
	11/25/2008	7.61		12.08	
	8/27/2008	7.91		11.78	
	5/28/2008	6.97		12.72	
	2/27/2008	5.38		14.31	
	11/29/2007	7.57	12.12		
	8/29/2007	8.07	11.62		
	5/29/2007	7.38	12.31		
3/12/2007	5.30	14.39			
11/6/2006	7.60	12.09			
EW2	5/16/2013	22.13*	6.70	15.43	
	12/11/2012		6.07	16.06	
	6/21/2012		6.39	15.74	
	11/28/2011		6.75	15.38	
	6/16/2011		6.09	16.04	
	5/26/2011		6.14	15.99	
	5/24/2011***		6.12	16.01	
EW4	5/16/2013	20.95*	5.49	15.46	
	12/11/2012		4.80	16.15	
	6/21/2012		5.10	15.85	
	11/28/2011		5.51	15.44	
	6/16/2011		4.72	16.23	
	5/26/2011		4.77	16.18	
	5/24/2011***		4.75	16.20	
EW5	5/16/2013	21.20*	5.61	15.59	
	12/11/2012		4.75	16.45	
	6/21/2012		4.91	16.29	
	11/28/2011		5.49	15.71	
	6/16/2011		4.71	16.49	
	5/26/2011		4.88	16.32	
	5/24/2011***		4.74	16.46	
OW2	5/16/2013	21.55*	5.69	15.86	
	12/11/2012		4.82	16.73	
	6/21/2012		5.15	16.40	
	11/28/2011		5.80	15.75	
	6/16/2011		4.80	16.75	
	5/26/2011		4.82	16.73	
	5/24/2011***		4.79	16.76	

**Abbreviations and Notes:**  
 \* = Surveyed by Kier & Wright on June 9, 2011.  
 \*\* = Surveyed by Andreas Deak in April 1997.  
 \*\*\* = Prior to well development.  
 ft-MSL = feet above mean sea level  
 ft = feet

Table 2. Summary of Laboratory Analytical Results

Well Number	Sample Date	TPH-G	TPH-D	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Fuel Oxygenates & Lead Scavengers
MW1	5/16/2013	18,000	1,800, c	ND<250	ND<800	4,400	320	510	1,100	ND, except TBA = 180
	12/11/2012	15,000	2,400, c	ND<250	ND<600	3,300	330	410	1,100	MTBE = 240 ND, except TBA = 190
	6/21/2012	17,000	2,100, c	ND<250	ND<500	1,800	420	500	1,500	MTBE = 100 ND, except TBA = 110
	11/28/2011	18,000	2,600, c	ND<250	ND<600	2,600	410	410	1,200	MTBE = 49 ND, except TBA = 460,
	5/26/2011	15,000	2,400, b,c	ND<250	ND<500	2,000	430	400	1,300	MTBE = 210 ND, except TBA = 570,
	11/18/2010	21,000	1,900, b,c	ND<250	1,700	6,300	340	340	860	MTBE = 120 ND, except TBA = 3,300,
	4/28/2010	19,000	2,800, b,c	260, b,c	840	3,400	680	500	1,600	MTBE = 1,500 ND, except TBA = 3,200,
	12/3/2009	19,000	1,900, b, c	ND<250	1,500	4,500	670	400	1,300	MTBE = 750 ND, except TBA = 10,000,
	2/25/2009	21,000	2,200, b,c	ND<250	ND<2,500	4,300	750	580	1,700	MTBE = 1,100 ND, except TBA = 17,000,
	11/25/2008	20,000	2,400, c	ND<250	1,900	5,500	490	530	1,300	MTBE = 1,400 ND, except TBA = 16,000,
	8/27/2008	46,000	5,200, c	ND<250	1,300	4,600	1,800	2,000	5,200	NA
	5/28/2008	40,000	6,100, c	290	1,600	4,200	2,600	1,700	5,900	NA
	2/27/2008	45,000	4,900, c	310	2,600	6,200	3,100	1,300	5,100	NA
	11/29/2007	27,000	3,100, b,c	ND<250	2,600	4,700	930	770	2,600	NA
	8/29/2007	26,000	3,900, b,c	470	3,200	5,400	1,400	810	3,000	NA
5/30/2007	22,000	3,300, c	ND<250	ND<750	400	380	1,100	3,600	NA	
3/12/2007	38,000	3,500, b,c	300	3,500	5,400	2,900	1,300	5,100	NA	
11/6/2006	44,000,a	3,400, a,c	360	3,900	5,600	2,300	920	3,000	NA	
MW2	5/16/2013	4,700	2,300, c,e,f	470, c,e,f	ND<180	360	17	31	16	ND, except TBA = 200,
	12/11/2012	3,900	2,700, c,d	590	110	290	15	27	16	MTBE = 62 ND, except TBA = 190,
	6/21/2012	4,900	1,600, b,c	ND<250	180	560	14	36	12	MTBE = 99 ND, except TBA = 340,
	11/28/2011	4,900	2,900, c,d	420, c,d	ND<50	400	11	39	7.7	MTBE = 160 ND, except TBA = 72,
	5/26/2011	6,600	1,900, b,c	ND<250	ND<350	1,000	39	36	97	MTBE = 29 ND, except TBA = 480,
	11/18/2010	7,700, a	11,000, a,c,d	3,500, a,c,d	ND<35	640	16	74	14	MTBE = 710 ND, except TBA = 19,
	4/28/2010	9,400, a	23,000, a,c,d	9,100, a,c,d	ND<250	1,200	35	40	29	MTBE = 22 ND, except TBA = 300,
	12/3/2009	7,700, a	6,900, a, b,c	2,000, a, b, c	ND<250	840	29	34	28	MTBE = 100 ND, except TBA = 200,
	2/25/2009	7,600, a	21,000, a,c,d	6,200	ND<160	810	18	46	24	MTBE = 61 ND, except TBA = 38,
	11/25/2008	8,700, a	23,000, a,c,d	6,400	14,e	740	15	90	27	MTBE = 31, 1,2-DCM = 7.7 ND, except TBA = 11,
	8/27/2008	13,000, a	9,200, a,c,d	2,200	ND<200	990	14	93	19	MTBE = 14 NA
	5/28/2008	12,000, a	25,000 a,c,d	7,200	ND<210	2,000	77	77	90	NA
	2/27/2008	11,000, a	21,000, a,c,d	6,800	ND<150	940	36	ND<10	22	NA
	11/29/2007	11,000, a	32,000, a,c,d	11,000	ND<50	1,000	28	120	31	NA
	8/29/2007	8,600, a	6,300, a, b, c	2,600	ND<100	1,300	36	48	48	NA
5/30/2007	14,000, a	22,000, a,c,d	5,800	ND<210	2,200	51	100	99	NA	
3/12/2007	8,500, a	74,000, a, c,d	21,000	ND< 80	1,200	34	140	69	NA	
11/6/2006	14,000,a	45,000, a,c	11,000	ND<120	1,400	27	200	37	NA	
MW3	5/16/2013	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	12/11/2012	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	6/21/2012	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	11/28/2011	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	5/26/2011	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	11/18/2010	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	4/28/2010	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	12/3/2009	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	2/25/2009	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	11/25/2008	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND
	8/27/2008	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
	5/28/2008	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
	2/27/2008	ND<50	ND<50	ND<250	15	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
	11/29/2007	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
	8/29/2007	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA
5/30/2007	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	
3/12/2007	ND< 50	ND< 50	ND< 250	ND< 5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	
11/6/2006	ND<50	ND<50	ND<250	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	

