

# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.

4020 Panama Court

Oakland, CA 94611

(510) 658-6916

September 30, 1999  
Report 0014.R30

Mr. Ted Simas  
Mr. Keith Simas  
XTRA OIL Company  
2307 Pacific Ave.  
Alameda, CA 94501

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT  
XTRA OIL Company  
3495 Castro Valley Blvd.  
Castro Valley, CA

Gentlemen:

P&D Environmental, a division of Paul H. King, Inc. (P&D) is pleased to present this report documenting the results of the most recent quarterly monitoring and sampling of the wells at the subject site. This work was performed in accordance with P&D's proposal 020599.P1 dated February 5, 1999. ~~The wells were monitored and sampled on April 29, 1999.~~ The reporting period is for February through April, 1999. A Site Location Map (Figure 1) and Site Plan (Figure 2) are attached with this report.

## BACKGROUND

The site is currently used as a gasoline station. Four 12,000 gallon underground fuel storage tanks are present at the site. Three of the tanks contain gasoline and the fourth tank contains diesel fuel. A 550 gallon waste oil tank was removed from the site in November, 1988. The fuel tanks were replaced during August, 1992.

Three monitoring wells, designated as MW1, MW2 and MW3 were installed at the site on February 14 and 15, 1990 by Western Geo-Engineers. The subsurface materials encountered in the boreholes consisted primarily of silt and clay. The locations of the monitoring wells are shown in Figure 2. Soil samples collected during drilling of the boreholes for the monitoring wells revealed the presence of total petroleum hydrocarbons as gasoline (TPH-G) and total petroleum hydrocarbons as diesel (TPH-D). TPH-G was encountered in borehole MW1 at depths of 5 and 10 feet below grade at concentrations of 40 and 1,400 ppm, respectively; in borehole MW2 at depths of 10 and 15 feet below grade at concentrations of 230 and 95 ppm, respectively; and in borehole MW3 at depths of 5, 10 and 15 feet at concentrations of 140, 250 and 25 ppm, respectively. In addition, 120 ppm TPH-D was detected in borehole MW3 at a depth of 5 feet. Soil samples collected at a depth of 20 feet in borehole MW1 and at a depth of 18 feet in boreholes in MW2 and MW3 did not show any detectable concentrations of TPH-G or TPH-D. Groundwater was encountered in the boreholes at depths of approximately 15 to 16 feet below grade.

On February 15, 1990 Western Geo-Engineers drilled three exploratory boreholes at the site designated as SB1, SB2 and SB3. The subsurface materials encountered in the boreholes consisted primarily of silt and clay. The approximate locations of the boreholes are shown on Figure 2. It is P&D's understanding that soil samples were collected from the exploratory boreholes at depths of 10 and 12 feet and evaluated in the field using a photo ionization detector. In borehole SB1, TPH-G was detected at the depths of 10 and 12 feet at concentrations of 1,700 and 450 ppm, respectively. In boreholes SB2 and SB3, TPH-G was detected at the depths of 10 and 12 feet in both boreholes at concentrations of 800 ppm and greater than 2,000 ppm, respectively. A groundwater monitoring and sampling program was initiated at the site on February 20, 1990.

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ENVIRONMENTAL  
PROTECTION

It is P&D's understanding that during fuel tank replacement activities in August, 1992 soil surrounding the tank pit was removed and disposed of offsite. An extraction well, designated as EW1, was designed and constructed in one corner of the new tank pit by K&B Environmental at the time of installation of the new tanks. The location of EW1 is shown on Figure 2.

On February 7, 1996 well MW2 was destroyed for the purpose of widening Redwood Road. The destruction was overseen by ACC Environmental Consultants of Oakland, California.

On August 15, 1997 P&D personnel oversaw the installation of one groundwater monitoring well, designated as MW4 at the subject site. The location of the monitoring well is shown on the attached Site Plan, Figure 2. This work was performed in accordance with P&D's work plan 0014.W4 dated June 27, 1997. The work plan was approved by the Alameda County Department of Environmental Health (ACDEH) in a telephone conversation with Mr. Scott Seery on August 14, 1997. During the conversation, Mr. Seery indicated that he would record his approval of the work plan in the county file for the site.

#### FIELD ACTIVITIES

On April 29, 1999 the three groundwater monitoring wells at the site (MW1, MW3 and MW4) were monitored and sampled by P&D personnel. A joint groundwater monitoring with Allisto Engineering, Inc. was not performed this quarter.

Extraction well EW1 was not monitored or sampled at the subject site during the quarter. The wells were monitored for depth to water and the presence of free product or sheen. Depth to water was measured to the nearest 0.01 foot using an electric water level indicator. The presence of free product and sheen was evaluated using a transparent bailer. No free product was observed in any of the monitoring wells prior to purging. However, sheen was observed in the initial purge water coming from well MW3. A petroleum-absorbent sock was present in monitoring well MW1. Depth to water level measurements are presented in Table 1.

Prior to sampling, the monitoring wells were purged of a minimum of three casing volumes of water, or until the wells had been purged dry. During purging operations, the field parameters of electrical conductivity, temperature and pH were monitored. Once the field parameters were observed to stabilize, and a minimum of three casing volumes had been purged or the wells had been purged dry and partially recovered, water samples were collected using a clean Teflon bailer.

The water samples were transferred to 40-milliliter glass Volatile Organic Analysis (VOA) vials and 1-liter amber glass bottles which were sealed with Teflon-lined screw caps. The VOA vials were overturned and tapped to assure that no air bubbles were present.

