



GETTLER-RYAN INC.

00 MAR -8 PM 1:36

TRANSMITTAL

February 23, 2000

G-R #:180064

LOP3627

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

CC: Mr. David Vossler
Gettler-Ryan Inc.
Novato, California 94945

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

RE: Tosco (Unocal) SS #3538
411 West MacArthur Blvd.
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	February 22, 2000	Groundwater Monitoring and Sampling Report Semi-Annual 2000 - Event of January 21, 2000

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 **March 6, 2000**, this report will be distributed to the following:

Enclosure

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

agency/3538dbd.qmt



GETTLER-~~ENVIRONMENTAL~~ RYAN Inc.

COMAR-8 PM 1:34

February 22, 2000
G-R Job #180064

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

RE: Semi-Annual 2000 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #3538
411 West MacArthur Boulevard
Oakland, California

Dear Mr. De Witt:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On January 21, 2000, field personnel monitored six wells (MW-1 through MW-6) and sampled two wells (MW-2 and MW-3) 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 not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. 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 2, and 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

Barbara Sieminski

Barbara Sieminski
Project Geologist, R.G. No. 6676

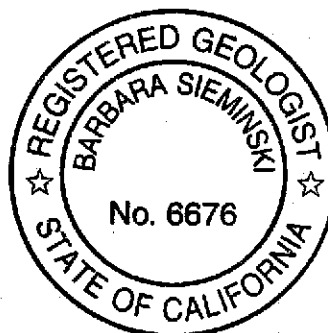
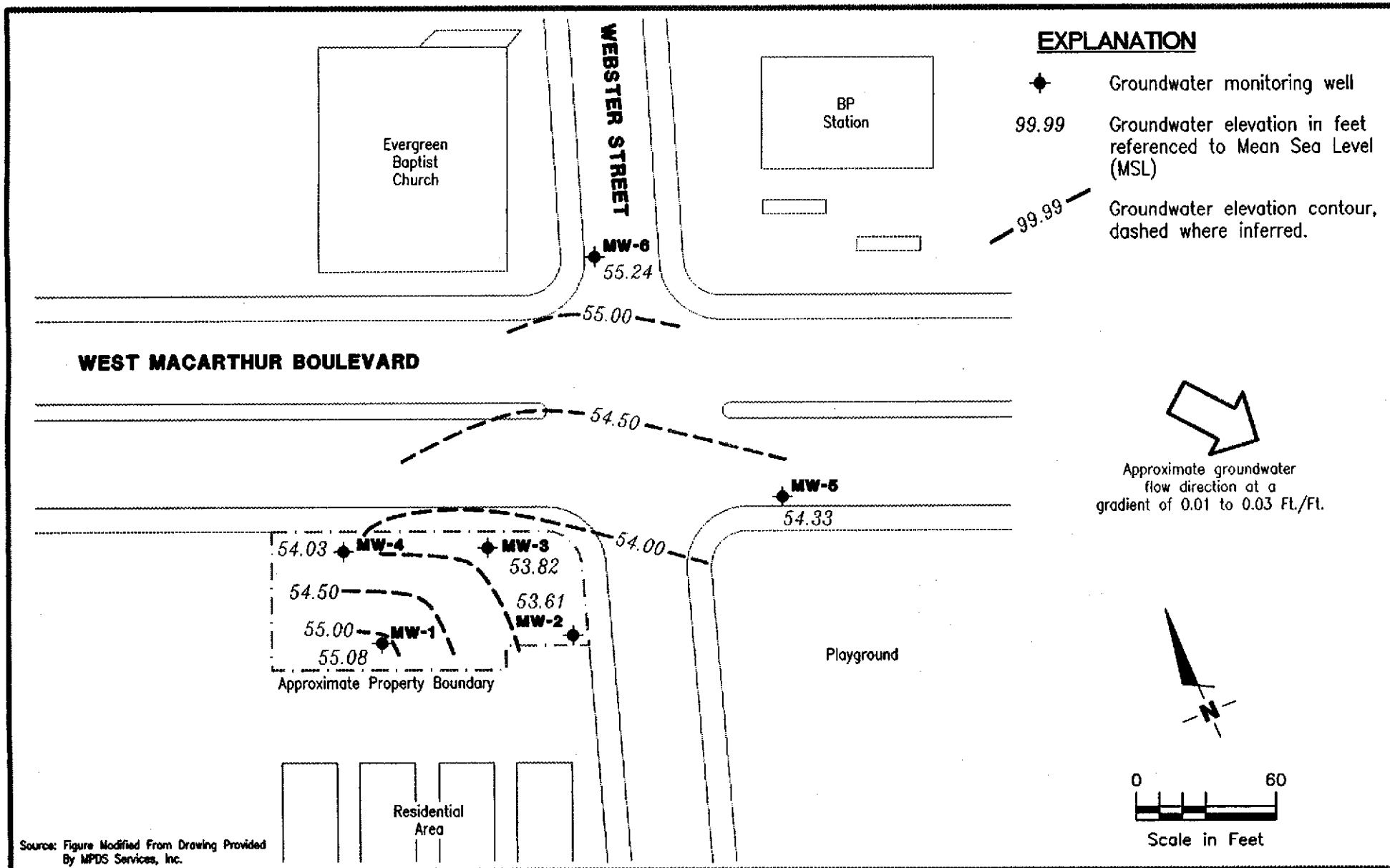


Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Groundwater Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

3538.qml



Gettler - Ryan Inc.

