

# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.

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Oakland, CA 94611

(510) 658-6916

July 28, 2004  
Report 0014.R52

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

Alameda County

APR 28 2005

ENVIRONMENTAL REPORT

SUBJECT: GROUNDWATER MONITORING AND SAMPLING REPORT  
(MAY THROUGH JULY 2004)  
Xtra Oil Company  
3495 Castro Valley Blvd.  
Castro Valley, California

Gentlemen:

P&D Environmental, a division of Paul H. King, Inc. (P&D) is pleased to present this report documenting the results of quarterly monitoring and sampling of both the on- and off-site wells for the subject property. This work was performed in accordance with P&D's proposal 020599.P1 dated February 5, 1999. Onsite wells MW1, MW3, MW4 and EW1 were monitored and onsite wells MW1, MW3 and EW1 were sampled on February 11, 2004. Offsite observation wells OW1 and OW2 were monitored and well OW1 was sampled on July 14, 2004. The reporting period for this report is for May through July 2004. A Site Location Map (Figure 1), a Site Plan showing onsite well locations (Figure 2), and a Site Vicinity Map showing offsite observation well locations (Figure 3) 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 mg/kg, respectively; in borehole MW2 at depths of 10 and 15 feet below grade at concentrations of 230 and 95 mg/kg, respectively; and in borehole MW3 at depths of 5, 10 and 15 feet at concentrations of 140, 250 and 25 mg/kg, respectively. In addition, 120 mg/kg 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 mg/kg, 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 mg/kg and greater than 2,000 mg/kg, respectively. A groundwater monitoring and sampling program was initiated at the site on February 20, 1990.

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. In accordance with an October 25, 2002 letter from Mr. Seery, groundwater samples are to be analyzed for fuel oxygenates (MTBE, TAME, ETBE, TAME and TBA), and lead scavengers (EDB, 1,2-DCA/EDC) using EPA Method 8260; and data for observation wells OW1 and OW2, located in Redwood Road, are to be incorporated into monitoring and sampling reports for the subject site.

#### FIELD ACTIVITIES

Onsite wells MW1, MW3, MW4 and EW1 were monitored and onsite wells MW1, MW3 and EW1 were sampled on July 13, 2004. Offsite observation wells OW1 and OW2 were monitored and well OW1 was sampled on July 14, 2004. A joint groundwater monitoring with Allisto Engineering, Inc. was not performed.

The wells were monitored for depth to water and the presence of free product or sheen. In wells MW4, OW1 and OW2 the depth to water and depth to free product was measured to the nearest 1/32-inch with a steel tape and water-finding or product-finding paste. In wells MW1, MW3, and EW1, the 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 in wells MW1, MW3, and EW1.

On July 13, 2004 onsite wells MW1, MW3 and EW1 and on July 14, 2004 offsite observation well OW1 were monitored prior to sampling. Onsite well MW4 was also monitored on July 13,

2004 but not sampled, and offsite well OW2 was monitored on July 14, 2004 but not sampled. No free product was observed in any of the wells with the exception of well MW4 where 0.03 feet of free product was measured and well MW3 where a brown opaque oily substance was described as being present on the water surface. A passive hydrocarbon collection device was present in well MW4 immediately prior to monitoring well MW4. Approximately 5 inches of dark colored petroleum hydrocarbons was present in the removal device. No water or free product were detected in well OW2. Depth to water level and free product layer thickness measurements are presented in Table 1.

Prior to well sampling on July 13, 2004, onsite wells MW1, MW3, and EW1 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 purged dry and partially recovered, water samples were collected using a clean Teflon bailer.

On July 14, 2004, offsite observation well OW1 was sampled using a vacuum pump and 0.25-inch diameter polyethylene tubing. The water sample from the well was decanted to sample bottles and managed as described below.

The water samples were transferred to 40-milliliter glass Volatile Organic Analysis (VOA) vials and 1-liter amber glass bottles that 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 all of the wells once during the quarter. The measured depth to water for onsite wells MW1, MW3, MW4 and EW1 on July 13, 2003 was 8.33, 8.11, 8.44 and 7.51 feet, respectively. The separate phase hydrocarbon layer in MW4 was 0.03 feet in thickness. Using a specific gravity of 0.75, the corrected depth to water in well MW4 is 8.42 feet. The depth to water and free product were measured in well MW4 after removal of the passive hydrocarbon collection device that was present in the well. The measured depth to water in offsite observation wells OW1 on July 14, 2004 was 7.02 feet. No water or free product were present in well OW2.

Since the previous quarter, the measured depth to water has decreased in wells MW1, MW3, MW4, EW1 and OW1 by 0.40, 0.70, 1.14, 0.88 and 0.01 feet, respectively. In well MW4, the separate phase layer thickness has decreased from 2.83 feet in thickness on April 6, 2004 to 0.03 feet in thickness on July 13, 2004. The corrected groundwater elevation in well MW4 has decreased by 0.96 feet since the previous quarter.

Based on the groundwater surface elevations in monitoring wells MW1 and MW3 and the corrected groundwater surface elevation in well MW4, the groundwater flow direction at the site on July 13, 2004 was calculated to be to the southeast with a gradient of 0.013. Since the previous monitoring event the groundwater flow direction at the site has shifted from the southeast toward the east and the gradient has increased from 0.0060. The groundwater flow direction on July 13, 2004 is shown on Figure 2.

### LABORATORY RESULTS

The groundwater samples collected from onsite monitoring wells MW1, MW3, and EW1 on July 13, 2004 and from offsite well OW1 on July 14, 2004 were analyzed for TPH-D and TPH-G using Modified EPA Method 8015; and benzene, toluene, ethylbenzene, and total xylenes (BTEX) as well as fuel oxygenates (MTBE, TAME, ETBE, TAME, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC) using EPA Method 8260.

The laboratory analytical results of the samples from onsite wells MW1, MW3, and EW1 show TPH-D concentrations of 22, 57, and 3.3 mg/L, respectively. Review of the laboratory analytical reports indicates that the TPH-D results for each of the wells consist of both diesel- and gasoline-range compounds. In addition, TPH-G was detected at concentrations of 34, 98 and 2.6 mg/L, respectively; and benzene was detected in wells MW1 and MW3 at concentrations of 2.1, 28 mg/L, respectively and was not detected in well EW1. MTBE was detected at concentrations of 0.053, 15, and 73 mg/L, respectively. No other fuel oxygenates or lead scavengers were detected except for t-butyl alcohol (TBA) at concentrations of 11 and 40 mg/L in wells MW3 and EW1, respectively.

The laboratory analytical results for the groundwater sample from well OW1 show that TPH-D and TPH-G were detected at concentrations of 2400, and 66 mg/L, respectively. In addition benzene was detected at a concentration of 1.8 mg/L. None of the fuel oxygenates or lead scavengers were detected. Review of the laboratory analytical reports shows that the results reported as TPH-D are identified by the laboratory as consisting of both gasoline and diesel-range compounds.

Since the previous sampling on April 6, 2004, benzene concentrations have decreased in wells MW1, MW3 and OW1 and remained not detected in well EW1. MTBE concentrations have also decreased in wells MW1 and MW3 and increased in wells EW1 and OW1. TPH-D and TPH-G concentrations have increased in wells MW1, MW3 and OW1 since the previous quarter. The laboratory analytical results for 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

Wells MW1, MW3, MW4, EW1, OW1 and OW2 were monitored and wells MW1, MW3, EW1 and OW1 were sampled once during the quarter. Although an attempt was made to collect a groundwater sample from offsite observation well OW2, sample collection was not possible because no water or free product were detected in the well.

A 0.03-foot thick floating separate phase hydrocarbon layer was measured in MW4. The passive hydrocarbon collection device was present in well MW4 when the well was monitored on July 13,

2004. The substantial reduction in floating separate phase layer thickness from 2.83 feet on April 6, 2004 is attributed to the passive hydrocarbon collection device.

It is P&D's understanding that the hydrocarbon collection device in well MW4 is maintained by Xtra Oil Company personnel. P&D recommends that a log be maintained of product removed. P&D recommends that use of petroleum hydrocarbon absorbent socks in well MW1 be continued. The sock present in MW1 during the previous monitoring event on April 6, 2004 had been replaced by others prior to the July 13, 2004 monitoring event, and socks should be checked periodically and replaced as needed.

