



GETTLER-RYAN INC.

December 1, 1998
G-R Job #180061

Ms. Tina R. Berry
Tosco Marketing Company
2000 Crow Canyon Place, Suite 200
San Ramon, California 94583

RE: Third Quarter 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Dear Ms. Berry:

This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On September 30, 1998, field personnel monitored and sampled six wells (U-1 through U-6) 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 any 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 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.

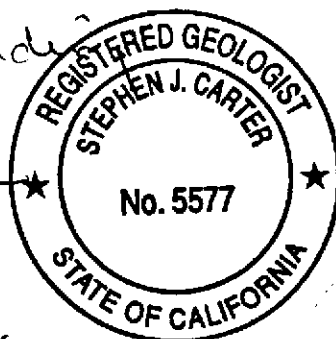
Sincerely,

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
- Table 3: Dissolved Oxygen Concentrations
- Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

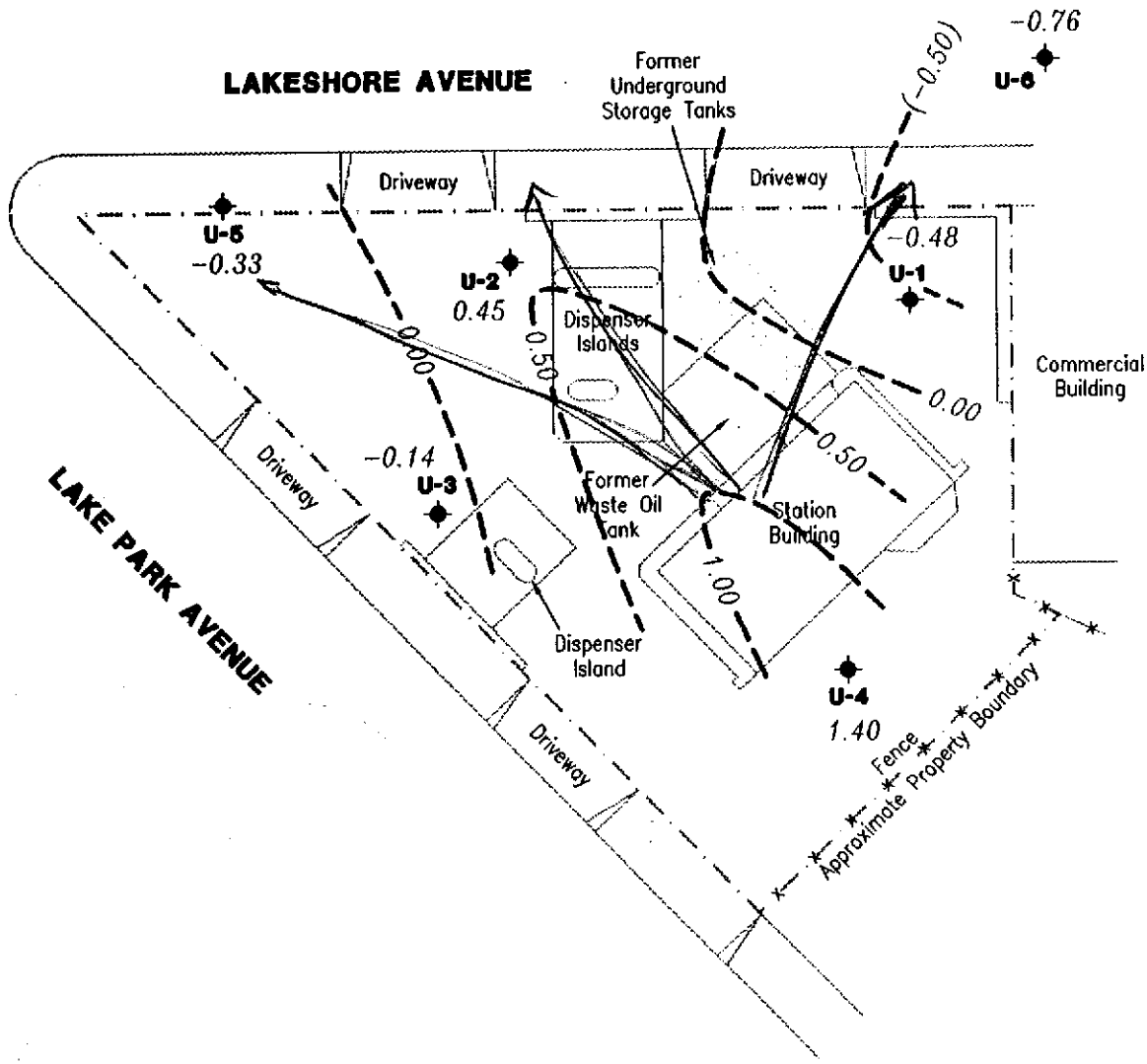
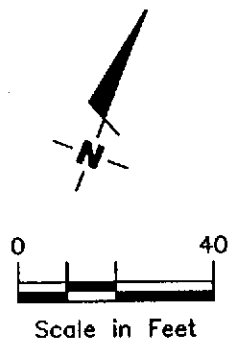
5325.qml

EXPLANATION

- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to USGS-Datum (Feet)
- - - 99.99 Groundwater elevation contour, dashed where inferred.

Groundwater flow direction varies at a gradient of 0.02 to 0.03 Ft./Ft.

