



OK  
5/17/96

ENVIRONMENTAL  
PROTECTION  
5/17/96 PH 1/14

May 17, 1996

Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, CA 94501

RE: Unocal Service Station #5484  
18950 Lake Chabot Road  
Castro Valley, California

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our most recent data report for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2321.

Sincerely,

MPDS Services, Inc.

A handwritten signature in black ink, appearing to read 'Kraig Remm' or 'Kraig Remm' over 'for Jarrel F. Crider'. A short horizontal line is drawn through the signature.

/dr

Enclosure

cc: Ms. Tina R. Berry



MPDS-UN5484-10  
May 7, 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 #5484  
18950 Lake Chabot Road  
Castro Valley, 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 April 11, 1996. Prior to sampling, the wells were each purged of between 8.5 and 52 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. Field blank, Trip blank and Equipment 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 and 3. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, 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.

MPDS-UN5484-10  
May 7, 1996  
Page 2

### 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 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,

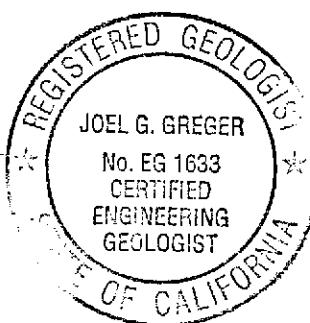
MPDS Services, Inc.



Haig (Gary) Tejirian  
Senior Staff Geologist



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



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

/jfc

Attachments:      Tables 1, 2 & 3  
                        Location Map  
                        Figures 1 & 2  
                        Laboratory Analyses  
                        Chain of Custody documentation

cc:      Mr. Thomas Berkins, Kaprelian Engineering, Inc.

**Table 1**  
**Summary of Monitoring Data**

Well #	Ground Water Elevation (feet)	Depth to Water (feet)*	Total Well Depth (feet)*	Product Thickness (feet)	Sheen	Water Purged (gallons)
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**(Monitored and Sampled on April 11, 1996)**

MW2	224.66	4.22	19.22	0	--	0
MW4	220.22	7.55	27.33	0	No	52
MW5	217.63	7.48	23.79	0	No	43
MW6	234.76	4.28	27.03	0	--	0
MW7	224.08	7.31	19.58	0	No	8.5

**(Monitored and Sampled on December 8, 1995)**

MW7	221.80	9.59	19.55	0	No	7
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**(Monitored and Sampled on December 5, 1995)**

MW2	222.56	6.32	9.20	0	No	9
MW4	217.85	9.92	27.30	0	No	25
MW5	215.51	9.60	23.86	0	No	24
MW6	232.29	6.75	26.96	0	No	23
MW7	221.70	9.69	19.55	0	No	6.5

**(Monitored and Sampled on September 5, 1995)**

MW2	223.22	5.66	19.22	0	No	9.5
MW4	218.50	9.27	27.30	0	No	47
MW5	215.54	9.57	23.92	0	No	37.5
MW6*	233.35	5.69	†	0	--	0
MW7	222.78	8.61	19.56	0	No	7.5

**(Monitored and Sampled on June 1, 1995)**

MW2	224.23	4.65	19.21	0	No	10
MW4	220.12	7.65	27.31	0	No	55
MW5	216.90	8.21	23.92	0	No	42
MW6	234.28	4.76	27.05	0	No	60
MW7	223.47	7.92	19.56	0	No	9

**Table 1**  
**Summary of Monitoring Data**

Well #	Well Casing Elevation (feet)**
MW2	228.88
MW4	227.77
MW5	225.11
MW6	239.04
MW7	231.39

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

\* Monitored only.

\*\* The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the Alameda County Benchmark (elevation = 219.68 feet MSL).

† Total well depth was not measured.

-- Sheen determination was not performed.

**Table 2**  
**Summary of Laboratory Analyses**  
**Water**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW2	5/23/91	--	ND	ND	ND	ND	ND	--
	9/20/91	--	ND	ND	ND	ND	ND	--
	12/19/91	--	140	0.66	ND	0.64	1.2	--
	3/20/92	--	120	ND	ND	ND	ND	--
	6/18/92	--	140*	ND	ND	ND	ND	--
	9/10/92	--	61*	ND	ND	ND	ND	110
	12/10/92	--	100*	ND	ND	ND	ND	170
	3/10/93	--	110*	ND	ND	ND	ND	350
	6/9/93	--	120*	ND	ND	ND	ND	300
	9/9/93	--	210*	ND	ND	ND	ND	--
	12/9/93	--	96*	ND	ND	ND	ND	--
	3/3/94	--	240*	ND	ND	ND	ND	--
	6/3/94	--	190*	ND	ND	ND	ND	--
	9/2/94	--	720	ND	ND	ND	4.6	--
	12/1/94	--	200	0.70	ND	0.58	ND	--
	3/1/95	--	ND	ND	ND	ND	ND	--
	6/1/95	--	420*	ND	ND	ND	ND	--
	9/5/95	--	ND	ND	0.80	ND	0.74	•
	12/5/95	--	ND	ND	ND	ND	ND	390
	4/11/96	NOT SAMPLED††						
MW4	5/23/91	--	ND	ND	ND	ND	ND	--
	9/20/91	SAMPLED SEMI-ANNUALLY						
	12/19/91	--	ND	ND	ND	ND	ND	--
	3/20/92	SAMPLED SEMI-ANNUALLY						
	6/18/92	--	ND	0.41	0.84	ND	0.55	--
	9/10/92	SAMPLED SEMI-ANNUALLY						
	12/10/92	--	ND	ND	ND	ND	ND	--
	3/10/93	--	ND	ND	ND	ND	ND	--
	6/9/93	--	ND	ND	ND	ND	ND	--
	9/9/93	--	ND	ND	ND	ND	ND	--
	12/9/93	WELL WAS INACCESSIBLE						
	3/3/94	--	ND	ND	ND	ND	ND	--
	6/3/94	--	ND	ND	ND	ND	ND	--
	9/2/94	--	ND	ND	ND	ND	ND	--
	12/1/94	--	ND	ND	ND	ND	ND	--
	3/1/95	--	ND	ND	1.1	ND	0.75	--
	6/1/95	--	ND	ND	0.78	ND	1.7	--
	9/5/95	--	ND	ND	0.70	ND	0.71	--
	12/5/95	--	ND	ND	ND	ND	ND	0.68
	4/11/96	--	ND	ND	ND	ND	ND	ND

