



# GETTLER-RYAN INC.

## TRANSMITTAL

March 13, 2002

G-R #180064

LO# 251

TO: Mr. David B. De Witt  
Phillips 66 Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

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

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

RE: **Tosco (Unocal) Service Station  
#3538  
411 West MacArthur Boulevard  
Oakland, California**

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	March 8, 2002	Groundwater Monitoring and Sampling Report First Semi-Annual - Event of January 28, 2002

### 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 26, 2002**, this report will be distributed to the following:

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

Enclosure

trans/3538-DBD



# GETTLER - RYAN INC.

March 8, 2002  
G-R Job #180064

Mr. David B. De Witt  
Phillips 66 Company  
2000 Crow Canyon Place, Suite 400  
San Ramon, California 94583

**RE: First Semi-Annual Event of January 28, 2002**  
Groundwater Monitoring & Sampling Report  
Tosco (Unocal) Service Station #3538  
411 West MacArthur Boulevard  
Oakland, California

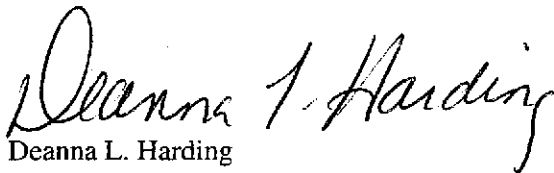
Dear Mr. De Witt:

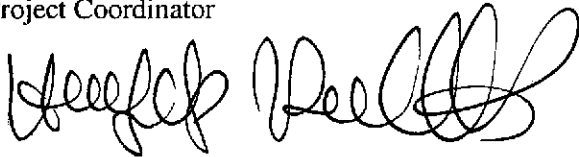
This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

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, 2, and 3. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