The laboratory analytical results for the groundwater samples from wells MW1, MW3, and EW1 showed that TPH-D concentrations ranged from 3.3 to 57 mg/L, TPH-G concentrations ranged from 2.6 to 89 mg/L, and benzene concentrations ranged from not detected to 28 mg/L. Review of the results for the fuel oxygenate and lead scavenger analysis shows that only MTBE and TBA were detected with MTBE detected in all of the wells at concentrations ranging from 0.053 to 73 mg/L and TBA detected in wells MW3 and EW1 at concentrations of 11 and 40 mg/L, respectively.

The laboratory analytical results of the water samples collected from well OW1 show that TPH-D, TPH-G, and benzene were detected at concentrations of 240, 66 and 1.8 mg/L, respectively. The TPH-D detected in well OW1 was identified as consisting of both gasoline- and diesel-range compounds. The presence of petroleum hydrocarbons in both observation wells OW1 and OW2 during the previous quarter, followed by the absence of liquids in well OW2 during the present quarter suggests that petroleum hydrocarbons could be preferentially migrating in the sanitary sewer trench where the observation wells are located on a seasonal basis.

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 be coordinated with other sites in the vicinity of the subject site that are presently being monitored and sampled.

#### DISTRIBUTION

Copies of this report should be sent 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 an authorized representative of 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 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.

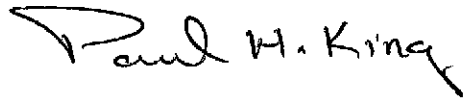
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the 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 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 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, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental



Paul H. King  
President  
California Registered Geologist  
Registration No. 5901  
Expires: 12/31/05

Attachments: Tables 1 & 2  
Site Location Map (Figure 1)  
Site Plan (Figure 2)  
Site Vicinity Map (Figure 3)  
Field Parameter Forms  
Laboratory Analytical Results  
Chain of Custody Documentation

PHK/wrw  
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TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	07/13/04	177.37*	8.33	169.04
	04/06/04		7.93	169.44
	12/18/03		7.65	169.72
	09/18/03		8.15	169.22
	06/19/03		8.13	169.24
	03/18/03		7.77	169.60

NOTES:

\* = Surveyed on August 20, 1997



TABLE 1  
 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	12/21/02	177.37*	5.74	171.63
(Continued)	9/10/02		8.28	169.09
	3/30/02		7.43	169.94
	12/22/01		6.92	170.45
	9/23/01		8.53	168.84
	6/22/01		8.30	169.07
	4/22/01		7.77	169.60
	12/14/00		8.49	168.88
	9/18/00		8.56	168.81
	6/08/00		7.97	169.40
	3/09/00		6.68	170.69
	12/09/99		8.15	169.22
	8/31/99		8.36	169.01
	4/29/99		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

NOTES:

\* = Surveyed on August 20, 1997

\*\* = Surveyed on March 24, 1993

\*\*\* = Surveyed on December 5, 1992

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW1	5/19/94	177.43**	8.05	169.38
(Continued)	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

NOTES:

\* = Surveyed on August 20, 1997

\*\* = Surveyed on March 24, 1993

\*\*\* = Surveyed on December 5, 1992

TABLE 1  
 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
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
	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

NOTES:

\* = Surveyed on August 20, 1997

\*\* = Surveyed on March 24, 1993

\*\*\* = Surveyed on December 5, 1992

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW3	07/13/04	176.40*	8.11	168.29
	04/06/04		7.41	168.99
	12/18/03		6.99	169.41
	09/18/03		7.91	168.49
	06/19/03		7.60	168.80
	03/18/03		7.35	169.05
	12/21/02		5.43	170.97
	9/10/02		7.97	168.43
	3/30/02		6.97	169.43
	12/22/01		6.44	169.96
	9/23/01		8.17	168.23
	6/22/01		8.06	168.34
	4/22/01		7.50	168.90
	12/14/00		8.13	168.27
	9/18/00		7.83	168.57
	9/26/00		7.77	168.63
	6/08/00		7.50	168.90
	3/09/00		6.08	170.32
	12/09/99		7.90	168.50
	8/31/99		7.95	168.45
	4/29/99		7.09	169.31
	1/29/99		6.42	169.98
	4/26/98		6.85	169.55
	1/24/98		5.90	170.50

NOTES:

\* = Surveyed on August 20, 1997

\*\* = Surveyed on March 24, 1993

\*\*\* = Surveyed on December 5, 1992

TABLE 1  
 WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW3 (Continued)	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	190.97***	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		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

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Water Table Elev. (ft.)
MW4	07/13/04	176.35*	8.44 (0.03)#	167.91
	04/06/04		9.58 (2.83)#	168.89
	02/11/04		9.43 (2.70)#	168.95
	12/18/03		9.75 (1.51)#	167.73
	9/18/03		9.13 (1.80)#	168.57
	6/19/03		8.56 (0.31)#	168.02
	3/18/03		7.49 (0.06)#	168.91
	12/21/02		8.58 (4.39)#	171.06
	9/10/02		9.09 (1.60)#	168.46
	3/30/02		9.86 (2.49)#	168.36
	12/22/01		7.79 (1.75)#	169.87
	9/23/01		8.97 (1.17)#	168.26
	6/22/01		7.79	168.56
	4/22/01		9.07 (2.20)#	168.93
	12/14/00		8.87 (0.72)#	168.02
	9/18/00		8.50 (0.45)#	168.19
	6/08/00		7.34	169.01
	3/09/00		6.61 (0.46)#	170.08
	12/09/99		8.80	167.55
	8/31/99		8.28	168.07
4/29/99	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

# = Indicates free product thickness in feet. The water table elevation has been corrected for the presence of free product by assuming a free product specific gravity of 0.75.

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)
EW1	07/13/04	Not Surveyed	7.51
	04/06/04		6.63
	12/18/03		6.72
	9/18/03		7.29

TABLE 1  
WELL MONITORING DATA

Well No.	Date Monitored	Top of Casing Elev. (ft.)	Depth to Water (ft.)	Total Well Depth (ft.)
OW1	07/14/04	Not Surveyed	7.02	7.44
	04/06/04		7.01	7.44
	02/11/04		7.01	7.44
	10/06/03		7.07 (0.01)#	7.44
	11/02/00		7.12,+	
	12/09/99		7.27	
	01/29/99		7.12	
OW2	07/14/04	Not Surveyed	No Water or Product	7.35
	04/06/04		7.27	7.33
	02/11/04		7.19	7.33
	10/06/03		7.29	7.34
	11/02/00		7.19	
	12/09/99		7.17	
	01/29/99		7.19	

NOTES:

# = Indicates free product thickness in feet.

+ = Petroleum hydrocarbon odor reported on probe for water level indicator.



TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW1

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
7/13/04	22a,b	34,a	0.053	2.1	0.59	2.1	4.4	ND<0.5, TBA ND<0.5
4/6/04	18,a,b	28,a	0.11	2.3	0.8	0.99	4.5	ND<0.1 TBA ND<1

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW1 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
12/18/03	13,b	33	0.038	2.1	0.77	1.8	4.4	ND<0.005 TBA ND<0.05
9/18/03	15,a,b	32	0.052	2.2	0.62	1.8	3.8	ND<0.017, TBA ND<0.17
6/26/03	67,a,b	45	ND<0.05	2.1	0.72	2.3	5.5	ND
3/18/03	7.3,a,b	33	ND<0.05	2.4	0.9	1.6	1.0	ND
12/21/02	11,a,b	32	ND<0.1	2.6	0.98	2.2	5.5	ND
9/10/02	18,c	31	ND<0.25	2.2	0.65	1.7	4.8	--
3/30/02	12,a,b	99	ND	4.1	1.2	2.5	6.4	--
12/22/01	22,a,b	60	ND	3.2	1.9	2	6.2	--
9/23/01	16,a,c	49	ND	4	1.4	2.2	6.2	--
6/22/01	85,a,b	35	ND	3.1	0.75	1.2	4.0	--
4/22/01	16,a	43	ND	3.6	1.2	1.6	5.8	--
12/14/00	11,a,d	49	ND	5.8	1.6	2	6.9	--
9/18/00	15,a,b	86	ND	7.2	2	3.2	13	--
6/8/00	6.5,a,c	50	ND	5.7	1.5	1.8	7	--
3/9/00	7.4,a,b	48	ND	5.3	3.1	1.6	8.1	--
12/9/99	12,a,b	65	ND	9.3	2.9	2.2	8.8	--
8/31/99	22,b	66	0.71	8.7	2.7	2.4	10	--
4/29/99	22,b	48	ND	8.4	2.8	2.0	8.1	--
1/29/99	9.1,b	47	ND	9.0	2.9	1.9	8.0	--
4/26/98	7.8,c	60	ND	9.3	5.7	2.1	9.1	--

