

# Ultramar

Ultramar, Inc.  
P.O. Box 466  
525 W. Third Street  
Hanford, CA 93232-0466  
(209) 582-0241

ENVIRONMENTAL  
PROTECTION

98 JUN 25 11 31 AM '98  
209-583-3685 Credit  
209-583-3330 Administrative  
209-583-3302 Information Services  
209-583-3358 Accounting

June 16, 1998

Mr. Tom Peacock  
Alameda County Health Department,  
Division of Hazardous Materials  
Department of Environmental Health  
1131 Harbor Bay Parkway  
Oakland, CA 94621

**SUBJECT: First Quarter 1998 Ground Water Monitoring Report  
Former Beacon Station No. 574  
22315 Redwood Road, Castro Valley, California**


Dear Mr. Peacock:

Enclosed is a copy of the *First Quarter 1998 Ground Water Monitoring Report*, prepared by El Dorado Environmental Inc., for the above-referenced Ultramar facility. Also enclosed is a copy of the Quarterly Status Report describing the work performed this quarter and the work anticipated to be conducted in the next quarter.

If you have questions regarding this project, please contact me at (209) 583-3231.

Sincerely,

**ULTRAMAR INC.**

  
Joseph A. Aldridge, RG  
Senior Project Manager  
Retail Environmental Services

Enclosures: First Quarter 1998 Ground Water Monitoring Report  
Quarterly Status Report

cc w/encl.: Mr. Rich Hiatt, CRWQCB-San Francisco Bay Region



A Member of the Ultramar Group of Companies

**BEACON**  
#1 Quality and Service

# Ultramar

Ultramar, Inc.  
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## ENVIRONMENTAL PROJECT QUARTERLY STATUS REPORT

DATE REPORT SUBMITTED: June 16, 1998  
QUARTER ENDING: March 31, 1998

FORMER SERVICE STATION NO.: 574  
ADDRESS: 22315 Redwood Road, Castro Valley, CA  
COUNTY: Alameda  
ULTRAMAR CONTACT: Joseph A. Aldridge

TEL. NO: 209-583-3231

### BACKGROUND:

On May 5, 1987, five underground storage tanks (two gasoline, two diesel and one waste oil) were excavated and removed from the site. Soil samples were collected from beneath the tanks and analyzed for hydrocarbon constituents. Based on preliminary analytical data related to the collected soil samples, it was determined that elevated levels of gasoline and diesel were present in the soil beneath the former fuel tanks. Soil was over-excavated from beneath the former fuel tanks. Soil samples were collected after the over-excavation and confirmed that the addition excavation was successful.

During March 1991, three ground-water monitoring wells were installed on-site. Laboratory analysis of soil samples obtained from the borings for the installation of the monitoring wells indicated that the soil near the soil/water interface exhibited gasoline range hydrocarbons.

Quarterly monitoring was initiated during the fourth quarter 1991.

Installed five groundwater monitoring wells in May of 1993. With the installation of these new wells the extent of impacted groundwater was fully defined.

Conducted a soil gas survey/performance test, aquifer pump test, and air sparging test during the first quarter of 1994.

Submitted a PAR/RAP during the fourth quarter 1994.

### SUMMARY OF THIS QUARTER'S ACTIVITIES:

Performed quarter monitoring on March 19, 1998.



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**RESULT OF QUARTERLY MONITORING:**

The dissolved petroleum hydrocarbon plume continues to be defined.

**PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:**

**ACTIVITY**

**ESTIMATED COMPLETION DATE**

Quarterly groundwater monitoring

June 1998

Gather additional information, requested by Alameda County in a letter dated May 27, 1997, regarding the Risk Based Corrective Action Assessment

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# El Dorado Environmental, Inc.

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2221 Goldorado Trail, El Dorado, California 95623

(916) 626-3898  
Fax (916) 626-3899

June 4, 1998

Mr. Joe Aldridge  
Senior Project Manager  
Ultramar Inc.  
525 West Third Street  
Hanford, California 93230

Subject: **First Quarter 1998 Ground Water Monitoring Report**  
**Former Beacon Station #574**  
22315 Redwood Road, Castro Valley, California

Dear Mr. Aldridge:

El Dorado Environmental, Inc. (EDE) has prepared this report to document the results of quarterly ground water monitoring conducted on March 19, 1998, at the subject site (Figure 1). The monitoring, conducted by Doulos Environmental (Doulos), included measurements of depth to ground water, subjective analysis for the presence or absence of free product, ground water purging and collection of ground water samples. Doulos reports that all field activities were conducted in accordance with the Ultramar Field Procedures described in Attachment A.

## GROUND WATER ELEVATIONS

Prior to purging, Doulos collected depth to ground water measurements. Copies of Doulos' field data sheets are contained in Attachment B. Ground water elevation data collected since March 1992 are summarized in Table 1. Historical ground water elevation data are contained in Attachment C. On the basis of the current measurements, ground water flows toward the southwest (Figure 2) at a gradient of less than 0.01 foot per foot. Ground water elevations increased an average of 2.07 feet compared to the last monitoring event.

## GROUND WATER SAMPLING AND ANALYSES

Ground water samples were collected from six monitoring wells (by agreement with Alameda County, ground water samples were not collected from monitoring wells MW-4 and MW-8). All samples were analyzed for concentrations of:

- TPH, as gasoline, by modified EPA Method 8015.
- BTEX by EPA Method 602.
- MTBE by EPA Method 602.

Analytical results collected since March 1992 are summarized in Table 2. Historical analytical data are contained in Attachment D. Figure 3 illustrates the inferred distribution of dissolved benzene in ground water based on the current data. The laboratory report and chain-of-custody form for the current sampling event are included in Attachment E. Benzene was not detected in ground water samples collected from monitoring wells MW-3, MW-5, MW-6, and MW-7. The concentration of benzene increased in ground water samples collected from monitoring wells MW-1 and MW-2 compared to the previous sampling event.

A copy of this quarterly monitoring report should be forwarded to:

Mr. Scott Seery  
Senior Hazardous Materials Specialist  
Alameda County Health Agency  
Division of Hazardous Materials  
Department of Environmental Health  
80 Swan Way, Room 350  
Oakland, California 94621

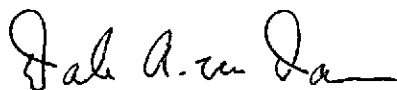
Mr. Rich Hiatt  
California Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, California 94612

The interpretations and/or conclusions that may be contained within this report represent our professional opinions. These opinions are based on currently available information. Other than this, no warranty is implied or intended. This report has been prepared solely for the use of Ultramar Inc. Any reliance on this report by third parties will be at such parties' sole risk.

If you have any questions or comments, please contact us at (530) 626-3898.