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

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station No. 3538
411 West MacArthur Boulevard
Oakland, California

FIGURE

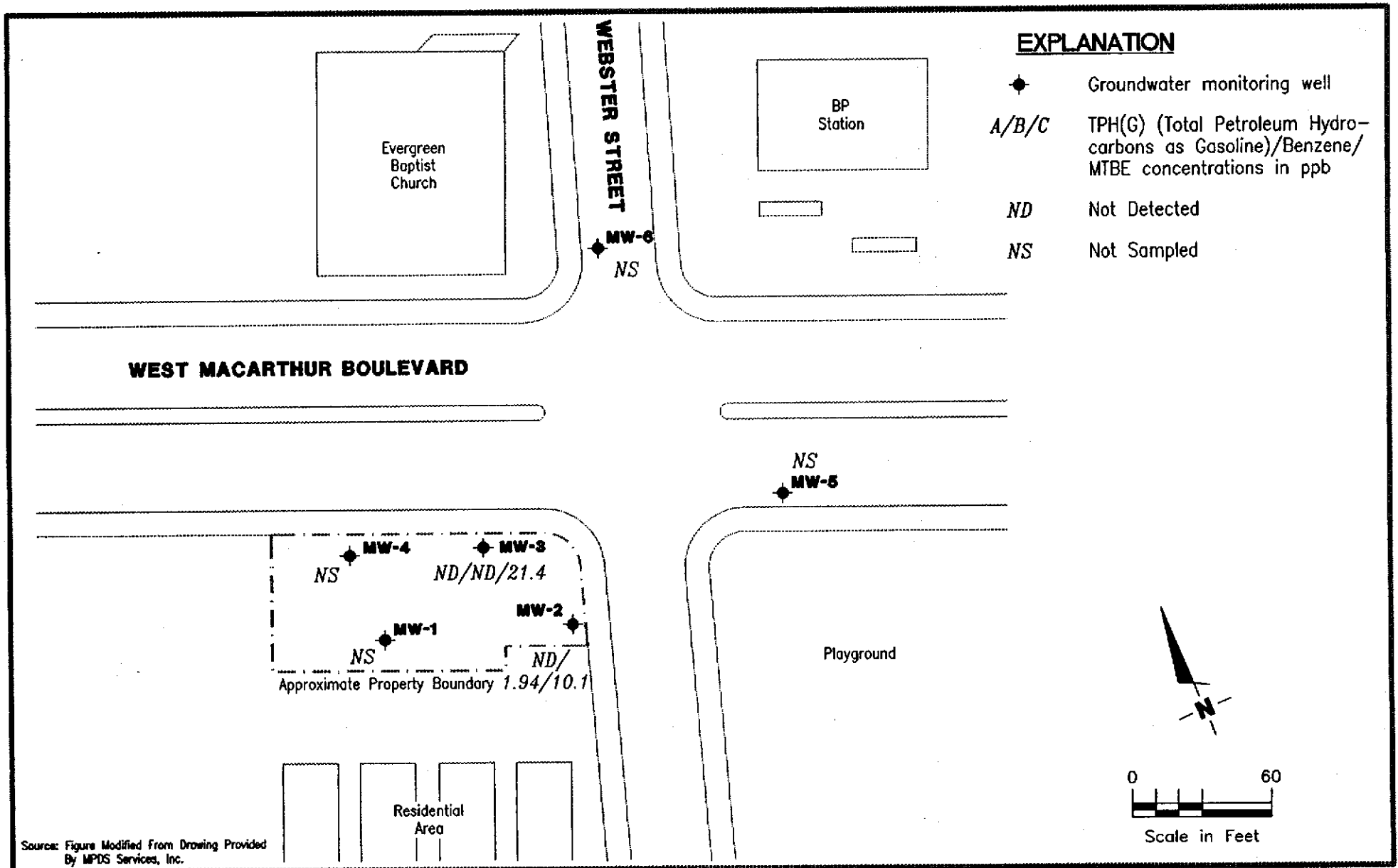
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JOB NUMBER
180064

REVIEWED BY

DATE
January 21, 2000

REVISED DATE



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



Gettler - Ryan Inc.