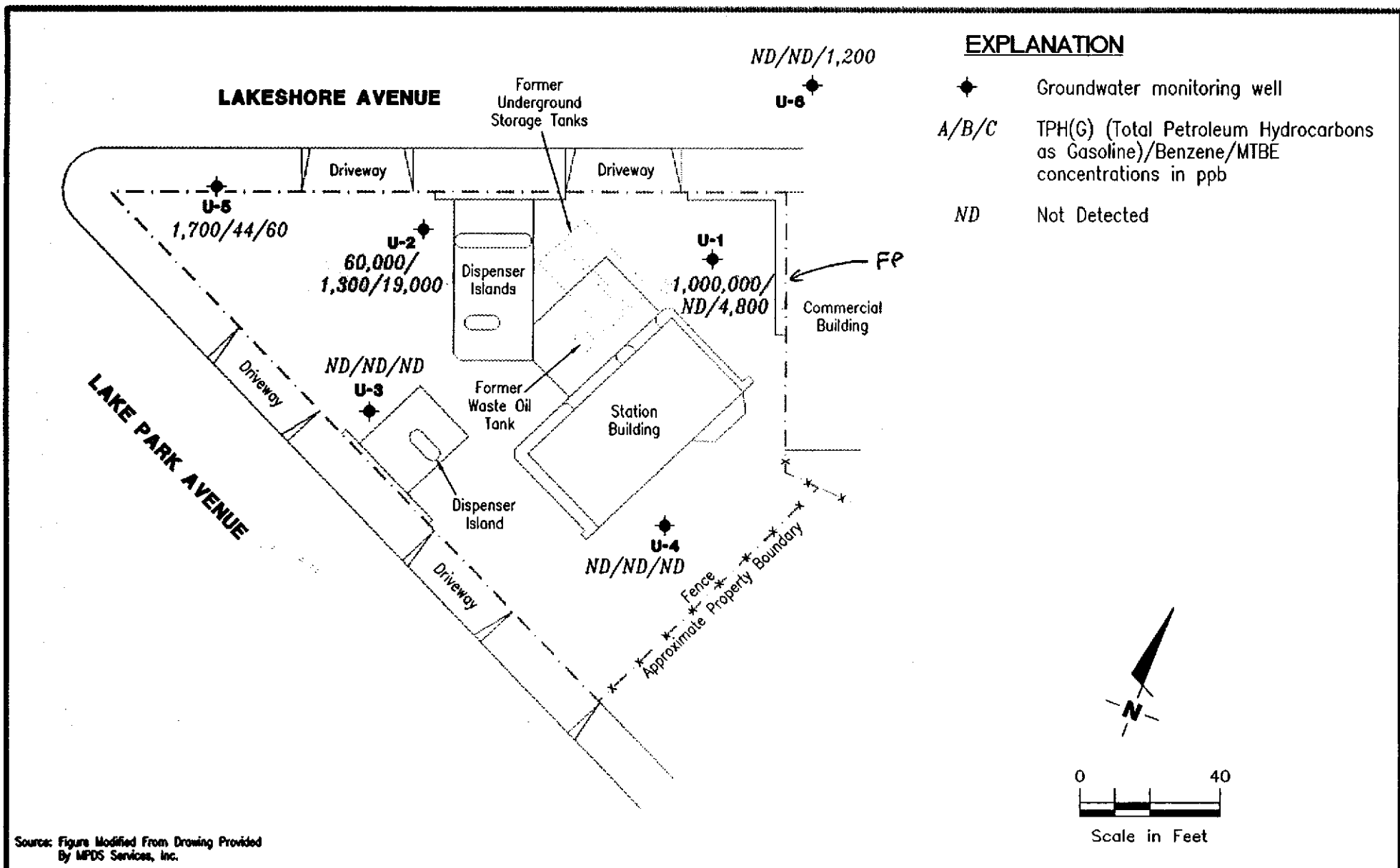
(W - NW)



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

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

POTENTIOMETRIC MAP
 Tosco (Unocal) Service Station No. 5325
 3220 Lakeshore Avenue
 Oakland, California



Gettler - Ryan Inc.

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

CONCENTRATION MAP
Tosco (Unocal) Service Station No. 5325
3220 Lakeshore Avenue
Oakland, California

FIGURE
2

JOB NUMBER
180061

REVIEWED BY

DATE
September 30, 1998

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
U-1	08/10/90	--	--	--	690	38	75	8.6	130	--	
	01/07/91	--	--	--	250	22	16	4.2	17	--	
	04/01/91	--	--	--	160	13	8.6	1.0	15	--	
	07/03/91	--	--	--	140	21	4.3	0.36	17	--	
	10/09/91	--	--	--	ND	ND	ND	ND	ND	--	
	02/12/92	--	--	--	250	ND	ND	ND	ND	--	
	05/05/92	--	--	--	230	1.2	ND	ND	ND	--	
	06/11/92	--	--	--	1,000	80	1.4	6.7	41	--	
	08/20/92	--	--	--	400 ¹	1.0	ND	ND	0.6	--	
	02/22/93	--	--	--	34,000	1,400	5,500	910	7,300	--	
5.32	05/07/93	--	--	--	8,700	600	240	650	3,300	--	
	08/08/93	--	--	--	4,900 ²	79	ND	832	270	--	
	11/16/93	8.61	-3.29	0.00	690 ³	ND	ND	ND	ND	--	
	02/16/94	8.54	-3.22	0.00	6,800 ⁴	ND	ND	ND	ND	--	
	8.46	06/22/94	8.39	0.07	0.00	200	ND	ND	5.9	21	--
		09/22/94	8.66	-0.20	0.00	6,100 ³	ND	ND	ND	ND	--
	12/24/94	8.04	0.42	0.00	50,000	2,500	9,700	2,400	17,000	--	
	03/25/95	7.72	1.02**	0.37	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	06/21/95	9.30	-0.69**	0.20	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	09/19/95	9.29	-0.53**	0.40	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	12/19/95	8.98	-0.50**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	03/18/96	8.25	0.21	0.00	27,000	ND	2,300	1,400	11,000	4,900	
	06/27/96	7.92	0.54	<0.01	120,000	540	4,300	2,600	26,000	ND	
	09/26/96	9.10	-0.62**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	12/09/96	6.88	1.60**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	03/14/97	9.02	-0.15**	0.55	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	06/30/97	8.41	0.07**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
09/19/97	8.56	-0.08**	0.02	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--	
12/12/97	8.58	-0.11**	0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--	
03/03/98	8.23	0.26**	0.04	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--	
06/15/98	8.37	0.09	Sheen	52,000	ND ⁷	900	1,800	13,000	ND ⁷		
09/30/98	8.94	-0.48	Sheen	1,000,000 ⁸	ND ⁷	2,600	13,000	83,000	4,800		