**Table 2**  
**Summary of Laboratory Analyses**  
**Water**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl- Benzene	Xylenes	MTBE
MW5	5/23/91	--	ND	ND	ND	ND	ND	--
	9/20/91	450	ND	ND	ND	ND	ND	--
	10/10/91	ND	--	--	--	--	--	--
	12/19/91	--	ND	ND	ND	ND	ND	--
	3/20/92	170	ND	ND	ND	ND	ND	--
	6/18/92	ND	ND	ND	ND	ND	ND	--
	9/10/92	110†	ND	ND	ND	ND	ND	--
	12/10/92	83‡	ND	ND	ND	ND	ND	--
	3/10/93	69†	ND	ND	ND	ND	ND	--
	6/9/93	64	ND	ND	ND	ND	ND	--
	9/9/93	58‡	ND	ND	ND	ND	ND	--
	12/9/93	87‡	ND	ND	ND	ND	ND	--
	3/3/94	ND	ND	ND	ND	0.71	1.7	ND
	6/3/94	80‡	ND	ND	ND	ND	ND	--
	9/2/94	130†	ND	ND	ND	ND	ND	--
	12/1/94	79†	ND	ND	ND	ND	ND	--
	3/1/95	ND	ND	ND	ND	ND	ND	--
	6/1/95	57†	ND	ND	ND	ND	ND	--
	9/5/95	210†	ND	ND	0.95	ND	0.87	•
	12/5/95	170†	ND	ND	ND	ND	ND	27
	4/11/96	--	ND	ND	ND	ND	ND	56
MW6	5/23/91	--	ND	ND	ND	ND	ND	--
	9/20/91	SAMPLED SEMI-ANNUALLY					ND	--
	12/19/91	--	ND	ND	ND	ND	ND	--
	6/18/92	--	ND	ND	ND	ND	ND	--
	12/10/92	--	ND	ND	ND	ND	ND	--
	6/9/93	--	ND	ND	ND	ND	ND	--
	12/9/93	--	150	ND	ND	ND	1.7	--
	6/3/94	--	ND	ND	ND	ND	ND	--
	12/1/94	--	ND	ND	ND	ND	ND	--
	6/1/95	--	ND	ND	0.70	ND	1.7	--
	12/5/95	--	ND	ND	ND	ND	ND	1.4
	4/11/96	NOT SAMPLED††					ND	--

**Table 2**  
**Summary of Laboratory Analyses**  
**Water**

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl Benzene	Xylenes	MTBE
MW7	5/23/91	540	3,000	160	1.2	25	120	--
	9/20/91	580	1,400	160	0.75	89	130	--
	12/19/91	770	3,900	240	2.4	280	270	--
	3/20/92	3,200	11,000	980	ND	990	1,600	--
	6/18/92	990†	5,500	340	4.2	380	410	--
	9/10/92	290†	2,100	160	1.9	140	150	--
	12/10/92	200‡	1,200	28	ND	37	13	--
	3/10/93	1,100†	4,400	310	ND	300	330	--
	6/9/93	830‡	4,600	430	ND	510	430	--
	9/9/93	550‡	2,600**	160	19	250	120	--
	12/9/93	250†	980	54	4.6	71	5.6	--
	3/3/94	1,400†	9,300	290	ND	590	400	1.7
	6/3/94	2,000†	9,400	380	5.0	820	240	--
	9/2/94	490†	3,800	77	ND	180	42	--
	12/1/94	260†	3,100	80	ND	250	190	--
	3/1/95	1,900‡	3,300	200	3.9	300	350	--
	6/1/95	1,600†	3,900	170	ND	400	430	--
	9/5/95	ND	710	32	ND	85	33	•
	12/5/95	110†	400	23	ND	34	16	1,600
	4/11/96	--	1,500	52	ND	160	130	1,500

MTBE = Methyl tert butyl ether.

- † Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.
- †† Sampling discontinued per Alameda County Health Care Services letter dated April 1, 1996.
- ‡ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- \* Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.
- \*\* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water sample collected from this well.
- Indicates analysis not performed.

ND = Non-detectable.

**Table 2**  
**Summary of Laboratory Analyses**  
**Water**

---

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

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory was C6 - C12.

Laboratory analyses data prior to December 9, 1993 were provided by Kaprelian Engineering, Inc.

**Table 3**  
**Summary of Laboratory Analyses**  
**Water**

Well #	Date	Total Oil & Grease (mg/L)	Bis(2-ethylhexyl) phthalate	2-Methyl-naphthalene	Naphthalene	1,2-Dichloroethane
MW4	4/11/96	--	ND	ND	ND	ND
MW5	3/10/93	--	ND	ND	ND	ND
	6/9/93	--	--	--	--	ND
	9/9/93	--	--	--	--	ND
	12/9/93	--	--	--	--	ND
	3/3/94	--	--	--	--	ND
	6/3/94	--	--	--	--	ND
	9/2/94	--	--	--	--	ND
	12/1/94	--	--	--	--	ND
	3/1/95	--	--	--	--	ND
	6/1/95	--	--	--	--	ND
	9/5/95	--	--	--	--	ND
	12/5/95	--	--	--	--	ND
	4/11/96	--	ND	ND	ND	ND
MW7	5/23/91	ND	--	--	--	3.4
	9/20/91	ND	--	--	--	ND
	12/19/91	ND	--	--	--	3.1
	3/20/92	ND	--	--	--	ND
	6/18/92	ND	--	--	--	ND
	9/10/92	--	--	--	--	2.3
	12/10/92	--	--	--	--	2.0
	3/10/93†	--	13	19	83	1.3
	6/9/93††	--	13	19	83	1.3
	9/9/93‡	--	ND	11	48	1.5
	12/9/93	--	ND	ND	15	1.5
	3/3/94	--	ND	34	130	1.7
	6/3/94	--	ND	18	61	1.4
	9/2/94	--	ND	ND	ND	1.1
	12/1/94	--	ND	ND	2.5	1.0
	3/1/95•	--	ND	40	120	1.6
	6/1/95	--	ND	13	83	1.4
	9/5/95	--	ND	ND	7.0	1.8
	12/5/95*	--	--	--	--	ND
	12/8/95	--	ND	ND	14	--
	4/11/96	--	ND	7.6	42	0.75

**Table 3**  
Summary of Laboratory Analyses  
Water

- 
- \* Tetrachloroethene was detected at a concentration of 56 µg/L.
  - † Nine "tentatively identified compounds" were detected by the EPA method 8270 open scan at concentrations ranging from 10 µg/L to 59 µg/L. Refer to laboratory analysis sheets for the specific compounds and concentrations.
  - †† Ten "tentatively identified compounds" were detected by the EPA method 8270 open scan at concentrations ranging from 14 µg/L to 150 µg/L. Refer to laboratory analysis sheets for the specified compounds and concentrations.
  - ‡ Seven "tentatively identified compounds" were detected by the EPA method 8270 open scan at concentrations ranging 11 µg/L to 88 µg/L. Refer to laboratory analysis sheets for the specific compounds and concentrations.
  - Phenol was detected at a concentration of 2.1 µg/L.
  - Indicates analysis was not performed.

