

October 9, 1997

Mr. Scott Seery Alameda County Health Care Services 1131 Harbor Bay Parkway Alameda, California 94501

RE:

Unocal Service Station #3292

15008 E. 14th Street San Leandro, California

Dear Mr. Seery:

Per the request of the Tosco Marketing Company Project Professional, Ms. Tina R. Berry, enclosed please find our report (MPDS-UN3292-16) dated September 9, 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 Professional at (510) 277-2321.

Sincerely,

MPDS Services, Inc.

Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry



MPDS-UN3292-16 September 9, 1997

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

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report

Unocal Service Station #3292

15008 E. 14th Street San Leandro, California

Dear Ms. Berry:

This data report presents the results of the most recent quarter of 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 during this quarter are indicated in Table 1. 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 quarter is shown on the attached Figure 1.

Ground water samples were collected on August 5, 1997. Prior to sampling, the wells were each purged of between 4 and 6 gallons of water. In addition, dissolved oxygen concentrations were measured and are presented in Table 3. 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 Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected from the wells this quarter are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

MPDS-UN3292-16 September 9, 1997 Page 2

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 Mr. Scott Seery 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. C 55734

Exp. Date December 31, 2000

/aab

Attachments: Tables 1 through 3

Location Map Figures 1 & 2

Laboratory Analyses

Chain of Custody documentation

cc: Mr. Sarkis A. Soghomonian, Kaprealian Engineering, Inc.

Table 1
Summary of Monitoring Data

	Ground Water	Depth to	Total Well	Product		Water
	Elevation	Water	Depth	Thickness		Purged
Well#	(feet)	(feet)+	(feet)∗	(feet)	Sheen	(gallons)
		(Monitored a	ınd Sampled on A	august 5, 1997)		
MW1	26.17	10.20	18.94	0	No	4.5
MW2	26.11	10.23	19.11	0	No	4.5
MW3	26.15	10.27	22,16	0	No	6
MW4	26.00	11.04	19.63	0	No	4.5
MW5	24.86	11.08	22.06	0	No	6
MW6	26.03	9.64	20.10	0	No	5.5
MW7	25.84	10.25	21.10	0	No	5.5
MW8	25.63	11.26	19.00	0	No	4
MW9	25.59	10.70	19.00	0	No	4.5
MW10	25.53	10.51	19.83	0	No	5
MW11	25.27	10.23	18.93	0	No	4.5
MW2‡	24.82	10.62	20.90	0	No	5.5
MW3‡	25.37	10.44	20.69	0	No	5.5
		(Monitored	l and Sampled on	May 7, 1997)		
MW1	27.13	9.24	18.98	0	Yes	6
MW2	27,20	9.14	19.12	0	No	6
MW3	27.25	9.17	22.15	0	No	7.5
MW4	27.19	9.85	19.65	0	No	6
MW5	26.96	8.98	22.15	0	No	7.5
MW6	27.35	8.32	20.17	0	No	8
MW7	27.62	8.47	21.25	0	No	7.5
MW8	26.77	10.12	19.10	0	No	6
MW9	26.84	9.45	19.05	0	No	6
MW10	26.76	9.28	19.96	0	No	6
MW11	26.43	9.07	19.05	0	No	6
MW2‡	25.86	9.58	20.85	0	No	6
MW3‡	26.46	9.35	20.65	0	No	6

Table 1
Summary of Monitoring Data

	Ground Water	Depth to	Total Well	Product		Water
	Elevation	Water	Depth	Thickness		Purged
Well#	(feer)	(feet)*	(feei)∗	(feet)	Sheen	(gallons)
	(Monitored on	February 10, 1	1997 and Sample	i on February 10	and 11, 1997)	
MW1	28.45	7.92	18.98	0	No	6
MW2	28.59	7.75	19.11	0	No	6
MW3	28.71	7.71	22.16	0	No	7.5
MW4	28.59	8.45	19.65	0	No	6
MW5	28.31	7.63	22.12	0	No	7.5
MW6	28.79	6.88	20.13	0	No	7
MW7	28.87	7.22	21.20	0	No	7
MW8	28.05	8.84	19.06	0	No	5.5
MW9	28.14	8.15	19.07	0	No	5.5
MW10	27.94	8.10	19.88	0	No	6
MW11	27.62	7.88	18.97	0	No	6
MW2‡	26.81	8.63	20.00	0	No	6
MW3‡	27.65	8.16	20.20	0	No	6
		(Monitored an	d Sampled on No	vember 7, 1996)		
MW1	25.63	10.74	18.95	0	No	4.5
MW2	25.65	10.69	19.10	0	No	4.5
MW3	25.46	10.96	22.15	0	No	6
MW4	25.46	11.58	19.65	0	No	4.5
MW5	25.29	10.65	22.08	0	No	6
MW6	25.55	10.12	20.10	0	No	5.5
MW7	25.33	10.76	21.11	0	No	5.5
MW8	25.18	11.71	19.01	0	No	4
MW9	25.19	11.10	19.00	0	No	4
MW10	25.12	10.92	19.83	0	No	5
MW11	24.92	10.58	18.92	0	No	4.5
MW2‡	24.46	10.98	20.90	0	No	5
MW3‡	24.93	10.88	20.70	0	No	5

Table 1
Summary of Monitoring Data

	Well Casing
	Elevation
Well #	(feet)*
3 61374	24.27
MW1	36.37
MW2	36.34
MW3	36.42
MW4	37.04
MW5	35.94
MW6	35.67
MW7	36.09
MW8	36.89
MW9	36.29
MW10	36.04
MW11	35.50
MW2‡	35.44**
MW3‡	35.81**

- ♦ The depth to water level and total well depth measurements were taken from the top of the well casings.
- * The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per a Benchmark located at the northwest corner of East 14th Street and 150th Avenue (elevation = 36.88 feet MSL).
- ** The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per Chevron monitoring well MW-6 used as a benchmark (elevation = 36.92 feet MSL).
- ‡ Wells located on Shadrall Property.