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Dublin, CA 94568

CONCENTRATION MAP
 Tosco (Unocal) Service Station No. 3538
 411 West MacArthur Boulevard
 Oakland, California

FIGURE
2

JOB NUMBER
180064

REVIEWED BY

DATE
January 21, 2000

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-1	09/15/89	--	--	ND	ND	0.61	ND	ND	--	
	01/23/90	--	--	ND	1.5	2.3	ND	4.3	--	
	04/19/90	--	--	ND	ND	ND	ND	ND	--	
	07/17/90	--	--	ND	ND	ND	ND	ND	--	
	10/16/90	--	--	ND	ND	ND	ND	ND	--	
	01/15/91	--	--	ND	ND	ND	ND	ND	--	
	04/12/91	--	--	ND	ND	ND	ND	ND	--	
	07/15/91	--	--	ND	ND	ND	ND	ND	--	
	07/14/92	--	--	ND	ND	ND	ND	ND	--	
72.43	04/13/93	17.70	54.73	SAMPLED ANNUALLY		--	--	--	--	
	07/14/93	18.49	53.94	ND	2.2	2.1	1.1	6.2	--	
72.10	10/14/93	18.32	53.78	--	--	--	--	--	--	
	01/12/94	18.18	53.92	--	--	--	--	--	--	
	04/11/94	17.80	54.30	--	--	--	--	--	--	
	07/07/94	18.28	53.82	ND	ND	ND	ND	ND	--	
	10/05/94	18.55	53.55	--	--	--	--	--	--	
	01/09/95	17.90	54.20	--	--	--	--	--	--	
	04/17/95	17.22	54.88	--	--	--	--	--	--	
	07/19/95	18.03	54.07	ND	ND	ND	ND	ND	--	
	10/26/95	18.67	53.43	--	--	--	--	--	--	
	01/16/95	17.20	54.90	--	--	--	--	--	--	
	04/15/96	17.40	54.70	--	--	--	--	--	--	
	07/11/96	18.03	54.07	ND	ND	ND	ND	ND	ND	
	01/17/97	16.54	55.56	--	--	--	--	--	--	
	07/21/97	18.16	53.94	ND	ND	ND	ND	ND	ND	
	01/14/98	16.05	56.05	--	--	--	--	--	--	
	07/06/98 ⁵	16.46	55.64	ND	ND	ND	ND	ND	ND	
	01/13/99	17.37	54.73	--	--	--	--	--	--	
	72.12	08/31/99	17.00	55.12	ND	ND	ND	ND	ND	ND
		01/21/00	17.04	55.08	--	--	--	--	--	--
	MW-2	09/15/89	--	--	290	ND	12	ND	ND	--
01/23/90		--	--	400	73	36	10	40	--	
04/19/90		--	--	3,900	550	5.1	91	390	--	
07/17/90		--	--	490	76	0.59	11	46	--	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2	10/16/90	--	--	1,400	430	2.0	48	240	--
(cont)	01/15/91	--	--	680	170	0.7	19	81	--
	04/12/91	--	--	2,200	160	4.3	23	62	--
	07/15/91	--	--	2,200	770	12	72	370	--
	10/15/91	--	--	140	44	0.56	1.5	12	--
	01/15/92	--	--	220	37	0.52	1.1	7	--
	04/14/92	--	--	150	6.2	ND	ND	1.4	--
	07/14/92	--	--	130	3.7	ND	ND	ND	--
	10/12/92	--	--	370	3.4	0.56	ND	11	--
	01/08/93	--	--	510 ¹	ND	ND	ND	ND	--
71.63	04/13/93	17.86	53.77	410 ²	42	7.7	6.4	28	200
	07/14/93	18.38	53.25	110 ¹	6.5	ND	ND	1.1	250
71.38	10/14/93	18.20	53.18	230 ¹	5.3	ND	ND	2.1	--
	01/12/94	18.08	53.30	300	7.8	3.8	1.8	10	--
	04/09/94	17.97	53.41	120	10	0.88	1.1	4.9	--
	04/11/94	17.88	53.50	--	--	--	--	--	--
	07/07/94	17.81	53.57	110 ¹	4.4	ND	ND	ND	--
	10/05/94	18.33	53.05	720 ¹	20	ND	ND	3.1	--
	01/09/95	17.40	53.98	ND	ND	ND	ND	ND	--
	04/17/95	17.50	53.88	93	5.6	0.62	1.7	5.5	--
	07/19/95	18.01	53.37	77	32	0.58	1.7	4.1	--
	10/26/95	18.21	53.17	54 ²	13	ND	ND	0.72	220
	01/16/96 ³	16.58	54.80	120	23	ND	ND	0.99	--
	04/15/96	17.61	53.77	340	21	ND	2.2	3.7	45
	07/11/96	17.98	53.40	540	34	ND	4.3	12	150
	01/17/97	17.08	54.30	320	63	2.4	9.4	26	260
	07/21/97	18.06	53.32	160	13	ND	1.3	1.6	180
	01/14/98	16.52	54.86	66	6.3	ND	ND	0.98	100
	07/06/98	16.87	54.51	ND	2.3	ND	ND	ND	11
	01/13/99	17.88	53.50	53	24	ND	0.52	0.98	120
71.34	08/31/99	18.45	52.89	86 ¹⁰	14	ND	0.63	ND	21
	01/21/00	17.73	53.61	ND	1.94	ND	ND	ND	10.1

