MONITORING
PURGING
DISPOSING
SAMPLING

MPDS SERVICES, INCORPORATED

5010 11/20
5-E

Pam Evans

April 9, 1997

97 APR 11 PM 3:54
ENVIRONMENTAL PROTECTION

Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

RE: Unocal Service Station #1871
96 MacArthur Boulevard
Oakland, California

Per the request of the Tosco Marketing Company Project Professional, Ms. Tina R. Berry, enclosed please find our report (MPDS-UN1871-14) dated March 7, 1997 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 Professional at (510) 277-2321.

Sincerely,

MPDS Services, Inc.

Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry

2401 Stanwell Drive, Suite 400, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS SERVICES, INCORPORATED

MPDS-UN1871-14
February 25, 1997

76 Products Company
2000 Crow Canyon Place, Suite 400
P.O. Box 5155
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Semi-Annual Data Report
Unocal Service Station #1871
96 MacArthur Boulevard
Oakland, California

97 APR 11 PM 3:54
ENVIRONMENTAL PROTECTION

Dear Ms. Berry:

This data report presents the results of the most recent 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 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 semi-annual period is shown on the attached Figure 1.

Ground water samples were collected on January 28, 1997. Prior to sampling, the wells were each purged of between 6 and 33.5 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded on the purging/sampling data sheets which are attached to this report. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately three casing volumes had been removed from each well, 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. 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 and benzene detected in the ground water samples collected this semi-annual period are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

2401 Stanwell Drive, Suite 400, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

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

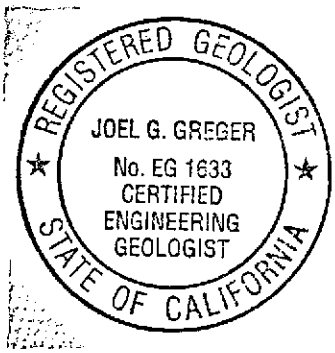
A copy of this report should be sent to the Alameda County Health Care Services Agency.

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 8/31/98

/aab

Attachments: Tables 1, 2 & 3
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation
Purging/Sampling Data Sheets

cc: Mr. Thomas J. Berkins, Kaprealian 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) |
|---|---|---|---|---|---|---|
| **(Monitored and Sampled on January 28, 1997)** | | | | | | |
| MW-1 | 74.99 | 11.25 | 24.13 | 0 | Yes | 18.5 |
| MW-2 | 73.96 | 7.70 | 24.73 | 0 | No | 33.5 |
| MW-3 | 73.05 | 9.50 | 23.70 | 0 | No | 28 |
| MW-4 | 74.10 | 7.94 | 19.57 | 0 | No | 6 |
| MW-5 | 74.04 | 7.76 | 19.99 | 0 | No | 6.5 |
| **(Monitored and Sampled on October 24, 1996)** | | | | | | |
| MW-1 | 71.39 | 14.85 | 24.18 | 0 | Yes | 18.5 |
| MW-2 | 70.88 | 10.78 | 24.74 | 0 | No | 27.5 |
| MW-3 | 69.90 | 12.65 | 23.70 | 0 | No | 22 |
| MW-4 | 70.90 | 11.14 | 19.57 | 0 | No | 6 |
| MW-5 | 70.40 | 11.40 | 20.00 | 0 | No | 4.5 |
| **(Monitored and Sampled on July 24, 1996)** | | | | | | |
| MW-1 | 72.09 | 14.15 | 24.10 | 0 | No | 26 |
| MW-2 | 71.64 | 10.02 | 24.70 | 0 | No | 25 |
| MW-3 | 70.38 | 12.17 | 23.68 | 0 | No | 30 |
| MW-4 | 71.57 | 10.47 | 19.56 | 0 | No | 6.5 |
| MW-5 | 71.00 | 10.80 | 20.00 | 0 | No | 6.5 |
| **(Monitored and Sampled on April 18, 1996)** | | | | | | |
| MW-1 | 72.84 | 13.40 | 24.20 | 0 | No | 23 |
| MW-2 | 72.39 | 9.27 | 24.80 | 0 | No | 41 |
| MW-3 | 71.25 | 11.30 | 23.77 | 0 | No | 33 |
| MW-4 | 72.21 | 9.83 | 19.61 | 0 | No | 7.5 |
| MW-5 | 72.15 | 9.65 | 20.05 | 0 | No | 7.5 |

