GETTLER-RYAN INC.

TRANSMITTAL

521

AP contents file in MW 6

TO: Mr. Barney M. Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

DATE: July 22, 1998
G-R #: 180065

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

RE: Tosco (Unocal) SS#5043
449 Hegenberger Road
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	July 2, 1998	Groundwater Monitoring and Sampling Report Second Quarter 1998 - April 1, 1998

COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on a quarterly basis. If you have questions please contact Ms. Tina R. Berry, Tosco Project Manager, at (925) 277-2321.

Enclosure

cc: Mr. Doug Lee, Gettler-Ryan Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568

agency/5043trb.qmt

98 JUL 23 PM 2:00
ENVIRONMENTAL PROTECTION

GETTLER-RYAN INC.

July 2, 1998
G-R Job #180065

Ms. Tina R. Berry
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

RE: Second Quarter 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #5043
449 Hegenberger Road
Oakland, California

Dear Ms. Berry:

This report documents the monthly site visits and the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On February 12, and March 3, 1998, field personnel monitored one well (MW-6). On April 1, 1998, field personnel monitored six wells (MW-3, MW-6, MW-7, MW-8, MW-9, MW-10) and sampled five wells (MW-3, MW-7, MW-8, MW-9, MW-10) 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 present in well (MW-6). Static water level data and groundwater elevations are summarized in Table 1. Product Thickness/Removal Data is summarized in Table 2. 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 Table 1, and a Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