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-3	09/15/89	--	--	32	ND	ND	ND	ND	--
	01/23/90	--	--	450	110	1.2	4.4	11	--
	04/19/90	--	--	3,100	600	27	54	220	--
	07/17/90	--	--	4,000	270	48	130	250	--
	10/16/90	--	--	740	210	1.4	2.5	82	--
	01/15/91	--	--	3,200	460	1.5	120	270	--
	04/12/91	--	--	880	170	1.1	34	110	--
	07/15/91	--	--	9,200	1,300	230	490	1,900	--
	10/15/91	--	--	3,100	390	34	150	390	--
	01/15/92	--	--	3,000	590	14	310	750	--
	04/14/92	--	--	14,000	660	48	560	2,000	--
	07/14/92	--	--	21,000	890	200	1,200	4,300	--
	10/12/92	--	--	3,200	160	10	230	540	--
	01/08/93	--	--	1,100 ²	48	0.99	0.9	93	--
72.06	04/13/93	17.96	54.10	12,000 ²	290	38	760	2,300	1,400
	07/14/93	18.54	53.52	6,300	190	ND	430	1,000	860
71.86	10/14/93	18.45	53.41	2,500	52	ND	110	250	--
	01/12/94	18.34	53.52	3,800	78	ND	180	390	--
	04/09/94	18.19	53.67	1,800	22	ND	140	280	--
	04/11/94	18.12	53.74	--	--	--	--	--	--
	07/07/94	18.21	53.65	110 ¹	4.5	ND	ND	ND	--
	10/05/94	18.58	53.28	ND	ND	ND	ND	ND	--
	01/09/95	17.69	54.17	ND	0.68	ND	ND	ND	--
	04/17/95	17.68	54.18	3,700	80	10	270	510	--
	07/19/95	18.20	53.66	15,000	330	27	990	2,400	--
	10/26/95	18.32	53.54	14,000	420	180	750	1,600	4,800
	01/16/96 ³	17.95	53.91	920	38	ND	30	57	--
	04/15/96	17.78	54.08	9,700	240	ND	570	860	3,200
	07/11/96	18.19	53.67	13,000	69	5.5	430	900	740
	01/17/97	17.23	54.63	4,400	25	ND	270	580	1,600
	07/21/97	18.29	53.57	9,000	36	ND	450	800	950
	01/14/98	16.71	55.15	7,100	40	ND ⁴	380	360	930
	07/06/98	17.03	54.83	6,800 ⁶	39	ND ⁴	320	360	370
	01/13/99 ⁷	18.00	53.86	1,800	9.4	ND ⁴	58	36	180
71.40	08/31/99	-- ⁸	--	--	--	--	--	--	--
	01/21/00	17.58	53.82	ND	ND	ND	ND	ND	21.4