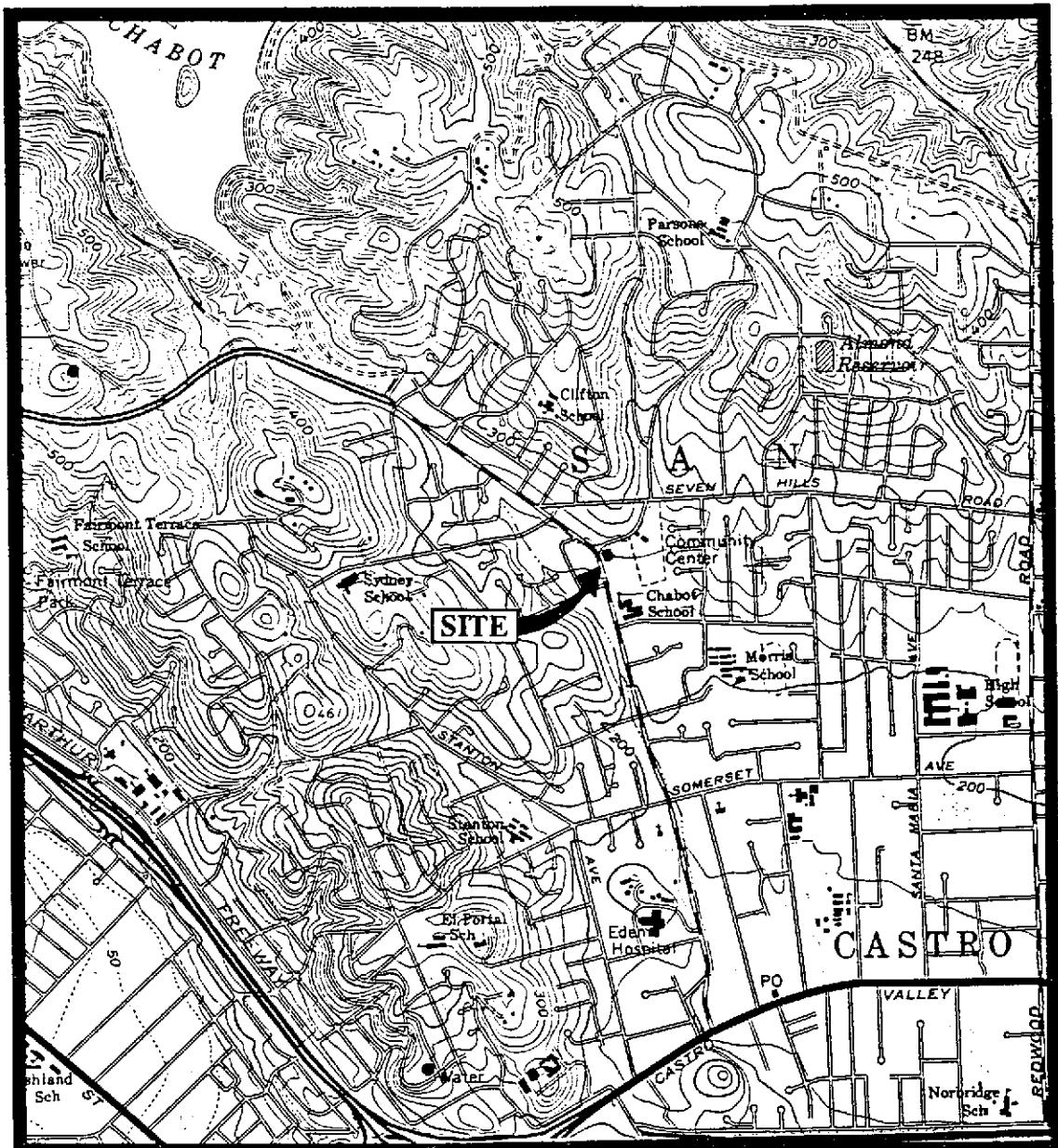
ND = Non-detectable.

mg/L = milligrams per liter.

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

Note: All EPA Method 8010 and 8270 compounds were non-detectable, except as listed above.

Laboratory analyses data prior to December 9, 1993, were provided by Kaprelian Engineering, Inc.