Table 2Summary of Laboratory Analyses
Water

			Wa	ater			
		TPH as			Ethyl-		
Well #	Date	Gasoline	Benzene	Toluene	Benzene	Xylenes	MTBE
MW1	5/4/91	31,000	74	20	920	1,500	
*** ** *	9/19/91	26,000	130	16	1,300	1,800	
	12/18/91	17,000	160	20	1,400	1,600	
	3/17/92	23,000	320	19	1,000	940	
	5/19/92	29,000	650	370	1,100	1,200	
	8/20/92	18,000	230	22	640	950	
	11/10/92	18,000	220	ND	690	830	
	2/20/93	19,000	190	ND	880	620	
	5/21/93	27,000	150	200	1,200	950	
	8/23/93	24,000	160	110	840	810	
	11/23/93	18,000	210	63	900	620	
	2/24/94	18,000	74	30	940	480	
	5/25/94§	6,400	72	ND	170	67	
	8/23/94	24,000	130	57	970	320	
•	11/23/94	23,000	180	44	970	270	
	2/3/95	20,000	77	17	950	390	
	5/10/95	16,000	230	27	880	630	
	8/2/95	18,000	190	ND	860	590	
	11/20/95†	20,000	180	ND	960	450	970
	2/8/96	15,000	43	16	940	410	5,200
	5/8/96	16,000	37	16	930	410	1,600
	8/9/96	2,300	25	ND	77	39	1,200
	11/7/96	38,000	140	ND	1,900	5,600	ND
	2/11/97	7,300	91	ND	170	68	1,700
	5/7/97	11,000	120	ND	470	110	1,200
	8/5/97	530*	5.9	ND	5.6	ND	430
141V/2	5/4/01	19,000		1.4	460	630	
MW2	5/4/91	19,000	6.6 100	1. 4 6.8	790	310	
	9/19/91 12/18/91	19,000	110	5.1	420	96	
	3/17/92	16,000	110	ND	730	220	
	5/17/92 5/19/92	17,000	140	87	680	170	
	8/20/92	13,000	52	ND	660	70	
	11/10/92	11,000	36	7.2	570	45	
	2/20/93	1,500	2.9	3.8	9.1	ND	
	5/21/93	9,500	37	ND	470	62	
	8/23/93	15,000	110	ND	590	64	
	11/23/93	11,000	80	10	480	20	
	2/24/94	11,000	44	ND	580	32	
	5/25/94	11,000	50	ND	400	22	
	8/23/94	12,000	45	10	360	20	
	11/23/94	15,000	61	24	440	ND	
	2/3/95	9,700	5.7	ND	250	10	
	5/10/95	7,500	56	4.7	310	33	
	8/2/95	8,200	53	22	220	25	
	11/2/95	5,000	56	4.5	170	7.7	110
	A A ! -! / J	. 2,000					

Table 2Summary of Laboratory Analyses
Water

	AA GICT							
Well#	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE	
MW2	5/8/96	8,400	5.6	9.0	170	10	130	
(Cont.)	8/9/96	3,100	24	ND	80	ND	64	
,	11/7/96	36,000	140	ND	1,900	5,600	ND	
	2/11/97	4,600	27	ND	53	ND	ND	
	5/7/97	5,300	61	ND	78	20	180	
	8/5/97	3,100	35	ND	13	ND	58	
MW3	5/4/91	9,100	2.0	ND	55	180		
	9/19/91	7,600	ND	13	190	170		
	12/18/91	5,900	54	6.4	110	64		
	3/17/92	5,800	66	7.5	100	58		
	5/19/92	3,400	25	3.6	66	41		
	8/20/92	4,500	58	ND	65	35		
	11/10/92	3,400	37	ND	85	34		
	2/20/93	1,600	12	18	8.9	12		
	5/21/93	2,600	42	ND	43	15		
	8/23/93	2,900	25	ND	50	18		
	11/23/93	2,300	34	ND	24	5.6		
	2/24/94	3,400	46	ND	53	11		
	5/25/94	1,400	20	ND	ND	ND		
	8/23/94	2,900	37	49	14	2.9		
	11/23/94	3,200	48	ND	22	ND		
	2/3/95	780	13	ND	2.1	ND		
	5/10/95	1,300	ND	ND	ND	ND		
	8/2/95	1,500	6.3	ND	16	2.1		
	11/2/95	1,100	5.2	2.1	7.4	0.5	15	
	2/8/96	450	ND	ND	ND	ND	ND	
	5/8/96	590	ND	11	10	ND	ND	
	8/9/96	ND	ND	ND	ND	ND	ND	
	11/7/96	140	1.2	ND	ND	ND	5.6	
	2/10/97	89	1.8	ND	ND	ND	ND	
	5/7/97	52**	ND	ND	ND	5.1	5.1	
	8/5/97	ND	ND	ND	ND	ND	ND	
MW4	5/4/91	6,300	ND	ND	2.8	61		
	9/19/91	1,800	0.83	ND	54	46		
	12/18/91	2,500	28	2.5	54	22		
	3/17/92	1,800	3.7	1.4	90	21		
	5/19/92	2,000	20	3.5	42	8.3		
	8/20/92	1,000	15	ND	11	3.0		
	11/10/92	690	9.1	ND	16	2.8		
	2/20/93	2,400	40	2.1	33	ND		
	5/21/93	1,900	31	ND	20	4.5		
	8/23/93	1,200	5.0	ND	16	ND		
	11/23/93	720	10	ND	8.7	ND		
	2/24/94	1,300	8.9	ND	20	ND		
	5/25/94	1,700	22	ND	4.5	ND		