The VOA vials and bottles were then transferred to a cooler with ice, until they were transported to McCampbell Analytical, Inc. in Pacheco, California. McCampbell Analytical, Inc. is a State-certified hazardous waste testing laboratory. 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 the wells once during the monitoring period. The measured depth to water at the site in wells MW1, MW3 and MW4 on April 29, 1999 was 7.68, 7.09, and 7.14 feet, respectively. Groundwater levels have

decreased in wells MW1, MW3 and MW4 by 0.69, 0.67 and 0.46 feet, respectively, since the previous monitoring on January 29, 1999.

Based on the measured depth to groundwater in the groundwater monitoring wells, the apparent groundwater flow direction at the site on April 29, 1999 was calculated to be to the east-southeast with a gradient of 0.0052. The groundwater flow direction has shifted toward the south and the gradient has decreased since the previous monitoring.

#### LABORATORY RESULTS

The groundwater samples collected from the monitoring wells were analyzed for TPH-G using EPA Method 5030 and Modified EPA Method 8015; benzene, toluene, ethylbenzene, total xylenes (BTEX), and MTBE using EPA Method 8020; and for TPH-D using EPA Method 3510 in conjunction with Modified EPA Method 8015.

The laboratory analytical results for the groundwater samples from wells MW1, MW3 and MW4 show TPH-G concentrations of 48, 100, and 210 ppm, respectively; benzene concentrations of 8.4, 33, and 42 ppm, respectively; and TPH-D concentrations of 22, 48, and 9.4 ppm, respectively. Review of the laboratory analytical reports indicates that the TPH-D results for MW1, MW3 and MW4 are both diesel-range and gasoline-range compounds.

Since the sampling on January 29, 1999, TPH-G concentrations have increased, TPH-D concentrations have decreased in MW3 and increased in MW1 and MW4, and benzene concentrations have decreased in wells MW1 and MW4 and increased in well MW3. The laboratory analytical results of the groundwater samples are summarized in Table 2. Copies of the laboratory analytical reports and chain of custody documentation are attached with this report.

#### DISCUSSION AND RECOMMENDATIONS

P&D recommends that use of absorbent socks in the wells be continued. The socks should be checked periodically and replaced as needed.

Based on the laboratory analytical results of the water samples collected from the monitoring wells, P&D recommends that groundwater monitoring and sampling be continued. In addition, P&D recommends that future monitoring and sampling efforts continue to be coordinated with other sites in the vicinity of the subject site which are presently being monitored and sampled.

#### DISTRIBUTION

Copies of this report should be sent to Mr. Chuck Headlee at the Regional Water Quality Control Board, San Francisco Bay Region, and to Mr. Scott Seery at the Alameda County Department of Environmental Health. Copies of the report should be accompanied by a transmittal letter signed by the principal executive officer of the XTRA OIL Company.

#### 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 judgement 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.

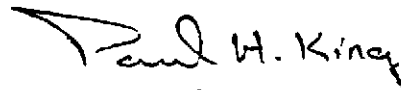
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the 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 similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgement 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, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

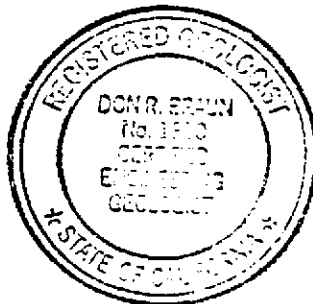
P&D Environmental



Paul H. King  
Hydrogeologist



Don R. Braun  
Certified Engineering Geologist  
Registration No.: 1310  
Expiration Date: 6/30/00



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Attachments: Tables 1 & 2  
Site Location Map (Figure 1)  
Site Plan (Figure 2)  
Field Parameter Forms  
Laboratory Analytical Results  
Chain of Custody Documentation

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)		
MW1	4/29/99	177.37*	7.68	169.69		
	1/29/99		6.99	170.38		
	4/26/98		7.50	169.87		
	1/24/98		6.61	170.76		
	11/06/97		8.79	168.58		
	8/26/97		8.51	168.86		
	7/24/97		177.43**	8.71	168.72	
	4/25/97			7.98	169.45	
	1/20/97			7.12	170.31	
	7/26/96			8.39	169.04	
	7/09/96	8.16		169.27		
	4/23/96	7.47		169.96		
	2/07/96	6.09		171.34		
	1/29/96	6.17		171.26		
	10/26/95	8.45		168.98		
	7/28/95	8.27		169.16		
	5/02/95	6.96	170.47			
	2/23/95	7.72	169.71			
	11/18/94	7.14	170.29			
	8/22/94	8.67	168.76			
	5/19/94	8.05	169.38			
	2/28/94	7.44	169.99			
	11/24/93	8.74	168.69			
	8/30/93	8.78	168.65			
	5/18/93	8.12	169.31			
	2/23/93	7.34	170.09			
	11/13/92	200.00***	9.13	190.87		
	5/29/92		175.73	8.59	167.14	
	1/14/92			8.57	167.16	
	12/23/91			9.65	166.08	
11/25/91	9.41			166.32		
10/10/91	9.70			166.03		
9/17/91	9.50			166.23		
8/19/91	9.31			166.42		
MW2	NOT MEASURED (DESTROYED ON FEBRUARY 7, 1996)					
	2/07/96			176.04**	5.70	170.34
	1/29/96	5.16			170.88	
	10/26/95	8.21	167.83			
	7/28/95	7.99	168.05			
	5/02/95	6.79	169.25			
	2/23/95	7.51	168.53			
	11/18/94	6.92	169.12			
	8/22/94	8.59	167.45			
	5/19/94	7.70	168.34			
	2/28/94	6.99	169.05			
	11/24/93	8.47	167.57			
	8/30/93	8.64	167.40			
5/18/93	7.73	168.31				

