

ST101746

December 10, 1997

Ms. Amy Leech Alameda County Health Care Services 1131 Harbor Bay Parkway Alameda, CA 94501

RE: Unocal Service Station #5760 376 Lewelling Boulevard San Lorenzo, California

Dear Ms. Leech:

Per the request of the Tosco Marketing Company Project Manager, Ms. Tina R. Berry, enclosed please find our data report (MPDS-UN5760-13) dated October 31, 1997, for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2321.

Sincerely,

MPDS Services, Inc.

Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry

61 0EC 15 VII 3: 113

MONOPIONA TVINA DEL AND



ENVIOUS MEMTAL PROTECTION

97 OCT 24 PM 4: 07

October 20, 1997 Project 311-058.1A # 1746 pu

Mr. Richard Hiett
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street. Suite 500
Oakland. California 94612

Re: Unocal Station 5760

Quarterly Summary Report

Third Quarter 1997

Dear Mr. Hiett:

As directed by Ms. Tina Berry of Tosco Marketing Company. Pacific Environmental Group. Inc. is forwarding the quarterly summary report for the following location:

Se	rvice	Ct.	tion

Location

5760

376 Lewelling Boulevard, San Lorenzo

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio

Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company

Ms. Amy Leech, Alameda County Environmental Health Care Services

Quarterly Summary Report Third Quarter 1997

Unocal Service Station 5760 376 Lewelling Boulevard San Lorenzo, California

City/County ID #: None

County: Alameda

BACKGROUND

The underground storage tanks were removed and replaced in November 1987. Currently, there are nine monitoring wells on site. Groundwater monitoring and sampling of wells began in February 1988. A remedial action plan was submitted during the third quarter 1994. Groundwater extraction and soil vapor_extraction systems were installed in August and September 1995.

In February 1996, modifications to the present sampling and monitoring activities were presented in a letter to Unocal and Alameda County, recommending a reduction to semiannual groundwater sampling for some of the monitoring wells. Because the mass removal versus time trend for the remediation system indicated a diminishing incremental benefit from continued operation, the remediation system was shut down February 1997.

RECENT QUARTER ACTIVITIES

Semiannual groundwater monitoring and sampling were performed in September.

NEXT QUARTER ACTIVITIES

No activities were performed.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? Yes.

Dissolved groundwater delineated? Yes.

Free product delineated? Yes.

Amount of groundwater contaminant recovered to date? Approximately 115 pounds.

Soil remediation in progress? No.

Start? October 1995.

Completion date? February 1997.

Dissolved/free product remediation in progress? No.

Start? October 1995

Completion? February 1997.

CONSULTANT: Pacific Environmental Group. Inc.



#1746 Als

January 20, 1998 Project 311-058.1A

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

Re: Unocal Station 5760 Quarterly Summary Report Fourth Quarter 1997

Dear Mr. Hiett:

As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

Location

5760

376 Lewelling Boulevard, San Lorenzo 94580

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio Project Geologist

Enclosure -

Ms. Tina Berry, Tosco Marketing Company

Ms. Amy Leech, Alameda County Environmental Health Care Services

38 JAN 23 PM 3: 01

Quarterly Summary Report Fourth Quarter 1997

Unocal Service Station 5760 376 Lewelling Boulevard San Lorenzo, California

City/County ID #: None

County: Alameda

BACKGROUND

The underground storage tanks were removed and replaced in November 1987. Currently, there are nine monitoring wells on site. Groundwater monitoring and sampling of wells began in February 1988. A remedial action plan was submitted during the third quarter 1994. Groundwater extraction and soil vapor extraction systems were installed in August and September 1995.

In February 1996, modifications to the present sampling and monitoring activities were presented in a letter to Unocal and Alameda County, recommending a reduction to semiannual groundwater sampling for some of the monitoring wells. Because the mass removal versus time trend for the remediation system indicated a diminishing incremental benefit from continued operation, the remediation system was shut down February 1997.

RECENT QUARTER ACTIVITIES

No activities were performed.

NEXT QUARTER ACTIVITIES

Semiannual groundwater monioring will be performed in March.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? Yes.

Dissolved groundwater delineated? Yes:

Free product delineated? Yes.

Amount of groundwater contaminant recovered to date? Approximately 115 pounds.

Soil remediation in progress? No.

Start? October 1995.

Completion date? February 1997.

Dissolved/free product remediation in progress? No.

Start? October 1995.

Completion? February 1997.

CONSULTANT: Pacific Environmental Group, Inc.



MPDS-UN5760-13 October 31, 1997

Tosco Marketing Company Environmental Compliance Department 2000 Crow Canyon Place, Suite 400 San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Semi-Annual Data Report

Unocal Service Station #5760 376 Lewelling Boulevard San Lorenzo, California

Dear Ms. Berry:

This data report presents the results of the most recent monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled are indicated in Table 1. Oxygen Release Compound (ORC) filter socks were present in monitoring wells U-6 and U-9. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow direction during the most recent semi-annual period is shown on the attached Figure 1.