Table 2
Summary of Laboratory Analyses
Water

Watci							
Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	мтве
MW4	8/23/94	690	9.2	1.3	7.1	1.9	
(Cont.)	11/23/94	420	5.0	1.1	4.2	1.2	
	2/3/95	620	6.4	ND	9.3	ND	
	5/10/95	280	2.8	ND	2.7	2.4	
	8/2/95	290	3.6	ND	2.8	ND	
	11/2/95	42,000	390	210	2,800	6,300	270
	2/8/96	130	2.1	ND	1.5	Ó.69	ND
	5/8/96	WELL WAS I					
	8/9/96	ND	ND	ND	ND	ND	ND
	11/7/96	ND	ND	ND	ND	ND	ND
	2/10/97	ND	ND	ND	ND	ND	ND
	5/7/97	ND	ND	ND	ND	ND	ND
	8/5/97	50	0.76	ND	ND	ND	ND
	0.0.7.	50	0.70	112	112	112	1,2
MW5	5/4/91	69,000	1,400	2,500	3,500	15,000	
5.2 7.0 5	9/19/91	57,000	1,600	2,700	5,200	20,000	
	12/18/91	31,000	1,600	3,100	4,800	19,000	
	3/17/92	81,000	850	1,600	4,800	18,000	
	5/19/92	84,000	760	1,500	4,000	17,000	
	8/20/92	58,000	660	1,700	4,200	19,000	
	11/10/92	57,000	800	1,800	4,400	18,000	
	2/20/93	17,000	75	ND	1,000	620	
	5/21/93	55,000	ND	160	3,500	12,000	
	8/23/93	61,000	340	380	3,600	14,000	
	11/23/93	46,000	290	310	4,100	15,000	
	2/24/94	57,000	140	400	4,400	16,000	
	5/25/94	53,000	ND	ND	4,000	14,000	
	8/23/94	61,000	360	380	4,800	17,000	
	11/23/94	46,000	230	260	3,900	14,000	
	2/3/95	56,000	140	330	3,500	13,000	
	5/10/95	27,000	160	170	2,200	5,200	
	8/2/95	65,000	260	300	3,500	12,000	
	11/2/95	240	0.76	ND	1.1	ND	ND
	2/8/96	54,000	210	150	3,400	12,000	170
	5/8/96	52,000	170	200	3,600	11,000	170
	8/9/96	25,000	54	16	1,700	4,700	ND
	11/7/96	2,100	42	ND	9.3	ND	2,300
	2/10/97	15,000	46	29	1,400	4,100	ND
	5/7/97	38,000	120	ND	2,000	5,100	380
	8/5/97	310	1.0	ND	17	40	ND
MW6	5/19/92	1,300	2.0	2.1	ND	2.7	
	8/20/92	280	8.4	ND	0.51	0.84	
	11/10/92	490	7.0	1.2	1.7	ND	
	2/20/93	2,400	43	ND	33	2.0	
	5/21/93	940	18	1.0	7.1	2.7	
	8/23/93	1,000	9.4	2.3	5.0	2.3	
	ل ۾ بن سه ب	1,000	∕. ¬				

Table 2Summary of Laboratory Analyses
Water

Walci.							
Well#	Date	TPH as Gasolme	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE
MW6	11/23/93	520	ND	1.7	1.9	0.82	
(Cont.)	2/24/94◆	810	12	ND	2.6	0.77	
` ,	5/25/94	500	11	ND	ND	0.73	
	8/23/94	570	8.8	2.5	3.2	2.6	
	11/23/94	460	6.4	1.1	1.9	1.1	
	2/3/95	660	4.8	13	1.4	ND	
	5/10/95	470	ND	0.65	1.4	0.67	
	8/2/95	360	3.2	ND	1.6	ND	
	11/2/95	470	ND	0.92	0.89	0.58	5.5
	2/8/96	450	3.1	ND	1.1	0.68	ND
	5/8/96	ND	ND	ND	ND	ND	ND
	8/9/96	ND	ND	ND	ND	ND	ND
	11/7/96	ND	ND	ND	ND	ND	ND
	2/10/97	ND	ND	ND	ND	ND	ND
	5/7/97	ND	ND	1.1	ND	ND	ND
	8/5/97	55	0.79	ND	ND	ND	ND
MW7	5/19/92	17,000	540	90	1,200	1,900	
	8/20/92	13,000	460	54	ND	3,100	
	11/10/92	1,800	74	ND	230	350	
	2/20/93	1,800	37	4.6	11	7.7	
	5/21/93	22,000	330	37	2,100	2,900	·
	8/23/93	33,000	360	ND	2,500	4,300	
	11/23/93	19,000	310	30	2,500	2,300	
	2/24/94◆	16,000	220	19	2,400	3,200	
	5/25/94	14,000	200	ND	1,500	1,800	
	8/23/94	19,000	210	50	2,000	2,800	
	11/23/94	10,000	220	ND	1,000	730	
	2/3/95	26,000	170	ND	2,300	3,700	
	5/10/95	1,300	13	1.5	170	230	
	8/2/95	15,000	200	ND	2,200	2,000	
	11/2/95	18,000	190	9.4	2,100	2,200	72
	2/8/96	19,000	150	ND	2,100	3,000	ND
	5/8/96	13,000	130	18	1,900	1,600	85
	8/9/96	11,000	67	ND	1,700	1,800	ND
	11/7/96	32,000	160	ND	3,300	8,400	570
	2/11/97	7,100	55	ND	ND	620	ND
	5/7/97	6,000	74	ND	560	330	250
	8/5/97	5,000	66	ND	420	240	ND
MW8	5/19/92	5,300	28	3.3	2.6	2.1	- -
	8/20/92	3,500*	67	11	ND	ND	
	11/10/92	1,800	20	ND	ND	ND	
	2/20/93	2,200	32	ND	42	5.0	
	5/21/93	2,500	44	ND	ND	ND	
	8/23/93	280*	49	4.5	ND	ND	
	11/23/93	1,800	ND	3.4	ND	ND	_

