



GETTLER - RYAN INC.



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3:58 pm, May 15, 2009

Alameda County
Environmental Health

December 14, 2000
G-R Job #180022

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

RE: Fourth Quarter 2000 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

Dear Mr. De Witt:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On October 27, 2000, field personnel monitored and sampled five wells (U-1, U-2, U-3, MW-4 and MW-5) 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. Dissolved Oxygen Concentrations are summarized in Table 3. 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. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

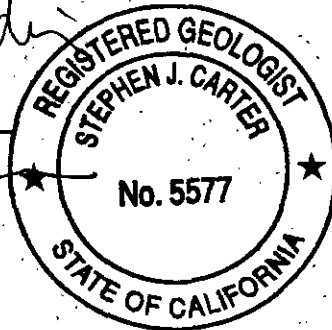
Sincerely,

Deanna L. Harding

Deanna L. Harding
Project Coordinator

Stephen J. Carter

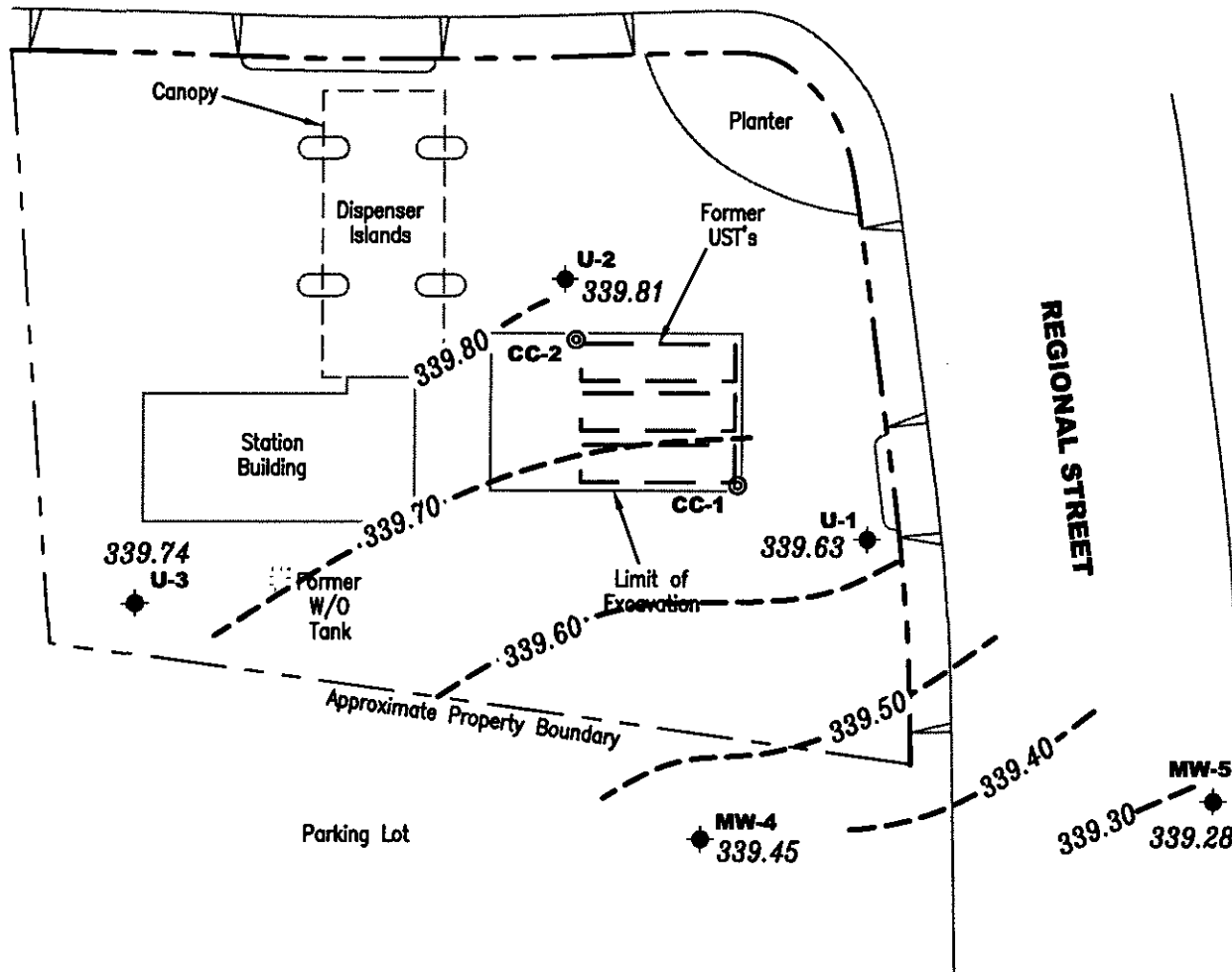
Stephen J. Carter
Senior Geologist, R.G. No. 5577



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

7176.qml

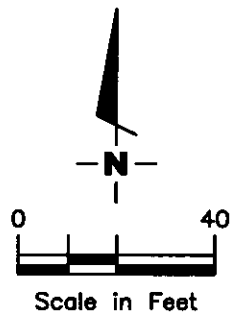
AMADOR VALLEY BOULEVARD



EXPLANATION

- ◆ Groundwater monitoring well
- ⊙ Conductor casing
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99--- Groundwater elevation contour, dashed where inferred.

Approximate groundwater flow direction at a gradient of 0.002 to 0.004 Ft./Ft.



Source: Figure modified from drawing provided by MPDS Services, Inc.



Gettler - Ryan Inc.