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

c = TPH-D results consist of both gasoline-range compounds.

d = TPH-D results consist of both oil-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW1 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
1/24/98	24,b	57	ND	6.9	5.5	2.0	8.7	--
11/6/97	17,c	63	ND	7.4	6.7	2.3	9.9	--
7/27/97	28,c	66	1.8	8.6	8.1	2.2	10	--
4/25/97	170,b	77	ND	7.4	7.9	2.1	9.8	--
1/21/97	57,c	80	0.25	7.8	8.3	1.9	8.9	--
7/26/96	11,c	76	ND	11	13	2.4	10	--
4/23/96	5.7,c	73	ND	8.6	12	2.2	9.8	--
1/29/96	6.6,c	81	0.25	7.6	13	1.9	8.9	--
10/26/95	62,c	89	ND	7.8	12	2.4	11	--
7/28/95	2.0,c	35	--	3.8	8.7	1.1	6.5	--
5/2/95	6.5,c	86	--	8.9	14	2.3	11	--
2/24/95	9.1	90	--	7.5	12	1.5	11	--
11/18/94	10	96	--	9.3	14	2.5	11	--
8/22/94	8.3	100	--	9.0	11	2.1	9.4	--
5/19/94	30	100	--	12	14	3.5	17	--
2/28/94	110	90	--	11	9.6	2.1	9.9	--
11/24/93	8.2	66	--	8.3	8.9	2.0	121	--
8/30/93	9.4	77	--	6.4	11	2.2	12	--
5/18/93	30	92	--	4.0	11	2.5	15	--

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

c = TPH-D results consist of both gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW1 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
2/23/93	14	100	--	4.5	11	2.1	12	--
11/13/92	4.4	120	--	5.8	10	2.1	13	--
5/27/92	11	120	--	8.8	16	2.3	15	--
1/24/92	19	39	--	7.3	8.7	1.3	8.9	--
12/23/91	34	78	--	9.3	7.3	0.54	13	--
11/25/91	36	170	--	5.5	5.6	1.6	8.4	--
10/10/91	19	28	--	4.1	4.7	1.0	4.8	--
9/17/91	19	39	--	4.9	4.1	1.2	5.9	--
8/19/91	47	48	--	13	8.4	0.99	29	--
7/20/91	49	100	--	11	14	2.3	17	--
6/20/91	42	76	--	4.7	7.1	1.5	9.8	--
5/17/91	26	72	--	7.7	9.9	ND	11	--
4/15/91	--	56	--	6.5	8.5	0.41	9.9	--
3/21/91	--	36	--	4.5	5.7	0.087	7.3	--
2/15/91	--	120	--	7.4	6.6	ND	13	--
1/15/91	--	33	--	3.9	2.9	0.21	5.3	--
9/27/90	--	28	--	3.7	3.5	0.01	6.5	--
8/23/90	--	40	--	5.1	4.9	0.35	6.0	--
7/20/90	44	--	--	5.1	4.2	ND	9.1	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW1 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
3/19/90	--	40	--	3.7	1.1	ND	3.3	--
2/20/90**	--	7.6	--	1.6	ND	ND	1.3	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

\*\* Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW2

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
2/7/96	MW2 Destroyed							
1/29/96	4.6,c	38	0.0071	1.9	5.7	1.1	5.9	--
10/26/95	900	74	ND	2.9	5.9	2.0	10	--
7/28/95	2.0,c	15	--	1.4	2.3	0.62	3.2	--
5/2/95	6.6,b	55	--	3.3	10	1.8	10	--
2/24/95	22	67	--	4.9	11	1.8	11	--
11/18/94	5.0	86	--	11	17	1.8	12	--
8/22/94	4.1	91	--	10	13	1.5	9.0	--
5/19/94	5.8	62	--	92	13	1.3	8.4	--
2/28/94	13	91	--	13	16	1.5	9.0	--
11/24/93	79	12	--	13	17	2.5	17	--
8/30/93	110	110	--	11	14	1.8	11	--
5/18/93	44	67	--	9.2	12	1.4	9.3	--
2/23/93	7.0	76	--	12	17	1.6	9.6	--
11/13/92	8.2	79	--	10	13	1.4	8.6	--
5/27/92	130	89	--	18	19	1.7	14	--
1/14/92	1600	59	--	17	14	1.8	15	--
12/23/91	700	2100	--	36	130	79	560	--
11/25/91	130	230	--	11	9.7	1.4	9.7	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

c = TPH-D results consist of both gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW2 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
10/10/91	360	85	--	21	25	2.1	14	--
9/17/91	56	74	--	10	11	1.4	8.1	--
8/19/91	19	69	--	26	22	2.1	18	--
7/20/91	100	51	--	9.9	7.7	1.2	7.5	--
6/20/91	69	87	--	8.1	8.4	1.1	8.9	--
5/17/91	33	62	--	5.9	6.3	1.2	9.0	--
4/15/91	--	82	--	5.3	7.4	1.0	9.4	--
3/21/91	--	62	--	9.3	11	0.35	9.7	--
2/15/91	--	200	--	12	12	1.7	14	--
1/14/91	--	78	--	11	8.7	0.58	8.0	--
9/27/90	--	59	--	8.4	12	0.88	9.0	--
8/23/90	--	96	--	8.1	8.4	1.5	8.6	--
7/20/90	86	--	--	9.1	14	0.94	13	--
3/19/90	--	50	--	7.7	8.7	0.075	5.6	--
2/20/90**	--	38	--	7.3	3.1	0.075	6.8	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

\*\* Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 Well MW3

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
7/13/04	57,a,b	98,a	15	28	2.9	1.7	8.9	ND<0.5, except TBA = 11
4/6/04	32,a,b	81,a	17	34	5.9	1.5	9.9	ND<0.5, except TBA = 8.8

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).



TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 Well MW3 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
12/18/03	32,a,b	130,a	32	33	5.4	0.72	11	ND<0.5, except TBA = 17
9/18/03	140,a,b	130	23	34	11	2.5	14	ND<0.5, except TBA = 10
6/26/03	27,a,b	96	21	29	5.2	2.0	10	ND, except TBA = 8.9
3/18/03	11,a,b	120	16	36	12	1.8	2.4	ND, except TBA = 5.1
12/21/02	21,a,b	110	33	34	9.3	2.0	13	ND, except TBA = 14
9/10/02	43,b	70	19	21	2.2	1.6	7.6	--
3/30/02	8.5,a,b	170	26	40	17	2.6	16	--
12/22/01	9.2,a,b	140	27	37	20	2.6	15	--
9/23/01	47,a,b	130	26	32	9.1	2.4	12	--
6/22/01	33,a,b	110	25	31	7.2	1.9	11	--
4/22/01	61,a	140	24	25	5.4	1.7	11	--
12/14/00	120,a,b	140	35	37	16	2.4	15	--
9/18/00	43,a,b	130	33	39	91	2.3	14	--
7/26/00	--	--	21	--	--	--	--	ND***, except tert- butanol = 19
6/8/00	74,a,b	130	23	41	16	1.9	13	--
3/9/00	14,a,b	180	24	39	22	2.5	16	--
12/9/99	17,a,b	120	16	35	6.7	2.4	12	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