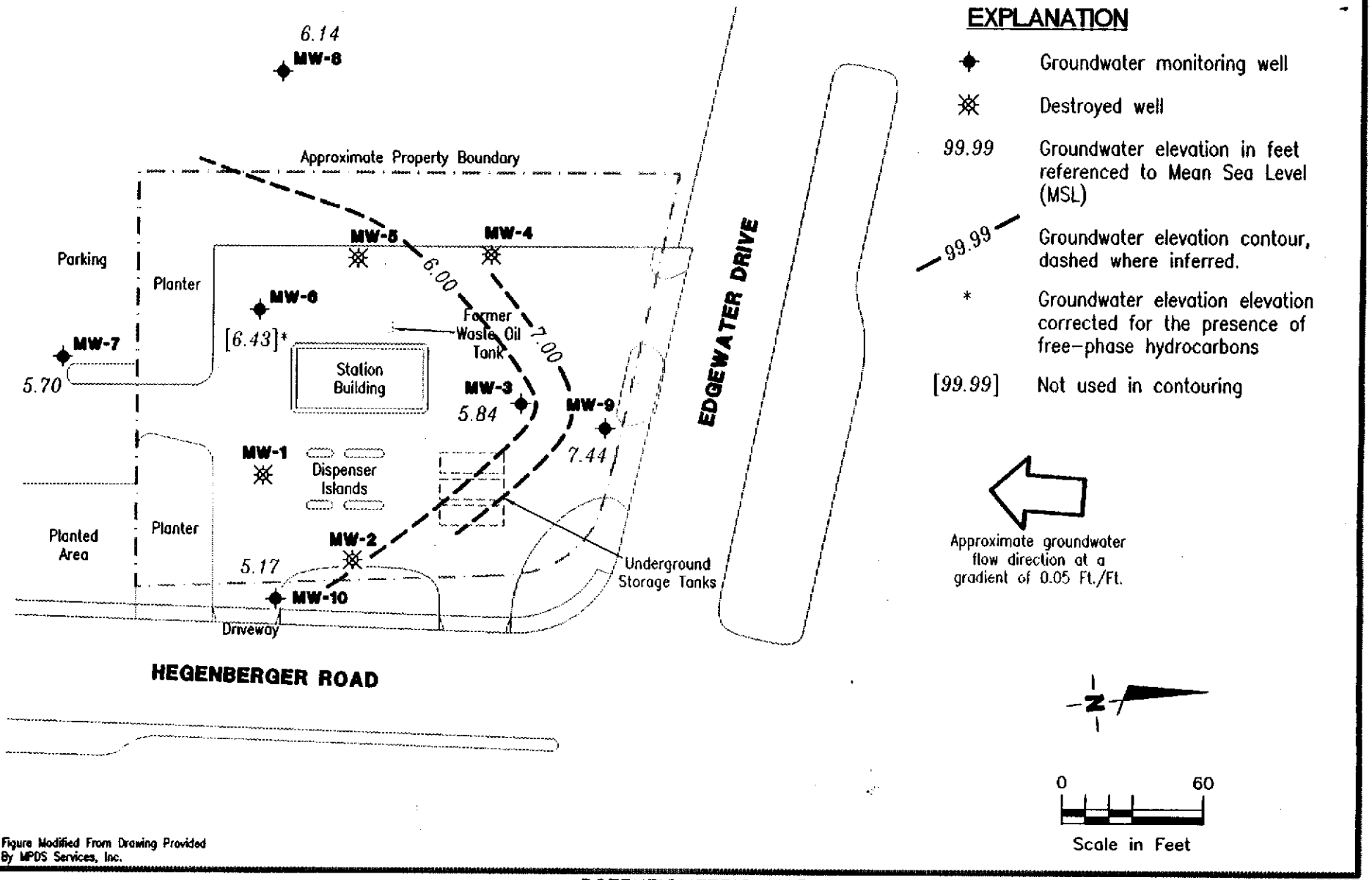
Deanna L. Harding
Project Coordinator

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

REGISTERED GEOLOGIST
RICKY L. FEARS
No. 6728
Exp. 8/31/98
STATE OF CALIFORNIA

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

5043.qml



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

Gettler - Ryan Inc.
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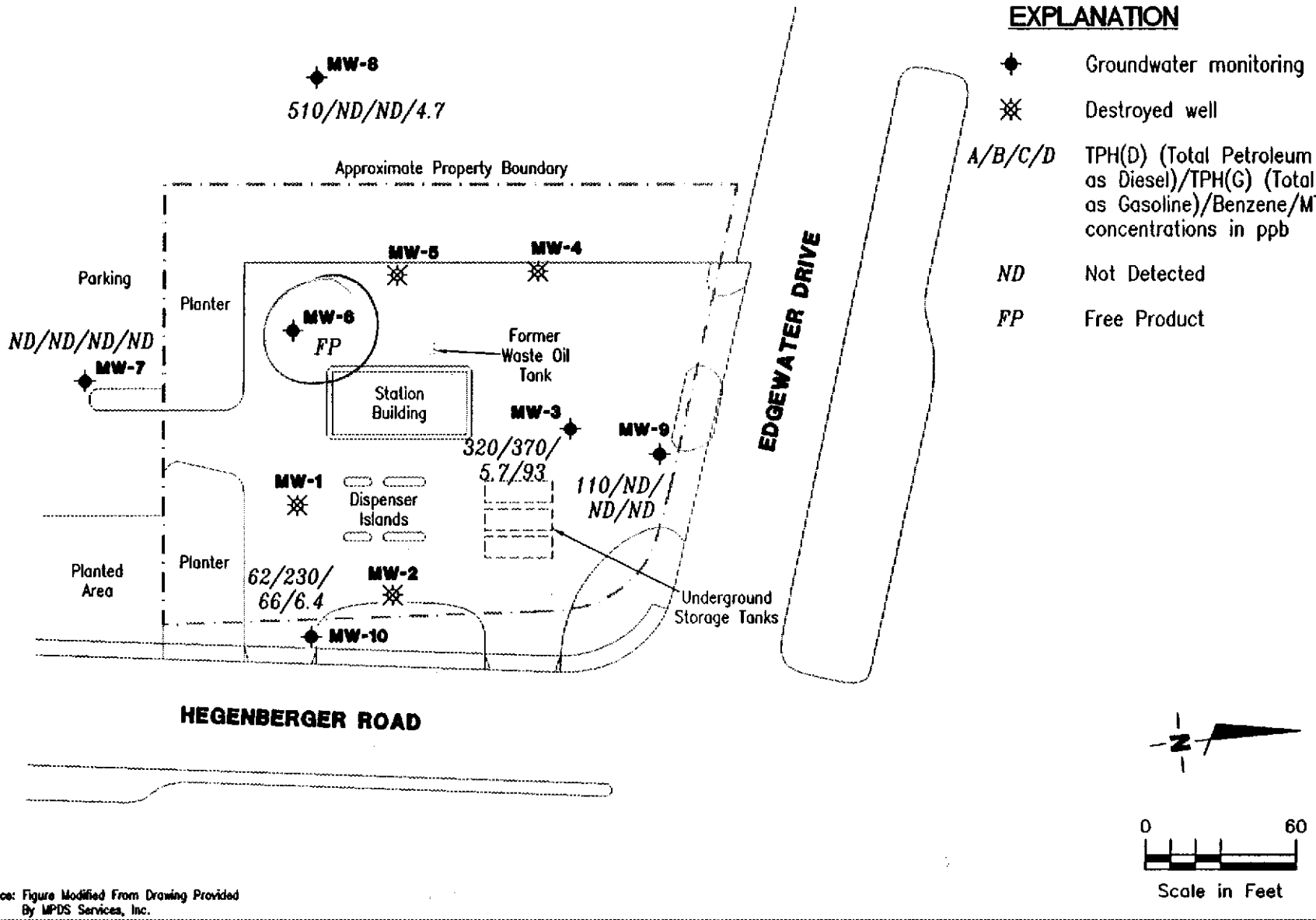
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station No. 5043
449 Hegenberger Road
Oakland, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180065		April 1, 1998	



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

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Dublin, CA 94568

CONCENTRATION MAP
Tosco (Unocal) Service Station No. 5043
449 Hegenberger Road
Oakland, California