**NOTES:**

- \* = Surveyed on August 20, 1997
- \*\* = Surveyed on March 24, 1993
- \*\*\* = Surveyed on December 5, 1992

TABLE 1  
WELL MONITORING DATA  
(Continued)

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW2	2/23/93		6.39	169.65
	11/13/92	198.61***	8.70	189.91
	5/29/92	175.45	9.31	166.14
	1/14/92		8.97	166.48
	12/23/91		10.39	165.06
	11/25/91		9.81	165.64
	10/10/91		10.39	165.06
	9/17/91		10.23	165.22
	8/19/91		9.60	165.85
	MW3	4/29/99	176.40*	7.09
1/29/99			6.42	169.98
4/26/98			6.85	169.55
1/24/98			5.90	170.50
11/06/97			7.80	168.80
8/26/97			7.67	168.93
7/24/97		176.41**	7.90	168.51
4/25/97			7.12	169.29
1/20/97			6.35	170.06
7/26/96			7.84	169.57
7/09/96			7.61	168.80
4/23/96			6.81	169.60
2/07/96			5.05	170.36
1/29/96			5.77	170.64
10/26/95			7.72	168.69
7/28/95			7.80	168.61
5/02/95			6.50	169.91
2/23/95			7.24	169.17
11/18/94			6.05	170.36
8/22/94			7.65	168.76
5/19/94			7.15	169.26
2/24/94			6.68	169.73
11/24/93			7.55	168.86
8/30/93			7.64	168.77
5/18/93			7.12	169.29
2/23/93			8.01	168.40
11/13/92		190.97***	7.86	191.12
5/29/92		175.00	8.45	166.55
1/14/92		8.24	166.55	
12/23/91		9.37	165.63	
11/25/91		9.19	165.81	
10/10/91		9.43	165.57	
9/17/91		9.20	165.80	
8/19/91		8.95	166.05	

**NOTES:**

- \* = Surveyed on August 20, 1997
- \*\* = Surveyed on March 24, 1993
- \*\*\* = Surveyed on December 5, 1992

TABLE 1  
WELL MONITORING DATA  
(Continued)

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW4	4/29/99	176.35*	7.14	169.21
	1/29/99		6.68	169.67
	4/26/98		6.87	169.48
	1/24/98		6.61	169.74
	11/06/97		9.16	167.19
	8/26/97		8.92	167.43
	8/20/97		7.66 (prior to development)	

NOTES:

- \* = Surveyed on August 20, 1997
- \*\* = Surveyed on March 24, 1993
- \*\*\* = Surveyed on December 5, 1992

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on April 29, 1999							
MW1+	22	48	ND	8.4	2.8	2.0	8.1
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	48	100	2.5	33	8.0	2.1	14
MW4+	9.4	210	3.2	42	35	2.8	15
EW1	Not Sampled						
Samples Collected on January 29, 1999							
MW1+	9.1	47	ND	9.0	2.9	1.9	8.0
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	240	84	1.3	31	2.8	1.8	12
MW4+	7.3	190	2.4	44	40	3.1	17
EW1	Not Sampled						
Samples Collected on April 26, 1998							
MW1++	7.8	60	ND	9.3	5.7	2.1	9.1
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	380	100	9.7	29	7.1	1.8	14
MW4+	13	190	ND	49	37	3.2	18
EW1	Not Sampled						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

ND = Not Detected.

+ = Review of the laboratory analytical reports indicates that the TPH-D results consist of both diesel-range and gasoline range compounds.

++ = Review of the laboratory analytical reports indicates that the TPH-D results consist of gasoline range compounds.

Results in parts per million (ppm), unless otherwise indicated.



TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on January 24, 1998							
MW1+	24	57	ND	6.9	5.5	2.0	8.7
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	77	97	ND	28	7.1	1.8	11
MW4+	20	200	ND	50	40	3.1	17
EW1	Not Sampled						
Samples Collected on November 6, 1997							
MW1++	17	63	ND	7.4	6.7	2.3	9.9
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	120	140	ND	37	19	2.4	14
MW4+	110	160	ND	48	30	2.8	16
EW1	Not Sampled						
Samples Collected on August 26, 1997							
MW1	Not Sampled						
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3	Not Sampled						
MW4+	5.5	210	1.7	48	42	3.4	19
EW1	Not Sampled						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

+ = Review of the laboratory analytical reports indicates that the TPH-D results consist of both diesel-range and gasoline range compounds.

++ = Review of the laboratory analytical reports indicates that the TPH-D results consist of gasoline range compounds.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on July 24, 1997							
MW1++	28	66	1.8	8.6	8.1	2.2	10
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3++	91	120	1.4	33	17	2.2	12
EW1	Not Sampled						
Samples Collected on April 25, 1997							
MW1+	170	77	ND	7.4	7.9	2.1	9.8
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3+	760	240	1.6	24	18	4.1	24
EW1	Not Sampled						
Samples Collected on January 21, 1997							
MW1++	57	80	0.25	7.8	8.3	1.9	8.9
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3++	34	150	1.30	40	14	2.6	12
EW1	Not Sampled						
Samples Collected on July 26, 1996							
MW1++	11	76	ND	11	13	2.4	10
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3++	24	130	0.89	40	22	2.4	12
EW1	Not Sampled						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

ND = Not Detected.

