



GETTLER-RYAN Inc.

TRANSMITTAL

August 10, 1999

G-R #:180063

TO: Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

CC: Mr. Doug Lee
Gettler-Ryan Inc.
Dublin, California

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Tosco (Unocal) SS #0746
3943 Broadway
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	August 3, 1999	Groundwater Monitoring and Sampling Report Semi-Annual 1999 - Event of May 20, 1999 Monthly Events of April 2, 1999, May 5, 1999 June 29, 1999 and July 29, 1999

COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by **August 23, 1999**, this report will be distributed to the following:

Enclosure

cc: Ms. Eva Chu
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

99 NOV 24 PM 2:50

ENVIRONMENTAL PROTECTION

agency/0746dbd.qmt



GETTLER-RYAN INC.

August 3, 1999
G-R Job #180063

Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

FILE COPY

RE: Semi-Annual 1999 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #0746
3943 Broadway
Oakland, California

Dear Mr. De Witt:

This report documents the monthly and semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On April 2, May 5, June 29, and July 29, 1999 field personnel monitored one well (MW-5). In addition, on May 20, 1999, field personnel monitored twelve wells (MW-1 through MW-12) and sampled six wells (MW-1, MW-3, MW-4, MW-8, MW-9, and MW-11) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were present in one of the wells (MW-5). Static water level data and groundwater elevations are summarized in Table 1. Product Thickness/Removal Data is presented in Table 3. Dissolved Oxygen Concentrations are summarized in Table 2. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Tables 1 and 4. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

Deanna L. Harding

Deanna L. Harding
Project Coordinator

Douglas J. Lee

Douglas J. Lee
Senior Geologist, R.G. No. 6882

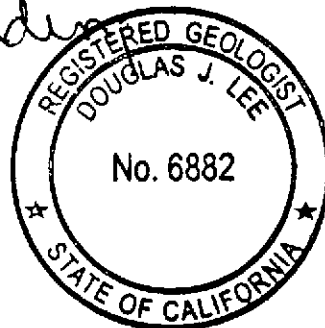
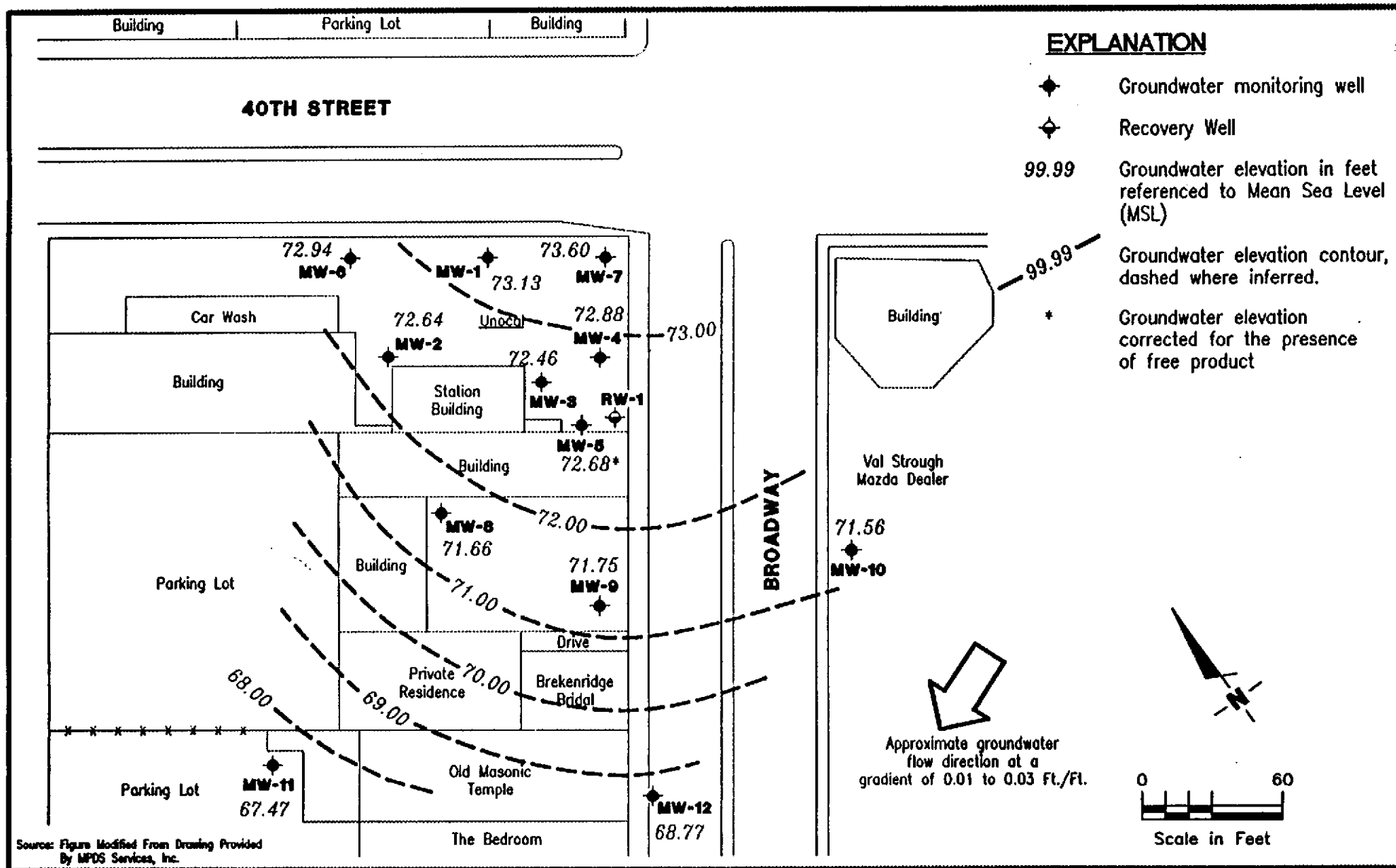


Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Dissolved Oxygen Concentrations
Table 3: Product Thickness/Removal Data
Table 4: Oxygenate Compounds
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports
0746.qml



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (925) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP

Tosco (Unocal) Service Station No. 0746
3943 Broadway
Oakland, California

FIGURE

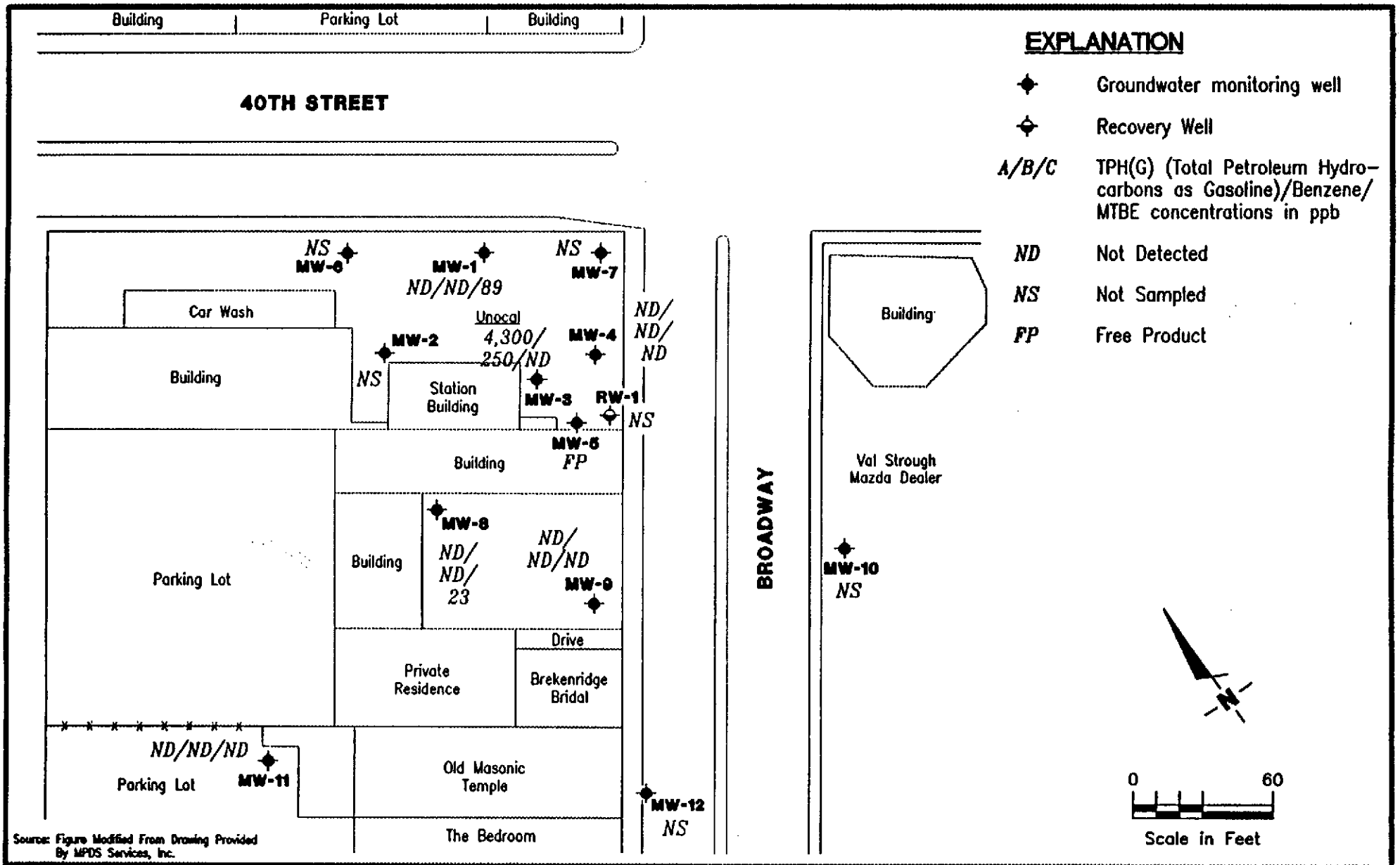
1

JOB NUMBER
180063

REVIEWED BY

DATE
May 20, 1999

REVISED DATE



Gettler - Ryan Inc.

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Dublin, CA 94568

CONCENTRATION MAP
 Tosco (Unocal) Service Station No. 0746
 3943 Broadway
 Oakland, California