## Table 1
Summary of Monitoring Data

| Well # | Well Casing Elevation (feet)* |
|---|---|
| MW-1 | 86.24 |
| MW-2 | 81.66 |
| MW-3 | 82.55 |
| MW-4 | 82.04 |
| MW-5 | 81.80 |

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

* The top of casing elevations were re-surveyed by Kier & Wright in May, 1996, per City of Oakland Benchmark No. 2310, a cut square in concrete curb at mid point of return at the northeast corner of El Dorado and Fairmont Streets (elevation = 77.53 feet MSL). These well casing elevations are used beginning with the April 18, 1996 monitoring event.

# Table 2

Summary of Laboratory Analyses
Water

| Well # | Date | TPH as Gasoline | Benzene | Toluene | Ethyl-Benzene | Xylenes | MTBE |
|---|---|---|---|---|---|---|---|
| MW-1 | 11/3/92 | 260,000 | 2,300 | 4,600 | 3,700 | 17,000 | -- |
| | 1/25/93 | 120,000 | 2,100 | 4,600 | 4,900 | 22,000 | -- |
| | 4/29/93 | 100,000 | 850 | 2,000 | 4,300 | 19,000 | -- |
| | 7/16/93 | 29,000 | 590 | 560 | 980 | 4,200 | -- |
| | 10/19/93 | 67,000 | 1,400 | 2,600 | 2,900 | 5,000 | -- |
| | 1/20/94 | 92,000 | 1,200 | 3,000 | 3,400 | 17,000 | -- |
| | 4/13/94 | 51,000 | 1,000 | 2,600 | 3,200 | 15,000 | -- |
| | 7/13/94 | 35,000 | 550 | 150 | 1,400 | 5,700 | -- |
| | 10/10/94 | 52,000 | 1,000 | 810 | 3,300 | 12,000 | -- |
| | 1/10/95 | 810 | 16 | 18 | 59 | 250 | -- |
| | 4/17/95 | 48,000 | 880 | 530 | 2,500 | 11,000 | -- |
| | 7/24/95 | 48,000 | 1,500 | 420 | 2,700 | 9,700 | -- |
| | 10/23/95 | 47,000 | 780 | 210 | 2,100 | 11,000 | 270 |
| | 1/18/96 | 30,000 | 1,500 | 500 | 3,500 | 13,000 | 2,400 |
| | 4/18/96 | 66,000 | 2,700 | 2,200 | 3,100 | 13,000 | 57,000 |
| | 7/24/96 | 5,600 | 2,100 | ND | 160 | 160 | 24,000 |
| | 10/24/96 | 110,000 | 7,500 | 8,000 | 3,300 | 14,000 | 58,000 |
| | **1/28/97** | **94,000** | **7,700** | **19,000** | **3,100** | **15,000** | **120,000** |
| MW-2 | 11/3/92 | 140 | 2.2 | ND | ND | 2.0 | -- |
| | 1/25/93 | 2,100 | 56 | 1.1 | 90 | 140 | -- |
| | 4/29/93 | 1,500 | 290 | ND | 33 | 11 | -- |
| | 7/16/93 | 510* | 17 | 0.60 | 3.2 | 2.5 | -- |
| | 10/19/93 | 670 | 24 | 1.1 | 7.7 | 23 | -- |
| | 1/20/94 | 820 | 97 | ND | 12 | ND | -- |
| | 4/13/94 | 550 | 71 | ND | 5.1 | 1.3 | -- |
| | 7/13/94 | 2,000 | 490 | ND | 17 | 13 | -- |
| | 10/10/94 | 2,300 | 340 | ND | 25 | ND | -- |
| | 1/10/95 | 850 | 3.8 | ND | 8.5 | 1.3 | -- |
| | 4/17/95 | 1,300 | 4.7 | ND | 8.3 | 1.2 | -- |
| | 7/24/95 | 960 | 20 | ND | 4.2 | 6.2 | -- |
| | 10/23/95 | ND | ND | ND | ND | ND | 19 |
| | 1/18/96 | 900 | 300 | 86 | 7.6 | 18 | 4,300 |
| | 4/18/96 | 18,000 | 3,600 | 680 | 890 | 4,100 | 19,000 |
| | 7/24/96 | 100,000 | 13,000 | 21,000 | 2,700 | 16,000 | 120,000 |
| | 10/24/96 | 800 | 110 | 17 | 11 | 20 | 20,000 |
| | **1/28/97** | **45,000** | **2,400** | **2,900** | **2,000** | **7,600** | **29,000** |
| MW-3 | 11/3/92 | 2,100 | 120 | 15 | 38 | 200 | -- |
| | 1/25/93 | 2,300 | 80 | 1 | 55 | 52 | - |
| | 4/29/93 | 4,500 | 1,700 | ND | 200 | 140 | -- |
| | 7/16/93 | 4,000* | 1,100 | 28 | 52 | 70 | -- |
| | 10/19/93 | 3,800 | 42 | ND | 50 | 56 | -- |