Regards,

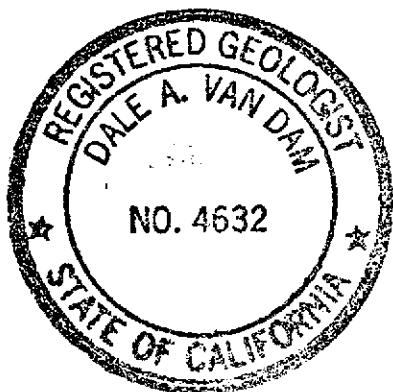
**EL DORADO ENVIRONMENTAL, INC.**



Dale A. van Dam, R.G.  
Hydrogeologist

DAvD/davd

Attachments



**FIGURES:**

FIGURE 1 ..... SITE LOCATION MAP

FIGURE 2 ..... GROUND WATER CONTOUR MAP  
MARCH 19, 1998

FIGURE 3 ..... DISSOLVED BENZENE DISTRIBUTION MAP  
MARCH 19, 1998

**TABLES:**

TABLE 1 ..... GROUND WATER ELEVATION DATA

TABLE 2 ..... GROUND WATER ANALYTICAL RESULTS

**ATTACHMENTS:**

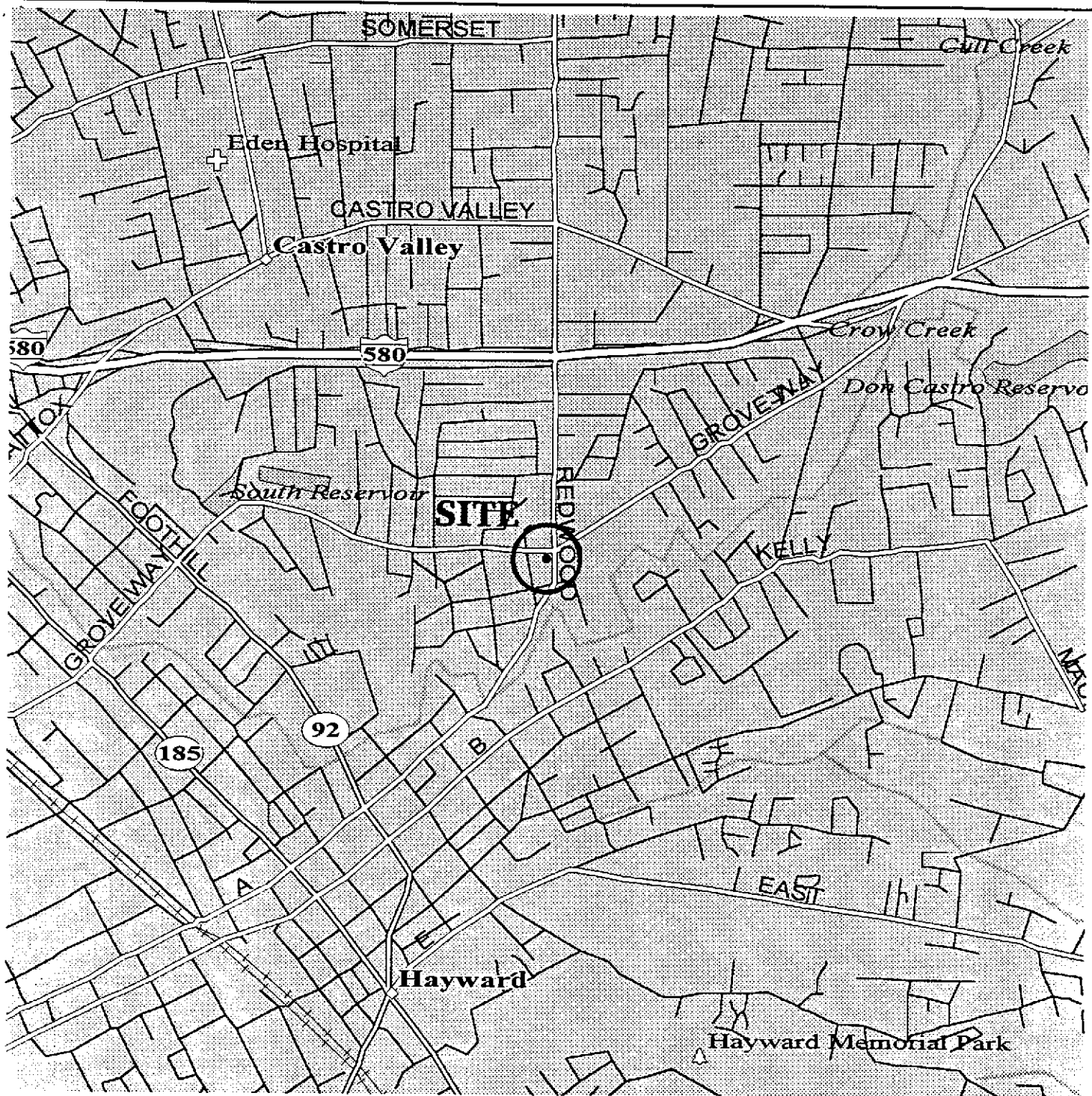
A ..... ULTRAMAR FIELD PROCEDURES

B ..... DOULOS ENVIRONMENTAL  
FIELD DATA SHEETS

C ..... HISTORICAL GROUND WATER ELEVATION DATA

D ..... HISTORICAL GROUND WATER ANALYTICAL DATA

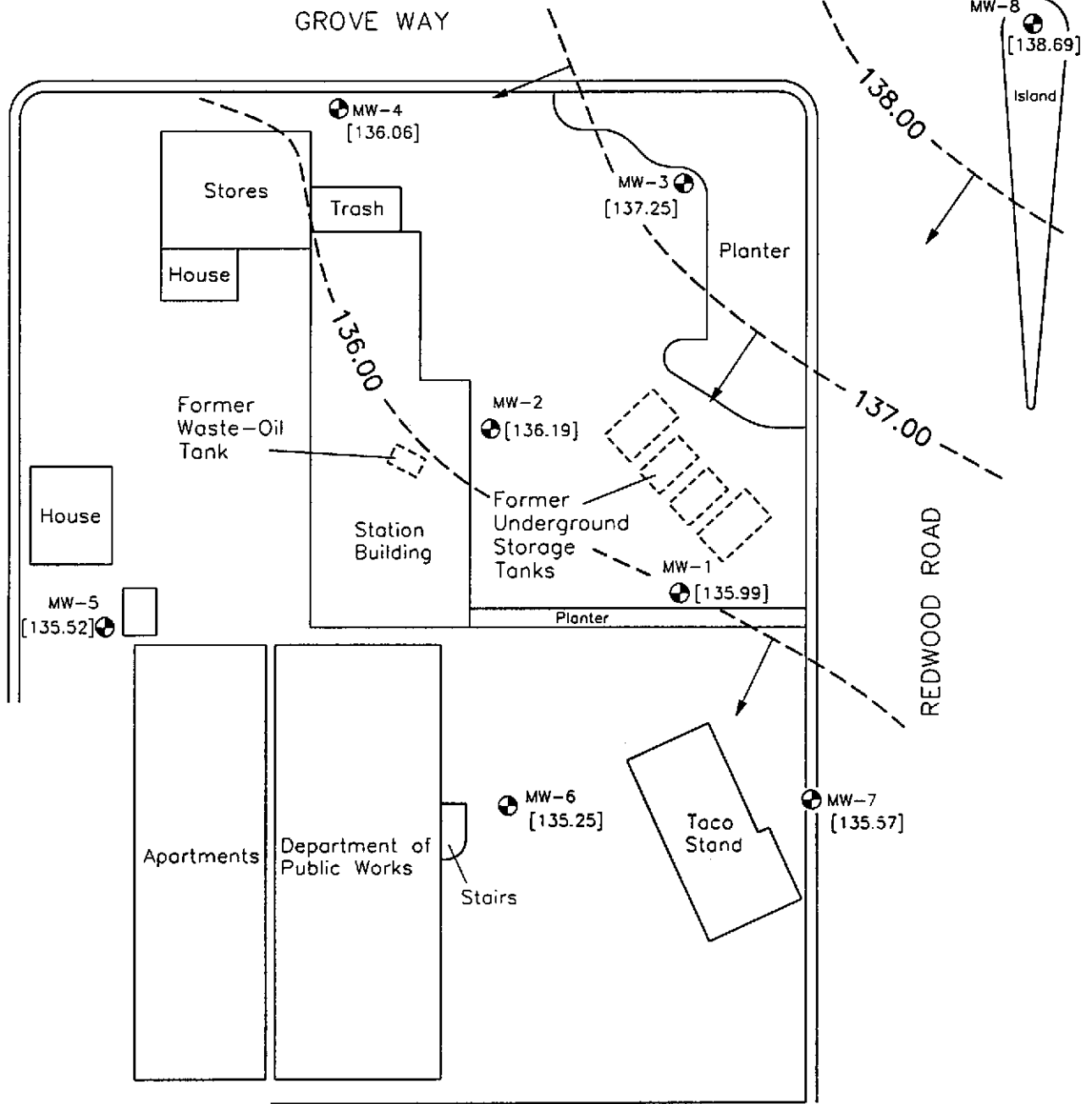
E ..... LABORATORY REPORT AND  
CHAIN-OF-CUSTODY FORM



<b>SITE LOCATION MAP</b>		<b>FIGURE 1</b>
BEACON STATION #574 22315 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA		PROJECT NUMBER: U065.01
EL DORADO ENVIRONMENTAL, INC.		DRAWN BY: D.A.V.D. CHECKED BY: D.V.D.

