

MPDS-UN0752-09
January 31, 1996

Unocal Corporation
2000 Crow Canyon Place, Suite 400
P.O. Box 5155
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report
Unocal Service Station #0752
800 Harrison Street
Oakland, California

Dear Ms. Berry:

This data report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled during this quarter are indicated in Table 1. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow direction during the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected on January 3, 1996. Prior to sampling, the wells were each purged of between 7 and 10 gallons of water. Samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. Equipment blank, Trip blank and Field blank samples (denoted as ES1, ES2 and ES3 respectively) were also collected for quality assurance and control. MPDS Services, Inc. transported the purged ground water to the Unocal Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water samples were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Tables 2 through 6. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this quarter are shown

on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

DISTRIBUTION

A copy of this report should be sent to Ms. Jennifer Eberle of the Alameda County Health Care Services Agency.

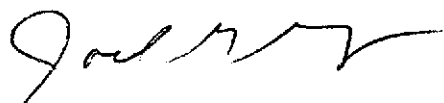
If you have any questions regarding this report, please do not hesitate to call Mr. Joel G. Greger at (510) 602-5120.

Sincerely,

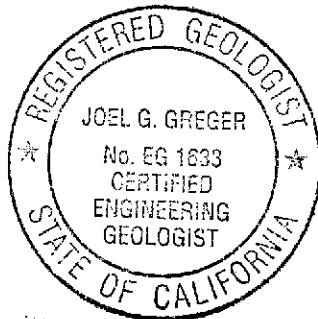
MPDS Services, Inc.



Haig (Gary) Tejirian
Senior Staff Geologist



Joel G. Greger, C.E.G.
Senior Engineering Geologist



License No. EG 1633
Exp. Date 8/31/96

/bp

Attachments: Tables 1 through 6
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Robert H. Kezerian, Kaprealian Engineering, Inc.

TABLE 1

SUMMARY OF MONITORING DATA

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)◆</u>	<u>Total Well Depth (feet)◆</u>	<u>Product Thickness (feet)</u>	<u>Seen</u>	<u>Water Purged (gallons)</u>
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(Monitored and Sampled on January 3, 1996)

MW1	15.00 ↓	19.69	33.88	0	No	10
MW2	15.32 ↓	19.40	30.59	0	No	8
MW3	14.60 ↓	18.54	30.74	0	No	8.5
MW4	14.66 ↓	18.05	32.50	0	No	10
MW5	14.75 ↓	18.20	31.80	0	No	9.5
MW6	14.50 ↓	17.66	30.97	0	No	9.5
MW7	14.18 ↑	18.02	31.93	0	No	9.5
MW8	14.18 ↑	17.82	27.61	0	No	7

(Monitored and Sampled on October 10, 1995)

MW1	15.09	19.60	33.96	0	No	10
MW2	15.47	19.25	30.75	0	No	8
MW3	14.64	18.50	30.81	0	No	8.5
MW4	14.68	18.03	32.61	0	No	10
MW5	14.80	18.15	32.00	0	No	10.5
MW6	14.48	17.68	31.25	0	No	10
MW7	14.12	18.08	32.16	0	No	10
MW8	14.15	17.85	27.15	0	No	6.5

(Monitored and Sampled on July 14, 1995)

MW1	16.11	18.58	33.45	0	No	10.5
MW2	16.42	18.30	30.72	0	No	8.5
MW3	15.65	17.49	30.74	0	No	9.5
MW4	15.70	17.01	32.57	0	No	11
MW5	15.77	17.18	31.95	0	No	10.5
MW6	15.53	16.63	31.18	0	No	10
MW7	15.15	17.05	32.22	0	No	10.5
MW8	15.19	16.81	27.27	0	No	7.5

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)♦	Total Well Depth (feet)♦	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on April 3, 1995)						
MW1	17.08	17.61	33.37	0	No	11
MW2	17.23	17.49	30.26	0	No	9
MW3	16.76	16.38	30.61	0	No	10
MW4	16.84	15.87	32.52	0	No	12
MW5	16.80	16.15	31.92	0	No	11
MW6	16.68	15.48	31.15	0	No	11
MW7	16.39	15.81	31.20	0	No	11
MW8	16.46	15.54	26.96	0	No	8

Well #	Well Casing Elevation (feet)*
MW1	34.69
MW2	34.72
MW3	33.14
MW4	32.71
MW5	32.95
MW6	32.16
MW7	32.20
MW8	32.00

♦ The depth to water level and total well depth measurements were taken from the top of the well casings.

* The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Oakland benchmark disk stamped "25/A" at the northeast corner of 7th and Harrison (elevation = 28.81 feet MSL).