Ground water samples were collected on September 23, 1997. Prior to sampling, the wells were each purged of between 6.5 and 9 gallons of water. In addition, dissolved oxygen concentrations were measured and are presented in Table 3. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded on the purging/sampling data sheets which are attached to this report. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately three casing volumes had been removed from each well, samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. MPDS Services, Inc. transported the purged ground water to the Tosco Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water samples were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Table 2. The concentrations of Total Petroleum

MPDS-UN5760-13 October 31, 1997 Page 2

Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this semiannual period are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

DISTRIBUTION

A copy of this report should be sent to Ms. Amy Leech of the Alameda County Health Care Services Agency.

If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.

Haig (Gary) Tejirian

Senior Staff Geologist

Hagop Kevork, P.E. Senior Staff Engineer

License No. C55734

Exp. Date December 31, 2000

Attachments: Tables 1, 2 & 3

Location Map Figures 1 & 2

Laboratory Analyses

Chain of Custody documentation Purging /Sampling Data Sheets

cc: Mr. Joe Muzzio, Pacific Environmental Group, Inc.

Table 1
Summary of Monitoring Data

	Ground Water	Depth to	Total Well	Product		Water		
	Elevation	Water	Depth	Thickness		Purged		
Well#	(feet)	(feet)•	(feer)*	(fect)	Sheen	(gallons)		
	0	Monitored and	Sampled on Sen	tember 23, 1997)				
	(4-	- I VIII VII VII WIII	builpied on bep	20, 122.,				
U-1	23.00	17.20	23.17	0	No	6.5		
U-2*	22.86	18.40	29.90	0		0		
U-3	22.52	16.74	24.80	0	No	9		
U-4*	22.56	17.69	27.87	0		0		
U-5*	22.41	16.90	28.48	0		0		
U-6	22,32	15.36	28.27	0	No	6.5		
U-7*	22.21	14.90	34.90	0		0		
U-8*	22,52	16.05	29.83	0		0		
U-9	22.03	15.28	28.20	0	No	6.5		
	(Monitored and Sampled on March 27, 1997)							
U-1	24.91	15.29	23.18	0	No	9		
U-2	24.81	16.45	29.90	0	No	15		
U-3	24.49	14.77	24.82	0	No	12		
U-4	24.59	15.66	27.87	0	No	13.5		
U-5	24.46	14.85	28.50	0	No	7		
U-6	24.20	13.48	28.28	0	No	7.5		
U-7	24.03	13.08	34.88	0	No	11.5		
U-8	24.39	14.18	29.84	0	No	8		
U-9	23.95	13.36	28.20	0	No	7.5		
	(I	Monitored and	Sampled on Sep	otember 24, 1996)				
U-1	WELL WAS INACCES	SSIBLE FOR MON	ITTORING AND PU	RGING - CONNECTE	D TO REMEDIA	TION SYSTEM		
U-2*	23.36	17.90	29.91	0	<u></u>	0		
U-3	WELL WAS INACCES				D TO REMEDIAT			
U-4*	23.06	17.19	27.88	0		0		
U-5*	22.76	16.55	28.45	0		0		
U-6	22.62	15.06	28.28	0	No	9		
U- 7 *	22.52	14.59	34.93	ő		Ó		
U-8*	22.82	15.75	29.84	ő		o		
U-9	22.39	14,92	28.20	ő	No	ŷ		
				-	•	<u>*</u>		

Table 1
Summary of Monitoring Data

Ground Water Depth to Total Well Prod	
	vi) Nacen feathangi l

(Monitored and Sampled on March 20, 1996)

U-1★	WELL WAS INACCI	ESSIBLE FOR MON	ITORING AND PUR	GING - CONNECT	ED TO REMEDIAT	ON SYSTEM
U-2*	26.24	15.02	29.90	0		0
U-3★	WELL WAS INACCI	ESSIBLE FOR MON	ITORING AND PUR	GING- CONNECT	ED TO REMEDIATI	ON SYSTEM
U-4*	25.32	14.93	27.86	0		0
U-5*	25.24	14.07	28.40	0		0
U-6	25.27	12.41	28.27	0	No	11
U-7*	25.15	11.96	34.97	0		0
U-8*	25.32	13.25	29.82	0		0
U-9	25.04	12.27	28.20	0	No	11

	Well Casing
	Elevation
Well#	(feet)**
U-1	40.20
U-2	41.26
U-3	39.26
U-4	40.25
U-5	39.31
U-6	37.68
U-7	37.11
U-8	38.57
11-9	37 31

- ♦ The depth to water level and total depth measurements were taken from the top of the well casings.
- Monitored only.
- ** The elevation of the top of the well casing are relative to Mean Sea Level.
- ★ Well was sampled on March 22, 1996.
- Sheen determination was not performed.