Table 2
Summary of Laboratory Analyses
Water

Walti								
Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE	
MW8	2/24/94	1,200	10	2.3	ND	3.2		
(Cont.)	5/25/94	14,000	29	ND	ND	ND		
	8/23/94	3,200	46	18	2.0	7.2		
	11/23/94	1,700	34	ND	ND	3.1		
	2/3/95	800	6.1	ND	ND	ND		
	5/10/95	1,400	15	1.5	0.65	0.84		
	8/2/95	690	8.3	1.9	ND	ND		
	11/2/95	1,200	ND	1.9	0.56	ND	6.4	
	2/14/96††	650	9.0	1.2	ND	0.52	ND	
	5/8/96	1,200	0.7	35	2.2	3.0	ND	
	8/9/96	350	ND	12	0.81	0.95	ND	
	11/7/96	1,000	23	ND	ND	ND	ND	
	2/10/97	630	13	ND	ND	8.1	ND	
	5/7/97	1,200*	26	3.4	ND	20	20	
	8/5/97	590*	9.8	ND	ND	ND	ND	
MW9	5/19/92	8,100	11	ND	25	5.8		
	8/20/92	3,800*	37	ND	ND	ND		
	11/10/92	4,200	ND	ND	21	23		
	2/20/93	2,300	47	ND	32	ND		
	5/21/93	3,200	32	ND	8.1	ND		
	8/23/93	3,000	29	ND	ND	ND		
	11/23/93	2,500	23	2.1	ND	ND		
	2/24/94	2,900	35	ND	ND	ND		
	5/25/94	ND	ND	ND	ND	ND		
	8/23/94	2,800	28	32	ND	ND		
	11/23/94	2,000	24	2.2	2.2	2.5		
	2/3/95	2,100	26	2.5	ND	ND		
	5/10/95	1,700	0.81	2.2	1.0	1.4		
	8/2/95	1,900	26	6.6	ND	3.9		
	11/2/95	1,600	ND	1.3	ND	ND	11	
	2/8/96	1,900	ND	ND	ND	ND	ND	
	5/8/96	1,700	1.9	22	1.7	2.7	ND	
	8/9/96	200	ND	4.5	ND	0.58	ND	
	11/7/96	920	24	ND	ND	ND	ND	
	2/11/97	580	14	2.4	ND	ND	16	
	5/7/97	810	11	3.9	1.7	9.9	13	
	8/5/97	850*	21	ND	ND	ND	33	
MW10	8/20/92	15,000	230	ND	1,000	350		
	11/10/92	15,000	300	42	3,500	330		
	2/20/93	17,000	74	ND	1,000	620		
	5/21/93	23,000	250	ND	3,000	240		
	8/23/93	20,000	230	13	3,200	140		
	11/23/93	18,000	300	10	2,800	110		
	2/24/94	15,000	330	19	2,000	83		
	5/25/94	14,000	240	ND	230	62		

Table 2
Summary of Laboratory Analyses
Water

11000								
Well#	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE	
MW10	8/23/94	16,000	250	41	1,800	74		
(Cont.)	11/23/94	16,000	260	ND	1,600	49		
(Cont.)	2/3/95	17,000	310	ND	1,500	93		
	5/10/95	12,000	260	16	1,200	54		
	8/2/95	8,900	240	ND	780	40		
	11/2/95	9,300	190	ND	470	1.7	110	
	2/8/96	9,700	170	ND	440	ND	ND	
	5/8/96	7,100	100	ND	240	ND	43	
	8/9/96	4,400	59	7.5	110	6.5	7 3	
	11/7/96	6,300	65	ND	110	ND	130	
	2/10/97	6,800	91	ND	100	ND	210	
	5/7/97	4,800	76	ND	50	ND	160	
	8/5/97	4,200	52	ND	40	ND	81	
MW11	8/20/92	4,600*	62	ND	ND	54		
	11/10/92	5,800	130	ND	260	42		
	2/20/93	18,000	76	ND	1,000	630		
	5/21/93	7,100	64	ND	340	120		
	8/23/93	5,400	68	ND	230	43		
	11/23/93	3,400	105	ND	120	43		
	2/24/94	4,600	170	ND	140	36		
	5/25/94	1,400	49	ND	26	ND		
	8/23/94	7,300	250	13	150	42		
	11/23/94	5,800	250	10	120	22		
	2/3/95	4,400	110	ND	150	37		
	5/10/95	4,200	120	ND	170	38		
	8/2/95	4,200	110	ND	110	22		
	11/2/95	6,100	150	ND	78	6.8	6,200	
	2/14/96††	3,100	60	ND	98	ND	4,000	
	5/8/96	3,500	120	ND	160	ND	6,400	
	8/9/96	1,100	42	ND	15	ND	4,300	
	11/7/96	2,900	57	ND	13	ND	3,400	
	2/10/97	600	9.5	ND	ND	ND	3,100	
	5/7/97	1,900	45	ND	31	ND	2,400	
	8/5/97	2,100	35	ND	24	ND	1,800	
MW2‡	5/8/96	540	0.68	21	1.0	1.7	ND	
-	8/9/96	170	ND	7.8	ND	ND	ND	
	11/7/96	430	8.9	1.5	ND	ND	10	
	2/11/97	230**	4.6	1.0	ND	ND	10	
	5/7/97	ND	ND	ND	ND	ND	14	
	8/5/97	360	5.5	50	ND	ND	ND	

Table 2
Summary of Laboratory Analyses
Water

Weil #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE
MW3‡	5/8/96	4,700	7.9	36	13	4.0	42
	8/9/96	2,000	ND	14	7.6	ND	ND
	11/7/96	1,800	29	ND	ND	ND	40
	2/11/97	3,500	70	14	ND	ND	150
	5/7/97	3,100	48	ND	ND	ND	110
	8/5/97	3,200	43	5.7	ND	ND	61

- ‡ Wells located on Shadrall Property.
- The analytical results of the ground water sample for well MW1 was inconsistent with the previous analytical results for this well. Sequoia Analytical Laboratory re-analyzed the sample past hold time; therefore the results may be biased low.
- † Monitoring well MW1 was resampled on November 20, 1995. The vial containing the water sample collected from this well on November 2, 1995, was inadvertently broken by the laboratory.
- †† Monitoring wells MW8 and MW11 were resampled on February 14, 1996. The vials containing the water samples collected from the wells on February 8, 1996, were inadvertently broken by the laboratory.
- * Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- ** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.
- All EPA 8010 constituents were non-detectable.

MTBE = methyl tert butyl ether.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Table 2 Summary of Laboratory Analyses Water

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 November 23, 1993, were provided by Kaprealian Engineering, Inc.