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POTENTIOMETRIC MAP

Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

FIGURE

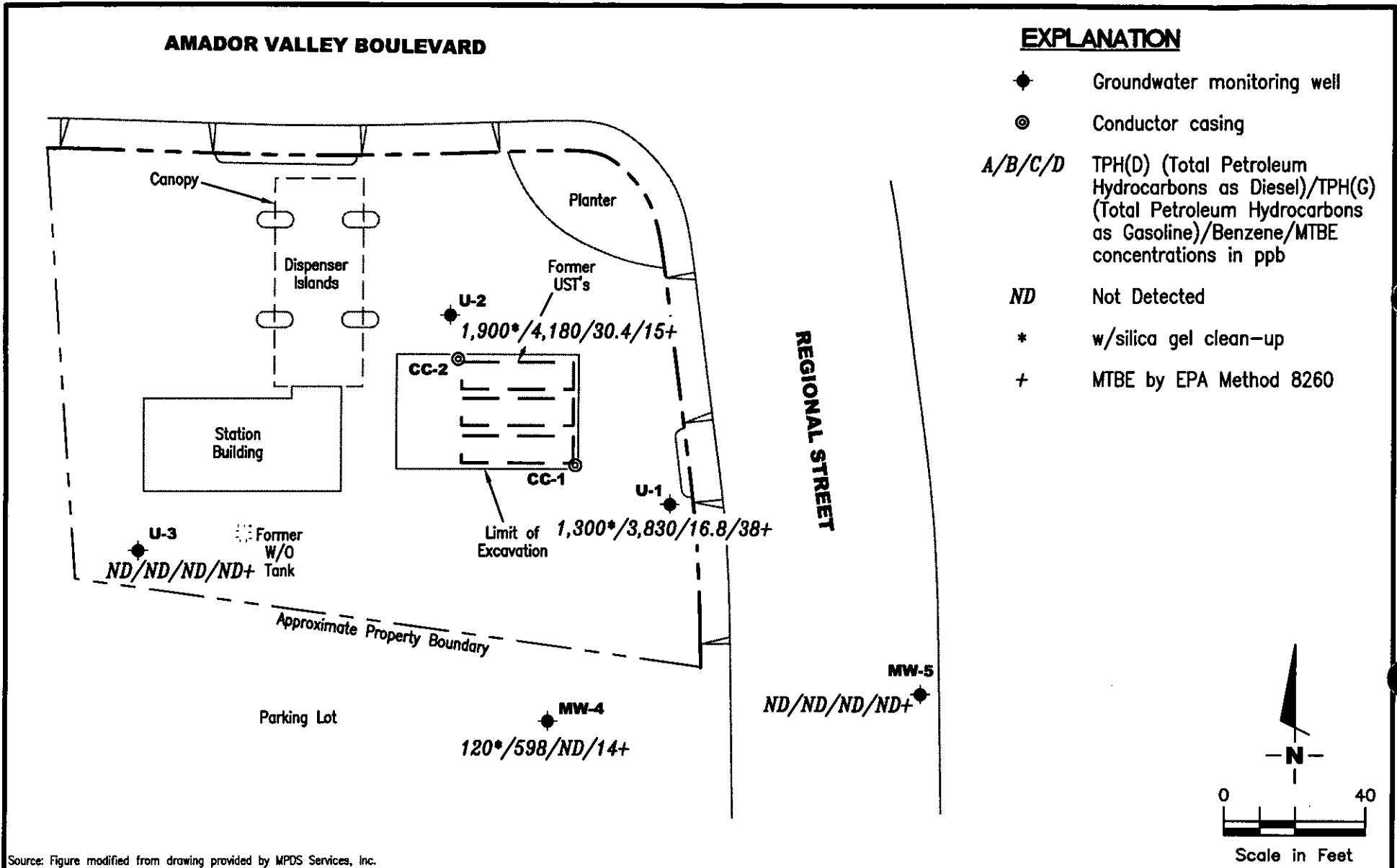
1

PROJECT NUMBER
180022

REVIEWED BY

DATE
October 27, 2000

REVISED DATE



Source: Figure modified from drawing provided by MPDS Services, Inc.



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CONCENTRATION MAP

Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

FIGURE

2

PROJECT NUMBER
180022

REVIEWED BY

DATE
October 27, 2000

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

WELL ID/ TOC*	DATE	DTW (ft.)	S.I. (ft. bgs.)	GWE (msl)	TPH(D)◆ (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-1											
355.62	07/08/95	12.59	10.0-30.0	343.03	9,400 ³	39,000	1,500	19	1,600	5,200	--
	10/12/95	15.38		340.24	4,200 ⁵	33,000	1,400	ND	1,400	3,100	-- ⁷
	01/11/96 ¹	16.33		339.29	8,200 ⁵	8,300	690	11	680	1,500	-- ⁸
	04/11/96 ²	12.20		343.42	630 ⁵	3,200	110	ND	180	290	790
	07/10/96	13.84		341.78	2,200 ⁵	2,600	81	4.4	210	230	510
	10/30/96	15.85		339.77	560 ⁵	2,200	67	19	140	150	360
	01/27/97	12.20		343.42	2,300 ⁵	4,600	98	ND	360	290	150
	04/08/97	13.46		342.16	1,300 ⁵	2,800	50	ND	220	140	ND
	07/17/97	15.30		340.32	460 ⁶	2,300	30	4.5	140	94	190
	10/17/97	16.33		339.29	510 ⁶	1,500	31	6.7	110	88	220
	01/19/98	14.34		341.28	¹⁰ 1,900/1,300 ¹⁰	3,100	46	3.4	310	200	170
355.59	NP 04/23/98	11.16		344.43	--/1,700 ¹¹	3,400	72	3.8	470	350	280
	NP 07/08/98	12.67		342.92	2,000 ¹⁴	4,500	51	ND ¹²	590	430	190
	10/05/98	14.57		341.02	--/2,500 ¹⁰	7,500 ¹⁶	53	ND ¹²	680	350	190/180 ¹⁷
	01/04/99	15.35		340.24	¹¹ 2,700/2,500 ¹¹	10,000 ¹⁹	ND ¹²	ND ¹²	1,200	540	ND ¹²
	04/05/99	13.64		341.95	¹⁰ 920/570 ¹⁰	4,900	34	ND ¹²	350	150	150/55 ¹⁷
	07/01/99	14.39		341.20	¹⁰ 2,700/3,600 ²⁶	10,000	45	ND ¹²	850	420	260/110 ¹⁷
	09/30/99	15.32		340.27	¹⁰ 2,360/1,680 ¹⁰	7,150 ²⁷	ND ¹²	ND ¹²	415	84.4	¹² ND/195 ¹⁷
	01/03/00	16.51		339.08	²⁶ 2,000/1,700 ²⁶	5,400 ²⁷	28	8.4	180	33	160/120 ¹⁷
	04/04/00	12.89		342.70	²⁶ 990/1,400 ²⁶	4,800 ²⁷	30	ND ¹²	210	93	170/160 ¹⁷
	07/14/00	14.56		341.03	²⁶ 2,800/1,200 ²⁶	6,200 ²⁷	41	16	170	32	170/120 ¹⁷
	10/27/00	15.96		339.63	²⁶1,400/1,300²⁶	3,830¹⁶	16.8	ND¹²	68.6	7.99	55.2/38¹⁷
U-2											
356.59	07/08/95	12.68	10.0-30.0	343.91	4,700 ³	17,000	430	ND	2,200	590	--
	10/12/95	16.01		340.58	3,600 ⁵	24,000	310	60	1,900	190	-- ⁷
	01/11/96 ¹	17.06		339.53	8,600 ⁵	10,000	210	55	1,400	240	-- ⁸
	04/11/96 ²	12.75		343.84	1,900 ⁵	7,700	130	27	1,100	110	340
	07/10/96	14.42		342.17	2,300 ⁵	5,600	59	15	610	42	250
	10/30/96	16.82		339.77	1,800 ⁵	7,700	67	35	1,000	54	260
	01/27/97	12.91		343.68	660 ⁵	1,600	14	ND	130	7.0	100
	04/08/97	14.07		342.52	2,000 ⁵	4,300	35	ND	400	16	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

