



GETTLER-RYAN Inc.

ENVIRONMENTAL
PROTECTION

98 NOV 18 PM 4:36

TRANSMITTAL

TO: Mr. Scott Seery
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94501

DATE: November 17, 1998
G-R #: 180107

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

RE: Tosco (Unocal) SS #5430
1935 Washington Avenue
San Leandro, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	October 29, 1998	Groundwater Monitoring and Sampling Report Semi-Annual 1998 - Event of September 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 an semi-annual basis. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (925) 277-2321.

Enclosure

cc: Mr. Tim Ripp, PEG, 2025 Gateway Pl., Suite 440, San Jose, CA 95110
Mr. Michael Bakaldin, City of San Leandro Fire Dept., 835 East 14th Street, San Leandro, CA 94577

agency/5430trb.qmt



PACIFIC
ENVIRONMENTAL
GROUP, INC.

AN  COMPANY

SO 1747
505

ENVIRONMENTAL
PROTECTION

98 OCT 13 PM 4: 21

October 12, 1998
Project 311-038.1A

Mr. John Jang
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Re: 76 Service Station 5430
Quarterly Summary Report
Third Quarter 1998

Dear Mr. Jang:

As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

<u>Service Station</u>	<u>Location</u>
5430	1935 Washington Avenue, San Leandro

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Timothy L. Ripp
Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company
Mr. Kevin Tinsley, Alameda County Environmental Health Care Services

Quarterly Summary Report Third Quarter 1998

76 Service Station 5430
1935 Washington Avenue at Castro Street
San Leandro, California

County STID #: 1747
County: Alameda

BACKGROUND

Unocal files suggest that a product line leak occurred in June 1976, and that one of the original underground gasoline storage tanks failed a precision test in October 1981. In December 1981, the two original steel gasoline storage tanks were replaced with two fiberglass gasoline storage tanks. There are currently six on-site groundwater monitoring wells and one off-site groundwater monitoring well in use at the site. In July 1997, three off-site exploratory borings were drilled on the property to the south of the 76 station. Based on the findings of that investigation, the lateral extent of hydrocarbon impact to groundwater is considered delineated.

RECENT QUARTER ACTIVITIES

The product dispensers and associated underground product piping were replaced in July and August 1998. The underground waste oil storage tank was also removed and replaced with an aboveground waste oil storage tank. A report documenting those activities was submitted on September 30, 1998. Semiannual groundwater monitoring and sampling were performed in September 1998 by Gettler-Ryan.

NEXT QUARTER ACTIVITIES

The report documenting the September 1998 groundwater monitoring and sampling activities will be submitted by Gettler-Ryan.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? None encountered.
Dissolved groundwater delineated? Yes.
Free product delineated? Not applicable.
Amount of groundwater contaminant recovered this quarter? None.
Soil remediation in progress? Not applicable.
Anticipated start date? Not applicable.
Anticipated completion date? Not applicable.
Dissolved/free product remediation in progress? No.
Anticipated start? Unknown.

Anticipated completion? Unknown.

CONSULTANT: Pacific Environmental Group, Inc.



PACIFIC ENVIRONMENTAL GROUP, INC.

ENVIRONMENTAL PROTECTION

98 JAN 27 AM 9:02

January 20, 1998
Project 311-038.1A

Mr. John Jang
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

#1747
IT

Re: Unocal Station 5430
Quarterly Summary Report
Fourth Quarter 1997

Dear Mr. Jang:

As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

Service Station

Location

5430

1935 Washington Avenue, San Leandro 94577

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio
Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company
Mr. Kevin Tinsley, Alameda County Environmental Health Care Services

Quarterly Summary Report Fourth Quarter 1997

Unocal Service Station 5430
1935 Washington Avenue at Castro Street
San Leandro, California

County STID #: 1747
County: Alameda

BACKGROUND

Unocal files suggest that a product line leak occurred in June 1976, and that one of the original underground gasoline storage tanks failed a precision test in October 1981. In December 1981, the two original steel gasoline storage tanks were replaced with two fiberglass gasoline storage tanks. Groundwater monitoring wells U-1 through U-3 and Borings U-A through U-E were installed in August 1993. Perimeter wells U-4 through U-7 were installed in June 1995 for further delineation of hydrocarbon impacted groundwater. Monthly groundwater monitoring and quarterly sampling of the wells was initiated in December 1993.

Alameda County Health Services (ACHS) submitted a request for delineation of hydrocarbon impacted groundwater in the southern portion of the site. Unocal submitted a workplan in January 1996. Unocal investigated former usage of the site located south of their site. The review found that the adjacent site was formerly a service station which included four USTs. PACIFIC completed an investigation to delineate the lateral extent of hydrocarbon impacted groundwater in July 1997. A report documenting the results was submitted in September 1997. Based on the investigation results groundwater impact beneath the Unocal facility was delineated.

RECENT QUARTER ACTIVITIES

No activities were performed.

NEXT QUARTER ACTIVITIES

Semiannual groundwater monitoring and sampling will be performed in March.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? None encountered.
Dissolved groundwater delineated? Yes.
Free product delineated? Not applicable.
Amount of groundwater contaminant recovered this quarter? None
Soil remediation in progress? Not applicable.
Anticipated start date? Not applicable.