  
Deanna L. Harding  
Project Coordinator

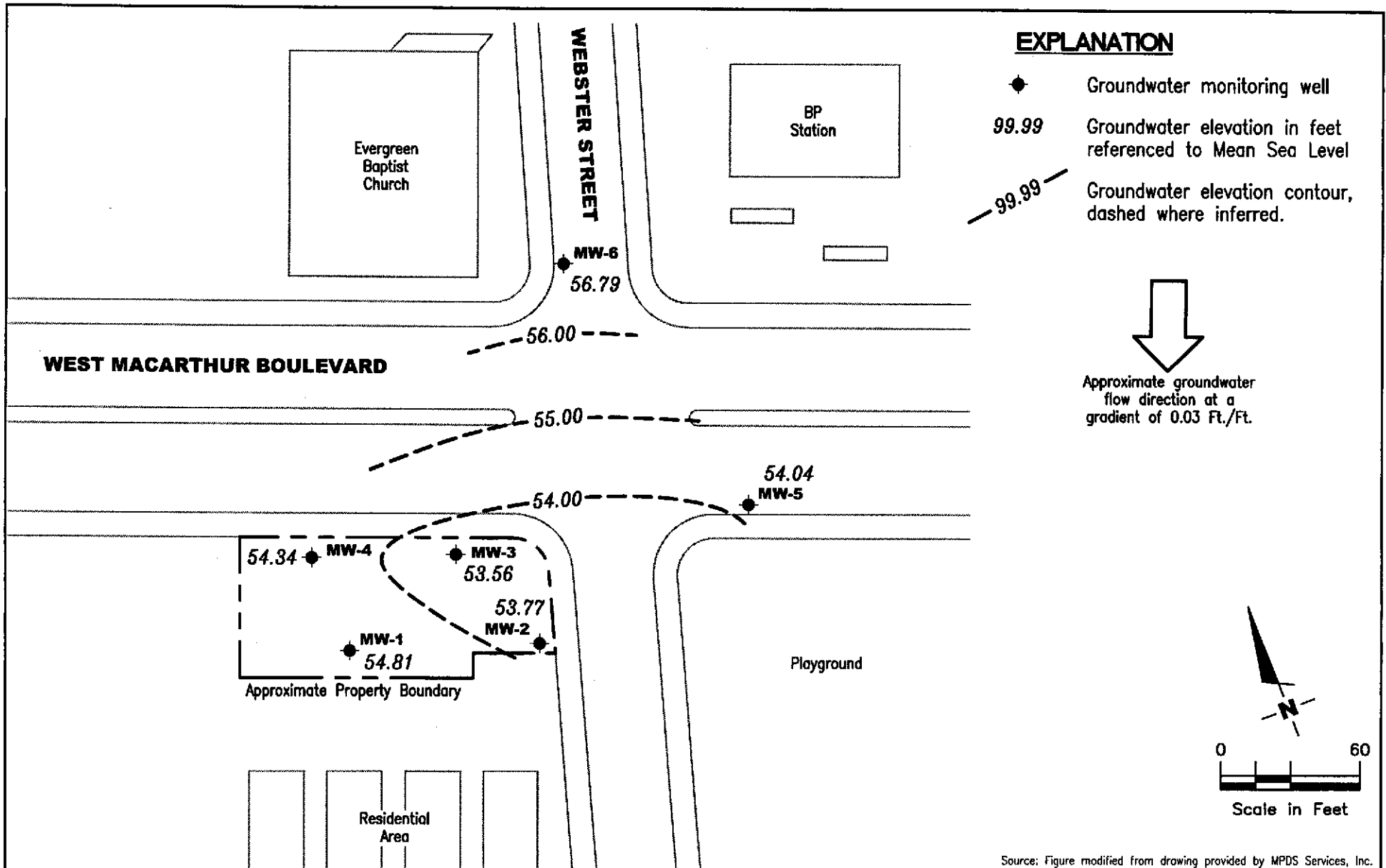


Hagop Kevork  
P.E. No. C55734



Figure 1: Potentiometric Map  
Figure 2: Concentration Map  
Table 1: Groundwater Monitoring Data and Analytical Results  
Table 2: Groundwater Analytical Results  
Table 3: Groundwater Analytical Results - Oxygenate Compounds  
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  
 Dublin, CA 94568 (925) 551-7555