WELL ID/ TOC*	DATE	DTW (ft.)	S.I. (ft. bgs.)	GWE (msl)	TPH(D)♦ (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-2	07/17/97	15.96	10.0-30.0	340.63	1,300 ⁶	6,200	17	22	410	ND	130
(cont)	10/17/97	17.03		339.56	1,400 ⁶	7,100	71	26	520	50	ND
	01/19/98	15.10		341.49	¹⁰ 2,100/1,500 ¹⁰	5,300	46	11	350	16	110
356.55	NP 04/23/98	11.74		344.81	--/1,200 ¹¹	3,200	23	11	210	38	160
	NP 07/08/98	13.27		343.28	1,100 ¹⁴	1,600	34	8.5	100	7.4	190
	10/05/98	14.90		341.65	--/1,300 ¹⁰	2,900 ¹⁸	37	8.4	110	7.3	78
	01/04/99	15.94		340.61	¹¹ 670/250 ²⁰	2,200 ²¹	35	ND ¹²	17	ND ¹²	86
	04/05/99	14.19		342.36	¹⁰ 660/490 ¹⁰	4,900	21	77	130	310	100/6.9 ¹⁷
	07/01/99	14.98		341.57	²⁴ 210/440 ²⁶	1,500 ²⁵	7.6	ND ¹²	ND ¹²	ND ¹²	¹² ND/35 ¹⁷
	09/30/99	16.00		340.55	¹⁰ 483/340 ¹⁰	256 ²⁷	1.85	ND ¹²	2.42	ND ¹²	26.3/29.8 ¹⁷
	01/03/00	17.20		339.35	²⁶ 2,400/1,900 ²⁶	3,400 ²⁷	23	13	ND ¹²	44	46/14 ¹⁷
	04/04/00	13.50		343.05	²⁶ 1,000/1,000 ²⁶	3,600 ²⁷	34	17	56	ND ¹²	59/25 ¹⁷
	07/14/00	15.23		341.32	²⁶ 1,000/350 ²⁶	3,100 ²⁷	16	13	15	10	100/19 ¹⁷
	10/27/00	16.74		339.81	²⁶ 2,000/1,900 ²⁶	4,180 ¹⁶	30.4	10.2	14.6	ND ¹²	55.5/15 ¹⁷
U-3											
358.13	07/08/95	14.58	10.0-30.0	343.55	710 ³	1,100 ⁴	0.57	2.1	1.7	2.4	--
	10/12/95	17.60		340.53	470 ⁶	560	ND	0.87	0.7	1.1	--
	01/11/96 ¹	18.65		339.48	260 ⁶	230	0.62	0.91	0.97	1.9	--
	04/11/96	13.20		344.93	ND	68 ⁹	ND	ND	ND	ND	ND
	07/10/96	15.98		342.15	ND	ND	ND	ND	ND	ND	ND
	10/30/96	18.24		339.89	ND	70	ND	ND	ND	ND	ND
	01/27/97	14.41		343.72	ND	ND	ND	ND	ND	ND	ND
	04/08/97	15.73		342.40	ND	ND	ND	ND	ND	ND	ND
	07/17/97	17.54		340.59	ND	ND	ND	ND	ND	ND	ND
	10/17/97	18.64		339.49	63 ⁶	ND	ND	ND	ND	ND	ND
	01/19/98	16.67		341.46	¹⁰ 68/ND	ND	ND	ND	ND	ND	ND
358.09	NP 04/23/98	13.28		344.81	--/ND	ND	ND	ND	ND	ND	ND
	NP 07/08/98	14.90		343.19	80 ¹⁵	ND	ND	ND	ND	ND	ND
	10/05/98	16.50		341.59	--/ND	ND	ND	ND	ND	ND	ND
	01/04/99	17.70		340.39	ND	ND	ND	ND	ND	ND	ND
	04/05/99	15.67		342.42	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
	07/01/99	16.79		341.30	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷

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Tosco (Unocal) Service Station #7176
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Dublin, California

WELL ID/ TOC*	DATE	DTW (ft.)	S.I. (ft. bgs.)	GWE (msl)	TPH(D)◆ (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-3 (cont)	09/30/99	17.60	10.0-30.0	340.49	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
	01/03/00	18.86		339.23	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
	04/04/00	15.10		342.99	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
	07/14/00	16.85		341.24	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
	10/27/00	18.35		339.74	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
MW-4 356.41	04/23/98	12.11	10.0-25.0	344.30	--/1,400 ¹¹	2,500	5.9	6.4	16	31	ND ¹²
	07/08/98	13.70		342.71	1,400 ¹¹	1,000 ¹³	ND ¹²	ND ¹²	ND ¹²	ND ¹²	ND ¹²
	10/05/98	15.18		341.23	--/230 ¹⁰	890 ¹⁶	ND ¹²	ND ¹²	ND ¹²	14	ND ¹²
	01/04/99	16.39		340.02	¹⁰ 71/71 ¹⁰	230 ²²	0.56	1.3	1.4	1.8	10
	04/05/99	14.61		341.80	¹⁰ 340/210 ¹⁰	620 ²³	ND ¹²	1.8	2.1	ND ¹²	6.0/9.3 ¹⁷
	07/01/99	15.43		340.98	²⁴ 260/310 ²⁶	700 ¹⁹	2.1	ND ¹²	1.9	2.4	¹² ND/21 ¹⁷
	09/30/99	16.27		340.14	¹⁰ 420/220 ¹⁰	582 ²⁷	2.60	1.30	1.98	ND ¹²	23.1/22.5 ¹⁷
	01/03/00	17.50		338.91	²⁶ 250/260 ²⁶	800 ²⁷	4.2	4.6	3.3	11	31/17 ¹⁷
	04/04/00	13.91		342.50	^{10,15} 460/340 ²⁶	710 ²⁷	2.0	1.3	4.4	2.0	21/22 ¹⁷
	07/14/00	15.58		340.83	²⁶ 220/76 ²⁶	490 ²⁸	0.89	1.3	0.85	1.8	21/12 ¹⁷
	10/27/00	16.96		339.45	²⁶ 160/120 ²⁶	598 ²¹	ND	1.56	4.65	ND	15.4/14 ¹⁷
	MW-5 355.03	04/23/98	11.15	10.0-25.0	343.88	--/100 ¹¹	120	0.53	0.90	1.0	3.8
07/08/98		12.63		342.40	170 ¹⁰	ND	ND	ND	ND	ND	12
10/05/98		14.00		341.03	--/100 ¹⁰	ND	ND	ND	ND	ND	12
01/04/99		15.21		339.82	ND	ND	ND	ND	ND	ND	ND
04/05/99		13.76		341.27	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
07/01/99		14.48		340.55	ND	ND	ND	ND	ND	ND	¹² ND/2.3 ¹⁷
09/30/99		15.15		339.88	¹⁰ 60.4/ND	50.8 ²⁷	ND	ND	ND	ND	ND/ND ¹⁷
01/03/00		16.34		338.69	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
04/04/00		12.90		342.13	¹⁵ 69/ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
07/14/00		14.48		340.55	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷
10/27/00		15.75		339.28	ND	ND	ND	ND	ND	ND	ND/ND ¹⁷

Table 1
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 7850 Amador Valley Boulevard
 Dublin, California