**Table 2. Summary of Laboratory Analytical Results**

Well Number	Sample Date	TPH-G	TPH-D	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Fuel Oxygenates & Lead Scavengers
MW4	5/16/2013	6,700	1,500, c	ND<250	ND<60	310	42	220	560	ND, except TBA = 43, MTRF = 71
	12/11/2012	17,000	2,700, c	ND<250	ND<170	88	120	670	2,100	ND, except TBA = 12
	6/21/2012	12,000	2,700, c	ND<250	ND<90	49	83	540	1,700	ND
	11/28/2011	6,000	2,200, c	ND<250	ND<50	86	63	350	1,200	ND, except TBA = 11,
	5/26/2011	7,300	2,400, b,c	ND<250	ND<210	230	64	450	1,100	MTBE = 12 ND, except TBA = 74,
	11/18/2010	5,900	1,100, b,c	ND<250	470	1,100	28	150	390	MTBE = 80 ND, except TBA = 690,
	4/28/2010	6,300	1,400, c	ND<250	470	480	74	280	750	MTBE = 540 ND, except TBA = 350,
	12/3/2009	6,300	1,200, c	ND<250	640	1,100	35	120	390	MTBE = 360 ND, except TBA = 600,
	2/25/2009	11,000	2,200, c	ND<250	ND<300	350	120	490	1,400	MTBE = 390 ND, except TBA = 160,
	11/25/2008	10,000	1,900, c	ND<250	270	630	130	390	1,500	MTBE = 130 ND, except TBA = 190, MTBE = 250
	8/27/2008	9,300	830, c	ND<250	ND<250	260	85	370	1,300	NA
	5/28/2008	2,200	1,400, c	ND<250	ND<30	16	38	100	320	NA
	2/27/2008	8,000	1,900, c	ND<250	ND<50	47	110	270	1,300	NA
	11/29/2007	12,000	2,800, c	ND<250	ND<180	260	230	580	2,500	NA
	8/29/2007	12,000, a	560, c	ND<250	660	910	200	750	2,200	NA
5/30/2007	43,000	4,500, c	610	3,600	5,800	3,700	1,400	5,400	NA	
3/12/2007	19,000	3,100, c	ND<250	370	560	450	1,100	4,400	NA	
11/6/2006	23,000	4,300, c	850	ND<900	680	250	930	3,100	NA	
EW2	5/16/2013	2,000	210, c	ND<250	83	580	4.9	32	7.3	ND, except TBA = 55, MTBE = 63
	12/11/2012	2,500	160, c	ND<250	ND<120	470	3.6	31	5.1	ND, except TBA = 74, MTBE = 66
	6/21/2012	3,700	280, c	ND<250	180	960	9.5	20	16	ND, except TBA = 140, MTBE = 120
	11/28/2011	4,600	960, c	ND<250	260	1,600	15	62	38	ND, except TBA = 270, MTRF = 770
	5/26/2011	2,700	560, b,c	ND<250	ND<150	580	7.9	10	80	ND, except TBA = 290, MTBE = 97
EW4	5/16/2013	76	ND<50	ND<250	14	4.0	ND<0.5	1.7	ND<0.5	ND, except TBA = 11, MTBE = 13
	12/11/2012	340	150, b,c	ND<250	ND<30	28	1.5	6.9	0.91	ND, except TBA = 26, MTBE = 20
	6/21/2012	9,600	2,200, c	ND<250	ND<75	270	22	340	290	ND, except TBA = 18, MTBE = 6.7
	11/28/2011	8,300	2,000, c	ND<250	ND<150	520	40	510	530	ND, except TBA = 89, MTBE = 16
	5/26/2011	2,800	500, b,c	ND<250	ND<150	99	9.9	20	300	ND, except TBA = 110, MTBE = 83
EW5	5/16/2013	19,000	2,500, c	ND<250	ND<300	1,500	100	1,700	2,100	ND, except TBA = 180, MTRF = 41
	12/11/2012	40,000	4,700, c	ND<250	ND<250	700	1,300	2,500	5,900	ND, except TBA = 180, MTBE = 8.6
	6/21/2012	44,000	4,900, c	ND<250	ND<1,000	710	2,400	2,300	8,800	ND, except TBA = 57, MTBE = 6.5
	11/28/2011	48,000	3,500, b,c	ND<250	ND<400	930	3,400	2,400	9,000	ND, except TBA = 110, MTRF = 48
	5/26/2011	35,000	3,600, b,c	ND<250	ND<450	1,000	2,700	850	11,000	ND, except TBA = 250, MTBE = 86
OW2	5/16/2013	85	ND<100	ND<250	ND<5.0	0.57	0.88	ND<0.5	0.54	ND, except TBA = 7.6, MTBE = 0.99
	12/11/2012	61	ND<50	ND<250	ND<5.0	3.2	0.70	0.94	3.5	ND, except TBA = 39, MTBE = 3.1
	6/21/2012	4,600	840, c	ND<250	ND<45	110	46	160	590	ND, except TBA = 60, MTRF = 5.4
	11/28/2011	5,300	1,100, b,c	ND<250	ND<130	350	170	24	790	ND, except TBA = 210, MTBE = 50
	5/26/2011	450	430, b,c	ND<250	ND<5.0	0.87	0.71	ND<0.5	7.7	ND, except TBA = 350, MTBE = 3.6

**Abbreviations and Notes:**

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil  
 TPH-D = Total Petroleum Hydrocarbons as Diesel  
 TPH-G = Total Petroleum Hydrocarbons as Gasoline  
 MTBE = Methyl tertiary-butyl ether  
 TBA = tert-Butyl alcohol.  
 1,2-DCA = 1,2-Dichloroethane  
 ND = Not Detected.  
 NA = Not Analyzed.  
 a = Laboratory Note: lighter than water immiscible sheen/ product is present.  
 b = Laboratory Note: diesel range compounds are significant; no recognizable pattern  
 c = Laboratory Note: gasoline range compounds are significant  
 d = Laboratory Note: unmodified or weakly modified diesel range compounds are significant  
 e = Analysis by EPA 8260B as part of fuel oxygenate analysis. All other results for MTBE and all results for BTEX are by EPA 8021B.  
 f = Laboratory Note: aged diesel is significant  
 Results are in micrograms per liter (µg/L), unless otherwise noted.