TABLE 2SUMMARY OF LABORATORY ANALYSES
WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes
MW1	6/05/91	47	ND	ND	ND	ND
	9/30/91	ND	ND	ND	ND	ND
	12/30/91	ND	ND	ND	ND	ND
	4/02/92	ND	ND	ND	ND	ND
	6/30/92	ND	ND	ND	ND	ND
	9/15/92	76	1.0	ND	ND	ND
	12/21/92	95	0.69	ND	ND	1.0
	4/28/93	920	3.1	2.3	1.2	9.7
	7/23/93	ND	0.50	0.66	ND	ND
	10/05/93	92**	1.5	ND	ND	0.72
	1/03/94	ND	ND	ND	ND	ND
	4/02/94	ND	ND	ND	ND	ND
	7/05/94	250	4.8	13	1.2	7.3
	10/06/94	540	1.4	ND	0.66	11
	1/02/95	140	ND	ND	ND	ND
	4/03/95	580	3.6	0.75	ND	4.0
	7/14/95	260	2.1	ND	ND	1.2
	10/10/95	220	2.0	ND	25	5.6
	1/03/96	190	2.4	ND	0.71	1.2
MW2	6/05/91	49	ND	ND	ND	ND
	9/30/91	130	18	0.53	14	9.6
	12/30/91	91	16	0.89	11	1.9
	4/02/92	88	12	0.32	6.3	7.2
	6/30/92	76	9.3	0.76	4.8	6.9
	9/15/92	1,300	91	5.7	80	110
	12/21/92	960	97	3.2	74	96
	4/28/93	1,300	76	1.9	130	87
	7/23/93	66	1.8	ND	2.5	2.0
	10/05/93	120	12	ND	2.1	12
	1/03/94	260	25	ND	5.5	26
	4/02/94	ND	0.65	ND	ND	0.99
	7/05/94	160	16	ND	0.73	10
	10/06/94	170	15	ND	1.4	11
	1/02/95	190	27	ND	0.95	11
	4/03/95	2,400	65	6.6	19	63
	7/14/95	750	270	ND	ND	13
	10/10/95	50	1.6	ND	ND	ND
	1/03/96	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes
MW3	6/05/91	5,800	1,200	40	140	97
	9/30/91	6,800	1,400	130	290	240
	12/30/91	7,200	2,100	690	410	550
	4/02/92	8,000	1,400	200	300	310
	6/30/92	8,900	1,900	210	430	550
	9/15/92	10,000	1,900	330	400	580
	12/21/92	8,500	1,500	150	310	330
	4/28/93	2,600	220	7.6	41	27
	7/23/93	4,400	660	26	160	82
	10/05/93	9,200	720	88	140	140
	1/03/94	4,900	830	100	170	150
	4/02/94	6,000	800	30	140	110
	7/05/94	25,000**	ND	ND	ND	ND
	10/06/94	49,000*	1,300	200	280	300
	1/02/95	480	1.6	ND	1.4	ND
	4/03/95	8,100**	65	ND	ND	ND
	7/14/95	ND	1,300	ND	ND	ND
	10/10/95	3,100	1,400	36	50	53
	1/03/96	ND	2,300	110	150	140
	MW4	10/19/92	480	0.51	2.1	2.8
12/21/92		220*	ND	ND	0.97	0.74
4/28/93		ND	ND	ND	ND	ND
7/23/93		85*	ND	ND	ND	ND
10/05/93		130**	ND	ND	ND	ND
1/03/94		210	ND	ND	0.76	1.6
4/02/94		89	ND	ND	ND	ND
7/05/94		190**	ND	ND	ND	ND
10/06/94		170	0.85	ND	ND	0.74
1/02/95		ND	ND	ND	ND	ND
4/03/95		98**	ND	ND	ND	ND
7/14/95		ND	ND	ND	ND	ND
10/10/95		ND	ND	ND	ND	ND
1/03/96		ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW5	10/19/92	2,700	61	5.0	100	61
	12/21/92	1,700	51	4.7	83	34
	4/28/93	6,700	200	190	250	430
	7/23/93	2,000	122	8.0	68	47
	10/05/93	1,700	70	6.2	54	40
	1/03/94	1,500	44	ND	42	46
	4/02/94	1,800	46	5.1	38	35
	7/05/94	2,200	97	8.4	37	36
	10/06/94	1,600	79	5.7	28	22
	1/02/95	1,700	50	8.6	30	28
	4/03/95	5,400**	190	240	170	420
	7/14/95	3,800	210	100	130	190
	10/10/95	1,300	92	14	15	39
	1/03/96▼	630	53	4.4	8.3	13
MW6	10/19/92	3,900	420	12	60	28
	12/21/92	2,300	370	11	39	15
	4/28/93	1,200	54	1.5	11	5.3
	7/23/93	580	19	0.99	3.4	2.7
	10/05/93	1,400	34	ND	5.3	7.3
	1/03/94	1,400	57	ND	8.5	11
	4/02/94	5,300*	ND	ND	ND	ND
	7/05/94	ND	ND	ND	ND	ND
	10/06/94	11,000**	ND	ND	ND	ND
	1/02/95	550	18	0.92	2.0	1.8
	4/03/95	6,600**	ND	ND	ND	ND
	7/14/95	ND	ND	ND	ND	ND
	10/10/95	ND	81	ND	ND	ND
	1/03/96▼	70	9.9	0.58	ND	0.81
MW7	4/28/93	110	2.8	1.3	1.4	1.7
	7/23/93	790	23	3.3	28	5.4
	10/05/93	360	10	1.2	0.91	0.99
	1/03/94	ND	0.93	ND	0.75	1.9
	4/02/94	360	2.0	ND	ND	0.80
	7/05/94	ND	ND	ND	ND	ND
	10/06/94	340	5.6	0.85	ND	1.2
	1/02/95	ND	ND	ND	ND	ND
	4/03/95	570	24	ND	3.4	5.8
	7/14/95	ND	14	ND	ND	ND
	10/10/95	740	170	ND	ND	ND
	1/03/96▼	360	16	1.3	2.7	1.4

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW8	4/28/93	450	18	1.8	1.8	1.4
	7/23/93	260	5.1	ND	0.60	ND
	10/05/93	120**	1.7	ND	ND	ND
	1/03/94	ND	ND	ND	ND	ND
	4/02/94	150	1.2	ND	ND	ND
	7/05/94	730	17	ND	1.6	ND
	10/06/94	140**	ND	ND	ND	ND
	1/02/95	440	18	0.72	2.0	1.8
	4/03/95	960	11	ND	ND	ND
	7/14/95	280	4.2	2.6	1.1	3.3
	10/10/95	110	1.3	0.62	0.67	ND
	1/03/96▼	63	ND	0.51	ND	1.8

▼ Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the sample collected from this well.