FIGURE

2

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-1	11/01/89				ND	ND	ND	ND	0.3	--	
	02/15/90				170	7.9	ND	2.2	2.8	--	
	08/16/90				ND	ND	ND	ND	ND	--	
	11/07/90				45	ND	ND	ND	ND	--	
	02/25/91				ND	ND	ND	ND	ND	--	
	05/28/91				ND	ND	ND	ND	ND	--	
	08/28/91				ND	ND	ND	ND	ND	--	
	11/19/91				ND	ND	ND	ND	ND	--	
	02/06/92				ND	ND	ND	ND	ND	--	
	05/23/92				ND	ND	ND	ND	ND	--	
	08/26/92				ND	ND	ND	ND	ND	--	
	11/20/92				ND	0.75	ND	ND	ND	--	
	02/24/93				1,100	280	4.9	120	140	--	
	05/25/93				260	27	4.9	2.6	54	--	
	08/25/93				ND	ND	ND	ND	ND	--	
11/30/93				SAMPLED SEMI-ANNUALLY						--	--
80.54	02/16/94	7.46	73.08	0.00	ND	0.84	ND	ND	0.59	--	
	05/31/94	7.80	72.74	0.00	--	--	--	--	--	--	
	08/31/94	8.27	72.27	0.00	ND	ND	0.98	ND	0.84	--	
	09/27/94	8.37	72.17	0.00	--	--	--	--	--	--	
	10/11/94	8.36	72.18	0.00	--	--	--	--	--	--	
	11/10/94	6.43	74.11	0.00	--	--	--	--	--	--	
	02/07/95	7.06	73.48	0.00	6,100	670	ND	120	60	--	
	05/03/95	6.85	73.69	0.00	260	21	39	17	24	--	
	08/03/95	7.69	72.85	0.00	--	--	--	--	--	--	
	11/07/95	8.15	72.39	0.00	ND	ND	ND	ND	ND	--	
	05/06/96	7.40	73.14	0.00	170	1.0	20	2.3	17	55	
	11/05/96	7.90	72.64	0.00	ND	ND	ND	ND	ND	5.2	
	05/15/97	7.77	72.77	0.00	ND	ND	ND	ND	ND	16	
	11/12/97	7.48	73.06	0.00	ND	ND	ND	ND	ND	11	
	NP	05/04/98	7.39	73.15	0.00	ND	ND	ND	ND	ND	320
NP	11/11/98	7.37	73.17	0.00	ND	ND	ND	ND	ND	200	
NP	05/20/99	7.41	73.13	0.00	ND	ND	ND	ND	ND	89/47 ^{7,8,9}	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-2	11/01/89				200	ND	ND	3.0	1.2	--	
	02/15/90				ND	ND	ND	ND	ND	--	
	08/16/90				ND	ND	6.7	ND	ND	--	
	11/07/90				ND	ND	ND	ND	ND	--	
	02/25/91				ND	0.68	0.42	ND	0.86	--	
	05/28/91				ND	ND	ND	ND	ND	--	
	08/28/91				ND	ND	ND	ND	ND	--	
	11/19/91				ND	ND	ND	ND	ND	--	
	02/06/92				ND	0.36	0.66	ND	0.62	--	
	05/23/92				ND	ND	ND	ND	ND	--	
	08/26/92				ND	ND	ND	ND	ND	--	
	11/20/92				510 ¹	ND	ND	ND	ND	--	
	02/24/93				11,000 ¹	ND	ND	ND	ND	--	
	05/25/93				1,300 ¹	ND	ND	ND	ND	2,700	
	08/25/93				190 ¹	ND	ND	ND	ND	--	
11/30/93				480 ¹	ND	ND	ND	ND	--		
81.32	02/16/94	8.91	72.41	0.00	3,200 ¹	ND	ND	ND	ND	--	
	05/31/94	9.36	71.96	0.00	1,100 ¹	ND	ND	ND	ND	--	
	08/31/94	9.85	71.47	0.00	310 ¹	ND	ND	ND	ND	--	
	09/27/94	9.95	71.37	0.00	--	--	--	--	--	--	
	10/11/95	9.95	71.37	0.00	--	--	--	--	--	--	
	11/10/94	7.47	73.85	0.00	95 ²	ND	ND	ND	ND	--	
	02/07/95	8.29	73.03	0.00	1,600 ¹	ND	ND	ND	ND	--	
	05/03/95	8.12	73.20	0.00	ND	ND	ND	ND	ND	--	
	08/03/95	9.35	71.97	0.00	ND	ND	ND	ND	ND	--	
	11/07/95	9.65	71.67	0.00	ND	ND	ND	ND	ND	160 ³	
	05/06/96	8.90	72.42	0.00	SAMPLING DISCONTINUED ⁴		--	--	--	--	--
	11/05/96	10.98	70.34	0.00	--	--	--	--	--	--	
	05/15/97	9.13	72.19	0.00	--	--	--	--	--	--	
	11/12/97	9.84	71.48	0.00	--	--	--	--	--	--	
	05/04/98	9.26	72.06	0.00	--	--	--	--	--	--	
	11/11/98	8.88	72.44	0.00	--	--	--	--	--	--	
	05/20/99	8.68	72.64	0.00	--	--	--	--	--	--	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-3	NP 05/04/98	9.50	71.91	0.00	8,200	430	ND ⁵	310	320	ND ⁵
(cont)	NP 11/11/98	9.25	72.16	0.00	8,700	500	ND ⁵	330	310	ND ⁵
	NP 05/20/99	8.95	72.46	0.00	4,300	250	ND ⁵	ND ⁵	86	ND ⁵
MW-4	02/15/90				150	8.0	8.0	10	45	--
	08/16/90				3,600	480	17	230	260	--
	11/07/90				180	1.5	0.37	6.3	26	--
	02/25/91				22,000	600	1,300	780	2,800	--
	05/28/91				38	ND	ND	ND	1.9	--
	08/28/91				2,000	1,500	20	120	300	--
	11/19/91				55	9.2	4.5	1.4	6.7	--
	02/06/92				5,700	2,200	140	57	980	--
	05/23/92				ND	ND	ND	ND	ND	--
	08/26/92				120	86	0.52	0.57	1.6	--
	11/20/92				ND	6.2	ND	1.2	0.52	--
	02/24/93				140	12	0.64	9.4	3.7	--
	05/25/93				74	10	ND	4.6	1.8	--
	08/25/93				640	100	1.1	100	22	--
	11/30/93				200	28	ND	17	8.1	--
81.29	02/16/94	9.21	72.08	0.00	190	11	0.98	21	6.6	--
	05/31/94	9.11	72.18	0.00	1,100	190	ND	100	58	--
	08/31/94	10.01	71.28	0.00	400	17	0.94	14	5.2	--
	09/27/94	10.09	71.20	0.00	--	--	--	--	--	--
	10/11/94	11.50	69.79	0.00	--	--	--	--	--	--
	11/10/94	9.21	72.08	0.00	7,700	1,800	280	460	1,300	--
	02/07/95	7.66	73.63	0.00	540	47	ND	17	2.5	--
	05/03/95	8.29	73.00	0.00	160	8.3	0.52	1.5	3.7	--
	08/03/95	8.60	72.69	0.00	57	2.0	ND	ND	ND	--
	11/07/95	10.28	71.01	0.00	ND	0.71	ND	ND	ND	0.86
	05/06/96	8.70	72.59	0.00	1,200	12	11	15	36	ND
	11/05/96	10.00	71.29	0.00	700	32	0.71	1.8	1.3	6.5
	05/15/97	9.37	71.92	0.00	51	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product							
				Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-4	11/12/97	8.92	72.37	0.00	74	1.7	ND	ND	ND	ND	
(cont)	NP 05/04/98	9.48	71.81	0.00	ND	ND	ND	ND	ND	ND	
	NP 11/11/98	9.13	72.16	0.00	ND	0.63	ND	ND	ND	ND	
	NP 05/20/99	8.41	72.88	0.00	ND	ND	ND	ND	ND	ND	
MW-5	02/15/90				24,000	1,500	1,700	260	3,600	--	
	08/16/90				16,000	1,400	1,900	2,800	660	--	
	11/07/90				20,000	640	1,100	670	3,000	--	
	02/25/91				25,000	950	1,300	900	3,500	--	
	05/28/91				24,000	2,300	3,400	1,300	6,000	--	
	08/28/91				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	11/19/91				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	02/06/92				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	05/23/92				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	08/26/92				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	11/20/92				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	02/24/93				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	05/25/93				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	08/25/93				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	11/30/93				NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