# **FIGURES**

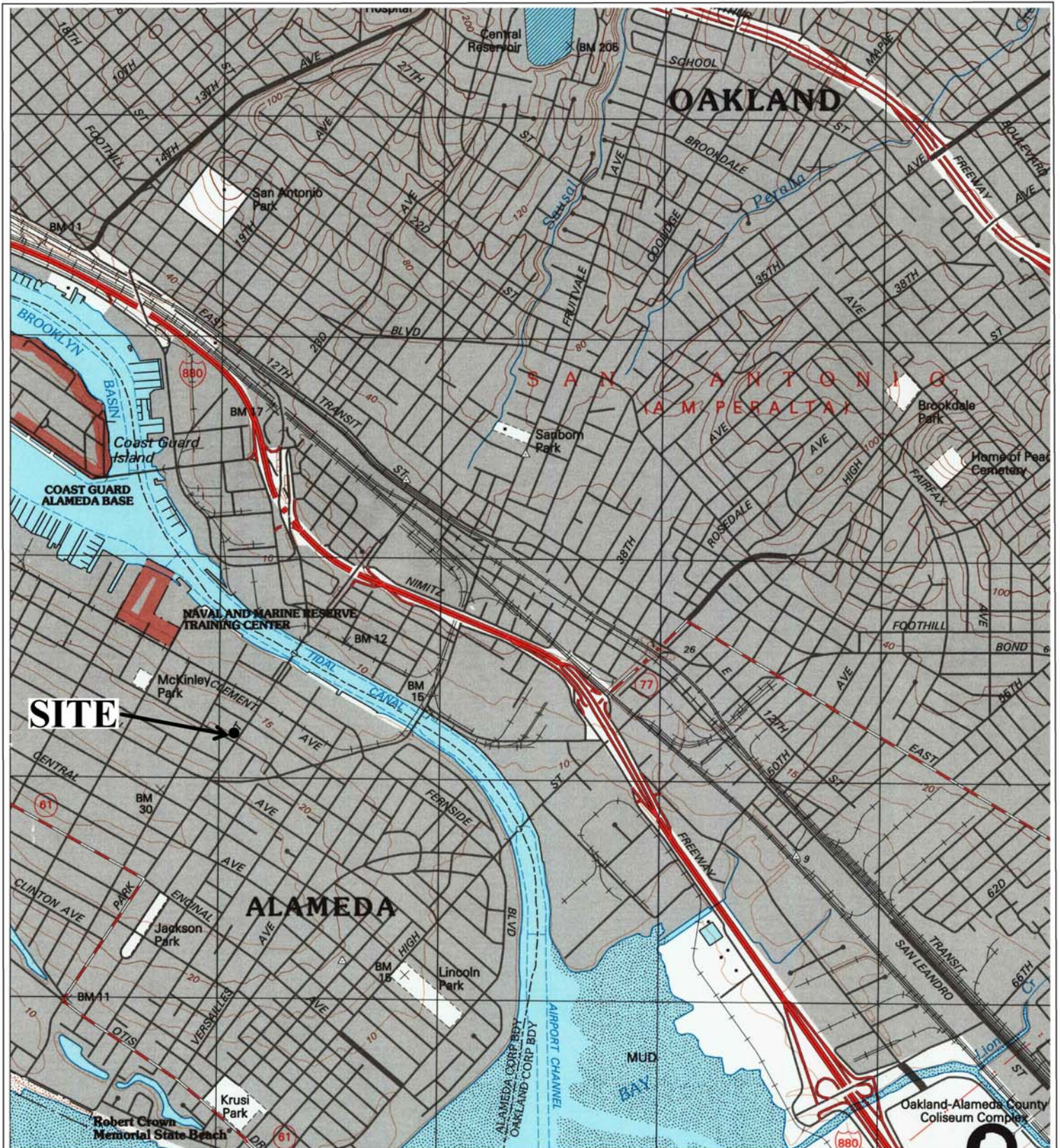


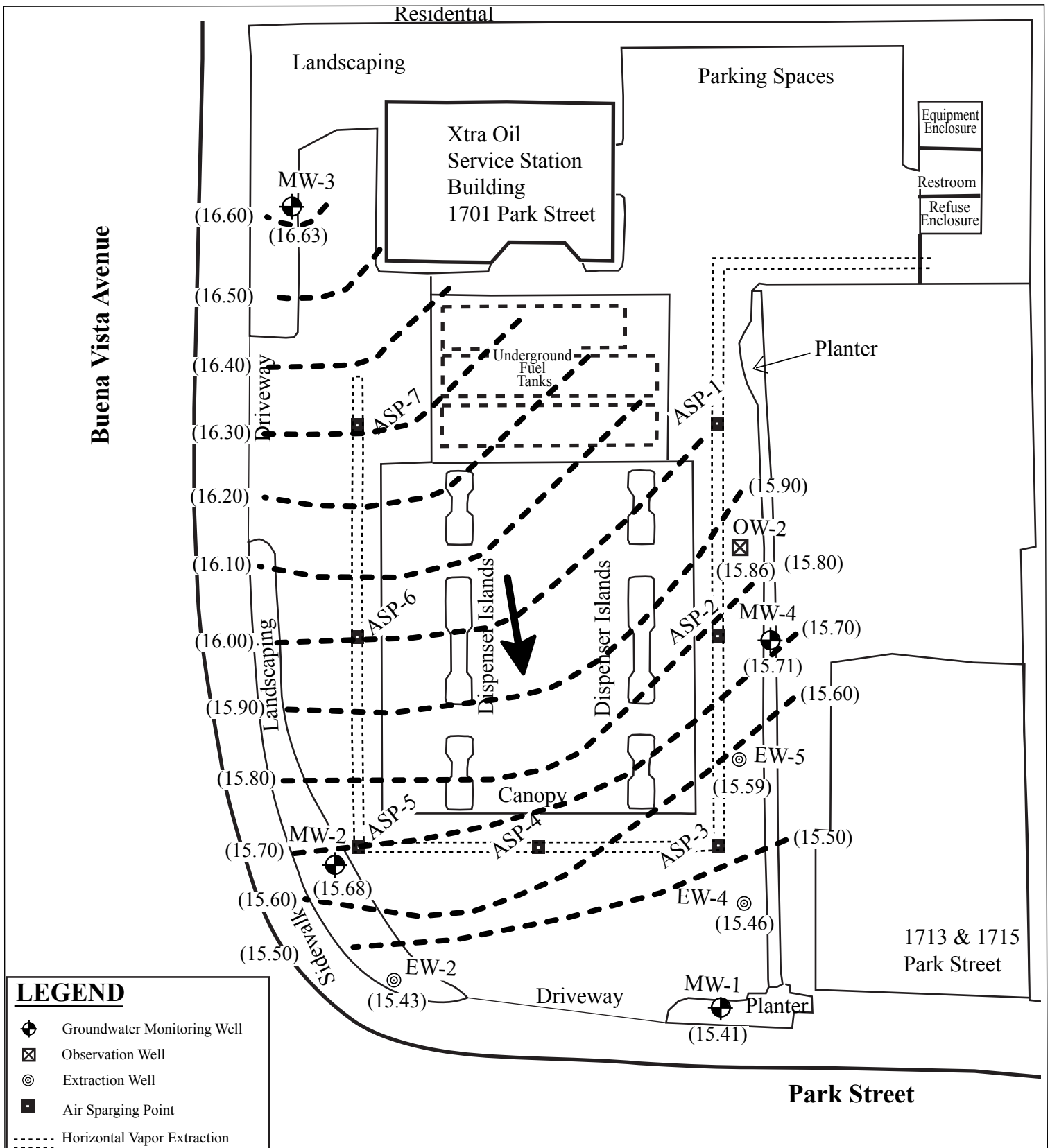
Figure 1  
 Site Location Map  
 Xtra Oil Company  
 1701 Park Street  
 Alameda, California

Basemap from:  
 U.S. Geological Survey  
 Oakland East, California  
 7.5-Minute Quadrangle, Map edited 1996

P&D Environmental, Inc.  
 55 Santa Clara Ave., Suite 240  
 Oakland, CA 94610

0 1,000 2,000  
 Approximate Scale in Feet



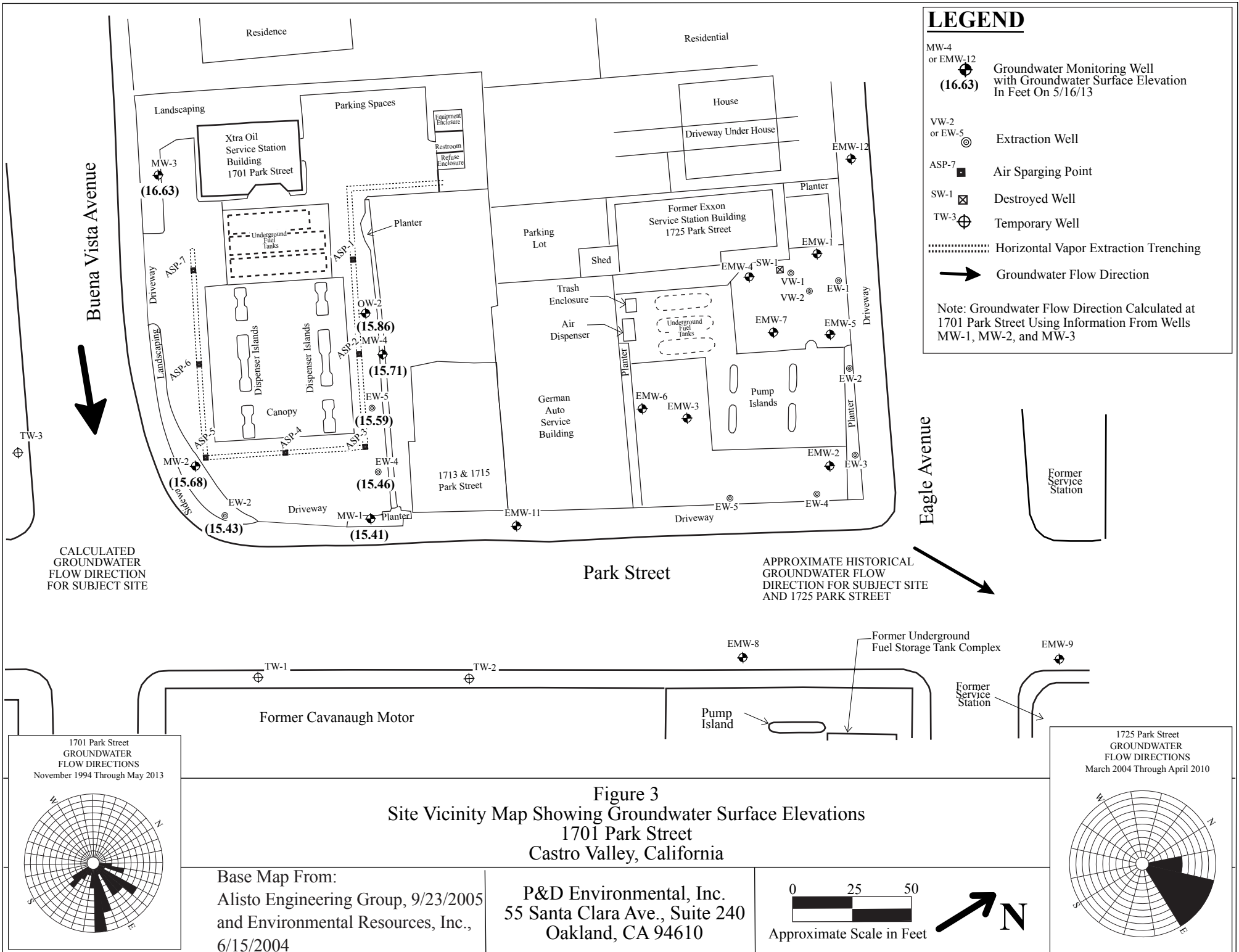


Basemap from: Alisto Engineering Group September 2005, and Google Earth October 2009