Anticipated completion date? Not applicable.
Dissolved/free product remediation in progress? No.
Anticipated start? Unknown.
Anticipated completion? Unknown.

CONSULTANT: Pacific Environmental Group, Inc.



GETTLER-RYAN INC.

October 29, 1998
G-R Job #180107

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

RE: Semi-Annual 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #5430
1935 Washington Avenue
San Leandro, California

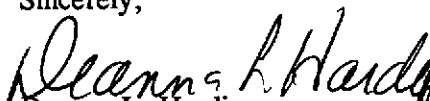
Dear Ms. Berry:


This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On September 1, 1998, field personnel monitored and sampled six wells (U-1 through U-5, and U-7) at the above referenced site. One well (U-6) was not located (paved over).

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in 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

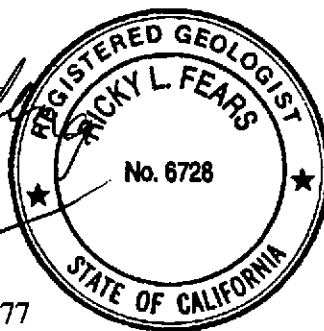
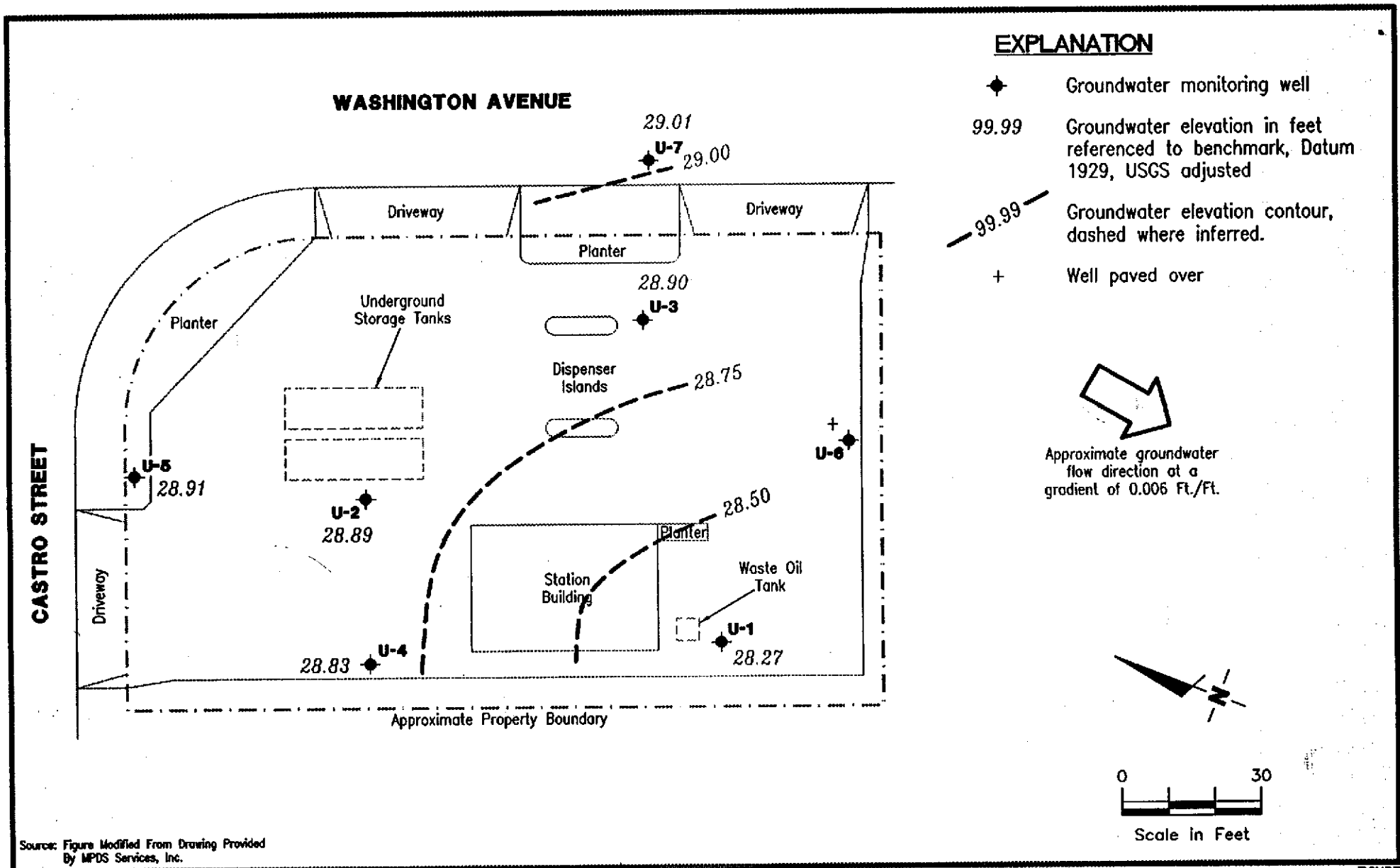


Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

5430.qml



EXPLANATION

- ◆ Groundwater monitoring well
- 99.99 Groundwater elevation in feet referenced to benchmark, Datum 1929, USGS adjusted
- 99.99 - Groundwater elevation contour, dashed where inferred.
- + Well paved over



Approximate groundwater flow direction at a gradient of 0.006 Ft./Ft.