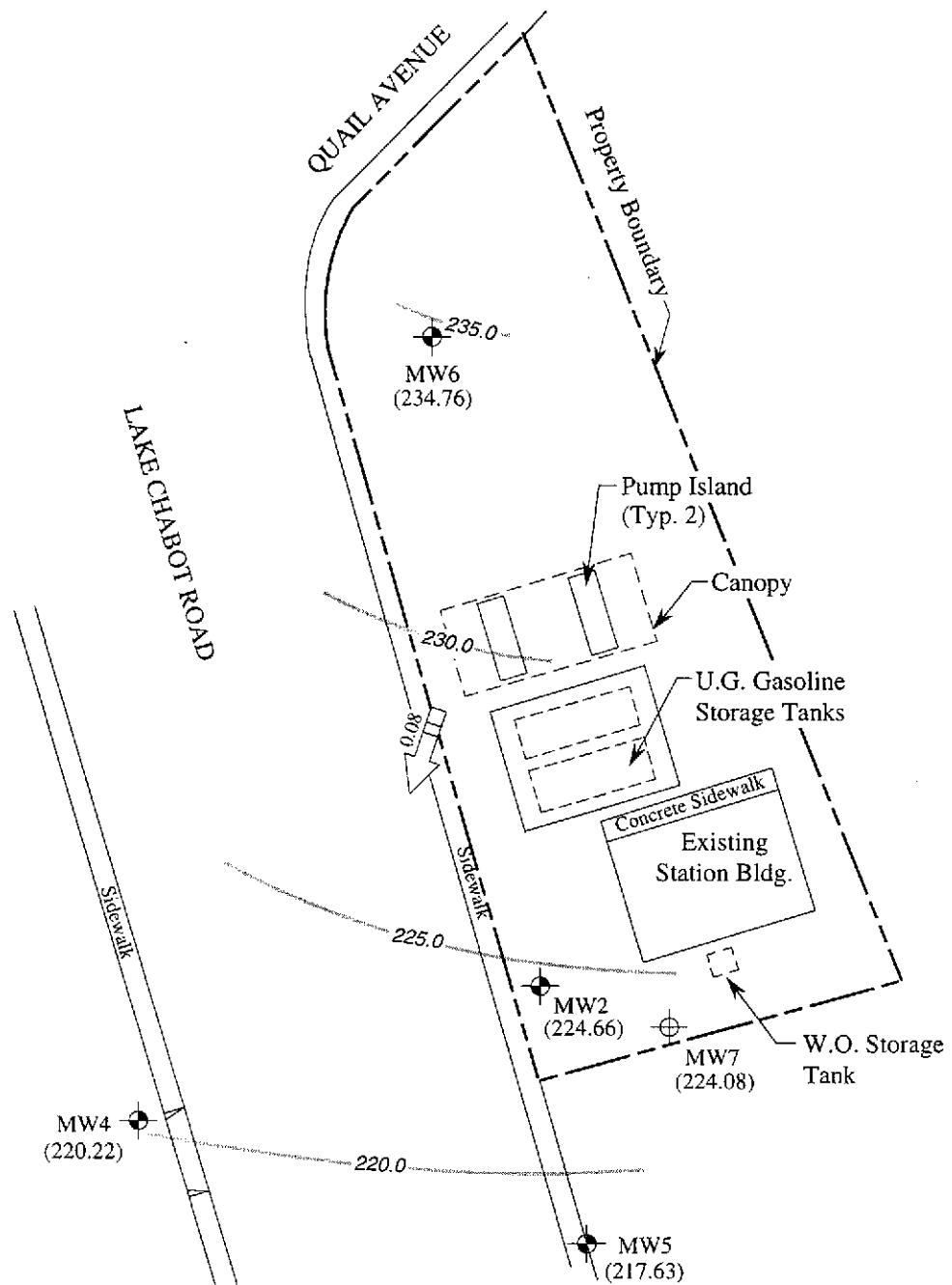
Base modified from 7.5 minute U.S.G.S. Hayward Quadrangle  
(photorevised 1980)

0 2000 4000  
feet  
Approx. scale

**MPDS**  
SERVICES, INCORPORATED

UNOCAL SERVICE STATION #5484  
18950 LAKE CHABOT ROAD  
CASTRO VALLEY, CALIFORNIA

LOCATION  
MAP



#### LEGEND

⊕ Monitoring well (by KEI)

● Monitoring well (by AGS)

( ) Ground water elevation in feet above Mean Sea Level

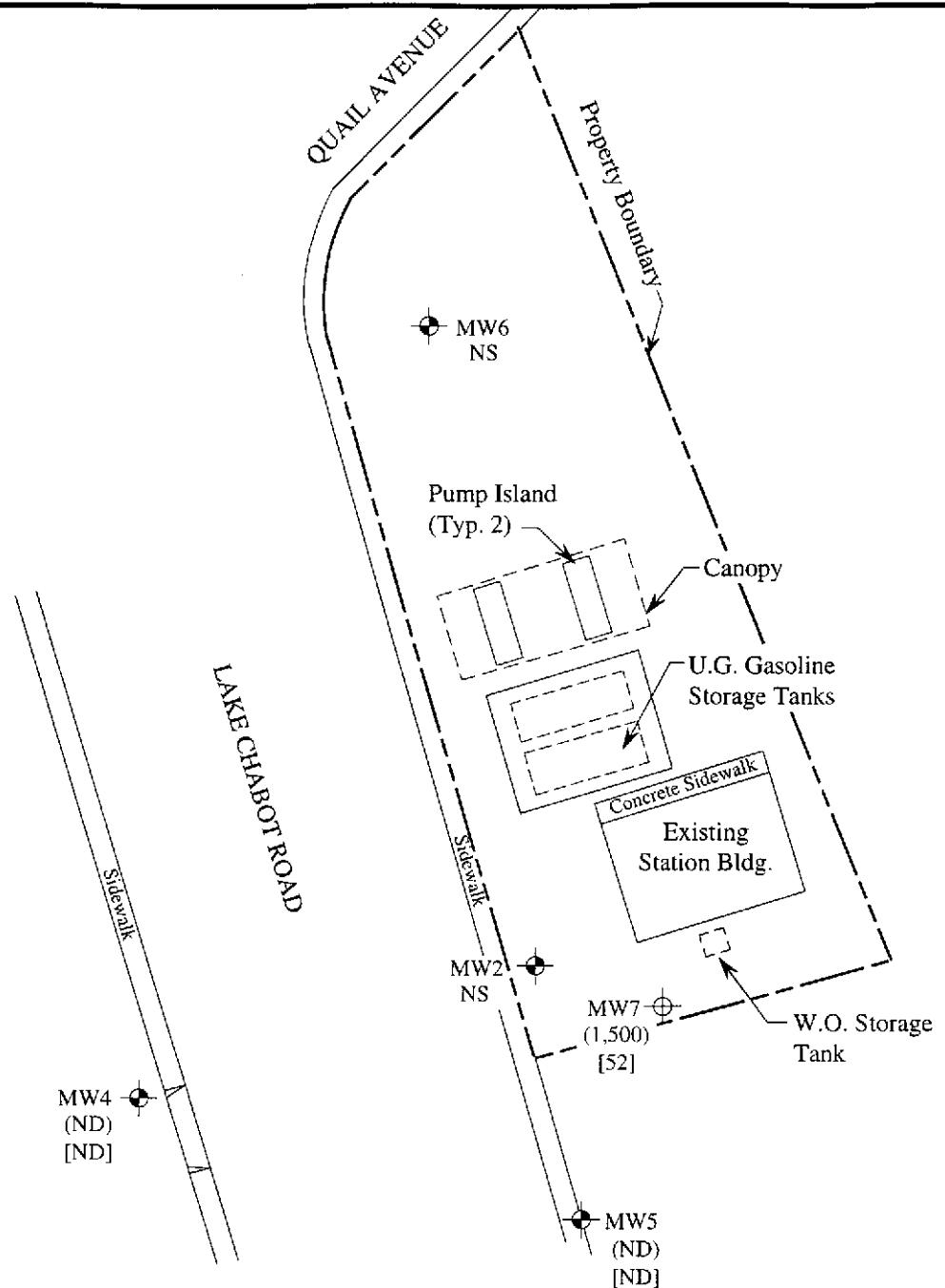
#.# ➤ Direction of ground water flow with approximate hydraulic gradient