\*\*\*Review of laboratory analytical reports indicate that oxygenated volatile organic compounds (including DIPE, ETBE, TAME, methanol, ethanol, EDB, and 1,2-DCA) were not detected except MTBE at 21 ppm and tert-butanol at 19 ppm. Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW3 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
8/31/99	22,b	120	4.7	35	3.7	2.4	14	--
4/29/99	48,b	100	2.5	33	8.0	2.1	14	--
1/29/99	240,b	84	1.3	31	2.8	1.8	12	--
4/26/98	380,b	100	9.7	29	7.1	1.8	14	--
1/24/98	77,b	97	ND	28	7.1	1.8	11	--
11/6/97	120,b	140	ND	37	19	2.4	14	--
7/24/97	91,c	120	1.4	33	17	2.2	12	--
4/25/97	760,b	240	1.6	24	18	4.1	24	--
1/21/97	34,c	150	1.3	40	14	2.6	12	--
7/26/96	24,c	130	0.89	40	22	2.4	12	--
4/23/96	280,c	170	0.72	34	22	2.2	14	--
1/29/96	45,c	150	0.54	32	21	1.9	12	--
10/26/95	33	130	0.69	37	21	0.21	11	--
7/28/95	1.9,b	86	--	1.4	2.3	0.62	3.2	--
5/2/95	9.7,b	170	--	43	30	2.5	14	--
2/24/95	9.2	130	--	31	19	1.8	10	--
11/18/94	23	140	--	38	22	2.0	11	--
7/22/94	5.3	170	--	35	20	1.8	10	--
5/19/94	30	150	--	38	25	2.4	14	--
2/28/94	210	110	--	36	21	1.9	11	--
11/24/93	24	160	--	48	26	2.2	12	--
7/30/93	32	130	--	36	21	1.9	8.2	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

c = TPH-D results consist of gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW3 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
5/18/93	7.2	130	--	36	21	2.1	12	--
2/23/93	8.1	110	--	31	18	1.9	11	--
11/13/92	4.7	140	--	38	24	2.0	12	--
5/27/92	27	370	--	91	57	3.0	21	--
7/14/92	270	130	--	76	30	3.4	21	--
12/23/91	540	740	--	30	61	31	180	--
11/25/91	74	150	--	65	31	3.4	18	--
10/10/91	39	140	--	57	31	2.2	14	--
9/17/91	140	180	--	47	25	2.6	15	--
8/19/91	150	170	--	82	31	4.4	22	--
7/20/91	270	450	--	46	29	3.5	21	--
6/20/91	210	920	--	39	49	13	69	--
5/17/91	70	170	--	32	22	2.2	18	--
4/15/91	--	110	--	31	15	0.88	7.4	--
3/21/91	--	87	--	30	14	0.69	5.4	--
2/15/91	--	230	--	44	40	ND	31	--
1/14/91	--	160	--	48	25	1.0	16	--
9/27/90	--	25	--	7.2	6.4	0.42	3.4	--
8/23/90	--	220	--	67	46	27	18	--
7/20/90	86	--	--	9.1	14	0.94	13	--
3/19/90	--	210	--	38	28	1.8	12	--
2/20/90**	--	46	--	20	15	1.8	9.7	--

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

\*\* Inorganic lead not detected in sample.

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW4

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
7/13/04	Not Sampled (Free Product Present in Well)							
2/11/04	Free Product sampled. Laboratory fuel fingerprint notes pattern resembling diesel, with less significant gasoline-range pattern.							
12/18/03	Not Sampled (Free Product Present in Well)							
9/18/03	Not Sampled (Free Product Present in Well)							
6/26/03	Not Sampled (Free Product Present in Well)							
3/18/03	Not Sampled (Free Product Present in Well)							
12/21/02	Not Sampled (Free Product Present in Well)							
9/10/02	Not Sampled (Free Product Present in Well)							
3/30/02	Not Sampled (Free Product Present in Well)							
12/22/01	Not Sampled (Free Product Present in Well)							
9/23/01	Not Sampled (Free Product Present in Well)							
6/22/01	440,a,b	140	15	35	19	2.0	10	--
4/22/01	Not Sampled (Free Product Present in Well)							
12/14/00	Not Sampled (Free Product Present in Well)							
9/18/00	Not Sampled (Free Product Present in Well)							
6/8/00	Not Sampled (Free Product Present in Well)							
3/9/00	2,100,a,b	130	6.9	35	13	2.1	11	--
12/9/99	9,000,a,b	120	8.1	33	6	2.4	12	--
8/31/99	9.4,b	190	4.4	46	30	2.8	15	--
4/29/99	9.4,b	210	3.2	42	35	2.8	15	--
1/29/99	7.3,b	190	2.4	44	40	3.1	17	--
4/26/98	13,b	190	ND	49	37	3.2	18	--

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well MW4 (Continued)

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
1/24/98	20,b	200	ND	50	40	3.1	17	--
11/6/97	110,b	160	ND	48	30	2.8	16	--
8/26/97	5.5,b	210	1.7	48	42	3.4	19	--
8/15/97	MW4 Installed							

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well EW1

Date	TPH-D	TPH-G	MTBE	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260*
7/13/04	3.3,a,b	2.6,a	73	ND<1.2	ND<1.2	ND<1.2	ND<1.2	ND<1.2, except TBA = 40
4/6/04	3.4,a,b	2.6,a	72	ND<1	ND<1	ND<1	ND<1	ND<1, except TBA = 34
12/18/03	3.0,b	ND<5.0,e	160	0.22	ND<50	ND<50	0.073	ND<5, except TBA = 64
9/18/03	8.2,a,b	7.5	220	0.33	ND<0.05	ND<0.05	ND<0.05	ND<2.5, except TBA = 51
2/23/93	9.6	66	--	14	8.5	1.4	9.8	--
11/13/92	13	62	--	11	9.2	1.1	9.6	--
8/92	EW1 Installed							

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Lighter than water immiscible sheen present on the sample.

b = TPH-D results consist of both diesel-range and gasoline-range compounds.

e = reporting limit raised due to high MTBE content

\* = This column summarizes results for analysis using EPA Method 8260 for non-MTBE fuel oxygenates (TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
 SUMMARY OF LABORATORY ANALYTICAL RESULTS  
 Well OW1

Date	TPH-D	TPH-G	TPH-MO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, incl. MTBE**
7/14/04	240,a,b	66,a	--	1.8	ND<0.05	1.8	0.056	ND<0.05, TBA ND<0.5
4/6/04	74,a,b	50,a	--	3.1	ND<0.1	0.21	0.14	ND<0.1, TBA ND<1
2/11/04	450,a,b	15,a	130	2.2	0.031	0.16	0.054	ND<0.025, TBA ND<0.25
11/21/03	1,900,a,b	38,e	570	2.0	0.059	0.19	0.095	ND<0.05, TBA ND<0.5
6/10/98	OW1 Installed							

**NOTES:**

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

b = Laboratory analytical report note: TPH-D results consist of both diesel-range and gasoline-range compounds.

e = Laboratory analytical report note: unmodified or weakly modified gasoline is significant.

\*\* = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

TABLE 2  
SUMMARY OF LABORATORY ANALYTICAL RESULTS  
Well OW2

Date	TPH-D	TPH-G	TPH-MO	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Other Fuel Additives by 8260, incl. MTBE**
7/14/04	No sample recovered.							
4/6/04	--	0.069,a	--	ND <0.00062	ND <0.00062	ND <0.00062	ND <0.00062	--
2/11/04	--	0.21	--	ND <0.0005	ND <0.0005	ND <0.0005	ND <0.0005	ND<0.0005, except MTBE = 0.0064 TBA = 0.0070
11/21/03	No sample recovered.							
6/10/98	OW2 Installed							

NOTES:

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

MTBE = Methyl tert-Butyl Ether.

ND = Not Detected.