**POTENTIOMETRIC MAP**  
 Tosco (Unocal) Service Station #3538  
 411 West MacArthur Boulevard  
 Oakland, California

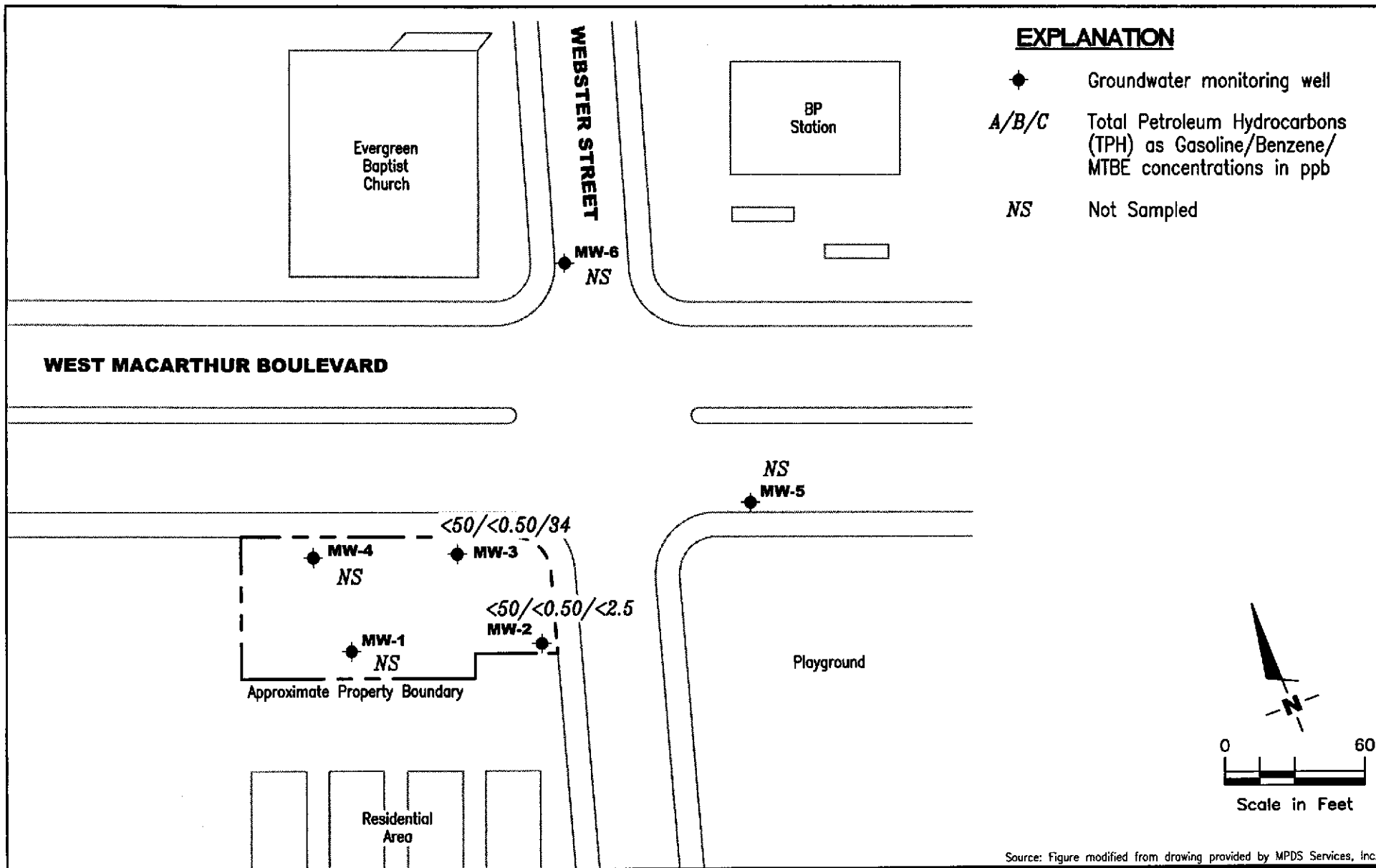
FIGURE  
**1**

PROJECT NUMBER  
**180064**

REVIEWED BY

DATE  
 January 28, 2002

REVISED DATE



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

**CONCENTRATION MAP**  
 Tosco (Unocal) Service Station #3538  
 411 West MacArthur Boulevard  
 Oakland, California

FIGURE  
**2**

PROJECT NUMBER: 180064      REVIEWED BY:      DATE: January 28, 2002      REVISED DATE:

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

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-1	09/15/89	--	5.0-29.0	--	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 <sup>5</sup>	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	--	--	--	--	--	--
	07/10/00 <sup>5</sup>	18.10		54.02	ND	ND	ND	ND	ND	ND
	01/04/01	17.95		54.17	--	--	--	--	--	--
	07/16/01	18.03		54.09	ND	ND	ND	ND	ND	ND
	01/28/02	17.31		54.81	SAMPLED ANNUALLY		--	--	--	--

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

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2	09/15/89	--	3.5-28.5	--	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	--
	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 <sup>1</sup>	ND	ND	ND	ND	--
71.63	04/13/93	17.86		53.77	410 <sup>2</sup>	42	7.7	6.4	28	200
	07/14/93	18.38		53.25	110 <sup>1</sup>	6.5	ND	ND	1.1	250
71.38	10/14/93	18.20		53.18	230 <sup>1</sup>	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 <sup>1</sup>	4.4	ND	ND	ND	--
	10/05/94	18.33		53.05	720 <sup>1</sup>	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 <sup>2</sup>	13	ND	ND	0.72	220
	01/16/96 <sup>3</sup>	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	