FIGURE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180065		April 1, 1998	

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<----------		ppb				---------->
MW-1	02/18/92	--	--	--	13,000	150,000	17,000	26,000	5,200	26,000	--
	05/20/92	--	--	--	--	--	--	--	--	--	--
	08/31/92	--	--	--	8,900[1]	64,000	13,000	12,000	2,500	22,000	--
	11/30/92	--	--	--	--	--	--	--	--	--	--
	02/04/93	--	--	--	--	--	--	--	--	--	--
8.96♦	05/04/93	2.13	5.73**	0.10	--	--	--	--	--	--	--
	08/04/93	2.92	4.88**	0.03	--	--	--	--	--	--	--
7.38	11/03/93	3.04	4.74	<0.01	--	--	--	--	--	--	--
	02/07/94	2.55	4.85**	0.03	--	--	--	--	--	--	--
	05/19/94	2.23	5.16**	0.01	--	--	--	--	--	--	--
	06/25/94	2.49	4.90**	0.01	--	--	--	--	--	--	--
	07/27/94	3.10	4.28	0.00	--	--	--	--	--	--	--
	08/15/94	2.85	4.61**	0.11	--	--	--	--	--	--	--
	11/14/94	2.97	4.50**	0.12	--	--	--	--	--	--	--
	02/21/95	1.53	5.87**	0.02	--	--	--	--	--	--	--
	05/18/95	DESTROYED (3/95)	--	--	--	--	--	--	--	--	--
MW-2	02/18/92	--	--	--	4,300	29,000	1,000	5,300	260	7,900	--
	05/20/92	--	--	--	4,300[1]	24,000	2,200	7,600	630	11,000	--
	08/31/92	--	--	--	1,600[1]	9,000	1,800	640	140	2,000	--
	11/30/92	--	--	--	5,700[1]	29,000	2,000	3,400	1,200	6,900	--
	02/04/93	--	--	--	6,100[1]	18,000	1,600	3,000	ND	6,900	--
8.96♦	05/04/93	2.48	6.48	0.00	7,100[1]	63,000	3,200	17,000	470	17,000	--
	08/04/93	3.20	5.76	0.00	1,800[2]	45,000	2,100	6,600	1,400	12,000	--
8.58	11/03/93	3.37	5.21	0.00	2,600[2]	72,000	3,700	16,000	3,700	20,000	--
	02/07/94	2.40	6.18	<0.01	--	--	--	--	--	--	--
	05/19/94	2.13	6.45	0.00	3,000[2]	42,000	2,500	1,300	2,300	13,000	--
	06/25/94	2.65	5.93	0.00	--	--	--	--	--	--	--
	07/27/94	3.44	5.14	0.00	--	--	--	--	--	--	--
	08/15/94	3.25	5.33	0.00	2,800[2]	35,000	2,400	850	1,700	15,000	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<			ppb			>
MW-2	11/14/94	2.13	6.45	0.00	10,000[1]	43,000	2,200	6,500	1,800	14,000	--
(cont)	02/21/95	1.65	6.93	0.00	2,000[2]	44,000	2,200	3,200	1,300	1,500	--
	05/18/95	DESTROYED (3/95)	--	--	--	--	--	--	--	--	--
MW-3	02/18/92	--	--	--	ND	230	4.8	22	1.8	33	--
	05/20/92	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	08/31/92	--	--	--	92[2]	210[4]	1	ND	ND	ND	--
	11/30/92	--	--	--	94	790[4]	ND	ND	ND	ND	--
	02/04/93	--	--	--	550[2]	3,300	320	ND	96	6.1	--
7.84•	05/04/93	4.32	3.52	0.00	250[2]	1,800[3]	95	ND	ND	ND	--
	08/04/93	4.94	2.90	0.00	100	210[4]	ND	ND	ND	ND	--
7.42	11/03/93	4.53	2.89	0.00	160	640[4]	ND	ND	ND	ND	--
	02/07/94	2.40	5.02	0.00	620[2]	2,700	110	ND	17	ND	--
	05/19/94	3.60	3.82	0.00	480[2]	1,800	83	ND	6.2	9.1	--
	06/25/94	4.58	2.84	0.00	--	--	--	--	--	--	--
	07/27/94	4.58	2.84	0.00	--	--	--	--	--	--	--
	08/15/94	4.65	2.77	0.00	110[2]	130	1.1	0.54	ND	0.97	--
	11/14/94	3.18	4.24	0.00	150[2]	1,600[4]	ND	ND	ND	ND	--
	02/21/95	1.81	5.61	0.00	850[2]	3,800	350	ND	130	22	--
	05/18/95	4.56	2.86	0.00	150[1]	1,300[3]	42	ND	ND	ND	--