WELL ID/ TOC*	DATE	DTW (ft.)	S.L. (ft. bgs.)	GWE (msl)	TPH(D)◆ (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
Trip Blank											
TB-LB	01/19/98	--		--	--	ND	ND	ND	ND	ND	ND
	04/23/98	--		--	--	ND	ND	ND	ND	ND	ND
	07/08/98	--		--	--	ND	ND	ND	ND	ND	ND
	10/05/98	--		--	--	ND	ND	0.70	ND	0.71	ND
	01/04/99	--		--	--	ND	ND	0.74	ND	0.92	ND
	04/05/99	--		--	--	ND	ND	ND	ND	ND	ND
	07/01/99	--		--	--	ND	ND	ND	ND	ND	ND
	09/30/99	--		--	--	ND	ND	ND	ND	ND	ND
	01/03/00	--		--	--	ND	ND	ND	ND	ND	ND
	04/04/00	--		--	--	ND	ND	ND	ND	ND	ND
	07/14/00	--		--	--	ND	ND	ND	ND	ND	ND
	10/27/00	--		--	--	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 19, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing	TPH(G) = Total Petroleum Hydrocarbons as Gasoline	
DTW = Depth to Water	B = Benzene	ppb = Parts per billion
S.I. = Screen Interval	T = Toluene	ND = Not Detected
(ft. bgs.) = Feet Below Ground Surface	E = Ethylbenzene	-- = Not Measured/Not Analyzed
(ft.) = Feet	X = Xylenes	NP = No purge
GWE = Groundwater Elevation	MTBE = Methyl tertiary butyl ether	PNA = Polynuclear Aromatic Hydrocarbons
msl = Mean sea level		
TPH(D) = Total Petroleum Hydrocarbons as Diesel		

- * TOC elevations were surveyed relative to msl, per the Benchmark AM-STW1977 located at the easterly return at the most easterly corner of intersection at Amador Valley Boulevard and Starward Street (Elevation = 344.17 feet msl).
- ◆ Analytical results reported as follows: TPH(D)/TPH(D) with silica gel cleanup.
- 1 PNA compound naphthalene was detected in well U-1 at a concentration of 320 ppb, and at a concentration of 310 ppb in well U-2. All other PNA compounds were ND in both wells.
- 2 PNA compounds were ND.
- 3 Laboratory report indicates unidentified hydrocarbons C9-C26.
- 4 Laboratory report indicates gasoline and unidentified hydrocarbons >C12.
- 5 Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- 6 Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
- 7 Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- 8 Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb in the sample collected from this well.
- 9 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- 10 Laboratory report indicates unidentified hydrocarbons C9-C24.
- 11 Laboratory report indicates diesel and unidentified hydrocarbons <C14.
- 12 Detection limit raised. Refer to analytical reports.
- 13 Laboratory report indicates unidentified hydrocarbons >C8.
- 14 Laboratory report indicates unidentified hydrocarbons <C14.
- 15 Laboratory report indicates discrete peaks.
- 16 Laboratory report indicates weathered gasoline C6-C12.
- 17 MTBE by EPA Method 8260.
- 18 Laboratory report indicates unidentified hydrocarbons <C8.
- 19 Laboratory report indicates gasoline and unidentified hydrocarbons C6-C12.
- 20 Laboratory report indicates diesel and unidentified hydrocarbons <C16.
- 21 Laboratory report indicates unidentified hydrocarbons C6-C12.
- 22 Laboratory report indicates gasoline and unidentified hydrocarbons >C10.
- 23 Laboratory report indicates gasoline and unidentified hydrocarbons <C7.

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

EXPLANATIONS: (cont)

- 24 Laboratory report indicates unidentified hydrocarbons C10-C24.
- 25 Laboratory report indicates gasoline and unidentified hydrocarbons <C6.
- 26 Laboratory report indicates unidentified hydrocarbons <C16.
- 27 Laboratory report indicates gasoline C6-C12.
- 28 Laboratory report indicates gasoline C6-C12 + unidentified hydrocarbons C6-C12.

Table 2
Groundwater Analytical Results - Oxygenate Compounds
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)	1,2-DCA (ppb)
U-1	04/05/99	ND ¹	ND ¹	55	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	07/01/99	ND	ND	110	ND	ND	ND	ND	ND
	09/30/99	ND ¹	ND ¹	195	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	01/03/00	ND	ND	120	ND	ND	ND	ND	ND
	04/04/00	ND ¹	ND ¹	160	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	07/14/00	ND ¹	ND ¹	120	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	10/27/00	ND	ND	38	ND	ND	ND	ND	ND
U-2	04/05/99	ND ¹	ND ¹	6.9	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	07/01/99	ND	ND	35	ND	ND	ND	ND	ND
	09/30/99	ND	ND	29.8	ND	ND	ND	ND	ND
	01/03/00	ND	ND	14	ND	ND	ND	ND	ND
	04/04/00	ND ¹	ND ¹	25	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
	07/14/00	ND	ND	19	ND	ND	ND	ND	ND
	10/27/00	ND	ND	15	ND	ND	ND	ND	ND
U-3	04/05/99	ND	ND	ND	ND	ND	ND	ND	ND
	07/01/99	ND	ND	ND	ND	ND	ND	ND	ND
	09/30/99	ND	ND	ND	ND	ND	ND	ND	ND
	01/03/00	ND	ND	ND	ND	ND	ND	ND	ND
	04/04/00	ND	ND	ND	ND	ND	ND	ND	ND
	07/14/00	ND	ND	ND	ND	ND	ND	ND	ND
	10/27/00	ND	ND	ND	ND	ND	ND	ND	ND

Table 2
Groundwater Analytical Results - Oxygenate Compounds
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

WELL ID	DATE	ETHANOL (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)	1,2-DCA (ppb)
MW-4	04/05/99	ND	ND	9.3	ND	ND	ND	ND	ND
	07/01/99	ND	ND	21	ND	ND	ND	ND	ND
	09/30/99	ND	ND	22.5	ND	ND	ND	ND	ND
	01/03/00	ND	ND	17	ND	ND	ND	ND	ND
	04/04/00	ND	ND	22	ND	ND	ND	ND	ND
	07/14/00	ND	ND	12	ND	ND	ND	ND	ND
	10/27/00	ND	ND	14	ND	ND	ND	ND	ND
MW-5	04/05/99	ND	ND	ND	ND	ND	ND	ND	ND
	07/01/99	ND	ND	2.3	ND	ND	ND	ND	ND
	09/30/99	ND	ND	ND	ND	ND	ND	ND	ND
	01/03/00	ND	ND	ND	ND	ND	ND	ND	ND
	04/04/00	ND	ND	ND	ND	ND	ND	ND	ND
	07/14/00	ND	ND	ND	ND	ND	ND	ND	ND
	10/27/00	ND	ND	ND	ND	ND	ND	ND	ND

Table 2
Groundwater Analytical Results - Oxygenate Compounds
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

EXPLANATIONS:

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

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

¹ Detection limit raised. Refer to analytical reports.