— Contours of ground water elevation

0 40 80

Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE APRIL 11, 1996 MONITORING EVENT



#### LEGEND

- Monitoring well (by KEI)
- Monitoring well (by AGS)
- ( ) Concentration of TPH as gasoline in  $\mu\text{g}/\text{L}$
- [ ] Concentration of benzene in  $\mu\text{g}/\text{L}$
- < > Concentration of TPH as diesel in  $\mu\text{g}/\text{L}$
- ND Non-detectable, NS Not sampled

0 40 80  
feet  
Approx. scale

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON APRIL 11, 1996



**Sequoia  
Analytical**

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Sampled: Apr 11, 1996  
Matrix Descript: Water Castro Valley Received: Apr 11, 1996  
Analysis Method: EPA 5030/8015 Mod./8020 Reported: May 1, 1996  
First Sample #: 604-0876

### 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
604-0876	MW-4	ND	ND	ND	ND	ND
604-0877	MW-5	ND	ND	ND	ND	ND
604-0878	MW-7	1,500	52	ND	160	130
604-0879	ES-1	ND	ND	0.60	ND	ND
604-0880	ES-2	ND	ND	ND	ND	ND
604-0881	ES-3	ND	ND	0.70	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

Page 1 of 2

604-0876.MPD <1>





**Sequoia  
Analytical**

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Sampled: Apr 11, 1996  
Matrix Descript: Water Castro Valley Received: Apr 11, 1996  
Analysis Method: EPA 5030/8015 Mod./8020 Reported: May 1, 1996  
First Sample #: 604-0876

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, %	QC Limits:
604-0876	MW-4	--	1.0	4/22/96	HP-2	102	70-130
604-0877	MW-5	--	1.0	4/22/96	HP-2	100	
604-0878	MW-7*	Gasoline	10	4/26/96	HP-2	108	
604-0879	ES-1	--	1.0	4/26/96	HP-2	102	
604-0880	ES-2	--	1.0	4/26/96	HP-2	105	
604-0881	ES-3	--	1.0	4/26/96	HP-2	102	

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

Please Note:

\*This sample was originally analyzed on 4/22/96 but was outside upper limits for quantitation.



**Sequoia  
Analytical**

680 Chesapeake Drive      Redwood City, CA 94063      (415) 364-9600      FAX (415) 364-9233  
404 N. Wiget Lane      Walnut Creek, CA 94598      (510) 988-9600      FAX (510) 988-9673  
819 Striker Avenue, Suite 8      Sacramento, CA 95834      (916) 921-9600      FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd.      Sampled: Apr 11, 1996  
Sample Descript: Water      Received: Apr 11, 1996  
Analysis for: MTBE (Modified EPA 8020)  
First Sample #: 604-0876      Analyzed: 4/22 & 26/96  
Reported: May 1, 1996

**LABORATORY ANALYSIS FOR:      MTBE (Modified EPA 8020)**

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
604-0876	MW-4	40	N.D.
604-0877	MW-5	40	56
604-0878	MW-7	40	1,500

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

604-0876.MPD <3>





Sequoia  
Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd.  
Sample Descript: Water, MW-4  
Analysis Method: EPA 5030/8010  
Lab Number: 604-0876

Castro Valley  
Received: Apr 11, 1996  
Analyzed: Apr 15, 1996  
Reported: May 1, 1996

### HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/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.
2-Chloroethylvinyl ether.....	1.0	..... N.D.
Chloroform.....	0.50	..... N.D.
Chloromethane.....	1.0	..... N.D.
Dibromochloromethane.....	0.50	..... N.D.
1,3-Dichlorobenzene.....	0.50	..... N.D.
1,4-Dichlorobenzene.....	0.50	..... N.D.
1,2-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.
Freon 113.....	0.50	..... N.D.

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

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp  
Project Manager

604-0876.MPD <4>



**Sequoia  
Analytical**

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Sampled: Apr 11, 1996  
Sample Descript: Water, MW-5 Castro Valley Received: Apr 11, 1996  
Analysis Method: EPA 5030/8010 Analyzed: Apr 15, 1996  
Lab Number: 604-0877 Reported: May 1, 1996

### HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/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.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	1.0	N.D.
Dibromochloromethane.....	0.50	N.D.
1,3-Dichlorobenzene.....	0.50	N.D.
1,4-Dichlorobenzene.....	0.50	N.D.
1,2-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.
Freon 113.....	0.50	N.D.

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

604-0876.MPD <5>



**Sequoia  
Analytical**

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404 N. Wiget Lane      Walnut Creek, CA 94598      (510) 988-9600      FAX (510) 988-9673  
819 Striker Avenue, Suite 8      Sacramento, CA 95834      (916) 921-9600      FAX (916) 921-0100