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

		Dis	solved Oxygen R	eading
			Before Purging	
Well#	Date	(mg/L)+	(mg/L)••	(mg/L)++
3 63774	1110105	1.00	0.00	
MW1	11/2/95	1.80	2.83	
	2/8/96		2.58	1.00
	5/8/96			1.92
	8/9/96		2.14	
	11/7/96		2.11	2.18
	2/11/97		_	2.05
	8/5/97			1.88
MW2	11/2/95	2.30	2.80	
	2/8/96		2.21	
	5/8/96			3.89
	8/9/96		3.36	
	11/7/96	_	1.96	1.98
	2/11/97			2,12
	8/5/97			2.38
1.73170	11/0/05	0.00	4.00	
MW3	11/2/95	2.20	4.98	
	2/8/96		2.78	2.72
	5/8/96			3.73
	8/9/96		3.29	- -
	11/7/96		3.15	3.98
	2/10/97			3.59
	8/5/97			2.86
MW4	11/2/95	3.00	7.91	
	2/8/96		2.66	
	5/8/96			
	8/9/96		2.92	
	11/7/96		4.32	4.38
	2/10/97			3.87
	8/5/97			5.12
MW5	11/2/95	3.00	2.30	
A12 17 V	2/8/96	J.00	2.35	
	5/8/96			1.29
	8/9/96		2.19	
	11/7/96		1.84	1.82
	2/10/97	 		2.07
	8/5/97			2.36
	013171			2,50

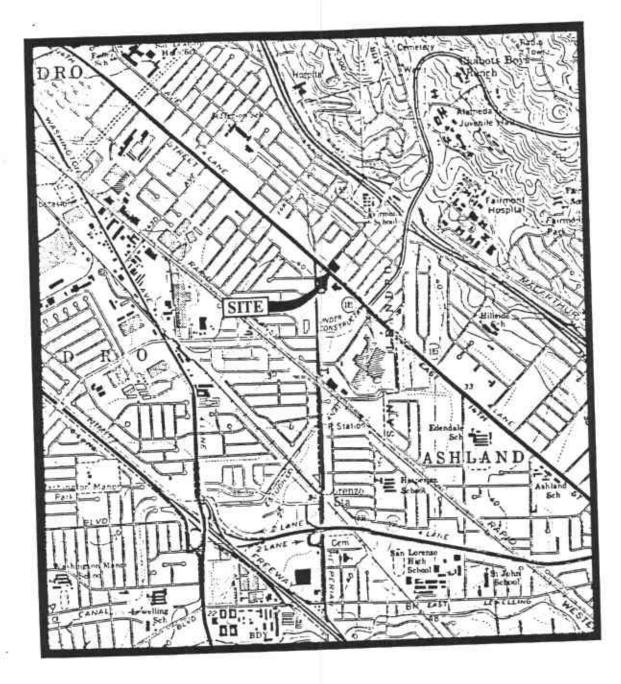
Table 3
Summary of Monitoring Data
Dissolved Oxygen (DO) Concentration Measurements

		Di	ssolved Oxygen R	eading
			Before Purging	
Well#	Date	(mg/L)+	(mg/L)++	(mg/L)••
MW6	11/2/95	3.80	4.55	
	2/8/96		3.77	
	5/8/96			3.40
	8/9/96		3.53	
	11/7/96		3.99	4.06
	2/10/97			3.85
	8/5/97			5.37
MW7	11/2/95			
	2/8/96		2.67	==
	5/8/96			2,20
	8/9/96		2.37	
	11/7/96		2.22	2.28
	2/11/97			2.33
	8/5/97			2.69
MW8	11/2/95			
	2/8/96		3.85	
	5/8/96			2.09
	8/9/96		2.56	
	11/7/96		1.67	1.84
	2/10/97			2.10
	8/5/97			3.04
MW9	11/2/95			
	2/8/96		3.62	
	5/8/96			2.20
	8/9/96		2.51	
	11/7/96		2.06	2.02
	2/10/97			1.96
	8/5/97			2.57
MW10	11/2/95	3.10	3.96	
	2/8/96		2.88	
	5/8/96			2.71
	8/9/96		2.63	
	11/7/96		1.81	1.84
	2/10/97		_	2.03
	8/5/97			2.78

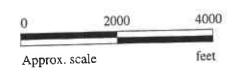
Table 3
Summary of Monitoring Data
Dissolved Oxygen (DO) Concentration Measurements

		Dis	solved Oxygen R	eading
			Before Purging	After Purging
Well#	Date	(mg/L)+	(mg/L)••	(mg/L)◆◆
MW11	11/2/95	2.60	3.55	
	2/8/96		2.19	
	5/8/96			2.06
	8/9/96		2.11	
	11/7/96		2.35	2.36
	2/10/97			2.18
	8/5/97			3.19
MW2‡	11/7/96		2.85	2.80
•	2/11/97			2.73
	8/5/97		_	3.99
MW3‡	11/7/96		2.41	2.40
	2/11/97			2.55
	8/5/97			3.74

- Dissolved oxygen concentrations measured in the laboratory.
- Dissolved oxygen concentrations measured in the field using a LaMotte DO4000 dissolved oxygen meter.
- ‡ Wells located on Shadrall Property.
- -- Indicates measurement was not taken.