+ = Review of the laboratory analytical reports indicates that the TPH-D results consist of both diesel-range and gasoline range compounds.

++ = Review of the laboratory analytical reports indicates that the TPH-D results consist of gasoline range compounds.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
(Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on April 23, 1996							
MW1++	5.7	73	ND	8.6	12	2.2	9.8
MW2	Not Sampled (Destroyed on February 7, 1996)						
MW3++	280	170	0.72	34	22	2.2	14
EW1	Not Sampled						
Samples Collected on January 29, 1996							
MW1++	6.6	81	0.25	7.6	13	1.9	8.9
MW2++	4.6	38	0.0071	1.9	5.7	1.1	5.9
MW3++	45	150	0.54	32	21	1.9	12
EW1	Not Sampled						
Samples Collected on October 26, 1995							
MW1++	62	89	ND	7.8	12	2.4	11
MW2	900	74	ND	2.9	5.9	2.0	10
MW3	33	130	0.69	37	21	0.21	11
EW1	Not Sampled.						
Samples Collected on July 28, 1995							
MW1++	2.0	35	NA	3.8	8.7	1.1	6.5
MW2++	2.0	15	NA	1.4	2.3	0.62	3.2
MW3+	1.9	86	NA	28	16	1.3	7.6
EW1	Not Sampled.						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

ND = Not Detected.

+ = Review of the laboratory analytical reports indicates that the TPH-D results consist of both diesel-range and gasoline range compounds.

++ = Review of the laboratory analytical reports indicates that the TPH-D results consist of gasoline range compounds.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
(Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on May 2, 1995							
MW1++	6.5	86	NA	8.9	14	2.3	11
MW2+	6.6	55	NA	3.3	10	1.8	10
MW3+	9.7	170	NA	43	30	2.5	14
EW1	Not Sampled.						
Samples Collected on February 24, 1995							
MW1	9.1	90	NA	7.5	12	1.5	11
MW2	22	67	NA	4.9	11	1.8	11
MW3	9.2	130	NA	31	19	1.8	10
EW1	Not Sampled.						
Samples Collected on November 18, 1994							
MW1	10	96	NA	9.3	14	2.5	11
MW2	5.0	86	NA	11	17	1.8	12
MW3	23	140	NA	38	22	2.0	11
EW1	Not Sampled.						
Samples Collected on August 22, 1994							
MW1	8.3	100	NA	9.0	11	2.1	9.4
MW2	4.1	91	NA	10	13	1.5	9.0
MW3	5.3	170	NA	35	20	1.8	10
EW1	Not Sampled.						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

NA = Not Analyzed.

+ = Review of the laboratory analytical reports indicates that the TPH-D results consist of both diesel-range and gasoline range compounds.

++ = Review of the laboratory analytical reports indicates that the TPH-D results consist of gasoline range compounds.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on May 19, 1994							
MW1	30	100	NA	12	14	3.5	17
MW2	5.8	62	NA	9.2	13	1.3	8.4
MW3	30	150	NA	38	25	2.4	14
EW1	Not Sampled.						
Samples Collected on February 28, 1994							
MW1	110	90	NA	11	9.6	2.1	9.9
MW2	13	91	NA	13	16	1.5	9.0
MW3	210	110	NA	36	21	1.9	11
EW1	Not Sampled.						
Samples Collected on November 24, 1993							
MW1	8.2	66	NA	8.3	8.9	2.0	11
MW2	79	12	NA	13	17	2.5	17
MW3	24	160	NA	48	26	2.2	12
EW1	Not Sampled.						
Samples Collected on August 30, 1993							
MW1	9.4	77	NA	6.4	11	2.2	12
MW2	110	110	NA	11	14	1.8	11
MW3	32	130	NA	36	21	1.9	8.2
EW1	Not Sampled.						

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

NA = Not Analyzed.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected on May 18, 1993							
MW1	30	92	NA	4.0	11	2.5	15
MW2	44	67	NA	9.2	12	1.4	9.3
MW3	7.2	130	NA	36	21	2.1	12
EW1	Not Sampled.						
Samples Collected on February 23, 1993							
MW1	14	100	NA	4.5	11	2.1	12
MW2	7.0	76	NA	12	17	1.6	9.6
MW3	8.1	110	NA	31	18	1.9	11
EW1	9.6	66	NA	14	8.5	1.4	9.8
Samples Collected on November 13, 1992							
MW1	4.4	120	NA	5.8	10	2.1	13
MW2	8.2	79	NA	10	13	1.4	8.6
MW3	4.7	140	NA	38	24	2.0	12
EW1	13	62	NA	11	9.2	1.1	9.6
Samples Collected On May 27, 1992							
MW1	11	120	NA	8.8	16	2.3	15
MW2	130	89	NA	18	19	1.7	14
MW3	27	370	NA	91	57	3.0	21