81.38	02/16/94	8.95	72.45**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	05/31/94	9.63	71.75	<0.01	43,000	1,500	1,200	1,600	6,700	--	
	08/31/94	10.25	71.15**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	09/27/94	10.38	71.00	<0.01	--	--	--	--	--	--	
	10/11/94	10.45	70.95**	0.02	--	--	--	--	--	--	
	11/10/94	7.54	73.90**	0.08	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	02/07/95	8.10	73.28	0.00	25,000	1,400	740	990	3,000	--	
	03/14/95	7.04	74.34	0.00	--	--	--	--	--	--	
	05/03/95	7.98	73.40	0.00	12,000	680	160	600	1,800	--	
	08/03/95	9.25	72.13	0.00	23,000	940	280	810	2,700	--	
	11/07/95	10.00	71.38	0.00	40,000	510	280	1,000	5,700	630 ³	
	05/06/96	9.03	72.35	Sheen	13,000	200	ND	180	610	170	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-5	11/05/96	10.41	70.97	0.00	35,000	1,800	ND	1,300	4,900	580
(cont)	05/15/97	9.41	71.97	Sheen	10,000	490	ND	ND	1,300	ND
	11/12/97	9.27	72.11	0.00	100	5.1	ND	ND	ND	74
NP	05/04/98	9.18	72.20	0.00	39,000	1,600	230	1,000	3,200	ND ⁵
	11/11/98	9.23	72.43**	0.37	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--
	02/22/99	7.69	73.88**	0.25	--	--	--	--	--	--
	04/02/99 ⁶	8.19	73.40**	0.28	--	--	--	--	--	--
	05/04/99	8.44	72.95**	0.01	--	--	--	--	--	--
	05/20/99	8.73	72.68**	0.04	--	--	--	--	--	--
	06/29/99	8.91	72.51**	0.05	--	--	--	--	--	--
	07/29/99	9.12	72.31**	0.07	--	--	--	--	--	--
MW-6	11/07/90				ND	ND	ND	ND	ND	--
	02/25/91				ND	0.37	0.4	0.35	1.5	--
	05/28/91				ND	ND	ND	ND	0.42	--
	08/28/91				ND	ND	ND	ND	ND	--
	11/19/91				ND	ND	ND	ND	ND	--
	02/06/92				ND	ND	ND	ND	ND	--
	05/23/92				ND	ND	ND	ND	ND	--
	08/26/92				ND	ND	ND	ND	ND	--
	11/20/92				ND	ND	ND	ND	ND	--
	02/24/93				ND	ND	ND	ND	ND	--
	05/25/93				ND	ND	ND	ND	ND	--
	08/25/93				ND	ND	ND	ND	ND	--
	11/30/93				SAMPLED SEMI-ANNUALLY		--	--	--	--
79.94	02/16/94	7.13	72.81	0.00	ND	ND	ND	ND	ND	--
	05/31/94	7.49	72.45	0.00	--	--	--	--	--	--
	08/31/94	7.93	72.01	0.00	ND	ND	1.5	ND	1.6	--
	09/27/94	8.03	71.91	0.00	--	--	--	--	--	--
	10/11/94	8.05	71.89	0.00	--	--	--	--	--	--
	11/10/94	6.12	73.82	0.00	--	--	--	--	--	--
	02/07/95	6.65	73.29	0.00	ND	ND	ND	ND	ND	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-6 (cont)	05/03/95	6.47	73.47	0.00	ND	ND	ND	ND	1.0	--
	08/03/95	7.28	72.66	0.00	--	--	--	--	--	--
	11/07/95	7.98	71.96	0.00	ND	ND	ND	ND	ND	--
	05/06/96	7.80	72.14	0.00	SAMPLING DISCONTINUED ⁴		--	--	--	--
	11/05/96	7.63	72.31	0.00	--	--	--	--	--	--
	05/15/97	7.41	72.53	0.00	--	--	--	--	--	--
	11/12/97	7.51	72.43	0.00	--	--	--	--	--	--
	05/04/98	7.15	72.79	0.00	--	--	--	--	--	--
	11/11/98	7.04	72.90	0.00	--	--	--	--	--	--
	05/20/99	7.00	72.94	0.00	--	--	--	--	--	--
MW-7	11/07/90				ND	ND	ND	ND	ND	--
	02/25/91				70	ND	ND	ND	0.52	--
	05/28/91				39	ND	ND	ND	0.73	--
	08/28/91				ND	ND	ND	ND	ND	--
	11/19/91				32	ND	ND	ND	ND	--
	02/06/92				ND	ND	ND	ND	ND	--
	05/23/92				ND	ND	ND	ND	ND	--
	08/26/92				ND	ND	ND	0.73	ND	--
	11/20/92				ND	ND	ND	ND	ND	--
	02/24/93				ND	ND	ND	ND	ND	--
	05/25/93				ND	ND	ND	ND	ND	--
	08/25/93				ND	ND	ND	ND	ND	--
	11/30/93				SAMPLED SEMI-ANNUALLY		--	--	--	--
81.64	02/16/94	8.36	73.28	0.00	ND	ND	ND	ND	0.7	--
	05/31/94	8.67	72.97	0.00	--	--	--	--	--	--
	08/31/94	9.12	72.52	0.00	ND	ND	0.8	ND	0.75	--
	09/27/94	9.22	72.42	0.00	--	--	--	--	--	--
	10/11/94	9.23	72.41	0.00	--	--	--	--	--	--
	11/10/94	7.66	73.98	0.00	--	--	--	--	--	--
	02/07/95	7.88	73.76	0.00	ND	ND	ND	ND	ND	--
	05/03/95	7.71	73.93	0.00	ND	ND	ND	ND	1.0	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-7	08/03/95	8.40	73.24	0.00	--	--	--	--	--	--
(cont)	11/07/95	8.95	72.69	0.00	ND	ND	ND	ND	ND	--
	05/06/96	8.15	73.49	0.00	--	--	--	--	--	--
	11/05/96	8.67	72.97	0.00	--	--	--	--	--	--
	05/15/97	8.47	73.17	0.00	--	--	--	--	--	--
	11/12/97	7.88	73.76	0.00	--	--	--	--	--	--
	05/04/98	7.93	73.71	0.00	--	--	--	--	--	--
	11/11/98	8.20	73.44	0.00	--	--	--	--	--	--
	05/20/99	8.04	73.60	0.00	--	--	--	--	--	--
MW-8	11/07/90				4,700	28	38	86	7,200	--
	02/25/91				5,300	17	6.1	53	300	--
	05/28/91				4,800	4.2	1.3	5.1	170	--
	08/28/91				1,800	3.2	1.9	19	74	--
	11/19/91				1,600	8.1	1.8	19	52	--
	02/06/92				2,600	4.1	7.0	31	93	--
	05/23/92				2,100	8.6	1.6	1.7	28	--
	08/26/92				1,800	12	8.0	4.0	13	--
	11/20/92	INACCESSIBLE	--	--	--	--	--	--	--	--
	02/24/93	INACCESSIBLE	--	--	--	--	--	--	--	--
	05/25/93				1,200	5.4	ND	9.0	21	--
	08/25/93				1,800	11	17	8.9	29	--
	11/30/93				3,500	18	ND	ND	ND	--
81.41	02/16/94	9.86	71.55	0.00	990	4.9	1.8	2.4	4.5	--
	05/31/94	10.61	70.80	0.00	350	3.0	1.0	0.73	1.7	--
	08/31/94	11.37	70.04	0.00	1,800 ¹	ND	ND	ND	ND	--
	09/27/94	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	10/11/94	11.50	69.91	0.00	--	--	--	--	--	--
	11/10/94	7.81	73.60	0.00	940	6.7	6.3	ND	16	--
	02/07/95	8.69	72.72	0.00	230	1.4	0.95	0.9	1.1	--
	05/03/95	8.60	72.81	0.00	75	ND	ND	ND	1.0	--
	08/03/95	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	11/07/95	11.05	70.36	0.00	210	1.3	1.2	ND	ND	-- ³