P&D Environmental, Inc.  
 55 Santa Clara Ave., Suite 240  
 Oakland, CA 94610

0 12.5 25  
 Approximate Scale in Feet







**WELL MONITORING AND  
PURGE DATA SHEETS**

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil - Park Street - Alameda  
 Job Number 0058  
 TOC to Water (ft.) 6.95  
 Well Depth (ft.) 19.2  
 Well Diameter 2"  
 Flow Rate (mL/minute) 300  
 Start Purge Time 1:23

Well No. MW-1  
 Date 5/16/13  
 Sheen None  
 Free Product Thickness ∅  
 Sample Collection Method peristaltic pump + new/unused disp. PE tubing

Time	Vol. Purged (mL)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1124	300	7.14	6.69	1015	20.2	1.55	-76.5	0.00
1127	1,200	7.28	6.66	1011	20.0	0.33	-97.6	0.00
1130	2,100	7.33	6.67	1009	20.0	0.29	-99.4	0.00
1133	3,000	7.41	6.68	1007	20.1	0.20	-103.2	0.00
1136	3,900	7.43	6.69	1001	20.2	0.19	-103.6	0.00
1139	4,800	7.48	6.67	983	20.2	0.18	-103.6	0.00

NOTES  
 Stability Parameters  
 pH = +/- 0.1  
 Sp. Conductivity = +/- 3%  
 Turbidity = +/- 10%  
 D.O. = +/- 10%

NO sheen & strong phc odor  
MW-1 collected @ 1142

**RGA Environmental, Inc.**  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil - Park Street - Alameda  
 Job Number 0058  
 TOC to Water (ft.) 7.42  
 Well Depth (ft.) 13.4  
 Well Diameter 2"  
 Flow Rate (mL/minute) 300  
 Start Purge Time 1006

Well No. MW-2  
 Date 5/16/13  
 Sheen yes  
 Free Product Thickness Ø  
 Sample Collection Method peristaltic  
pump + new unused  
PE tubing

<u>Time</u>	<u>Vol. Purged (mL)</u>	<u>Depth to Water (ft.)</u>	<u>pH</u>	<u>Electrical Conductivity (µS/cm)</u>	<u>Temperature (C°)</u>	<u>Dissolved Oxygen (mg/L)</u>	<u>Oxidation/Reduction Potential (mV)</u>	<u>Turbidity (NTU)</u>
<u>1007</u>	<u>300</u>	<u>7.59</u>	<u>6.54</u>	<u>917</u>	<u>20.3</u>	<u>0.87</u>	<u>-71.6</u>	<u>4.33</u>
<u>1010</u>	<u>1,200</u>	<u>7.79</u>	<u>6.50</u>	<u>827</u>	<u>20.5</u>	<u>0.36</u>	<u>-97.5</u>	<u>0.00</u>
<u>1013</u>	<u>2,100</u>	<u>7.89</u>	<u>6.47</u>	<u>782</u>	<u>20.5</u>	<u>0.25</u>	<u>-97.6</u>	<u>0.00</u>
<u>1016</u>	<u>3,000</u>	<u>7.91</u>	<u>6.48</u>	<u>785</u>	<u>20.5</u>	<u>0.23</u>	<u>-98.4</u>	<u>0.00</u>
<u>1019</u>	<u>3,900</u>	<u>7.94</u>	<u>6.50</u>	<u>797</u>	<u>20.6</u>	<u>0.20</u>	<u>-99.7</u>	<u>0.00</u>
<u>1022</u>	<u>4,800</u>	<u>7.97</u>	<u>6.50</u>	<u>813</u>	<u>20.6</u>	<u>0.19</u>	<u>-101.3</u>	<u>0.00</u>

NOTES  
 Stability Parameters  
 p.H. = +/- 0.1  
 Sp. Conductivity = +/- 3%  
 Turbidity = +/- 10%  
 D.O. = +/- 10%

Moderate to strong odor and sheen  
sample collected @ 1025

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil - Park St - Alameda

Well No. MW3-

Job Number: 0058

Date 05/16/13

TOC: Water (ft.) 6.72

Sheen None

Well Depth (ft.) 19.3

Free Product Thickness 0

Well Diameter 2"

Sample Collection Method Peristaltic

Flow Rate (ml/minute) 300

pump + new unused PE tubing

Start Purge Time 0932

Time	Vol. Purged (ml)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/l.)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
0933	300	7.05	6.05	832	19.1	1.37	158.8	0.00
0936	1,200	7.23	6.10	828	19.2	1.33	145.5	0.00
0939	2,100	7.36	6.11	827	19.1	1.32	157.2	0.00
0942	3,000	7.51	6.11	823	19.2	1.13	135.7	0.00
0945	3,900	7.60	6.11	819	19.2	1.04	98.3	0.00
0948	4,800	7.63	6.12	799	19.2	1.45	152.8	0.00

**NOTES**  
Stability Parameters  
pH - +/- 0.1  
Sp. Conductivity = +/- 3%  
Turbidity - +/- 10%  
D.O. - +/- 10%

no sheen, no odor  
sample collected @ 0950

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name XtraOil - Park Street - Alameda  
 Job Number 0058  
 TOC to Water (ft.) 6.77  
 Well Depth (ft.) 10.9  
 Well Diameter 2"  
 Flow Rate (ml/minute) 300  
 Start Purge Time 1342

Well No. MW-4  
 Date 5/16/13  
 Sheen none  
 Free Product Thickness Ø  
 Sample Collection Method peristaltic pump + new knused PE tubing

Time	Vol. Pumped (mL)	Depth to Water (ft.)	pH	Electrical Conductivity ( $\mu\text{S}/\text{cm}$ )	Temperature ( $^{\circ}\text{C}$ )	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1343	300	7.30	6.79	427.0	17.8	0.48	-65.8	0.00
1346	1,200	7.93	6.79	426.7	18.0	0.33	-67.9	0.00
1349	2,100	8.82	6.81	426.5	18.0	0.31	-69.8	0.00
1352	3,000	9.38	6.93	473.6	18.1	0.38	-61.0	0.00
1355	3,900	10.18	6.94	485.4	18.3	0.45	-66.1	0.00
1358	4,800	10.80	6.93	510.2	17.9	0.50	-68.7	0.00

NOTES  
 Stability: \_\_\_\_\_  
 pH: \_\_\_\_\_  
 Sp. Conductivity: \_\_\_\_\_  
 Turbidity: \_\_\_\_\_  
 D.O.: \_\_\_\_\_

moderate odor + no sheen  
 MW-4 collected @ 1400

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil - Park Street - Alameda Well No. EW-2  
 Job Number 0058 Date 5/16/13  
 TOC to Water (ft.) 6.70 Sheen none  
 Well Depth (ft.) 23.6 Free Product Thickness 0  
 Well Diameter 4" Sample Collection Method peristaltic pump, new unused PE tubing  
 Flow Rate (mL/minute) 300  
 Start Purge Time 1038

Time	Vol. Purged (ml.)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1039	300	6.78	6.94	912	19.9	0.61	-90.0	0.00
1042	1,200	6.90	6.92	911	19.9	0.25	-107.2	0.00
1045	2,100	6.96	6.93	912	19.9	0.20	-112.0	0.00
1048	3,000	6.96	6.93	909	19.9	0.20	-112.6	0.00
1051	3,900	6.98	6.93	909	19.9	0.17	-115.3	0.00
1054	4,800	7.03	6.94	908	20.0	0.15	-118.3	0.00

**NOTES**  
 Stability Parameters  
 p.H. = +/- 0.1  
 Sp. Conductivity = +/- 3%  
 Turbidity = +/- 10%  
 D.O. = +/- 10%

Strong odor & no sheen  
EW-2 collected @ 1056

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil- Park Street- Alameda  
 Job Number 0058  
 TOC to Water (ft.) 5.49  
 Well Depth (ft.) 21.8  
 Well Diameter 4"  
 Flow Rate (ml./minute) 300  
 Start Purge Time 1241

Well No. EW-4  
 Date 5/16/13  
 Sheen yes

Free Product Thickness ∅  
 Sample Collection Method peristaltic pump + new unused PE tubing

Time	Vol. Purged (ml.)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1242	300	5.67	7.28	646	20.2	0.58	-69.6	2.33
1245	1,200	5.81	7.20	643	19.9	0.27	-95.6	0.00
1248	2,100 <sup>88</sup>	<del>5.88</del>	7.20	644	19.9	0.24	-101.2	0.00
1251	3,000	5.92	7.22	643	20.0	0.21	-102.9	0.00
1254	3,900	5.96	7.24	642	20.0	0.21	-104.3	0.00
1257	4,800	6.01	7.23	642	19.9	0.18	-107.4	0.00