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-4	09/15/89	--	--	ND	ND	ND	ND	ND	--
	01/23/90	--	--	ND	ND	0.4	ND	ND	--
	04/19/90	--	--	ND	ND	0.48	ND	ND	--
	07/17/90	--	--	ND	ND	ND	ND	ND	--
	10/16/90	--	--	ND	ND	ND	ND	ND	--
	01/15/91	--	--	ND	ND	ND	--	ND	--
	04/12/91	--	--	ND	ND	ND	ND	ND	--
	07/15/91	--	--	ND	ND	ND	ND	ND	--
	07/14/92	--	--	ND	1.3	2.5	ND	1.0	--
71.98	04/13/93	17.67	54.31	SAMPLED ANNUALLY		--	--	--	--
	07/14/93	18.31	53.67	ND	ND	ND	ND	ND	--
71.64	10/14/93	18.08	53.56	--	--	--	--	--	--
	01/12/94	17.97	53.67	--	--	--	--	--	--
	04/11/94	17.70	53.94	--	--	--	--	--	--
	07/07/94	17.80	53.84	ND	ND	ND	ND	ND	--
	10/05/94	18.28	53.36	--	--	--	--	--	--
	01/09/95	17.38	54.26	--	--	--	--	--	--
	04/17/95	17.21	54.43	--	--	--	--	--	--
	07/19/95	17.82	53.82	ND	ND	ND	ND	ND	--
	10/26/95	18.17	53.47	--	--	--	--	--	--
	01/16/96	16.45	55.19	--	--	--	--	--	--
	04/15/96	17.35	54.29	--	--	--	--	--	--
	07/11/96	17.81	53.83	ND	ND	ND	ND	ND	ND
	01/17/97	16.73	54.91	--	--	--	--	--	--
	07/21/97	17.91	53.73	ND	ND	ND	ND	ND	ND
	01/14/98	16.18	55.46	--	--	--	--	--	--
	07/06/98	16.49	55.15	ND	ND	ND	ND	ND	ND
	01/13/99	17.29	54.35	--	--	--	--	--	--
71.54	08/31/99	-- ⁹	--	--	--	--	--	--	--
	01/21/00	17.51	54.03	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (mst)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
MW-5	11/30/92	--	--	ND	ND	ND	ND	ND	--	
	01/08/93	--	--	ND	ND	ND	ND	ND	--	
71.51	04/13/93	17.49	54.02	ND	ND	ND	ND	ND	--	
	07/14/93	18.02	53.49	ND	ND	0.57	ND	ND	--	
71.23	10/14/93	17.82	53.41	ND	ND	ND	ND	ND	--	
	01/12/94	17.74	53.49	ND	ND	0.84	ND	1.6	--	
	04/11/94	17.56	53.67	SAMPLED ANNUALLY		--	--	--	--	
	07/07/94	17.50	53.73	ND	ND	ND	ND	ND	--	
	10/05/94	17.98	53.25	--	--	--	--	--	--	
	01/09/95	17.13	54.10	--	--	--	--	--	--	
	04/17/95	17.05	54.18	--	--	--	--	--	--	
	07/19/95	17.59	53.64	ND	ND	ND	ND	ND	--	
	10/26/95	18.10	53.13	--	--	--	--	--	--	
	01/16/96	17.11	54.12	--	--	--	--	--	--	
	04/15/96	17.22	54.01	--	--	--	--	--	--	
	07/11/96	17.59	53.64	ND	ND	ND	ND	ND	ND	
	01/17/97	16.75	54.48	--	--	--	--	--	--	
	07/21/97	17.59	53.64	ND	ND	ND	ND	ND	ND	
	01/14/98	16.16	55.07	--	--	--	--	--	--	
	07/06/98	16.52	54.71	ND	ND	ND	ND	ND	ND	
	01/13/99	17.62	53.61	--	--	--	--	--	--	
	71.16	08/31/99	17.76	53.40	ND	ND	ND	ND	ND	ND
		01/21/00	16.83	54.33	--	--	--	--	--	--
	MW-6	11/30/92	--	--	ND	ND	ND	ND	ND	--
01/08/93		--	--	ND	ND	ND	ND	ND	--	
71.79	04/13/93	11.94	59.85	ND	ND	ND	ND	ND	--	
	07/14/93	17.20	54.59	ND	0.99	2.4	ND	1.9	--	
71.44	10/14/93	17.21	54.23	ND	ND	0.64	ND	ND	--	
	01/12/94	17.44	54.00	ND	ND	1.2	ND	2.9	--	
	04/11/94	13.66	57.78	SAMPLED ANNUALLY		--	--	--	--	
	07/07/94	14.05	57.39	ND	ND	ND	ND	ND	--	
	10/05/94	14.16	57.28	--	--	--	--	--	--	
	01/09/95	13.73	57.71	--	--	--	--	--	--	
	04/17/95	11.30	60.14	--	--	--	--	--	--	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-6 (cont)	07/19/95	12.32	59.12	ND	ND	ND	ND	ND	--
	10/26/95	17.88	53.56	--	--	--	--	--	--
	01/16/96	16.38	55.06	--	--	--	--	--	--
	04/15/96	14.00	57.44	--	--	--	--	--	--
	07/11/96	13.58	57.86	ND	ND	ND	ND	ND	ND
	01/17/97	15.42	56.02	--	--	--	--	--	--
	07/21/97	13.78	57.66	ND	ND	ND	ND	ND	ND
	01/14/98	13.65	57.79	--	--	--	--	--	--
	07/06/98	13.90	57.54	ND	ND	ND	ND	ND	ND
	01/13/99	14.93	56.51	--	--	--	--	--	--
71.37	08/31/99	15.81	55.56	ND	ND	ND	ND	ND	ND
	01/21/00	16.13	55.24	--	--	--	--	--	--
Trip Blank									
TB-LB	01/14/98	--	--	ND	ND	ND	ND	ND	ND
	07/06/98	--	--	ND	ND	ND	ND	ND	ND
	01/13/99	--	--	ND	ND	ND	ND	ND	ND
	08/31/99	--	--	ND	ND	1.5	ND	2.3	39
	01/21/00	--	--	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation	TPH(G) = Total Petroleum Hydrocarbons as Gasoline	MTBE = Methyl tertiary butyl ether
DTW = Depth to Water	B = Benzene	ppb = Parts per billion
(ft.) = Feet	T = Toluene	ND = Not detected
GWE = Groundwater Elevation	E = Ethylbenzene	-- = Not Measured/Not Analyzed
msl = Referenced relative to sea level	X = Xylenes	

* TOC elevations are relative to mean sea level (msl), per the City of Oakland Benchmark #9NW10. (Elevation = 75.50 feet msl). Prior to October 14, 1994, the DTW measurements were taken from the top of well covers. On September 15, 1999, TOC elevations were resurveyed City of Oakland Benchmark being a square brass pin in the concrete gutter at the southwest corner of Webster & MacArthur. The stationing data is with reference to the back of sidewalk on MacArthur in front of the site. Benchmark (Elevation = 71.055 feet, msl)

- 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 a non-gasoline mixture.
- 3 Laboratory report indicates the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb.
- 4 Detection limit raised. Refer to analytical reports.
- 5 All EPA Method 8010 constituents were ND.
- 6 Laboratory report indicates gasoline and unidentified hydrocarbons < C7.
- 7 TOC measurement may have been altered due to damaged casing.
- 8 Well was obstructed by a solid at 0.5 feet.
- 9 Well was obstructed by a solid (concrete or soil) at 10.4 feet.
- 10 Laboratory report indicates gasoline C6-C12.