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-8 (cont)	05/06/96	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	11/05/96	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	05/15/97	10.46	70.95	0.00	ND	ND	ND	ND	ND	43
	11/12/97	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	05/04/98	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	11/11/98	INACCESSIBLE (PARKED OVER)		--	--	--	--	--	--	--
	NP	05/20/99	9.75	71.66	0.00	ND	ND	ND	ND	ND
MW-9	11/07/90				480	7.8	1.2	13	47	--
	02/25/91				390	13	1.1	2.8	14	--
	05/28/91				590	6.0	0.43	6.8	1.4	--
	08/28/91				450	17	0.9	13	14	--
	11/19/91				360	17	0.45	15	11	--
	02/06/92				660	41	1.0	33	15	--
	05/23/92				460	18	0.66	1.4	3.2	--
	08/26/92				250	13	ND	8.6	3.8	--
	11/20/92	INACCESSIBLE	--	--	--	--	--	--	--	--
	02/24/93	INACCESSIBLE	--	--	--	--	--	--	--	--
	05/25/93				160	6.1	ND	7.4	1.1	--
	08/25/93				220	10	ND	6.8	1.4	--
	11/30/93				200	5.6	ND	2.9	2.7	--
80.53	02/16/94	9.21	71.32	0.00	250	5.1	1.3	4.4	1.5	--
	05/31/94	10.15	70.38	0.00	360	7.8	0.97	4.6	2.2	--
	08/31/94	10.97	69.56	0.00	650	7.7	2.8	4.4	5.0	59
	09/27/94	11.10	69.43	0.00	--	--	--	--	--	--
	10/11/94	11.20	69.33	0.00	--	--	--	--	--	--
	11/10/94	7.25	73.28	0.00	ND	ND	ND	ND	ND	--
	02/07/95	7.76	72.77	0.00	57	0.7	ND	0.86	ND	--
	05/03/95	7.82	72.71	0.00	ND	0.85	0.67	1.3	1.0	--
	08/03/95	9.70	70.83	0.00	91	1.1	ND	ND	ND	--
	11/07/95	10.64	69.89	0.00	130	1.5	0.62	0.71	ND	60 ³
	05/06/96	9.01	71.52	0.00	860	6.1	13	6.0	25	ND
	11/05/96	11.42	69.11	0.00	84	0.74	ND	1.2	4.5	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-9 (cont)	05/15/97	9.89	70.64	0.00	ND	ND	ND	ND	ND	ND
	11/12/97	10.22	70.31	0.00	ND	0.55	ND	ND	ND	74
	NP 05/04/98	10.05	70.48	0.00	ND	ND	ND	ND	ND	45
	NP 11/11/98	9.23	71.30	0.00	ND	ND	ND	ND	ND	ND
	NP 05/20/99	8.78	71.75	0.00	ND	ND	ND	ND	ND	ND
MW-10	02/06/92				ND	ND	ND	ND	ND	--
	05/23/92				ND	ND	ND	ND	ND	--
	08/26/92				ND	ND	ND	ND	ND	--
	11/20/92				ND	ND	ND	ND	ND	--
	02/24/93				ND	ND	ND	ND	ND	--
	05/25/93				ND	ND	ND	ND	ND	--
	08/25/93				ND	ND	ND	ND	ND	--
81.61	11/30/93	INACCESSIBLE	--	--	--	--	--	--	--	--
	02/16/94	12.43	69.18	0.00	ND	ND	ND	ND	ND	--
	05/31/94	12.69	68.92	0.00	ND	ND	0.9	ND	0.91	--
	08/31/94	13.47	68.14	0.00	ND	ND	0.64	ND	0.54	--
	09/27/94	13.72	67.89	0.00	--	--	--	--	--	--
	10/11/94	14.80	66.81	0.00	--	--	--	--	--	--
	11/10/94	12.64	68.97	0.00	ND	ND	ND	ND	ND	--
	02/07/95	10.29	71.32	0.00	SAMPLED SEMI-ANNUALLY		--	--	--	--
	05/03/95	10.22	71.39	0.00	ND	ND	ND	ND	0.65	--
	08/03/95	11.73	69.88	0.00	--	--	--	--	--	--
	11/07/95	12.98	68.63	0.00	ND	ND	ND	ND	ND	--
	05/06/96	10.90	70.71	0.00	SAMPLING DISCONTINUED ⁴		--	--	--	--
	11/05/96	11.96	69.65	0.00	--	--	--	--	--	--
	05/15/97	10.79	70.82	0.00	--	--	--	--	--	--
	11/12/97	10.07	71.54	0.00	--	--	--	--	--	--
	05/04/98	10.01	71.60	0.00	--	--	--	--	--	--
	11/11/98	12.03	69.58	0.00	--	--	--	--	--	--
	05/20/99	10.05	71.56	0.00	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-11	02/06/92				ND	ND	ND	ND	ND	--
	05/23/92				ND	ND	ND	ND	ND	--
	08/26/92				ND	ND	ND	ND	ND	--
	11/20/92				ND	ND	ND	ND	ND	--
	02/24/93				ND	ND	ND	ND	ND	--
	05/25/93				ND	ND	0.75	ND	1.0	--
	08/25/93				ND	ND	ND	ND	ND	--
	11/30/93				ND	ND	ND	ND	ND	--
78.18	02/16/94	12.76	65.42	0.00	ND	ND	ND	ND	ND	--
	05/31/94	12.79	65.39	0.00	ND	ND	ND	ND	ND	--
	08/31/94	12.97	65.21	0.00	ND	ND	1.5	ND	1.8	--
	09/27/94	14.88	63.30	0.00	--	--	--	--	--	--
	10/11/94	13.40	64.78	0.00	--	--	--	--	--	--
	11/10/94	13.57	64.61	0.00	ND	ND	ND	ND	ND	--
	02/07/95	12.28	65.90	0.00	SAMPLED SEMI-ANNUALLY		--	--	--	--
	05/03/95	9.28	68.90	0.00	ND	ND	ND	ND	ND	--
	08/03/95	12.67	65.51	0.00	--	--	--	--	--	--
	11/07/95	12.28	65.90	0.00	ND	ND	ND	ND	ND	--
	05/06/96	13.30	64.88	0.00	SAMPLING DISCONTINUED ⁴		--	--	--	--
	11/05/96	10.90	67.28	0.00	--	--	--	--	--	--
	05/15/97	11.65	66.53	0.00	--	--	--	--	--	--
	11/12/97	9.66	68.52	0.00	--	--	--	--	--	--
	05/04/98	10.87	67.31	0.00	--	--	--	--	--	--
	11/11/98	11.40	66.78	0.00	--	--	--	--	--	--
	NP	05/20/99	10.71	67.47	0.00	ND	ND	ND	ND	ND
MW-12	08/26/92				ND	ND	ND	ND	ND	--
	11/20/92				ND	ND	ND	ND	ND	--
	11/30/93				ND	ND	ND	ND	ND	--
	08/25/93				ND	ND	ND	ND	ND	--
	05/25/93				ND	ND	ND	ND	ND	--
	02/24/93				ND	ND	ND	ND	ND	--
79.61	02/16/94	12.76	66.85	0.00	ND	ND	ND	ND	ND	--
	08/31/94	12.82	66.79	0.00	ND	ND	1.0	ND	1.0	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-12 (cont)	05/31/94	12.64	66.97	0.00	ND	ND	0.81	ND	0.82	--
	09/27/94	14.66	64.95	0.00	--	--	--	--	--	--
	10/11/94	14.25	65.36	0.00	--	--	--	--	--	--
	11/10/94	13.40	66.21	0.00	ND	ND	ND	ND	ND	--
	02/07/95	11.72	67.89	0.00	SAMPLED SEMI-ANNUALLY		--	--	--	--
	05/03/95	13.38	66.23	0.00	ND	ND	ND	ND	ND	--
	08/03/95	13.47	66.14	0.00	--	--	--	--	--	--
	11/07/95	12.78	66.83	0.00	ND	ND	ND	ND	ND	--
	05/06/96	13.25	66.36	0.00	SAMPLING DISCONTINUED ⁴		--	--	--	--
	11/05/96	11.88	67.73	0.00	--	--	--	--	--	--
	05/15/97	11.72	67.89	0.00	--	--	--	--	--	--
	11/12/97	10.01	69.60	0.00	--	--	--	--	--	--
	05/04/98	10.96	68.65	0.00	--	--	--	--	--	--
	11/11/98	11.53	68.08	0.00	--	--	--	--	--	--
05/20/99	10.84	68.77	0.00	--	--	--	--	--	--	
RW-1 80.63	02/16/94	7.82	72.81	0.00						
	05/31/94	8.81	71.82	0.00						
	08/31/94	9.61	71.02	0.00						
	11/10/94	6.34	74.29	0.00						
	02/07/95	7.18	73.45	0.00						
	03/14/95	6.01	74.62	0.00						
Trip Blank TB-LB	05/04/98	--	--	--	ND	ND	ND	ND	ND	ND
	11/11/98	--	--	--	ND	ND	ND	ND	ND	ND
	05/20/99	--	--	--	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #0746
3943 Broadway
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to May 4, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing	B = Benzene	ppb = Parts per billion
DTW = Depth to Water	T = Toluene	ND = Not Detected
(ft.) = Feet	E = Ethylbenzene	-- = Not Measured/Not Analyzed
GWE = Groundwater Elevation	X = Xylenes	NP = No Purge
msl = Relative to mean sea level	MTBE = Methyl tertiary butyl ether	
TPH(G) = Total Petroleum Hydrocarbons as Gasoline		