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

Client Project ID:	Unocal 5484, 18950 Lake Chabot Rd.	Sampled:	Apr 11, 1996
Sample Descript:	Water, MW-4	Received:	Apr 11, 1996
Analysis Method:	EPA 8270	Extracted:	Apr 18, 1996
Lab Number:	604-0876	Analyzed:	Apr 23, 1996
		Reported:	May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	2.0	.....
Acenaphthylene.....	2.0	.....
Aniline.....	2.0	.....
Anthracene.....	2.0	.....
Benzidine.....	50	.....
Benzoic Acid.....	10	.....
Benzo(a)anthracene.....	2.0	.....
Benzo(b)fluoranthene.....	2.0	.....
Benzo(k)fluoranthene.....	2.0	.....
Benzo(g,h,i)perylene.....	2.0	.....
Benzo(a)pyrene.....	2.0	.....
Benzyl alcohol.....	2.0	.....
Bis(2-chloroethoxy)methane.....	2.0	.....
Bis(2-chloroethyl)ether.....	2.0	.....
Bis(2-chloroisopropyl)ether.....	2.0	.....
Bis(2-ethylhexyl)phthalate.....	10	.....
4-Bromophenyl phenyl ether.....	2.0	.....
Butyl benzyl phthalate.....	2.0	.....
4-Chloroaniline.....	2.0	.....
2-Chloronaphthalene.....	2.0	.....
4-Chloro-3-methylphenol.....	2.0	.....
2-Chlorophenol.....	2.0	.....
4-Chlorophenyl phenyl ether.....	2.0	.....
Chrysene.....	2.0	.....
Dibenz(a,h)anthracene.....	2.0	.....
Dibenzofuran.....	2.0	.....
Di-N-butyl phthalate.....	10	.....
1,3-Dichlorobenzene.....	2.0	.....
1,4-Dichlorobenzene.....	2.0	.....
1,2-Dichlorobenzene.....	2.0	.....
3,3-Dichlorobenzidine.....	10	.....
2,4-Dichlorophenol.....	2.0	.....
Diethyl phthalate.....	2.0	.....
2,4-Dimethylphenol.....	2.0	.....
Dimethyl phthalate.....	2.0	.....
4,6-Dinitro-2-methylphenol.....	10	.....
2,4-Dinitrophenol.....	10	.....
2,4-Dinitrotoluene.....	2.0	.....
2,6-Dinitrotoluene.....	2.0	.....
Di-N-octyl phthalate.....	2.0	.....



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819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Sampled: Apr 11, 1996  
Sample Descript: Water, MW-4 Received: Apr 11, 1996  
Analysis Method: EPA 8270 Extracted: Apr 18, 1996  
Lab Number: 604-0876 Analyzed: Apr 23, 1996  
Reported: May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results	
		µg/L	µg/L
Fluoranthene.....	2.0	.....	N.D.
Fluorene.....	2.0	.....	N.D.
Hexachlorobenzene.....	2.0	.....	N.D.
Hexachlorobutadiene.....	2.0	.....	N.D.
Hexachlorocyclopentadiene.....	2.0	.....	N.D.
Hexachloroethane.....	2.0	.....	N.D.
Indeno(1,2,3-cd)pyrene.....	2.0	.....	N.D.
Isophorone.....	2.0	.....	N.D.
2-Methylnaphthalene.....	2.0	.....	N.D.
2-Methylphenol.....	2.0	.....	N.D.
4-Methylphenol.....	2.0	.....	N.D.
Naphthalene.....	2.0	.....	N.D.
2-Nitroaniline.....	10	.....	N.D.
3-Nitroaniline.....	10	.....	N.D.
4-Nitroaniline.....	10	.....	N.D.
Nitrobenzene.....	2.0	.....	N.D.
2-Nitrophenol.....	2.0	.....	N.D.
4-Nitrophenol.....	10	.....	N.D.
N-Nitrosodimethylamine.....	2.0	.....	N.D.
N-Nitrosodiphenylamine.....	2.0	.....	N.D.
N-Nitroso-di-N-propylamine.....	2.0	.....	N.D.
Pentachlorophenol.....	10	.....	N.D.
Phenanthrene.....	2.0	.....	N.D.
Phenol.....	2.0	.....	N.D.
Pyrene.....	2.0	.....	N.D.
1,2,4-Trichlorobenzene.....	2.0	.....	N.D.
2,4,5-Trichlorophenol.....	10	.....	N.D.
2,4,6-Trichlorophenol.....	2.0	.....	N.D.

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager



**Sequoia  
Analytical**

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819 Striker Avenue, Suite 8      Sacramento, CA 95834      (916) 921-9600      FAX (916) 921-0100

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd.      Sampled: Apr 11, 1996  
Sample Descript: Water, MW-5      Castro Valley      Received: Apr 11, 1996  
Analysis Method: EPA 8270      Extracted: Apr 18, 1996  
Lab Number: 604-0877      Analyzed: Apr 24, 1996  
Reported: May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	2.0	.....
Acenaphthylene.....	2.0	.....
Aniline.....	2.0	.....
Anthracene.....	2.0	.....
Benzidine.....	50	.....
Benzoic Acid.....	10	.....
Benzo(a)anthracene.....	2.0	.....
Benzo(b)fluoranthene.....	2.0	.....
Benzo(k)fluoranthene.....	2.0	.....
Benzo(g,h,i)perylene.....	2.0	.....
Benzo(a)pyrene.....	2.0	.....
Benzyl alcohol.....	2.0	.....
Bis(2-chloroethoxy)methane.....	2.0	.....
Bis(2-chloroethyl)ether.....	2.0	.....
Bis(2-chloroisopropyl)ether.....	2.0	.....
Bis(2-ethylhexyl)phthalate.....	10	.....
4-Bromophenyl phenyl ether.....	2.0	.....
Butyl benzyl phthalate.....	2.0	.....
4-Chloroaniline.....	2.0	.....
2-Chloronaphthalene.....	2.0	.....
4-Chloro-3-methylphenol.....	2.0	.....
2-Chlorophenol.....	2.0	.....
4-Chlorophenyl phenyl ether.....	2.0	.....
Chrysene.....	2.0	.....
Dibenz(a,h)anthracene.....	2.0	.....
Dibenzofuran.....	2.0	.....
Di-N-butyl phthalate.....	10	.....
1,3-Dichlorobenzene.....	2.0	.....
1,4-Dichlorobenzene.....	2.0	.....
1,2-Dichlorobenzene.....	2.0	.....
3,3-Dichlorobenzidine.....	10	.....
2,4-Dichlorophenol.....	2.0	.....
Diethyl phthalate.....	2.0	.....
2,4-Dimethylphenol.....	2.0	.....
Dimethyl phthalate.....	2.0	.....
4,6-Dinitro-2-methylphenol.....	10	.....
2,4-Dinitrophenol.....	10	.....
2,4-Dinitrotoluene.....	2.0	.....
2,6-Dinitrotoluene.....	2.0	.....
Di-N-octyl phthalate.....	2.0	.....