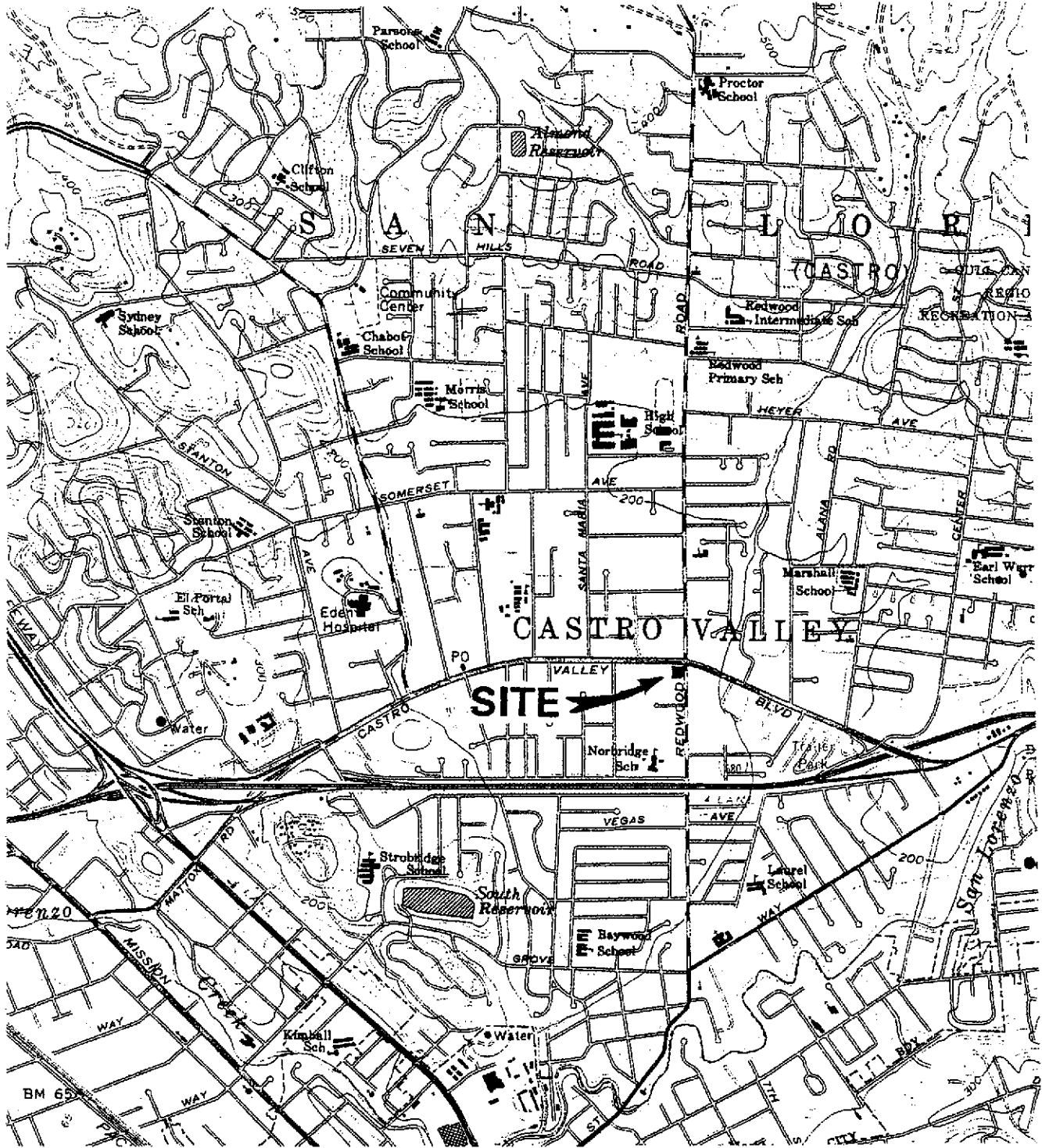
-- = Not Analyzed.

a = Laboratory analytical report note: lighter than water immiscible sheen present on the sample.

\*\* = This column summarizes results for analysis using EPA Method 8260 for fuel oxygenates (MTBE, TAME, ETBE, and TBA) and lead scavengers (EDB, 1,2-DCA/EDC).

Results in milligrams per liter (mg/L), unless otherwise indicated.

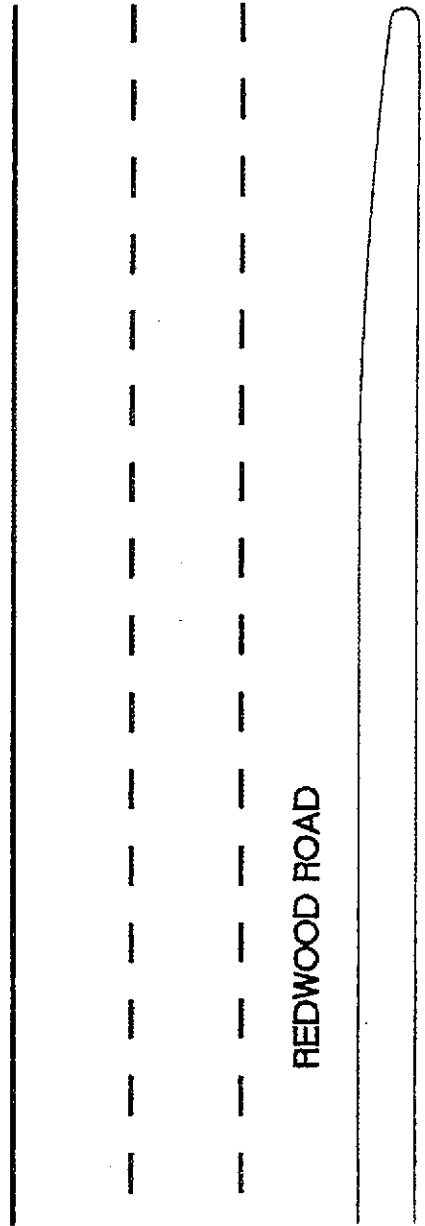
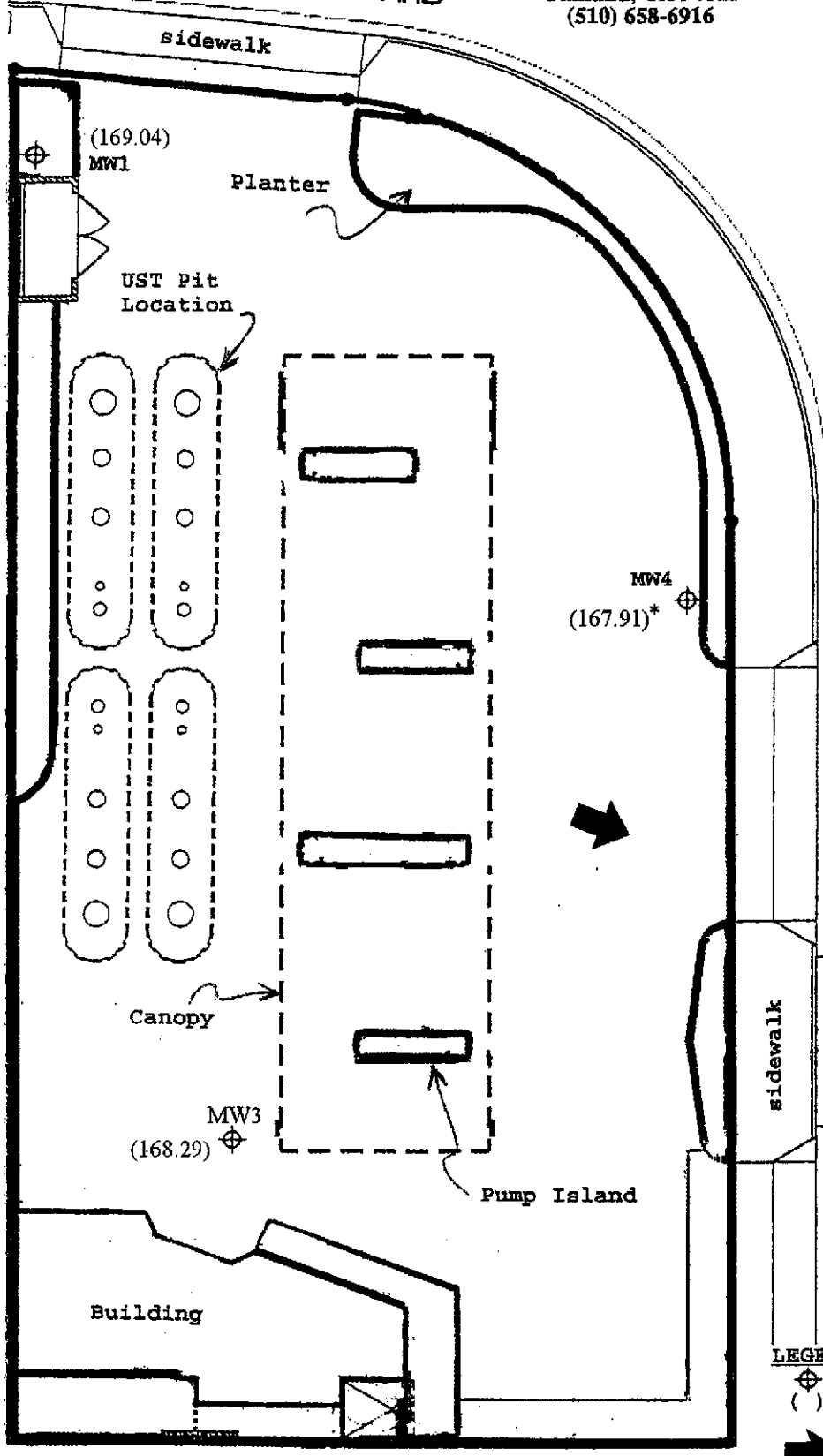




Base Map From:  
 U.S. Geological Survey  
 Hayward, Calif.  
 7.5 Minute Quadrangle  
 Photorevised 1980

Figure 1  
 SITE LOCATION MAP  
 Xtra Oil Company  
 3495 Castro Valley Blvd.  
 Castro Valley, California

CASTRO VALLEY BOULEVARD



REDWOOD ROAD

**LEGEND**

- ⊕ Monitoring Well Location
- ( ) Groundwater Surface Elevation on July 13, 2004
- ➔ Groundwater Flow Direction
- \* Groundwater Surface Elevation Corrected for the Presence of Free Product.