SOURCE: STREET ATLAS U.S.A., DELORME MAPPING, 1994





**EXPLANATION**

MW-1 Monitoring Well Location

[135.99] Elevation of Ground Water Measured in Feet; Datum is Mean Sea Level

Line of Equal Elevation of Ground Water Measured in Feet; Datum is Mean Sea Level

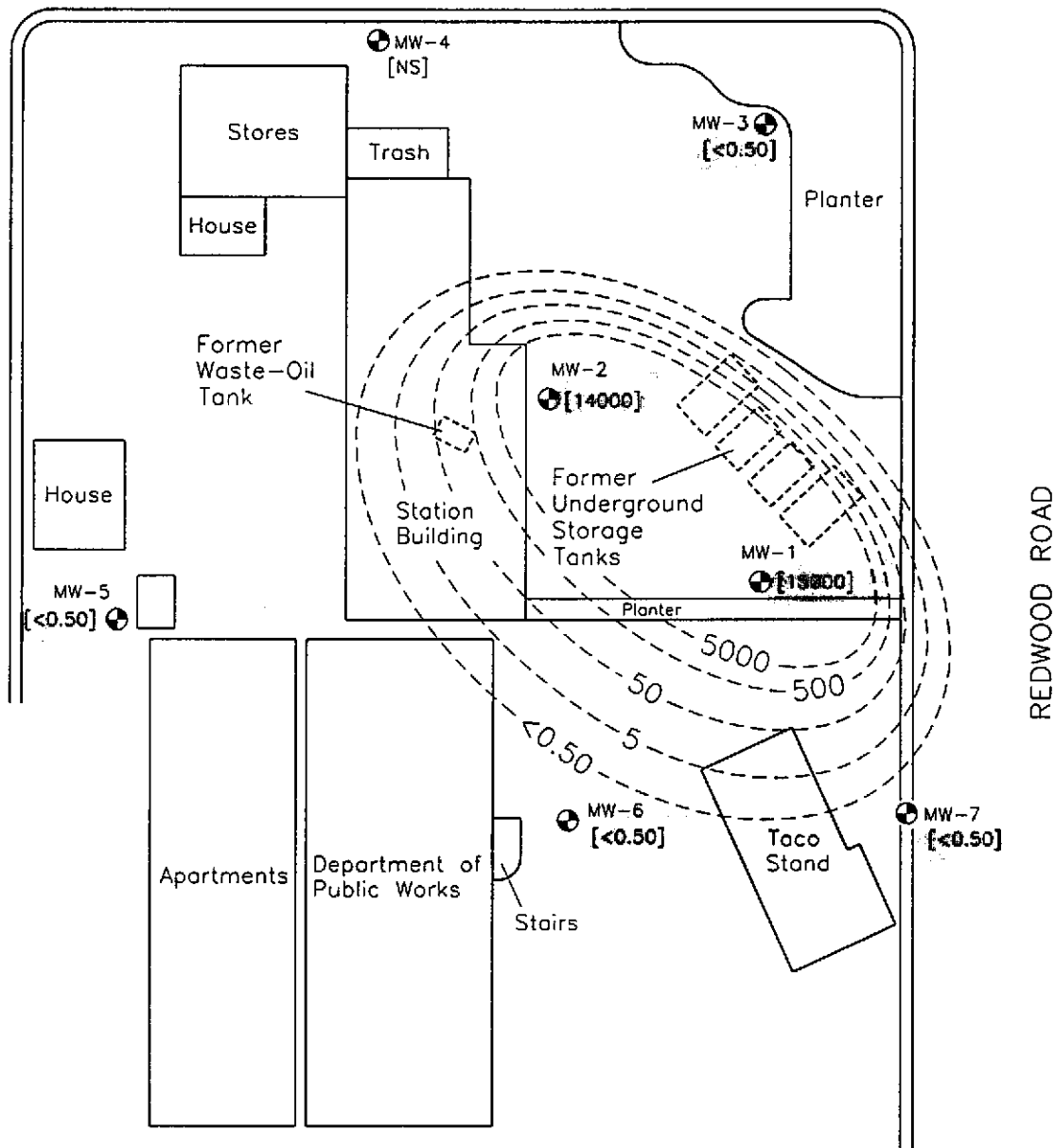
Inferred Direction of Ground Water Flow



SOURCE: FIGURE MODIFIED FROM DRAWING PROVIDED BY FUGRO WEST, INC.

GROUND WATER CONTOUR MAP, MARCH 19, 1998	FIGURE 2
BEACON STATION #574 22315 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	PROJECT NUMBER: U065.01
	DRAWN BY: D.A.
EL DORADO ENVIRONMENTAL, INC.	CHECKED BY: DvD

GROVE WAY



EXPLANATION

- MW-2 ● Monitoring Well Location
- [14000] Concentration of Benzene in Ground Water; Concentration in Micrograms per Liter
- [NS] Well Not Sampled
- - - 50 - - - Line of Equal Concentration of Benzene in Ground Water; Concentration in Micrograms per Liter



DISSOLVED BENZENE DISTRIBUTION MAP, MARCH 19, 1998	FIGURE 3
BEACON STATION #574 22315 REDWOOD ROAD CASTRO VALLEY, CALIFORNIA	PROJECT NUMBER: U065.01
EL DORADO ENVIRONMENTAL, INC.	DRAWN BY: D.A.
	CHECKED BY: D.V.D.

SOURCE: FIGURE MODIFIED FROM DRAWING PROVIDED BY FUGRO WEST, INC.

**TABLE 1**  
**GROUND WATER ELEVATION DATA**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(Measurements in feet)**

Monitoring Well	Date	Reference Elevation (top of casing) <sup>1</sup>	Depth to Ground Water <sup>1</sup>	Ground Water Elevation <sup>2</sup>	Well Depth	Comments
MW-1	03/27/92	156.55	22.43	134.12	—	
	06/04/92		23.40	133.15	—	
	09/23/92		24.07	132.48	—	
	11/12/92		24.16	132.39	29.33	
	02/02/93		21.87	134.68	29.80	
	05/07/93		22.58	133.97	29.84	
	05/18/93		22.66	133.89	—	
	08/11/93		23.41	133.14	29.81	
	11/05/93		24.09	132.46	29.81	
	03/01/94		22.76	133.79	29.85	
	06/02/94		23.24	133.31	29.85	
	09/09/94		23.93	132.62	29.86	
	12/20/94		22.94	133.61	29.85	
	03/08/95		22.20	134.35	29.71	
	06/14/95		22.65	133.90	29.70	
	09/26/95		23.44	133.11	29.71	
	12/27/95		23.04	133.51	29.72	
	03/26/96		21.39	135.16	29.71	
	06/05/96		22.43	134.12	29.73	
	09/16/96		24.42	132.13	29.74	
12/02/96	23.14	133.41	29.75			
03/10/97	22.30	134.25	29.76			
06/12/97	22.97	133.58	29.76			
09/29/97	23.35	133.20	29.78			
12/01/97	22.73	133.82	29.79			
03/19/98	20.56	135.99	29.78			
MW-2	03/27/92	155.17	20.82	134.35	—	
	06/04/92		21.81	133.36	—	
	09/23/92		22.45	132.72	—	
	11/12/92		22.60	132.57	29.71	
	02/02/93		20.28	134.89	29.73	
	05/07/93		20.97	134.20	29.73	
	05/18/93		21.06	134.11	—	
	08/11/93		21.85	133.32	29.70	
	11/05/93		22.32	132.85	29.70	
	03/01/94		21.19	133.98	29.68	
	06/02/94		21.59	133.58	29.69	
	09/09/94		22.33	132.84	29.66	
	12/20/94		21.37	133.80	29.65	
	03/08/95		20.60	134.57	29.52	
	06/14/95		21.04	134.13	29.54	
	09/26/95		21.84	133.33	29.53	
	12/27/95		21.44	133.73	29.56	
	03/26/96		19.81	135.36	29.56	
	06/05/96		20.83	134.34	29.59	
	09/16/96		21.93	133.24	29.58	
12/02/96	21.54	133.63	29.58			
03/10/97	20.71	134.46	29.58			
06/12/97	21.41	133.76	29.52			
09/29/97	21.26	133.91	29.51			
12/01/97	20.97	134.20	29.50			
03/19/98	18.98	136.19	29.51			

NOTES: 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.  
2 = Elevation referenced to mean sea level.  
Well Depth = Measurement from top of casing to bottom of well.  
--- = Not measured.