Table 3
Dissolved Oxygen Concentrations
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

WELL ID	DATE	Before Purging (mg/L)	After Purging (mg/L)
U-1	01/11/96	--	3.41
	04/11/96	3.77	3.78
	07/10/96 ¹	1.22	--
	10/30/96 ¹	1.41	--
	01/27/97 ¹	1.34	--
	04/08/97 ¹	2.09	--
	07/17/97 ¹	2.00	--
	10/17/97 ¹	1.86	--
	01/19/98 ¹	2.91	--
	04/23/98 ¹	0.59	--
	07/08/98 ¹	1.10	--
U-2	01/11/96	--	3.99
	04/11/96	3.32	3.41
	07/10/96 ¹	1.01	--
	10/30/96 ¹	1.42	--
	01/27/97 ¹	1.29	--
	04/08/97 ¹	1.69	--
	07/17/97 ¹	2.08	--
	10/17/97 ¹	1.80	--
	01/19/98 ¹	2.95	--
	04/23/98 ¹	0.55	--
	07/08/98 ¹	1.36	--
U-3	01/11/96	--	5.05
	04/11/96	5.16	4.96
	07/10/96 ¹	3.44	--
	10/30/96 ¹	2.18	--
	01/27/97 ¹	2.61	--
	04/08/97 ¹	3.73	--
	07/17/97 ¹	2.65	--
	10/17/97 ¹	2.44	--
	01/19/98 ¹	6.51	--
	04/23/98 ¹	4.72	--
	07/08/98 ¹	4.35	--
CC-1	10/02/95	2.83	--

EXPLANATIONS:

Dissolved oxygen concentrations prior to January 19, 1998, were compiled from reports prepared by MPDS Services, Inc.

CC-1 = Conductor casing in the underground storage tank backfill

-- = Not Measured

mg/L = milligrams per liter

¹ The wells were not purged on this date.

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 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: UNOCAL SS # 7176 (Tosco) Job#: 180022
 Address: 7850 AMADOR VALLEY ROAD Date: 10-27-00
 City: DUBLIN, CA Sampler: STEVE BAIAN

Well ID: U-1 Well Condition: OK
 Well Diameter: 2" in. Hydrocarbon Thickness: ∅ (feet) Amount Bailed (product/water): ∅ (Gallons)
 Total Depth: 27.90 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 15.96 ft. Factor (VF) 6" = 1.50 12" = 5.80

11.94 x VF 0.17 = 2.03 x 3 (case volume) = Estimated Purge Volume: 6.09 (gal.)

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

Starting Time: 17:02 Weather Conditions: CLOUD
 Sampling Time: 17:20 Water Color: NOT CLEAR Odor: YES
 Purging Flow Rate: 1 gpm. Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
17:04	3.5	6.69	530	28.7			
17:06	4.5	6.65	498	27.8			
17:08	6.5	6.63	504	27.5			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-1	5-VOA	Y	Hcl	SEQUOIA	TPHIGI/btex/mtbe
U-1	11-AMBER	Y	-	"	TPH-D

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/ Facility UNOCAL SS # 7176 (Tosco) Job#: 180022
 Address: 7850 AMADOR VALLEY ROAD Date: 10-27-00
 City: DUBLIN, CA Sampler: STEVE BAIAN

Well ID U-2 Well Condition: OK
 Well Diameter 2" in. Hydrocarbon Amount Bailed
 Thickness: Ø (feet) (product/water): Ø (Gallons)
 Total Depth 26.50 ft.
 Depth to Water 16.74 ft.

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

9.76 X VF 0.17 = 1.66 X 3 (case volume) = Estimated Purge Volume: 4.98 (gal.)

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

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

Starting Time: 16:38 Weather Conditions: PARTLY CLOUDY
 Sampling Time: 16:55 Water Color: CLEAR Odor: YES
 Purging Flow Rate: 1 gpm Sediment Description: _____
 Did well de-water? No If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>16:40</u>	<u>2</u>	<u>6.53</u>	<u>623</u>	<u>26.4</u>			
<u>16:42</u>	<u>3.5</u>	<u>6.50</u>	<u>627</u>	<u>26.6</u>			
<u>16:43</u>	<u>5</u>	<u>6.51</u>		<u>26.6</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>5-VOA"</u>	<u>Y</u>	<u>Hcl</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btax/mtbe/16-007</u>
<u>U-2</u>	<u>1-AMBER</u>	<u>Y</u>	<u>-</u>	<u>"</u>	<u>TPH-D</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/ Facility: UNOCAL SS # 7176 (Tosco) Job#: 180022
 Address: 7850 AMADOR VALLEY ROAD Date: 10-27-00
 City: DUBLIN CA Sampler: STEVE BALIAN

Well ID: U-3 Well Condition: ~~10~~
 Well Diameter: 2" in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)
 Total Depth: 28.50 ft. Volume Factor (VF): 2" = 0.17, 3" = 0.38, 4" = 0.66
 Depth to Water: 18.35 ft. 6" = 1.50, 12" = 5.80

10.15 X VF 0.17 = 1.73 X 3 (case volume) = Estimated Purge Volume: 5.18 (gal.)

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

Starting Time: 15:39 Weather Conditions: CLOUD
 Sampling Time: 16:00 Water Color: NOT CLEAR Odor: _____
 Purging Flow Rate: 1 gpm Sediment Description: _____
 Did well de-water? NO If yes: Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>15:41</u>	<u>2</u>	<u>6.60</u>	<u>623</u>	<u>25.8</u>			
<u>15:43</u>	<u>4</u>	<u>6.58</u>	<u>609</u>	<u>25.8</u>			
<u>15:45</u>	<u>5.5</u>	<u>6.55</u>	<u>599</u>	<u>25.6</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>5-VOA11</u>	<u>Y</u>	<u>HY</u>	<u>SEQUOIA</u>	<u>TPH(Gi)/btex/mtbe 16-04</u>
<u>U-3</u>	<u>1-AMBER</u>	<u>Y</u>	<u>-</u>	<u>"</u>	<u>TPH-P</u>

COMMENTS: * ONE FLANGE IS BROKEN (8" METAL)

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ Facility: UNOCAL SS # 7176 (Tosco) Job#: 180022
 Address: 7850 AMADOR VALLEY ROAD Date: 10-27-00
 City: DUBLIN, CA Sampler: STEVE RALIAN

Well ID: MW-4 Well Condition: O.K.
 Well Diameter: 2" in. Hydrocarbon Thickness: Ø (feet) Amount Bailed (product/water): Ø (Gallons)
 Total Depth: 25.50 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 16.96 ft. Factor (VF) 6" = 1.50 12" = 5.80

8.54 x VF 0.17 = 1.45 x 3 (case volume) = Estimated Purge Volume: 4.36 (gal.)