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

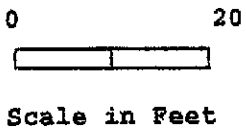


Figure 2  
**SITE PLAN**  
 Xtra Oil Company  
 3495 Castro Valley Blvd  
 Castro Valley, CA

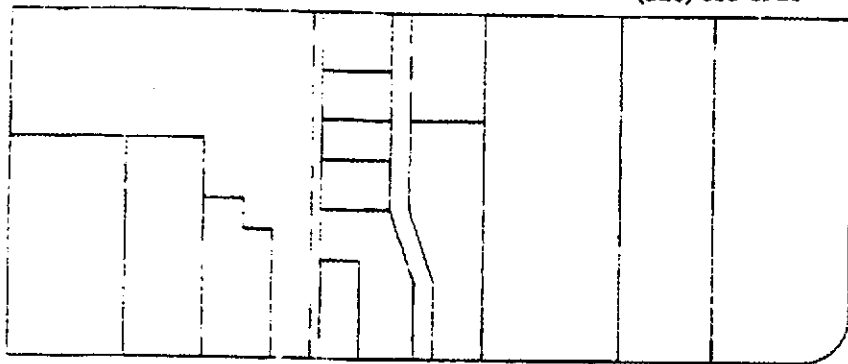
# P & D ENVIRONMENTAL

A Division of Paul H. King, Inc.

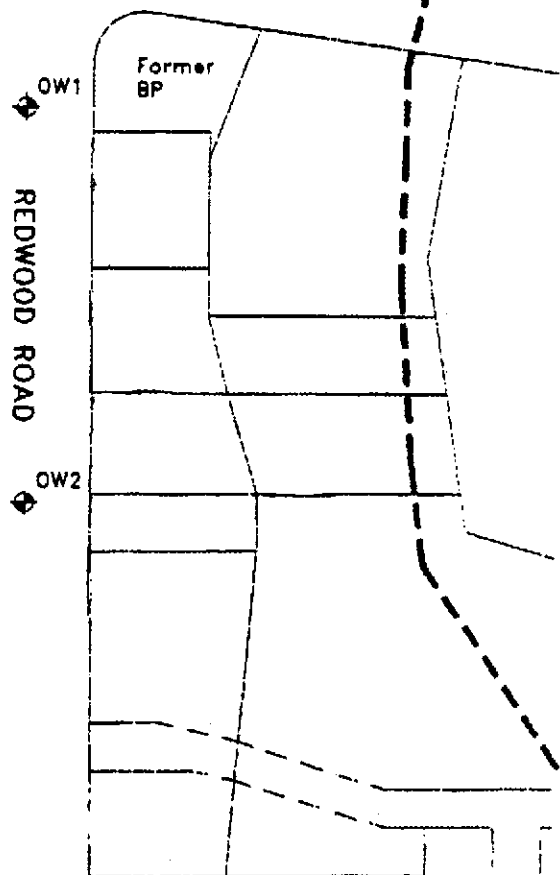
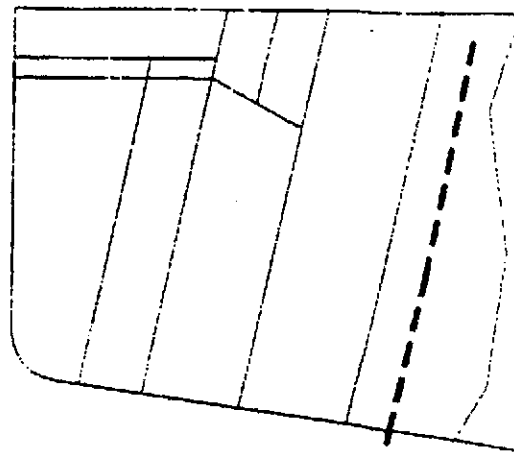
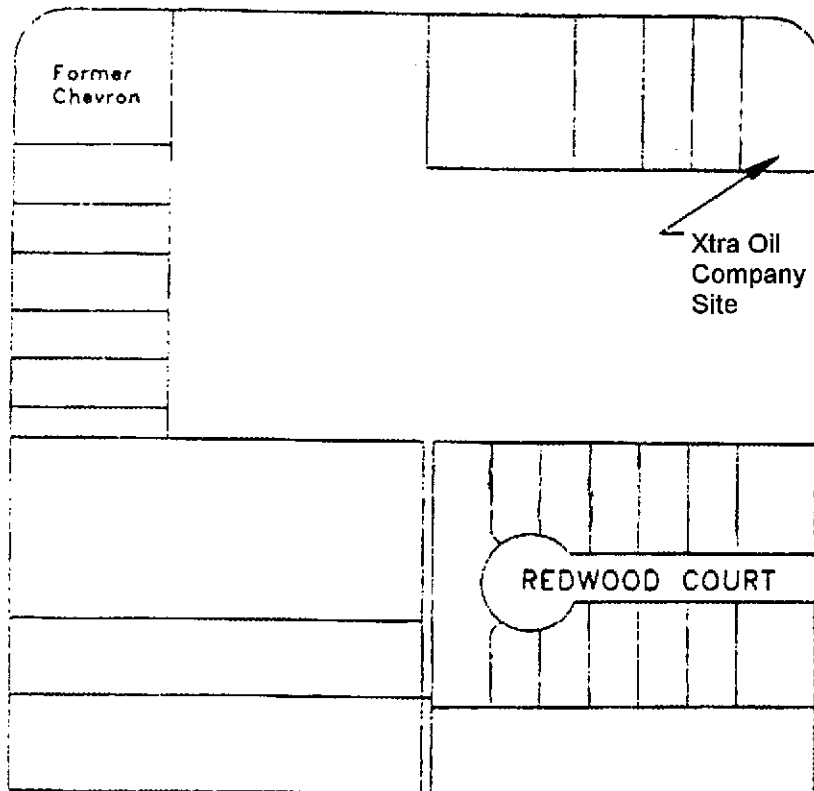
4020 Panama Court

Oakland, CA 94611

(510) 658-6916



CASTRO VALLEY BOULEVARD



### LEGEND

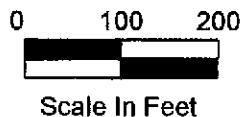


Observation Well Location



Approximate Creek Location

Base Map From:  
Castro Valley Sanitation District  
Undated



North



Figure 3  
SITE VICINITY MAP  
Xtra Oil Company  
3495 Castro Valley Blvd.  
Castro Valley, CA







P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name X.O. - Castro Valley

Well No. MW4

Job No. 2014

Date 7/13/04

TOC to Water (ft.) \_\_\_\_\_

Sheen \_\_\_\_\_

Well Depth (ft.) \_\_\_\_\_

Free Product Thickness \_\_\_\_\_

Well Diameter 2 in.