	08/17/95	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	07/26/96	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	10/28/96[6]	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	01/29/97	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	04/15/97	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	05/27/97	3.45	4.59	0.00	--	670	6.5	ND	ND	ND	250
	06/01/97	3.50	4.54	0.00	610[2]	--	--	--	--	--	--
8.04	07/15/97	3.71	4.33	0.00	240[2]	240	ND	ND	ND	ND	490
	10/09/97	3.70	4.34	0.00	500[2]	270	1.1	ND	2.4	1.4	910
	01/14/98	2.16	5.88	0.00	340[7]	310	ND	ND	0.62	0.65	140
	04/01/98	**2.20**	**5.84**	**0.00**	**320[7]**	**370**	**5.7**	**ND[9]**	**ND[9]**	**ND[9]**	**93**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<--------		ppb				-------->
MW-4	08/31/92	--	--	--	90[2]	240[4]	ND	ND	ND	0.54	--
	11/30/92	--	--	--	61	420[4]	ND	ND	ND	ND	--
	02/04/93	--	--	--	ND	ND	ND	ND	ND	ND	--
9.00+	05/04/93	4.09	4.91	0.00	ND	110[3]	0.95	ND	ND	ND	--
	08/04/93	5.01	3.99	0.00	81	250[4]	ND	3.5	ND	4.1	--
8.41	11/03/93	4.23	4.18	0.00	68	130[4]	ND	ND	ND	ND	--
	02/07/94	3.35	5.06	0.00	ND	56[4]	ND	ND	ND	ND	--
	05/19/94	3.92	4.49	0.00	90[2]	140[4]	ND	ND	ND	ND	--
	06/25/94	4.35	4.06	0.00	--	--	--	--	--	--	--
	07/27/94	4.28	4.13	0.00	--	--	--	--	--	--	--
	08/15/94	4.27	4.14	0.00	72[2]	59[4]	ND	0.6	ND	ND	--
	11/14/94	4.05	4.36	0.00	ND	130[4]	ND	ND	ND	ND	--
	02/21/95	DESTROYED (1/95)	--	--	--	--	--	--	--	--	--
MW-5	08/31/92	--	--	--	690[1]	78	0.89	ND	ND	13	--
	11/30/92[5]	--	--	--	470[2]	930	70	290	0.79	14	--
	02/04/93[5]	--	--	--	5,500[2]	5,700	38	ND	620	170	--
	05/04/93[5]	4.37	4.90	0.00	4,600[1]	7,400	41	ND	1,000	35	--
	08/04/93[5]	5.81	3.46	0.00	970[2]	1,500	130	1	460	11	--
8.95	11/03/93	5.68	3.27	0.00	2,100[2]	13,000	350	ND	3,500	530	--
	02/07/94	5.11	3.84	0.00	830[2]	2,000	87	ND	370	110	--
	05/19/94	5.09	3.86	0.00	600[2]	260	44	ND	32	4.1	--
	06/25/94	4.55	4.40	0.00	--	--	--	--	--	--	--
	07/27/94	5.72	3.23	0.00	--	--	--	--	--	--	--
	08/15/94	5.68	3.27	0.00	860[2]	1,600	110	ND	340	72	--
	11/14/94	5.63	3.32	0.00	290[1]	250	40	ND	ND	5	--
	02/21/95	DESTROYED (1/95)	--	--	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<----------			ppb			---------->
MW-6	08/31/92	--	--	--	750[2]	ND	ND	ND	ND	ND	--
	11/30/92	--	--	--	1,400[1]	9,200	550	ND	740	1,600	--
	02/04/93	--	--	--	890[2]	3,600	340	ND	290	550	--
9.12*	05/04/93	3.72	5.40	0.00	1,800[1]	4,900	360	18	450	430	--
	08/04/93	5.15	3.97	0.00	1,100[2]	3,400	390	ND	440	190	--
8.87	11/03/93	5.25	3.62	0.00	390[2]	1,400	320	ND	200	7.7	--
	02/07/94	4.55	4.32	0.00	970[2]	4,900	650	ND	250	35	--
	05/19/94	4.62	4.25	0.00	1,400[2]	3,600	300	1.7	210	41	--
	08/15/94	5.08	3.79	0.00	790[2]	1,300	130	6.7	54	57	--
	11/14/94	5.30	3.57	0.00	800[2]	730	50	ND	ND	39	--
	02/21/95	5.37	3.50	0.00	730[2]	2,000	250	4.6	25	30	--
	05/18/95	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	08/17/95	INACCESSIBLE	--	--	--	--	--	--	--	--	--
	07/26/96	6.40	5.03**	3.33	--	--	--	--	--	--	--
	10/28/96	4.10	4.93**	0.21	--	--	--	--	--	--	--
