



GETTLER - RYAN INC.

TRANSMITTAL

October 8, 1999

G-R #:180064

Ro2513627

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	October 5, 1999	Groundwater Monitoring and Sampling Report Semi-Annual 1999 - Event of August 31, 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 **October 20, 1999**, 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

ENVIRONMENTAL
PROTECTION
OCT 21 PM 4:59



GETTLER - RYAN INC.

October 5, 1999
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 1999 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 August 31, 1999, field personnel monitored six wells (MW-1 through MW-6) and sampled four wells (MW-1, MW-2, MW-5, and MW-6) at the above referenced site. Two wells (MW-3 and MW-4) were blocked.

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.

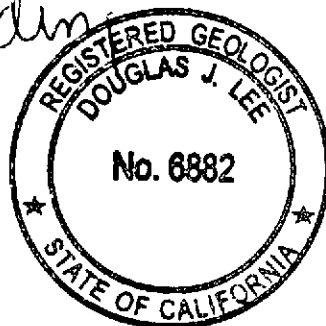
Sincerely,

Deanna L. Harding

Deanna L. Harding
Project Coordinator

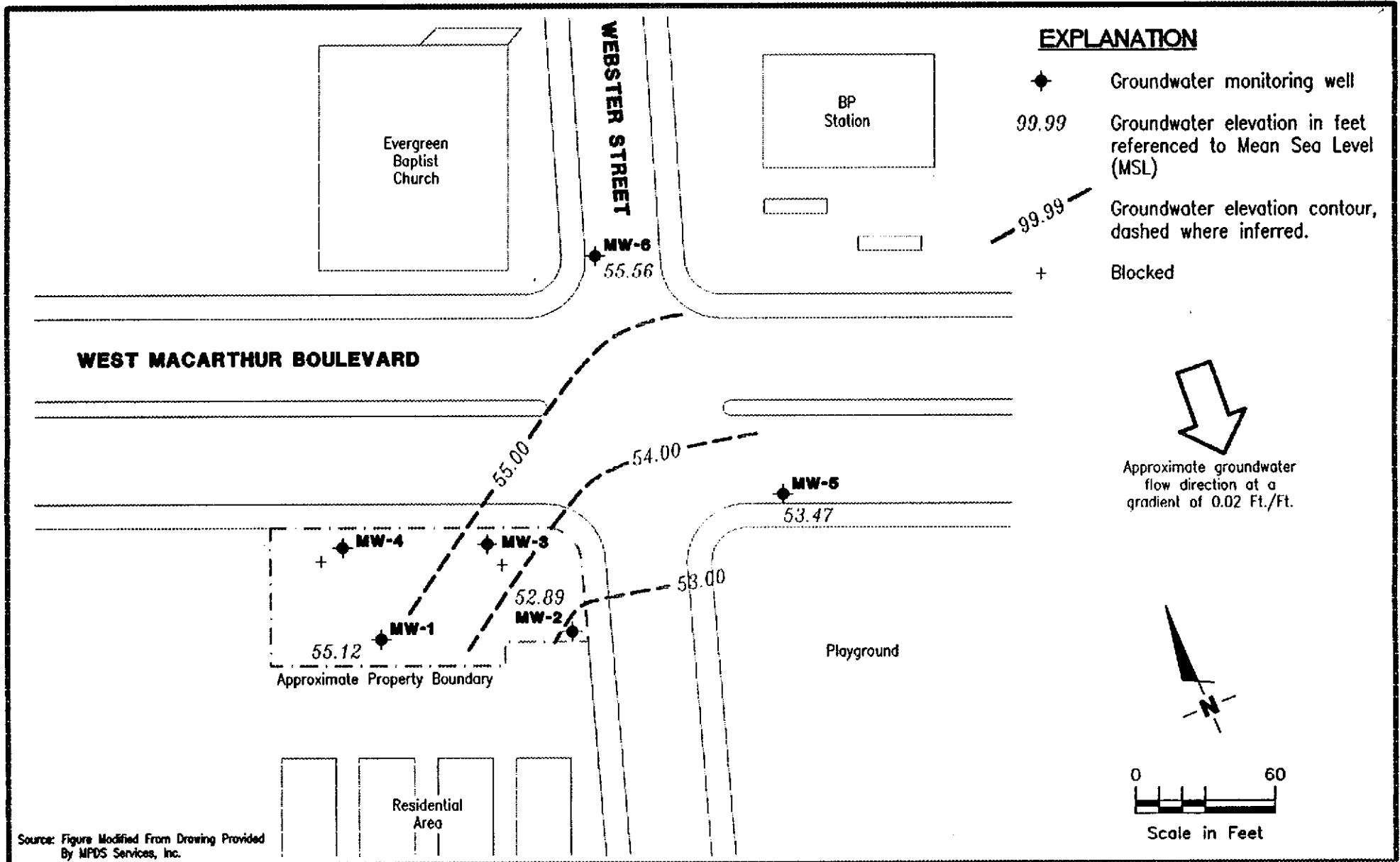
Douglas J. Lee

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: Groundwater Analytical Results
- Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

3538.qml



Gertler - Ryan Inc.

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 Dublin, CA 94568

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

FIGURE

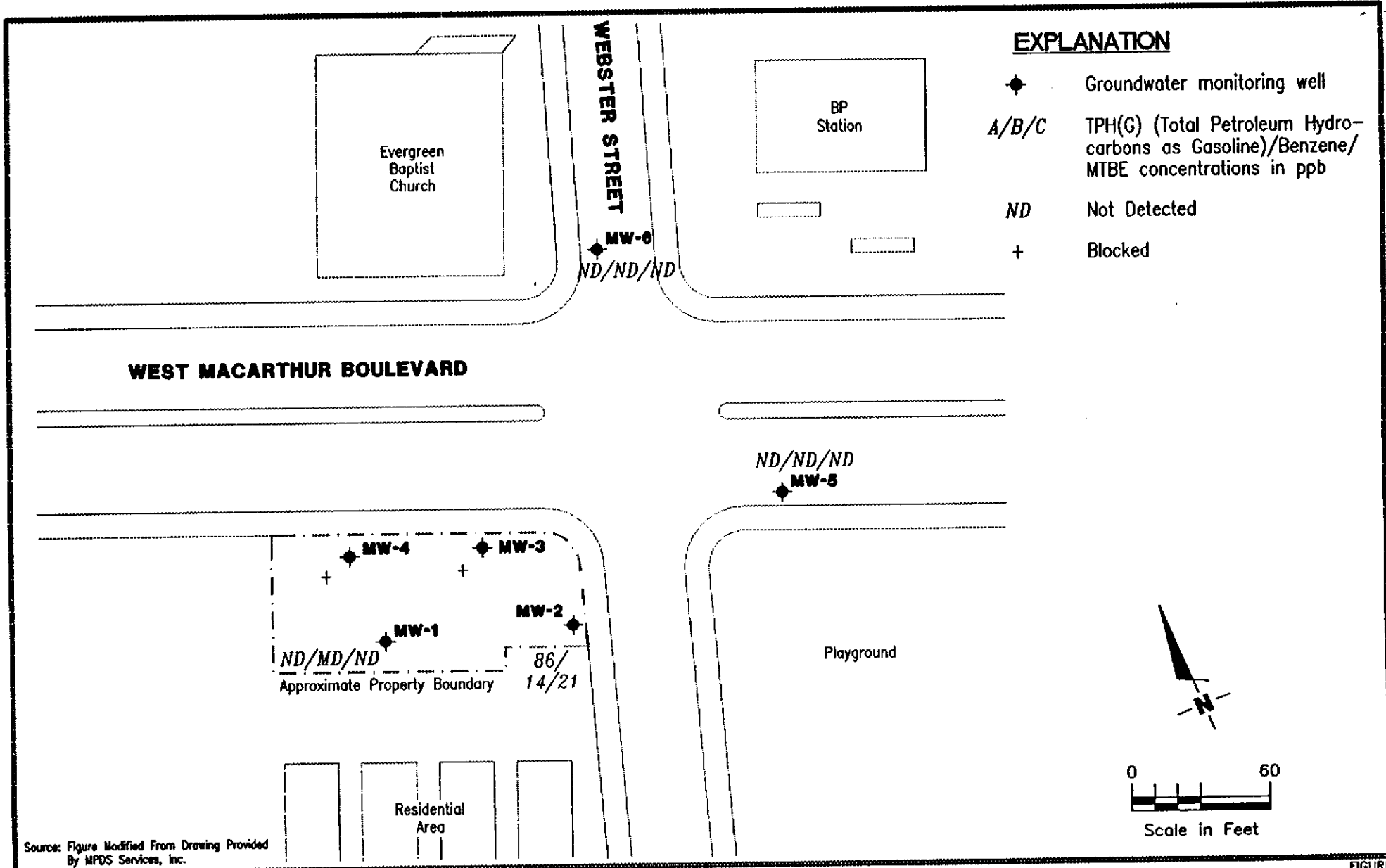
1

JOB NUMBER
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REVIEWED BY

DATE
 August 31, 1999

REVISED DATE



Source: Figure Modified From Drawing Provided By MPDS Services, 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
August 31, 1999