**TABLE 1**  
**GROUND WATER ELEVATION DATA**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(Measurements in feet)**

Monitoring Well	Date	Reference Elevation (top of casing) <sup>1</sup>	Depth to Ground Water <sup>1</sup>	Ground Water Elevation <sup>2</sup>	Well Depth	Comments
MW-3	03/27/92	157.13	21.46	135.67	---	
	06/04/92		22.34	134.79	---	
	09/23/92		22.84	134.29	---	
	11/12/92		23.04	134.09	29.55	
	02/02/93		21.03	136.10	29.45	
	05/07/93		21.59	135.54	29.53	
	05/18/93		21.73	135.40	---	
	08/11/93		22.31	134.82	29.41	
	11/05/93		22.85	134.28	29.41	
	03/01/94		21.97	135.16	29.55	
	06/02/94		22.29	134.84	29.56	
	09/09/94		22.91	134.22	29.56	
	12/20/94		22.11	135.02	29.54	
	03/08/95		21.40	135.73	29.38	
	06/14/95		21.80	135.33	29.36	
	09/26/95		22.38	134.75	29.37	
	12/27/95		22.07	135.06	29.37	
	03/26/96		20.73	136.40	29.38	
	06/05/96		21.54	135.59	29.40	
	09/16/96		22.37	134.76	29.43	
12/02/96	22.35	134.78	29.45			
03/10/97	21.44	135.69	29.47			
06/12/97	21.97	135.16	29.45			
09/29/97	22.30	134.83	29.45			
12/01/97	21.78	135.35	29.46			
03/19/98	19.88	137.25	29.46			
MW-4	05/18/93	151.96	17.55	134.41	---	
	08/11/93		17.50	134.46	28.43	
	11/05/93		15.84	136.12	28.43	
	03/01/94		17.35	134.61	28.11	
	06/02/94		17.68	134.28	28.12	
	09/09/94		18.19	133.77	28.13	
	12/20/94		17.52	134.44	28.10	
	03/08/95		16.82	135.14	27.97	
	06/14/95		17.22	134.74	27.97	
	09/26/95		17.79	134.17	27.91	
	12/27/95		17.47	134.49	27.89	
	03/26/96		16.32	135.64	27.89	
	06/05/96		17.10	134.86	27.88	
	09/16/96		17.85	134.11	27.89	
	12/02/96		17.59	134.37	27.88	
	03/10/97		16.79	135.17	27.89	
	06/12/97		17.49	134.47	27.90	
09/29/97	18.33	133.63	27.91			
12/01/97	17.36	134.60	27.90			
03/19/98	15.90	136.06	27.91			

NOTES: 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.  
2 = Elevation referenced to mean sea level.  
Well Depth = Measurement from top of casing to bottom of well.  
--- = Not measured.

**TABLE 1**  
**GROUND WATER ELEVATION DATA**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(Measurements in feet)**

Monitoring Well	Date	Reference Elevation (top of casing) <sup>1</sup>	Depth to Ground Water <sup>1</sup>	Ground Water Elevation <sup>2</sup>	Well Depth	Comments
MW-5	05/18/93	148.68	15.72	132.96	—	
	08/11/93		16.42	132.26	25.43	
	11/05/93		16.92	131.76	25.43	
	03/01/94		15.54	133.14	25.00	
	06/02/94		16.19	132.49	25.00	
	09/09/94		16.87	131.81	25.00	
	12/20/94		15.84	132.84	25.01	
	03/08/95		15.11	133.57	24.85	
	06/14/95		15.69	132.99	24.86	
	09/26/95		16.46	132.22	24.81	
	12/27/95		15.91	132.77	24.80	
	03/26/96		14.31	134.37	24.81	
	06/05/96		15.43	133.25	24.75	
	09/16/96		16.52	132.16	24.74	
	12/02/96		16.05	132.63	24.76	
	03/10/97		14.80	133.88	24.74	
	06/12/97		15.95	132.78	24.75	
	09/29/97		16.33	132.35	24.76	
	12/01/97		15.48	133.20	24.78	
03/19/98	13.16	135.52	24.77			
MW-6	05/18/93	153.96	20.80	133.16	—	
	08/11/93		21.64	132.32	31.15	
	11/05/93		22.11	131.85	31.15	
	03/01/94		20.80	133.16	29.96	
	06/02/94		21.37	132.59	29.98	
	09/09/94		22.05	131.91	29.96	
	12/20/94		21.06	132.90	29.89	
	03/08/95		20.29	133.67	29.67	
	06/14/95		20.81	133.15	29.65	
	09/26/95		21.62	132.34	29.66	
	12/27/95		21.12	132.84	29.63	
	03/26/96		19.50	134.46	29.60	
	06/05/96		20.56	133.40	29.63	
	09/16/96		21.70	132.26	29.65	
	12/02/96		21.25	132.71	29.66	
	03/10/97		20.16	133.80	29.64	
	06/12/97		21.16	132.80	29.62	
	09/29/97		21.51	132.45	29.62	
	12/01/97		20.89	133.07	29.61	
03/19/98	18.71	135.25	29.60			

NOTES: 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.  
2 = Elevation referenced to mean sea level.  
Well Depth = Measurement from top of casing to bottom of well.  
— = Not measured.

**TABLE 1**  
**GROUND WATER ELEVATION DATA**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(Measurements in feet)**

Monitoring Well	Date	Reference Elevation (top of casing) <sup>1</sup>	Depth to Ground Water <sup>1</sup>	Ground Water Elevation <sup>2</sup>	Well Depth	Comments
MW-7	05/18/93	156.09	22.64	133.45	---	
	08/11/93		23.25	132.84	30.75	
	11/05/93		23.93	132.16	30.75	
	03/01/94		22.72	133.37	30.11	
	06/02/94		23.22	132.87	30.12	
	09/09/94		23.90	132.19	30.12	
	12/20/94		22.98	133.11	30.10	
	03/08/95		22.14	133.95	29.91	
	06/14/95		22.61	133.48	29.91	
	09/26/95		23.43	132.66	29.90	
	12/27/95		23.01	133.08	29.90	
	03/26/96		21.32	134.77	29.87	
	06/05/96		22.37	133.72	29.91	
	09/16/96		23.51	132.58	29.90	
	12/02/96		23.08	133.01	29.91	
	03/10/97		21.94	134.15	29.90	
	06/12/97		22.96	133.13	29.88	
09/29/97	23.35	132.74	29.87			
12/01/97	22.68	133.41	29.88			
03/19/98	20.52	135.57	29.88			
MW-8	05/18/93	158.04	21.55	136.49	---	
	08/11/93		22.43	135.61	34.82	
	11/05/93		23.00	135.04	34.82	
	03/01/94		22.05	135.99	34.04	
	06/02/94		22.29	135.75	34.04	
	09/09/94		22.99	135.05	34.04	
	12/20/94		22.14	135.90	33.98	
	03/08/95		21.25	136.79	34.48	
	06/14/95		21.70	136.34	34.49	
	09/26/95		22.29	135.75	34.40	
	12/27/95		21.96	136.08	34.43	
	03/26/96		20.48	137.56	34.42	
	06/05/96		21.50	136.54	34.41	
	09/16/96		22.38	135.66	34.43	
	12/02/96		22.39	135.65	34.42	
	03/10/97		20.89	137.16	34.43	
	06/12/97		21.80	136.24	34.42	
09/29/97	22.81	135.23	34.40			
12/01/97	21.70	136.34	34.41			
03/19/98	19.35	138.69	34.42			

NOTES: 1 = Measurement and reference elevation taken from notch/mark on top north side of well casing.  
2 = Elevation referenced to mean sea level.  
Well Depth = Measurement from top of casing to bottom of well  
-- = Not measured.