Table 2
Groundwater Analytical Results
 Tosco (Unocal) Service Station #3538
 411 West MacArthur Boulevard
 Oakland, California

Well ID	Date	TPH(D) (ppb)	TOG (ppb)	Tetrachloroethene ¹ (ppb)
MW-1	09/15/89	ND	ND	2.7
	01/23/90	ND	1.5	2.1
	04/19/90	ND	ND	2.2
	07/17/90	ND	ND	1.7
	10/16/90	ND	ND	2.0
	01/15/91	ND	ND	2.1
	04/12/91	ND	ND	2.0
	07/15/91	ND	ND	1.8
	07/14/92	--	--	1.4
	07/14/93	--	--	0.95
	07/07/94	--	--	0.83
	07/19/95	--	--	0.52
	07/11/96 ²	--	--	0.73
	07/21/97 ³	--	--	0.70
	08/31/99	--	--	ND

EXPLANATIONS:

Groundwater analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TOG = Total Oil and Grease

ppb = Parts per billion

ND = Not Detected

-- = Not Analyzed

¹ All other EPA Method 8010 constituents were ND.

² Chloroform was detected at a concentration of 0.96 ppb.

³ Chloroform was detected at a concentration of 1.0 ppb.

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, temperature, pH and electrical conductivity are measured. If purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. The measurements are taken 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.

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 3538 Job#: 180064
Address: 411 W. MacArthur Blvd. Date: 1-21-00
City: Oakland Sampler: Joc

Well ID MW-1 Well Condition: O.K.
Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): 0 (Gallons)
Total Depth 23.35 ft.
Depth to Water 17.04 ft.

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

_____ X VF 0.17 = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other: _____	Sampling Equipment:	Disposable Bailer Bailer Pressure Bailer Grab Sample Other: _____
------------------	---	---------------------	---

Starting Time: _____ Weather Conditions: cloudy
Sampling Time: _____ Water Color: clear Odor: _____
Purging Flow Rate: _____ gpm Sediment Description: none
Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-</u>	<u>300A</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>

COMMENTS: M. only

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility # 3538 Job#: 180064
 Address: 411 W. MacArthur Blvd. Date: 1-21-00
 City: Oakland Sampler: Joc

Well ID MW-2 Well Condition: O.K.
 Well Diameter 2 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)
 Total Depth 24.30 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water 17.73 ft. Factor (VF) 6" = 1.50 12" = 5.80

6.57 x VF 0.17 = 1.12 x 3 (case volume) = Estimated Purge Volume: 3.5 (gal.)

Purge Equipment: Disposable Bailer Bailer Stack Suction Grundfos Other: _____
 Sampling Equipment: Disposable Bailer Bailer Pressure Bailer Grab Sample Other: _____

Starting Time: 7:28 Weather Conditions: cloudy
 Sampling Time: 7:55 AM Water Color: clear Odor: none
 Purging Flow Rate: 0.5 gpm Sediment Description: none
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>7:41</u>	<u>1.5</u>	<u>7.39</u>	<u>5.16</u>	<u>66.1</u>			
<u>7:43</u>	<u>3</u>	<u>7.30</u>	<u>4.95</u>	<u>66.2</u>			
<u>7:45</u>	<u>3.5</u>	<u>7.26</u>	<u>5.02</u>	<u>66.3</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>300A</u>	<u>Y</u>	<u>NCC</u>	<u>SEQUOIA</u>	<u>TPH(GI)/bTEX/mtbe</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility # 3538 Job#: 180064
 Address: 411 W. MacArthur Blvd. Date: 1-21-00
 City: Oakland Sampler: Joc

Well ID MW-3

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 27.20 ft.

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

Depth to Water 17.58 ft.

9.62 x VF 0.17 = 1.64 x 3 (case volume) = Estimated Purge Volume: 5 (gal.)

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

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

Starting Time: 8:07 Weather Conditions: cloudy
 Sampling Time: 8:45 a.m. Water Color: clear Odor: none
 Purging Flow Rate: 2 gpm. Sediment Description: none
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm) X ¹⁰⁰	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>8:15</u>	<u>1.5</u>	<u>7.39</u>	<u>7.22</u>	<u>69.2</u>			
<u>8:16</u>	<u>3</u>	<u>7.41</u>	<u>8.11</u>	<u>69.6</u>			
<u>8:17</u>	<u>5</u>	<u>7.48</u>	<u>8.16</u>	<u>69.7</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>300A</u>	<u>Y</u>	<u>NCC</u>	<u>SEQUOIA</u>	<u>TPH(GI)/bTEX/mtbe</u>

COMMENTS: Purged additional 10 well volumes before sampling.

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 3538 Job#: 180064
Address: 411 W. MacArthur Blvd. Date: 1-21-00
City: Oakland Sampler: Joc

Well ID mw-4 Well Condition: O.K.