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
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	--
	10/16/90	--	--	1,400	430	2.0	48	240	--

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	01/15/91	--	--	680	170	0.7	19	81	--
(cont)	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
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	--

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	10/16/90	--	--	740	210	1.4	2.5	82	--
(cont)	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	--	--	--	--	--	--	--
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	--

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	07/17/90	--	--	ND	ND	ND	ND	ND	--
(cont)	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	--	--	--	--	--	--	--
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	--

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	10/05/94	17.98	53.25	--	--	--	--	--	--
(cont)	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	53.47	ND	ND	ND	ND	ND	ND
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	--	--	--	--	--	--
	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

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	01/14/98	13.65	57.79	--	--	--	--	--	--
(cont)	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
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

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 Date: 8-31-99
City: Oakland Sampler: Joe

Well ID MW-1 Well Condition: O.K.
Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): 0 (Gallons)
Total Depth 23.30 ft.
Depth to Water 17.00 ft.

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

0.3 x VF 0.17 = 0.051 x 3 (case volume) = Estimated Purge Volume: 3.5 (gal.)

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

Starting Time: 10:50 Weather Conditions: Clear
Sampling Time: 11:10 A.M. 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 $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:55</u>	<u>1</u>	<u>7.29</u>	<u>7.38</u>	<u>65.9</u>			
<u>10:59</u>	<u>2</u>	<u>7.36</u>	<u>8.14</u>	<u>65.3</u>			
<u>11:02</u>	<u>3.5</u>	<u>7.41</u>	<u>8.22</u>	<u>65.5</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-1</u>	<u>240A</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
	<u>240A</u>	<u>Y</u>	<u>"</u>	<u>"</u>	<u>8010</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: #3538 Job#: 180064
 Address: 411 W. MacArthur Date: 8-31-99
 City: Oakland Sampler: —

Well ID: MW-2 Well Condition: OK
 Well Diameter: 2 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed: 0 (Gallons)
 Total Depth: 24.30 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 18.45 ft. Factor (VF) 6" = 1.50 12" = 5.80

5.85 X VF 0.17 = 1.00 X 3 (case volume) = Estimated Purge Volume: 3 (gal.)

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

Starting Time: 11:16 Weather Conditions: clear
 Sampling Time: 11:34 p.m. 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 $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:20</u>	<u>1</u>	<u>7.10</u>	<u>4.11</u>	<u>65.3</u>			
<u>11:24</u>	<u>2</u>	<u>7.07</u>	<u>3.86</u>	<u>65.5</u>			
<u>11:26</u>	<u>3</u>	<u>7.17</u>	<u>3.92</u>	<u>65.7</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>3V0A</u>	<u>Y</u>	<u>HCC</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 Date: 8-31-99
 City: Oakland Sampler: Jae

Well ID MW-3 Well Condition: ok.
 Well Diameter 2 in. Hydrocarbon Amount Bailed
 Thickness: 0 (feet) (product/water): 0 (Gallons)
 Total Depth _____ ft.
 Depth to Water _____ 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: _____
 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 hos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	/	_____	_____	/	_____
_____	_____	_____	/	_____	_____	/	_____
_____	_____	_____	/	_____	_____	/	_____
_____	_____	_____	/	_____	_____	/	_____

LABORATORY INFORMATION

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

COMMENTS: Well was obstructed by a solid at 0.5'

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/ Facility # 3538 Job#: 18004
 Address: 411 W. MacArthur Date: 8-31-99
 City: Ostland Sampler: Joe

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

_____ X VF _____ = _____ 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: _____
 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 hos/cm	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		X		SEQUOIA	TPH(G)/bTEX/mTBE

COMMENTS: Well was obstructed by a solid (concrete or soil) at 10.4'