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

ND = Non-detectable.

-- Indicates analysis was not performed.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

Note: Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3

SUMMARY OF LABORATORY ANALYSES
 WATER

Date	Well #	TPH as Diesel	Chloroform	Tetrachloro-ethene	Trichloro-ethene	MTBE
6/05/91	MW1	ND	7.8	2.9	1.3	--
9/30/91	MW1	ND	--	--	--	--
12/30/91	MW1	ND	6.4	2.1	0.9	--
4/02/92	MW1	94	7.1	2.6	1.4	--
6/30/92	MW1	120	9.5	2.2	1.3	--
9/15/92	MW1	ND	12	2.2	1.3	--
12/21/92	MW1	ND	12	1.4	0.83	--
4/28/93	MW1♦	470▲▲	12	0.89	0.85	--
7/23/93	MW1	ND	16	1.3	0.91	--
10/05/93	MW1	57▲	13	1.3	0.66	--
1/03/94	MW1*	ND	18	1.4	0.93	--
4/02/94	MW1	ND	15	1.1	0.68	--
10/10/95	MW1	--	--	--	--	29
10/10/95	MW2	--	--	--	--	200
10/10/95	MW3	--	--	--	--	190,000
1/03/94	MW4	--	9.0	1.0	ND	240
10/10/95	MW4	--	--	--	--	120
10/10/95	MW5	--	--	--	--	1,100
10/10/95	MW6	--	--	--	--	75,000
10/10/95	MW7	--	--	--	--	13,000
1/03/94	MW8♦	--	1.5	1.2	ND	51
10/10/95	MW8	--	--	--	--	170

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER

- * A fuel fingerprint analysis was conducted on this sample. Sequoia Analytical Laboratory reported that total extractable petroleum hydrocarbons in this sample were not detected in high enough concentrations to compare with known standards and approximate their make-up.
- ◆ 1,2-dichloroethane was detected in MW8 at a concentration of 4.0 $\mu\text{g/L}$ on 1/03/94, and 1.1 $\mu\text{g/L}$ in MW1 on 4/28/93.
- ▲ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.
- ▲▲ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

ND = Non-detectable.

-- Indicates analysis was not performed.

Results are in micrograms per liter ($\mu\text{g/L}$), unless otherwise indicated.

Note: - All EPA method 8010 constituents were non-detectable, except as indicated above.

- Laboratory analyses data prior to January 3, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 4

SUMMARY OF LABORATORY ANALYSES
WATER

<u>Date</u>	<u>Well #</u>	<u>TOG</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>
6/30/92	MW1	ND	ND	0.079	0.0090	0.10	0.087
4/02/92	MW1	ND	ND	0.015	0.016	ND	0.020
12/30/91	MW1	ND	ND	0.0078	0.0057	ND	0.046
9/30/91	MW1	ND	ND	0.019	ND	ND	0.11
6/05/91	MW1	ND	ND	0.0083	0.011	0.063	0.023

TOG = Total Oil & Grease.

ND = Non-detectable.

Results are in milligrams per liter (mg/L), unless otherwise indicated.

Note: Laboratory analyses data were provided by Kaprealian Engineering, Inc.

TABLE 5
SUMMARY OF LABORATORY ANALYSES
WATER

<u>Date</u>	<u>Well #</u>	<u>Heterotrophic Plate Count (CFU/mL)</u>
1/03/96	MW2	>5,700
	MW3	350
	MW4	1,000
	MW5	>5,700
	MW8	>5,700

CFU/mL = Colony Forming Units per milliliter.