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	
U-2	08/10/90	--	--	--	780	27	46	15	130	--	
	01/07/91	--	--	--	1,900	67	5.8	58	69	--	
	04/01/91	--	--	--	1,700	250	89	34	190	--	
	07/03/91	--	--	--	2,100	150	25	3.1	290	--	
	10/09/91	--	--	--	230	7.1	ND	ND	11	--	
	02/12/92	--	--	--	410	1.9	ND	0.36	0.4	--	
	05/05/92	--	--	--	1,600	120	52	6.2	290	--	
	06/11/92	--	--	--	620	17	2.1	ND	37	--	
	08/20/92	--	--	--	700	28	6.5	1.3	4.6	--	
	02/22/93	--	--	--	3,400	2,400	2,100	1,200	5,800	--	
	05/07/93	--	--	--	17,000	1,800	660	1,700	4,000	--	
	08/08/93	--	--	--	5,600 ²	420	ND	410	670	--	
	4.53	11/16/93	8.17	-3.64	0.00	510 ³	ND	ND	ND	ND	--
02/16/94		7.73	-3.20	0.00	980 ⁴	49	13	2.7	40	--	
7.62	06/22/94	7.60	0.02	0.00	31,000	2,200	62	1,500	3,500	--	
	09/22/94	7.93	-0.31	0.00	8,500 ³	29	ND	ND	ND	--	
	12/24/94	7.27	0.35	0.00	32,000	1,500	890	1,300	5,000	--	
	03/25/95	7.01	0.61	0.00	170,000	1,900	21,000	4,800	33,000	--	
	06/21/95	6.98	0.64	0.00	16,000	2,100	ND	1,800	1,700	--	
	09/19/95	7.70	-0.08	0.00	3,000	610	ND	78	240	-- ⁵	
	12/19/95	7.30	0.32	0.00	1,600	140	55	52	270	-- ⁶	
	03/18/96	6.45	1.17	0.00	12,000	2,200	ND	1,200	2,200	22,000	
	06/27/96	7.41	0.21	0.00	28,000	3,400	ND	2,800	3,100	3,000	
	09/26/96	7.90	-0.28	0.00	5,900	750	ND	ND	ND	18,000	
	12/09/96	6.76	0.86	0.00	13,000	5,100	290	980	370	2,700	
	03/14/97	7.12	0.52**	0.03	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	06/30/97	6.19	1.43	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	09/19/97	7.31	0.31	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	12/12/97	6.75	0.88**	<0.01	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--	--
	03/03/98	6.36	1.26	Sheen		80,000	3,000	1,100	820	16,000	16,000
06/15/98	6.51	1.11	Sheen		48,000	1,800	330	470	7,900	20,000	
09/30/98	7.17	0.45	Sheen		60,000	1,300	ND ⁷	500	9,700	19,000	

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-3	08/10/90	--	--	--	ND	ND	ND	ND	ND	--
	01/07/91	--	--	--	ND	ND	ND	ND	1.8	--
	04/01/91	--	--	--	ND	1.0	2.9	0.53	5.4	--
	07/03/91	--	--	--	ND	ND	ND	ND	ND	--
	10/09/91	--	--	--	ND	ND	ND	ND	ND	--
	02/12/92	--	--	--	ND	ND	ND	ND	ND	--
	05/05/92	--	--	--	ND	ND	ND	ND	ND	--
	06/11/92	--	--	--	ND	ND	ND	ND	ND	--
	08/20/92	--	--	--	ND	ND	ND	ND	ND	--
	02/22/93	--	--	--	ND	ND	ND	ND	ND	--
	05/07/93	--	--	--	ND	ND	ND	ND	ND	--
08/08/93	--	--	--	210	5.0	9.7	0.7	4.1	--	
7.86	11/16/93	11.82	-3.96	0.00	ND	ND	ND	ND	ND	--
	02/16/94	11.62	-3.76	0.00	ND	ND	ND	ND	ND	--
10.98	06/22/94	11.64	-0.66	0.00	ND	ND	ND	ND	ND	--
	09/22/94	11.76	-0.78	0.00	ND	ND	ND	ND	ND	--
	12/24/94	11.28	-0.30	0.00	ND	ND	ND	ND	ND	--
	03/25/95	10.96	0.02	0.00	ND	ND	ND	ND	ND	--
	06/21/95	11.37	-0.39	0.00	ND	ND	ND	ND	ND	--
	09/19/95	11.55	-0.57	0.00	ND	ND	ND	ND	ND	-- ⁵
	12/19/95	11.45	-0.47	0.00	ND	ND	ND	ND	ND	--
	03/18/96	11.10	-0.12	0.00	ND	ND	ND	ND	ND	--
	06/27/96	11.16	-0.18	0.00	440	49	50	51	140	50
	09/26/96	11.55	-0.57	0.00	ND	ND	ND	ND	ND	ND
	12/09/96	10.12	0.86	0.00	ND	ND	ND	ND	ND	29
	03/14/97	10.87	0.11	0.00	ND	ND	ND	ND	ND	ND
	06/30/97	11.08	-0.10	0.00	ND	ND	ND	ND	ND	ND
	09/19/97	11.05	-0.07	0.00	ND	ND	ND	ND	ND	ND
	12/12/97	10.58	0.40	0.00	ND	ND	ND	ND	ND	ND
	03/03/98	9.84	1.14	0.00	ND	ND	ND	ND	ND	ND
	06/15/98	10.56	0.42	0.00	ND	ND	ND	ND	ND	ND
	09/30/98	11.12	-0.14	0.00	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-4										
11.15	06/22/94	10.16	0.99	0.00	ND	ND	ND	ND	ND	--
	09/22/94	10.79	0.36	0.00	ND	0.78	1.3	ND	1.4	--
	12/24/94	9.81	1.34	0.00	ND	ND	ND	ND	ND	--
	03/25/95	9.51	1.64	0.00	ND	ND	ND	ND	ND	--
	06/21/95	9.54	1.61	0.00	ND	ND	ND	ND	ND	--
	09/19/95	10.17	0.98	0.00	ND	ND	ND	ND	ND	--
	12/19/95	9.98	1.17	0.00	ND	ND	ND	ND	ND	--
	03/18/96	9.66	1.49	0.00	ND	ND	ND	ND	ND	--
	06/27/96	9.74	1.41	0.00	ND	ND	ND	ND	ND	ND
	09/26/96	10.14	1.01	0.00	ND	ND	ND	ND	ND	ND
	12/09/96	8.67	2.48	0.00	ND	ND	ND	ND	ND	33
	03/14/97	9.35	1.80	0.00	ND	ND	ND	ND	ND	ND
	06/30/97	9.89	1.26	0.00	ND	ND	ND	ND	ND	ND
	09/19/97	9.96	1.19	0.00	ND	ND	ND	ND	ND	ND
	12/12/97	8.56	2.59	0.00	ND	ND	ND	ND	ND	ND
	03/03/98	7.85	3.30	0.00	ND	ND	ND	ND	ND	ND
	06/15/98	9.08	2.07	0.00	ND	ND	ND	ND	ND	ND
	09/30/98	9.75	1.40	0.00	ND	ND	ND	ND	ND	ND
U-5										
6.98	06/22/94	6.83	0.15	0.00	210	7.1	13	4.5	26	--
	09/22/94	6.90	0.08	0.00	170	8.4	10	8.5	18	--
	12/24/94	6.43	0.55	0.00	8,700	560	70	670	430	--
	03/25/95	6.35	0.63	0.00	44,000	390	960	1,500	7,600	--
	06/21/95	7.11	-0.13	0.00	400	2.3	ND	9.1	3.5	--
	09/19/95	6.99	-0.01	0.00	850	14	7.1	13	66	-- ^s
	12/19/95	7.17	-0.19	0.00	ND	ND	ND	ND	ND	--
	03/18/96	6.65	0.33	0.00	100	0.67	0.5	0.51	5.4	--
	06/27/96	6.49	0.49	0.00	16,000	280	150	1,400	4,600	530
	09/26/96	7.13	-0.15	0.00	ND	ND	0.57	ND	0.96	ND
	12/09/96	5.90	1.08	0.00	1,300	29	46	ND	140	97
	03/14/97	6.99	-0.01	0.00	ND	ND	ND	ND	ND	14
	06/30/97	7.08	-0.10	0.00	4,200	74	51	180	980	270