	01/29/97	3.24	5.87**	0.31	--	--	--	--	--	--	--
	04/15/97	4.90	4.76**	1.03	--	--	--	--	--	--	--
	05/27/97	4.50	4.56**	0.25	--	--	--	--	--	--	--
	07/15/97	4.63	4.56**	0.42	--	--	--	--	--	--	--
	07/21/97	4.75	4.31**	0.25	--	--	--	--	--	--	--
	08/06/97	4.50	4.45**	0.10	--	--	--	--	--	--	--
	08/20/97	4.55	4.40**	0.10	--	--	--	--	--	--	--
	09/02/97	4.75	4.16**	0.05	--	--	--	--	--	--	--
	10/09/97	4.84	4.06**	0.04	--	--	--	--	--	--	--
	01/14/98	3.90	5.69**	0.94	--	--	--	--	--	--	--
	02/12/98	**3.35**	**6.01****	**0.64**	--	--	--	--	--	--	--
	03/03/98	**4.51**	**4.38****	**0.02**	--	--	--	--	--	--	--
	04/01/98	**3.67**	**6.43****	**1.60**	--	--	--	--	--	--	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<----------ppb---------->						
MW-7	05/27/97	4.50	4.33	0.00	--	68	ND	ND	ND	ND	ND
8.83	06/01/97	4.54	4.29	0.00	69[2]	--	--	--	--	--	--
	07/15/97	4.70	4.13	0.00	ND	ND	ND	ND	ND	ND	ND
	10/09/97	4.30	4.53	0.00	190[1]	ND	ND	ND	ND	ND	ND
	01/14/98	2.88	5.95	0.00	65[7]	ND	ND	ND	ND	ND	36
	04/01/98	**3.13**	**5.70**	**0.00**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
MW-8	05/27/97	3.42	5.10	0.00	--	310	0.88	0.67	15	70	ND
8.52	06/01/97	3.46	5.06	0.00	320[2]	--	--	--	--	--	--
	07/15/97	3.49	5.03	0.00	ND	ND	ND	ND	2.7	3.8	ND
	10/09/97	3.73	4.79	0.00	390[1]	590	1.4	ND	32	4.1	ND
	01/14/98	1.92	6.60	0.00	230[7]	ND	ND	ND	ND	ND	ND
	04/01/98	**2.38**	**6.14**	**0.00**	**510[7]**	**ND**	**ND**	**ND**	**ND**	**ND**	**4.7**
MW-9	02/21/95	1.98	6.31	0.00	71[2]	70[4]	ND	ND	ND	ND	--
8.29	05/18/95	3.47	4.82	0.00	ND	52	ND	1.1	ND	1.9	--
	08/17/95	1.49	6.80	0.00	ND	ND	ND	ND	ND	ND	--
	07/26/96	0.28	8.01	0.00	98	ND	ND	ND	ND	ND	ND
	10/28/96	1.15	7.14	0.00	99[1]	ND	ND	ND	ND	ND	7.6
	01/29/97	1.05	7.24	0.00	54	ND	ND	ND	ND	ND	5.4
	04/15/97	1.88	6.41	0.00	94[1]	ND	ND	ND	ND	ND	5.4
	05/27/97	1.05	7.24	0.00	--	--	--	--	--	--	--
	07/15/97	1.90	6.39	0.00	ND	ND	ND	ND	ND	ND	ND
	10/09/97	1.76	6.53	0.00	160[1]	ND	ND	ND	ND	ND	ND
	01/14/98	1.26	7.03	0.00	110[7]	ND	ND	ND	ND	ND	3.0
	04/01/98	**0.85**	**7.44**	**0.00**	**110[7]**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE
					<--------		ppb				-------->
MW-10	02/21/95	4.69	3.93	0.00	270[2]	1,500	250	26	9.1	160	--
8.62	05/18/95	4.92	3.70	0.00	75[1]	810	520	ND	18	23	--
	08/17/95	4.05	4.57	0.00	ND	67	25	ND	2.4	ND	--
	07/26/96	4.08	4.54	0.00	ND	ND	3.7	ND	ND	ND	ND
	10/28/96	4.09	4.53	0.00	ND	ND	1.1	ND	ND	ND	ND
	01/29/97	2.94	5.68	0.00	ND	210	41	0.67	7.2	4.8	11
	04/15/97	4.07	4.55	0.00	ND	110	12	ND	0.77	ND	9.7
	05/27/97	4.40	4.22	0.00	--	--	--	--	--	--	--
	07/15/97	4.19	4.43	0.00	ND	ND	2.1	ND	0.67	0.73	ND
	10/09/97	4.75	3.87	0.00	ND	190	38	0.92	6.6	7.6	ND
	01/14/98	2.66	5.96	0.00	--[8]	59	9.5	0.85	1.2	1.7	4.5
	04/01/98	**3.45**	**5.17**	**0.00**	**62[7]**	**230**	**66**	**1.7**	**12**	**17**	**6.4**
Trip Blank											
TB-LB	01/14/98	--	--	--	--	ND	ND	ND	ND	ND	ND
	04/01/98	**--**	**--**	**--**	**--**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