## Table 2
Summary of Laboratory Analyses
Water

| Well # | Date | TPH as Gasoline | Benzene | Toluene | Ethyl-Benzene | Xylenes | MTBE |
|---|---|---|---|---|---|---|---|
| MW-3 | 1/20/94 | 4,200 | 11 | ND | 21 | 15 | -- |
| (Cont.) | 4/13/94 | 4,200 | 210 | ND | 36 | 53 | -- |
| | 7/13/94 | 1,800** | 16 | 16 | ND | 21 | -- |
| | 10/10/94 | 4,300 | 11 | ND | 12 | ND | -- |
| | 1/10/95 | 310 | 4.6 | ND | 3.5 | 2.1 | -- |
| | 4/17/95 | 7,800 | ND | 4.6 | 300 | 450 | -- |
| | 7/24/95 | 3,200 | 170 | ND | 22 | 16 | -- |
| | 10/23/95 | 3,900 | 55 | ND | 19 | 11 | 4,500 |
| | 1/18/96 | 2,200 | 270 | 33 | 26 | 18 | 5,500 |
| | 4/18/96 | 6,000 | 1,800 | ND | 100 | 230 | 48,000 |
| | 7/24/96 | ND | 2,500 | ND | ND | ND | 71,000 |
| | 10/24/96 | 3,800 | 660 | ND | 15 | ND | 65,000 |
| | **1/28/97** | **4,400** | **250** | **13** | **87** | **47** | **54,000** |
| MW-4 | 4/18/96 | ND | 630 | ND | ND | ND | 18,000 |
| | 7/24/96 | ND | ND | ND | ND | 5.2 | 3,900 |
| | 10/24/96 | ND | ND | ND | ND | ND | 6,300 |
| | **1/28/97** | **1,200** | **490** | **ND** | **17** | **6.8** | **16,000** |
| MW-5 | 4/18/96 | 31,000 | 5,500 | 1,400 | 1,700 | 8,100 | 66,000 |
| | 7/24/96 | 32,000 | 6,400 | ND | 1,600 | 6,100 | 120,000 |
| | 10/24/96 | 17,000 | 6,900 | ND | 970 | 130 | 84,000 |
| | **1/28/97** | **19,000** | **6,100** | **62** | **82** | **310** | **160,000** |

* Primarily due to the presence of discrete peaks not indicative of gasoline.

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

-- Indicates analysis was not performed.

ND = Non-detectable.

Results are in micrograms per liter (µg/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 is C6 - C12.

Laboratory analyses data prior to October 19, 1993, were provided by GeoStrategies, Inc.

## Table 3

Summary of Laboratory Analyses
Water

| Well # | Date | TPH as Diesel | TOG (mg/L) | VOC | SVOC |
|---|---|---|---|---|---|
| MW-4 | 4/18/96 | 110* | ND | ND | -- |
| | 7/24/96 | ND | ND | ND | ND |
| | 10/24/96 | ND | ND | ND | ND★ |
| | 1/28/97 | 210** | ND | ND | ND★★ |

* Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to contain diesel.

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

★ Bis (2-ethylhexyl) phthalate was detected at a concentration of 14 µg/L.