TABLE 6

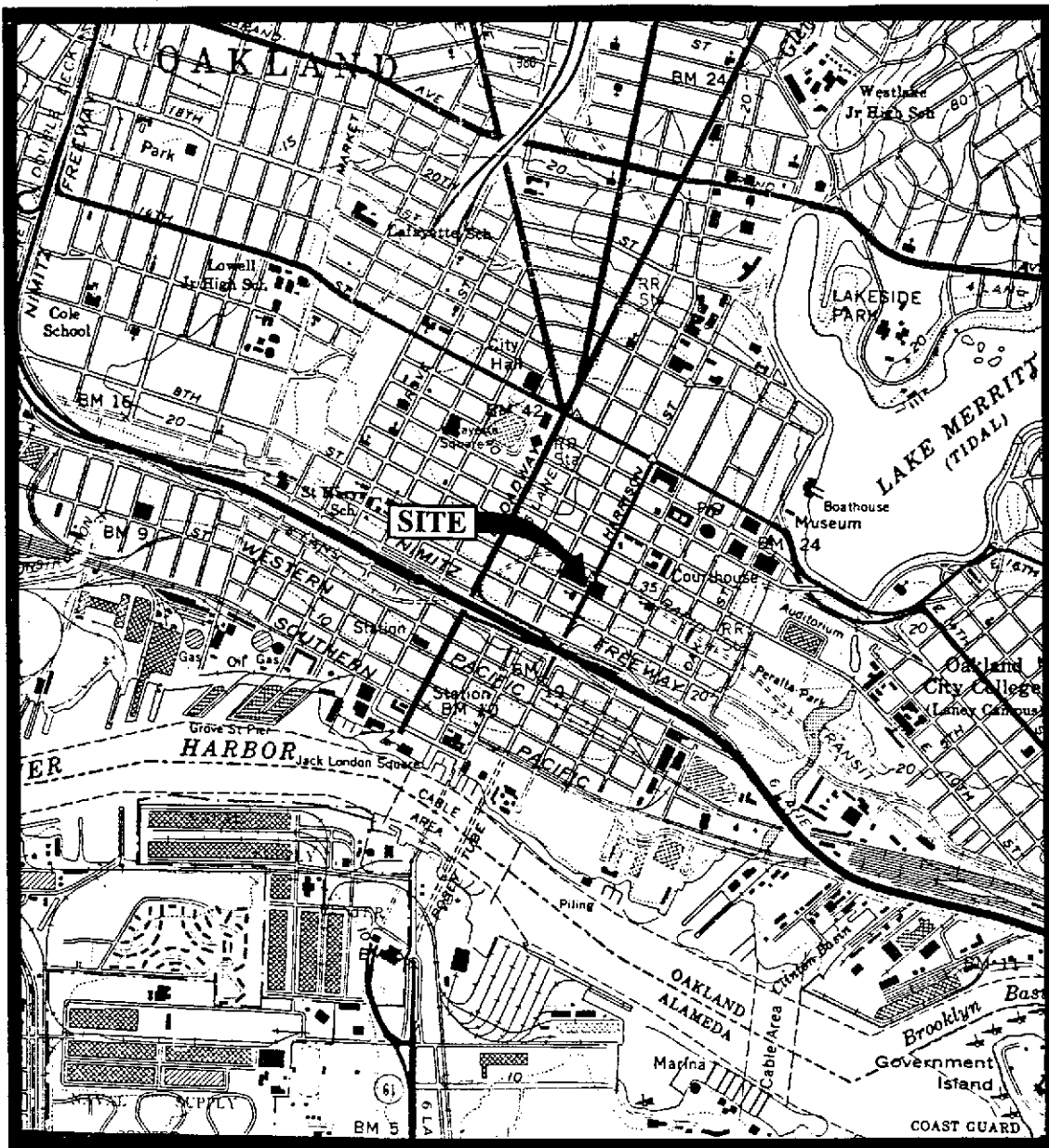
SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	BOD	Dissolved Bicarbonate		Calcium	Iron	Manganese	Nitrate	Sulfate
			Oxygen	Alkalinity					
1/3/96	MW2	2.2	1.8	130	27	77	3.0	0.22	97
	MW3	4.3	1.5	430	43	61	5.4	0.23	16
	MW4	ND	1.2	120	20	61	3.3	10	44
	MW5	3.4	2.8	240	31	80	3.3	ND	17
	MW8	ND	1.3	310	37	62	3.3	0.57	20

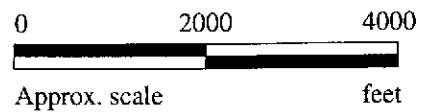
ND = Non-detectable.

BOD = Biochemical Oxygen Demand

Results are in milligrams per liter (mg/L), unless otherwise indicated.



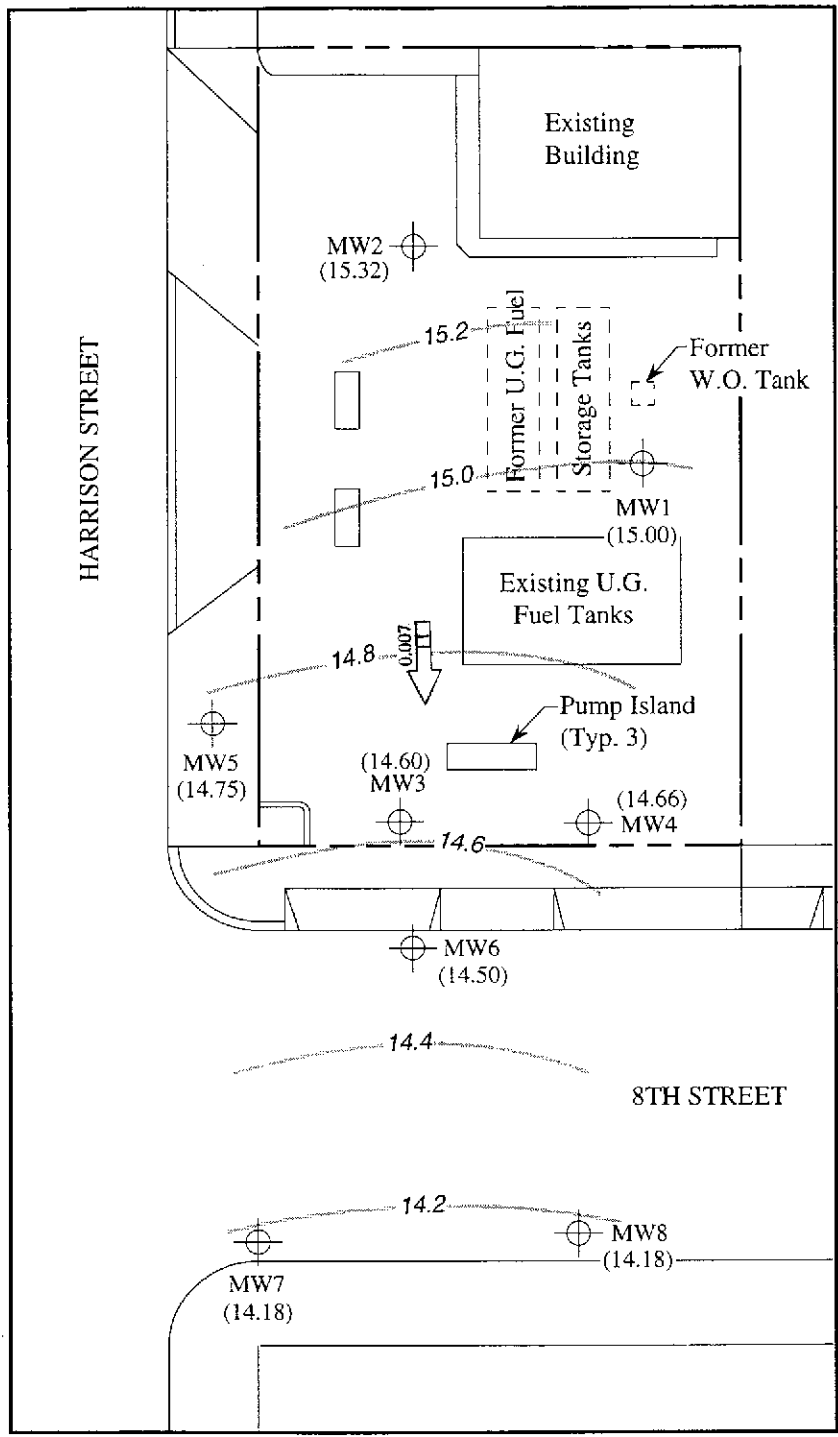
Base modified from 7.5 minute U.S.G.S. Oakland West Quadrangle
(photorevised 1980)