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

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (mst)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-2	07/06/98	16.87	3.5-28.5	54.51	ND	2.3	ND	ND	ND	11
(cont)	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 <sup>10</sup>	14	ND	0.63	ND	21
	01/21/00	17.73		53.61	ND	1.94	ND	ND	ND	10.1
	07/10/00	18.14		53.20	ND	ND	ND	ND	ND	46.6
	01/04/01	18.02		53.32	ND	0.925	ND	ND	ND	ND
	07/16/01	18.02		53.32	ND	ND	ND	ND	ND	ND
	01/28/02	17.57		53.77	<50	<0.50	<0.50	<0.50	<0.50	<2.5
MW-3	09/15/89	--	5.0-29.0	--	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 <sup>2</sup>	48	0.99	0.9	93	--
72.06	04/13/93	17.96		54.10	12,000 <sup>2</sup>	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 <sup>1</sup>	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	--

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

WELL ID/ TOC* (ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-3	07/19/95	18.20	5.0-29.0	53.66	15,000	330	27	990	2,400	--
(cont)	10/26/95	18.32		53.54	14,000	420	180	750	1,600	4,800
	01/16/96 <sup>3</sup>	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 <sup>4</sup>	380	360	930
	07/06/98	17.03		54.83	6,800 <sup>6</sup>	39	ND <sup>4</sup>	320	360	370
	01/13/99 <sup>7</sup>	18.00		53.86	1,800	9.4	ND <sup>4</sup>	58	36	180
71.40	08/31/99	-- <sup>8</sup>		--	--	--	--	--	--	--
	01/21/00	17.58		53.82	ND	ND	ND	ND	ND	21.4
	07/10/00	18.05		53.35	ND	ND	ND	ND	ND	162
	08/25/00	17.82		53.58	--	--	--	--	--	180 <sup>11</sup>
	01/04/01	18.16		53.24	ND	ND	ND	ND	ND	193
	07/16/01	17.98		53.42	ND	ND	ND	ND	ND	660
	01/28/02	17.84		53.56	<50	<0.50	<0.50	<0.50	<0.50	34
MW-4	09/15/89	--	5.0-29.0	--	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	--



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

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.I. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-4	10/05/94	18.28	5.0-29.0	53.36	--	--	--	--	--	--
(cont)	01/09/95	17.38		54.26	--	--	--	--	--	--
	04/17/95	17.21		54.43	SAMPLED ANNUALLY		--	--	--	--
	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	-- <sup>9</sup>		--	--	--	--	--	--	--
	01/21/00	17.51		54.03	--	--	--	--	--	--
	07/10/00	17.93		53.61	ND	ND	ND	ND	ND	ND
	01/04/01	18.10		53.44	--	--	--	--	--	--
	07/16/01	17.76		53.78	ND	ND	ND	ND	ND	ND
	<b>01/28/02</b>	<b>17.20</b>		<b>54.34</b>	<b>SAMPLED ANNUALLY</b>		--	--	--	--
<b>MW-5</b>	11/30/92	--	13.0-30.0	--	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	--	--	--	--	--	--