★★ Naphthalene was detected at a concentration of 17 µg/L.

-- Indicates analysis was not performed.

Volatile Organic Compounds (VOC) by EPA method 8010.

Semi-Volatile Organic Compounds (SVOC) by EPA method 8270.

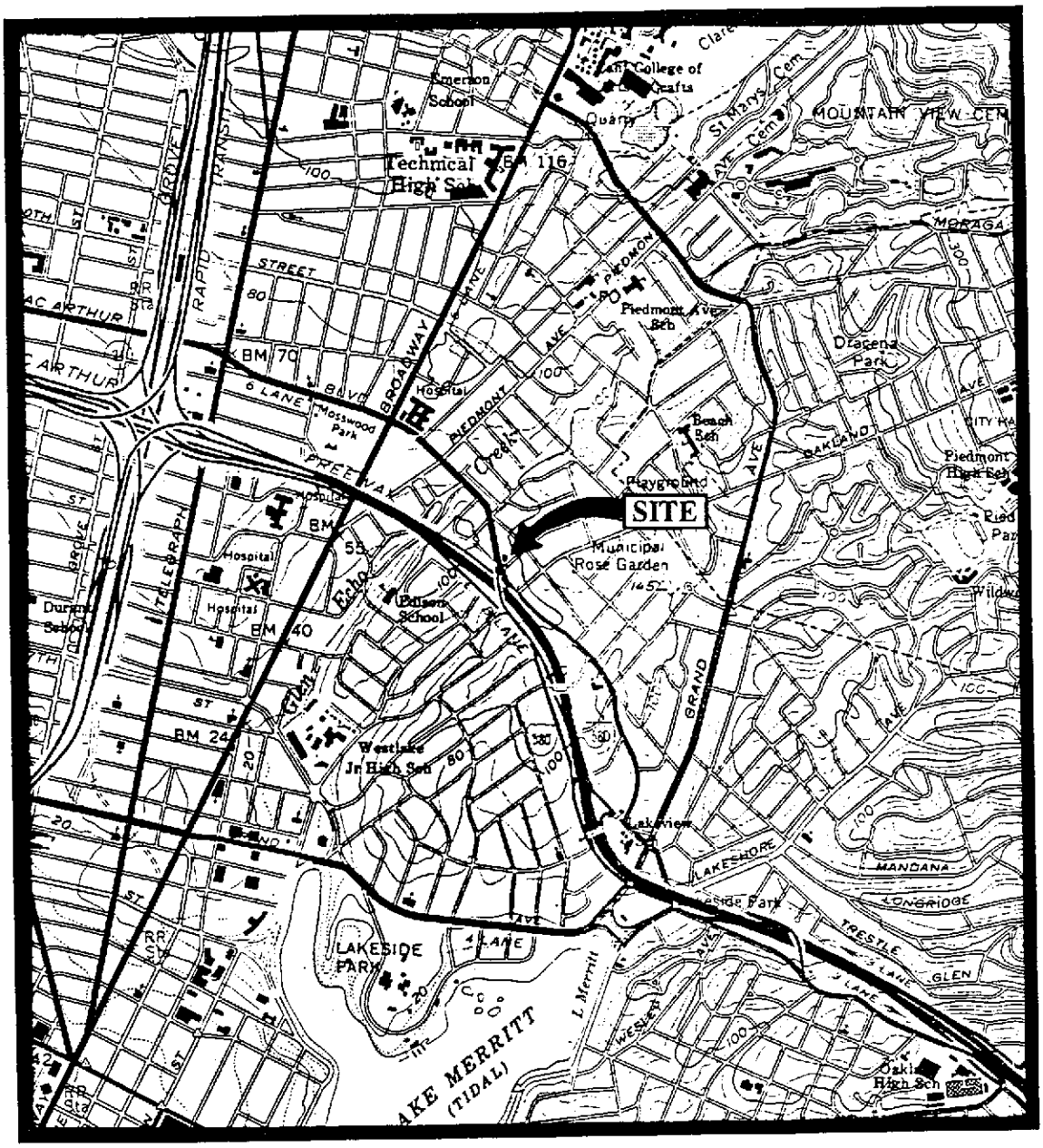
TOG = Total Oil & Grease.

mg/L = milligrams per liter.