Gettler - Ryan Inc.

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

POTENTIOMETRIC MAP
 Tosco (Unocal) Service Station No. 5430
 1935 Washington Avenue
 San Leandro, California

JOB NUMBER
180107

REVIEWED BY

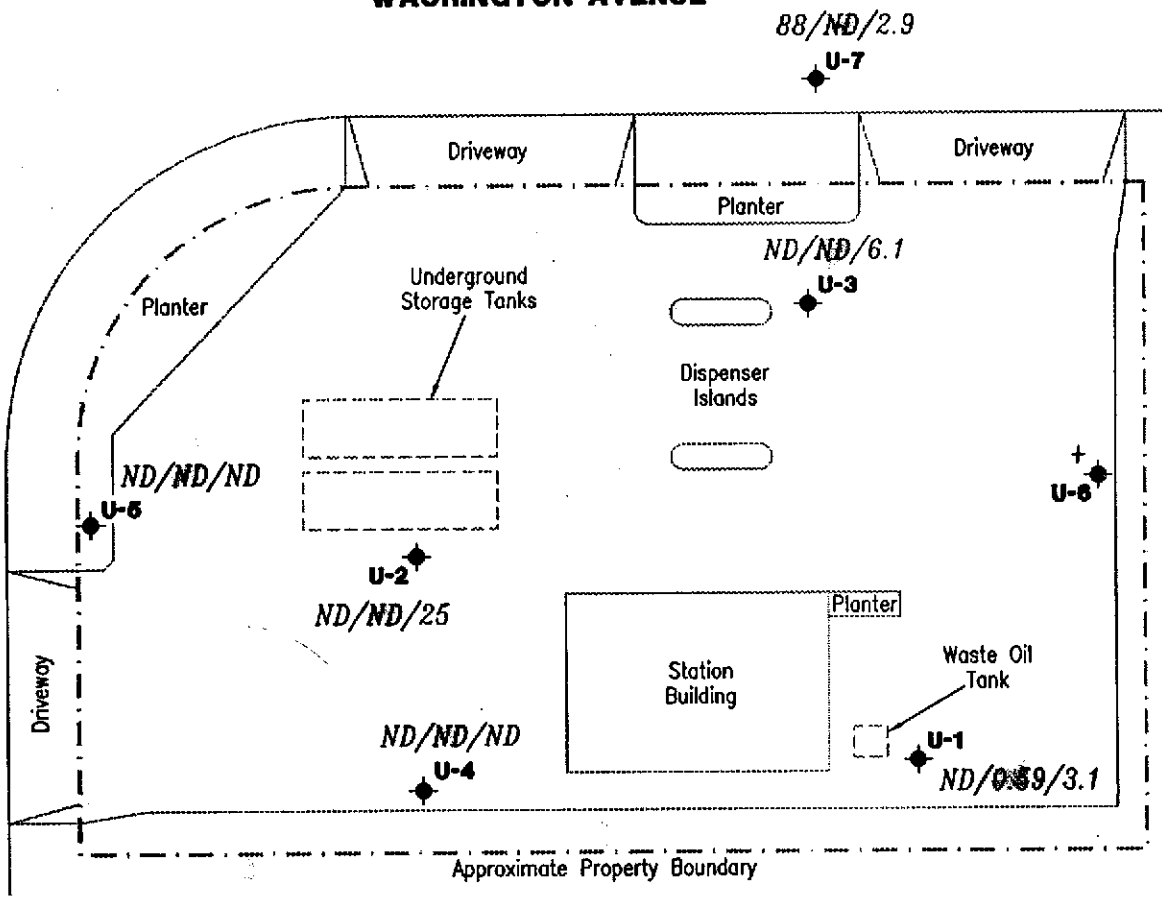
DATE
September 1, 1998

REVISED DATE

FIGURE
1

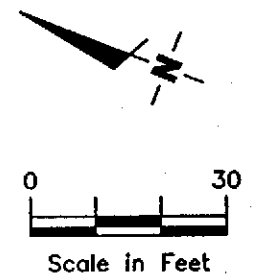
WASHINGTON AVENUE

CASTRO STREET



EXPLANATION

- ◆ Groundwater monitoring well
- A/B/C TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb
- ND Not Detected
- + Well paved over



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



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

CONCENTRATION MAP
 Tosco (Unocal) Service Station No. 5430
 1935 Washington Avenue
 San Leandro, California