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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Sampled: Apr 11, 1996  
Sample Descript: Water, MW-5 Castro Valley Received: Apr 11, 1996  
Analysis Method: EPA 8270 Extracted: Apr 18, 1996  
Lab Number: 604-0877 Analyzed: Apr 24, 1996  
Reported: May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Fluoranthene.....	2.0	..... N.D.
Fluorene.....	2.0	..... N.D.
Hexachlorobenzene.....	2.0	..... N.D.
Hexachlorobutadiene.....	2.0	..... N.D.
Hexachlorocyclopentadiene.....	2.0	..... N.D.
Hexachloroethane.....	2.0	..... N.D.
Indeno(1,2,3-cd)pyrene.....	2.0	..... N.D.
Isophorone.....	2.0	..... N.D.
2-MethylNaphthalene.....	2.0	..... N.D.
2-Methylphenol.....	2.0	..... N.D.
4-Methylphenol.....	2.0	..... N.D.
Naphthalene.....	2.0	..... N.D.
2-Nitroaniline.....	10	..... N.D.
3-Nitroaniline.....	10	..... N.D.
4-Nitroaniline.....	10	..... N.D.
Nitrobenzene.....	2.0	..... N.D.
2-Nitrophenol.....	2.0	..... N.D.
4-Nitrophenol.....	10	..... N.D.
N-Nitrosodimethylamine.....	2.0	..... N.D.
N-Nitrosodiphenylamine.....	2.0	..... N.D.
N-Nitroso-di-N-propylamine.....	2.0	..... N.D.
Pentachlorophenol.....	10	..... N.D.
Phenanthrene.....	2.0	..... N.D.
Phenol.....	2.0	..... N.D.
Pyrene.....	2.0	..... N.D.
1,2,4-Trichlorobenzene.....	2.0	..... N.D.
2,4,5-Trichlorophenol.....	10	..... N.D.
2,4,6-Trichlorophenol.....	2.0	..... N.D.

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager



**Sequoia  
Analytical**

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 819 Striker Avenue, Suite 8      Sacramento, CA 95834      (916) 921-9600      FAX (916) 921-0100

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

Client Project ID:	Unocal 5484, 18950 Lake Chabot Rd.	Sampled:	Apr 11, 1996
Sample Descript:	Water, MW-7	Received:	Apr 11, 1996
Analysis Method:	EPA 8270	Extracted:	Apr 18, 1996
Lab Number:	604-0878	Analyzed:	Apr 23, 1996
		Reported:	May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	2.0	N.D.
Acenaphthylene.....	2.0	N.D.
Aniline.....	2.0	N.D.
Anthracene.....	2.0	N.D.
Benzidine.....	50	N.D.
Benzoic Acid.....	10	N.D.
Benzo(a)anthracene.....	2.0	N.D.
Benzo(b)fluoranthene.....	2.0	N.D.
Benzo(k)fluoranthene.....	2.0	N.D.
Benzo(g,h,i)perylene.....	2.0	N.D.
Benzo(a)pyrene.....	2.0	N.D.
Benzyl alcohol.....	2.0	N.D.
Bis(2-chloroethoxy)methane.....	2.0	N.D.
Bis(2-chloroethyl)ether.....	2.0	N.D.
Bis(2-chloroisopropyl)ether.....	2.0	N.D.
Bis(2-ethylhexyl)phthalate.....	10	N.D.
4-Bromophenyl phenyl ether.....	2.0	N.D.
Butyl benzyl phthalate.....	2.0	N.D.
4-Chloroaniline.....	2.0	N.D.
2-Chloronaphthalene.....	2.0	N.D.
4-Chloro-3-methylphenol.....	2.0	N.D.
2-Chlorophenol.....	2.0	N.D.
4-Chlorophenyl phenyl ether.....	2.0	N.D.
Chrysene.....	2.0	N.D.
Dibenz(a,h)anthracene.....	2.0	N.D.
Dibenzofuran.....	2.0	N.D.
Di-N-butyl phthalate.....	10	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
3,3-Dichlorobenzidine.....	10	N.D.
2,4-Dichlorophenol.....	2.0	N.D.
Diethyl phthalate.....	2.0	N.D.
2,4-Dimethylphenol.....	2.0	N.D.
Dimethyl phthalate.....	2.0	N.D.
4,6-Dinitro-2-methylphenol.....	10	N.D.
2,4-Dinitrophenol.....	10	N.D.
2,4-Dinitrotoluene.....	2.0	N.D.
2,6-Dinitrotoluene.....	2.0	N.D.
Di-N-octyl phthalate.....	2.0	N.D.



**Sequoia  
Analytical**

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--	--	--	--

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

Client Project ID:	Unocal 5484, 18950 Lake Chabot Rd.	Sampled:	Apr 11, 1996
Sample Descript:	Water, MW-7	Received:	Apr 11, 1996
Analysis Method:	EPA 8270	Extracted:	Apr 18, 1996
Lab Number:	604-0878	Analyzed:	Apr 23, 1996
		Reported:	May 1, 1996

### SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Fluoranthene.....	2.0	.....
Fluorene.....	2.0	.....
Hexachlorobenzene.....	2.0	.....
Hexachlorobutadiene.....	2.0	.....
Hexachlorocyclopentadiene.....	2.0	.....
Hexachloroethane.....	2.0	.....
Indeno(1,2,3-cd)pyrene.....	2.0	.....
Isophorone.....	2.0	.....
<b>2-Methylnaphthalene.....</b>	<b>2.0</b>	<b>7.6</b>
2-Methylphenol.....	2.0	.....
4-Methylphenol.....	2.0	.....
<b>Naphthalene.....</b>	<b>2.0</b>	<b>42</b>
2-Nitroaniline.....	10	.....
3-Nitroaniline.....	10	.....
4-Nitroaniline.....	10	.....
Nitrobenzene.....	2.0	.....
2-Nitrophenol.....	2.0	.....
4-Nitrophenol.....	10	.....
N-Nitrosodimethylamine.....	2.0	.....
N-Nitrosodiphenylamine.....	2.0	.....
N-Nitroso-di-N-propylamine.....	2.0	.....
Pentachlorophenol.....	10	.....
Phenanthrene.....	2.0	.....
Phenol.....	2.0	.....
Pyrene.....	2.0	.....
1,2,4-Trichlorobenzene.....	2.0	.....
2,4,5-Trichlorophenol.....	10	.....
2,4,6-Trichlorophenol.....	2.0	.....