**TABLE 2**  
**GROUND WATER ANALYTICAL RESULTS**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(All results in micrograms per Liter)**

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons			Aromatic Volatile Organics				
		Gasoline	Diesel	Motor Oil	MTBE <sup>1</sup>	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-1	03/27/92	5,600	<50	<50		760	900	230	1,100
	06/04/92	2,600	<800	NA		270	57	230	440
	09/23/92	3,400	NA	NA		480	430	110	550
	11/12/92	2,700	NA	NA		5.8	<5.0	140	340
	02/02/93	8,500	NA	NA		760	770	250	1,200
	05/07/93	7,700	NA	NA		970	630	280	1,500
	08/11/93	11,000	NA	NA		1,400	1,000	260	1,600
	11/05/93	36,000	NA	NA		6,200	4,700	1,400	7,100
	03/01/94	3,800	NA	NA		580	490	110	620
	06/02/94	8,900	NA	NA		1,900	1,200	420	2,100
	09/09/94	4,300	NA	NA		740	290	200	630
	12/20/94	3,900	NA	NA		550	260	150	510
	03/08/95	8,100	NA	NA		1,100	540	250	1,100
	06/14/95	NS	NS	NS		NS	NS	NS	NS
	09/26/95	8,600	NA	NA		2,100	550	420	1,300
	12/27/95	NS	NS	NS		NS	NS	NS	NS
	03/26/96	21,000	NA	NA		7,000	2,700	590	7,000
	06/05/96	NS	NS	NS		NS	NS	NS	NS
	09/16/96	13,000	NA	NA	1,400	3,200	770	470	2,900
	12/02/96	NS	NS	NS	NS	NS	NS	NS	NS
03/10/97	30,000	NA	NA	1,100	7,300	1,900	850	7,100	
06/12/97	NS	NS	NS	NS	NS	NS	NS	NS	
09/29/97	25,000	NA	NA	840	5,500	920	920	4,000	
12/01/97	NS	NS	NS	NS	NS	NS	NS	NS	
03/19/98	90,000	NA	NA	<1,500					
MW-2	03/27/92	18,000	<50	<50		2,400	2,300	870	3,300
	06/04/92	14,000	<5,000	NA		1,900	1,700	580	2,300
	09/23/92	22,000	NA	NA		2,100	1,500	760	2,900
	11/12/92	29,000	NA	NA		2,400	860	540	3,500
	02/02/93	24,000	NA	NA		2,700	1,900	590	2,600
	05/07/93	19,000	NA	NA		1,800	1,300	460	2,600
	08/11/93	23,000	NA	NA		2,300	1,500	550	2,300
	11/05/93	30,000	NA	NA		3,100	2,900	860	3,700
	03/01/94	13,000	NA	NA		1,500	490	350	1,000
	06/02/94	12,000	NA	NA		2,000	790	460	1,300
	09/09/94	13,000	NA	NA		1,800	660	440	1,000
	12/20/94	16,000	NA	NA		2,300	1,000	650	1,900
	03/08/95	16,000	NA	NA		2,200	1,000	550	2,100
	06/14/95	NS	NS	NS		NS	NS	NS	NS
	09/26/95	18,000	NA	NA		2,500	1,000	770	2,700
	12/27/95	NS	NS	NS		NS	NS	NS	NS
	03/26/96	33,000	NA	NA		4,200	2,600	1,000	5,000
	06/05/96	NS	NS	NS		NS	NS	NS	NS
	09/16/96	19,000	NA	NA	940	2,600	490	560	2,000
	12/02/96	NS	NS	NS	NS	NS	NS	NS	NS
03/10/97	23,000	NA	NA	1,400	3,700	870	650	3,000	
06/12/97	NS	NS	NS	NS	NS	NS	NS	NS	
09/29/97	30,000	NA	NA	1,400	4,900	880	990	3,800	
12/01/97	NS	NS	NS	NS	NS	NS	NS	NS	
03/19/98	72,000	NA	NA	<1,500	14,000	9,500	2,300	11,000	

*high conc. historically consistent w/ highest GW to date*

NOTES: < = Below indicated detection limit.  
 NS = Not sampled.  
 NA = Not analyzed.  
 \* = Product is not typical gasoline.

**TABLE 2**  
**GROUND WATER ANALYTICAL RESULTS**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(All results in micrograms per Liter)**

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons			Aromatic Volatile Organics				
		Gasoline	Diesel	Motor Oil	MTBE <sup>1</sup>	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-3	03/27/92	160	<50	<50		9.2	4.8	10	23
	06/04/92	120	<50	NA		7.5	2.7	0.5	15
	09/23/92	220	NA	NA		8.3	4.3	6.2	19
	11/12/92	230	NA	NA		12	5.5	7.7	19
	02/02/93	86	NA	NA		2.4	0.71	2.7	6.2
	05/07/93	140	NA	NA		2.6	1.2	3.9	8.4
	08/11/93	490	NA	NA		15	8.1	14	37
	11/05/93	820	NA	NA		45	24	34	93
	03/01/94	410	NA	NA		7.4	2.7	5.6	10
	06/02/94	440	NA	NA		13	4.9	14	31
	09/09/94	620	NA	NA		12	4.8	9.7	20
	12/20/94	770	NA	NA		24	11	16	36
	03/08/95	300	NA	NA		6.1	0.97	4.8	7.5
	06/14/95	NS	NS	NS		NS	NS	NS	NS
	09/26/95	130	NA	NA		4.8	1.6	4.8	9.4
	12/27/95	NS	NS	NS		NS	NS	NS	NS
	03/26/96	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	06/05/96	NS	NS	NS		NS	NS	NS	NS
	09/16/96	170	NA	NA	<5.0	10	2.9	4.4	15
	12/02/96	NS	NS	NS	NS	NS	NS	NS	NS
03/10/97	84	NA	NA	<5.0	2.3	<0.50	1.4	2.6	
06/12/97	NS	NS	NS	NS	NS	NS	NS	NS	
09/29/97	740	NA	NA	<5.0	61	9.8	42	61	
12/01/97	NS	NS	NS	NS	NS	NS	NS	NS	
03/19/98	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50	
MW-4	05/18/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	08/11/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	11/05/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/01/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/02/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/09/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	12/20/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/08/95	NS	NS	NS		NS	NS	NS	NS
	06/14/95	NS	NS	NS		NS	NS	NS	NS
	09/26/95	NS	NS	NS		NS	NS	NS	NS
	12/27/95	NS	NS	NS		NS	NS	NS	NS
	03/26/96	NS	NS	NS		NS	NS	NS	NS
	06/05/96	NS	NS	NS		NS	NS	NS	NS
	09/16/96	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50
	12/02/96	NS	NS	NS	NS	NS	NS	NS	NS
	03/10/97	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/97	NS	NS	NS	NS	NS	NS	NS	NS
	09/29/97	NS	NS	NS	NS	NS	NS	NS	NS
12/01/97	NS	NS	NS	NS	NS	NS	NS	NS	
03/19/98	NS	NS	NS	NS	NS	NS	NS	NS	

NOTES: < = Below indicated detection limit.  
NS = Not sampled.  
NA = Not analyzed.  
\* = Product is not typical gasoline.



**TABLE 2**  
**GROUND WATER ANALYTICAL RESULTS**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(All results in micrograms per Liter)**