Table 2
Summary of Laboratory Analyses
Water

Well#	ο.	TPH as			Ethyl-					
WCH #	Date	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE			
U-1	9/23/97	2.000	1.00				-			
O I	3/27/97	2,000	15	ND	ND	530	ND			
	9/24/96	1,300	8.0	ND	ND	400	ND			
	3/22/96	NOT SAMPLED	- WELL CONNE	CTED TO REMEI		MWHICH WAS NO	T RUNNING			
	12/14/95	13,000	200	590	640	4,000	790			
	9/12/95	NOT SAMPLED	- WELL CONNE	CTED TO REMED		I WHICH WAS NO	T RUNNING			
	6/13/95	43,000	910	2,700	1,700	9,600	1,400			
	3/9/95	53,000	1,400	5,000	2,500	14,000	2,800			
		49,000	860	3,200	1,900	10,000	1,500			
	12/5/94	1,300	55	20	16	330				
	9/7/94	41,000	1,600	6,200	3,100	16,000				
	6/9/94	59,000	5,200	1,300	5,200	15,000				
	3/9/94	45,000	930	4,100	2,000	11,000				
	12/2/93	NOT SAMPL	ED DUE TO T	HE PRESENC	E OF FREE PE	RODUCT				
	9/9/93	67,000	2,900	18,000	6,200	32,000				
	6/4/93	35,000	1,300	5,700	900	9,200				
	2/12/93	70,000	2,200	8,400	3,100	18,000				
	11/20/92	NOT SAMPL	ED DUE TO T	HE PRESENCE	E OF FREE PR	RODUCT				
	8/6/92	NOT SAMPL	ED DUE TO T	HE PRESENCI	E OF FREE PR	RODUCT				
	4/7/92	NOT SAMPL	ED - PRODUC	'T SKIMMER I	NSTALLED IN	N WELL				
	3/5/92	NOT SAMPL	ED DUE TO T	HE PRESENCI	E OF FREE PR	ODUCT				
	12/4/91	NOT SAMPL	ED DUE TO T	HE PRESENCI	E OF FREE PR	ODUCT				
	9/19/91	NOT SAMPLI	ED DUE TO T	HE PRESENCE	OF FREE PR	ODUCT				
	6/3/91	NOT SAMPLI	ED DUE TO T	HE PRESENCI	OF FREE PR	ODUCT				
	3/4/91	NOT SAMPLI	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT							
	12/5/90	NOT SAMPLI	ED DUE TO T	HE PRESENCE	OF FREE PR	ODUCT				
	8/24/90	27,000	1,200	1,800	1,400	5,500				
	6/5/90	46,000	2,300	5,500	2,500	11,000				
	3/20/90	36,000	2,100	5,500	1,900	9,300				
	2/9/88	93,000	3,600	11,000	†	20,000				
			·	,	r	20,000				
U-2	3/27/97	ND	ND	ND	ND	ND	ND			
	12/14/95	ND	ND	ND	ND	ND				
	9/12/95	ND	ND	ND	ND	ND	ND			
	6/13/95	ND	ND	ND	ND	ND ND	ND			
	3/9/95	ND	ND	ND	ND	ND ND	ND			
	12/5/94	ND	ND	ND	ND	ND	ND			
	9/7/94	ND	ND	0.63	ND					
	6/9/94	ND	ND	ND	ND	0.61	7-			
	4/13/94	ND	ND	ND	ND ND	ND ND				
	3/9/94	62	1.1	5.4		ND				
	12/2/93	ND	ND	ND	1.1	9.7				
		- 11-7	MD	מא	ND	ND				

Table 2Summary of Laboratory Analyses
Water

Well#	Date	TPH as	D	T-1	Ethyl-		
11.011.77	LZAIC	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
U-2	9/9/93	ND	ND	ND	ND	ND	
(Cont.)	6/4/93	ND	ND	ND	ND ND	ND ND	
. ,	2/12/93	ND	ND	ND	ND	ND	
	11/20/92	ND	ND	ND	ND	ND	
	8/6/92	ND	ND	ND	ND	ND	
	4/7/92	ND	ND	ND	ND	ND	
	3/5/92	ND	ND	0.36	ND	ND	
	12/4/91	ND	ND	ND	ND	ND	
	9/19/91	ND	ND	ND	ND	ND	
	6/3/91	ND	ND	ND	ND	ND	
	3/4/91	ND	ND	0.9	ND	2.6	
	12/5/90	ND	ND	ND	ND	ND	
	8/23/90	ND	ND	ND	ND	ND	
U-3	9/23/97	ND	ND	ND	ND	ND	ND
	3/27/97	110	ND	ND	ND	0.62	9.6
	9/24/96	NOT SAMPLED -	WELL CONNEC	CTED TO REMED	IATION SYSTEM		
	3/22/96	15,000	150	490	480	3,100	400
	12/14/95	NOT SAMPLED -	WELL CONNEC	CTED TO REMED	IATION SYSTEM		
	9/12/95	69,000	1,700	820	4,000	19,000	29,000
	6/13/95	64,000	1,700	1,500	3,800	18,000	900
	3/9/95	100,000	2,300	3,300	4,800	21,000	54,000
	12/5/94	140,000	3,100	5,100	4,900	21,000	
	9/7/94	100,000	2,400	4,900	4,200	21,000	
	6/9/94	120,000*	3,300	6,100	5,200	26,000	
	3/9/94	120,000	4,500	8,300	5,600	28,000	
	12/2/93	110,000	3,200	7,700	5,600	26,000	
	9/9/93	110,000	2,800	10,000	6,500	31,000	
	6/4/93	92,000	2,900	8,700	4,300	20,000	
	2/12/93	80,000	3,700	9,400	3,700	18,000	
	11/20/92	50,000	3,200	4,700	1,900	10,000	
	8/6/92	140,000	5,100	13,000	5,000	23,000	
	4/7/92	97,000	6,100	16,000	5,400	28,000	
	3/5/92	160,000	5,300	15,000	5,400	26,000	
	12/4/91	75,000	2,500	6,100	1,900	11,000	
	9/19/91	61,000	3,300	9,700	2,800	15,000	
	6/3/91	130,000	5,800	19,000	4,600	24,000	
	3/4/91	84,000	1,400	10,000	2,900	17,000	
	1/18/91	51,000	1,700	3,100	1,500	7,500	
	12/5/90	69,000	1,900	3,500	1,600	9,800	
	8/23/90	110,000	4,400	13,000	2,800	17,000	