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





**Sequoia  
Analytical**

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--	--	--	--

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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd. Castro Valley  
Matrix: Liquid

QC Sample Group: 6040876-878

Reported: May 1, 1996

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	L. Huang	L. Huang	L. Huang	L. Huang

**MS/MSD**  
**Batch#:** 6040687      6040687      6040687      6040687

**Date Prepared:** 4/22/96      4/22/96      4/22/96      4/22/96  
**Date Analyzed:** 4/22/96      4/22/96      4/22/96      4/22/96  
**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:** 110      110      115      112

**Matrix Spike**  
**Duplicate %**  
**Recovery:** 100      100      105      102

**Relative %**  
**Difference:** 9.5      9.5      9.1      9.4

**LCS Batch#:** 2LCS042296      2LCS042296      2LCS042296      2LCS042296

**Date Prepared:** 4/22/96      4/22/96      4/22/96      4/22/96  
**Date Analyzed:** 4/22/96      4/22/96      4/22/96      4/22/96  
**Instrument I.D.#:** HP-2      HP-2      HP-2      HP-2

**LCS %**  
**Recovery:** 95      90      100      97

**% Recovery**  
**Control Limits:** 70-130      70-130      70-130      70-130

**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



**Sequoia  
Analytical**

680 Chesapeake Drive      Redwood City, CA 94063      (415) 364-9600      FAX (415) 364-9233  
404 N. Wiget Lane      Walnut Creek, CA 94598      (510) 988-9600      FAX (510) 988-9673  
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2401 Stanwell Dr., Ste. 300  
Concord, CA 94520  
Attention: Jarrel Crider

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd., Castro Valley  
Matrix: Liquid

QC Sample Group: 6040876-681

Reported: May 1, 1996

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
<b>Method:</b>	EPA 8010	EPA 8010	EPA 8010
<b>Analyst:</b>	I.Dalvand	I.Dalvand	I.Dalvand

<b>MS/MSD Batch#:</b>	6040876	6040876	6040876
<b>Date Prepared:</b>	4/15/96	4/15/96	4/15/96
<b>Date Analyzed:</b>	4/15/96	4/15/96	4/15/96
<b>Instrument I.D.#:</b>	HP-6	HP-6	HP-6
<b>Conc. Spiked:</b>	10 µg/L	10 µg/L	10 µg/L
<b>Matrix Spike % Recovery:</b>	89	94	87
<b>Matrix Spike Duplicate % Recovery:</b>	84	93	85
<b>Relative % Difference:</b>	5.8	1.1	2.3

<b>LCS Batch#:</b>	LCS041596	LCS041596	LCS041596
<b>Date Prepared:</b>	4/15/96	4/15/96	4/15/96
<b>Date Analyzed:</b>	4/15/96	4/15/96	4/15/96
<b>Instrument I.D.#:</b>	HP-6	HP-6	HP-6
<b>LCS % Recovery:</b>	89	95	84
<b>% Recovery Control Limits:</b>	28-167	35-146	38-150

**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



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

Client Project ID: Unocal 5484, 18950 Lake Chabot Rd., Castro Valley  
Matrix: Liquid

QC Sample Group: 6040876-881

Reported: May 1, 1996

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	Phenol	2-Chlorophenol	1,4-Dichloro- benzene	N-Nitroso-Di- N-propylamine	1,2,4-Trichloro- benzene	4-Chloro-3- Methylphenol
<b>Prep. Method:</b>	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510
<b>Method:</b>	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270
<b>Analyst:</b>	T. Granicher	T. Granicher	T. Granicher	T. Granicher	T. Granicher	T. Granicher

**MS/MSD**  
**Batch#:**

**Date Prepared:** -  
**Date Analyzed:** -  
**Instrument I.D.#:** -  
**Conc. Spiked:** -

**Matrix Spike**  
**% Recovery:** -

**Matrix Spike**  
**Duplicate %**  
**Recovery:** -

**Relative %**  
**Difference:** -  
**RPD Limit:** 0-42

0-40            0-28            0-38            0-28            0-42

<b>LCS Batch#:</b>	LCS041896	LCS041896	LCS041896	LCS041896	LCS041896	LCS041896
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<b>Date Prepared:</b>	4/18/96	4/18/96	4/18/96	4/18/96	4/18/96	4/18/96
<b>Date Analyzed:</b>	4/24/96	4/24/96	4/24/96	4/24/96	4/24/96	4/24/96
<b>Instrument I.D.#:</b>	GC/MS-1	GC/MS-1	GC/MS-1	GC/MS-1	GC/MS-1	GC/MS-1

<b>LCS %</b> <b>Recovery:</b>	39	63	58	64	62	69
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<b>% Recovery</b> <b>Control Limits:</b>	35-120	30-120	30-120	30-120	40-120	30-120
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**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

**Please Note:**

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MPDS Services  
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Client Project ID: Unocal 5484, 18950 Lake Chabot Rd., Castro Valley  
 Matrix: Liquid

QC Sample Group: 6040876-881

Reported: May 1, 1996

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	Acenaphthene	4-Nitrophenol	2,4-Dinitrotoluene	Pentachlorophenol	Pyrene
<b>Prep. Method:</b>	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510
<b>Method:</b>	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270
<b>Analyst:</b>	T. Granicher	T. Granicher	T. Granicher	T. Granicher	T. Granicher

**MS/MSD**  
**Batch#:**

**Date Prepared:** -  
**Date Analyzed:** -  
**Instrument I.D.#:** -  
**Conc. Spiked:** -

**Matrix Spike**  
**% Recovery:** -

**Matrix Spike**  
**Duplicate %**  
**Recovery:** -

**Relative %**  
**Difference:** -  
**RPD Limit:** 0-31      0-50      0-38      0-50      0-31

<b>LCS Batch#:</b>	LCS041896	LCS041896	LCS041896	LCS041896	LCS041896
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<b>Date Prepared:</b>	4/18/96	4/18/96	4/18/96	4/18/96	4/18/96
<b>Date Analyzed:</b>	4/24/96	4/24/96	4/24/96	4/24/96	4/24/96
<b>Instrument I.D.#:</b>	GC/MS-1	GC/MS-1	GC/MS-1	GC/MS-1	GC/MS-1

<b>LCS %</b> <b>Recovery:</b>	62	39	54	66	80
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<b>% Recovery</b> <b>Control Limits:</b>	50-140	20-120	40-130	30-110	55-115
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**Please Note:**

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**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
 Project Manager

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**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.