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	Product Thickness (ft.)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
U-5	09/19/97	6.78	0.20	0.00	6,300	160	13	370	1000	480
(cont)	12/12/97	6.94	0.04	0.00	60	1.3	ND	1.6	2.1	47
	03/03/98	6.50	0.48	0.00	1,700	29	ND ⁷	150	190	330
	06/15/98	6.85	0.13	0.00	1,500	32	ND ⁷	91	83	330
	09/30/98	7.31	-0.33	0.00	1,700	44	ND ⁷	39	150	60
U-6										
7.14	06/22/94	7.14	0.00	0.00	ND	ND	ND	ND	ND	--
	09/22/94	7.34	-0.20	0.00	130	1.3	0.8	ND	0.73	--
	12/24/94	6.67	0.47	0.00	6,900	500	59	600	380	--
	03/25/95	6.29	0.85	0.00	47,000	450	1,300	1,700	8,200	--
	06/21/95	7.60	-0.46	0.00	ND	ND	ND	ND	ND	--
	09/19/95	7.70	-0.56	0.00	ND	ND	ND	ND	ND	-- ⁵
	12/19/95	7.75	-0.61	0.00	210	2.5	1.0	2.9	17	--
	03/18/96	6.86	0.28	0.00	ND	ND	ND	ND	ND	--
	06/27/96	6.52	0.62	0.00	ND	ND	ND	ND	ND	510
	09/26/96	7.62	-0.48	0.00	ND	ND	ND	ND	ND	1,400
	12/09/96	5.88	1.26	0.00	1,200	29	48	6.4	140	58
	03/14/97	7.30	-0.16	0.00	ND	ND	ND	ND	ND	1,500
	06/30/97	7.35	-0.21	0.00	ND	ND	ND	ND	ND	990
	09/19/97	7.25	-0.11	0.00	ND	ND	ND	ND	ND	1,400
	12/12/97	7.29	-0.15	0.00	ND	ND	ND	ND	ND	680
	03/03/98	7.00	0.14	0.00	ND	ND	ND	ND	ND	1,600
	06/15/98	7.18	-0.04	0.00	ND ⁷	ND ⁷	ND ⁷	ND ⁷	ND ⁷	1,000
	09/30/98	7.90	-0.76	0.00	ND	ND	ND	ND	ND	1,200
Trip Blank										
TB-LB	03/03/98	--	--	--	ND	ND	ND	ND	ND	ND
	06/15/98	--	--	--	ND	ND	ND	ND	ND	ND
	09/30/98	--	--	--	ND	ND	1.7	ND	2.2	ND

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #5325
3220 Lakeshore Avenue
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to March 3, 1998, were compiled from reports prepared by MPDS Services, Inc.

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

* TOC elevations are surveyed relative to City of Oakland Benchmark, at the northeasterly corner of Weller and Cheney Avenue (Elevation = 9.055 feet, city datum; add 3.00' to U.S.G.S. datum). Prior to November 16, 1993, the DTW measurements were taken from the well cover.

** Groundwater elevation corrected due to the presence of free product; correction factor = [(TOC-DTW) + (Product Thickness x 0.75)].

- 1 The positive result for gasoline does not appear to have a typical gasoline pattern.
- 2 The concentration reported as gasoline is primarily due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.
- 3 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline
- 4 Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- 5 Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- 6 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.
- 7 Detection limit raised. Refer to analytical results.
- 8 Laboratory report indicates unidentified hydrocarbons C6-C12.