EXPLANATIONS:

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

TOC = Top of Casing elevation
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
msl = Relative to mean sea level
TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary butyl ether

ppb = Parts per billion
ND = Not Detected
-- = Not Measured/Not Analyzed
TOG = Total Oil and Grease

* TOC elevations are relative to msl, per the City of Oakland Benchmark #3880 (Elevation = 20.37 feet, msl).

** Groundwater elevation corrected for the presence of free product [(TOC-DTW)+(Product Thickness x 0.77)].

◆ Elevations were based on the top of the well covers, and were surveyed relative to msl, per the City of Oakland Benchmark #3880 (Elevation = 20.37 feet).

[1] Laboratory reported that the hydrocarbons detected did not appear to be diesel.

[2] Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

[3] Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

[4] Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

[5] TOG was ND.

[6] The well was obstructed with debris at 0.55 feet. A water sample was collected but was not analyzed as it was considered not representative of groundwater in this well.

[7] Laboratory report indicates unidentified hydrocarbons C9-C24

[8] Sample bottle broken at Laboratory.

[9] Detection limit raised. Refer to analytical results.

Table 2

Product Thickness/Removal Data

Tosco (Unocal) Service Station #5043

449 Hegenberger Road

Oakland, California

Well ID	Date	DTW (ft.)	Product Thickness (ft.)	Amount Bailed (Product + Water) Gallons
MW-6	07/26/96	6.40	3.33	
	10/28/96	4.10	0.21	0.15
	01/29/97	3.24	0.31	0.25
	02/11/97	4.65	1.20	0.62
	02/24/97	4.81	1.10	0.50
	03/10/97	4.60	0.95	0.47
	03/17/97	4.50	0.89	0.35
	03/31/97	4.65	1.00	0.50
	04/15/97	4.90	1.03	
	05/27/97	4.50	0.25	
	07/15/97	4.63	0.42	
	07/21/97	4.75	0.25	
	08/06/97	4.50	0.10	
	08/20/97	4.55	0.10	
	09/02/97	4.75	0.05	
	10/09/97	4.84	0.04	
	01/14/98	3.90	0.94	
	02/12/98	**3.35**	**0.64**	**0.32**
	03/03/98	**4.51**	**0.02**	**2.00**
	04/01/98	**3.67**	**1.60**	**0.50**

EXPLANATIONS:

DTW = Depth to Water

(ft.) = Feet

Amount Bailed history will be updated in future reports.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using 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: #5043 Job#: 180065

Address: 449 Hegenberger Road Date: 2/12/98

City: Oakland Sampler: Craig Kavolk

Time: 10:45 a.m

Well ID: MW-6 Well Condition: OK - Skimmer in well

Well Diameter: 2 in. Hydrocarbon Thickness: 0.64' (feet) Amount Bailed (product/water): 0.32 (Gallons)

Total Depth: 12.77 ft.

Depth to Water: 3.35 ft.

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

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

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

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

Monthly Visit

Starting Time: _____ Weather Conditions: _____

Sampling Time: _____ Water Color: _____ Odor: _____

Purging Flow Rate: _____ gpm. Sediment Description: _____

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

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

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
		Y		SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: Skimmer had product. Emptied product into dedicated drum on site - Bailed (40 ounces) 0.32 gallons into drum.

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WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5043 Job#: 180065

Address: 449 Hegenberger Date: 3-3-98

City: Oakland Sampler: Joe

Well ID U-6 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: 0.02 (ft) Amount Bailed (product/water): 2g. product + water (1 ounce of FP) (gal.)

Total Depth 12.70 ft

Depth to Water 4.51 ft

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

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

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

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

Starting Time: _____ Weather Conditions: clear

Sampling Time: _____ Water Color: _____ Odor: _____

Purging Flow Rate: _____ gpm Sediment Description: _____

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

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

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: Skimmer had 7 ounces of product besides product in well

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5043 Job#: 180065

Address: 449 Hegenberger Rd. Date: 4-1-98

City: Oakland Sampler:

Well ID MW-3 Well Condition: Concrete grout around casing chipping away

Well Diameter 2 in. Hydrocarbon Thickness: ___ in. Amount Bailed (product/water): ___ (gal.)

Total Depth 14.07 ft.

Depth to Water 2.20 ft.

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

11.87 X VF 0.17 = 2.02 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) Bailer, Stack, Suction, Grundfos, Other: ___

Sampling Equipment: (Disposable Bailer) ~~Bailer~~, Pressure Bailer, Grab Sample, Other: ___

Starting Time: 12:30 Weather Conditions: cloudy

Sampling Time: 12:55 P.M. Water Color: Semi clear Odor: faint

Purging Flow Rate: ___ gpm Sediment Description: None

Did well de-water? ___ If yes; Time: ___ Volume: ___ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:40	2	7.53	2.87	66.3			
12:43	4	7.14	3.11	65.9			
12:46	6	7.26	3.14	66.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	3 x 40	Y	HCl	Seq.	TPHG, BTEX, MTBE
"	1 Amb.	"	—	"	TPHD

COMMENTS: ___

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5043 Job#: 180065

Address: 449 Hegenberger Rd. Date: 4-1-98

City: Oakland Sampler: Joe

Well ID MW-6 Well Condition: O.K. Skimmer in well

Well Diameter 2 in. Hydrocarbon Thickness: 1.6 (ft) Amount Bailed (product/water): 3 liters of product (Approx. 65 ounces) (gal.)

Total Depth 12.75 ft.

Depth to Water 3.67 ft.

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

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

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

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

Starting Time: _____ Weather Conditions: _____

Sampling Time: _____ Water Color: _____ Odor: _____

Purging Flow Rate: _____ gpm Sediment Description: _____

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

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

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: _____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility #5042 Job#: 180065

Address: 449 Hegenberger Rd. Date: 4-1-98

City: Oakland Sampler: Joe

Well ID MW7 Well Condition: O.K.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 13.15 ft.

Depth to Water 3.13 ft.