mpds SERVICES, INCORPORATED

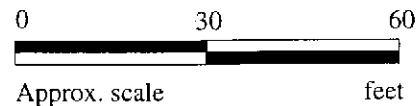
**UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA**

**LOCATION
MAP**



LEGEND

-  Monitoring well
-  () Ground water elevation in feet above Mean Sea Level
-  ### Direction of ground water flow with approximate hydraulic gradient
-  Contours of ground water elevation

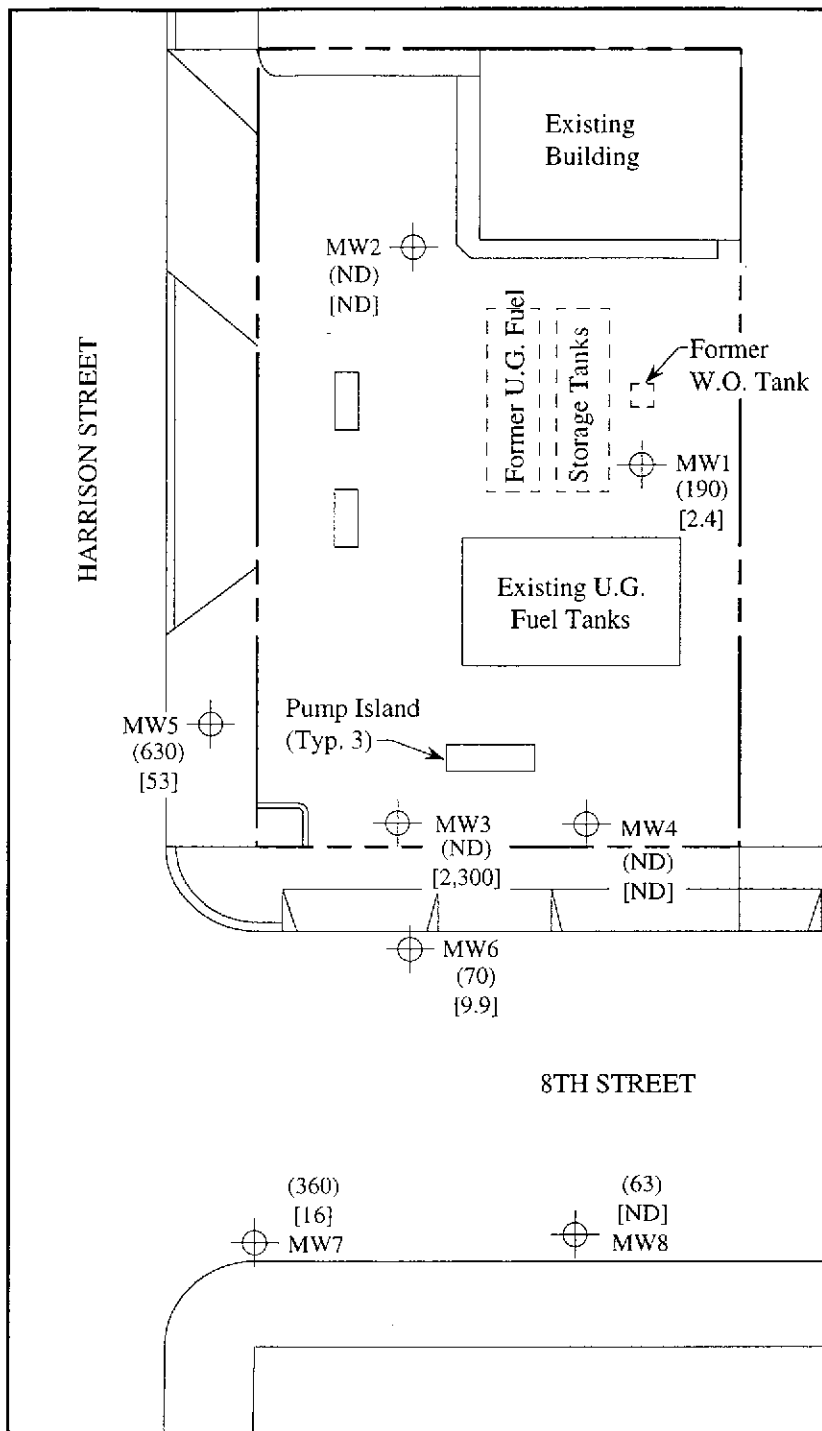


POTENTIOMETRIC SURFACE MAP FOR THE JANUARY 3, 1996 MONITORING EVENT



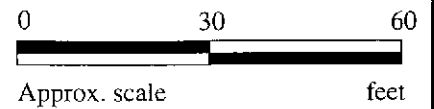
**UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA**