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility # 3538 Job#: 180064
 Address: 411 W. MacArthur Date: 8-31-99
 City: Ostland Sampler: — Joe

Well ID MW-5 Well Condition: OK
 Well Diameter 2 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (Gallons) 0
 Total Depth 30.10 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water 17.76 ft. Factor (VF) 6" = 1.50 12" = 5.80

12.34 X VF 0.17 = 2.10 X 3 (case volume) = Estimated Purge Volume: 6.5 (gal.)

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

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

Starting Time: 10:15 Weather Conditions: clear
 Sampling Time: 10:37 AM Water Color: clear Odor: none
 Purging Flow Rate: 1 gpm Sediment Description: none
 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>10:25</u>	<u>2.5</u>	<u>7.91</u>	<u>8.55</u>	<u>65.9</u>	_____	_____	_____
<u>10:27</u>	<u>4</u>	<u>7.38</u>	<u>8.67</u>	<u>65.3</u>	_____	_____	_____
<u>10:30</u>	<u>6.5</u>	<u>7.46</u>	<u>6.72</u>	<u>65.4</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-5</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility: # 3538 Job#: 18006d
 Address: 411 W. MacArthur Date: 8-31-99
 City: Oakland Sampler: Joe

Well ID: MW-6 Well Condition: O.K.
 Well Diameter: 2 in. Hydrocarbon Amount Bailed
 Thickness: (feet) (product/water): (Gallons)
 Total Depth: 30.05 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 15.81 ft. Factor (VF) 6" = 1.50 12" = 5.80

14.24 X VF 0.17 = 2.42 X 3 (case volume) = Estimated Purge Volume: 7 (gal.)

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

Starting Time: 9:25 Weather Conditions: clear
 Sampling Time: 9:50 AM Water Color: clear Odor: none
 Purging Flow Rate: 1 gpm. Sediment Description: none
 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>9:35</u>	<u>2.5</u>	<u>7.63</u>	<u>8.58</u>	<u>65.9</u>			
<u>9:39</u>	<u>5</u>	<u>7.65</u>	<u>9.02</u>	<u>65.6</u>			
<u>9:42</u>	<u>7</u>	<u>7.69</u>	<u>9.14</u>	<u>65.7</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-6</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>

COMMENTS: _____




Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	W909075-03	Water	31-Aug-99 11:34	31-Aug-99 14:35
MW-1	W909075-02	Water	31-Aug-99 11:10	31-Aug-99 14:35
MW-5	W909075-04	Water	31-Aug-99 10:37	31-Aug-99 14:35
TB-LB	W909075-01	Water	31-Aug-99 00:00	31-Aug-99 14:35
MW-6	W909075-05	Water	31-Aug-99 09:50	31-Aug-99 14:35


Julianne Pegley, Project Manager





Gettler Ryan, Inc. - Dublin
5747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-LB (W909075-01) Water Sampled: 31-Aug-99 00:00 Received: 31-Aug-99 14:35									
Purgeable Hydrocarbons	ND	50	ug/l	1	9I08017	07-Sep-99	07-Sep-99	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	1.5	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	2.3	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	39	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		90.0 %	70-130	"	"	"	"	"	
MW-1 (W909075-02) Water Sampled: 31-Aug-99 11:10 Received: 31-Aug-99 14:35									
Purgeable Hydrocarbons	ND	50	ug/l	1	9I08017	07-Sep-99	07-Sep-99	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.7 %	70-130	"	"	"	"	"	
MW-2 (W909075-03) Water Sampled: 31-Aug-99 11:34 Received: 31-Aug-99 14:35 P-01									
Purgeable Hydrocarbons	86	50	ug/l	1	9I08017	07-Sep-99	07-Sep-99	DHS LUFT	
Benzene	14	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	0.63	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	21	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.7 %	70-130	"	"	"	"	"	


Julianne Fegley, Project Manager





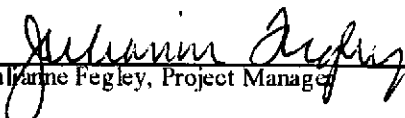
Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (W909075-04) Water Sampled: 31-Aug-99 10:37 Received: 31-Aug-99 14:35									
Purgeable Hydrocarbons	ND	50	ug/l	1	9I08017	07-Sep-99	07-Sep-99	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.7 %	70-130		"	"	"	"	
MW-6 (W909075-05) Water Sampled: 31-Aug-99 09:50 Received: 31-Aug-99 14:35									
Purgeable Hydrocarbons	ND	50	ug/l	1	9I08017	07-Sep-99	07-Sep-99	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.7 %	70-130		"	"	"	"	