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

WELL ID/ TOC*(ft.)	DATE	DTW (ft.)	S.L. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-5	01/16/96	17.11	13.0-30.0	54.12	--	--	--	--	--	--
(cont)	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	SAMPLED ANNUALLY					--
	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	--	--	--	--	--	--
	07/10/00	17.46		53.70	ND	ND	ND	ND	ND	ND
	01/04/01	17.51		53.65	--	--	--	--	--	--
	07/16/01	17.32		53.84	ND	ND	ND	ND	ND	ND
	01/28/02	17.12		54.04	SAMPLED ANNUALLY					--
MW-6	11/30/92	--	13.0-30.0	--	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*(ft.)	DATE	DTW (ft.)	S.L. (ft. bgs)	GWE (msl)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
MW-6	01/14/98	13.65	13.0-30.0	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
	01/21/00	16.13		55.24	SAMPLED ANNUALLY		--	--	--	--
	07/10/00	16.95		54.42	ND	ND	ND	ND	ND	ND
	01/04/01	17.09		54.28	--	--	--	--	--	--
	07/16/01	16.83		54.54	ND	ND	ND	ND	ND	ND
	<b>01/28/02</b>	<b>14.58</b>		<b>56.79</b>	<b>SAMPLED ANNUALLY</b>		--	--	--	--
<b>Trip Blank</b>										
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
	07/10/00	--	--	--	ND	ND	ND	ND	ND	ND
	01/04/01	--	--	--	ND	ND	ND	ND	ND	ND
	07/16/01	--	--	--	ND	ND	ND	ND	ND	ND
	<b>01/28/02</b>	--	--	--	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;2.5</b>

**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	TPH-G = Total Petroleum Hydrocarbons as Gasoline	(ppb) = Parts per billion
DTW = Depth to Water	B = Benzene	ND = Not Detected
(ft.) = Feet	T = Toluene	-- = Not Measured/Not Analyzed
S.I. = Screen Interval	E = Ethylbenzene	
(ft. bgs) = Feet Below Ground Surface	X = Xylenes	
GWE = Groundwater Elevation	MTBE = Methyl tertiary butyl ether	
(msl) = Mean sea level		

\* TOC elevations are relative to 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.
- 11 MTBE by EPA Method 8260.

**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 <sup>1</sup> (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 <sup>2</sup>	--	--	0.73
	07/21/97 <sup>3</sup>	--	--	0.70
	08/31/99	--	--	ND
	07/16/01 <sup>4</sup>	--	--	ND

**EXPLANATIONS:**

Groundwater laboratory analytical results prior to August 31, 2001, 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

<sup>1</sup> All other EPA Method 8010 constituents were ND.

<sup>2</sup> Chloroform was detected at a concentration of 0.96 ppb.

<sup>3</sup> Chloroform was detected at a concentration of 1.0 ppb.

<sup>4</sup> All EPA Method 8021B constituents were ND with a raised detection limit, except Chloroform was detected at a concentration of 45 ppb and Bromodichloromethane at 1.7 ppb.

**Table 3**  
**Groundwater Analytical Results - Oxygenate Compounds**  
 Tosco (Unocal) Service Station #3538  
 411 West MacArthur Boulevard  
 Oakland, California

WELL ID	DATE	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (ppb)	EDB (ppb)
MW-3	08/25/00	ND <sup>1</sup>	180	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>	ND <sup>1</sup>

**EXPLANATIONS:**

TBA = Tertiary butyl alcohol  
 MTBE = Methyl tertiary butyl ether  
 DIPE = Di-isopropyl ether  
 ETBE = Ethyl tertiary butyl ether  
 TAME = Tertiary amyl methyl ether  
 1,2-DCA = 1,2-Dichloroethane  
 EDB = 1,2-Dibromoethane  
 (ppb) = Parts per billion  
 ND = Not Detected

**ANALYTICAL METHOD:**

EPA Method 8260 for Oxygenate Compounds

<sup>1</sup> Detection limit raised. Refer to analytical reports.

## 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 an 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 Phillips 66 Company, the purge water and decontamination water generated during sampling activities is transported to Phillips 66 - San Francisco Refinery, located in Rodeo, California.