Well Diameter 2 in.

Total Depth 24.80 ft.

Depth to Water 17.51 ft.

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

Purge Equipment: Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

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

Starting Time: _____ Weather Conditions: cloudy
Sampling Time: _____ Water Color: clear Odor: _____
Purging Flow Rate: _____ gpm Sediment Description: none
Did well de-water? _____ If yes: Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm) X	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW -</u>	<u>340A</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(GI)/bTEX/mtbe</u>

COMMENTS: m. only

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 3538 Job#: 180064
Address: 411 W. MacArthur Blvd. Date: 1-21-00
City: Oakland Sampler: Joc

Well ID MW-5 Well Condition: O.K.
Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): 0 (Gallons)
Total Depth 30.10 ft.
Depth to Water 16.83 ft.

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

_____ X VF 0.17 = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

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

Starting Time: _____ Weather Conditions: cloudy
Sampling Time: _____ Water Color: clear Odor: _____
Purging Flow Rate: _____ gpm. Sediment Description: none
Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

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

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-5</u>	<u>300A</u>	<u>Y</u>	<u>NCC</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>

COMMENTS: M. only

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 3538 Job#: 180064
Address: 411 W. MacArthur Blvd. Date: 1-21-00
City: Oakland Sampler: Joc

Well ID MW-6 Well Condition: O.K.
Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): 0 (Gallons)
Total Depth 30.00 ft.
Depth to Water 16.13 ft.

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

_____ X VF 0.17 = _____ X 3 (case volume) = Estimated Purge Volume: _____ (gal.)

Purge Equipment: Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

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

Starting Time: _____ Weather Conditions: cloudy
Sampling Time: _____ Water Color: clear Odor: _____
Purging Flow Rate: _____ gpm. Sediment Description: none
Did well de-water? _____ If yes: Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm) X	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-6</u>	<u>300A</u>	<u>X</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>

COMMENTS: m. only



February 4, 2000

RECEIVED

FEB 04 2000

GETTLER-RYAN INC.
GENERAL CONTRACTORS

Deanna Harding
Gettler-Ryan/Geostrategies(1)
6747 Sierra Court, Suite D
Dublin, CA 94568

RE: Tosco(4)/L001186

Dear Deanna Harding:

Enclosed are the results of analyses for sample(s) received by the laboratory on January 21, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Wayne Stevenson
Project Manager

CA ELAP Certificate Number I-2360





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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ANALYTICAL REPORT FOR L001186

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
TB-LB	L001186-01	Water	1/21/00
MW-2	L001186-02	Water	1/21/00
MW-3	L001186-03	Water	1/21/00





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Sample Description: TB-LB
Laboratory Sample Number: L001186-01

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Purgeable Hydrocarbons as Gasoline	0020003	2/1/00	2/1/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		5.00	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	70.0-130		87.5	%	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Sample Description: MW-2
Laboratory Sample Number: L001186-02

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Purgeable Hydrocarbons as Gasoline	0020008	2/2/00	2/2/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	1.94	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		5.00	10.1	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	"	"	70.0-130		73.7	%	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Sample Description: MW-3
Laboratory Sample Number: L001186-03

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method/ Surrogate Limits	Reporting Limit	Result	Units	Notes*
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Sequoia Analytical - San Carlos