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

Starting Time: 16:09 Weather Conditions: CLOUD
 Sampling Time: 16:25 Water Color: NOT CLEAR Odor: YES
 Purging Flow Rate: 1 gpm Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity μ mhos/cm	Temperature $^{\circ}$ C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>16:10</u>	<u>1.5</u>	<u>6.61</u>	<u>613</u>	<u>26.0</u>			
<u>16:12</u>	<u>3</u>	<u>6.63</u>	<u>613</u>	<u>26.2</u>			
<u>16:14</u>	<u>4.5</u>	<u>6.62</u>	<u>6.07</u>	<u>26.4</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>5-NOA</u>	<u>Y</u>	<u>HE</u>	<u>SEQUOIA</u>	<u>TPH(Gi/btex/mtbe) 16.5</u>
<u>MW-4</u>	<u>1-AMBER</u>	<u>Y</u>	<u>-</u>	<u>"</u>	<u>TPH</u>

COMMENTS: _____

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility: UNOCAL SS # 7176 (Tosco) Job#: 180022
 Address: 7850 AMADOR VALLEY ROAD Date: 10-27-00
 City: DUBLIN, CA Sampler: STEVE RALIAN

Well ID: MW-5 Well Condition: O.K.
 Well Diameter: 2" in. Hydrocarbon Thickness: ∅ (feet) Amount Bailed (product/water): ∅ (Gallons)
 Total Depth: 25.00 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66
 Depth to Water: 15.75 ft. Factor (VF) 6" = 1.50 12" = 5.80

9.25 X VF 0.17 = 1.57 X 3 (case volume) = Estimated Purge Volume: 4.72 (gal.)

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

Starting Time: 15:11 Weather Conditions: CLOUDY
 Sampling Time: 15:30 Water Color: NOT CLEAR Odor: -
 Purging Flow Rate: 1 gpm. Sediment Description: _____
 Did well de-water? NO If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°C)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>15:13</u>	<u>2</u>	<u>6.91</u>	<u>133</u>	<u>26.2</u>			
<u>15:15</u>	<u>3.5</u>	<u>6.94</u>	<u>718</u>	<u>26.3</u>			
<u>15:16</u>	<u>5</u>	<u>6.95</u>	<u>701</u>	<u>26.4</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-5</u>	<u>5-60A"</u>	<u>Y</u>	<u>HR</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btax/mtbe 16-orig 1</u>
<u>MW-5</u>	<u>1-AMBER</u>	<u>Y</u>	<u>-</u>	<u>"</u>	<u>TPH-D</u>

COMMENTS: _____



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

Facility Number UNOCAL SS# 7176
 Facility Address 7850 Amador Valley Blvd. Dublin, CA
 Consultant Project Number 180022.85
 Consultant Name Gettler-Ryan Inc. (G-R Inc.)
 Address 6747 Sierra Court, Suite J, Dublin, CA 94568
 Project Contact (Name) Deanna L. Harding
 (Phone) 510-551-7555 (Fax Number) 510-551-7888

Contact (Name) MR. DAVE DEWITT
 (Phone) (925) 277-2384
 Laboratory Name Sequoia Analytical
 Laboratory Release Number _____
 Samples Collected by (Name) STEVE BALIAN
 Collection Date 10-27-00
 Signature STEVE BALIAN

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed											DO NOT BILL TB-LB ANALYSIS	Remarks
								TPH Gas + STEK W/ATRE (8016)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (NAP or AA)	6-ox, 3, 4, 8, 260 X, 1, 2 DCA x 500 micrograms ETHANOL				
TB-LB	01A	1	W	G		Hcl	Y	X												Run Silica Gel
U-1	02A-F	6	"	"	17:20	"	Y	X	X											check-up on any
U-2	03A-F	6	"	"	16:55	"	Y	X	X											Diesel hits
U-3	04A-F	6	"	"	16:00	"	Y	X	X											
MW-4	05A-F	6	"	"	16:25	"	Y	X	X											
MW-5	06A-F	6	"	"	15:30	"	Y	X	X											

Relinquished By (Signature) <u>STEVE BALIAN</u>	Organization <u>G-R Inc.</u>	Date/Time <u>10-27-00</u>	Received By (Signature) _____	Organization _____	Date/Time _____	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days <u>10 Days</u> As Contracted
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received By (Signature) _____	Organization _____	Date/Time _____	
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received For Laboratory By (Signature) <u>WC</u>	Organization _____	Date/Time <u>10/27/00</u> <u>18:05</u>	



Sequoia Analytical

404 N. Wiget Lane
Walnut Creek, CA 94598
(925) 988-9600
FAX (925) 988-9673
www.sequoialabs.com

17 November, 2000

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

RE: Unocal
Sequoia Report: W010690

Enclosed are the results of analyses for samples received by the laboratory on 27-Oct-00 18:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Charlie Westwater
Project Manager

CA ELAP Certificate #1271





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TBLB	W010690-01	Water	27-Oct-00 00:00	27-Oct-00 18:05
U-1	W010690-02	Water	27-Oct-00 17:20	27-Oct-00 18:05
U-2	W010690-03	Water	27-Oct-00 16:55	27-Oct-00 18:05
U-3	W010690-04	Water	27-Oct-00 16:00	27-Oct-00 18:05
MW-4	W010690-05	Water	27-Oct-00 16:25	27-Oct-00 18:05
MW-5	W010690-06	Water	27-Oct-00 15:30	27-Oct-00 18:05

Sequoia Analytical - Walnut Creek

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.

Charlie Westwater, Project Manager





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Diesel Hydrocarbons (C9-C24) by DHS LUFT
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-1 (W010690-02) Water Sampled: 27-Oct-00 17:20 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	1400	50	ug/l	1	0K10011	10-Nov-00	12-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		74.2 %	50-150		"	"	"	"	
U-2 (W010690-03) Water Sampled: 27-Oct-00 16:55 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	2000	50	ug/l	1	0K10011	10-Nov-00	12-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		95.2 %	50-150		"	"	"	"	
U-3 (W010690-04) Water Sampled: 27-Oct-00 16:00 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	ND	50	ug/l	1	0K10011	10-Nov-00	12-Nov-00	EPA 8015M	
Surrogate: n-Pentacosane		102 %	50-150		"	"	"	"	
MW-4 (W010690-05) Water Sampled: 27-Oct-00 16:25 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	160	50	ug/l	1	0K10011	10-Nov-00	12-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		93.1 %	50-150		"	"	"	"	
MW-5 (W010690-06) Water Sampled: 27-Oct-00 15:30 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	ND	50	ug/l	1	0K10011	10-Nov-00	12-Nov-00	EPA 8015M	
Surrogate: n-Pentacosane		89.2 %	50-150		"	"	"	"	





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Diesel Hydrocarbons (C9-C24) with Silica Gel Cleanup by DHS LUFT
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-1 (W010690-02) Water Sampled: 27-Oct-00 17:20 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	1300	50	ug/l	1	0K10011	10-Nov-00	17-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		59.2 %	50-140		"	"	"	"	
U-2 (W010690-03) Water Sampled: 27-Oct-00 16:55 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	1900	50	ug/l	1	0K10011	10-Nov-00	17-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		86.2 %	50-140		"	"	"	"	
MW-4 (W010690-05) Water Sampled: 27-Oct-00 16:25 Received: 27-Oct-00 18:05									
Diesel Range Hydrocarbons	120	50	ug/l	1	0K10011	10-Nov-00	17-Nov-00	EPA 8015M	D-11
Surrogate: n-Pentacosane		71.2 %	50-140		"	"	"	"	