Sample Collection Method \_\_\_\_\_

Gal./Casing Vol. \_\_\_\_\_

None collected

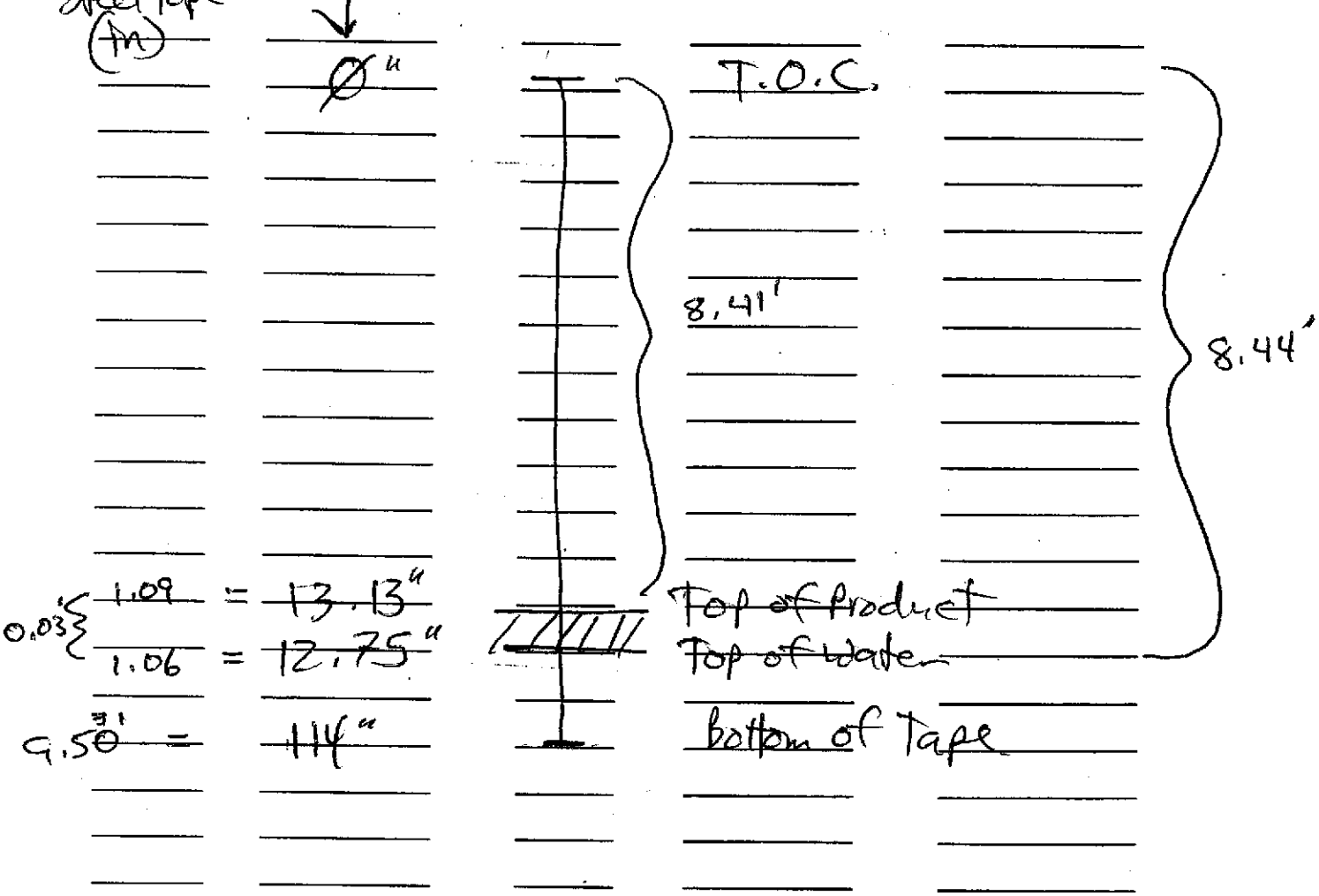
Length on  
TIME  
Steel tape  
(in)

~~Steel~~  
CAL. FORGED

~~PH~~

~~feature~~  
TEMPERATURE

ELECTRICAL  
CONDUCTIVITY



NOTES: Approximately 5 in. of dark colored product in product removal device. No water in Christie box.

PURGE10.92

FP Correction  $0.03 \times 0.75 = 0.02$

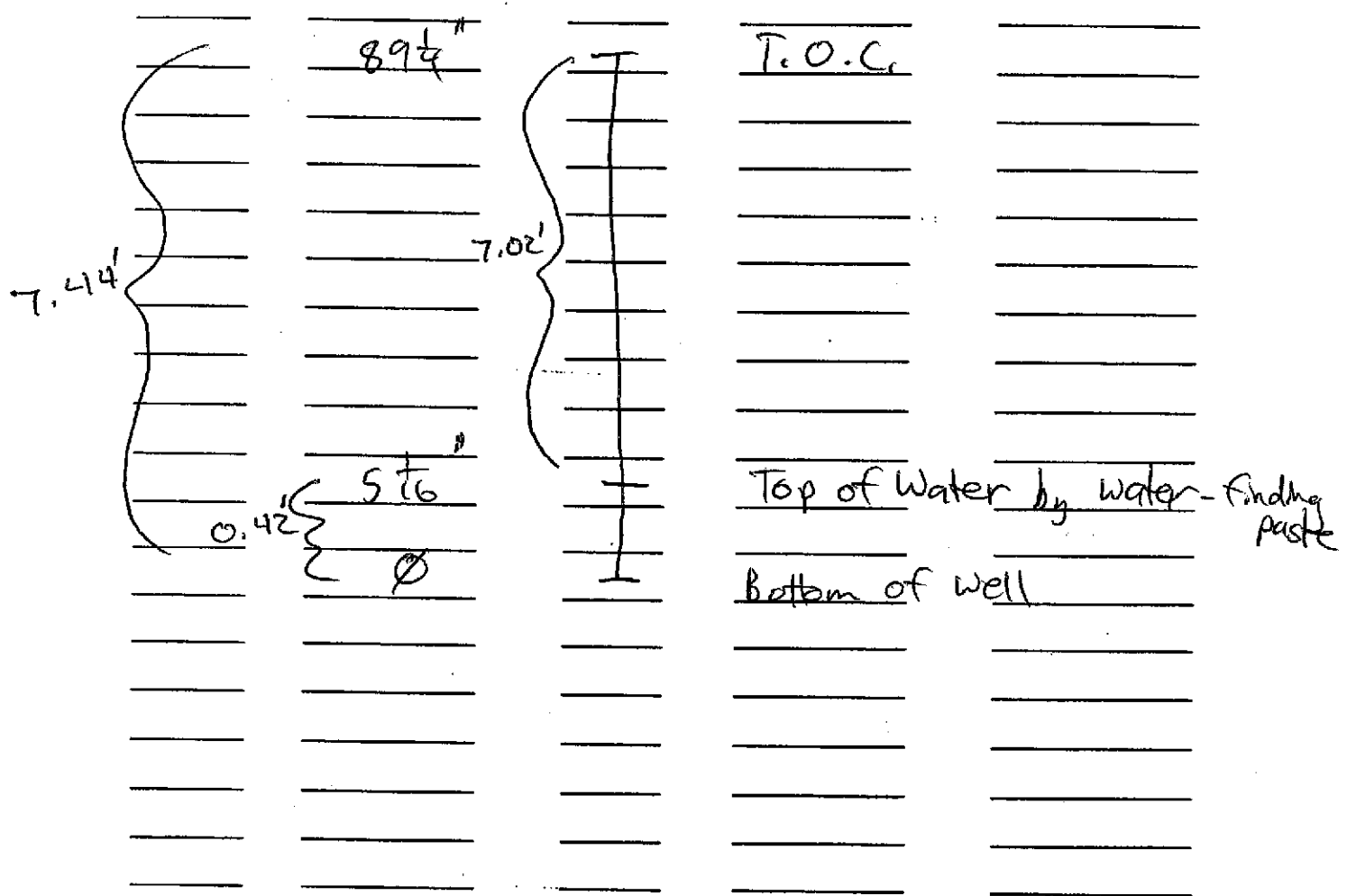
$8.44 - 0.02 = 8.42 =$  Corrected Depth to water

P&D ENVIRONMENTAL  
GROUNDWATER MONITORING/WELL PURGING  
DATA SHEET

Site Name X.O. - Castro Valley  
 Job No. 0014  
 TOC to Water (ft.) 7.02  
 Well Depth (ft.) 7.44  
 Well Diameter 1 in.  
 Gal./Casing Vol. N/A

Well No. OW1  
 Date 7/14/04  
 Sheen (Not recorded.)  
 Free Product Thickness 0  
 Sample Collection Method Vacuum pump

TIME      Length on Steel Tape (in)      Feature      ELECTRICAL  
~~GAL. PURGED~~      ~~DH~~      ~~TEMPERATURE~~      CONDUCTIVITY