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons			Aromatic Volatile Organics				
		Gasoline	Diesel	Motor Oil	MTBE <sup>1</sup>	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-5	05/18/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	08/11/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	11/05/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/01/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/02/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/09/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	12/20/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/08/95	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/14/95	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/26/95	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	12/27/95	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	03/26/96	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	06/05/96	<50	NA	NA	15	<0.50	<0.50	<0.50	<0.50
	09/16/96	<50	NA	NA	20	<0.50	<0.50	<0.50	<0.50
	12/02/96	<50	NA	NA	12	<0.50	<0.50	<0.50	<0.50
	03/10/97	<50	NA	NA	7.0	<0.50	<0.50	<0.50	<0.50
	06/12/97	<50	NA	NA	7.2	<0.50	<0.50	<0.50	<0.50
	09/29/97	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50
	12/01/97	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50
03/19/98	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50	
MW-6	05/18/93	170	NA	NA		<0.5	<0.5	<0.5	<0.5
	08/11/93	78	NA	NA		<0.5	<0.5	<0.5	<0.5
	11/05/93	170	NA	NA		<0.5	<0.5	<0.5	0.65
	03/01/94	210	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/02/94	190	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/09/94	140	NA	NA		<0.5	<0.5	<0.5	<0.5
	12/20/94	210	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/08/95	180*	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/14/95	220*	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/26/95	110*	NA	NA		<0.50	<0.50	<0.50	<0.50
	12/27/95	130*	NA	NA		<0.50	<0.50	<0.50	<0.50
	03/26/96	100*	NA	NA		<0.50	<0.50	<0.50	<0.50
	06/05/96	100*	NA	NA	430	<0.50	<0.50	<0.50	<0.50
	09/16/96	170	NA	NA	430	<0.50	<0.50	<0.50	<0.50
	12/02/96	160	NA	NA	160	<0.50	<0.50	<0.50	<0.50
	03/10/97	140	NA	NA	390	<0.50	<0.50	<0.50	<0.50
	06/12/97	<50	NA	NA	330	<0.50	<0.50	<0.50	<0.50
09/29/97	<50	NA	NA	130	<0.50	<0.50	<0.50	<0.50	
12/01/97	<50	NA	NA	200	<0.50	<0.50	<0.50	<0.50	
03/19/98	<50	NA	NA	240	<0.50	<0.50	<0.50	<0.50	

NOTES: < = Below indicated detection limit.  
NS = Not sampled.  
NA = Not analyzed.  
\* = Product is not typical gasoline.

**TABLE 2**  
**GROUND WATER ANALYTICAL RESULTS**  
**BEACON STATION #574**  
**22315 REDWOOD ROAD, CASTRO VALLEY, CALIFORNIA**  
**(All results in micrograms per Liter)**

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons			Aromatic Volatile Organics				
		Gasoline	Diesel	Motor Oil	MTBE <sup>1</sup>	Benzene	Toluene	Ethylbenzene	Total Xylenes
MW-7	05/18/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	08/11/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	11/05/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/01/94	60	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/02/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/09/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	12/20/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/08/95	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/14/95	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/26/95	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	12/27/95	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	03/26/96	<50	NA	NA		<0.50	<0.50	<0.50	<0.50
	06/05/96	<50	NA	NA	20	<0.50	<0.50	<0.50	<0.50
	09/16/96	<50	NA	NA	26	<0.50	<0.50	<0.50	<0.50
	12/02/96	140	NA	NA	140	<0.50	<0.50	<0.50	<0.50
	03/10/97	<50	NA	NA	29	<0.50	<0.50	<0.50	<0.50
	06/12/97	<50	NA	NA	28	<0.50	<0.50	<0.50	<0.50
	09/29/97	<50	NA	NA	27	<0.50	<0.50	<0.50	<0.50
12/01/97	<50	NA	NA	29	<0.50	<0.50	<0.50	<0.50	
03/19/98	<50	NA	NA	6.0	<0.50	<0.50	<0.50	<0.50	
MW-8	05/18/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	08/11/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	11/05/93	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/01/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	06/02/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	09/09/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	12/20/94	<50	NA	NA		<0.5	<0.5	<0.5	<0.5
	03/08/95	NS	NS	NS		NS	NS	NS	NS
	06/14/95	NS	NS	NS		NS	NS	NS	NS
	09/26/95	NS	NS	NS		NS	NS	NS	NS
	12/27/95	NS	NS	NS		NS	NS	NS	NS
	03/26/96	NS	NS	NS		NS	NS	NS	NS
	06/05/96	NS	NS	NS		NS	NS	NS	NS
	09/16/96	<50	NA	NA	<5.0	<0.50	<0.50	<0.50	<0.50
	12/02/96	NS	NS	NS	NS	NS	NS	NS	NS
	03/10/97	NS	NS	NS	NS	NS	NS	NS	NS
	06/12/97	NS	NS	NS	NS	NS	NS	NS	NS
	09/29/97	NS	NS	NS	NS	NS	NS	NS	NS
12/01/97	NS	NS	NS	NS	NS	NS	NS	NS	
03/19/98	NS	NS	NS	NS	NS	NS	NS	NS	

NOTES: < = Below indicated detection limit.  
NS = Not sampled.  
NA = Not analyzed.  
<sup>1</sup> = Product is not typical gasoline.

**ATTACHMENT A**

**ULTRAMAR FIELD PROCEDURES**

## ATTACHMENT A - ULTRAMAR FIELD PROCEDURES

The following section describes procedures used by field personnel in the performance of ground water sampling at Ultramar Inc. sites.

### Ground Water Level and Total Depth Determination

A water level indicator is lowered down the well and a measurement of the depth to water from an established reference point on the casing is taken. The indicator probe is used to sound the bottom of the well and a measurement of the total depth of the well is taken. Both the water level and total depth measurements are taken to the nearest 0.01-foot.

### Visual Analysis of Ground Water

Prior to purging and sampling ground water monitoring wells, a water sample is collected from each well for subjective analysis. The visual analysis involves gently lowering a clean, disposable, polyethylene bailer to approximately one-half the bailer length past the water table interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating product or the appearance of a petroleum product sheen. If measurable free product is noted in the bailer, a water/product interface probe is used to determine the thickness of the free product to the nearest 0.01-foot. The thickness of free product is determined by subtracting the depth to product from the depth to water.

### Monitoring Well Purging and Sampling

Monitoring wells are purged by removing approximately four casing volumes of water from the well using a clean disposable bailer or electrical submersible purge pump. Purge volumes are calculated prior to purging. During purging, the temperature, pH, and electric conductivity of the purge water are monitored. The well is considered to be sufficiently purged when: The four casing volumes have been removed; the temperature, pH, and conductivity values have stabilized to within 10% of the initial readings; and the ground water being removed is relatively free of suspended solids. After purging, ground water levels are allowed to stabilize to within 80% of the initial water level reading. A water sample is then collected from each well with a clean, disposable polyethylene bailer. If the well is bailed or pumped dry prior to removing the minimum volume of water, the ground water is allowed to recharge. If the well has recharged to within 80% of the initial depth to water reading within two hours, the well will continue to be purged until the minimum volume of water has been removed. If the well has not recharged to at least 80% of the initial depth to water reading within two hours, the well is considered to contain formation water and a ground water sample is collected. Ground water removed from the well is stored in 55-gallon drums at the site and labeled pending disposal.

In wells where free product is detected, the wells will be bailed to remove the free product. An estimate of the volume of product and water well be recorded. If the free product thickness is reduced to the point where a measurable thickness is no longer present in the well, a ground water sample will be collected. If free product persists throughout the purging process, a final free product thickness measurement will be taken and a ground water sample will not be collected.

Ground water samples are stored in 40-milliliter vials so that air passage through the sample is minimized (to prevent volatilization of the sample). The vial is tilted and filled slowly until an upward convex meniscus forms over the mouth of the vial. The Teflon™ side of the septum (in cap) is then placed against the meniscus, and the cap is screwed on tightly. The sample is then inverted and the bottle is tapped lightly to check for air bubbles. If an air bubble is present in the vial, the cap is removed and more sample is transferred from the bailer. The vial is then resealed and rechecked for air bubbles. The sample is then appropriately labeled and stored on ice from the time of collection through the time of delivery to the laboratory. The Chain-of-Custody form is completed to ensure sample integrity. Ground water samples are transported to a state-certified laboratory and analyzed within the U.S. Environmental Protection Agency-specified hold times for the specified analytes.

**ATTACHMENT B**

**DOULOS ENVIRONMENTAL FIELD DATA SHEETS**

DOULOS ENVIRONMENTAL COMPANY  
GROUNDWATER/LIQUID LEVEL DATA  
(measurements in feet)

Project Address: Beacon #574, 22315 Redwood Rd.