NOTES

<sup>- strong</sup>  
 Moderate color and sheen observed  
 EW-4 Sample collected @ 1300

Stability Parameters  
 pH = +/- 0.1  
 Sp. Conductivity = +/- 3%  
 Turbidity = +/- 10%  
 D.O. = +/- 10%

RGA Environmental, Inc.  
Groundwater Monitoring/Well Purging Data Sheet

Site Name Xtra Oil - Berk Street - Alameda  
 Job Number 0058  
 TOC to Water (ft.) 5.61  
 Well Depth (ft.) 23.7  
 Well Diameter 4"  
 Flow Rate (mL/minute) 300  
 Start Purge Time 1311

Well No. EW-5  
 Date 5/16/13  
 Screen none  
 Free Product Thickness φ  
 Sample Collection Method peristaltic pump + new unused PE tubing

Time	Vol. Purged (mL)	Depth to Water (ft.)	pH	Electrical Conductivity (uS/cm)	Temperature (C°)	Dissolved Oxygen (mg/L)	Oxidation/Reduction Potential (mV)	Turbidity (NTU)
1312	300	5.75	6.73	484.9	18.6	0.48	-85.8	0.00
1315	1,200	5.88	6.74	484.8	18.5	0.33	-93.9	0.00
1318	2,100	5.92	6.77	485.0	18.5	0.23	-98.2	0.00
1321	3,000	5.99	6.77	484.9	18.5	0.19	-100.8	0.00
1324	3,900	6.06	6.78	484.5	18.5	0.18	-101.7	0.00
1327	4,800	6.10	6.80	485.3	18.5	0.17	-102.9	0.00

NOTES  
 Stability Elements  
 pH = +/- 0.1  
 Sp. Conductivity = +/- 3%  
 Turbidity = +/- 10%  
 D.O. = +/- 10%

Strong odor i, no sheen  
EW5 collected @ 1330





**LABORATORY REPORTS  
AND CHAIN OF CUSTODY  
DOCUMENTATION**



## Analytical Report

P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Reported: 05/30/13
	Client P.O.:	Date Completed: 05/30/13

**WorkOrder: 1305575**

May 30, 2013

Dear Paul:

Enclosed within are:

- 1) The results of the **8** analyzed samples from your project: **#0058; Xtra Oil**,
- 2) QC data for the above samples, and
- 3) A copy of the chain of custody.

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.

*The analytical results relate only to the items tested.*





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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1305575

ClientCode: PDEO

WaterTrax  
  WriteOn  
  EDF  
  Excel  
  EQuIS  
 Email  
  HardCopy  
  ThirdParty  
  J-flag

**Report to:**

Paul King  
 P & D Environmental  
 55 Santa Clara, Ste.240  
 Oakland, CA 94610  
 (510) 658-6916    FAX: 510-834-0152

Email: lab@pdenviro.com  
 cc:  
 PO:  
 ProjectNo: #0058; Xtra Oil

**Bill to:**

Accounts Payable  
 Xtra Oil Company  
 2307 Pacific Avenue  
 Alameda, CA 94507  
 xtraoil@sbcglobal.net

**Requested TAT:**

**5 days**

*Date Received:*    **05/17/2013**

*Date Printed:*        **05/20/2013**

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	
1305575-001	MW-1	Water	5/16/2013 11:42	<input type="checkbox"/>	B	A	C										
1305575-002	MW-2	Water	5/16/2013 10:25	<input type="checkbox"/>	B	A	C										
1305575-003	MW-3	Water	5/16/2013 9:50	<input type="checkbox"/>	B	A	C										
1305575-004	MW-4	Water	5/16/2013 14:00	<input type="checkbox"/>	B	A	C										
1305575-005	EW-2	Water	5/16/2013 10:56	<input type="checkbox"/>	B	A	C										
1305575-006	EW-4	Water	5/16/2013 13:00	<input type="checkbox"/>	B	A	C										
1305575-007	EW-5	Water	5/16/2013 13:30	<input type="checkbox"/>	B	A	C										
1305575-008	OW-2	Water	5/16/2013 14:35	<input type="checkbox"/>	B	A	C										

**Test Legend:**

1	5-OXYS+PBSCV_W	2	G-MBTX_W	3	TPH(DMO)WSG_W	4		5	
6		7		8		9		10	
11		12							

**Prepared by: Zoraida Cortez**

**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: **P & D Environmental** Date and Time Received: **5/17/2013 9:43:29 PM**  
 Project Name: **#0058; Xtra Oil** LogIn Reviewed by: **Zoraida Cortez**  
 WorkOrder N°: **1305575** Matrix: Water Carrier: Rob Pringle (MAI Courier)

#### 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: 3.4°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.

-----  
 Comments:



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

P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Reported: 05/30/13
	Client P.O.:	Date Completed: 05/30/13

**Work Order: 1305575**

May 30, 2013

CASE NARRATIVE REGARDING TPH-DIESEL DATA for QC BATCH#77476

The LCS recovery for TPH-diesel was 13.8% higher than our acceptance criteria. Diesel was ND in samples #1305575-003 & -006; therefore the data is acceptable.

Diesel results for samples #1305575-001, -002, -004, -005 & -007 were hypothesized to be 13.8% higher than the actual values. However, Diesel was detected at a significant level for these samples; therefore, 13.8% may not cause a big difference between the actual data and the reported results.



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http://www.mccampbell.com / E-mail: main@mccampbell.com

P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Extracted: 05/20/13-05/21/13
	Client P.O.:	Date Analyzed: 05/20/13-05/21/13

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

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305575

Lab ID	1305575-001B	1305575-002B	1305575-003B	1305575-004B	Reporting Limit for DF = 1	
Client ID	MW-1	MW-2	MW-3	MW-4		
Matrix	W	W	W	W		
DF	10	3.3	1	2		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<5.0	ND<1.7	ND	ND<1.0	NA	0.5
t-Butyl alcohol (TBA)	180	200	ND	43	NA	2.0
1,2-Dibromoethane (EDB)	ND<5.0	ND<1.7	ND	ND<1.0	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<5.0	ND<1.7	ND	ND<1.0	NA	0.5
Diisopropyl ether (DIPE)	ND<5.0	ND<1.7	ND	ND<1.0	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<5.0	ND<1.7	ND	ND<1.0	NA	0.5
Methyl-t-butyl ether (MTBE)	240	62	ND	21	NA	0.5

### Surrogate Recoveries (%)

%SS1:	107	112	107	120	
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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.





P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Extracted: 05/20/13-05/21/13
	Client P.O.:	Date Analyzed: 05/20/13-05/21/13

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

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 1305575

Lab ID	1305575-005B	1305575-006B	1305575-007B	1305575-008B	Reporting Limit for DF=1	
Client ID	EW-2	EW-4	EW-5	OW-2		
Matrix	W	W	W	W		
DF	2.5	1	10	1		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<1.2	ND	ND<5.0	ND	NA	0.5
t-Butyl alcohol (TBA)	55	11	180	7.6	NA	2.0
1,2-Dibromoethane (EDB)	ND<1.2	ND	ND<5.0	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<1.2	ND	ND<5.0	ND	NA	0.5
Diisopropyl ether (DIPE)	ND<1.2	ND	ND<5.0	ND	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<1.2	ND	ND<5.0	ND	NA	0.5
Methyl-t-butyl ether (MTBE)	63	13	41	0.99	NA	0.5

**Surrogate Recoveries (%)**

%SS1:	107	110	114	109	
-------	-----	-----	-----	-----	--

**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.

*OC for*



P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Extracted: 05/21/13
	Client P.O.:	Date Analyzed: 05/21/13

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

Extraction method: SW5030B

Analytical methods: SW8021B/8015Bm

Work Order: 1305575

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS	Comments
001A	MW-1	W	18,000	ND<800	4400	320	510	1100	10	---#	d1
002A	MW-2	W	4700	ND<180	360	17	31	16	5	---#	d1
003A	MW-3	W	ND	ND	ND	ND	ND	ND	1	97	
004A	MW-4	W	6700	ND<60	310	42	220	560	5	---#	d1
005A	EW-2	W	2000	83	580	4.9	32	7.3	1	---#	d1
006A	EW-4	W	76	14	4.0	ND	1.7	ND	1	---#	d1
007A	EW-5	W	19,000	ND<300	1500	100	1700	2100	10	---#	d1
008A	OW-2	W	85	ND	0.57	0.88	ND	0.54	1	106	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