Table 2
Summary of Laboratory Analyses
Water

				-			
		TPH as			Ethyl-		
Well#	Date	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
U-4	3/27/97	ND	ND	ND	ND	ND	ND
	12/14/95	ND	ND	ND	ND	ND ND	ND 1.3
	9/12/95	ND	ND	ND	ND	ND	ND
	6/13/95	ND	ND	ND	ND	ND	2.7
	3/9/95	ND	ND	ND	ND	ND	ND
	12/5/94	ND	ND	ND	ND	ND	
	9/7/94	ND	ND	1.1	ND	1.0	**
	6/9/94	ND	ND	ND	ND	ND	
	4/13/94	ND	ND	ND	ND	ND	
	3/9/94	ND	1.4	4.7	1.1	8.1	
	12/2/93	ND	ND	ND	ND	2.6	
	9/9/93	ND	ND	ND	ND	ND	
	6/4/93	ND	ND	ND	ND	ND	
	2/12/93	ND	ND	ND	ND	ND	
	11/20/92	ND	ND	2.5	ND	ND	
	8/6/92	ND	ND	ND	ND	ND	
	4/7/92	ND	ND	ND	ND	ND	
	3/5/92	ND	ND	ND	ND	ND	
	12/4/91	ND	ND	ND	ND	ND	
	9/19/91	ND	ND	ND	ND	ND	
	6/3/91	ND	ND	ND	ND	ND	
	3/4/91	ND	ND	ND	ND	ND	
	1/18/91	ND	ND	ND	ND	ND	
	12/5/90	ND	ND	ND	ND	ND	
	8/23/90	ND	ND	1.0	ND	1.8	
U-5	3/27/97	ND	ND	ND	ND	ND	ND
	12/14/95	ND	ND	ND	ND	ND	ND
	9/12/95	ND	ND	ND	ND	ND	ND
	6/13/95	ND	ND	ND	ND	ND	0.87
	3/9/95	ND	ND	ND	ND	ND	ND
	12/5/94	ND	ND	ND	ND	ND	
	9/7/94	ND	ND	0.73	ND	0.84	
	6/9/94	ND	ND	ND	ND	ND	
	4/13/94	ND	ND	ND	ND	ND	
	3/9/94	71	1.7	6.3	1.5	10	
	12/2/93	ND	ND	ND	ND	ND	
	9/9/93	ND	ND	ND	ND	ND	
	6/4/93	ND	ND	ND	ND	ND	
	2/12/93	ND	ND	ND	ND	ND	
	11/20/92	ND	ND	ND	ND	ND	
	8/6/92	ND	ND	ND	ND	ND	
	4/7/92	ND	ND	ND	ND	ND	