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-1 (W010690-02) Water Sampled: 27-Oct-00 17:20 Received: 27-Oct-00 18:05									
Ethanol	ND	500	ug/l	1	OK09015	09-Nov-00	09-Nov-00	EPA 8260B	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	38	2.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
Ethylene dibromide	ND	2.0	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		104 %		50-150	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		90.0 %		50-150	"	"	"	"	
U-2 (W010690-03) Water Sampled: 27-Oct-00 16:55 Received: 27-Oct-00 18:05									
Ethanol	ND	500	ug/l	1	OK09015	09-Nov-00	09-Nov-00	EPA 8260B	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	15	2.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
Ethylene dibromide	ND	2.0	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		102 %		50-150	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %		50-150	"	"	"	"	
U-3 (W010690-04) Water Sampled: 27-Oct-00 16:00 Received: 27-Oct-00 18:05									
Ethanol	ND	500	ug/l	1	OK09015	09-Nov-00	09-Nov-00	EPA 8260B	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	2.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	
Ethylene dibromide	ND	2.0	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		100 %		50-150	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		86.0 %		50-150	"	"	"	"	





Gettler Ryan, Inc. - Dublin 6747 Sierra Court Suite J Dublin CA, 94568	Project: Unocal Project Number: Unocal # 7176 Project Manager: Deanna L. Harding	Reported: 17-Nov-00 14:11
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Volatile Organic Compounds by EPA Method 8260B
Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (W010690-05) Water Sampled: 27-Oct-00 16:25 Received: 27-Oct-00 18:05									
Ethanol	ND	500	ug/l	1	OK09015	09-Nov-00	09-Nov-00	EPA 8260B	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	"
Methyl tert-butyl ether	14	2.0	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
tert-Amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	"
Ethylene dibromide	ND	2.0	"	"	"	"	"	"	"
<i>Surrogate: Dibromofluoromethane</i>		100 %		50-150	"	"	"	"	"
<i>Surrogate: 1,2-Dichloroethane-d4</i>		86.0 %		50-150	"	"	"	"	"
MW-5 (W010690-06) Water Sampled: 27-Oct-00 15:30 Received: 27-Oct-00 18:05									
Ethanol	ND	500	ug/l	1	OK09015	09-Nov-00	09-Nov-00	EPA 8260B	
tert-Butyl alcohol	ND	50	"	"	"	"	"	"	"
Methyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
Di-isopropyl ether	ND	2.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	2.0	"	"	"	"	"	"	"
tert-Amyl methyl ether	ND	2.0	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	2.0	"	"	"	"	"	"	"
Ethylene dibromide	ND	2.0	"	"	"	"	"	"	"
<i>Surrogate: Dibromofluoromethane</i>		102 %		50-150	"	"	"	"	"
<i>Surrogate: 1,2-Dichloroethane-d4</i>		88.0 %		50-150	"	"	"	"	"





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

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

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TBLB (W010690-01) Water Sampled: 27-Oct-00 00:00 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	0110050	09-Nov-00	09-Nov-00	DHS LUFT	
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		107 %	70.0-130		"	"	"	"	
U-1 (W010690-02) Water Sampled: 27-Oct-00 17:20 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	3830	500	ug/l	10	0110050	09-Nov-00	09-Nov-00	DHS LUFT	P-02
Benzene	16.8	5.00	"	"	"	"	"	"	
Toluene	ND	5.00	"	"	"	"	"	"	
Ethylbenzene	68.6	5.00	"	"	"	"	"	"	
Xylenes (total)	7.99	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	55.2	50.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		110 %	70.0-130		"	"	"	"	
U-2 (W010690-03) Water Sampled: 27-Oct-00 16:55 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	4180	500	ug/l	10	0110050	09-Nov-00	09-Nov-00	DHS LUFT	P-02
Benzene	30.4	5.00	"	"	"	"	"	"	
Toluene	10.2	5.00	"	"	"	"	"	"	
Ethylbenzene	14.6	5.00	"	"	"	"	"	"	
Xylenes (total)	ND	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	55.5	50.0	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		135 %	70.0-130		"	"	"	"	S-04





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

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

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-3 (W010690-04) Water Sampled: 27-Oct-00 16:00 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	0110050	09-Nov-00	09-Nov-00	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		109 %	70.0-130		"	"	"	"	
MW-4 (W010690-05) Water Sampled: 27-Oct-00 16:25 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	598	50.0	ug/l	1	0110050	09-Nov-00	09-Nov-00	DHS LUFT	P-03
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	1.56	0.500	"	"	"	"	"	"	
Ethylbenzene	4.65	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	15.4	5.00	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		152 %	70.0-130		"	"	"	"	S-04
MW-5 (W010690-06) Water Sampled: 27-Oct-00 15:30 Received: 27-Oct-00 18:05									
Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l	1	0110055	10-Nov-00	10-Nov-00	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.00	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		106 %	70.0-130		"	"	"	"	





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6747 Sierra Court Suite J
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Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Diesel Hydrocarbons (C9-C24) by DHS LUFT - Quality Control
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0K10011 - EPA 3510B										
Blank (0K10011-BLK1)										
Prepared & Analyzed: 10-Nov-00										
Diesel Range Hydrocarbons	ND	50	ug/l							
Surrogate: n-Pentacosane	41.0		"	33.3		123	50-150			
LCS (0K10011-BS1)										
Prepared: 10-Nov-00 Analyzed: 14-Nov-00										
Diesel Range Hydrocarbons	323	50	ug/l	500		64.6	60-140			
Surrogate: n-Pentacosane	36.3		"	33.3		109	50-150			
LCS Dup (0K10011-BSD1)										
Prepared: 10-Nov-00 Analyzed: 14-Nov-00										
Diesel Range Hydrocarbons	312	50	ug/l	500		62.4	60-140	3.46	50	
Surrogate: n-Pentacosane	40.0		"	33.3		120	50-150			





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6747 Sierra Court Suite J
Dublin CA, 94568

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Diesel Hydrocarbons (C9-C24) with Silica Gel Cleanup 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
Batch 0K10011 - EPA 3510B										
Blank (0K10011-BLK2)					Prepared: 10-Nov-00 Analyzed: 17-Nov-00					
Diesel Range Hydrocarbons	ND	50	ug/l							
Surrogate: <i>n</i> -Pentacosane	30.3		"	33.3		91.0	50-140			
LCS (0K10011-BS1)					Prepared: 10-Nov-00 Analyzed: 14-Nov-00					
Diesel Range Hydrocarbons	323	50	ug/l	500		64.6	35-125			
Surrogate: <i>n</i> -Pentacosane	36.3		"	33.3		109	50-140			
LCS Dup (0K10011-BSD1)					Prepared: 10-Nov-00 Analyzed: 14-Nov-00					
Diesel Range Hydrocarbons	312	50	ug/l	500		62.4	35-125	3.46	50	
Surrogate: <i>n</i> -Pentacosane	40.0		"	33.3		120	50-140			





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Volatile Organic Compounds by EPA Method 8260B - 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 0K09015 - EPA 5030B [P/T]

Blank (0K09015-BLK1)

Prepared & Analyzed: 09-Nov-00

Ethanol	ND	500	ug/l							
tert-Butyl alcohol	ND	50	"							
Methyl tert-butyl ether	ND	2.0	"							
Di-isopropyl ether	ND	2.0	"							
Ethyl tert-butyl ether	ND	2.0	"							
tert-Amyl methyl ether	ND	2.0	"							
1,2-Dichloroethane	ND	2.0	"							
Ethylene dibromide	ND	2.0	"							
<i>Surrogate: Dibromofluoromethane</i>	52.0		"	50.0		104	50-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.0		"	50.0		96.0	50-150			