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P & D Environmental  55 Santa Clara, Ste.240  Oakland, CA 94610	Client Project ID: #0058; Xtra Oil	Date Sampled: 05/16/13
		Date Received: 05/17/13
	Client Contact: Paul King	Date Extracted: 05/17/13
	Client P.O.:	Date Analyzed: 05/20/13-05/23/13

**Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up\***

Extraction method: SW3510C/3630C

Analytical methods: SW8015B

Work Order: 1305575

Lab ID	Client ID	Matrix	TPH-Diesel (C10-C23)	TPH-Motor Oil (C18-C36)	DF	% SS	Comments
1305575-001C	MW-1	W	1800	ND	1	74	e4
1305575-002C	MW-2	W	2300	470	1	88	e4,e3
1305575-003C	MW-3	W	ND	ND	1	95	
1305575-004C	MW-4	W	1500	ND	1	76	e4
1305575-005C	EW-2	W	210	ND	1	88	e4
1305575-006C	EW-4	W	ND	ND	1	89	
1305575-007C	EW-5	W	2500	ND	1	79	e4
1305575-008C	OW-2	W	ND<100	ND	1	96	e4

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	250	µg/L
	S	NA	NA	mg/Kg

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

#) cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract; &) low or no surrogate 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:

- e3) aged diesel is significant
- e4) gasoline range compounds are significant.

DHS ELAP Certification 1644

MAM Analyst's Initial

*OC for*

Angela Rydelius, Lab Manager



**QC SUMMARY REPORT FOR SW8260B**

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 77527

WorkOrder: 1305575

EPA Method: SW8260B		Extraction: SW5030B					Spiked Sample ID: 1305572-001B			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
tert-Amyl methyl ether (TAME)	ND	10	99.8	99.3	0.509	100	70 - 130	20	70 - 130	
Benzene	ND	10	103	102	0.850	112	70 - 130	20	70 - 130	
t-Butyl alcohol (TBA)	ND	40	89.7	89.9	0.212	80.3	70 - 130	20	70 - 130	
Chlorobenzene	ND	10	99.6	101	0.946	110	70 - 130	20	70 - 130	
1,2-Dibromoethane (EDB)	ND	10	109	107	1.33	107	70 - 130	20	70 - 130	
1,2-Dichloroethane (1,2-DCA)	ND	10	87.1	85.6	1.71	89.6	70 - 130	20	70 - 130	
Diisopropyl ether (DIPE)	ND	10	95.3	97.2	1.90	105	70 - 130	20	70 - 130	
Ethyl tert-butyl ether (ETBE)	ND	10	94.2	95.7	1.62	99.2	70 - 130	20	70 - 130	
Methyl-t-butyl ether (MTBE)	ND	10	98.4	98.3	0.0900	99.9	70 - 130	20	70 - 130	
Toluene	ND	10	98.4	99.9	1.46	109	70 - 130	20	70 - 130	
Trichloroethene	ND	10	102	100	1.78	105	70 - 130	20	70 - 130	
%SS1:	106	25	110	110	0	106	70 - 130	20	70 - 130	

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

**BATCH 77527 SUMMARY**

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305575-001B	05/16/13 11:42 AM	05/20/13	05/20/13 12:00 PM	1305575-002B	05/16/13 10:25 AM	05/20/13	05/20/13 5:22 PM
1305575-003B	05/16/13 9:50 AM	05/20/13	05/20/13 1:20 PM	1305575-004B	05/16/13 2:00 PM	05/21/13	05/21/13 2:50 PM
1305575-005B	05/16/13 10:56 AM	05/21/13	05/21/13 3:29 PM	1305575-006B	05/16/13 1:00 PM	05/20/13	05/20/13 3:20 PM
1305575-007B	05/16/13 1:30 PM	05/20/13	05/20/13 4:01 PM	1305575-008B	05/16/13 2:35 PM	05/20/13	05/20/13 4:42 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 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: 77539

WorkOrder: 1305575

EPA Method: SW8021B/8015Bm		Extraction: SW5030B					Spiked Sample ID: 1305584-007A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH(btex) <sup>£</sup>	ND	60	89.4	96.8	7.97	92.6	70 - 130	20	70 - 130	
MTBE	ND	10	88.4	98.2	10.1	96.6	70 - 130	20	70 - 130	
Benzene	ND	10	82.6	91.4	10.1	83.9	70 - 130	20	70 - 130	
Toluene	ND	10	81.8	90.5	10.0	85	70 - 130	20	70 - 130	
Ethylbenzene	ND	10	83.1	93	11.2	84.3	70 - 130	20	70 - 130	
Xylenes	ND	30	83.4	92.4	10.2	86.2	70 - 130	20	70 - 130	
%SS:	95	10	89	91	2.32	90	70 - 130	20	70 - 130	

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

BATCH 77539 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305575-001A	05/16/13 11:42 AM	05/21/13	05/21/13 12:10 AM	1305575-001A	05/16/13 11:42 AM	05/21/13	05/21/13 10:08 PM
1305575-002A	05/16/13 10:25 AM	05/21/13	05/21/13 12:40 AM	1305575-003A	05/16/13 9:50 AM	05/21/13	05/21/13 1:10 AM
1305575-004A	05/16/13 2:00 PM	05/21/13	05/21/13 1:40 AM	1305575-005A	05/16/13 10:56 AM	05/21/13	05/21/13 2:10 AM
1305575-005A	05/16/13 10:56 AM	05/21/13	05/21/13 10:38 PM	1305575-006A	05/16/13 1:00 PM	05/21/13	05/21/13 8:07 PM
1305575-007A	05/16/13 1:30 PM	05/21/13	05/21/13 3:10 AM	1305575-008A	05/16/13 2:35 PM	05/21/13	05/21/13 8:37 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.  
 £ 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 SW8015B

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 77476

WorkOrder: 1305575

EPA Method: SW8015B		Extraction: SW3510C/3630C					Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	MS / MSD	RPD	LCS	
TPH-Diesel (C10-C23)	N/A	1000	N/A	N/A	N/A	148, F2	N/A	N/A	70 - 130	
%SS:	N/A	625	N/A	N/A	N/A	83	N/A	N/A	70 - 130	
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										
F2 = LCS recovery for this compound is outside of acceptance limits.										

#### BATCH 77476 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
1305575-001C	05/16/13 11:42 AM	05/17/13	05/21/13 6:42 AM	1305575-002C	05/16/13 10:25 AM	05/17/13	05/20/13 10:16 PM
1305575-003C	05/16/13 9:50 AM	05/17/13	05/23/13 9:10 PM	1305575-004C	05/16/13 2:00 PM	05/17/13	05/21/13 9:06 AM
1305575-005C	05/16/13 10:56 AM	05/17/13	05/20/13 9:02 PM	1305575-006C	05/16/13 1:00 PM	05/17/13	05/20/13 7:48 PM
1305575-007C	05/16/13 1:30 PM	05/17/13	05/21/13 7:54 AM	1305575-008C	05/16/13 2:35 PM	05/17/13	05/23/13 8:04 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 $\% \text{ Recovery} = 100 * (\text{MS-Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$   
 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.

## **APPENDIX A**





TABLE 1 - SUMMARY OF GROUNDWATER SAMPLING  
 XTRA OIL COMPANY SERVICE STATION  
 1701 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-210