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

NA = Not Analyzed.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
(Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected On January 14, 1992							
MW1	19	39	NA	7.3	8.7	1.3	8.9
MW2	1600	59	NA	17	14	1.8	15
MW3	270	130	NA	76	30	3.4	21
Samples Collected On December 23, 1991							
MW1	34	78	NA	9.3	7.3	0.54	13
MW2	700	2100	NA	36	130	79	560
MW3	540	740	NA	30	61	31	180
Samples Collected On November 25, 1991							
MW1	36	170	NA	5.5	5.6	1.6	8.4
MW2	130	230	NA	11	9.7	1.4	9.7
MW3	74	150	NA	65	31	3.4	18
Samples Collected On October 10, 1991							
MW1	19	28	NA	4.1	4.7	1.0	4.8
MW2	360	85	NA	21	25	2.1	14
MW3	39	140	NA	57	31	2.2	14
Samples Collected On September 17, 1991							
MW1	19	39	NA	4.9	4.1	1.2	5.9
MW2	56	74	NA	10	11	1.4	8.1
MW3	140	180	NA	47	25	2.6	15

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

NA = Not Analyzed.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
(Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected On August 19, 1991							
MW1	47	48	NA	13	8.4	0.99	29
MW2	19	69	NA	26	22	2.1	18
MW3	150	170	NA	82	31	4.4	22
Samples Collected On July 20, 1991							
MW1	49	100	NA	11	14	2.3	17
MW2	100	51	NA	9.9	7.7	1.2	7.5
MW3	270	450	NA	46	29	3.5	21
Samples Collected On June 20, 1991							
MW1	42	76	NA	4.7	7.1	1.5	9.8
MW2	69	87	NA	8.1	8.4	1.1	8.9
MW3	210	920	NA	39	49	13	69
Samples Collected On May 17, 1991							
MW1	26	72	NA	7.7	9.9	ND	11
MW2	33	62	NA	5.9	6.3	1.2	9.0
MW3	70	170	NA	32	22	2.2	18
Samples Collected On April 15, 1991							
MW1	NA	56	NA	6.5	8.5	0.41	9.9
MW2	NA	82	NA	5.3	7.4	1.0	9.4
MW3	NA	110	NA	31	15	0.88	7.4

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

NA = Not Analyzed.

ND = Not Detected.

Results in parts per million (ppm), unless otherwise indicated.



TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected On March 21, 1991							
MW1	NA	36	NA	4.5	5.7	0.087	7.3
MW2	NA	62	NA	9.3	11	0.35	9.7
MW3	NA	87	NA	30	14	0.69	5.4
Samples Collected On February 15, 1991							
MW1	NA	120	NA	7.4	6.6	ND	13
MW2	NA	200	NA	12	12	1.7	14
MW3	NA	230	NA	44	40	ND	31
Samples Collected On January 14, 1991							
MW1	NA	33	NA	3.9	2.9	0.21	5.3
MW2	NA	78	NA	11	8.7	0.58	8.0
MW3	NA	160	NA	48	25	1.0	16
Samples Collected On September 27, 1990							
MW1	NA	28	NA	3.7	3.5	0.01	6.5
MW2	NA	59	NA	8.4	12	0.88	9.0
MW3	NA	25	NA	7.2	6.4	0.42	3.4
Samples Collected On August 23, 1990							
MW1	NA	40	NA	5.1	4.9	0.35	6.0
MW2	NA	96	NA	8.1	8.4	1.5	8.6
MW3	NA	220	NA	67	46	27	18

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

ND = Not Detected.

NA = Not Analyzed.

Results in parts per million (ppm), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 (Continued)

Well No.	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Samples Collected On July 20, 1990							
MW1	44	NA	NA	5.1	4.2	ND	9.1
MW2	86	NA	NA	9.1	14	0.94	13
MW3	88	NA	NA	25.1	21.1	0.61	14.1
Samples Collected On March 19, 1990							
MW1	NA	40	NA	3.7	1.1	ND	3.3
MW2	NA	50	NA	7.7	8.7	0.075	5.6
MW3	NA	210	NA	38	28	1.8	12
Samples Collected On February 20, 1990							
MW1+++	NA	7.6	NA	1.6	ND	ND	1.3
MW2+++	NA	38	NA	7.3	3.1	0.075	6.8
MW3+++	NA	46	NA	20	15	1.8	9.7

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

ND = Not Detected.

NA = Not Analyzed.

+++ Indicates Organic Lead was not detected.

Results in parts per million (ppm), unless otherwise indicated.