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #5430
1935 Washington Avenue
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) ←	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA →
U-1												
56.58	08/13/93 ¹	31.60	24.98	50 ²	310	0.84	ND	2.6	1.0	--	--	--
	09/07/93	31.60	24.98	--	--	--	--	--	--	--	--	--
56.10	12/16/93 ¹	33.19	22.91	130 ³	ND	ND	ND	ND	ND	--	--	--
	01/13/94	33.06	23.04	--	--	--	--	--	--	--	--	--
	02/09/94	32.70	23.40	--	--	--	--	--	--	--	--	--
	03/25/94 ¹	31.07	25.03	57 ³	58	0.63	0.79	ND	0.65	--	--	--
	05/18/94	31.76	24.34	--	--	--	--	--	--	--	--	--
	06/19/94 ¹	32.26	23.84	61 ³	51	ND	1.4	ND	2.7	--	ND	7.4
	07/27/94	33.07	23.03	--	--	--	--	--	--	--	--	--
	08/18/94	33.50	22.60	--	--	--	--	--	--	--	--	--
	09/15/94 ¹	33.93	22.17	83 ³	ND	0.50	0.85	ND	0.77	--	ND	9.5
	10/11/94	33.25	22.85	--	--	--	--	--	--	--	--	--
	11/08/94	34.05	22.05	--	--	--	--	--	--	--	--	--
56.09	12/06/94 ¹	32.37	23.73	ND	ND	ND	ND	ND	ND	--	ND	5.8
	01/10/95	31.29	24.81	--	--	--	--	--	--	--	--	--
	03/14/95	27.86	28.23	71 ³	380	20	ND	ND	10	--	--	--
	06/20/95	28.20	27.89	170 ³	500	50	ND	ND	4.4	--	--	--
	09/18/95	30.65	25.44	72	57	1.2	0.75	0.57	2.2	-- ⁶	--	--
	12/14/95	32.20	23.89	ND	ND	0.72	1.4	1.2	3.6	--	ND	3.8
	03/06/96	26.53	29.56	ND	96	4.5	ND	ND	3.7	ND	--	--
	06/04/96	27.43	28.66	170 ³	410	48	ND	3.4	7.9	ND	--	--
	09/06/96	30.25	25.84	ND	ND	ND	ND	ND	ND	ND	--	--
	03/08/97	26.03	30.06	--	ND	ND	ND	ND	ND	ND	ND	43
	09/04/97	31.56	24.53	--	ND	ND	ND	ND	ND	ND	ND	4.5
03/09/98	20.63	35.46	--	ND	ND	ND	ND	ND	ND	ND	ND	
09/01/98	27.82	28.27	--	ND	0.59	ND	ND	ND	3.1	ND	8.9	
U-2												
55.77	08/13/93	30.87	24.90	--	1,400	ND	ND	ND	ND	--	--	--
	09/07/93	30.87	24.90	--	--	--	--	--	--	--	--	--
55.27	12/16/93	32.19	23.08	--	330	1.7	ND	11	8.5	--	--	--
	01/13/94	32.13	23.14	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5430
 1935 Washington Avenue
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA
U-2	02/09/94	33.50	21.77	--	--	--	--	--	--	--	--	--
(cont)	03/25/94	30.09	25.18	--	130	0.70	0.78	0.65	0.64	--	ND	11
(D)	03/25/94	--	--	--	--	--	--	--	--	--	ND	ND
	05/18/94	30.73	24.54	--	--	--	--	--	--	--	--	--
	06/19/94	31.31	23.96	--	180 ⁴	ND	ND	ND	0.86	--	ND	0.54
	07/27/94	32.12	23.15	--	--	--	--	--	--	--	--	--
	08/18/94	32.50	22.77	--	--	--	--	--	--	--	--	--
	09/15/94	33.00	22.27	--	1,000 ⁵	44	ND	ND	ND	--	ND	0.66
	10/11/94	32.35	22.92	--	--	--	--	--	--	--	--	--
	11/08/94	33.09	22.18	--	--	--	--	--	--	--	--	--
	12/06/94	31.44	23.83	--	250	19	ND	ND	ND	--	ND	ND
	01/10/95	30.25	25.02	--	--	--	--	--	--	--	--	--
55.29	03/14/95	26.36	28.93	--	89	ND	ND	ND	1.2	--	--	--
	06/20/95	26.74	28.55	--	ND	ND	0.58	ND	1.7	--	--	--
	09/18/95	29.65	25.64	--	ND	ND	ND	ND	0.85	-- ⁶	--	--
	12/14/95	31.10	24.19	--	ND	ND	0.89	ND	2.0	-- ⁷	ND	ND
	03/06/96	25.17	30.12	--	ND	ND	ND	ND	ND	80	--	--
	06/04/96	26.03	29.26	--	ND	ND	ND	ND	ND	110	--	--
	09/06/96	29.18	26.11	--	ND	ND	ND	ND	ND	ND	--	--
	03/08/97	24.64	30.65	--	ND	ND	ND	ND	ND	42	--	--
	09/04/97	30.59	24.70	--	ND	ND	ND	ND	ND	46	--	--
	03/09/98	19.22	36.07	--	ND	ND	ND	ND	ND	4.4	--	--
	09/01/98	26.40	28.89	--	ND	ND	ND	ND	ND	25	--	--
U-3												
55.66	08/13/93	30.70	24.96	--	23,000	1,000	ND	1,700	1,600	--	--	--
	09/07/93	30.70	24.96	--	--	--	--	--	--	--	--	--
55.24	12/16/93	32.08	23.16	--	15,000	570	ND	940	670	--	--	--
	01/13/94	31.98	23.26	--	--	--	--	--	--	--	--	--
	02/09/94	33.82	21.42	--	--	--	--	--	--	--	--	--
	03/25/94	30.03	25.21	--	18,000	560	40	1,000	770	--	ND	480
	05/18/94	30.66	24.58	--	--	--	--	--	--	--	--	--
	06/19/94	31.19	24.05	--	17,000	580	ND	1,300	90	--	ND	410
	07/27/94	31.98	23.26	--	--	--	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5430
 1935 Washington Avenue