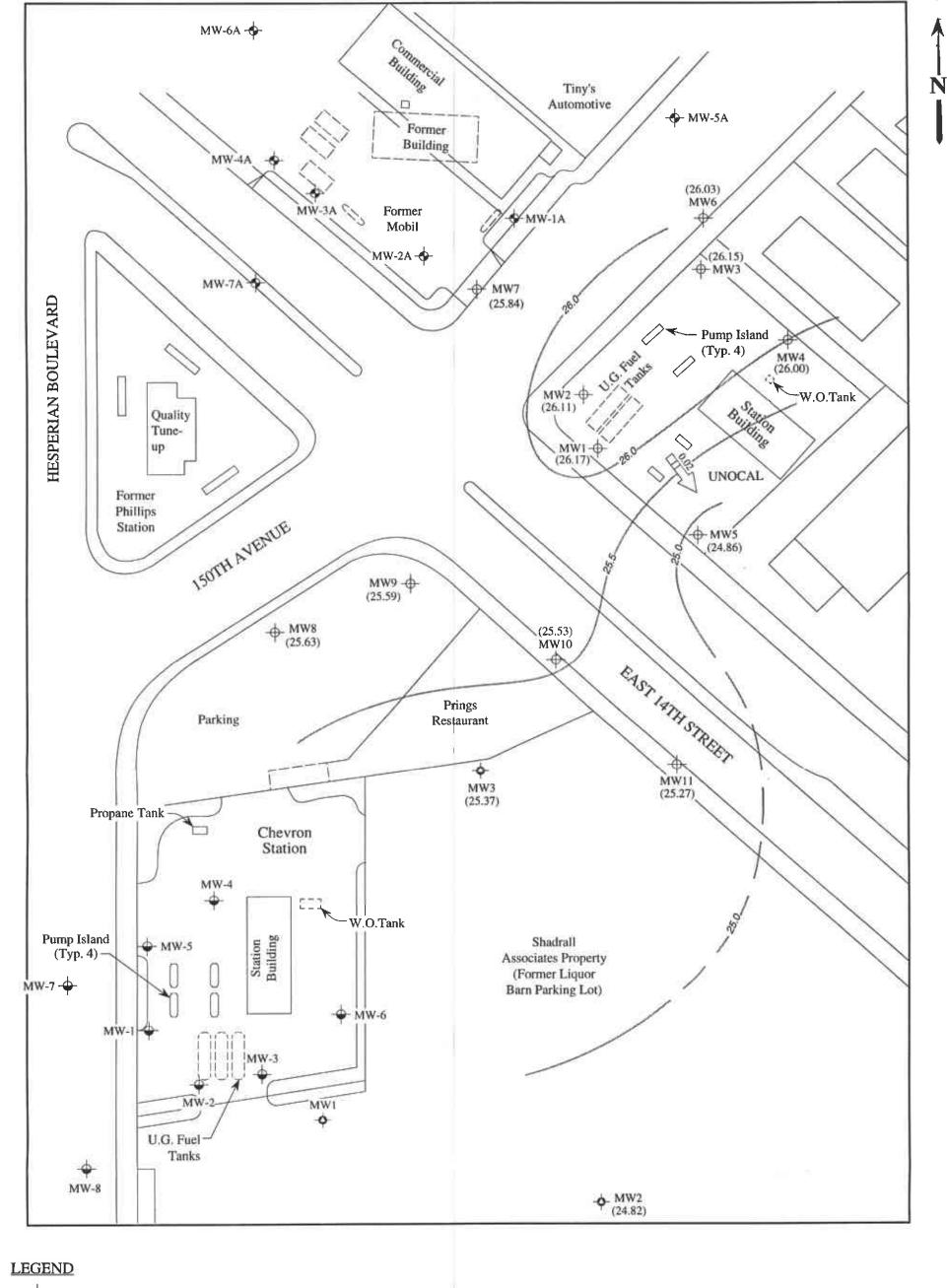


Base modified from 7.5 minute U.S.G.S. Hayward and San Leandor Quadrangles (both photorevised 1980)





UNOCAL SERVICE STATION #3292 15008 E. 14TH STREET SAN LEANDRO, CALIFORNIA LOCATION MAP



- Monitoring well (Unocal)
- Monitoring well (Shadrall Property)
- Monitoring well (Former Mobil)
- Monitoring well (Chevron)
- () Ground water elevation in feet above Mean Sea Level
- Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation

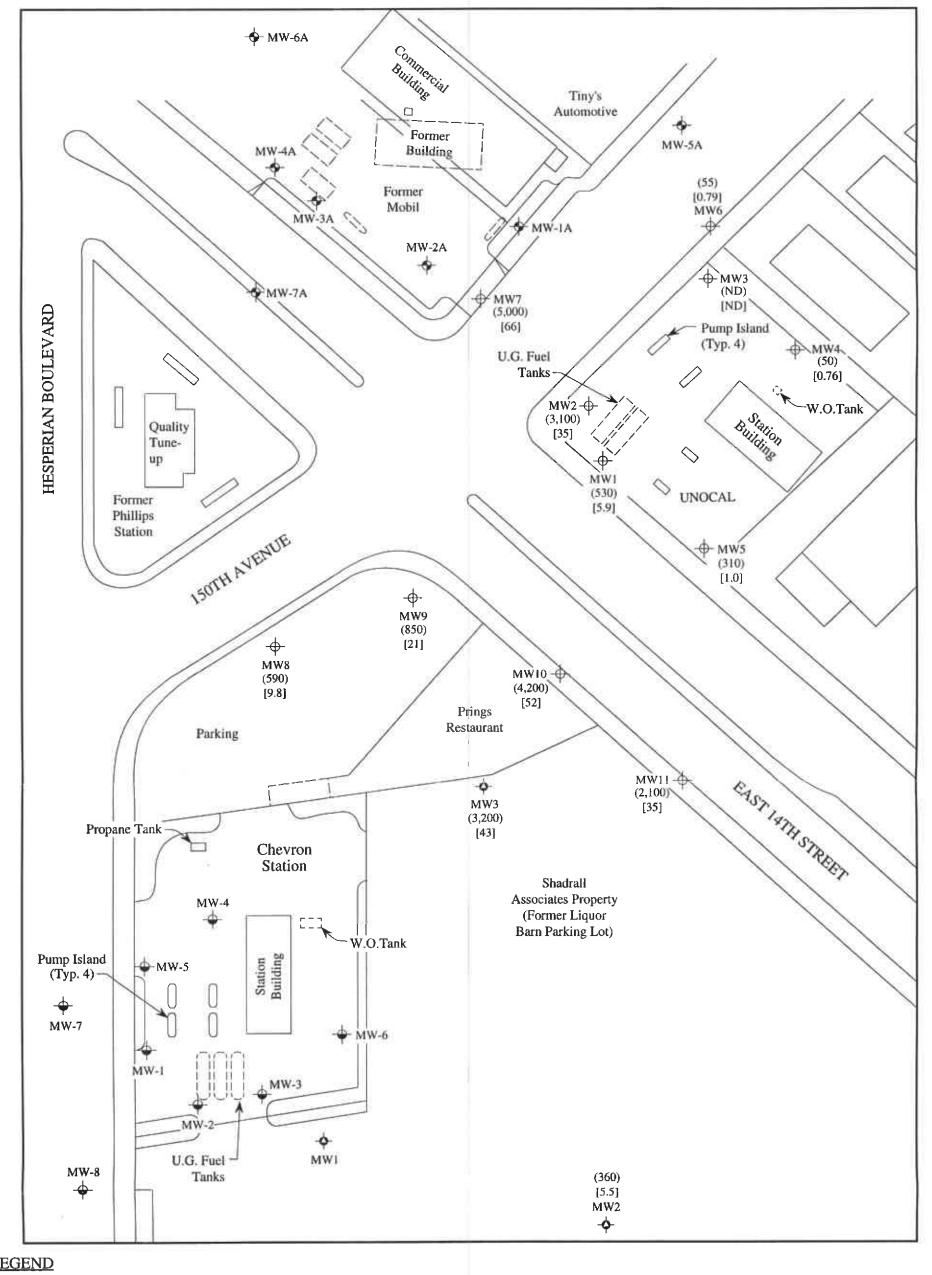
POTENTIOMETRIC SURFACE MAP FOR THE AUGUST 5, 1997 MONITORING EVENT

UNOCAL SERVICE STATION #3292 15008 E. 14TH STREET SAN LEANDRO, CALIFORNIA





FIGURE 1

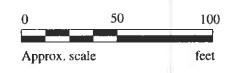


LEGEND

- → Monitoring well (Unocal)
- → Monitoring well (Shadrall Property)
- Monitoring well (Former Mobil)
- Monitoring well (Chevron)
- () Concentration of TPH as gasoline in $\mu \text{g}/L$
- [] Concentration of benzene in $\mu g/L$
- ND Non-detectable
 - * The lab reported that the hydrocarbons detected did not appear to be gasoline.

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON AUGUST 5, 1997

UNOCAL SERVICE STATION #3292 15008 E. 14TH STREET SAN LEANDRO, CALIFORNIA





FIGURE

N



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 #3292, 15008 E 14th, San Leandro Sampled: Aug 5, 199 Water

Aug 5, 1997 Aug 6, 1997

Attention: Jarrel Crider

Analysis Method: First Sample #:

EPA 5030/8015 Mod./8020 708-0389

Received: Reported:

Aug 19, 1997

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene μg/L	Toluene μg/L	Ethyl Benzene µg/L	Total Xylenes μg/L
708-0389	MW-1	530^	5.9	ND	5.6	NĐ
708-0390	MW-2	3,100	35	ND	13	ND
708-0391	MW-3	ND	ND	ND	ND	ND
708-0392	MW-4	50	0.76	ND	ND	ND
708-0393	MW-5	310	1.0	ND	17	40
708-0394	MW-6	55	0.79	ND	ND	ND
708-0395	MW-7	5,000	66	ND	420	240
708-0396	MW-8	590^	9.8	ND	ND	ND
708-0397	MW-9	850^	21	ND	ND	ND
708-0398	MW-10	4,200	52	ND	40	ND

[^] Hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

Detection Limits:	EΛ	Λ ΕΛ	ΛΕΛ	ΛΕΛ	ΛΕΛ	
Detection Limits.	ວບ	0.50	0.50	บ.อบ	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





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 Attention: Jarrel Crider

Client Project ID: Matrix Descript:

roject ID: Unocal #3292, 15008 E 14th, San Leandro Sampled: A

Water

Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 708-0389

Aug 5, 1997

Received: Aug 6, 1997 Reported: Aug 19, 1997

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Recovery, % QC Limits: 70-130	
708-0389	MW-1	Gasoline & Unidentified Hydrocarbons <c7^< td=""><td>10</td><td>08/13/97</td><td>HP-4</td><td>97</td></c7^<>	10	08/13/97	HP-4	97	
708-0390	MW-2	Gasoline	20	08/13/97	HP-4	95	
708-0391	MW-3	-	1.0	08/13/97	HP-4	101	
708-0392	MW-4	Gasoline	1.0	08/13/97	HP-4	98	
708-0393	MW-5	Gasoline	1.0	08/13/97	HP-4	88	
708-0394	MW-6	Gasoline	1.0	08/13/97	HP-4	98	
708-0395	MW-7	Gasoline	50	08/13/97	HP-4	92	
708-0396	MW-8	Gasoline & Unidentified Hydrocarbons <c7^< td=""><td>2.0</td><td>08/13/97</td><td>HP-4</td><td>89</td></c7^<>	2.0	08/13/97	HP-4	89	
708-0397	MW-9	Gasoline & Unidentified Hydrocarbons <c7^< td=""><td>10</td><td>08/14/97</td><td>HP-4</td><td>98</td></c7^<>	10	08/14/97	HP-4	98	
708-0398	MW-10	Gasoline	20	08/13/97	HP-4	86	

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager Please Note:

"Unidentified Hydrocarbons < C7" refers to unidentified peaks in the EPA 8010 range.

Page 2 of 2





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 #3292, 15008 E 14th, San Leandro Sampled: Aug 5, 1997 Water

Received:

Aug 6, 1997

Attention: Jarrel Crider

Analysis Method: First Sample #:

EPA 5030/8015 Mod./8020 708-0399

Reported:

Aug 19, 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 μg/L
708-0399	MW-11	2,100	35	ND	24	ND
708-0400	MW-2CH	360	5.5	50	ND	ND
708-0401	MW-3CH	3,200	43	5.7	ND	ND

Paration inches		A EA		A EA	0.00
I Detection Limits:	50	0.50	0.50	0.50	0.50
Detection Entities.		0.00	0.50	0.00	0.00

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

7080389.MPD <3>





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 Attention: Jarrel Crider

Matrix Descript: Analysis Method:

Client Project ID: Unocal #3292, 15008 E 14th, San Leandro Sampled: Aug 5, 1997

Water EPA 5030/8015 Mod./8020

First Sample #: 708-0399

Received:

Aug 6, 1997

Reported: Aug 19, 1997

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
708-0399	MW-11	Gasoline	10	08/13/97	HP-4	85
708-0400	MW-2CH	Gasoline	1.0	08/13/97	HP-4	98
708-0401	MW-3CH	Gasoline	10	08/13/97	HP-4	90

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp Project Manager





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 Attention: Jarrel Crider

Client Project ID: Sample Descript: Analysis for:

First Sample #:

Unocal #3292, 15008 E 14th, San Leandro

Water

MTBE (Modified EPA 8020) 708-0389 Sampled: Aug 5, 1997 Received: Aug 6, 1997

Analyzed: Aug 13-14,1997 Reported: Aug 19, 1997

LABORATORY ANALYSIS FOR:

MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit μg/L	Sample Result µg/L
708-0389	MW-1	25	430
708-0390	MW-2	50	58
708-0391	MW-3	5.0	N.D.
708-0392	MW-4	5.0	N.D.
708-0393	MW-5	5.0	N.D.
708-0394	MW-6	5.0	N.D.
708-0395	MW-7	130	N.D.
708-0396	MW-8	5.0	N.D.
708-0397	MW-9	25	33
708-0398	MW-10	50	81