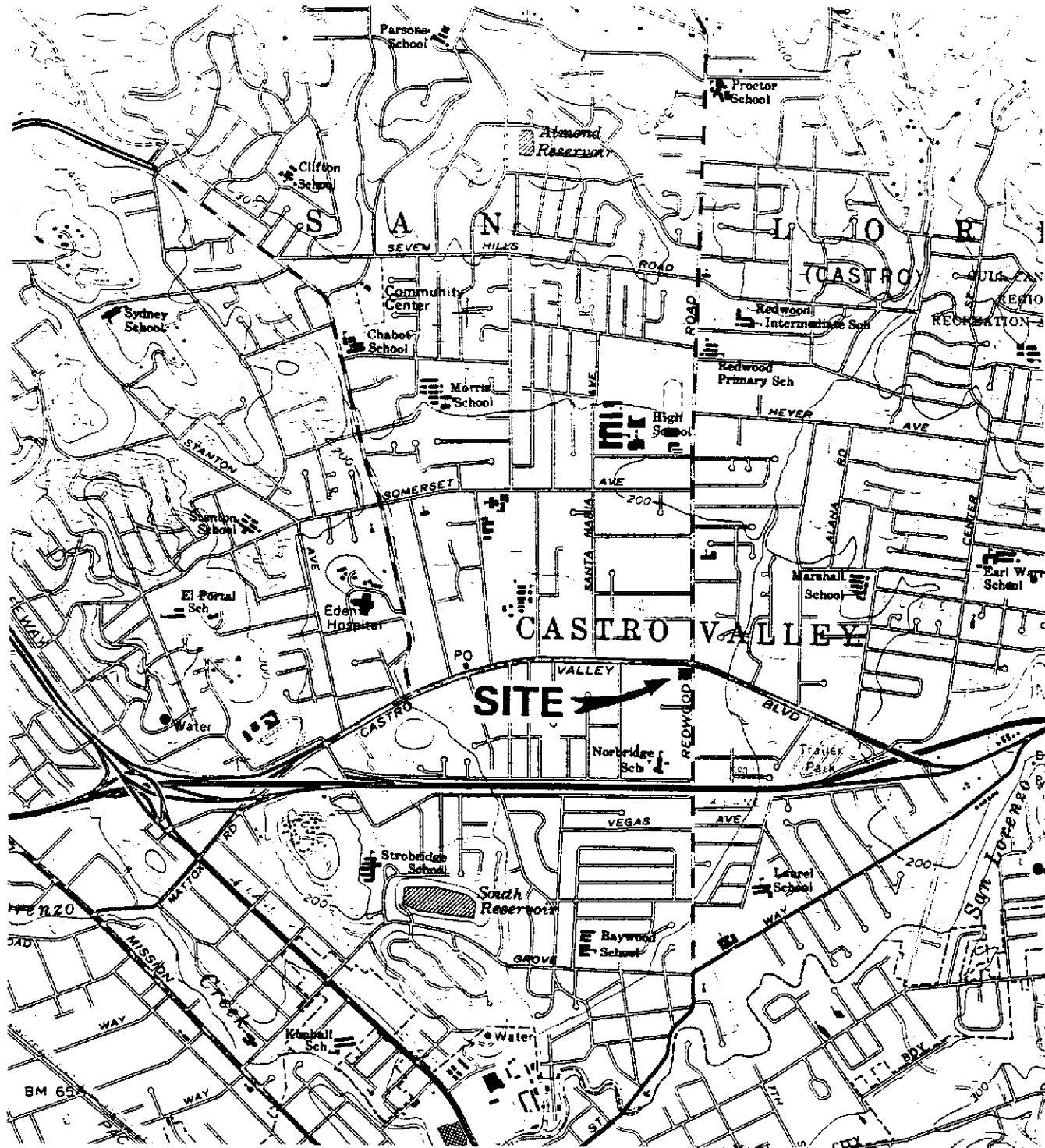
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Oakland, CA 94611

(510) 658-6916



Base Map from:  
U.S. Geological Survey  
Hayward, Calif.  
7.5 Minute Quadrangle  
Photorevised 1980

Figure 1  
**SITE LOCATION MAP**  
XTRA OIL Company  
3195 Castro Valley Blvd.  
Alameda, California

# P & D ENVIRONMENTAL

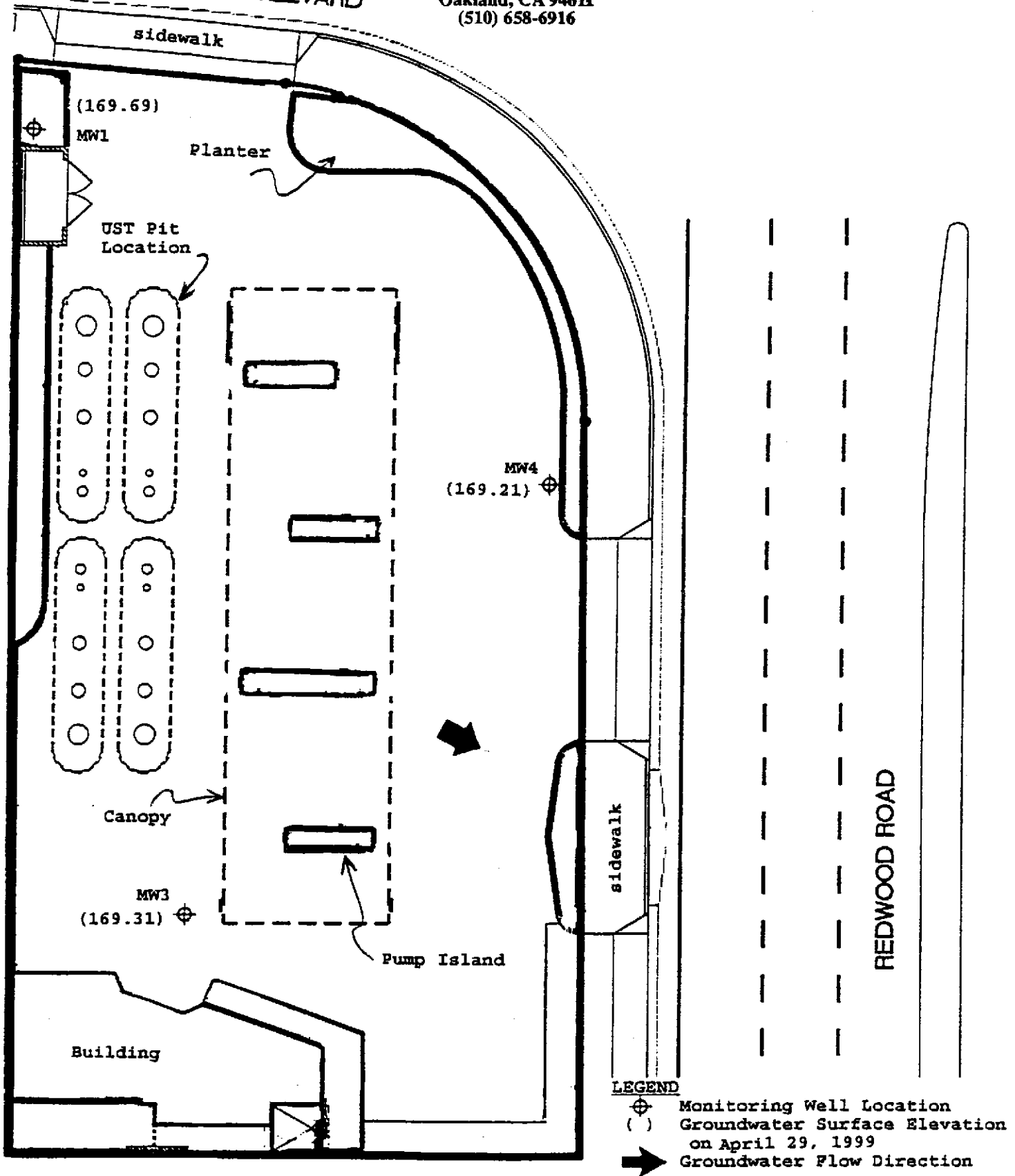
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CASTRO VALLEY BOULEVARD