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) ←	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA →
U-3	08/18/94	32.39	22.85	--	--	--	--	--	--	--	--	--
(cont)	09/15/94	32.84	22.40	--	12,000	370	ND	970	610	--	ND	420
	10/11/94	32.20	23.04	--	--	--	--	--	--	--	--	--
	11/08/94	33.01	22.23	--	--	--	--	--	--	--	--	--
	12/06/94	31.34	23.90	--	17,000	390	ND	990	560	--	ND	430
	01/10/95	30.23	25.01	--	--	--	--	--	--	--	--	--
55.23	03/14/95	25.44	29.79	--	13,000	860	120	1,300	1,700	--	--	--
	06/20/95	26.70	28.53	--	9,800	590	ND	800	1,000	--	--	--
	09/18/95	29.55	25.68	--	9,800	600	ND	1,000	760	-- ⁶	--	--
	12/14/95	31.02	24.21	--	10,000	520	ND	920	630	-- ⁷	ND	240
	03/06/96	25.25	29.98	--	19,000	1,400	ND	1,800	3,000	73	--	--
	06/04/96	26.00	29.23	--	8,800	510	ND	600	830	ND	--	--
	09/06/96	29.06	26.17	--	15,000	360	20	540	450	ND	--	--
	03/08/97	24.65	30.58	--	3,500	310	ND	230	630	ND	ND	100
	09/04/97	30.44	24.79	--	700	27	ND	48	34	ND	ND	160
	03/09/98	19.20	36.03	--	410	22	1.2	ND ⁹	6.1	24	ND	4.4
	09/01/98	26.33	28.90	--	ND	ND	ND	ND	ND	6.1	ND	ND
U-4												
55.39	03/14/95	26.52	28.87	--	490	3.2	2.1	0.79	1.2	--	ND	ND
	06/20/95	26.90	28.49	--	ND	ND	ND	ND	1.5	--	--	--
	09/18/95	29.79	25.60	--	ND	ND	ND	ND	ND	-- ⁶	--	--
	12/14/95	31.23	24.16	--	ND	ND	0.59	ND	0.79	-- ⁷	ND	ND
	03/06/96	25.30	30.09	--	ND	ND	ND	ND	0.62	50	--	--
	06/04/96	26.19	29.20	--	ND	ND	ND	ND	ND	290	--	--
	09/06/96	29.32	26.07	--	ND	ND	ND	ND	ND	ND	--	--
	03/08/97	24.79	30.60	--	ND	ND	ND	ND	ND	ND	--	--
	09/04/97	30.71	24.68	--	ND	ND	ND	ND	ND	18	--	--
	03/09/98	19.37	36.02	--	ND	ND	ND	ND	ND	ND	--	--
	09/01/98	26.56	28.83	--	ND	ND	ND	ND	ND	ND	--	--
U-5												
54.18	03/14/95	25.20	28.98	--	ND	ND	ND	ND	1.2	--	ND	ND
	06/20/95	25.60	28.58	--	ND	ND	ND	ND	1.6	--	--	--
	09/18/95	28.55	25.63	--	ND	ND	ND	ND	0.66	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5430
 1935 Washington Avenue
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) <-----	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA	----->	
													ppb	
U-5	12/14/95	29.94	24.24	--	ND	ND	ND	ND	ND	--	ND	ND		
(cont)	03/06/96	24.03	30.15	--	ND	ND	ND	ND	ND	ND	--	--		
	06/04/96	24.91	29.27	--	ND	ND	ND	ND	ND	ND	--	--		
	09/06/96	28.06	26.12	--	ND	ND	ND	ND	ND	ND	--	--		
	03/08/97	23.49	30.69	--	ND	ND	ND	ND	ND	ND	--	--		
	09/04/97	29.46	24.72	--	ND	ND	ND	ND	ND	ND	--	--		
	03/09/98	18.10	36.08	--	ND	ND	ND	ND	ND	ND	--	--		
	09/01/98	25.27	28.91	--	ND	ND	ND	ND	ND	ND	--	--		
U-6														
55.36	03/14/95	26.94	28.42	--	14,000	170	36	790	1,500	--	ND	210		
	06/20/95	27.15	28.21	--	8,500	170	11	950	1,300	--	--	--		
	09/18/95	29.95	25.41	--	9,500	260	ND	1,400	1,800	-- ⁶	--	--		
	12/14/95	31.32	24.04	--	15,000	240	ND	1,400	1,700	-- ⁷	ND	370		
	03/06/96	25.71	29.65	--	2,400	54	ND	170	250	ND	--	--		
	06/04/96	26.52	28.84	--	4,600	83	ND	400	520	46	--	--		
	09/06/96	29.41	25.95	--	12,000	180	6.4	690	600	95	--	--		
	03/08/97	25.25	30.11	--	2,000	180	ND	96	290	ND	--	--		
	09/04/97	30.75	24.61	--	680	17	ND	52	39	ND	--	--		
	03/09/98	19.84	35.52	--	690	41	8.5	3.2	140	16	--	--		
	09/01/98	INACCESSIBLE (PAVED OVER)			--	--	--	--	--	--	--	--		
U-7														
55.05	03/14/95	26.13	28.92	--	ND	ND	ND	ND	ND	--	ND	ND		
	06/20/95	26.38	28.67	--	ND	ND	ND	ND	ND	--	--	--		
	09/18/95	29.21	25.84	--	ND	ND	ND	ND	ND	--	--	--		
	12/14/95	30.75	24.30	--	ND	ND	ND	ND	0.88	--	ND	ND		
	03/06/96	25.10	29.95	--	ND	ND	ND	ND	ND	ND	--	--		
	06/04/96	25.67	29.38	--	ND	ND	ND	ND	ND	ND	--	--		
	09/06/96	28.75	26.30	--	ND	ND	ND	ND	ND	ND	--	--		
	03/08/97	24.33	30.72	--	ND	ND	ND	ND	ND	ND	ND	ND		
	09/04/97 ⁸	30.16	24.89	--	ND	ND	ND	ND	ND	ND	ND	ND		
	03/09/98	18.91	36.14	--	ND	ND	ND	ND	ND	ND	ND	ND		
	09/01/98 ¹⁰	26.04	29.01	--	88	ND	ND	ND	ND	2.9	ND	ND		