- * TOC elevations have been surveyed relative to mean sea level (msl) per the City of Oakland Benchmark BM#1336 (Elevation = 82.28 feet msl).
- ** Groundwater elevation corrected due to the presence of free product; correction factor: $[(TOC-DTW) + (Product\ Thickness \times 0.75)]$.

- ¹ Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- ² Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- ³ Laboratory has identified the presence of MTBE at a level greater than or equal to the taste and odor threshold of 40 ppb in the sample collected from this well.
- ⁴ Sampling discontinued per Alameda County Health Care Services' letter dated January 24, 1996.
- ⁵ Detection limit raised. Refer to analytical results.
- ⁶ Twelve minutes after water/product was bailed, well was monitored again, (DTW = 8.06 ft. and Product Thickness 0.04 ft.).
- ⁷ MTBE by EPA Method 8260.
- ⁸ Sample analyzed past hold time (June 9, 1999).
- ⁹ First run on MTBE by EPA Method 8260 was 92 ppb and analyzed past hold time (June 9, 1999).
- ¹⁰ First run on MTBE by EPA Method 8260 was 12 ppb and analyzed past hold time (June 9, 1999).

Depth to water and groundwater elevation history will be updated in future reports.

Table 2
Dissolved Oxygen Concentrations
Tosco (Unocal) Service Station #0746
3943 Broadway
Oakland, California

Well ID	Date	Before Purging (mg/L)	After Purging (mg/L)
MW-1	05/06/96	5.21	4.13
	11/05/96	3.12	-- ¹
	05/15/97	3.92	-- ¹
	11/12/97	4.16	-- ¹
	05/04/98	3.84	-- ¹
	11/11/98	2.85	-- ¹
	05/20/99	3.30	-- ¹
MW-2	08/19/95	--	2.77
	05/15/97	3.01	-- ¹
	11/12/97	3.27	-- ¹
	05/04/98	3.63	-- ¹
MW-3	08/19/95	--	2.06
	11/07/95	--	1.68
	05/06/96	3.18	3.40
	11/05/96	2.03	-- ¹
	05/15/97	3.08	-- ¹
	05/04/98	2.98	-- ¹
	11/11/98	2.22	-- ¹
	05/20/99	2.60	-- ¹
MW-4	08/19/95	--	2.19
	11/07/95	--	8.43
	05/06/96	3.75	5.97
	11/05/96	2.11	-- ¹
	05/15/97	3.24	-- ¹
	11/12/97	3.11	-- ¹
	05/04/98	3.73	-- ¹
	11/11/98	4.33	-- ¹
	05/20/99	3.90	-- ¹
MW-5	08/19/95	--	2.09
	11/07/95	--	1.79
	05/06/96	2.91	1.80
	11/05/96	1.85	-- ¹
	05/15/97	2.10	-- ¹
	11/12/97	1.98	-- ¹
	05/04/98	1.69	-- ¹
MW-6	05/15/97	2.90	-- ¹
	05/04/98	3.57	-- ¹

Table 2
Dissolved Oxygen Concentrations
Tosco (Unocal) Service Station #0746
3943 Broadway
Oakland, California

Well ID	Date	Before Purging (mg/L)	After Purging (mg/L)
MW-7	05/15/97	2.21	— ¹
	05/04/98	3.09	— ¹
MW-8	11/05/96	INACCESSIBLE (PARKED OVER)	
	05/15/97	2.88	— ¹
	11/12/97	INACCESSIBLE (PARKED OVER)	
	05/04/98	INACCESSIBLE (PARKED OVER)	
	11/11/98	INACCESSIBLE (PARKED OVER)	
	05/20/99	3.55	— ¹
MW-9	05/06/96	4.23	3.25
	11/05/96	2.98	— ¹
	05/15/97	3.04	— ¹
	11/12/97	4.02	— ¹
	05/04/98	3.41	— ¹
	11/11/98	5.19	— ¹
	05/20/99	4.46	— ¹
MW-10	05/15/97	1.61	— ¹
	05/04/98	2.85	— ¹
MW-11	05/15/97	1.68	— ¹
	05/04/98	2.94	— ¹
	05/20/99	3.22	— ¹
MW-12	05/15/97	2.10	— ¹
	05/04/98	3.41	— ¹
RW-1	11/07/95	—	2.13

EXPLANATIONS:

Dissolved oxygen concentrations prior to May 4, 1998, were compiled from reports prepared by MPDS Services, Inc.

mg/L = milligrams per liter

-- = Not Measured

¹ Wells were not purged prior to sampling.

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

Table 4
Groundwater Analytical Results - Oxygenate Compounds
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID	Date	Ethanol (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)
MW-1	05/20/99 ^{1,3}	ND	ND	² 92/47	ND	ND	ND
MW-8	05/20/99 ^{1,3}	ND	ND	² 12/10	ND	ND	ND

EXPLANATIONS:

TBA = Tertiary Butyl Alcohol
 MTBE = Methyl Tertiary Butyl Ether
 DIPE = Di-isopropyl Ether
 ETBE = Ethyl Tertiary Butyl Ether
 TAME = Tertiary Amyl Methyl Ether
 ppb = Parts per billion
 ND = Not Detected

- ¹ Analyzed past hold time (June 9, 1999).
² First run MTBE was for qualitative use only.
³ Report revised July 6, 1999.

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

Table 3
Product Thickness/Removal Data
 Tosco (Unocal) Service Station #0746
 3943 Broadway
 Oakland, California

Well ID	Date	DTW (ft.)	Product Thickness (ft.)	Amount Bailed Product	Amount Bailed Water	Amount Bailed (Product + Water)
MW-5	11/11/1998	9.23	0.37	—	—	0.25 gallons
	02/22/99	7.69	0.25	5 oz.	3 gallons	—
	04/02/99 ^{1,2}	8.19	0.28	9 oz.	20 oz.	29 oz.
	05/04/99	8.44	0.01	—	—	—
	05/20/99	8.73	0.04	—	—	1 oz.
	06/29/99	8.91	0.05	—	—	4 oz.
	07/29/99	9.12	0.07	4 oz.	8 oz.	12 oz.

EXPLANATIONS:

DTW = Depth to water
 (ft.) = Feet
 oz. = ounces

¹ A new skimmer (Petro Trap) was installed.

² Twelve minutes after water/product was bailed, well was monitored again, (DTW = 8.06 ft. and Product Thickness 0.04 ft.).

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

*TOSCO (UNOCAL) SS #0746
OAKLAND, CA*

*MONITORING
EVENT OF APRIL 2, 1999*

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0146
 Address: 3943 BROADWAY
 City: OAKLAND

Job#: 180063
 Date: 4/2/1999
 Sampler: HAIG KEVOAK

Well ID: MW-5
 Well Diameter: 2 in.
 Total Depth: 19.81 ft.
 Depth to Water: 8.19 ft.

Well Condition: WELL COVER IS NOT SECURED (SHORT CHAISTY BOX-HIGH CASING)

Hydrocarbon Thickness: 0.28 (feet) Amount Bailed: 9 OZ. FREE PROD. WATER (Gallons)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer BAILING PRODUCT
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: SUNNY
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: N/A gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	

COMMENTS: MONITOR MW-5. BAIL PRODUCT. INSTALL A NEW SKIMMER (PETRO TRAP)

NOTE: ADDITIONAL WORK IS NEEDED ASAP IN ORDER TO SECURE WELL COVER ON CHAISTY BOX. I LEFT ONE CONE ON TOP OF MW-5 FOR SAFETY.

*TOSCO (UNOCAL) SS #0746
OAKLAND, CA*

*MONITORING
EVENT OF MAY 4, 1999*

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

190063.85

Client/
Facility TOSCO 76# 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 140064.03
Date: 5/4/99
Sampler: HAIG KEVORK

Well ID MW-5

Well Condition: OK

Well Diameter 2 in.

Hydrocarbon Thickness: 0.01 (feet) Amount Bailed (product/water): _____ (Gallons)

Total Depth 19.81 ft.

Depth to Water 8.44 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: N/A
Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____
Sampling Time: N/A
Purging Flow Rate: N/A gpm.
Did well de-water? _____

Weather Conditions: SUNNY
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
		<u>N/A</u>	<u>N/A</u>				

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>/</u>	<u>/</u>	<u>Y</u>	<u>/</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>

COMMENTS: _____

*TOSCO (UNOCAL) SS #0746
OAKLAND, CA*

*MONITORING & SAMPLING
EVENT OF MAY 20, 1999*

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 # 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/1994
Sampler: HAIG KEVORK

Well ID MW-1
Well Diameter 2 in.
Total Depth 19.90 ft.
Depth to Water 7.41 ft.

Well Condition: OK

Hydrocarbon Thickness:	\emptyset	Amount Bailed (product/water):	\emptyset
Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____
Sampling Time: 11:55
Purging Flow Rate: _____ gpm.
Did well de-water? _____

Weather Conditions: SUNNY
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>3.30</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-1</u>	<u>4 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>

COMMENTS: ORC IN WELL
NO PURGING

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0146 Job#: 180063
 Address: 3943 BROADWAY Date: 5/20/99
 City: OAKLAND Sampler: HALG KEVORK

Well ID: MW-2 Well Condition: OK
 Well Diameter: 2 in. Hydrocarbon Thickness: ∅ (feet) Amount Bailed: ∅ (Gallons)
 Total Depth: 19.96 ft. Volume Factor (VF):
 Depth to Water: 8.68 ft.