Julianne Pegley, Project Manager





Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

Volatile Organic Compounds by EPA Method 8010B
Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (W909075-02) Water Sampled: 31-Aug-99 11:10 Received: 31-Aug-99 14:35									
Bromodichloromethane	ND	0.50	ug/l	1	9I10017	10-Sep-99	10-Sep-99	EPA 8010B	
Bromoform	ND	0.50	"	"	"	"	"	"	
Bromomethane	ND	1.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.50	"	"	"	"	"	"	
Chloroethane	ND	1.0	"	"	"	"	"	"	
Chloroform	ND	0.50	"	"	"	"	"	"	
Chloromethane	ND	1.0	"	"	"	"	"	"	
Dibromochloromethane	ND	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Trichloroethene	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	1.0	"	"	"	"	"	"	
Surrogate: Dibromodifluoromethane		89.0 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		59.0 %	50-150	"	"	"	"	"	

Julianne Fegley, Project Manager





Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9I08017: Prepared 07-Sep-99 Using EPA 5030B [P/T]

Blank (9I08017-BLK1)

Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
Surrogate: a, a, a-Trifluorotoluene	26.1		"	30.0		87.0	70-130			

LCS (9I08017-BS1)

Benzene	20.7	0.50	ug/l	20.0		104	70-130			
Toluene	20.8	0.50	"	20.0		104	70-130			
Ethylbenzene	20.7	0.50	"	20.0		104	70-130			
Xylenes (total)	65.4	0.50	"	60.0		109	70-130			
Surrogate: a, a, a-Trifluorotoluene	26.2		"	30.0		87.3	70-130			

Matrix Spike (9I08017-MS1)

Source: W909069-02

Benzene	20.8	0.50	ug/l	20.0	ND	104	70-130			
Toluene	21.1	0.50	"	20.0	ND	106	70-130			
Ethylbenzene	20.9	0.50	"	20.0	ND	104	70-130			
Xylenes (total)	65.1	0.50	"	60.0	ND	108	70-130			
Surrogate: a, a, a-Trifluorotoluene	27.1		"	30.0		90.3	70-130			

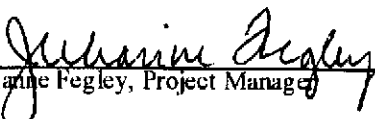
Matrix Spike Dup (9I08017-MSD1)

Source: W909069-02

Benzene	20.1	0.50	ug/l	20.0	ND	101	70-130	3.42	20	
Toluene	20.5	0.50	"	20.0	ND	103	70-130	2.88	20	
Ethylbenzene	20.4	0.50	"	20.0	ND	102	70-130	2.42	20	
Xylenes (total)	63.4	0.50	"	60.0	ND	106	70-130	2.65	20	
Surrogate: a, a, a-Trifluorotoluene	28.4		"	30.0		94.7	70-130			

Sequoia Analytical - Walnut Creek

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Julianne Fegley, Project Manager





Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

Volatile Organic Compounds by EPA Method 8010B - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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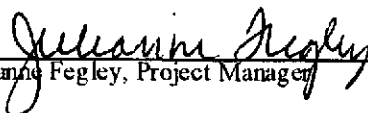
Batch 9I10017: Prepared 10-Sep-99 Using EPA 5030B [P/T]

Blank (9I10017-BLK1)

Bromodichloromethane	ND	0.50	ug/l							
Bromoform	ND	0.50	"							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	0.50	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	0.50	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.50	"							
1,4-Dichlorobenzene	ND	0.50	"							
1,2-Dichlorobenzene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,2-Dichloropropane	ND	0.50	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Methylene chloride	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50	"							
1,1,2-Trichloroethane	ND	0.50	"							
Trichloroethene	ND	0.50	"							
Trichlorofluoromethane	ND	0.50	"							
Vinyl chloride	ND	1.0	"							
Surrogate: Dibromodifluoromethane	10.0		"	10.0		100	50-150			
Surrogate: 1-Chloro-2-fluorobenzene	0		"	10.0			50-150			
Surrogate: 4-Bromofluorobenzene	5.90		"	10.0		59.0	50-150			