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

10.02 X VF 0.17 = 1.70 X 3 (case volume) = Estimated Purge Volume: 5 (gal.)

Purge Equipment: (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other: ____

Sampling Equipment: (Disposable Bailer) ~~Bailer~~ Pressure Bailer Grab Sample Other: ____

Starting Time: 9:45 Weather Conditions: Cloudy

Sampling Time: 10:15 A.M Water Color: Clear Odor: None

Purging Flow Rate: 0.5 gpm Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm X100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:00	1.5	7.20	6.49	66.3			
~~10:05~~	3	7.25	6.53	67.0			
10:08	5	7.31	6.51	66.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-7	3 VOA	Y	HCl	Seq.	TPHG, BTEX, MTBE
"	1 Amb.	"	—	"	TPHD

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5042 Job#: 180065

Address: 449 Hegenberger Date: 4-1-98

City: Oakland Sampler: Joe

Well ID MW-8 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 14.82 ft.

Depth to Water 2.38 ft.

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

12.44 X VF 0.17 = 2.11 X 3 (case volume) = Estimated Purge Volume: 6.5 (gal.)

Purge Equipment: ~~Disposable Bailer~~, Bailer, Stack, Suction, Grundfos, Other: ____

Sampling Equipment: Disposable Bailer, Bailer, Pressure Bailer, Grab Sample, Other: ____

Starting Time: 10:25 Weather Conditions: cloudy

Sampling Time: 10:46 AM Water Color: clear Odor: ~~none~~ faint

Purging Flow Rate: 0.5 gpm Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm X 1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:30	2	7.36	4.51	67.0			
10:33	4	7.38	4.63	66.2			
10:36	6.5	7.40	4.71	66.1			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	3 x 0A	Y	HCL	Seq.	TPHG, BTEX, MTBE
"	1 Amb	"	—	"	TPHD

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5042 Job#: 180065

Address: 449 Hegenberger Date: 4-1-98

City: Oakland Sampler: Joe

Well ID MW-9 Well Condition: Well casing is 1.5' below grade. Vault was filled with a lot of mud. Recommend extending well casing about a foot.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 11.98 ft.

Depth to Water 0.85 ft.

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

11.13 X VF 0.17 = 1.89 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) Bailer Stack Suction Grundfos Other: ____

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

Starting Time: 11:02 Weather Conditions: cloudy

Sampling Time: 11:25 P.M Water Color: Very turbid Odor: None

Purging Flow Rate: 0.5gpm Sediment Description: silty.

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm (X1 ω)	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:10	2	7.07	3.15	67.2			
11:13	4	7.02	3.10	65.8			
11:17	6	7.12	3.08	66.0			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	3 VOA	Y	HCl	Seq.	TPHG, BTEX & MTBE
"	1 Amb	"	—	"	TPHD

COMMENTS: ____

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WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 5042 Job#: 180065

Address: 449 Hegenberger Date: 4-1-98

City: Oakland Sampler: Joe

Well ID MW-10 Well Condition: o.k.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 12.80 ft.

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

Depth to Water 3.45 ft.

9.35 x VF 0.17 = 1.59 X 3 (case volume) = Estimated Purge Volume: 5 (gal.)

Purge Equipment: (Disposable Bailer) Bailer Stack Suction Grundfos Other: ____

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

Starting Time: 12:00 Weather Conditions: cloudy

Sampling Time: 12:22 P.M Water Color: clear Odor: None

Purging Flow Rate: ____ gpm Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm X100	Temperature °C °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:08	1.5	7.60	5.11	65.7			
12:12	3	7.58	4.12	66.2			
12:16	5	7.54	4.03	66.3			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE
"	1 Amb	"	—	"	TPHD

COMMENTS: ____

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Chain of Custody

TOSCO

Tosco Marketing Company
2003 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL SS# 5043
Facility Address: 449 Hegenberger Road, Oakland, CA
Consultant Project Number: 180065.85
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): MS. TINA BERRY
(Phone): 925-277-2321
Laboratory Name: Sequoia Analytical
Laboratory Release Number:
Samples Collected by (Name): JOE ASEMIAN
Collection Date: 4-1-98
Signature:

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: TPH Gas + BTEX w/MTBE (8020)	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 (ICAP or AA)	DO NOT BILL TB-LB ANALYSIS — Remarks
TB-LB		1 VOA	W	—	—	HCl	Y	✓								
MW-3		3 VOA 1 Amb	W	G	12:55 P.M	"	"	✓	✓							
MW-7		"	"	"	10:15 A.M	"	"	✓	✓							
MW-8		"	"	"	10:46 A.M	"	"	✓	—							
MW-9		"	"	"	11:25 P.M	"	"	✓	—							
MW-10		"	"	"	12:22 P.M	"	"	✓	✓							

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	G-R Inc.	4-2-98 1:30 PM			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			[signature]		4/2/98 1330

Turn Around Time (Circle Choice)

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

RECEIVED

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: TB-LB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-01

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC041098802004A
Instrument ID: GCHP04

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	101

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9804114-02

Sampled: 04/01/98
Received: 04/02/98
Extracted: 04/09/98
Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC0409980HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	320
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	101

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-02

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/13/98
Reported: 04/17/98

QC Batch Number: GC041398802004A
Instrument ID: GCHP04

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	200	370
Methyl t-Butyl Ether	10	93
Benzene	2.0	5.7
Toluene	2.0	N.D.
Ethyl Benzene	2.0	N.D.
Xylenes (Total)	2.0	N.D.
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	88