**FIGURE
1**



LEGEND

- ⊕ Monitoring well.
- () Concentration of TPH as gasoline in $\mu\text{g/L}$
- [] Concentration of benzene in $\mu\text{g/L}$
- ND Non-detectable



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 3, 1996



**UNOCAL SERVICE STATION #0752
800 HARRISON STREET
OAKLAND, CALIFORNIA**

**FIGURE
2**



MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Unocal #0752, 800 Harrison St., Oakland Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 601-0075	Sampled: Jan 3, 1996 Received: Jan 3, 1996 Reported: Jan 22, 1996
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TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
601-0075	MW-1	190	2.4	ND	0.71	1.2
601-0076	MW-2	ND	ND	ND	ND	ND
601-0077	MW-3	ND	2,300	110	150	140
601-0078	MW-4	ND	ND	ND	ND	ND
601-0079	MW-5	630	53	4.4	8.3	13
601-0080	MW-6	70	9.9	0.58	ND	0.81
601-0081	MW-7	360	16	1.3	2.7	1.4
601-0082	MW-8	63	ND	0.51	ND	1.8
601-0083	ES-1	ND	ND	ND	ND	ND
601-0084	ES-2	ND	ND	ND	ND	ND
601-0085	ES3	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
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Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard. Analytes reported as ND were not present above the stated limit of detection.

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID: Unocal #0752, 800 Harrison St., Oakland	Sampled: Jan 3, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript: Water	Received: Jan 3, 1996
Concord, CA 94520	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Jan 22, 1996
Attention: Jarrel Crider	First Sample #: 601-0075	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
601-0075	MW-1	Gasoline	1.0	1/16/96	HP-2	123
601-0076	MW-2	--	1.0	1/19/96	HP-2	106
601-0077	MW-3	--	200	1/17/96	HP-5	84
601-0078	MW-4	--	1.0	1/16/96	HP-2	103
601-0079	MW-5	Gasoline	4.0	1/19/96	HP-2	115
601-0080	MW-6	Gasoline	1.0	1/16/96	HP-5	81
601-0081	MW-7	Gasoline	1.0	1/16/96	HP-5	72
601-0082	MW-8	Gasoline	1.0	1/16/96	HP-5	90
601-0083	ES-1	--	1.0	1/17/96	HP-5	90
601-0084	ES-2	--	1.0	1/17/96	HP-5	87
601-0085	ES3	--	1.0	1/17/96	HP-9	110

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Sample Descript: Water

First Sample #: 601-0076

Reported: Jan 22, 1996

BACTERIOLOGICAL ANALYSIS: HETEROTROPHIC PLATE COUNT

Sample Number	Date Sampled and Received	Sample Description	Heterotrophic Plate Count CFU/mL
601-0076	1/3/96	MW-2	>5700
601-0077	1/3/96	MW-3	350
601-0078	1/3/96	MW-4	1,000
601-0079	1/3/96	MW-5	>5700
601-0082	1/3/96	MW-8	>5700

SEQUOIA ANALYTICAL #1210

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Sample Descript: Water, MW-2
Lab Number: 601-0076

Sampled: Jan 3, 1996
Received: Jan 3, 1996
Analyzed: Jan 3-17, 1996
Reported: Jan 22, 1996

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
---------	-------------------------	------------------------

Biochemical Oxygen Demand.....	1.0	2.2
Dissolved Oxygen.....	1.0	1.8
Bicarbonate Alkalinity.....	1.0	130
Calcium.....	0.010	27
Iron.....	0.010	77
Manganese.....	0.010	3.0
Nitrate.....	0.10	0.22
Sulfate.....	0.10	97

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

**SEQUOIA ANALYTICAL, #1271
& #1210**

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID: Unocal #0752, 800 Harrison St., Oakland	Sampled: Jan 3, 1996
2401 Stanwell Dr., Ste. 300	Sample Descript: Water, MW-3	Received: Jan 3, 1996
Concord, CA 94520		Analyzed: Jan 3-17, 1996
Attention: Jarrel Crider	Lab Number: 601-0077	Reported: Jan 22, 1996

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Biochemical Oxygen Demand.....	1.0	4.3
Dissolved Oxygen.....	1.0	1.5
Bicarbonate Alkalinity.....	1.0	430
Calcium.....	0.010	43
Iron.....	0.010	61
Manganese.....	0.010	5.4
Nitrate.....	0.10	0.23
Sulfate.....	0.10	16

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

**SEQUOIA ANALYTICAL, #1271
& #1210**

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Sample Descript: Water, MW-4
Lab Number: 601-0078

Sampled: Jan 3, 1996
Received: Jan 3, 1996
Analyzed: Jan 3-17, 1996
Reported: Jan 22, 1996

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Biochemical Oxygen Demand.....	1.0	N.D.
Dissolved Oxygen.....	1.0	1.2
Bicarbonate Alkalinity.....	1.0	120
Calcium.....	0.010	20
Iron.....	0.010	61
Manganese.....	0.010	3.3
Nitrate.....	0.10	10
Sulfate.....	0.10	44

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

**SEQUOIA ANALYTICAL, #1271
& #1210**

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Sample Descript: Water, MW-5
Lab Number: 601-0079