WELL ID	DATE OF MONITORING/SAMPLING	CASING ELEVATION (Feet)	DEPTH TO WATER (a) (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	OTHER SVOCs (ug/l)	NAPHTHALENE (ug/l)	BENZO-PYRENE (ug/l)	DO (ppm)	LAB	
MW-2	11/04/84	20.31	9.12	0.16	11.31	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	01/11/95	20.31	6.75	—	13.56	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	02/24/95	20.31	7.11	0.18	13.34	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	05/25/95	20.31	7.01	0.01	13.31	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	08/30/95	20.31	6.58	0.12	11.82	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	11/16/95	20.31	6.07	0.01	11.26	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	03/20/96	20.31	6.79	0.01	13.53	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	06/13/96	20.31	7.41	0.01	12.91	—	—	—	—	—	—	—	—	—	—	—	—	
MW-2	09/23/96	20.31	7.83	0.01	12.49	30000	19000	4600	180	1500	4100	2600	—	—	—	5.5	MCC	
QC-1 (c)	09/23/96	—	—	—	—	33000	—	4700	170	1600	3900	2400	—	—	—	—	MCC	
MW-2	12/19/96	20.31	7.37	0.01	12.95	29000	—	1800	240	1400	5400	(d)	—	—	ND<10	—	MCC	
QC-1 (c)	12/19/96	—	—	—	—	29000	—	580	210	1300	5100	—	—	—	—	—	MCC	
MW-2	05/09/97	20.31	6.11	0.21	14.36	34000	6700000	4600	260	1500	4300	1600	—	—	—	3.7	MCC	
MW-2	09/11/97	20.31	7.70	0.03	12.63	44000	1200000	3900	250	2400	7400	ND<610	—	—	—	6.5	MCC	
QC-1 (c)	09/11/97	—	—	—	—	47000	1100000	4000	420	2700	8300	920	—	—	—	—	MCC	
MW-2	12/15/97	20.31	7.87	0.03	12.46	32000	68000	4600	130	2200	5400	ND<470	—	—	—	6	MCC	
MW-2	03/11/98	20.31	5.61	0.18	14.84	44000	3800	5200	220	2000	5000	1100	—	—	—	6.2	MCC	
MW-2	06/23/98	20.31	6.74	0.02	13.59	75000	570000	5900	390	3100	8300	8400	—	—	—	6.3	MCC	
MW-2	12/01/98	20.31	7.30	—	13.01	36000	—	3800	73	1500	3900	2000	—	—	—	1.9	MCC	
MW-2	03/30/99	20.31	6.51	0.13	13.90	23000	23000	5000	100	610	870	21000	—	—	—	1.7	MCC	
MW-2	08/16/99	20.31	8.04	0.21	12.43	30000	—	5200	67	1100	1800	6000	—	—	—	2.6	MCC	
MW-2	12/31/99	20.31	8.20	0.01	12.12	43000	340000	7600	97	1400	2500	4300	—	—	—	9.0	MCC	
MW-2	03/31/00	20.31	6.29	0.01	14.03	26000	200000	4000	58	1100	1500	13000	—	—	—	8.1	MCC	
MW-2	07/14/00	20.31	8.02	—	12.29	35000	17000	5000	76	1100	2500	4900	—	—	—	3.9	MCC	
MW-2	10/04/00	20.31	8.62	—	11.89	22000	67000	4700	97	1300	1000	1900	—	—	—	1.8	MCC	
MW-2	12/21/00	20.31	7.70	—	12.61	23000	16000	3700	85	770	490	8600	—	220	ND<10	0.6	MCC	
MW-2	04/13/01	20.31	7.05	—	13.26	25000	21000	6400	79	790	670	8300	—	—	—	1.1	MCC	
MW-2	06/27/01	20.31	7.50	—	12.81	34000	10000	5400	100	520	370	6800	—	—	—	0.7	MCC	
MW-2	09/20/01	20.31	8.10	—	12.21	28000	64000	4600	78	670	500	2000	—	—	—	0.4	MCC	
MW-2	12/21/01	20.31	6.66	—	13.65	30000	18000	3000	52	1700	970	ND<100	—	—	—	0.9	MCC	
MW-2	02/04/02	20.31	6.75	—	13.56	17000	35000	3600	ND<50	960	500	1200	—	—	—	1.3	MCC	
MW-2	05/07/02	20.31	7.20	—	13.11	16000	59000	3500	43	520	220	3100	—	—	—	1.0	MCC	
MW-2	08/22/02	20.31	7.98	—	12.35	15000	60000	2700	30	460	220	700	—	—	—	4.2	MCC	
MW-2	11/08/02	20.31	7.66	—	12.62	15000	100000	2100	60	1100	150	ND<250	—	—	—	—	MCC	
MW-2	02/07/03	20.31	6.52	—	13.79	11000	—	4400	24	ND<12	77	1900	—	—	—	0.7	MCC	
MW-2	05/02/03	20.31	6.40	—	13.91	16000	79000	1800	23	860	210	ND<350	—	—	—	—	MCC	
MW-2	08/14/03	20.31	7.77	—	12.54	13000	4300	1600	21	450	80	ND<400	—	—	—	0.9	MCC	
MW-2	11/14/03	20.31	7.85	—	12.46	12000	13000	1700	29	600	100	ND<600	—	—	—	0.7	MCC	
MW-2	03/01/04	20.31	6.10	—	14.21	17000	43000	3900	100	670	430	1800	—	—	—	0.42	MCC	
MW-2	06/30/04	20.31	7.61	—	12.70	14000	12000	3800	33	390	72	1900	—	—	—	0.42	MCC	
MW-2	10/20/04	20.31	7.12	—	13.19	14000	7900	3700	47	300	100	1700	—	—	—	—	MCC	
MW-2	03/24/05	20.31	5.78	—	14.63	15000	57000	3000	ND<25	400	58	ND<900	—	—	—	—	MCC	
MW-2	06/14/05	20.31	6.92	—	13.39	15000	53000	2100	31	310	49	530	—	—	—	0.8	MCC	
MW-2	09/12/05	20.31	8.25	0.01	12.06	10000	11000	2600	30	200	ND<10	660	—	—	—	2.6	MCC	
MW-2	01/04/06	(g)	20.31	6.45	<0.01	13.86	7300	14000	1500	18	180	47	ND<250	—	—	—	—	MCC
MW-2	04/04/06	(h)	20.31	6.14	—	14.17	9500	130000	2200	35	170	52	ND<250	—	—	—	—	MCC
MW-2	06/12/06	20.31	7.15	0.01	13.16	10000	29000	2200	46	74	59	460	—	—	—	—	MCC	
MW-2	09/08/06	20.31	8.22	sheen	12.09	12000	7400	1800	25	130	38	ND<300	—	—	—	—	MCC	
MW-3	11/04/84	20.57	8.92	—	11.65	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	MCC	
MW-3	01/11/95	20.57	5.67	—	14.90	—	—	—	—	—	—	—	—	—	—	—	—	
MW-3	02/24/95	20.57	6.11	—	14.46	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	MCC	
MW-3	05/25/95	20.57	6.24	—	14.33	91	ND<50	28.0	12.0	2.1	6.5	—	—	—	—	—	MCC	
MW-3	08/30/95	20.57	8.27	—	12.30	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	4.6	MCC
MW-3	11/16/95	20.57	8.82	—	11.75	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	MCC	
MW-3	03/20/96	20.57	5.44	—	15.13	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	MCC	
MW-3	06/13/96	20.57	6.17	—	14.40	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	MCC	
MW-3	09/23/96	20.57	6.57	—	14.00	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	4.9	MCC
MW-3	12/19/96	20.57	6.59	—	13.98	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	—	—	—	—	—	MCC
MW-3	05/09/97	20.57	7.00	—	13.57	ND<50	59	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	3.3	MCC
MW-3	09/11/97	20.57	6.92	—	13.95	ND<50	82	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	7	MCC
MW-3	12/15/97	20.57	7.03	—	13.54	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	6.5	MCC
MW-3	03/11/98	20.57	4.71	—	15.86	ND<50	ND<50	ND<0.5	1.8	0.6	3.1	ND<5.0	—	—	—	—	6.1	MCC
MW-3	06/23/98	20.57	6.33	—	14.24	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	5.7	MCC
MW-3	12/01/98	20.57	6.74	—	13.83	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	4	MCC
MW-3	03/30/99	20.57	5.68	—	14.89	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	4.6	MCC
MW-3	08/16/99	20.57	7.67	—	12.90	ND<50	—	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	2.7	MCC
MW-3	12/31/99	20.57	8.07	—	12.50	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	9.0	MCC
MW-3	03/31/00	20.57	5.99	—	14.98	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	2.8	MCC
MW-3	07/14/00	20.57	7.84	—	12.93	68	ND<50	0.89	1.7	2.1	9.5	ND<5.0	—	—	—	—	2.1	MCC
MW-3	10/04/00	20.57	8.34	—	12.23	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	2.0	MCC
MW-3	12/21/00	20.57	7.00	—	13.57	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	1.4	MCC
MW-3	04/13/01	20.57	6.38	—	14.19	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	1.3	MCC
MW-3	06/27/01	20.57	7.37	—	13.20	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	1.9	MCC
MW-3	09/20/01	20.57	8.25	—	12.52	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	2.1	MCC
MW-3	12/21/01	20.57	5.72	—	14.85	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	2.9	MCC
MW-3	02/04/02	20.57	5.85	—	14.72	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	—	—	—	—	4.1	MCC

TABLE 1 - SUMMARY OF GROUNDWATER SAMPLING  
XTRA OIL COMPANY SERVICE STATION  
1701 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-210