Table 2
Groundwater Analytical Results
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID	Date	Iron (ppm)	Nitrate as NO3 (ppm)	Phosphate as PO4 (ppm)	Redox Potential (mV)
U-1	06/15/98	39	ND	ND	382 (mV)
	09/30/98	17	ND	ND	366 (mV)
U-2	03/03/98	25	ND	ND	369 (mV)
	06/15/98	42	ND	ND	341 (mV)
	09/30/98	25	ND	ND	354 (mV)
U-3	06/30/97	1.4	21	0.86	190
	09/19/97	0.57	19	ND	75
	12/12/97	1.9	23	0.85	390
	03/03/98	0.013	36	ND	358 (mV)
	06/15/98	0.16	33	ND	318 (mV)
	09/30/98	0.040	31	ND	295 (mV)
U-4	06/30/97	0.13	35	0.52	200
	09/19/97	0.35	30	ND	45
	12/12/97	0.68	31	0.73	380
	03/03/98	0.018	3.2	ND	284 (mV)
	06/15/98	0.14	33	ND	256 (mV)
	09/30/98	0.049	31	ND	276 (mV)
U-5	06/30/97	16	ND	ND	160
	09/19/97	0.22	ND	ND	63
	12/12/97	6.7	ND	ND	400
	03/03/98	18	3.1	ND	345 (mV)
	06/15/98	17	ND	ND	333 (mV)
	09/30/98	17	ND	ND	318 (mV)
U-6	06/30/97	88	0.80	ND	190
	09/19/97	2.9	1.80	ND	ND
	12/12/97	51	ND	ND	380
	03/03/98	60	3.5	ND	327 (mV)
	06/15/98	590	4.8	ND	315 (mV)
	09/30/98	33	ND	ND	345 (mV)

EXPLANATIONS:

Groundwater analytical results prior to March 3, 1998, were compiled from reports prepared by MPDS Services, Inc.

ppm = Parts per million

ND = Not Detected

mV = millivolts

Table 3
Dissolved Oxygen Concentrations
 Tosco (Unocal) Service Station #5325
 3220 Lakeshore Avenue
 Oakland, California

Well ID	Date	Before Purge (mg/L)
U-3	06/30/97	4.1
	09/19/97	4.2
	12/12/97	2.97
	03/03/98	2.63
	06/15/98	2.93
	09/30/98	3.11
U-4	06/30/97	5.4
	09/19/97	5.1
	12/12/97	3.11
	03/03/98	2.94
	06/15/98	3.08
	09/30/98	4.05
U-5	06/30/97	3.4
	09/19/97	0.6
	12/12/97	1.75
	03/03/98	2.36
	06/15/98	2.55
	09/30/98	1.93
U-6	06/30/97	0.30
	09/19/97	0.60
	12/12/97	2.70
	03/03/98	2.18
	06/15/98	2.48
	09/30/98	3.06

EXPLANATIONS:

Dissolved oxygen concentrations prior to March 3, 1998, were compiled from reports prepared by MPDS Services, Inc.

mg/L = milligrams per liter

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

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

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

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

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

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

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

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 5325
Address: 3220 Lakeshore Ave.
City: Oakland

Job#: 180061
Date: 9-30-98
Sampler: Joe

Well ID U-1

Well Condition: O.K.

Well Diameter 3 in.

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

Total Depth 19.73 ft.

Depth to Water 8.94 ft.

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

10.79 X VF 0.33 = 4.10 X 3 (case volume) = Estimated Purge Volume: 12.5 (gal.)

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

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

Starting Time: 11:25

Weather Conditions: clear

Sampling Time: 11:50 A.M.

Water Color: clear Odor: yes

Purging Flow Rate: 1 gpm.

Sediment Description: none

Did well de-water? _____

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

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^6$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:37</u>	<u>4</u>	<u>7.16</u>	<u>0.58</u>	<u>71.2</u>	<u>2.0</u>	<u>366</u>	
<u>11:40</u>	<u>8</u>	<u>7.21</u>	<u>0.57</u>	<u>71.0</u>			
<u>11:43</u>	<u>12.5</u>	<u>7.10</u>	<u>0.56</u>	<u>71.7</u>			
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-1</u>	<u>3VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>"</u>	<u>Iron</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>plain</u>	<u>"</u>	<u>N.trate, Phosphate</u>
_____	_____	_____	_____	_____	_____

COMMENTS: Heavy sheen in well. No FP found in skimmer

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 5325

Job#: 180061

Address: 3220 Lakeshore Ave.

Date: 9-30-98

City: Oakland

Sampler: Joe

Well ID U-2

Well Condition: O.K.

Well Diameter 3 in.

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

Total Depth 19.67 ft.

Depth to Water 7.17 ft.

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

12.5 x VF 0.38 = 4.75 x 3 (case volume) = Estimated Purge Volume: 15 (gal.)

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

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

Starting Time: 10:37

Weather Conditions: clear

Sampling Time: 11:06 AM

Water Color: clear Odor: yes

Purging Flow Rate: 1.5 gpm.

Sediment Description: none

Did well de-water? _____

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

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 100$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:50</u>	<u>5</u>	<u>7.27</u>	<u>2.98</u>	<u>71.0</u>		<u>344</u>	
<u>10:53</u>	<u>10</u>	<u>7.31</u>	<u>3.05</u>	<u>72.0</u>		<u>354</u>	
<u>10:57</u>	<u>15</u>	<u>7.35</u>	<u>3.10</u>	<u>72.3</u>			
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>300A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>"</u>	<u>Iron</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>Plain</u>	<u>"</u>	<u>Nitrate, Phosphate</u>
_____	_____	_____	_____	_____	_____

COMMENTS: Sheen in sampled water

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 5325
Address: 3220 Lakeshore Ave.
City: Oakland

Job#: 180061
Date: 9-30-98
Sampler: Joe

Well ID U-3

Well Condition: O.K.

Well Diameter 3 in.