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5430
 1935 Washington Avenue
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) <-----	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA ----->
				<i>ppb</i>								
Trip Blank												
TB-LB	03/09/98	--	--	--	ND	ND	0.53	ND	ND	ND	--	--
	09/01/98	--	--	--	ND	ND	ND	ND	ND	5.0	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #5430
 1935 Washington Avenue
 San Leandro, California

EXPLANATIONS:

Groundwater monitoring data and analytical results prior to March 9, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing	B = Benzene	1,2-DCA = 1,2-Dichloroethane
DTW = Depth to Water	T = Toluene	ppb = Parts per billion
(ft.) = Feet	E = Ethylbenzene	ND = Not Detected
GWE = Groundwater Elevation	X = Xylenes	-- = Not Measured/Not Analyzed
TPH(D) = Total Petroleum Hydrocarbons as Diesel	MTBE = Methyl tertiary butyl ether	(D) = Duplicate
TPH(G) = Total Petroleum Hydrocarbons as Gasoline	1,2-DCB = 1,2-Dichlorobenzene	

* TOC elevations were surveyed March 1995, based on Benchmark provided by City of San Leandro, City Engineers Office, Datum 1929, USGS adjusted. Prior to December 16, 1993, the DTW measurements were taken from the top of well covers.

- 1 Total Oil and Grease (TOG) was ND.
- 2 Not a typical diesel pattern; lower boiling hydrocarbons in the boiling range of stoddard calculated as diesel.
- 3 Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
- 4 Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- 5 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- 6 Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- 7 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.
- 8 Carbon tetrachloride was detected at a concentration of 1.3 ppb.
- 9 Detection limit raised. Refer to analytical results.
- 10 Carbon tetrachloride was detected at a concentration of 2.0 ppb, and Chloroform was detected at a concentration of 0.60 ppb.

Note: All EPA Method 8010 constituents were ND, except as indicated above.

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 #5430
Address: 1935 Washington Ave.
City: San Leandro

Job#: 180107
Date: 9-1-98
Sampler: Joe

Well ID: U-1
Well Diameter: 2 in.
Total Depth: 39.60 ft.
Depth to Water: 27.82 ft.

Well Condition: o.k.
Hydrocarbon Thickness: 0 (feet)
Amount Bailed (product/water):
(Gallons)
Volume Factor (VF):
2" = 0.17 3" = 0.38 4" = 0.66
6" = 1.50 12" = 5.80

11.78 x VF 0.17 = 2.00 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: 11:35
Sampling Time: 12:05 P.M.
Purging Flow Rate: _____ l.gpm.
Did well de-water? _____

Weather Conditions: clear
Water Color: clear Odor: none
Sediment Description: none
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>11:45</u>	<u>2</u>	<u>7.30</u>	<u>8.15</u>	<u>65.6</u>			
<u>11:48</u>	<u>4</u>	<u>7.40</u>	<u>8.20</u>	<u>65.1</u>			
<u>11:51</u>	<u>6</u>	<u>7.37</u>	<u>8.18</u>	<u>65.2</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(GI)/btex/mtbe</u>
<u>11</u>	<u>2VOA</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>8010</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5430 Job#: 180107
Address: 1935 Washington Ave. Date: 9-1-98
City: San Leandro Sampler: Joe

Well ID U-2 Well Condition: o.k.

Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): _____ (Gallons)
Total Depth 39.27 ft.
Depth to Water 26.40 ft.

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

12.87 x VF 0.17 = 2.19 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: 10:52 Weather Conditions: clear
Sampling Time: 11:12 A.M. 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 $\mu\text{mhos/cm}^2$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:00</u>	<u>2</u>	<u>7.35</u>	<u>7.16</u>	<u>65.1</u>			
<u>11:03</u>	<u>4</u>	<u>7.38</u>	<u>6.92</u>	<u>65.5</u>			
<u>11:06</u>	<u>6.5</u>	<u>7.42</u>	<u>6.89</u>	<u>65.5</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>3V0A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5430
Address: 1935 Washington Ave.
City: San Leandro

Job#: 180107
Date: 9-1-98
Sampler: Joe

Well ID U-3

Well Condition: o.k.