Sequoia Analytical - Walnut Creek

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Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

**Volatile Organic Compounds by EPA Method 8010B - Quality Control
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9I10017: Prepared 13-Sep-99 Using EPA 5030B [P/T]

Blank (9I10017-BLK2)

Bromodichloromethane	ND	0.50	ug/l							
Bromoform	ND	0.50	"							
Bromomethane	ND	1.0	"							
Carbon tetrachloride	ND	0.50	"							
Chlorobenzene	ND	0.50	"							
Chloroethane	ND	1.0	"							
Chloroform	ND	0.50	"							
Chloromethane	ND	1.0	"							
Dibromochloromethane	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.50	"							
1,4-Dichlorobenzene	ND	0.50	"							
1,2-Dichlorobenzene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,2-Dichloropropane	ND	0.50	"							
cis-1,3-Dichloropropene	ND	0.50	"							
trans-1,3-Dichloropropene	ND	0.50	"							
Methylene chloride	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.50	"							
1,1,1-Trichloroethane	ND	0.50	"							
1,1,2-Trichloroethane	ND	0.50	"							
Trichloroethene	ND	0.50	"							
Trichlorofluoromethane	ND	0.50	"							
Vinyl chloride	ND	1.0	"							
Surrogate: Dibromodifluoromethane	9.00		"	10.0		90.0	50-150			
Surrogate: 1-Chloro-2-fluorobenzene	0		"	10.0			50-150			
Surrogate: 4-Bromofluorobenzene	6.00		"	10.0		60.0	50-150			

Sequoia Analytical - Walnut Creek

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Dublin CA, 94568

Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

**Volatile Organic Compounds by EPA Method 8010B - Quality Control
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9I10017: Prepared 10-Sep-99 Using EPA 5030B [P/T]

LCS (9I10017-BS1)

Chlorobenzene	19.0	0.50	ug/l	20.0		95.0	70-130			
1,1-Dichloroethene	22.0	0.50	"	20.0		110	65-135			
Trichloroethene	20.0	0.50	"	20.0		100	70-130			
Surrogate: Dibromodifluoromethane	9.70		"	10.0		97.0	50-150			
Surrogate: 4-Bromofluorobenzene	6.30		"	10.0		63.0	50-150			

LCS (9I10017-BS2)

Chlorobenzene	20.0	0.50	ug/l	20.0		100	70-130			
1,1-Dichloroethene	26.0	0.50	"	20.0		130	65-135			
Trichloroethene	21.0	0.50	"	20.0		105	70-130			
Surrogate: Dibromodifluoromethane	9.50		"	10.0		95.0	50-150			
Surrogate: 4-Bromofluorobenzene	5.50		"	10.0		55.0	50-150			

Matrix Spike (9I10017-MS1)

Source: W909156-02

Chlorobenzene	18.0	0.50	ug/l	20.0	ND	90.0	60-140			
1,1-Dichloroethene	18.0	0.50	"	20.0	ND	90.0	60-140			
Trichloroethene	19.0	0.50	"	20.0	ND	95.0	60-140			
Surrogate: Dibromodifluoromethane	8.00		"	10.0		80.0	50-150			
Surrogate: 4-Bromofluorobenzene	6.00		"	10.0		60.0	50-150			

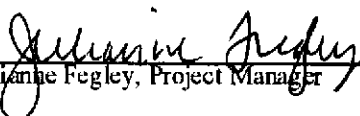
Matrix Spike Dup (9I10017-MSD1)

Source: W909156-02

Chlorobenzene	16.0	0.50	ug/l	20.0	ND	80.0	60-140	11.8	25	
1,1-Dichloroethene	16.0	0.50	"	20.0	ND	80.0	60-140	11.8	25	
Trichloroethene	16.0	0.50	"	20.0	ND	80.0	60-140	17.1	25	
Surrogate: Dibromodifluoromethane	7.50		"	10.0		75.0	50-150			
Surrogate: 4-Bromofluorobenzene	5.00		"	10.0		50.0	50-150			

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Project: Unocal
Project Number: Unocal SS# 3538
Project Manager: Deanna L. Harding

Reported:
20-Sep-99 16:26

Notes and Definitions

P-01 Chromatogram Pattern: Gasoline C6-C12
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
RPD Relative Percent Difference