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # 3538 Job#: 180064  
Address: 411 W. MacArthur Blvd. Date: 1-28-02  
City: Oakland Sampler: Joc

Well ID MW-1 Well Condition: O.K.  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: 0 in. (product/water): 0 (gal.)  
Total Depth 23.30 ft.  
Depth to Water 17.31 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: 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 $\mu\text{mhos/cm} \times 10^2$	Temperature $^{\circ}\text{C}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-</u>	<u>3Y04</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHG, BTEX, MTBE</u>

COMMENTS: M. only



**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # 3538 Job#: 180064  
Address: 411 W. MacArthur Blvd. Date: 1-28-02  
City: Oakland Sampler: Soc

Well ID MW-2 Well Condition: O.K.  
Well Diameter 2 in. Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)  
Total Depth 24.25 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66  
Depth to Water 17.57 ft. Factor (VF) 6" = 1.50 12" = 5.80

6.68 X VF 0.17 = 1.14 X 3 (case volume) = Estimated Purge Volume: 3.5 (gal.)

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

Starting Time: 11:00 Weather Conditions: cold/wet  
Sampling Time: 1:22 P.M. (1322) Water Color: clear Odor: none  
Purging Flow Rate: 25 gpm Sediment Description: \_\_\_\_\_  
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>1:08</u>	<u>1</u>	<u>7.97</u>	<u>7.24</u>	<u>64.6</u>			
<u>1:12</u>	<u>2</u>	<u>7.58</u>	<u>7.18</u>	<u>64.1</u>			
<u>1:15</u>	<u>3.5</u>	<u>7.61</u>	<u>7.26</u>	<u>64.4</u>			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>3 vol</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHG, BTEX, MTBE</u>

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/Facility # 3538 Job#: 180064  
 Address: 411 W. MacArthur Blvd. Date: 1-28-02  
 City: Oakland Sampler: Joc

Well ID MW-3 Well Condition: O.K.  
 Well Diameter 2 in. Hydrocarbon Amount Bailed  
 Thickness: 0 in. (product/water): 0 (gal.)  
 Total Depth 27.15 ft  
 Depth to Water 17.84 ft

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

9.31 X VF 0.17 = 1.58 X 3 (case volume) = Estimated Purge Volume: 5 (gal.)

Purge Equipment: Disposable Bailer Sampling Equipment: Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
 Other: \_\_\_\_\_

Starting Time: 1:30 Weather Conditions: cold/wet  
 Sampling Time: 1:55 pm (1355) Water Color: clear Odor: \_\_\_\_\_  
 Purging Flow Rate: 0.2 gpm Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu$ mhos/cm K	Temperature $^{\circ}$ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>1:36</u>	<u>1.5</u>	<u>7.59</u>	<u>6.88</u>	<u>64.6</u>			
<u>1:40</u>	<u>3</u>	<u>7.60</u>	<u>6.91</u>	<u>64.4</u>			
<u>1:43</u>	<u>5</u>	<u>7.64</u>	<u>6.96</u>	<u>64.5</u>			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>3Y04</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHG, BTEX, MTBE</u>

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/Facility # 3538 Job#: 180064  
 Address: 411 W. MacArthur Blvd. Date: 1-28-02  
 City: Oakland Sampler: Soc

Well ID mw-4 Well Condition: o.k.  
 Well Diameter 2 in Hydrocarbon Thickness: 0 in. Amount Bailed (product/water): 0 (gal.)  
 Total Depth 2480 ft  
 Depth to Water 1720 ft

Volume	2" = 0.17	3" = 0.38	4" = 0.66
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 $\mu\text{mhos/cm} \times 10^2$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW</u>	<u>3Yok</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHG, BTEX, MTBE</u>

COMMENTS: M: only  
2" cap & padlock

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # 3538 Job#: 180064  
Address: 411 W. MacArthur Blvd. Date: 1-28-02  
City: Oakland Sampler: SOC

Well ID MW-5 Well Condition: O.K.  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: 0 in. (product/water): 0 (gal.)  
Total Depth 30.10 ft.  
Depth to Water 17.12 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: 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 $\mu\text{mhos/cm} \times$	Temperature $^{\circ}\text{C}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-	3Y04	Y	HCL	Seq.	TPHG, BTEX, MTBE