Well Diameter 2 in.

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

Total Depth 38.53 ft.

Depth to Water 26.33 ft.

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

12.2 x VF 0.17 2.07 x 3 (case volume) = Estimated Purge Volume: 6.5 (gal.)

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

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

Starting Time: 10:15

Weather Conditions: clear

Sampling Time: 10:40 A.M.

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 $\mu\text{mhos}/\text{cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:25</u>	<u>2</u>	<u>7.12</u>	<u>6.85</u>	<u>65.2</u>			
<u>10:27</u>	<u>4</u>	<u>7.16</u>	<u>6.83</u>	<u>65.1</u>			
<u>10:30</u>	<u>6.5</u>	<u>7.19</u>	<u>6.80</u>	<u>65.3</u>			
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>3V0A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>2V0A</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>8010</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5430
Address: 1935 Washington Ave.
City: San Leandro

Job#: 180107
Date: 9-1-98
Sampler: Joe

Well ID: U-4

Well Condition: o.k.

Well Diameter: 2 in.

Hydrocarbon Thickness: \emptyset (feet) Amount Bailed (Gallons)

Total Depth: 39.03 ft.

Depth to Water: 26.56 ft.

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

$12.47 \times VF 0.17 = 2.12 \times 3$ (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: 9:40

Weather Conditions: clear

Sampling Time: 10:24 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 $\mu\text{mhos}/\text{cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
9:46	2	7.85	6.38	65.8			
9:49	4	7.39	6.40	65.9			
9:57	6.5	7.40	6.50	65.7			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
U-4	3V0A	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5430 Job#: 180107
Address: 1935 Washington Ave. Date: 9-1-98
City: San Leandro Sampler: Joe

Well ID U-5 Well Condition: O.K.
Well Diameter 2 in. Hydrocarbon Amount Bailed
Thickness: 0 (feet) (product/water): _____ (Gallons)
Total Depth 38.51 ft.
Depth to Water 25.27 ft.

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

13.24 x VF 0.17 = 2.25 x 3 (case volume) = Estimated Purge Volume: 7 (gal.)

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

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

Starting Time: 8:26 Weather Conditions: clear
Sampling Time: 8:45 A.M. 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>8:33</u>	<u>2.5</u>	<u>7.60</u>	<u>7.36</u>	<u>65.5</u>	_____	_____	_____
<u>8:35</u>	<u>5</u>	<u>7.51</u>	<u>7.30</u>	<u>65.5</u>	_____	_____	_____
<u>8:38</u>	<u>7</u>	<u>7.53</u>	<u>7.28</u>	<u>65.7</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-5</u>	<u>3 v o A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility #5430
Address: 1935 Washington Ave.
City: San Leandro

Job#: 180107
Date: 9-1-98
Sampler: Joe

Well ID U-6 Well Condition: o.k.

Well Diameter 2 in.

Total Depth 40.2 ft.

Depth to Water _____ ft.

Hydrocarbon Thickness:	Amount Bailed (feet) (product/water): (Gallons)		
	Volume Factor (VF)	2" = 0.17 6" = 1.50	3" = 0.38 12" = 5.80

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

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

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

Starting Time: _____

Weather Conditions: clear

Sampling Time: _____

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 $\mu\text{mhos/cm} \times 1000$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-6</u>	<u>3VSA</u>	<u>r</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH/G/btex/mtbe</u>

COMMENTS: Well was paved over with asphalt.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/
Facility #5430
Address: 1935 Washington Ave.
City: San Leandro

Job#: 180107
Date: 9-1-98
Sampler: Joe

Well ID U-7

Well Condition: o.k.

Well Diameter 2 in.

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

Total Depth 37.78 ft.

Depth to Water 26.04 ft.

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

11.74 x VF 0.17 = 2.00 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: 9:00
Sampling Time: 9:25 A.M.
Purging Flow Rate: 1 gpm.
Did well de-water? _____

Weather Conditions: clear
Water Color: clear Odor: None
Sediment Description: None
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 1000$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>9:09</u>	<u>2</u>	<u>7.59</u>	<u>7.38</u>	<u>65.8</u>			
<u>9:12</u>	<u>4</u>	<u>7.26</u>	<u>7.48</u>	<u>66.0</u>			
<u>9:15</u>	<u>6</u>	<u>7.21</u>	<u>7.52</u>	<u>65.7</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-7</u>	<u>3 VO A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>2 VO A</u>	<u>Y</u>	<u>"</u>	<u>"</u>	<u>8010</u>

COMMENTS: _____



Sequoia Analytical

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SEP 23 1998

GETTLER RYAN INC

Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	CONTRACT Client Proj. ID: Unocal 5430, 180107.85 Sample Descript: TB-LB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-01	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
--	--	---

Instrument ID: HP9

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	5.0
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	99

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

SEQUOIA ANALYTICAL - ELAP #1271

Tod Granicher
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 5430, 180107.85 Sample Descript: U-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-02	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
--	--	---

Instrument ID: HP9

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	3.1
Benzene	0.50	0.59
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	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