WELL ID	DATE OF MONITORING/SAMPLING	CASING ELEVATION (Feet)	DEPTH TO WATER (Feet) (a)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet) (b)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	OTHER SVOCs (ug/l)	NAPHTHALENE (ug/l)	BENZO-PYRENE (ug/l)	DO (ppm)	LAB
MW-3	02/07/03	20.57	5.85	---	14.82	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	2.8	MCC
MW-3	05/02/03	20.57	5.75	---	14.82	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
MW-3	08/14/03	20.57	7.74	---	12.83	ND<50	ND<50	1.6	ND<0.5	0.82	3.2	ND<5.0	---	---	---	2.1	MCC
MW-3	11/14/03	20.57	7.75	---	12.82	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	0.8	MCC
MW-3	03/01/04	20.57	5.17	---	15.40	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	0.92	MCC
MW-3	06/30/04	(e) 20.57	7.48	---	13.09	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	0.92	MCC
MW-3	10/26/04	20.57	6.47	---	14.10	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	3.0	MCC
MW-3	03/24/05	20.57	4.70	---	15.87	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	3.0	MCC
MW-3	06/14/05	20.57	5.99	---	14.58	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	2.7	MCC
MW-3	09/12/05	20.57	7.89	---	12.68	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	3.3	MCC
MW-3	01/04/06	(g) 20.57	5.10	---	15.47	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
MW-3	04/04/06	(h) 20.57	4.93	---	15.64	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
MW-3	06/12/06	20.57	6.20	---	14.37	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
MW-3	09/08/06	20.57	7.81	---	12.76	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	---	---	---	---	MCC
MW-4	05/09/97	19.69	7.17	---	12.52	31000	15000	540	1300	1000	4500	1900	ND	2.1	ND<2	3.1	MCC/CHR
MW-4	09/11/97	19.69	7.71	---	11.98	40000	6500	2000	3100	1700	7700	3400	---	---	---	6.4	MCC
MW-4	12/15/97	19.69	7.87	---	11.82	14000	2100	910	690	390	2700	1700	---	---	---	5.5	MCC
MW-4	03/11/98	19.69	3.51	---	16.18	2800	780	68	94	72	430	140	---	---	---	6	MCC
MW-4	06/23/98	19.69	5.21	---	14.48	15000	2800	240	630	720	2700	370	---	---	---	5.4	MCC
MW-4	12/01/98	19.69	6.45	---	13.24	21000	---	580	1000	530	3600	1700	---	---	---	4.4	MCC
MW-4	03/20/99	19.69	5.41	---	14.28	41000	3600	3100	3400	1700	6700	5700	---	---	---	4.6	MCC
MW-4	08/16/99	19.69	7.35	---	12.34	24000	---	4600	940	1200	2700	9700	---	---	---	3.4	MCC
MW-4	12/31/99	19.69	7.71	---	11.98	14000	2000	510	630	600	3100	3500	---	---	---	10.1	MCC
MW-4	03/31/00	19.69	5.22	---	14.47	14000	1400	470	480	580	2200	2000	---	---	---	6.8	MCC
MW-4	07/14/00	19.69	7.31	---	12.38	37000	4300	770	1500	1800	7200	1700	---	---	---	3.3	MCC
MW-4	10/04/00	19.69	7.11	---	12.58	47000	3200	870	2000	2600	9800	ND<1500	---	---	---	1.7	MCC
MW-4	12/21/00	19.69	6.66	---	12.83	13000	1800	370	410	460	1500	---	---	88	ND<10	0.6	MCC
MW-4	04/13/01	19.69	6.02	---	13.67	20000	2800	710	640	620	2900	2300	---	---	---	1.0	MCC
MW-4	06/27/01	19.69	6.72	---	12.97	23000	2100	510	1100	1100	4300	1400	---	---	---	1.0	MCC
MW-4	09/20/01	19.69	7.30	---	12.39	36000	4400	460	1300	1700	6700	1000	---	---	---	2.0	MCC
MW-4	12/21/01	19.69	4.55	---	15.14	11000	5600	130	250	480	2400	ND<320	---	---	---	1.6	MCC
MW-4	02/04/02	19.69	5.82	---	13.87	50000	12000	3000	8100	1900	7600	ND<500	---	---	---	2.0	MCC
MW-4	05/07/02	19.69	6.08	---	13.61	17000	3200	270	820	870	3700	ND<500	---	---	---	2.6	MCC
MW-4	08/22/02	19.69	7.45	---	12.24	26000	3800	720	920	1500	6500	2100	---	---	---	4.6	MCC
MW-4	11/08/02	19.69	6.74	---	12.95	20000	3600	280	630	1200	5100	670	---	---	---	---	MCC
MW-4	02/07/03	19.69	4.86	---	14.83	13000	---	520	1300	ND<25	3600	420	---	---	---	2.1	MCC
QC-1 (c)	02/07/03	---	---	---	---	13000	---	510	1200	83	3100	420	---	---	---	---	MCC
MW-4	05/02/03	19.69	5.45	---	14.24	18000	3800	280	550	810	3600	470	---	---	---	---	MCC
MW-4	08/14/03	19.69	7.20	---	12.49	31000	4100	720	810	1300	6400	1100	---	---	---	1.2	MCC
MW-4	11/14/03	19.69	6.92	---	12.77	18000	3300	450	320	1000	4500	ND<1000	---	---	---	0.7	MCC
QC-1 (e)	11/14/03	---	---	---	---	---	---	440	310	1100	4500	---	---	---	---	---	MCC
MW-4	03/01/04	19.69	5.10	---	14.59	15000	2500	110	210	580	2700	240	---	---	---	0.61	MCC
QC-1 (e)	03/01/04	---	---	---	---	15000	---	110	220	610	2800	250	---	---	---	---	MCC
MW-4	06/30/04	(e) 19.69	6.70	---	12.99	23000	5800	330	550	1300	5200	ND<900	---	---	---	0.61	MCC
MW-4	10/26/04	19.69	6.05	---	13.64	19000	3800	150	380	950	3800	ND<300	---	---	---	2.0	MCC
MW-4	03/24/05	19.69	4.23	---	15.46	6600	1900	62	28	190	950	ND<120	---	---	---	2.0	MCC
MW-4	06/14/05	19.69	5.58	---	14.11	23000	5600	160	510	1200	4000	ND<500	---	---	---	2.1	MCC
MW-4	09/12/05	19.69	7.84	---	11.95	24000	4000	1400	640	1400	3900	1400	---	---	---	2.2	MCC
MW-4	01/04/06	(g) 19.69	4.65	---	15.04	20000	2800	740	350	930	2900	1100	---	---	---	---	MCC
MW-4	04/04/06	(h) 19.69	4.62	---	15.07	8100	2000	300	64	490	1200	530	---	---	---	---	MCC
MW-4	06/12/06	19.69	6.07	sheen	13.62	24000	4500	270	390	1300	3600	340	---	---	---	---	MCC
MW-4	09/08/06	(j) 19.69	7.42	sheen	12.27	20000	3100	1700	240	930	2000	1800	---	---	---	---	MCC
QC-2 (f)	11/04/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	02/24/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	05/25/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	08/30/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	11/16/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	03/20/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC
QC-2 (f)	06/13/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	---	---	MCC

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline using EPA Methods 5030/8015  
 TPH-D Total petroleum hydrocarbons as diesel using EPA Methods 3510/8015  
 B Benzene using EPA Methods 5030/8020  
 T Toluene using EPA Methods 5030/8020  
 E Ethylbenzene using EPA Methods 5030/8020  
 X Total xylenes using EPA Methods 5030/8020  
 MTBE Methyl tert butyl ether using EPA Methods 5030/8020  
 SVOCs Semivolatile organic compounds using EPA Method 8270  
 DO Dissolved oxygen  
 ug/l Micrograms per liter  
 ppm Parts per million  
 --- Not analyzed/applicable/measurable  
 ND Not detected above reported detection limit  
 MCC McCampbell Analytical, Inc.  
 CHR Chromatlab, Inc.

NOTES:

(a) Top of casing surveyed relative to mean sea level.  
 (b) Groundwater elevations expressed in feet above mean sea level, and adjusted assuming a specific gravity of 0.75 for free product.  
 (c) Blind duplicate.  
 (d) Other SVOCs detected at concentrations of 200 ug/l 2-methylnaphthalene and 14 ug/l phenanthrene  
 (e) Wells monitored 6/15/04  
 (f) Travel blank.  
 (g) 4th Quarter 2005 sampling  
 (h) 1st Quarter 2006 sampling  
 (j) Well recharge was exceeding slow; not to be used in prepaying contours