Blank (0K09015-BLK2)

Prepared & Analyzed: 10-Nov-00

Ethanol	ND	500	ug/l							
tert-Butyl alcohol	ND	50	"							
Methyl tert-butyl ether	ND	2.0	"							
Di-isopropyl ether	ND	2.0	"							
Ethyl tert-butyl ether	ND	2.0	"							
tert-Amyl methyl ether	ND	2.0	"							
1,2-Dichloroethane	ND	2.0	"							
Ethylene dibromide	ND	2.0	"							
<i>Surrogate: Dibromofluoromethane</i>	51.0		"	50.0		102	50-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	51.0		"	50.0		102	50-150			

LCS (0K09015-BS1)

Prepared & Analyzed: 09-Nov-00

Methyl tert-butyl ether	52.8	2.0	ug/l	50.0		106	70-130			
<i>Surrogate: Dibromofluoromethane</i>	52.0		"	50.0		104	50-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.0		"	50.0		96.0	50-150			





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Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

**Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Walnut Creek**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Notes
Batch 0K09015 - EPA 5030B [P/T]									
LCS (0K09015-BS2)				Prepared & Analyzed: 10-Nov-00					
Methyl tert-butyl ether	50.0	2.0	ug/l	50.0		100 70-130			
Surrogate: Dibromofluoromethane	51.0		"	50.0		102 50-150			
Surrogate: 1,2-Dichloroethane-d4	47.0		"	50.0		94.0 50-150			
Matrix Spike (0K09015-MS1)				Source: W010690-06		Prepared & Analyzed: 09-Nov-00			
Methyl tert-butyl ether	46.0	2.0	ug/l	50.0	ND	92.0 60-150			
Surrogate: Dibromofluoromethane	51.0		"	50.0		102 50-150			
Surrogate: 1,2-Dichloroethane-d4	42.0		"	50.0		84.0 50-150			
Matrix Spike Dup (0K09015-MSD1)				Source: W010690-06		Prepared & Analyzed: 09-Nov-00			
Methyl tert-butyl ether	52.9	2.0	ug/l	50.0	ND	106 60-150	14.0	25	
Surrogate: Dibromofluoromethane	51.0		"	50.0		102 50-150			
Surrogate: 1,2-Dichloroethane-d4	44.0		"	50.0		88.0 50-150			





Gettler Ryan, Inc. - Dublin
6747 Sierra Court Suite J
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Project: Unocal
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Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0110050 - EPA 5030B [P/T]

Blank (0110050-BLK1)

Prepared & Analyzed: 09-Nov-00

Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	5.00	"							
<i>Surrogate: a, a, a-Trifluorotoluene</i>	9.69		"	10.0		96.9	70.0-130			

LCS (0110050-BS1)

Prepared & Analyzed: 09-Nov-00

Benzene	8.95	0.500	ug/l	10.0		89.5	70.0-130			
Toluene	8.24	0.500	"	10.0		82.4	70.0-130			
Ethylbenzene	8.25	0.500	"	10.0		82.5	70.0-130			
Xylenes (total)	25.4	0.500	"	30.0		84.7	70.0-130			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	9.09		"	10.0		90.9	70.0-130			

LCS (0110050-BS2)

Prepared & Analyzed: 09-Nov-00

Purgeable Hydrocarbons as Gasoline	234	50.0	ug/l	250		93.6	70.0-130			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	8.00		"	10.0		80.0	70.0-130			

Matrix Spike (0110050-MS1)

Source: L011042-02

Prepared & Analyzed: 09-Nov-00

Purgeable Hydrocarbons as Gasoline	238	50.0	ug/l	250	ND	95.2	60.0-140			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	10.8		"	10.0		108	70.0-130			

Matrix Spike Dup (0110050-MSD1)

Source: L011042-02

Prepared: 09-Nov-00 Analyzed: 10-Nov-00

Purgeable Hydrocarbons as Gasoline	229	50.0	ug/l	250	ND	91.6	60.0-140	3.85	25.0	
<i>Surrogate: a, a, a-Trifluorotoluene</i>	10.7		"	10.0		107	70.0-130			





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

Project: Unocal
Project Number: Unocal # 7176
Project Manager: Deanna L. Harding

Reported:
17-Nov-00 14:11

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0110055 - EPA 5030B [P/T]

Blank (0110055-BLK1)

Prepared & Analyzed: 10-Nov-00

Purgeable Hydrocarbons as Gasoline	ND	50.0	ug/l							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	0.500	"							
Methyl tert-butyl ether	ND	5.00	"							
<i>Surrogate: a, a, a-Trifluorotoluene</i>	11.0		"	10.0		110	70.0-130			

LCS (0110055-BS1)

Prepared & Analyzed: 10-Nov-00

Benzene	9.03	0.500	ug/l	10.0		90.3	70.0-130			
Toluene	8.54	0.500	"	10.0		85.4	70.0-130			
Ethylbenzene	8.26	0.500	"	10.0		82.6	70.0-130			
Xylenes (total)	25.3	0.500	"	30.0		84.3	70.0-130			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	11.3		"	10.0		113	70.0-130			

LCS (0110055-BS2)

Prepared & Analyzed: 10-Nov-00

Purgeable Hydrocarbons as Gasoline	254	50.0	ug/l	250		102	70.0-130			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	9.39		"	10.0		93.9	70.0-130			

Matrix Spike (0110055-MS1)

Source: L011042-04

Prepared: 10-Nov-00 Analyzed: 11-Nov-00

Benzene	10.9	0.500	ug/l	10.0	ND	109	60.0-140			
Toluene	10.2	0.500	"	10.0	ND	102	60.0-140			
Ethylbenzene	9.90	0.500	"	10.0	ND	99.0	60.0-140			
Xylenes (total)	30.4	0.500	"	30.0	ND	101	60.0-140			
<i>Surrogate: a, a, a-Trifluorotoluene</i>	10.5		"	10.0		105	70.0-130			

Matrix Spike Dup (0110055-MSD1)

Source: L011042-04

Prepared: 10-Nov-00 Analyzed: 11-Nov-00

Benzene	10.7	0.500	ug/l	10.0	ND	107	60.0-140	1.85	25.0	
Toluene	9.69	0.500	"	10.0	ND	96.9	60.0-140	5.13	25.0	
Ethylbenzene	9.62	0.500	"	10.0	ND	96.2	60.0-140	2.87	25.0	
Xylenes (total)	29.4	0.500	"	30.0	ND	98.0	60.0-140	3.02	25.0	
<i>Surrogate: a, a, a-Trifluorotoluene</i>	10.5		"	10.0		105	70.0-130			





Gettler Ryan, Inc. - Dublin
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Dublin CA, 94568

Project: Unocal
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Reported:
17-Nov-00 14:11

Notes and Definitions

- D-11 Chromatogram Pattern: Unidentified Hydrocarbons < C16
- P-02 Chromatogram Pattern: Weathered Gasoline C6-C12
- P-03 Chromatogram Pattern: Unidentified Hydrocarbons C6-C12
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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