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

Total Depth 19.42 ft.

Depth to Water 11.12 ft.

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

8.3 x VF 0.38 = 3.15 x 3 (case volume) = Estimated Purge Volume: 10 (gal.)

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

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

Starting Time: 8:15

Weather Conditions: Clear

Sampling Time: 8:40 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 $\mu\text{mhos/cm} \times 10^6$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>8:25</u>	<u>3.5</u>	<u>7.33</u>	<u>6.95</u>	<u>72.3</u>	<u>3.11</u>	<u>295</u>	
<u>8:28</u>	<u>7</u>	<u>7.14</u>	<u>6.92</u>	<u>70.8</u>			
<u>8:31</u>	<u>10</u>	<u>7.18</u>	<u>6.93</u>	<u>70.5</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>"</u>	<u>Iron</u>
	<u>1 plastic</u>	<u>"</u>	<u>plain</u>	<u>"</u>	<u>Nitrate, Phosphate</u>

COMMENTS: none

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5325
Address: 3220 Lakeshore Ave.
City: Oakland

Job#: 180061
Date: 9-30-98
Sampler: Joe

Well ID U-4

Well Condition: o.k.

Well Diameter 4 in.

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

Total Depth 20.17 ft.

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

Depth to Water 9.75 ft.

10.42 x VF 0.66 = 6.88 x 3 (case volume) = Estimated Purge Volume: 21 (gal.)

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

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

Starting Time: 7:28

Weather Conditions: clear

Sampling Time: 8:00 A.M.

Water Color: clear Odor: none

Purging Flow Rate: 2 gpm.

Sediment Description: none

Did well de-water? _____

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

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^3$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>7:39</u>	<u>7</u>	<u>7.06</u>	<u>6.42</u>	<u>70.9</u>	<u>4.05</u>	<u>276</u>	
<u>7:43</u>	<u>14</u>	<u>7.31</u>	<u>6.48</u>	<u>71.0</u>			
<u>7:46</u>	<u>21</u>	<u>7.44</u>	<u>6.53</u>	<u>71.0</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-4</u>	<u>3 vol A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>Seq.</u>	<u>Iron</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>Plain</u>	<u>"</u>	<u>Nitrate, Phosphate</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 5325 Job#: 120061
Address: 3220 Lakeshore Ave. Date: 9-30-98
City: Oakland Sampler: Joe

Well ID U-5 Well Condition: O.K.

Well Diameter 4 in. Hydrocarbon Amount Bailed
Thickness: (feet) (product/water): (Gallons)
Total Depth 20.10 ft.
Depth to Water 7.31 ft.

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

12.79 x VF 0.66 = 8.44 x 3 (case volume) = Estimated Purge Volume: 26 (gal.)

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

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

Starting Time: 9:52 Weather Conditions: Clear
Sampling Time: 10:15 A.M. Water Color: clear Odor: yes
Purging Flow Rate: 2 gpm. Sediment Description: none
Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:00</u>	<u>8</u>	<u>7.12</u>	<u>0.95</u>	<u>70.0</u>	<u>1.93</u>	<u>318</u>	
<u>+0:05</u>	<u>18</u>	<u>7.08</u>	<u>0.85</u>	<u>69.9</u>			
<u>10:08</u>	<u>26</u>	<u>7.04</u>	<u>0.83</u>	<u>70.4</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-5</u>	<u>300A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>"</u>	<u>Iron</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>plain</u>	<u>"</u>	<u>Nitrate, phosphate</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 5325
Address: 3220 Lakeshore Ave.
City: Oakland

Job#: 180061
Date: 9-30-98
Sampler: Joe

Well ID U-6

Well Condition: OK

Well Diameter 2 in.

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

Total Depth 23.82 ft.

Depth to Water 7.90 ft.

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

15.92 x VF 0.17 = 2.71 x 3 (case volume) = Estimated Purge Volume: 8.5 (gal.)

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

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

Starting Time: 9:03

Weather Conditions: Clear

Sampling Time: 9:30 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 $\mu\text{mhos/cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>9:15</u>	<u>3</u>	<u>7.41</u>	<u>5.80</u>	<u>69.5</u>	<u>3.06</u>	<u>345</u>	
<u>9:17</u>	<u>5</u>	<u>7.47</u>	<u>5.85</u>	<u>70.2</u>			
<u>9:20</u>	<u>8.5</u>	<u>7.52</u>	<u>5.83</u>	<u>70.9</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-6</u>	<u>3 JVA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>HNO₃</u>	<u>"</u>	<u>Iron</u>
<u>"</u>	<u>1 plastic</u>	<u>"</u>	<u>Plain</u>	<u>"</u>	<u>Nitrate, phosphate</u>

COMMENTS: _____



Tosco Marketing Company
2300 Cape Canyon Pl., Ste. 400
San Ramon, California 94563

Facility Number UNOCAL SS#5325
Facility Address 3220 Lakeshore Ave. Oakland, CA
180061.85
Consultant Project Number 180061.85
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 (Home) TINA BERRY

(Phone) (925) 277-5325

Laboratory Name Sequoia Analytical

Laboratory Release Number _____

Samples Collected by (Name) JOE AJEMIAN

Collection Date 9-30-98

Signature [Signature]

Analyses To Be Performed

DO NOT BILL
TB-LB ANALYSIS

9810001 #

Remarks

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Chloroac	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Lead (Yes or No)	Analyses To Be Performed																																					
								TPH Gas + BTEX w/MTE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8220)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)	Phosphate Nitrate	Iron																												
TB-LB	01	1	VoA	W	-	HCL	Y	✓																																					
U-1	02	3	VoA 2 pl.	G	11:50 A.W.	HCL HNO ₃		✓																																					
U-2	03	"	"	/	11:06 A.W.	/		✓																																					
U-3	04	"	"	/	8:40 A.W.	/		✓																																					
U-4	05	"	"	/	8:00 A.M.	/	Y	✓																																					
U-5	06	"	"	/	10:15 A.M.	/		✓																																					
U-6	07	"	"	/	9:30 A.M.	/		✓																																					