Sampled: Jan 3, 1996
Received: Jan 3, 1996
Analyzed: Jan 3-17, 1996
Reported: Jan 22, 1996

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Biochemical Oxygen Demand.....	1.0	3.4
Dissolved Oxygen.....	1.0	2.8
Bicarbonate Alkalinity.....	1.0	240
Calcium.....	0.010	31
Iron.....	0.010	80
Manganese.....	0.010	3.3
Nitrate.....	0.10	N.D.
Sulfate.....	0.10	17

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

**SEQUOIA ANALYTICAL, #1271
& #1210**

Signature on File

Alan B. Kemp
Project Manager





MPDS Services	Client Project ID: Unocal #0752, 800 Harrison St., Oakland	Sampled: Jan 3, 1996
2401 Stanwell Dr., Ste. 300	Sample Descript: Water, MW-8	Received: Jan 3, 1996
Concord, CA 94520		Analyzed: Jan 3-17, 1996
Attention: Jarrel Crider	Lab Number: 601-0082	Reported: Jan 22, 1996

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Biochemical Oxygen Demand.....	1.0	N.D.
Dissolved Oxygen.....	1.0	1.3
Bicarbonate Alkalinity.....	1.0	310
Calcium.....	0.010	37
Iron.....	0.010	62
Manganese.....	0.010	3.3
Nitrate.....	0.10	0.57
Sulfate.....	0.10	20

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

**SEQUOIA ANALYTICAL, #1271
& #1210**

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid

QC Sample Group: 6010075-085

Reported: Jan 22, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	T. Granicher	T. Granicher	T. Granicher	T. Granicher

MS/MSD Batch#:	BLK011696	BLK011696	BLK011696	BLK011696
Date Prepared:	1/16/96	1/16/96	1/16/96	1/16/96
Date Analyzed:	1/16/96	1/16/96	1/16/96	1/16/96
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	100	95	95	97
Matrix Spike Duplicate % Recovery:	95	90	90	92
Relative % Difference:	5.1	5.4	5.4	5.3

LCS Batch#:	3LCS011696	3LCS011696	3LCS011696	3LCS011696
Date Prepared:	1/16/96	1/16/96	1/16/96	1/16/96
Date Analyzed:	1/16/96	1/16/96	1/16/96	1/16/96
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	100	95	95	98

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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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, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid

QC Sample Group: 6010075-085

Reported: Jan 22, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn

MS/MSD Batch#:	6010011	6010011	6010011	6010011
Date Prepared:	1/17/96	1/17/96	1/17/96	1/17/96
Date Analyzed:	1/17/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	90	90	92
Matrix Spike Duplicate % Recovery:	95	95	95	98
Relative % Difference:	5.4	5.4	5.4	7.0

LCS Batch#:	3LCS011796	3LCS011796	3LCS011796	3LCS011796
Date Prepared:	1/17/96	1/17/96	1/17/96	1/17/96
Date Analyzed:	1/17/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	95	95	95	98

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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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, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid

QC Sample Group: 6010075-085

Reported: Jan 22, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	N. Beaman	N. Beaman	N. Beaman	N. Beaman

MS/MSD Batch#:	6010873	6010873	6010873	6010873
Date Prepared:	1/16/96	1/16/96	1/16/96	1/16/96
Date Analyzed:	1/16/96	1/16/96	1/16/96	1/16/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	105	100	105	105
Matrix Spike Duplicate % Recovery:	115	105	110	112
Relative % Difference:	9.1	4.9	4.7	6.2

LCS Batch#:	1LCS011696	1LCS011696	1LCS011696	1LCS011696
Date Prepared:	1/16/96	1/16/96	1/16/96	1/16/96
Date Analyzed:	1/16/96	1/16/96	1/16/96	1/16/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	115	115	120	120

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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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, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid

QC Sample Group: 6010075-085

Reported: Jan 22, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	T. Granicher	T. Granicher	T. Granicher	T. Granicher

MS/MSD				
Batch#:	6010417	6010417	6010417	6010417
Date Prepared:	1/17/96	1/17/96	1/17/96	1/17/96
Date Analyzed:	1/17/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike				
% Recovery:	100	100	95	100
Matrix Spike				
Duplicate %				
Recovery:	95	95	90	95
Relative %				
Difference:	5.1	5.1	5.4	5.1

LCS Batch#:	4LCS011796	4LCS011796	4LCS011796	4LCS011796
Date Prepared:	1/17/96	1/17/96	1/17/96	1/17/96
Date Analyzed:	1/17/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	HP-9	HP-9	HP-9	HP-9
LCS %				
Recovery:	110	110	105	110

% Recovery				
Control Limits:	71-133	72-128	72-130	71-120

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, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #0752, 800 Harrison St., Oakland
Matrix: Liquid

QC Sample Group: 6010075-085

Reported: Jan 22, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Nitrate as NO3	Sulfate	Bicarbonate Alkalinity	Cadmium	Manganese	Iron
Method:	EPA 300.0	EPA 300.0	EPA 310.1	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	R. Salinas	R. Salinas	R. Salinas	K. Anderson	K. Anderson	K. Anderson

MS/MSD						
Batch#:	6010077	6010077	6010078	6010350	6010350	6010350
Date Prepared:	1/4/96	1/4/96	1/5/96	1/10/96	1/10/96	1/10/96
Date Analyzed:	1/4/96	1/4/96	1/5/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	INIC-1	INIC-1	INPH-1	MV-3	MV-3	MV-3
Conc. Spiked:	100 mg/L	100 mg/L	1000 mg/L	20 mg/L	1.0	10 mg/L
Matrix Spike % Recovery:	99	94	98	85	84	99
Matrix Spike Duplicate % Recovery:	99	94	98	95	87	97
Relative % Difference:	0.0	0.0	0.0	6.3	3.5	2.0