2" = 0.17	3" = 0.38	4" = 0.66
6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: _____
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
		<u>N/A</u>					

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(C)/ben/crba

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 #0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/99
Sampler: HAIG KEVORK

Well ID MW-3
Well Diameter 2 in.
Total Depth 22.43 ft.
Depth to Water 8.95 ft.

Well Condition: OK
Hydrocarbon Thickness: Ø (feet)
Amount Bailed (product/water): Ø (Gallons)
Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66
6" = 1.50 12" = 5.80

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment:

N/A

Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment:

Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____
Sampling Time: 12:30
Purging Flow Rate: _____ gpm.
Did well de-water? _____

Weather Conditions: SUNNY
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>2.60</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>4 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: ORC IN WELL
NO PURGING

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0746
 Address: 3943 BROADWAY
 City: OAKLAND

Job#: 180063
 Date: 5/20/99
 Sampler: HAIG KIEVORK

Well ID: MW-4
 Well Diameter: 2 in.
 Total Depth: 20.03 ft.
 Depth to Water: 8.41 ft.

Well Condition: OK
 Hydrocarbon Thickness: ∅ (feet)
 Amount Bailed (product/water): ∅ (Gallons)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____
 Sampling Time: 11:25
 Purging Flow Rate: _____ gpm.
 Did well de-water? _____

Weather Conditions: SUNNY
 Water Color: _____ Odor: _____
 Sediment Description: _____
 If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>3.90</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>4 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btax/mtbe</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: ORC IN WELL
NO PURGING

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 # 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/99
Sampler: HAG KEVORK

Well ID MW-5
Well Diameter 2 in.
Total Depth 20.18 ft.
Depth to Water 8.73 ft.

Well Condition: OK (SKIMMER IN WELL)

Hydrocarbon Thickness: 0.04 (feet) Amount Bailed (product/water): 1 OZ (Gallons)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A

Disposable Bailer
Bailer BAILED
Stack ≈ 1 OZ PRODUCT
Suction _____
Grundfos _____
Other: _____

Sampling Equipment: N/A
Disposable Bailer _____
Bailer _____
Pressure Bailer _____
Grab Sample _____
Other: _____

Starting Time: _____
Sampling Time: _____
Purging Flow Rate: _____ gpm.
Did well de-water? _____

Weather Conditions: SUNNY
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ hos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	<u>N/A</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
_____	_____	✓	_____	SEQUOIA	TPH(G/1000X/MT08)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: FEW DROPS OF PRODUCT IN SKIMMER.
≈ 1 OZ PRODUCT & WATER BAILED.
NOT SAMPLED DUE TO 0.04 / PRODUCT.

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility FDSCO 76 # 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/99
Sampler: HAIG KIEVOAK

Well ID MW-6

Well Condition: OK

Well Diameter 2 in.

Hydrocarbon Thickness: Ø (feet) Amount Bailed Ø (Gallons)

Total Depth 19.78 ft.

Depth to Water 7.00 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment:

N/A

Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment:

N/A

Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____

Weather Conditions: SUNNY

Sampling Time: _____

Water Color: _____ Odor: _____

Purging Flow Rate: _____ gpm.

Sediment Description: _____

Did well de-water? _____

If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	<u>N/A</u>		_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
_____	_____	Y	_____	SEQUOIA	TPH(O)/bTEX/mTBE
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO #6 # 0M46 Job#: 180063
 Address: 3943 BROADWAY Date: 5/20/99
 City: OAKLAND Sampler: HAIG KEVORK

Well ID: MW-7 Well Condition: OK
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed: Ø (Gallons)
 Total Depth: 18.50 ft. Volume Factor (VF):
 Depth to Water: 8.04 ft.

2" = 0.17	3" = 0.38	4" = 0.66
6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: SUNNY
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	<u>N/A</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
_____	_____	Y	_____	SEQUOIA	TPH(G)/BTEX/MBE
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0746 Job#: 180063
 Address: 3943 BROADWAY Date: 5/20/99
 City: OAKLAND Sampler: HAI G KEVORK

Well ID: MW-8 Well Condition: OK

Well Diameter: 2 in.
 Total Depth: 21.40 ft.
 Depth to Water: 9.75 ft.

Hydrocarbon Thickness: Ø (feet) Amount Bailed: Ø (Gallons)
 (product/water):

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: SUNNY
 Sampling Time: 14:10 Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ hos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>3.55</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-8</u>	<u>4 VIA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPHIG/btex/mtbe</u>

COMMENTS: NO PURGING.

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0746 Job#: 180063
 Address: 3943 BROADWAY Date: 5/20/99
 City: OAKLAND Sampler: HAG KEVOR

Well ID: MW-9 Well Condition: OK
 Well Diameter: 2 in. Hydrocarbon Thickness: ∅ (feet) Amount Bailed: ∅ (Gallons)
 Total Depth: 21.93 ft. Volume Factor (VF):
 Depth to Water: 8.78 ft.

2" = 0.17	3" = 0.38	4" = 0.66
6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A Disposable Bailer: _____ Sampling Equipment: Disposable Bailer
 Bailer _____
 Stack _____
 Suction _____
 Grundfos _____
 Other: _____

Starting Time: _____ Weather Conditions: SUNNY
 Sampling Time: 14:45 Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ hos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>4.46</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-9</u>	<u>4 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPHIG/btex/mtbe</u>

COMMENTS: NO PURGING
ORC IN WELL

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 # 0146
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/99
Sampler: HAIG KEVORK

Well ID MW-10
Well Diameter 2 in.
Total Depth 21.78 ft.
Depth to Water 10.05 ft.

Well Condition: OK
Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)
Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66
6" = 1.50 12" = 5.80

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: N/A
Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____
Sampling Time: _____
Purging Flow Rate: _____ gpm.
Did well de-water? _____

Weather Conditions: SUNNY
Water Color: _____ Odor: _____
Sediment Description: _____
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	<u>N/A</u>		_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
_____	_____	Y	_____	SEQUOTA	TPH/GI/btw/mtba
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: MONITORED ONLY

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO 76 # 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 5/20/99
Sampler: HAIG KEVOAK

Well ID MW-11 Well Condition: OK

Well Diameter 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed Ø (Gallons)
Total Depth 19.20 ft. Volume Factor (VF) 2" = 0.17 3" = 0.38 4" = 0.66
Depth to Water 10.71 ft. 6" = 1.50 12" = 5.80

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: _____ Weather Conditions: SUNNY
Sampling Time: 15:35 Water Color: _____ Odor: _____
Purging Flow Rate: _____ gpm. Sediment Description: _____
Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	<u>3.22</u>	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-11</u>	<u>4 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: NO PURGING

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO 76 # 0746 Job#: 180063
 Address: 3943 BROADWAY Date: 5/20/99
 City: OAKLAND Sampler: HAIG KEVOAK

Well ID: MW-12 Well Condition: OK
 Well Diameter: 2 in. Hydrocarbon Thickness: Ø (feet) Amount Bailed: Ø (Gallons)
 Total Depth: 17.65 ft. Volume Factor (VF):
 Depth to Water: 10.84 ft.