### LEGEND

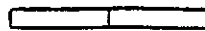
- ⊕ Monitoring Well Location
- (.) Groundwater Surface Elevation on April 29, 1999
- ➔ Groundwater Flow Direction

Base Map From  
RHL Design Group, Inc.  
June, 1997

North



0 20



Scale in Feet

Figure 2

### SITE PLAN

XTRA OIL Company  
3459 Castro Valley Blvd.  
Castro Valley, CA

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name XTRA OIL - CASTLE Valley  
 Job No. 0014  
 TOC to Water (ft.) 7.68'  
 Well Depth (ft.) 70.2'  
 Well Diameter 4"  
 Gal./Casing Vol. 8.09

Well No. MW1  
 Date 4/29/99  
 Sheen NONE  
 Free Product Thickness \_\_\_\_\_  
 Sample Collection Method TEFLON BAUER

$\Sigma = 24.3$

TIME	GAL. PURGED	DH	TEMPERATURE	ELECTRICAL CONDUCTIVITY
11:32A	<del>1</del> 1	6.70	71.5	8.26
11:34A	2.5	6.27	67.7	12.38
11:36A	5	6.10	66.4	12.57
11:39A	7.5	6.17	66.3	12.58
11:43A	10	6.17	68.9	<del>12.13</del> 13.10
11:48A	12.5	6.31	73.7	13.44
11:52A	15	6.33	71.0	13.21
11:54	17.5	6.33	68.1	12.60
11:56	20	6.05	69.0	12.28
12:01P	22.5	6.07	70.4	12.60
12:06P	25	6.01	71.1	12.20
<del>SAMPLE</del>				

NOTES: GMB - Hydrocarbon ABSORBENT SOCK ~~IS~~ REMOVED FOR ~~SAMPLE~~  
PURGING & SAMPLING. PURGE WATER IS SPORADICALLY  
CLOVEN & FAMILY.

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name XTRA OIL-GASTRO VARIETY

Well No. MWB

Job No. 0014

Date 4/29/99

TOC to Water (ft.) 7.09'

Sheen NONE

Well Depth (ft.) 18.3

Free Product Thickness 0

Well Diameter 4"

Sample Collection Method TEFLON BOTTLE

Gal./Casing Vol. ~~21.7 gallons~~ 7.24 gal.

$\Sigma = 21.7 \text{ gallons}$

TIME	GAL. PURGED	pH	TEMPERATURE	ELECTRICAL CONDUCTIVITY
3:13 P	1	6.27	75.9	15.03
	2.5	5.42	68.8	15.53
3:16 P	5	5.22	67.8	15.47
3:22 P	7.5	5.35	72.2	17.03
3:25 P	10	5.03	71.2	16.18
3:28 P	12.5	5.31	76.0	17.32
3:32 P	14	5.54	77.2	17.38
<u>WELL RE-WATERED; SAMPLE</u>				

NOTES:

SHEEN IS EVIDENT ON  
PURGE10.92 GMB- INITIAL PURGE WATER, CLEARING UP AFTER ~ 5 G  
- WATER IS TURBID W/ DIET; FOAMY THEREAFTER,  
1ST 5 GAL. OF  
- FAINT PHC ODR

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name XTRA OIL - CASTRO VALLEY  
Job No. 0014  
TOC to Water (ft.) 7.14'  
Well Depth (ft.) 20.0'  
Well Diameter 2"  
Gal./Casing Vol. 2.10

Well No. MW4  
Date 4/21/99  
Sheen NONE  
Free Product Thickness Ø  
Sample Collection Method TEFLON RAILER