Table 2Summary of Laboratory Analyses
Water

		TPH as			Ethyl-		
Well #	Date	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
U-6	9/23/97	66	0.81	ND	ND	ND	150
	3/27/97	ND	ND	ND	ND	ND	150
	9/24/96	ND	ND	ND	ND	ND	750
	3/20/96	52	1,1	0.98	ND	0.75	1,200
	12/14/95	760	ND	ND	7.0	8.4	1,100
	9/12/95	ND	ND	ND	ND	ND	6,600
	6/13/95	1,300	ND	ND	20	46	5,400
	3/9/95	2,500	29	ND	70	120	320
	12/5/94	450**	ND	ND	ND	ND	
	9/7/94	1,600*	ND	ND	ND	ND	
	6/9/94	2,600*	16	ND	29	ND	
	3/9/94	2,200	11	8.2	24	16	
	12/2/93	2,100	12	1.6	21	1.1	
	9/9/93	6,300♦♦	29	ND	120	34	
	6/4/93	13,000	100	38	450	320	
	2/12/93	2,600	27	ND	120	51	
	11/20/92	WELL WAS I	NACCESSIBLI	E			
	8/6/92	9,200	160	ND	360	150	
	4/7/92	6,600	90	ND	820	1,200	
U-7	3/27/97	ND	ND	ND	ND	ND	ND
	12/14/95	ND	ND	ND	ND	ND	1.4
	9/12/95	ND	ND	ND	ND	ND	ND
	6/13/95	ND	ND	ND	ND	ND	3.5
	3/9/95	ND	ND	ND	ND	ND	ND
	12/5/94	ND	ND	ND	ND	ND	
	9/7/94	ND	ND	ND	ND	ND	
	6/9/94	ND	ND	ND	ND	ND	
	4/13/94	ND	ND	ND	ND	ND	
	3/9/94	ND	1.4	4.4	0.96	7.5	
	12/2/93	ND	ND	ND	ND	ND	
	9/9/93	ND	ND	ND	ND	ND	
	6/4/93	ND	ND	ND	ND	ND	
	2/12/93	ND	ND	ND	ND	ND	
	11/20/92	ND	ND	ND	ND	ND	
	8/6/92	ND	ND	ND	ND	ND	
	4/7/92	ND	ND	ND	ND	ND	

Table 2
Summary of Laboratory Analyses
Water

		TPH as			Ethyl-		
Well#	Date	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
U-8	3/27/97	ND	ND	ND	ND	ND	ND
	12/14/95	ND	ND	ND	ND	ND	ND
	9/12/95	ND	ND	ND	ND	ND	ND
	6/13/95	ND	ND	ND	ND	ND	ND
	3/9/95	ND	ND	ND	ND	ND	ND
	12/5/94	ND	ND	ND	ND	ND	
	9/7/94	ND	ND	ND	ND	ND	
	6/9/94	ND	ND	ND	ND	ND	
	4/13/94	ND	ND	0.78	ND	0.98	
	3/9/94	ND	1.2	3.7	0.79	6.1	
	12/2/93	ND	ND	ND	ND	ND	
	9/9/93	ND	ND	ND	ND	ND	
	6/4/93	ND	ND	ND	ND	ND	
	2/12/93	ND	ND	ND	ND	ND	
	8/6/92	ND	ND	ND	ND	ND	
	4/7/92	ND	ND	ND	ND	ND	
U-9	9/23/97	ND	ND	ND	ND	ND	ND
	3/27/97	ND	ND	ND	ND	ND	42
	9/24/96	ND	ND	ND	ND	ND	ND
	3/20/96	ND	ND	ND	ND	ND	480
	12/14/95	ND	ND	ND	ND	ND	4,400
	9/12/95	ND	ND	ND	ND	ND	1,600
	6/13/95	ND	ND	ND	ND	ND	1,200
	3/9/95	2,500**	ND	ND	ND	ND	5,800
	12/5/94	3,700**	ND	ND	ND	ND	
	9/7/94	2,700**	ND	ND	ND	ND	
	6/9/94	2,900**	ND	ND	ND	ND	
	4/13/94	ND	ND	ND	ND	ND	
	3/9/94	5,700*	ND	ND	ND	ND	
	12/2/93	ND	ND	ND	ND	ND	
	9/9/93	1,200♦	ND	ND	ND	ND	
	6/4/93	2,100♦	ND	ND	ND	ND	

Table 2 Summary of Laboratory Analyses Water

- * Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be gasoline and non-gasoline mixture.
- ** Sequoia Analytical Laboratory reported that the hydrocarbon detected did not appear to be gasoline.
- † Ethylbenzene and xylenes were combined prior to March 1990.
- The concentration reported as gasoline is primarily due to the presence of a discrete hydrocarbon peak not indicative of standard gasoline.
- The concentration reported as gasoline is primarily due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.

MTBE = methyl tert butyl ether.

ND = Non-detectable.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

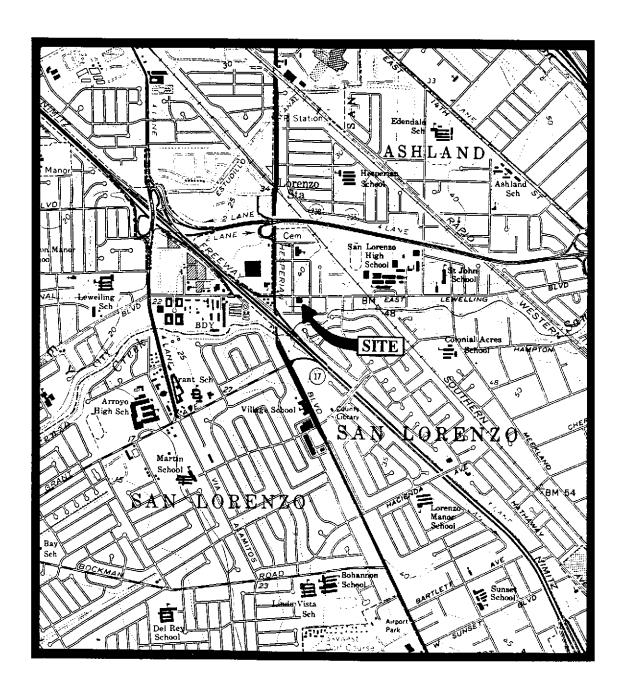
Laboratory analyses data prior to December 2, 1993, were provided by GeoStrategies, Inc.