2" = 0.17	3" = 0.38	4" = 0.66
6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____ Weather Conditions: SUNNY
 Sampling Time: _____ Water Color: _____ Odor: _____
 Purging Flow Rate: _____ gpm. Sediment Description: _____
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
			<u>N/A</u>				

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH/GH/btox/mrbe

COMMENTS: MONITORED ONLY



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D
1551 Industrial Road

Redwood City, CA 94063
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FAX (707) 792-0342
FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Matrix: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 905-2106

Sampled: May 20, 1999
Received: May 21, 1999
Reported: Jun 17, 1999

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 905-2106 TB-LB	Sample I.D. 905-2107 MW-1	Sample I.D. 905-2108 MW-3	Sample I.D. 905-2109 MW-4	Sample I.D. 905-2110 MW-8	Sample I.D. 905-2111 MW-9
Purgeable Hydrocarbons	50	N.D.	N.D.	4,300	N.D.	N.D.	N.D.
Benzene	0.50	N.D.	N.D.	250	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	86	N.D.	N.D.	N.D.
MTBE	2.5	N.D.	89	N.D.	N.D.	23	N.D.
Chromatogram Pattern:		--	--	Gasoline	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	40	1.0	1.0	1.0
Date Analyzed:	6/1/99	6/1/99	6/1/99	6/1/99	6/1/99	6/1/99
Instrument Identification:	HP-2	HP-2	HP-2	HP-2	HP-2	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	96	97	104	95	100	96

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

9052106.GET <1>





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Matrix: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 905-2112

Sampled: May 20, 1999
Received: May 21, 1999
Reported: Jun 17, 1999

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 905-2112 MW-11
Purgeable Hydrocarbons	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Total Xylenes	0.50	N.D.
MTBE	2.5	N.D.

Chromatogram Pattern: --

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Analyzed:	6/1/99
Instrument Identification:	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager



Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Descript: Water, MW-1 *
Analysis Method: EPA 8260
Lab Number: 905-2107

Sampled: May 20, 1999
Received: May 21, 1999
Analyzed: Jun 9, 1999
Reported: Jun 17, 1999

MTBE by EPA 8260

Analyte	Detection Limit µg/L	Sample Results µg/L
Methyl t-Butyl Ether (MTBE).....	2.0	92

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50	150
		97

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

Please Note:

* Analyzed past holding time 6/9/99.





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Descript: Water, MW-8 *
Analysis Method: EPA 8260
Lab Number: 905-2110

Sampled: May 20, 1999
Received: May 21, 1999
Analyzed: Jun 9, 1999
Reported: Jun 17, 1999

MTBE by EPA 8260

Analyte	Detection Limit µg/L	Sample Results µg/L
Methyl t-Butyl Ether (MTBE).....	2.0	12

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50	150
		95

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

Please Note:
* Analyzed past holding time 6/9/99.





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Descript: Water, MW-1 *
Analysis Method: EPA 8260
Lab Number: 905-2107

Sampled: May 20, 1999
Received: May 21, 1999
Analyzed: Jun 11, 1999
Reported: Jun 17, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	47 **
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150.....	81
1,2-Dichloroethane-d4.....	50 150.....	66

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

Please Note:

- * Analyzed past holding time 6/9/99.
- ** First run MTBE was 92 µg/L. For qualitative use only.
- *** Report revised 7/6/99.



Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Sample Descript: Water, MW-8 *
Analysis Method: EPA 8260
Lab Number: 905-2110

Sampled: May 20, 1999
Received: May 21, 1999
Analyzed: Jun 11, 1999
Reported: Jun 17, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	10 **
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.

Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50	150
1,2-Dichloroethane-d4.....	50	150

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

Please Note:

- * Analyzed past holding time 6/9/99.
- ** First run MTBE was 12 µg/L. For qualitative use only.
- *** Report revised 7/6/99.



Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Matrix: Liquid

QC Sample Group: 9052106-112

Reported: Jun 17, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
Batch#:	9052113	9052113	9052113	9052113
Date Prepared:	6/1/99	6/1/99	6/1/99	6/1/99
Date Analyzed:	6/1/99	6/1/99	6/1/99	6/1/99
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	100	90	90	102
Matrix Spike Duplicate % Recovery:	95	90	90	98
Relative % Difference:	5.1	0.0	0.0	3.3

LCS Batch#:	Benzene	Toluene	Ethyl Benzene	Xylenes
	2LCS060199	2LCS060199	2LCS060199	2LCS060199
Date Prepared:	6/1/99	6/1/99	6/1/99	6/1/99
Date Analyzed:	6/1/99	6/1/99	6/1/99	6/1/99
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	100	90	95	100

% Recovery Control Limits:	Benzene	Toluene	Ethyl Benzene	Xylenes
	70-130	70-130	70-130	70-130

Please Note:

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.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

9052106.GET <7>



Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#BP0746, Oakland
Matrix: Liquid

QC Sample Group: 9052106-112

Reported: Jun 17, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene	MTBE	MTBE
Method:	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260
Analyst:	N. Nelson	N. Nelson	N. Nelson	N. Nelson	N. Nelson	N. Nelson	N. Nelson

MS/MSD	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene	MTBE	MTBE
Batch#:	9060143	9060143	9060143	9060143	9060143	9060143	9060136
Date Prepared:	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/9/99
Date Analyzed:	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	9/9/99
Instrument I.D.#:	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
Matrix Spike % Recovery:	82	100	98	100	106	84	84
Matrix Spike Duplicate % Recovery:	82	100	100	104	104	84	62
Relative % Difference:	0.0	0.0	2.0	3.9	1.9	0.0	30

LCS Batch#:	LCS061099	LCS061099	LCS061099	LCS061099	LCS061099	LCS061099	LCS061099
Date Prepared:	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/8/99
Date Analyzed:	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/10/99	6/8/99
Instrument I.D.#:	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2	GC/MS 2
LCS % Recovery:	80	104	102	108	106	90	96

% Recovery Control Limits:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene	MTBE	MTBE
	65-135	70-130	70-130	70-130	70-130	70-130	70-130

Please Note:

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.

SEQUOIA ANALYTICAL, #1271

Jillianne Fegley
Jillianne Fegley
Project Manager

*TOSCO (UNOCAL) SS #0746
OAKLAND, CA*

*MONITORING
EVENT OF JUNE 29, 1999*

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility TOSCO M6 # 0746
Address: 3943 BROADWAY
City: OAKLAND

Job#: 180063
Date: 6/29/99
Sampler: HAIG KEVOAR

Well ID MW-5
Well Diameter 2 in.
Total Depth 19.81 ft.
Depth to Water 8.91 ft.

Well Condition: OK

Hydrocarbon Thickness: 0.05 (feet) Amount Bailed 4 OUNCES (Gallons)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: N/A
 Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: N/A
 Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: _____
 Sampling Time: N/A
 Purging Flow Rate: _____ gpm.
 Did well de-water? _____

Weather Conditions: _____
 Water Color: _____ Odor: _____
 Sediment Description: _____
 If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV) =	Alkalinity (ppm)
			<u>N/A</u>				

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

*TOSCO (UNOCAL) SS #0746
OAKLAND, CA*

*MONITORING
EVENT OF JULY 29, 1999*

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: TOSCO #6 # 0746 Job#: 180063
 Address: 3943 BROADWAY Date: 7/29/99
 City: OAKLAND, CA Sampler: HAIG KEVORK

Well ID: MW-5
 Well Diameter: 2 in.
 Total Depth: 19.81 ft.
 Depth to Water: 9.12 ft.

Well Condition: OK
 Hydrocarbon Thickness: 0.07 (feet) Amount Bailed: 4 oz PRODUCT
 (product/water): 2.8 oz WATER (Gallons)

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

_____ X VF _____ = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment:

N/A

~~Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____~~

Sampling Equipment:

N/A

~~Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____~~

Starting Time: N/A
 Sampling Time: N/A
 Purging Flow Rate: _____ gpm.
 Did well de-water? _____

Weather Conditions: _____
 Water Color: _____ Odor: _____
 Sediment Description: _____
 If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

N/A

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btax/mtbe

COMMENTS: APPROX. 4 OZ PRODUCT FROM SKIMMER AND WELL AND 2.8 OZ WATER BAILED FROM WELL,