Relinquished By (Signature) <u>[Signature]</u>	Organization G-R Inc.	Date/Time 3:00 9-30-98 P.M.	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time
Relinquished By (Signature) [Signature]	Organization	Date/Time	Received By (Signature) [Signature]	Organization	Date/Time
Relinquished By (Signature) [Signature]	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>	Organization	Date/Time 9/30 1515

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
6 Days
10 Days
As Contracted



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#5325 Sample Descript: TB-LB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-01	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/06/98 Reported: 10/19/98
--	--	---

Instrument ID: HP5


Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	1.7
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	2.2
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	96

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

SEQUOIA ANALYTICAL - ELAP #1271



Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#5325 Sample Descript: U-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-02	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/06/98 Reported: 10/19/98
--	--	---

Instrument ID: HP5


Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50000	1000000
Methyl t-Butyl Ether	2500	4800
Benzene	500	N.D.
Toluene	500	2600
Ethyl Benzene	500	13000
Xylenes (Total)	500	83000
Chromatogram Pattern: Unidentified HC		Gasoline C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70	130
		84

g 1000
 10% MTBE 4.8 .005 ≈ .5%
 ~3% B <.5

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

SEQUOIA ANALYTICAL - ELAP #1271


 Tod Granicher
 Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5325 Sample Descript: U-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-03	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/07/98 Reported: 10/19/98
Attention: Deanna Harding		

Instrument ID: HP5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	60000
Methyl t-Butyl Ether	500	19000
Benzene	100	1300
Toluene	100	N.D.
Ethyl Benzene	100	500
Xylenes (Total)	100	9700
Chromatogram Pattern:		Gasoline
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	102

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

SEQUOIA ANALYTICAL - ELAP #1271

Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5325 Sample Descript: U-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-04	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/06/98 Reported: 10/19/98
Attention: Deanna Harding		

Instrument ID: HP5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	92

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

SEQUOIA ANALYTICAL - ELAP #1271


Tod Granicher
Project Manager



Gettler Ryan/Geostrategies
6747 Sierra Court Suite J
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Unocal SS#5325
Sample Descript: U-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9810001-05

Sampled: 09/30/98
Received: 09/30/98
Analyzed: 10/06/98
Reported: 10/19/98

Instrument ID: HP5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	94

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

SEQUOIA ANALYTICAL - ELAP #1271


Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5325 Sample Descript: U-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-06	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/06/98 Reported: 10/19/98
Attention: Deanna Harding		


Instrument ID: HP5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1700
Methyl t-Butyl Ether	25	60
Benzene	5.0	44
Toluene	5.0	N.D.
Ethyl Benzene	5.0	39
Xylenes (Total)	5.0	150
Chromatogram Pattern: Unidentified HC		Gasoline
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	94

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

SEQUOIA ANALYTICAL - ELAP #1271



Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5325 Sample Descript: U-6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810001-07	Sampled: 09/30/98 Received: 09/30/98 Analyzed: 10/06/98 Reported: 10/19/98
Attention: Deanna Harding		


Instrument ID: HP5

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	1200
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	114

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

SEQUOIA ANALYTICAL - ELAP #1271


Tod Granicher
Project Manager



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiger Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

OCT 23 1998

CHERRYAN, INC.

Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5325 Lab Proj. ID: 9810001	Sampled: 09/30/98 Received: 09/30/98 Analyzed: see below Reported: 10/19/98
Attention: Deanna Harding		

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9810001-02 Sample Desc: LIQUID,U-1				
Iron by ICP	mg/L	10/07/98	0.010	17
Nitrate as Nitrate	mg/L	10/01/98	1.0	N.D.
Phosphate	mg/L	10/01/98	10	N.D.
<i>Want Fe it & not false Fe</i>				
Lab No: 9810001-03 Sample Desc: LIQUID,U-2				
Iron by ICP	mg/L	10/07/98	0.010	25
Nitrate as Nitrate	mg/L	10/01/98	1.0	N.D.
Phosphate	mg/L	10/01/98	10	N.D.
Lab No: 9810001-04 Sample Desc: LIQUID,U-3				
Iron by ICP	mg/L	10/07/98	0.010	0.040
Nitrate as Nitrate	mg/L	10/01/98	1.0	31
Phosphate	mg/L	10/01/98	10	N.D.
Lab No: 9810001-05 Sample Desc: LIQUID,U-4				
Iron by ICP	mg/L	10/07/98	0.010	0.049
Nitrate as Nitrate	mg/L	10/01/98	1.0	31
Phosphate	mg/L	10/01/98	10	N.D.
Lab No: 9810001-06 Sample Desc: LIQUID,U-5				
Iron by ICP	mg/L	10/07/98	0.010	17
Nitrate as Nitrate	mg/L	10/01/98	1.0	N.D.
Phosphate	mg/L	10/01/98	10	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager



Gettler Ryan/Geostrategies
6747 Sierra Court Suite J
Dublin, CA 94568

Client Proj. ID: Unocal SS#5325

Lab Proj. ID: 9810001

Sampled: 09/30/98

Received: 09/30/98

Analyzed: see below

Attention: Deanna Harding

Reported: 10/19/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9810001-07				
Sample Desc : LIQUID,U-6				
Iron by ICP	mg/L	10/07/98	0.010	33
Nitrate as Nitrate	mg/L	10/01/98	1.0	N.D.
Phosphate	mg/L	10/01/98	10	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher
Project Manager



**Sequoia
Analytical**

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

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

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

Client Proj. ID: Unocal SS#5325

Lab Proj. ID: 9810001


Received: 09/30/98

Reported: 10/19/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 15 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL


Tod Granicher
Project Manager



Sequoia Analytical

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

Redwood City, CA 94063
 Walnut Creek, CA 94598
 Sacramento, CA 95834
 Petaluma, CA 94954