COMMENTS: M only  
2" cap + padlock

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # 3538  
Address: 411 W. MacArthur Blvd.  
City: Oakland

Job#: 180064  
Date: 1-28-02  
Sampler: Soc

Well ID MW-6  
Well Diameter 2 in  
Total Depth 30.04 ft  
Depth to Water 14.58 ft

Well Condition: OK

Hydrocarbon Thickness:	<u>0</u> in.	Amount Bailed (product/water):	<u>0</u> (gal)
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: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: \_\_\_\_\_  
Sampling Time: \_\_\_\_\_  
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 $\mu$ mhos/cm K	Temperature F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-</u>	<u>3Y0A</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHG, BTEX, MTBE</u>

COMMENTS: MW only  
2" cap & padlock



Tosco Marketing Company  
2000 Cripe Canyon Pl., Ste. 400  
San Ramon, California 94583

Facility Number Tosco #3538  
 Facility Address 411 W. MacArthur Blvd., Oakland, CA  
 Consultant Project Number 180064  
 Consultant Name Gettler-Ryan Inc. (G-R Inc.)  
 Address 6747 SIERRA COURT, SUITE J, DUBLIN, CA 94568  
 Project Contact (Name) Deanna L. Harding  
 (Phone) (925) 551-7555 (Fax Number) 925-551-7899

Contact (Name) MR. Dave DeWitt  
 (Phone) 925-277-2384  
 Laboratory Name Sequoia Analytical  
 Laboratory Release Number \_\_\_\_\_  
 Samples Collected by (Name) JOE ASEMIAN  
 Collection Date 1-28-02  
 Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed											DO NOT BILL TB-LB ANALYSIS  MLA 0511  Remarks							
								TPH Gas + BTEX w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (8020)	Purgeable Hydrocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)											
TB-LB	01	10A	W	G	-	ACC	Y	✓																		
MW-2	02	10A	W	G	1322			✓																		
MW-3	03	"	W	G	1355			✓																		

Relinquished By (Signature) <u>[Signature]</u>	Organization <u>G-R Inc.</u>	Date/Time <u>1-28-02 1500</u>	Received By (Signature) <u>[Signature]</u>	Organization _____	Date/Time <u>1/28/02 1500</u>	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature) <u>[Signature]</u>	Organization _____	Date/Time _____	Received By (Signature) <u>[Signature]</u>	Organization <u>SEA</u>	Date/Time <u>1-28-1630</u>	
Relinquished By (Signature) <u>[Signature]</u>	Organization <u>SEA</u>	Date/Time <u>1/28/2 1745</u>	Received For Laboratory By (Signature) <u>[Signature]</u>	Organization <u>[Signature]</u>	Date/Time <u>1/28/02 1745</u>	



**Sequoia  
Analytical**

885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoiakabs.com

11 February, 2002

Deanna Harding  
Gettler Ryan/Geostrategies - Tosco/Unocal  
6747 Sierra Ct, Suite J  
Dublin, CA 94568

RECEIVED

FEB 14 2002

GETTLER-RYAN INC.  
GENERAL CONTRACTORS

RE: Tosco #3538, Oakland, Ca  
Sequoia Report: MLA0511

Enclosed are the results of analyses for samples received by the laboratory on 01/28/02 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Hartley  
Project Manager

CA ELAP Certificate #1210



Gettler Ryan/Geostrategies - Tosco/Unocal  
6747 Sierra Ct, Suite J  
Dublin CA, 94568

Project: Tosco #3538, Oakland, Ca  
Project Number: 411 W. MacArthur Blvd  
Project Manager: Deanna Harding

**Reported:**  
02/11/02 08:38

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	MLA0511-01	Water	01/28/02 00:00	01/28/02 15:00
MW-2	MLA0511-02	Water	01/28/02 13:22	01/28/02 15:00
MW-3	MLA0511-03	Water	01/28/02 13:55	01/28/02 15:00