ND = Non-detectable.

Results are in micrograms per liter (µg/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.

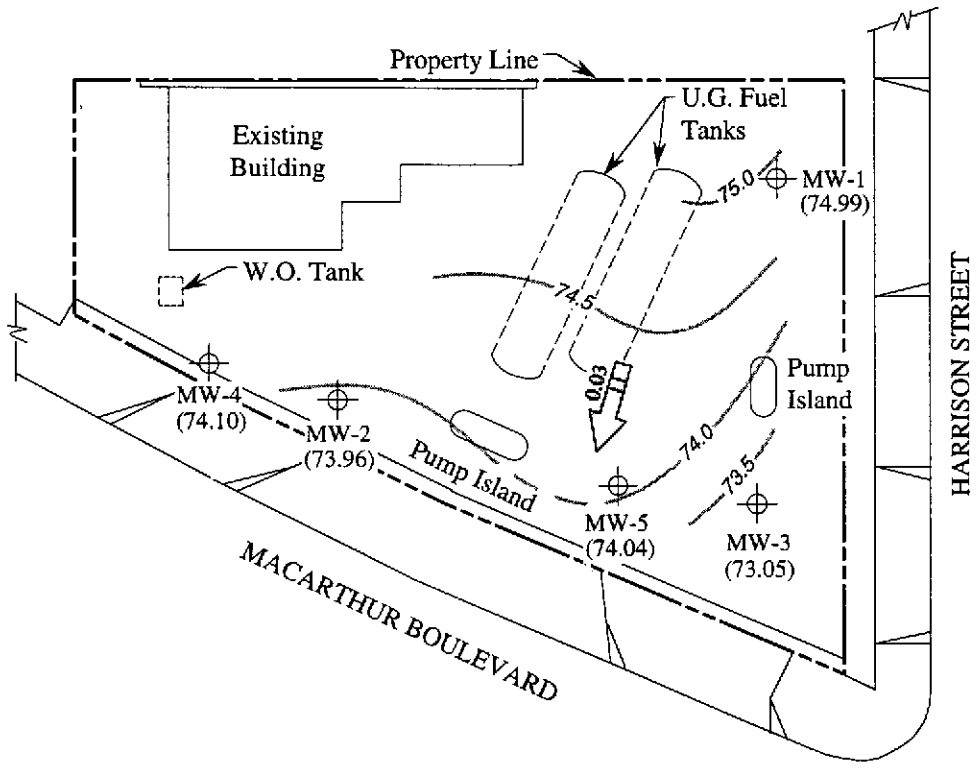



Base modified from 7.5 minute U.S.G.S.
Oakland East and West Quadrangles
(both photorevised 1980)

0 2000 4000

Approx. scale feet

| | | |
|---|---|---|
| mpds SERVICES, INCORPORATED | **UNOCAL SERVICE STATION # 1871**<br>**96 MACARTHUR BOULEVARD**<br>**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