Table 3
Summary of Monitoring Data
Dissolved Oxygen Concentration (DO) Measurements

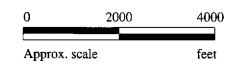
			D0
Date	Well#		(mg/L)
		Before Purging	After Purging
3/27/97	U-1	2.41	2.35
3/27/97	U-2	4.36	4.49
3/27/97	U-3	3.18	3.32
3/27/97	U-4	3.32	3.26
3/27/97	U-5	3.74	3.77
9/23/97	U-6		4.14
3/27/97	U-6	4.43	4.36
9/20/96	U-6	3.73	3.81
3/20/96	U-6	3.85	3.89
3/27/97	U-7	3.29	3.38
3/27/97	U-8	3.04	3.11
9/23/97	U-9		3.80
3/27/97	U-9	3.65	3.57
9/20/96	U-9	3.85	3.98
3/20/96	U-9	4.02	4.00

mg/L = milligrams per liter

Note: Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.



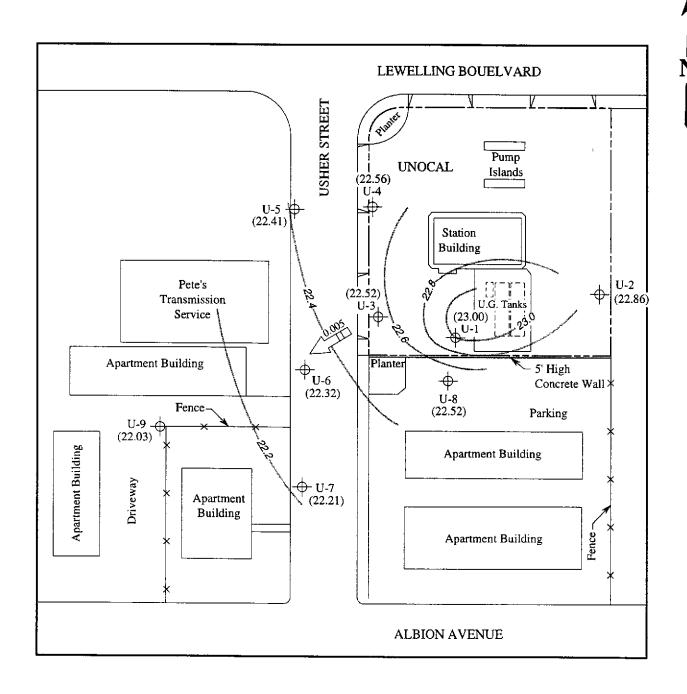
Base modified from 7.5 minute U.S.G.S. Hayward and San Leandro Quadrangles (both photorevised 1980)





UNOCAL SERVICE STATION #5760 376 LEWELLING BOULEVARD SAN LORENZO, CALIFORNIA

LOCATION MAP



LEGEND

Monitoring well

() Ground water elevation in feet above Mean Sea Level

Direction of ground water flow with approximate hydraulic gradient

Contours of ground water elevation

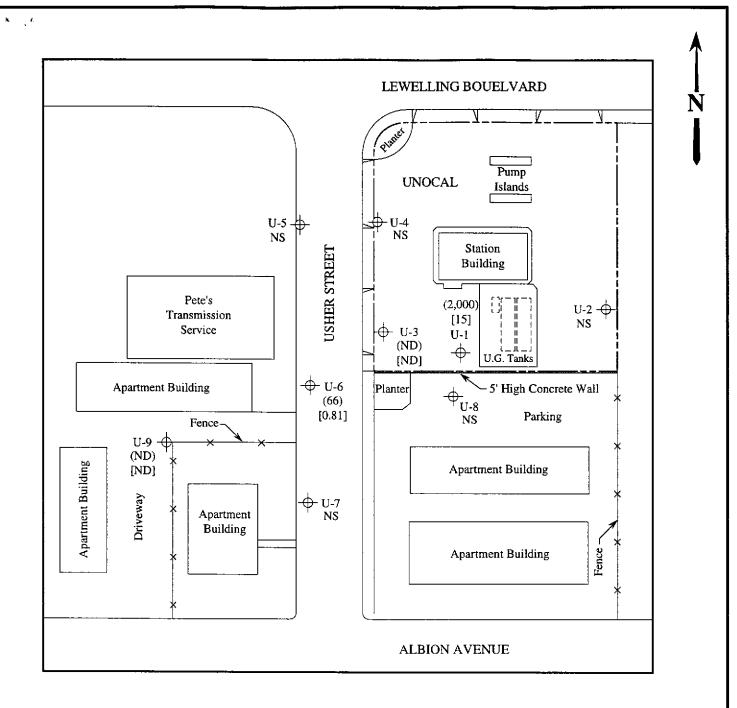


POTENTIOMETRIC SURFACE MAP FOR THE SEPTEMBER 23, 1997 MONITORING EVENT



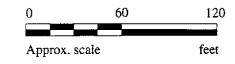
UNOCAL SERVICE STATION #5760 376 LEWELLING BOULEVARD SAN LORENZO, CALIFORNIA

FIGURE



LEGEND

- Monitoring well
- () Concentration of TPH as gasoline in μg/L
- [] Concentration of benzene in μg/L
- ND Non-detectable, NS Not sampled