$\Sigma = 6.29 \text{ GAL.}$

TIME	GAL. PURGED	pH	TEMPERATURE	ELECTRICAL CONDUCTIVITY
2:02 PM	0.1	<del>5.71</del> 6.71	84.7	OFF SCALE
2:03 P	1	5.94	75.6	12.46
2:04 P	2	5.83	72.5	13.12
2:06 P	3	5.93	69.6	12.81
2:08	4	5.86	69.9	12.96
2:09	5	5.92	69.6	12.37
2:11	6	5.75	70.6	12.39

— WELL PURGED DRY; SAMPLE — (WELL DE-WATERED)

NOTES:

PURGE10.92 GMB - PURGE WATER IS BROWN, ~~OR~~ CLOUDY w/DIRT  
PURGE WATER HAS Faint to MOD. PETROLEUM HYDROCARBON  
(PHC) odor



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: main@mccampbell.com

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0014; Xtra Oil-Castro Valley	Date Sampled: 04/29/99
	Client Contact: Paul King	Date Received: 04/30/99
	Client P.O:	Date Extracted: 04/30/99
		Date Analyzed: 04/30/99

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with Methyl tert-Butyl Ether\* & BTEX\***  
 EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) <sup>†</sup>	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
10239	MW1	W	48,000,a,h	ND<200	8400	2800	2000	8100	105
10240	MW3	W	100,000,a,h	2500	33,000	8000	2100	14,000	100
10241	MW4	W	210,000,a,h	3200	42,000	35,000	2800	15,000	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	0.005	

\* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L.

† cluttered chromatogram; sample peak coelutes with surrogate peak

‡ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.





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110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

P&D Environmental 4020 Panama Court Oakland, CA 94611	Client Project ID: #0014; Xtra Oil-Castro Valley	Date Sampled: 04/29/99
	Client Contact: Paul King	Date Received: 04/30/99
	Client P.O:	Date Extracted: 04/30/99
		Date Analyzed: 05/02-05/04/99

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel \***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)*	% Recovery Surrogate
10239	MW1	W	22,000,d,b,h	102
10240	MW3	W	48,000,a,d,h	104
10241	MW4	W	9400,d,b,h	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	
	S		1.0 mg/kg	

\* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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.

\*The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/30/99-05/01/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#09710)	MS	MSD		MS	MSD	
TPH (gas)	0.0	104.6	101.9	100.0	104.6	101.9	2.7
Benzene	0.0	10.3	10.1	10.0	103.0	101.0	2.0
Toluene	0.0	10.6	10.3	10.0	106.0	103.0	2.9
Ethyl Benzene	0.0	10.5	10.4	10.0	105.0	104.0	1.0
Xylenes	0.0	31.6	31.2	30.0	105.3	104.0	1.3
TPH(diesel)	0.0	8289	8169	7500	111	109	1.5
TRPH (oil & grease)	0	26200	27500	23700	111	116	4.8

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/02/99-05/03/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#09710)	MS	MSD		MS	MSD	
TPH (gas)	0.0	102.4	104.9	100.0	102.4	104.9	2.4
Benzene	0.0	9.6	10.2	10.0	96.0	102.0	6.1
Toluene	0.0	9.8	10.3	10.0	98.0	103.0	5.0
Ethyl Benzene	0.0	10.0	10.6	10.0	100.0	106.0	5.8
Xylenes	0.0	29.9	31.6	30.0	99.7	105.3	5.5
TPH(diesel)	0.0	8421	8365	7500	112	112	0.7
TRPH (oil & grease)	0	27600	25800	23700	116	109	6.7

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

**P & D ENVIRONMENTAL**

A Division of Paul H. King, Inc.

4020 Panama Court

Oakland, CA 94611

(510) 658-6916

**CHAIN OF CUSTODY RECORD**

14929 ZPD9 PAGE 1 OF 1

PROJECT NUMBER: 0014		PROJECT NAME: XTRA OIL - CASTRO VALLEY			NUMBER OF CONTAINERS	ANALYSIS(ES): PH-S / STX / MTBE				PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE) Greg Brown [Signature]											
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION							
MW1	4/29/99		WATER	MONITORING WELL 1	7	X	X			ICE	NORMAL TOWN AROUND
MW3	"		"	" " 2	7	X	X			"	" " "
MW4	"		"	" " 3	7	X	X			"	" " "
											10239
											10240
											10241
ICE <input checked="" type="checkbox"/>		PRESERVATION <input checked="" type="checkbox"/>		VOAS O&G METALS OTHER							
GOOD CONDITION <input checked="" type="checkbox"/>		APPROPRIATE <input checked="" type="checkbox"/>									
HEAD SPACE ABSENT <input checked="" type="checkbox"/>		CONTAINERS <input checked="" type="checkbox"/>									
RELINQUISHED BY: (SIGNATURE) [Signature]		DATE 4/30/99	TIME 9:20	RECEIVED BY: (SIGNATURE) [Signature]		TOTAL NO. OF SAMPLES (THIS SHIPMENT) 3	LABORATORY: McCAMPBELL ANALYTICAL, INC				
RELINQUISHED BY: (SIGNATURE) [Signature]		DATE 4/30	TIME 11/10	RECEIVED BY: (SIGNATURE)		TOTAL NO. OF CONTAINERS (THIS SHIPMENT) 21	LABORATORY CONTACT: ED HAMILTON		LABORATORY PHONE NUMBER: (925) 798-1620		
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE) [Signature]		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO					
					REMARKS: VOAS PRESERVED w/ HCl						

(X)  
(X)