Client Proj. ID: Unocal 5430, 180107.85
Sample Descript: U-1
Matrix: LIQUID
Analysis Method: EPA 8010
Lab Number: 9809008-02

Sampled: 09/01/98
Received: 09/01/98
Analyzed: 09/14/98
Reported: 09/20/98

Attention: Deanna Harding

QC Batch Number: GC091498OVOA24A
Instrument ID: GCHP24_2

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	8.9
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
Surrogates	Control Limits %	% Recovery
4-Bromofluorobenzene	70 130	84

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 5430, 180107.85 Sample Descript: U-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-03	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
Attention: Deanna Harding		

Instrument ID: HP9

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	25
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	99

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 5430, 180107.85 Sample Descript: U-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-04	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
Attention: Deanna Harding		


Instrument ID: HP9

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	6.1
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	97

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 5430, 180107.85 Sample Descript: U-3 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9809008-04	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/14/98 Reported: 09/20/98
Attention: Deanna Harding		

QC Batch Number: GC091498OVOA24A
Instrument ID: GCHP24_2

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
Surrogates	Control Limits %	% Recovery
4-Bromofluorobenzene	70 130	91

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 5430, 180107.85 Sample Descript: U-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-05	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
Attention: Deanna Harding		


Instrument ID: HP9

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	Client Proj. ID: Unocal 5430, 180107.85 Sample Descript: U-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-06	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
Attention: Deanna Harding		

Instrument ID: HP9

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

Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal 5430, 180107.85 Sample Descript: U-7 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9809008-07	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/08/98 Reported: 09/20/98
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Instrument ID: HP9

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	88
Methyl t-Butyl Ether	2.5	2.9
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



Tod Granicher
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal 5430, 180107.85 Sample Descript: U-7 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9809008-07	Sampled: 09/01/98 Received: 09/01/98 Analyzed: 09/14/98 Reported: 09/20/98
Attention: Deanna Harding		

QC Batch Number: GC091498OVOA24A
Instrument ID: GCHP24_2

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	2.0
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	0.60
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
Surrogates	Control Limits %	% Recovery
4-Bromofluorobenzene	70 130	90

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

SEQUOIA ANALYTICAL - ELAP #1210


Tod Granicher
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Gettler Ryan/Geostrategies
6747 Sierra Court, Ste. J
Dublin, CA 94568
Attention: Tim Koomey

Client Project ID: Uncoal 5430, 1800107.85

QC Sample Group: 9809008

Reported: Sep 21, 1998

QUALITY CONTROL DATA REPORT

Matrix: Liquid
Method: EPA 8010/8020, 601/602
Analyst: L. Kim

ANALYTE	1,1-DCE	TCE	Chlorobenzene	Benzene	Toluene	Chlorobenzene
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QC Batch #: GC0914980VOA24A

Sample No.:	9809438-01					
Date Prepared:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Date Analyzed:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Instrument I.D.#:	gchp24_2	gchp24_2	gchp24_2	gchp24_2	gchp24_2	gchp24_2
Sample Conc., ug/L:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Conc. Spiked, ug/L:	25	25	25	25	25	25
Matrix Spike, ug/L:	20	21	25	24	25	24
% Recovery:	80	84	100	96	100	96
Matrix Spike Duplicate, ug/L:	22	22	25	26	25	25
% Recovery:	88	88	100	104	100	100
Relative % Difference:	9.5	4.7	0.0	8.0	0.0	4.1
RPD Control Limits:	0-50	0-50	0-50	0-50	0-50	0-50

LCS Batch#: VWLCS091498A

Date Prepared:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Date Analyzed:	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98	9/14/98
Instrument I.D.#:	gchp24.2	gchp24.2	gchp24.2	gchp24.2	gchp24.2	gchp24.2
Conc. Spiked, ug/L:	25	25	25	25	25	25
Recovery, ug/L:	21	21	24	25	25	25
LCS % Recovery:	84	84	96	100	100	100

Percent Recovery Control Limits:

MS/MSD	60-140	60-140	60-140	60-140	60-140	60-140
LCS	65-135	70-130	70-130	70-130	70-130	70-130

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

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Tod 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.



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

Client Project ID: Unocal 5430, 180107.85
Matrix: Liquid

Work Order #: 9809008 01-07

Reported: Sep 22, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC090898802009A	GC090898802009A	GC090898802009A	GC090898802009A	GC090898802009A
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:	J. Minkel	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	8090163	8090163	8090163	8090163	8090163
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Analyzed Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L

Result:	16	18	19	58	260
MS % Recovery:	80	90	95	97	93

Dup. Result:	17	18	20	61	260
MSD % Recov.:	85	90	100	102	93

RPD:	6.1	0.0	5.1	5.0	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS090898	LCS090898	LCS090898	LCS090898	LCS090898
Prepared Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Analyzed Date:	9/8/98	9/8/98	9/8/98	9/8/98	9/8/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	280 µg/L
LCS Result:	10	21	23	71	270
LCS % Recov.:	100	105	115	118	96

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

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**

Tod Granicher
Tod Granicher
Project Manager

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

9809008.GET <1>



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

Client Proj. ID: Unocal 5430, 180107.85

Lab Proj. ID: 9809008


Received: 09/01/98

Reported: 09/20/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 14 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

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Tod Granicher
Project Manager