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON SEPTEMBER 23, 1997



UNOCAL SERVICE STATION #5760 376 LEWELLING BOULEVARD SAN LORENZO, CALIFORNIA

FIGURE

2



680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8

Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

(415) 364-9600 (510) 988-9600 (916) 921-9600 FAX (415) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520

Matrix Descript:

Client Project ID: Unocal #5760, 376 Lewelling Blvd. Sampled: Water

San Lorenzo

Received:

Reported:

Sep 23, 1997 Sep 24, 1997

Attention: Jarrel Crider

Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 709-1907

Oct 10, 1997

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons $\mu \mathrm{g}/\mathrm{L}$	Benzene μg/L	Toluene μg/L	Ethyl Benzene μg/L	Total Xylenes $\mu \mathrm{g}/\mathrm{L}$
709-1907	U-1	2,000	15	ND	ND	530
709-1908	U-3	ND	ND	ND	ND	ND
709-1909	U-6	66	0.81	ND	ND	ND
709-1910	U- 9	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50	

Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as ND were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager

Page 1 of 2





680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8

Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834

(415) 364-9600 (510) 988-9600 (916) 921-9600 FAX (415) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520

Client Project ID: Matrix Descript:

); Unocal #5760, 376 Lewelling Blvd. Sampled: Water

San Lorenzo

Sep 23, 1997 Sep 24, 1997 Received:

Attention: Jarrel Crider

Analysis Method: First Sample #:

EPA 5030/8015 Mod./8020

Reported:

Oct 10, 1997

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

709-1907

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
709-1907	U-1	Gasoline	10	10/2/97	HP-4	102
709-1908	U-3		1.0	10/2/97	HP-4	101
709-1909	U-6	Gasoline	1.0	10/1/97	HP-9	93
709-1910	U-9		1.0	10/1/97	HP-9	95

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager





680 Chesapeake Drive 404 N. Wiget Lane 819 Striker Avenue, Suite 8 Redwood City, CA 94063 Walnut Creek, CA 94598 Sacramento, CA 95834 (415) 364-9600 (510) 988-9600 (916) 921-9600 FAX (415) 364-9233 FAX (510) 988-9673 FAX (916) 921-0100

MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Client Project ID: Sample Descript:

Unocal #5760, 376 Lewelling Blvd. Water

Sampled: San Lorenzo Received: Sep 23, 1997 Sep 24, 1997

Concord, CA 94520 Attention: Jarrel Crider

Analysis for: First Sample #:

MTBE (Modified EPA 8020) 709-1907

Analyzed: Reported: Oct 1 - 2, 97 Oct 10, 1997

LABORATORY ANALYSIS FOR:

MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit $\mu \mathrm{g}/\mathrm{L}$	Sample Result µg/L
709-1907	U-1	25	N.D.
709-1908	U-3	5.0	N.D.
709-1909	U-6	5.0	150
709-1910	U-9	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager



CHAIN OF CUSTODY

SAMPLER HAIG	KEVOR	 К	TOSC S/S	²⁰ 5′	760	CITY: SAN LO	RENZO			AN	ALYSES	REQUES	TED			TURN AROUND TIME:
WITNESSING AGENCY			Ł			LEWELLI	NG BLVD.	9-H	BTEX	TBE SPPb						REGULAR
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	сомр	NO. OF CONT,	SAMPLING LOCATION	1	18	MT		i				REMARKS
U-I	9/23/97		V	V		2 VO A'S	WELL	~	~	V		0919	07			
u-3			7	\				V	/	~	7(919	08			
U-6			~	\				V	V	~	1.	091	909			
U-9	*		V	V			V	V	~	V	٦	0919	10			
						·										
		•														
L10010010 1 9/20			16/TIME 24/97 00	1. HAVE	LLOWING <u>M</u> ALL SAMPLI AMPLES RE	ES RECEIV	ED FOR AN	IALYSIS BE	EN STORE		NG SAMPLES FOR ANALYSES:					
(SIGNATURE)				(SIGNA	ATURE,				3, DID AN	IY SAMPLES	S RECEIVE	FOR ANA	ILYSIS HA'	∕€ HEAD S	PACE?	_ <i>N</i>
(SIGNATURE)				(SIGNA	ATURE				4. WERE S	SAMPLES IN	І АРРПОРР	IIATE CON	TAINERS A	NO PROPE	RLY PACKA	GED?
(SIGNATURE)				(SIGNA	ATURE				SIGNAT	JRE:	has	ma		TITI	LE: Anal	lyst 9/9497

Note: All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HN03. All other containers are unpreserved.