Date: 3-19-98

Castro Valley, CA

Project No.: 94-574-01

Recorded by: Hal Hansen

Well No	Time	Well Elev. TOC	Depth to Gr. Water	Measured Total Depth	Gr. Water Elevation	Depth to Product	Product Thickness	Comments
MW-1	10:13		20.56	29.78				Petroleum odor no sheen
MW-2	10:07		18.98	29.51				Petroleum odor no sheen
MW-3	10:07		19.88	29.46				Slight odor no sheen
MW-4	9:53		15.90	27.91				_____
MW-5	9:50		13.16	24.77				no odor no sheen
MW-6	10:05		18.71	29.60				no odor no sheen
MW-7	9:59		20.52	29.88				no odor no sheen
MW-8	9:57		19.35	34.42				_____

Notes:

Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574  
22315 Redwood Road  
Castro Valley, CA

Project No.: 94-574-01  
 Well Designation: MW-1

Is setup of traffic control devices required?  NO YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): \_\_\_\_\_  
 Well cover type: 8" UV \_\_\_\_\_ 12" UV  12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good Fair Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2" \_\_\_\_\_ 4"  6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.  
Initial Measurement Time: 10:13 Recharge Measurement Time: 1:40  
 Depth of well: 29.78 Depth to water: 20.91 Calculated purge: 23.9 gal  
 Depth to water: 20.56 Actual purge: 23.9 gal

Start purge: 11:44 Sampling time: 1:41

Time	Temp.	E.C.	pH	Turbidity	Volume
11:56	66.1	1870	5.61	—	1
12:02	67.0	1810	5.10	—	2
12:04	67.4	1781	4.99	—	3
12:10	67.6	1780	4.96	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: [Signature]

Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574

Project No.: 94-574-01

22315 Redwood Road

Well Designation: MW- 2

Castro Valley, CA

Is setup of traffic control devices required?  NO YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): \_\_\_\_\_  
 Well cover type: 8" UV \_\_\_\_\_ 12" UV  12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good Fair Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2" \_\_\_\_\_ 4"  6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement Recharge Measurement  
 Time: 10:09 Time: 1:20 Calculated purge: 27.3 gal  
 Depth of well: 29.51 Depth to water: 19.10 Actual purge: 27.3 gal  
 Depth to water: 18.98

Start purge: 11:23 Sampling time: 1:23

Time	Temp.	E.C.	pH	Turbidity	Volume
11:25	67.8	2217	5.10	—	1
11:29	67.4	2110	4.98	—	2
11:36	67.1	2046	4.91	—	3
11:41	66.1	2040	4.80	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: [Signature]



Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574

Project No.: 94-574-01

22315 Redwood Road

Well Designation: MW-3

Castro Valley, CA

Is setup of traffic control devices required?  NO YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): 4  
 Well cover type: 8" UV \_\_\_\_\_ 12" UV  12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good Fair Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2" \_\_\_\_\_ 4"  6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement

Recharge Measurement

Time: 10:07  
 Depth of well: 29.46  
 Depth to water: 19.98

Time: 1:06  
 Depth to water: 20.19

Calculated purge: 24.5 gal  
 Actual purge: 24.5 gal

Start purge: 11:06 Sampling time: 1:08

Time	Temp.	E.C.	pH	Turbidity	Volume
11:07	66.4	1840	5.10	—	1
11:10	67.1	1790	4.96	—	2
11:16	67.4	1730	4.90	—	3
11:20	68.7	1724	4.80	—	4

Sample appearance: clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: Neil J. Haran

Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574

Project No.: 94-574-01

22315 Redwood Road

Well Designation: MW- 5

Castro Valley, CA

Is setup of traffic control devices required?  NO YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): 3  
 Well cover type: 8" UV  12" UV \_\_\_\_\_ 12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good Fair Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2"  4" \_\_\_\_\_ 6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement Time: 9:50 Recharge Measurement Time: 10:30  
 Depth of well: 24.77 Depth to water: 13.91 Calculated purge: 7.4 gal  
 Depth to water: 13.16 Actual purge: 7.4 gal

Start purge: 10:20 Sampling time: 10:31

Time	Temp.	E.C.	pH	Turbidity	Volume
10:21	67.1	1450	7.23	—	1
10:22	67.4	1410	7.16	—	2
10:23	67.9	1360	7.14	—	3
10:24	66.8	1340	7.11	—	4

Sample appearance: Clear Lock: Detention

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: Ned [Signature]

Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574

Project No.: 94-574-01

22315 Redwood Road

Well Designation: MW- 6

Castro Valley, CA

Is setup of traffic control devices required?  NO  YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO  YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): 10  
 Well cover type: 8" UV  12" UV \_\_\_\_\_ 12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good  Fair  Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2"  4" \_\_\_\_\_ 6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement Recharge Measurement

Time: 10:05 Time: 11:04 Calculated purge: 6.9 gal  
 Depth of well: 29.60 Depth to water: 19.10 Actual purge: 6.9 gal  
 Depth to water: 18.71

Start purge: 10:54 Sampling time: 11:05

Time	Temp.	E.C.	pH	Turbidity	Volume
10:55	67.4	1517	7.56	—	1
10:56	67.6	1410	7.50	—	2
10:57	67.9	1409	7.41	—	3
10:58	66.9	1339	7.39	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: [Handwritten Signature]

Client: Ultramar

Sampling Date: 3-19-98

Site: Beacon #574

Project No.: 94-574-01

22315 Redwood Road

Well Designation: MW-7

Castro Valley, CA

Is setup of traffic control devices required?  NO YES time: \_\_\_\_\_ hours  
 Is there standing water in well box?  NO YES Above TOC Below TOC  
 Is top of casing cut level? NO  YES If no, see remarks  
 Is well cap sealed and locked? NO  YES If no, see remarks  
 Height of well casing riser (in inches): 6  
 Well cover type: 8" UV  12" UV \_\_\_\_\_ 12" EMCO \_\_\_\_\_ 8" BK \_\_\_\_\_  
 12" BK \_\_\_\_\_ 12" DWP \_\_\_\_\_ 12" CNI \_\_\_\_\_ 36" CNI \_\_\_\_\_ Other \_\_\_\_\_  
 General condition of wellhead assembly: Excellent  Good Fair Poor

Purging Equipment: \_\_\_\_\_ 2" disposable bailer \_\_\_\_\_ Submersible pump  
 \_\_\_\_\_ 2" PVC bailer \_\_\_\_\_ Dedicated bailer  
 \_\_\_\_\_ 4" PVC bailer  Centrifugal pump

Sampled with: Disposal bailer:  Teflon bailer: \_\_\_\_\_

Well Diameter: 2"  4" \_\_\_\_\_ 6" \_\_\_\_\_ 8" \_\_\_\_\_

Purge Vol. Multiplier: 0.16 0.65 1.47 2.61 gal/ft.

Initial Measurement Time: 9:59 Recharge Measurement Time: 10:50  
 Depth of well: 29.88 Depth to water: 20.91 Calculated purge: 5.9 gal  
 Depth to water: 20.52 Actual purge: 5.9 gal

Start purge: 10:36 Sampling time: 10:51

Time	Temp.	E.C.	pH	Turbidity	Volume
10:37	67.4	1241	7.31	—	1
10:38	68.1	1210	7.26	—	2
10:39	68.4	1159	7.20	—	3
10:40	68.5	1150	7.16	—	4

Sample appearance: Clear Lock: Dolphin

Equipment replaced: (Check all that apply) Note condition of replaced item  
 2" Locking Cap: \_\_\_\_\_ Lock #3753: \_\_\_\_\_ 7/32 Allenhead: \_\_\_\_\_  
 4" Locking Cap: \_\_\_\_\_ Lock-Dolphin: \_\_\_\_\_ 9/16 Bolt: \_\_\_\_\_  
 6" Locking Cap: \_\_\_\_\_ Pinned Allenhead (DWP): \_\_\_\_\_

Remarks: \_\_\_\_\_

Signature: [Handwritten Signature]

**ATTACHMENT C**

**HISTORICAL GROUND WATER ELEVATION DATA**

TABLE 2  
WATER LEVEL DATA  
(measurements in feet)