Sequoia Analytical - Morgan Hill

James Hartley, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*





Gettler Ryan/Geostrategies - Tosco/Unocal  
6747 Sierra Ct, Suite J  
Dublin CA, 94568

Project: Tosco #3538, Oakland, Ca  
Project Number: 411 W. MacArthur Blvd  
Project Manager: Deanna Harding

Reported:  
02/11/02 08:38

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>TB-LB (MLA0511-01) Water</b> Sampled: 01/28/02 00:00 Received: 01/28/02 15:00									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2A31001	01/31/02	01/31/02	8015Bm/8021B	
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>		93.6 %	70-130		"	"	"	"	
<b>MW-2 (MLA0511-02) Water</b> Sampled: 01/28/02 13:22 Received: 01/28/02 15:00									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2A31001	01/31/02	01/31/02	8015Bm/8021B	
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>		91.5 %	70-130		"	"	"	"	
<b>MW-3 (MLA0511-03) Water</b> Sampled: 01/28/02 13:55 Received: 01/28/02 15:00									
Gasoline Range Organics (C6-C10)	ND	50	ug/l	1	2A31001	01/31/02	01/31/02	8015Bm/8021B	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	34	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.3 %	70-130		"	"	"	"	



Gettler Ryan/Geostrategies - Tosco/Unocal  
6747 Sierra Ct, Suite J  
Dublin CA, 94568

Project: Tosco #3538, Oakland, Ca  
Project Number: 411 W. MacArthur Blvd  
Project Manager: Deanna Harding

Reported:  
02/11/02 08:38

**Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2A31001 - EPA 5030B [P/T]**

**Blank (2A31001-BLK1)**

Prepared & Analyzed: 01/31/02

Gasoline Range Organics (C6-C10)	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	9.49		"	10.0		94.9	70-130			

**LCS (2A31001-BS1)**

Prepared & Analyzed: 01/31/02

Benzene	10.8	0.50	ug/l	10.0		108	70-130			
Toluene	11.0	0.50	"	10.0		110	70-130			
Ethylbenzene	10.4	0.50	"	10.0		104	70-130			
Xylenes (total)	31.2	0.50	"	30.0		104	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.95		"	10.0		99.5	70-130			

**LCS (2A31001-BS2)**

Prepared & Analyzed: 01/31/02

Gasoline Range Organics (C6-C10)	276	50	ug/l	250		110	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.4		"	10.0		104	70-130			

**Matrix Spike (2A31001-MS1)**

Source: MLA0511-02

Prepared & Analyzed: 01/31/02

Gasoline Range Organics (C6-C10)	632	50	ug/l	550	ND	115	60-140			
Benzene	9.52	0.50	"	6.60	ND	144	60-140			QM-07
Toluene	47.4	0.50	"	39.7	ND	119	60-140			
Ethylbenzene	10.1	0.50	"	9.20	ND	110	60-140			
Xylenes (total)	45.2	0.50	"	46.1	ND	98.0	60-140			
Surrogate: a,a,a-Trifluorotoluene	13.2		"	10.0		132	70-130			S-02

**Matrix Spike Dup (2A31001-MSD1)**

Source: MLA0511-02

Prepared & Analyzed: 01/31/02

Gasoline Range Organics (C6-C10)	606	50	ug/l	550	ND	110	60-140	4.20	25	
Benzene	9.42	0.50	"	6.60	ND	143	60-140	1.06	25	QM-07
Toluene	46.7	0.50	"	39.7	ND	118	60-140	1.49	25	
Ethylbenzene	9.88	0.50	"	9.20	ND	107	60-140	2.20	25	
Xylenes (total)	44.3	0.50	"	46.1	ND	96.1	60-140	2.01	25	
Surrogate: a,a,a-Trifluorotoluene	12.6		"	10.0		126	70-130			



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**Reported:**  
02/11/02 08:38

#### Notes and Definitions

- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample.
- 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