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Purgeable Hydrocarbons as Gasoline	0020007	2/3/00	2/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		5.00	21.4	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	"	"	70.0-130		85.9	%	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0020003			Date Prepared: 2/1/00			Extraction Method: EPA 5030B [P/T]				
Blank			0020003-BLK1							
Purgeable Hydrocarbons as Gasoline	2/1/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.85	"	70.0-130	98.5			
LCS			0020003-BS1							
Benzene	2/1/00	10.0		11.0	ug/l	70.0-130	110			
Toluene	"	10.0		10.6	"	70.0-130	106			
Ethylbenzene	"	10.0		10.5	"	70.0-130	105			
Xylenes (total)	"	30.0		31.8	"	70.0-130	106			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.5	"	70.0-130	105			
LCS			0020003-BS2							
Purgeable Hydrocarbons as Gasoline	2/1/00	250		266	ug/l	70.0-130	106			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		12.6	"	70.0-130	126			
Matrix Spike			0020003-MS1 L001205-09							
Purgeable Hydrocarbons as Gasoline	2/1/00	250	ND	238	ug/l	60.0-140	95.2			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		11.7	"	70.0-130	117			
Matrix Spike Dup			0020003-MSD1 L001205-09							
Purgeable Hydrocarbons as Gasoline	2/1/00	250	ND	249	ug/l	60.0-140	99.6	25.0	4.52	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		12.4	"	70.0-130	124			
Batch: 0020007			Date Prepared: 2/2/00			Extraction Method: EPA 5030B [P/T]				
Blank			0020007-BLK1							
Purgeable Hydrocarbons as Gasoline	2/2/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.00	"	70.0-130	90.0			
Blank			0020007-BLK2							
Purgeable Hydrocarbons as Gasoline	2/3/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)										
0020007-BLK2										
Toluene	2/3/00			ND	ug/l	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.78	"	70.0-130	87.8			
LCS										
0020007-BS1										
Benzene	2/2/00	10.0		7.78	ug/l	70.0-130	77.8			
Toluene	"	10.0		7.32	"	70.0-130	73.2			
Ethylbenzene	"	10.0		7.42	"	70.0-130	74.2			
Xylenes (total)	"	30.0		22.7	"	70.0-130	75.7			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.56	"	70.0-130	85.6			
LCS										
0020007-BS2										
Purgeable Hydrocarbons as Gasoline	2/2/00	250		195	ug/l	70.0-130	78.0			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.08	"	70.0-130	90.8			
LCS										
0020007-BS3										
Benzene	2/3/00	10.0		8.41	ug/l	70.0-130	84.1			
Toluene	"	10.0		7.92	"	70.0-130	79.2			
Ethylbenzene	"	10.0		8.00	"	70.0-130	80.0			
Xylenes (total)	"	30.0		24.3	"	70.0-130	81.0			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.48	"	70.0-130	84.8			
LCS										
0020007-BS4										
Purgeable Hydrocarbons as Gasoline	2/3/00	250		202	ug/l	70.0-130	80.8			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.38	"	70.0-130	93.8			
Matrix Spike										
0020007-MS1 L001249-07										
Benzene	2/2/00	10.0	ND	9.47	ug/l	60.0-140	94.7			
Toluene	"	10.0	ND	8.39	"	60.0-140	83.9			
Ethylbenzene	"	10.0	ND	8.49	"	60.0-140	84.9			
Xylenes (total)	"	30.0	ND	25.8	"	60.0-140	86.0			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.69	"	70.0-130	86.9			
Matrix Spike Dup										
0020007-MSD1 L001249-07										
Benzene	2/2/00	10.0	ND	8.90	ug/l	60.0-140	89.0	25.0	6.21	
Toluene	"	10.0	ND	8.38	"	60.0-140	83.8	25.0	0.119	
Ethylbenzene	"	10.0	ND	8.41	"	60.0-140	84.1	25.0	0.947	
Xylenes (total)	"	30.0	ND	25.7	"	60.0-140	85.7	25.0	0.349	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.53	"	70.0-130	85.3			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0020008			Date Prepared: 2/2/00		Extraction Method: EPA 5030B IP/TI					
Blank			0020008-BLK1							
Purgeable Hydrocarbons as Gasoline	2/2/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.22	"	70.0-130	92.2			
Blank			0020008-BLK2							
Purgeable Hydrocarbons as Gasoline	2/3/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	5.00				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.32	"	70.0-130	93.2			
LCS			0020008-BS1							
Benzene	2/2/00	10.0		8.95	ug/l	70.0-130	89.5			
Toluene	"	10.0		8.56	"	70.0-130	85.6			
Ethylbenzene	"	10.0		8.86	"	70.0-130	88.6			
Xylenes (total)	"	30.0		26.5	"	70.0-130	88.3			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.63	"	70.0-130	96.3			
LCS			0020008-BS2							
Purgeable Hydrocarbons as Gasoline	2/2/00	250		240	ug/l	70.0-130	96.0			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.26	"	70.0-130	92.6			
LCS			0020008-BS3							
Benzene	2/3/00	10.0		7.88	ug/l	70.0-130	78.8			
Toluene	"	10.0		7.55	"	70.0-130	75.5			
Ethylbenzene	"	10.0		7.71	"	70.0-130	77.1			
Xylenes (total)	"	30.0		23.2	"	70.0-130	77.3			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.38	"	70.0-130	93.8			
LCS			0020008-BS4							
Purgeable Hydrocarbons as Gasoline	2/3/00	250		226	ug/l	70.0-130	90.4			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.20	"	70.0-130	92.0			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite D Dublin, CA 94568	Project: Tosco(4) Project Number: UNOCAL SS#3538/180064.85 Project Manager: Deanna Harding	Sampled: 1/21/00 Received: 1/21/00 Reported: 2/4/00
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - San Carlos**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Matrix Spike	0020008-MS1		L001186-02							
Benzene	2/2/00	10.0	1.94	10.1	ug/l	60.0-140	81.6			
Toluene	"	10.0	ND	8.26	"	60.0-140	82.6			
Ethylbenzene	"	10.0	ND	8.00	"	60.0-140	80.0			
Xylenes (total)	"	30.0	ND	23.9	"	60.0-140	79.7			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.70	"	70.0-130	87.0			
Matrix Spike Dup	0020008-MSD1		L001186-02							
Benzene	2/2/00	10.0	1.94	9.68	ug/l	60.0-140	77.4	25.0	5.28	
Toluene	"	10.0	ND	7.69	"	60.0-140	76.9	25.0	7.15	
Ethylbenzene	"	10.0	ND	7.62	"	60.0-140	76.2	25.0	4.87	
Xylenes (total)	"	30.0	ND	22.9	"	60.0-140	76.3	25.0	4.36	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		8.22	"	70.0-130	82.2			





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Notes and Definitions

#	Note
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