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





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 Attention: Jarrel Crider

Client Project ID: Sample Descript: Analysis for:

First Sample #:

Unocal #3292, 15008 E 14th, San Leandro

Water

MTBE (Modified EPA 8020) 708-0399

Sampled: Aug 5, 1997 Received: Aug 6, 1997

Analyzed: Aug 13, 1997 Reported: Aug 19, 1997

LABORATORY ANALYSIS FOR:

MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit $\mu \mathrm{g/L}$	Sample Result µg/L
708-0399	MW-11	25	1,800
708-0400	MW-2CH	5.0	N.D.
708-0401	MW-3CH	25	61

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





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 Attention: Jarrel Crider

Client Project ID:

Matrix:

Unocal #3292, 15008 E 14th, San Leandro

Liquid

QC Sample Group: 7080389-401

Reported:

Aug 19, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl	Xylenes	
			Benzene		
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	
MS/MSD					
Batch#:	7080391	7080391	7080391	7080391	
Date Prepared:	8/13/97	8/13/97	8/13/97	· 8/13/97	
Date Analyzed:	8/13/97	8/13/97	8/13/97	8/13/97	
Instrument i.D.#:	HP-4	HP-4	HP-4	HP-4	
Conc. Spiked:	20 μg/L	20 μg/L	20 μg/L	60 μg/L	
Matrix Spike					
% Recovery:	95	95	90	95	
Matrix Spike Duplicate % Recovery:	95	95	90	95	
Relative %					
Difference:	0.0	0.0	0.0	0.0	
LCS Batch#:	4LCS081397	4LCS081397	4LCS081397	4LCS081397	
Date Prepared:	8/13/97	8/13/97	8/13/97	8/13/97	
Date Analyzed:	8/13/97	8/13/97	8/13/97	8/13/97	
instrument i.D.#:	HP-4	HP-4	HP-4	HP-4	

90

60-140

SEQUOIA ANALYTICAL, #1271

95

60-140

LCS % Recovery:

% Recovery **Control Limits:**

Signature on File

Alan B. Kemp Project Manager Please Note:

95

60-140

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

93

60-140



CHAIN OF CUSTODY

97 18/17

SAMPLER		. \	TOS	co # 3	292	CITY: San Le	anden	ANALYSES REQUESTED							TURN AROUND TIME:		
SOC A	-SEMIA		ADDR	ESS: _	150	_ CITY: <u>San Le</u> DOS E114`	+E1	16,876 78E							Regular		
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	СОМР	NO. OF CONT.	SAMPLING LOCATION	12							REMARKS		
Muc-1	8-5-97	5:08 p.m		/		2 V O A	wells	/	7080	389	A-	B			mTBE! < COS.		
vuw.2		31 W P. w	/	/		-	1	/	7080	330					\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
MW.3	-	11:38 Am							7080	391							
mw-4		9:30 A.v	/	_		/	/	/	7080	392							
MW-5	,	5.47 PM	2	/				/	7080	393							
MW-G		10,12 A.W	_	/		/	/	/	7080	394							
vuw-7	1	3;30	/			1			7080	395							
mw-8	/	1:00 P.W	/	/		/	/	/	7080	396							
mw-q.	-	12:15 PN		1		/	/	/	7080	397							
MW-10.	<i>)</i> #:	4:17	/	7		/	/	1	708	039 8	1						
RELINQUIS	HED BY:	DATE/T	IME		RI	ECEIVED BY:	DA	TE/TIME	THE FOLLOWING	MUST BE C	OMPLETE	D BY THE L	ABORATOR	Y ACCEPTIF	NG SAMPLES FOR ANALYSES:		
	İ	5:30	ginor M						1. HAVE ALL SAME	LES RECEIV	ED FOR A	NALYSIS B	EEN STORE	ON ICE?			
(SIGNATURE)	المكس	8.6	77	(SIGN/ ×/)	ATURE)	leias	(D.	730 697	2. WILL SAMPLES I						<u> </u>		
	l Circo	Q~7~	77			N-	8	(1500) (1500) (1500)	3. DID ANY SAMPL								
	he	γ - \		ISIGN	LA	sma		8/7/97 1445	4. WERE SAMPLES	IN APPROP	RIATE CO	NTAINERS /	AND PROPER	ILY PACKA	GED?		
(SIGNATURE)				(SIGN)	ATURE)				SIGNATURE:				TITL	.E:	DATE: 8-6-97		

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.

CHAIN OF CUSTODY

SAMPLER	<u>-</u>		TOSC S/S	0 # <u>32</u>	92	_ CITY: <u>ξαν (ε.</u>	פולעוי	ANALYSES REQUESTED					•	TURN AROUND TIME:		
JOE AT	EM (AN	·	ADDR	ESS: _	1500	CITY: Saule.	_	46,87EX								Regular
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	СОМР	NO, OF CONT.	SAMPLING LOCATION	747								REMARKS
MW-11	8-5-47	1:33 e.w	/	-		2 vo 1	wexs	/		708	0399	A-	3			MTSE: 5 pp.
mw-2cil	,	10:52 A.m	_	7		-	-	/		708	3046	9 1				
MW_3CH	,	2:2d F.m				/	/			708	9461	J				
		<i>j</i> ,														
																,
	:															
		,														
RELINQUISI	IED BY:	DATE/T	IME		R	ECEIVED BY:	DA	TE/TIME	THE FO	LLOWING !	MUST BE CO	MPLETE	BY THE L	ABORATO	RY ACCEPT	ING SAMPLES FOR ANALYSES:
		5.30	سرهر	•												
(SIGNATURE)	·	8 6 G		IISIGN	ATURE	dear		1730 6-97			EMAIN REFF					
(SIGNATURE)	0000			ISIGN	ATURE	deras		3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? 3. 7 8,77 4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? TITLE: DATE:								
(SIGNATURE)	1	8-7-5	<u>' / </u>	(SIGN	ATURE) 	8	17/97	4. WERE	SAMPLES	IN APPROPR	NATE CO	NTAINERS	AND PROPI	ERLY PACK	AGED?
(SIGNATURE)	74	87		ISIGN	ATURE	sma		147)	I SIGNA I	UKE:				111	LC:	date: 8-6-97

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.