(650) 364-9600
 (925) 988-9600
 (916) 921-9600
 (707) 792-1865

FAX (650) 364-9233
 FAX (925) 988-9673
 FAX (916) 921-0100
 FAX (707) 792-0342

Gettler Ryan/Geostrategies
 6747 Sierra Court, Ste J
 Dublin, CA 94568
 Attention: Deanna Harding

Client Project ID: Unocal SS#5325
 Matrix: Liquid

Work Order #: 9810001 01-07

Reported: Oct 22, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC100698802005A	GC100698802005A	GC100698802005A	GC100698802005A	GC100698802005A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	C. Westwater
MS/MSD #:	LCS100698	LCS100698	LCS100698	LCS100698	LCS100698
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/6/98	10/6/98	10/6/98	10/6/98	10/6/98
Analyzed Date:	10/6/98	10/6/98	10/6/98	10/6/98	10/6/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	290 µg/L
Result:	21	21	21	65	270
MS % Recovery:	105	105	105	108	93
Dup. Result:	19	20	20	62	270
MSD % Recov.:	95	100	100	103	93
RPD:	10	4.9	4.9	4.7	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS100698	LCS100698	LCS100698	LCS100698	LCS100698
Prepared Date:	10/6/98	10/6/98	10/6/98	10/6/98	10/6/98
Analyzed Date:	10/6/98	10/6/98	10/6/98	10/6/98	10/6/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	290 µg/L
LCS Result:	19	20	19	61	290
LCS % Recov.:	95	100	95	102	100

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140

SEQUOIA ANALYTICAL
 ELAP #1271

[Signature]
 Todd Granicher
 Project Manager

Please Note:
 The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

9810001.GET <1>



Sequoia Analytical

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

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#5325
Matrix: Liquid

Work Order #: 9810001 01-07

Reported: Oct 22, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC100798802005A	GC100798802005A	GC100798802005A	GC100798802005A	GC100798802005A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8100176	8100176	8100176	8100176	8100176
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/7/98	10/7/98	10/7/98	10/7/98	10/7/98
Analyzed Date:	10/7/98	10/7/98	10/7/98	10/7/98	10/7/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
Result:	19	19	19	59	270
MS % Recovery:	95	95	95	98	96
Dup. Result:	19	19	19	60	280
MSD % Recov.:	95	95	95	100	100
RPD:	0.0	0.0	0.0	1.7	3.6
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS100798	LCS100798	LCS100798	LCS100798	LCS100798
Prepared Date:	10/7/98	10/7/98	10/7/98	10/7/98	10/7/98
Analyzed Date:	10/7/98	10/7/98	10/7/98	10/7/98	10/7/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
LCS Result:	18	18	18	56	270
LCS % Recov.:	90	90	90	93	96

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140
---------------------------	--------	--------	--------	--------	--------

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL
ELAP #1271

Tom Granicher
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9810001.GET <2>



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite B
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

Gettler Ryan/Geostrategies
6747 Sierra Court, Ste J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#5325
Matrix: Liquid

Work Order #: 9810001 01-07

Reported: Oct 22, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME1002986010MDB	ME1002986010MDB	ME1002986010MDB	ME1002986010MDB
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010

Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
MS/MSD #:	981003301	981003301	981003301	981003301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/2/98	10/2/98	10/2/98	10/2/98
Analyzed Date:	10/7/98	10/7/98	10/7/98	10/7/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	1.01	1.04	1.04	1.03
MS % Recovery:	101	104	104	103
Dup. Result:	0.88	0.90	0.91	0.90
MSD % Recov.:	88	90	91	90
RPD:	14	14	13	13
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	BLK100298	BLK100298	BLK100298	BLK100298
Prepared Date:	10/2/98	10/2/98	10/2/98	10/2/98
Analyzed Date:	10/7/98	10/7/98	10/7/98	10/7/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	1.0	1.05	1.04	1.04
LCS % Recov.:	100	105	104	104

MS/MSD	80-120	80-120	80-120	80-120
LCS	80-120	80-120	80-120	80-120
Control Limits				

SEQUOIA ANALYTICAL

[Signature]
T. J. Granicher
Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9810001.GET <3>



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiger Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(925) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (925) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

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

Client Project ID: Unocal SS#5325

QC Sample Group: 9810001

Reported: Oct 23, 1998

QUALITY CONTROL DATA REPORT

Matrix: Liquid
Method: EPA 300.0
Analyst: G. Fish

ANALYTE	Fluoride	Chloride	Nitrite	Bromide	Nitrate	Phosphate	Sulfate
---------	----------	----------	---------	---------	---------	-----------	---------

QC Batch #: 1001983000ACD

Sample No.:	9810142-2						
Date Prepared:	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98
Date Analyzed:	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98
Instrument I.D.#:	INAC1	INAC1	INAC1	INAC1	INAC1	INAC1	INAC1
Sample Conc., mg/L:	N.D.	120	N.D.	N.D.	N.D.	N.D.	120
Conc. Spiked, mg/L:	100	100	100	100	100	100	100
Matrix Spike, mg/L:	100	240	94	92	92	78	220
% Recovery:	100	120	94	92	92	78	100
Matrix Spike Duplicate, mg/L:	100	230	94	92	92	80	220
% Recovery:	100	110	94	92	92	80	100
Relative % Difference:	0.0	8.7	0.0	0.0	0.0	2.5	0.0

RPD Control Limits:

LCS Batch#: LCS1001983000ACD

Date Prepared:	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98
Date Analyzed:	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98	10/1/98
Instrument I.D.#:	INAC1	INAC1	INAC1	INAC1	INAC1	INAC1	INAC1
Conc. Spiked, mg/L:	10	10	10	10	10	10	10
LCS Recovery, mg/L:	10	9.3	9.7	9.1	9.3	9.4	9.1
LCS % Recovery:	100	93	97	91	93	94	91

Percent Recovery Control Limits:

MS/MSD	75-125	75-125	75-125	75-125	75-125	75-125	75-125
LCS	90-110	90-110	90-110	90-110	90-110	90-110	90-110

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL


Joe Granicher
Project Manager