0 30 60

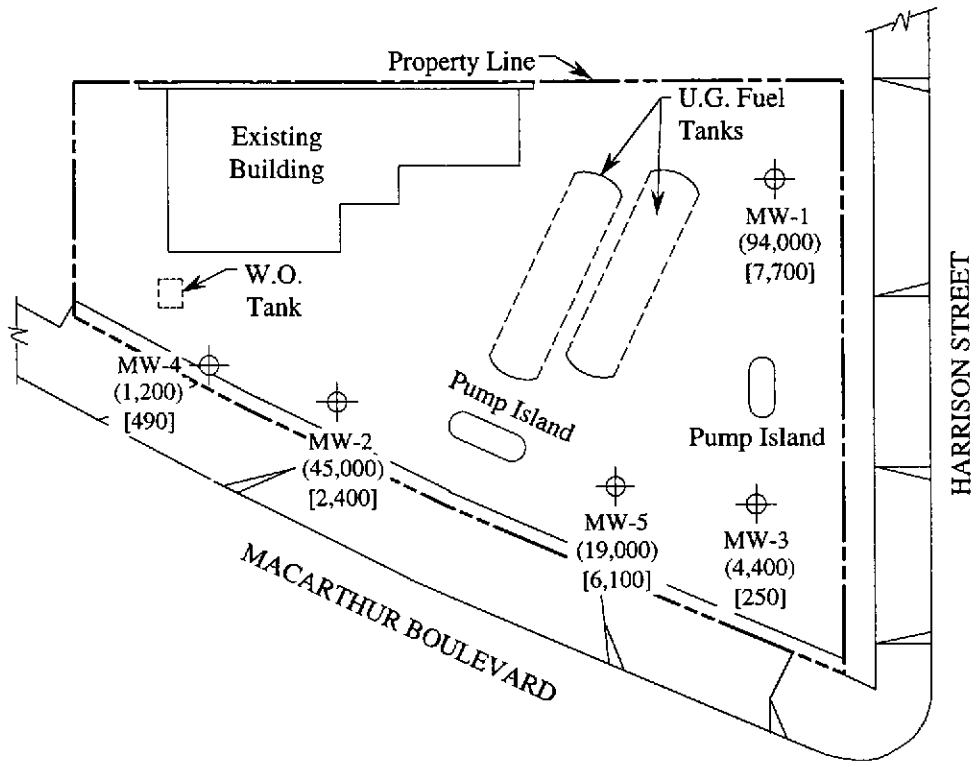
Approx. scale feet

**POTENTIOMETRIC SURFACE MAP FOR THE JANUARY 28, 1997 MONITORING EVENT**

mpds SERVICES, INCORPORATED

**UNOCAL SERVICE STATION # 1871**
**96 MACARTHUR BOULEVARD**
**OAKLAND, CALIFORNIA**

FIGURE
**1**




LEGEND

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L
- ND Non-detectable

MTBE?

0 30 60

Approx. scale feet

**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 28, 1997**

mpds SERVICES, INCORPORATED

**UNOCAL SERVICE STATION # 1871**
**96 MACARTHUR BOULEVARD**
**OAKLAND, CALIFORNIA**

FIGURE
**2**

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 | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: | Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Matrix Descript: | Water | Received: | Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: | Feb 11, 1997 |
| Attention: Jarrel Crider | First Sample #: | 701-1580 | | |

## 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 |
|---|---|---|---|---|---|---|
| 701-1580 | MW-1 | 94,000 | 7,700 | 19,000 | 3,100 | 15,000 |
| 701-1581 | MW-2 | 45,000 | 2,400 | 2,900 | 2,000 | 7,600 |
| 701-1582 | MW-3 | 4,400 | 250 | 13 | 87 | 47 |
| 701-1583 | MW-4 | 1,200 | 490 | ND | 17 | 6.8 |
| 701-1584 | MW-5 | 19,000 | 6,100 | 62 | 82 | 310 |

| | | | | | |
|---|---|---|---|---|---|
| **Detection Limits:** | **50** | **0.50** | **0.50** | **0.50** | **0.50** |

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



7011580.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 | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: | Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Matrix Descript: | Water | Received: | Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015 Mod./8020 | Reported: | Feb 11, 1997 |
| Attention: Jarrel Crider | First Sample #: | 701-1580 | | |

## 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 |
|---|---|---|---|---|---|---|
| 701-1580 | MW-1 | Gasoline | 400 | 1/31/97 | HP-2 | 86 |
| 701-1581 | MW-2 | Gasoline | 200 | 2/3/97 | HP-4 | 103 |
| 701-1582 | MW-3 | Gasoline | 10 | 1/31/97 | HP-2 | 117 |
| 701-1583 | MW-4 | Gasoline | 10 | 2/3/97 | HP-4 | 96 |
| 701-1584 | MW-5 | Gasoline | 100 | 1/31/97 | HP-2 | 87 |

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

| | | | |
|---|---|---|---|
| MPDS Services | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Sample Matrix: | Water | Received: Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 3510/8015 Mod. | Reported: Feb 11, 1997 |
| Attention: Jarrel Crider | First Sample #: | 701-1583 | |

## TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

| Analyte | Reporting Limit µg/L | Sample I.D. 701-1583 MW-4^ |
|---|---|---|
| Extractable Hydrocarbons | 50 | 210 |
| Chromatogram Pattern: | | Diesel & Unidentified Hydrocarbons <C15 |