NOTES:  
 \_\_\_\_\_  
 \_\_\_\_\_











# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

P & D Environmental 4020 Panama Court Oakland, CA 94611-4931	Client Project ID: #0014; Xtra Oil-Castro Valley	Date Sampled: 07/13/04
	Client Contact: Wilhelm Welzenbach	Date Received: 07/14/04
	Client P.O.:	Date Extracted: 07/15/04-07/16/04
		Date Analyzed: 07/15/04-07/16/04

### Oxygenates and BTEX by GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0407184

Lab ID	0407184-001B	0407184-002B	0407184-003B	Reporting Limit for DF =1	
Client ID	MW1	MW3	EW1		
Matrix	W	W	W		
DF	100	1000	2500	S	W

Compound	Concentration			ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<50	ND<500	ND<1200	NA	0.5
Benzene	2100	28,000	ND<1200	NA	0.5
t-Butyl alcohol (TBA)	ND<500	11,000	40,000	NA	5.0
1,2-Dibromoethane (EDB)	ND<50	ND<500	ND<1200	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<50	ND<500	ND<1200	NA	0.5
Diisopropyl ether (DIPE)	ND<50	ND<500	ND<1200	NA	0.5
Ethylbenzene	2100	1700	ND<1200	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<50	ND<500	ND<1200	NA	0.5
Methyl-t-butyl ether (MTBE)	53	15,000	73,000	NA	0.5
Toluene	590	2900	ND<1200	NA	0.5
Xylenes	4400	8900	ND<1200	NA	0.5

### Surrogate Recoveries (%)

%SS1:	108	98.5	101		
%SS2:	98.3	98.6	98.3		
%SS3:	101	102	106		
Comments	h	h	h		

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content.

**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0407184

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 12342		Spiked Sample ID: 0407173-008A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) <sup>E</sup>	ND	60	96.9	94.4	2.61	96.7	98.4	1.79	70	130
MTBE	ND	10	117	115	1.63	110	112	2.01	70	130
Benzene	ND	10	111	111	0	110	111	0.697	70	130
Toluene	ND	10	108	109	0.469	108	105	2.32	70	130
Ethylbenzene	ND	10	114	113	1.09	113	113	0	70	130
Xylenes	ND	30	96.3	96.7	0.345	96.3	96.3	0	70	130
%SS:	109	10	107	106	0.875	107	106	1.01	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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

<sup>E</sup> TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or 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.

**QC SUMMARY REPORT FOR SW8015C**

Matrix: W

WorkOrder: 0407184

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 12343			Spiked Sample ID: N/A		
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	107	108	0.0508	70	130
%SS:	N/A	2500	N/A	N/A	N/A	109	109	0	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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with 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.

**QC SUMMARY REPORT FOR SW8260B**

Matrix: W

WorkOrder: 0407184

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 12344			Spiked Sample ID: 0407175-001A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	97.2	96.8	0.387	91	93	2.13	70	130
Benzene	ND	10	123	124	0.925	122	123	1.18	70	130
t-Butyl alcohol (TBA)	20.3	50	123	125	0.931	84.4	88.4	4.70	70	130
1,2-Dibromoethane (EDB)	ND	10	103	107	3.13	95.9	99.7	3.97	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	118	121	2.50	111	113	2.20	70	130
Diisopropyl ether (DIPE)	ND	10	123	123	0	123	127	2.63	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	119	119	0	114	117	2.61	70	130
Methyl-t-butyl ether (MTBE)	ND	10	128	130	1.52	113	118	3.90	70	130
Toluene	ND	10	101	101	0	102	104	2.19	70	130
%SS1:	121	10	102	102	0	95.3	95.7	0.455	70	130
%SS2:	81.9	10	97	96.1	0.836	97.9	97.7	0.187	70	130
%SS3:	83.0	10	103	102	1.15	109	109	0	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

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

$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / ((\text{MS} + \text{MSD}) / 2).$

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with 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 SW8260B**

Matrix: W

WorkOrder: 0407184

EPA Method: SW8260B		Extraction: SW5030B		BatchID: 12352			Spiked Sample ID: 0407189-001B			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
tert-Amyl methyl ether (TAME)	ND	10	95.4	93.1	2.43	95.1	94.8	0.343	70	130
Benzene	ND	10	122	121	0.446	124	123	1.11	70	130
t-Butyl alcohol (TBA)	ND	50	106	95	10.5	101	91.8	10.0	70	130
1,2-Dibromoethane (EDB)	ND	10	104	99.8	3.80	103	100	3.00	70	130
1,2-Dichloroethane (1,2-DCA)	ND	10	119	119	0	117	117	0	70	130
Diisopropyl ether (DIPE)	ND	10	123	120	2.84	125	124	0.904	70	130
Ethyl tert-butyl ether (ETBE)	ND	10	119	114	3.57	120	119	0.996	70	130
Methyl-t-butyl ether (MTBE)	ND	10	130	118	9.14	127	121	4.93	70	130
Toluene	ND	10	101	99.9	1.50	103	102	1.84	70	130
%SS1:	105	10	103	102	1.53	95.6	92.8	3.01	70	130
%SS2:	96.8	10	96.8	96.5	0.313	97.4	97	0.379	70	130
%SS3:	106	10	104	104	0	105	107	2.13	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

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 and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with 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.



**McC Campbell Analytical, Inc.**



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0407184

ClientID: PDEO

**Report to:**

Wilhelm Welzenbach  
 P & D Environmental  
 4020 Panama Court  
 Oakland, CA 94611-4931

TEL: (510) 658-6916  
 FAX: 510-834-0152  
 ProjectNo: #0014; Xtra Oil-Castro Valley  
 PO:

**Bill to:**

Accounts Payable  
 P & D Environmental  
 4020 Panama Court  
 Oakland, CA 94611-4931

Requested TAT: 5 days

Date Received: 7/14/04

Date Printed: 7/14/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0407184-001	MW1	Water	7/13/04	<input type="checkbox"/>	A	B														
0407184-002	MW3	Water	7/13/04	<input type="checkbox"/>	A	B														
0407184-003	EW1	Water	7/13/04	<input type="checkbox"/>	A	B														

Test Legend:

1	G-MBTEX_W	2	MBTEXOXY-8260B_W	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Melissa Valles

**Comments:**

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

000

P & D ENVIRONMENTAL  
A Division of Paul H. King, Inc.  
4020 Panama Court  
Oakland, CA 94611  
(510) 658-6916

0407194

# CHAIN OF CUSTODY RECORD

Lead scavengers by 8260

PROJECT NUMBER: 0014		PROJECT NAME: Xtra Oil - Castro Valley			NUMBER OF CONTAINERS	ANALYSIS(ES): TPH, Gas, Visc BTEX + P, Oxy, S	PRESERVATIVE	REMARKS
SAMPLED BY: (PRINTED AND SIGNATURE) Wilhelm Welzenbach								
SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION				
+ MW1	7/17/04		water		7	X	ICE	Normal Turnaround
+ MW3	↓		↓		2	X	↓	↓
+ FW1	↓		↓		2	X	↓	↓
<input checked="" type="checkbox"/> GOOD CONDITION <input checked="" type="checkbox"/> HEAD SPACE ABSENT <input checked="" type="checkbox"/> DECHLORINATED IN LAB <input checked="" type="checkbox"/> APPROPRIATE CONTAINERS <input checked="" type="checkbox"/> PRESERVED IN LAB PRESERVATION: <input checked="" type="checkbox"/> VOAS <input type="checkbox"/> OMS <input type="checkbox"/> METALS <input type="checkbox"/> OTHER					TOTAL NO. OF SAMPLES (THIS SHIPMENT)		LABORATORY:	
RELINQUISHED BY: (SIGNATURE) Wilhelm Welzenbach		DATE 07/14	TIME 1010	RECEIVED BY: (SIGNATURE) Kongchar		3	McCampbell Analytical	
RELINQUISHED BY: (SIGNATURE) Kongchar		DATE 07/14	TIME 1230	RECEIVED BY: (SIGNATURE) McVall		21	LABORATORY CONTACT: Angela Kydding (925) 798-1620	
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)		SAMPLE ANALYSIS REQUEST SHEET ATTACHED: ( ) YES (X) NO		
REMARKS:					VOAs preserved w HCL			