Monitoring Well	Date	Reference Elevation (top of casing)	Depth to Ground Water	Ground Water Elevation
MW-1	04-01-91	156.55	22.37	134.18
	03-27-92		22.43	134.12
	06-04-92		23.40	133.15
	09-23-92		24.07	132.48
	11-12-92		24.16	132.39
	02-02-93		21.87	134.68
	05-18-93		22.66	133.89
MW-2	04-01-91	155.17	20.82	134.25
	03-27-92		20.82	134.35
	06-04-92		21.81	133.36
	09-23-92		22.45	132.72
	11-12-92		22.60	132.57
	02-02-93		20.28	134.89
	05-18-93		21.06	134.11
MW-3	04-01-91	157.13	21.55	135.58
	03-27-92		21.46	135.67
	06-04-92		22.34	134.79
	09-23-92		22.84	134.29
	11-12-92		23.03	134.09
	02-02-93		21.03	136.10
	05-18-93		21.73	135.40
MW-4	05-18-93	151.96	17.55	134.41
MW-5	05-18-93	148.68	15.72	132.96
MW-6	05-18-93	153.96	20.80	133.16
MW-7	05-18-93	156.09	22.64	133.45
MW-8	05-18-93	158.04	21.55	136.49

**ATTACHMENT D**

**HISTORICAL GROUND WATER ANALYTICAL DATA**

**TABLE 3**  
**GROUND WATER ANALYTICAL RESULTS**  
 (concentrations in parts per billion)

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons			Aromatic Volatile Organics			Total Xylenes
		Gasoline	Diesel	Motor Oil	Benzene	Toluene	Ethylbenzene	
MW-1	04-01-91	4,100	<100	-	140	570	76	460
	03-27-92	5,600	<50	<50	760	900	230	1,100
	06-04-92	2,600	<100	-	270	57	230	440
	09-23-92	3,400	-	-	480	430	110	550
	11-12-92	2,700	-	-	5.8	<5.0	140	340
	02-02-93	8,500	-	-	760	770	250	1,200
	05-07-93	7,700	-	-	970	630	280	1,500
MW-2	04-01-91	10,000	<100	-	650	640	150	960
	03-27-92	18,000	<50	<50	2,400	2,300	870	3,300
	06-04-92	14,000	<5,000	-	1,900	1,700	580	2,300
	09-23-92	22,000	-	-	2,100	1,500	760	2,900
	11-12-92	29,000	-	-	2,400	860	540	3,500
	02-02-93	24,000	-	-	2,700	1,900	590	2,600
	05-07-93	19,000	-	-	1,800	1,300	460	2,600
MW-3	04-01-91	3,100	<100	-	41	91	37	420
	03-27-92	160	<50	<50	9.2	4.8	10	23
	06-04-92	120	<50	-	7.5	2.7	0.5	15
	09-23-92	220	-	-	8.3	4.3	6.2	19
	11-12-92	230	-	-	12	5.5	7.7	19
	02-02-93	86	-	-	2.4	0.71	2.7	6.2
	05-07-93	140	-	-	2.6	1.2	3.9	8.4
MW-4	05-18-93	<50	-	-	<0.50	<0.50	<0.50	<0.50
MW-5	05-18-93	<50	-	-	<0.50	<0.50	<0.50	<0.50
MW-6	05-18-93	170	-	-	<0.50	<0.50	<0.50	<0.50
MW-7	05-18-93	<50	-	-	<0.50	<0.50	<0.50	<0.50
MW-8	05-18-93	<50	-	-	<0.50	<0.50	<0.50	<0.50

Note: Dash (-) indicates that the sample was not analyzed for this constituent.



**ATTACHMENT E**

**LABORATORY REPORT AND  
CHAIN-OF-CUSTODY FORM**



Report Number : 11317

Date : 04/01/98

Dale van Dam  
El Dorado Environmental  
2221 Goldorado Trail  
El Dorado, CA 95623

Subject : 6 Water Samples  
Project Name : Beacon 574  
Project Number : 94-574-01

Dear Mr. van Dam,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 916-297-4800.

Sincerely,



Joel Kiff



Report Number : 11317

Date : 04/01/98

Subject : 6 Water Samples  
Project Name : Beacon 574  
Project Number : 94-574-01

## Case Narrative

The quantitation of TPH as Gasoline for sample MW-6 does not include the compound Methyl-t-butyl ether.

The reporting limit for Methyl-t-butyl ether for samples MW-1 and MW-2 is increased due to the presence of interfering compounds. GC/MS analysis is recommended if increased sensitivity is required.

Approved By:  \_\_\_\_\_  
Joel Kiff



Report Number : 11317

Date : 04/01/98

Project Name : **Beacon 574**

Project Number : **94-574-01**

Sample : **MW-1**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>15000</b>	25	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	<b>7000</b>	25	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	<b>3300</b>	25	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	<b>20000</b>	25	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	<b>&lt; 1500</b>	1500	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	<b>90000</b>	2500	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	108		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	87.7		% Recovery	M EPA 8015	03/25/98

Sample : **MW-2**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>14000</b>	25	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	<b>9500</b>	25	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	<b>2300</b>	25	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	<b>11000</b>	25	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	<b>&lt; 1500</b>	1500	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	<b>72000</b>	2500	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	107		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	88.3		% Recovery	M EPA 8015	03/25/98

Approved By:  Joel Kiff



Report Number : 11317

Date : 04/01/98

Project Name : **Beacon 574**

Project Number : **94-574-01**

Sample : **MW-3**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	< 5.0	5.0	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	< 50	50	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	104		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	86.8		% Recovery	M EPA 8015	03/25/98

Sample : **MW-5**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	< 5.0	5.0	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	< 50	50	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	103		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	86.1		% Recovery	M EPA 8015	03/25/98

Approved By:  Joel Kiff



Report Number : 11317

Date : 04/01/98

Project Name : **Beacon 574**

Project Number : **94-574-01**

Sample : **MW-6**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	240	5.0	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	< 50	50	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	103		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	87.0		% Recovery	M EPA 8015	03/25/98

Sample : **MW-7**

Matrix : Water

Sample Date :03/19/98

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8020	03/25/98
<b>Methyl-t-butyl ether</b>	6.0	5.0	ug/L	EPA 8020	03/25/98
<b>TPH as Gasoline</b>	< 50	50	ug/L	M EPA 8015	03/25/98
aaa-Trifluorotoluene (8020 Surrogate)	105		% Recovery	EPA 8020	03/25/98
aaa-Trifluorotoluene (Gasoline Surrogate)	86.8		% Recovery	M EPA 8015	03/25/98

Approved By:  \_\_\_\_\_  
Joel Kiff



**Ultram Inc.**  
**CHAIN OF CUSTODY REPORT**

11317

**BEACON**

Beacon Station No. <b>574</b>		Sampler (Print Name) <b>Hal Hansen</b>			ANALYSES				Date <b>3-19-98</b>	Form No. <b>1 of 1</b>
Project No. <b>94-574-01</b>		Sampler (Signature) <i>Hal Hansen</i>			BTEX	TPH (gasoline)	TPH (diesel)	No. of Containers	<b>Standard TAT</b>	
Project Location <b>Castro Valley</b>		Affiliation <b>Soulos Env.</b>								
Sample No./Identification	Date	Time	Lab No.							
<b>MW-1</b>	<b>3-19-98</b>	<b>141</b>	<b>-01</b>	<b>X</b>	<b>X</b>			<b>2</b>		
<b>MW-2</b>		<b>123</b>	<b>-02</b>							
<b>MW-3</b>		<b>108</b>	<b>-03</b>							
<b>MW-5</b>		<b>1031</b>	<b>-04</b>							
<b>MW-6</b>		<b>1105</b>	<b>-05</b>							
<b>MW-7</b>	<b>✓</b>	<b>1051</b>	<b>-06</b>	<b>✓</b>	<b>✓</b>			<b>✓</b>		
Relinquished by: (Signature/Affiliation) <i>Hal Hansen Soulos Env.</i>		Date <b>3-24</b>	Time <b>9:30</b>	Received by: (Signature/Affiliation)				Date	Time	
Relinquished by: (Signature/Affiliation)		Date	Time	Received by: (Signature/Affiliation)				Date	Time	
Relinquished by: (Signature/Affiliation)		Date <b>3-24</b>	Time <b>9:30</b>	Received by: (Signature/Affiliation) <i>[Signature]</i>				Date	Time	
Report To: <b>Dale van Dam</b>				Bill to: <b>ULTRAMAR INC.</b> 525 West Third Street Hanford, CA 93230 Attention: <b>Joe Aldridge</b>						

WHITE: Return to Client with Report

YELLOW: Laboratory Copy

PINK: Originator Copy