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-7
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9804114-03

Sampled: 04/01/98
Received: 04/02/98
Extracted: 04/09/98
Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC0409980HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		
Surrogates	**Control Limits %**	**% Recovery**
n-Pentacosane (C25)	50 150	81

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-7
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-03

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC041098802004A
Instrument ID: GCHP04

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	101

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-8
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9804114-04

Sampled: 04/01/98
Received: 04/02/98
Extracted: 04/09/98
Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC0409980HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	510
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	113

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-8
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-04

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC041098802004A
Instrument ID: GCHP04

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**	**4.7**
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	101

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-9
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9804114-05

Sampled: 04/01/98
Received: 04/02/98
Extracted: 04/09/98
Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC0409980HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	110
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	103

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-9
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-05

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC041098802004A
Instrument ID: GCHP04

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	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-10
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9804114-06

Sampled: 04/01/98
Received: 04/02/98
Extracted: 04/09/98
Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC0409980HBPEXB
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	62
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	92

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

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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

Attention: Deanna Harding

Client Proj. ID: UNOCAL 5043, 180065.85
Sample Descript: MW-10
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804114-06

Sampled: 04/01/98
Received: 04/02/98

Analyzed: 04/10/98
Reported: 04/17/98

QC Batch Number: GC041098802004A
Instrument ID: GCHP04

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	230
Methyl t-Butyl Ether	2.5	6.4
Benzene	0.50	66
Toluene	0.50	1.7
Ethyl Benzene	0.50	12
Xylenes (Total)	0.50	17
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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Gettler Ryan/Geostrategies	Client Proj. ID: UNOCAL 5043, 180065.85	Received: 04/02/98
6747 Sierra Court Suite J Dublin, CA 94568	Lab Proj. ID: 9804114	Reported: 04/17/98
Attention: Deanna Harding		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 16 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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

Client Project ID: UNOCAL 5043, 180065.85
Matrix: Liquid
Work Order #: 9804114 -01, 03-06
Reported: Apr 20, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC041098802004A	GC041098802004A	GC041098802004A	GC041098802004A	GC041098802004A
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 #:	8040642	8040642	8040642	8040642	8040642
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/10/98	4/10/98	4/10/98	4/10/98	4/10/98
Analyzed Date:	4/10/98	4/10/98	4/10/98	4/10/98	4/10/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	260 µg/L
Result:	21	22	21	65	480
MS % Recovery:	105	110	105	108	185
Dup. Result:	20	21	21	65	330
MSD % Recov.:	100	105	105	108	127
RPD:	4.9	4.7	0.0	0.0	37
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS041098	LCS041098	LCS041098	LCS041098	LCS041098
Prepared Date:	4/10/98	4/10/98	4/10/98	4/10/98	4/10/98
Analyzed Date:	4/10/98	4/10/98	4/10/98	4/10/98	4/10/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	260 µg/L
LCS Result:	19	20	19	62	280
LCS % Recov.:	95	100	95	103	108
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL
Elap #1271

Mike Gregory
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

Sequoia Analytical

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

Client Project ID: UNOCAL 5043, 180065.85
Matrix: Liquid
Work Order #: 9804114-02
Reported: Apr 20, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC041398802004A	GC041398802004A	GC041398802004A	GC041398802004A	GC041398802004A
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:	K. Nill	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	8040682	8040682	8040682	8040682	8040682
Sample Conc.:	N.D.	0.58	N.D.	N.D.	N.D.
Prepared Date:	4/13/98	4/13/98	4/13/98	4/13/98	4/13/98
Analyzed Date:	4/13/98	4/13/98	4/13/98	4/13/98	4/13/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	370 µg/L
Result:	21	22	21	66	410
MS % Recovery:	105	107	105	110	111
Dup. Result:	20	22	21	65	390
MSD % Recov.:	100	107	105	108	105
RPD:	4.9	0.0	0.0	1.5	5.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS041398	LCS041398	LCS041398	LCS041398	LCS041398
Prepared Date:	4/13/98	4/13/98	4/13/98	4/13/98	4/13/98
Analyzed Date:	4/13/98	4/13/98	4/13/98	4/13/98	4/13/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	370 µg/L
LCS Result:	21	22	21	65	270
LCS % Recov.:	105	110	105	108	73
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL
Elap #1271

Mike Gregory
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

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

Client Project ID: UNOCAL 5043, 180065.85
Matrix: Liquid
Work Order #: 9804114-02-06
Reported: Apr 20, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0409980HBPEXB
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	A. Porter
MS/MSD #:	980423307
Sample Conc.:	920
Prepared Date:	4/9/98
Analyzed Date:	4/9/98
Instrument I.D.#:	GCHP5
Conc. Spiked:	1000 µg/L
Result:	1700
MS % Recovery:	78
Dup. Result:	1700
MSD % Recov.:	78
RPD:	0.0
RPD Limit:	0-50

LCS #:	BLK040998
Prepared Date:	4/9/98
Analyzed Date:	4/9/98
Instrument I.D.#:	GCHP5
Conc. Spiked:	1000 µg/L
LCS Result:	780
LCS % Recov.:	78

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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