LCS Batch#:	300.0YB01F	300.0YB01F	310.1YB01B	BLK011096	BLK011096	BLK011096
Date Prepared:	1/4/96	1/4/96	1/5/96	1/10/96	1/10/96	1/10/96
Date Analyzed:	1/4/96	1/4/96	1/5/96	1/17/96	1/17/96	1/17/96
Instrument I.D.#:	INIC-1	INIC-1	INPH-1	MV-3	MV-3	MV-3
LCS % Recovery:	94	99	100	90	82	100

% Recovery Control Limits:	80-120	80-120	70-130	75-125	75-125	75-125
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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, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	Client Project ID: Unocal #0752, 800 Harrison St., Oakland Matrix:	QC Sample Group: 6010075-085	Reported: Jan 22, 1996
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QUALITY CONTROL DATA REPORT

ANALYTE	Biochemical Oxygen Demand
Method:	EPA 405.1
Analyst:	J. Clark

Date Analyzed: 1/9/96

Instrument I.D.#: Manual

Sample #: 9601079-3

Sample Concentration: 7.4

Sample Duplicate Concentration: 7.1

RPD: 4.1

RPD Control Limits: 0-30

SEQUOIA ANALYTICAL, #1210

Signature on File

Alan B. Kemp
Project Manager





Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

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

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord CA 94520
Attention: Jarrel Crider

Date: 1/22/96

Sequoia Analytical has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the following site(s):

Client Project I.D. - **Unocal #0752- Oakland**

Sequoia Work Order # - **9601029**

Sample Number:

Sample Description:

6010077

MW-3

6010078

MW-4

6010079

MW-5

6010080

MW-6

6010081

MW-7

6010082

MW-8

SEQUOIA ANALYTICAL, #1271


Alan B. Kemp
Project Manager



CHAIN OF CUSTODY

9601029

SAMPLER			UNOCAL					ANALYSES REQUESTED										TURN AROUND TIME:
NICHOLAS PERROW			S/S # <u>0752</u> CITY: <u>OAKLAND</u>					TPH-GAS BTEX	DISCOVED O ₂	PRESERV	METROTOXIC FOE	PLATE COUNT	BIOLOGICAL BIO-OXYGEN DIEN AND	SULFATES	NITRATES	IRON, CALCIUM MANGANESE (1025)	BICARBONATE (102)	REGULAR REMARKS
			ADDRESS: <u>800 HARRISON ST.</u>															
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION											
MW-1	1/3/96	10:15	✓	✓		2	WELL	✓								6010075 AB		
MW-2	"	9:50	✓	✓		7	"	✓	✓	✓	✓	✓	✓	✓	✓	6010076 AG		
MW-3	"	12:25	✓	✓		7	"	✓	✓	✓	✓	✓	✓	✓	✓	6010077		
MW-4	"	8:45	✓	✓		7	"	✓	✓	✓	✓	✓	✓	✓	✓	6010078		
MW-5	"	11:20	✓	✓		7	"	✓	✓	✓	✓	✓	✓	✓	✓	6010079		
MW-6	"	10:40	✓	✓		2	"	✓								6010080 AB		
MW-7	"	11:50	✓	✓		2	"	✓								6010081		
MW-8	"	9:15	✓	✓		7	"	✓	✓	✓	✓	✓	✓	✓	✓	6010082 AG		
							BB											
							W											

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:
(SIGNATURE)	1/3/96 13:15	(SIGNATURE)	1/3/96 13:15	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>yes</u>
(SIGNATURE)	1-3-96 1330	(SIGNATURE)	1-3-96 1330	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>yes</u>
(SIGNATURE)	1-3	(SIGNATURE)	1-3-96 15:00	3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>yes no</u>
(SIGNATURE)		(SIGNATURE)		4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>yes</u>
(SIGNATURE)		(SIGNATURE)		SIGNATURE: <u>[Signature]</u> TITLE: <u>analyst</u> DATE: <u>1/3</u>

Note: All water containers to be sampled for TPHG/BTEX, B010 & B240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HNO3. All other containers are unpreserved.

CHAIN OF CUSTODY

901020

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:	
NICHOLAS PERROW			S/S # <u>0752</u> CITY: <u>OAKLAND</u>					TPH-GAS BTEX	TPH-DIBSEL	TOG	8010					REGULAR REMARKS
WITNESSING AGENCY			ADDRESS: <u>800 HARRISON ST.</u>													
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									
ES-1	1/3/96		✓			1 VOA		✓								
ES-2	"		✓			"		✓								
ES-3	"		✓			"		✓								
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:			DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:									
(SIGNATURE) <i>[Signature]</i>		1/3/96 13:15	(SIGNATURE) <i>[Signature]</i>			1/3/96 13:15	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>yes</u>									
(SIGNATURE) <i>[Signature]</i>		1-3 (3:30)	(SIGNATURE) <i>[Signature]</i>			1-3 15:00	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>yes</u>									
(SIGNATURE) <i>[Signature]</i>		1-3	(SIGNATURE) <i>[Signature]</i>			1-3-96	3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>no</u>									
(SIGNATURE) <i>[Signature]</i>		1-3	(SIGNATURE) <i>[Signature]</i>			1-3-96	4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>yes</u>									
							SIGNATURE: <i>[Signature]</i> TITLE: <u>analyst</u> DATE: <u>1/3</u>									

Note: All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HN03. All other containers are unpreserved.