Tel: (510) 602-5120 Fax: (510) 689-1918

SAMPLING LOCATION: 5160-San Lorenzo	DATE & TIME SAMPLED 9/23/91 2:45 A.M.
	FIELD TECHNICIAN HAIG-KIEVORK
PURGE METHOD PUMP	DATE(S) PURGED 9/23/97
WELL NUMBER U-	
WATER LEVEL-INITIAL 17,20	SAMPLING METHOD BAIL
WATER LEVEL-FINAL 17.24	CONTAINERS 2 VOA
WELL DEPTH 23.17	PRESERVATIVES HC
WELL CASING VOLUME 2.21	tCASING DIAMETER 311

TIME	GALLONS PURGED	TEMPERATURE (%F) (0) (± 1°F)	ELECTRICAL CONDUCTIVITY ([\(\mu\)mhos/cm]x100) (± 10% of TOTAL	pH (± 0.2)
2:15	2.5	27.3	683	M.24
	5	27.2	675	4,20
2:25	6.5	27.2 c°	670 Mg	7.18
			*	

t	Correction Factors:	Well Diameter	Factor
•		2"	0.17
		3"	0.37
		4"	0.65
		4.5"	0.82
		6"	1.46
		8"	2.6
		12 "	5.87

Tel: (510) 602-5120 Fax: (510) 689-1918

SAMPLING	DATE & A.M.
LOCATION: 5760- Jan Lorenzo	TIME SAMPLED 9/23/97 1:50 P.M.
	FIELD TECHNICIAN HAIG KEVORK
PURGE METHOD PUMP	DATE(S) PURGED 9/23/97
WELL NUMBER <u>U-3</u>	
WATER LEVEL-INITIAL 16.74	SAMPLING METHOD BAIL
WATER LEVEL-FINAL 16.77	CONTAINERS 2 VOA
WELL DEPTH24.80	PRESERVATIVES HCC
WELL CASING VOLUME 2.98	tCASING DIAMETER 3 //

TIME	GALLONS PURGED	TEMPERATURE (°F) (° (± 1°F)	ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL	pH (± 0.2)
1:20	3	27.7	693	4.15
	6	27.9	674	7.13
1:30	9	28.0 €	665 As	7.12

† Correction Factors:	Well Diameter	<u>Factor</u>
	2"	0.17
	3"	0.37
	4"	0.65
	4.5"	0.82
	6"	1.46
	8"	2.6
	12"·	5.87

Tel: (510) 602-5120 Fax: (510) 689-1918

SAMPLING LOCATION: 5760-San Lorenzo	DATE & TIME SAMPLED 9/23/97 12:10 PM.
	FIELD TECHNICIAN HAIG KEVORK
PURGE METHOD PUMP	DATE(S) PURGED 9/23/97
WELL NUMBER U-6	
WATER LEVEL-INITIAL 15.36	SAMPLING METHOD BAIL
WATER LEVEL-FINAL 15.37	CONTAINERS 2 VDA
WELL DEPTH	PRESERVATIVES HCC
WELL CASING VOLUME 2.19	tCASING DIAMETER 21

TIME	GALLONS PURGED	TEMPERATURE (%F) CO (± 1°F)	ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL	pH (± 0.2)
11:45	2.5	29.7	695	4.24
X	5	30.0	688	7,27
11:55	6.5	30.100	681 /5	4.29

t	Correction Factors:	Well Diameter	Factor
		2"	0.17
		3"	0.37
		4"	0.65
		4.5"	0.82
		6"	1.46
		8"	2.6
		12"·	5.87

Tel: (510) 602-5120 Fax: (510) 689-1918

SAMPLING LOCATION: 5760-San Livrenzo	DATE & TIME SAMPLED 9/23/91 12:50 P.M.
	FIELD TECHNICIAN HAIG KENORK
PURGE METHOD PUMP	DATE(S) PURGED 9/23/97
WELL NUMBER U-9	
WATER LEVEL-INITIAL 15.28	SAMPLING METHOD BAIL
WATER LEVEL-FINAL 15.28	CONTAINERS 2 VOA
WELL DEPTH 28.20	PRESERVATIVES HCC
WELL CASING VOLUME 2.20	tCASING DIAMETER 211

TIME	GALLONS PURGED	TEMPERATURE (%F) (± 1°F)	ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL	pH (± 0.2)
12:25	2.5	28.7	833	6.90
4	5	28.6	825	6,93
12:35	6.5	28.50°	820 Ms	6.91

t	Correction Factors:	Well Diameter	<u>Factor</u>
		2"	0.17
		3"	0.37
		4"	0.65
		4.5"	0.82
		6"	1.46
		8"	2.6
		12"	5.87