**Quality Control Data**

| | |
|---|---|
| Report Limit Multiplication Factor: | 1.0 |
| Date Extracted: | 1/30/97 |
| Date Analyzed: | 1/31/97 |
| Instrument Identification: | HP-3B |

Extractable Hydrocarbons are quantitated against a fresh diesel standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp
Project Manager

Please Note:
^ Ths sample appears to contain diesel and non-diesel mixtures. "Unidentified Hydrocarbons <C15" are probably gasoline.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | | |
|---|---|---|---|
| MPDS Services | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Matrix Descript: | Water | Received: Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | SM 5520 B&F (Gravimetric) | Extracted: Jan 31, 1997 |
| Attention: Jarrel Crider | First Sample #: | 701-1583 | Analyzed: Jan 31, 1997 |
| | | | Reported: Feb 11, 1997 |

## TOTAL RECOVERABLE PETROLEUM OIL

| Sample Number | Sample Description | Oil & Grease mg/L (ppm) | Detection Limit Multiplication Factor |
|---|---|---|---|
| 701-1583 | MW-4 | N.D. | 1.0 |

| | |
|---|---|
| **Detection Limits:** | **5.0** |

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

7011580.MPD <5>

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 | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: | Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Sample Descript: | Water, MW-4 | Received: | Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8010 | Analyzed: | Feb 4, 1997 |
| Attention: Jarrel Crider | Lab Number: | 701-1583 | Reported: | Feb 11, 1997 |

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|---|---|---|
| Bromodichloromethane | 25 | N.D. |
| Bromoform | 25 | N.D. |
| Bromomethane | 50 | N.D. |
| Carbon tetrachloride | 25 | N.D. |
| Chlorobenzene | 25 | N.D. |
| Chloroethane | 50 | N.D. |
| 2-Chloroethylvinyl ether | 50 | N.D. |
| Chloroform | 25 | N.D. |
| Chloromethane | 50 | N.D. |
| Dibromochloromethane | 25 | N.D. |
| 1,3-Dichlorobenzene | 25 | N.D. |
| 1,4-Dichlorobenzene | 25 | N.D. |
| 1,2-Dichlorobenzene | 25 | N.D. |
| 1,1-Dichloroethane | 25 | N.D. |
| 1,2-Dichloroethane | 25 | N.D. |
| 1,1-Dichloroethene | 25 | N.D. |
| cis-1,2-Dichloroethene | 25 | N.D. |
| trans-1,2-Dichloroethene | 25 | N.D. |
| 1,2-Dichloropropane | 25 | N.D. |
| cis-1,3-Dichloropropene | 25 | N.D. |
| trans-1,3-Dichloropropene | 25 | N.D. |
| Methylene chloride | 250 | N.D. |
| 1,1,2,2-Tetrachloroethane | 25 | N.D. |
| Tetrachloroethene | 25 | N.D. |
| 1,1,1-Trichloroethane | 25 | N.D. |
| 1,1,2-Trichloroethane | 25 | N.D. |
| Trichloroethene | 25 | N.D. |
| Trichlorofluoromethane | 25 | N.D. |
| Vinyl chloride | 50 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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

| | | | | |
|---|---|---|---|---|
| MPDS Services | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: | Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Sample Descript: | Water, MW-4 | Received: | Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 8270 | Extracted: | Feb 4, 1997 |
| Attention: Jarrel Crider | Lab Number: | 701-1583 | Analyzed: | Feb 5, 1997 |
| | | | Reported: | Feb 11, 1997 |

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

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|---|---|---|
| Acenaphthene | 5.0 | N.D. |
| Acenaphthylene | 5.0 | N.D. |
| Anthracene | 5.0 | N.D. |
| Benzoic Acid | 10 | N.D. |
| Benzo(a)anthracene | 5.0 | N.D. |
| Benzo(b)fluoranthene | 5.0 | N.D. |
| Benzo(k)fluoranthene | 5.0 | N.D. |
| Benzo(g,h,i)perylene | 5.0 | N.D. |
| Benzo(a)pyrene | 5.0 | N.D. |
| Benzyl alcohol | 5.0 | N.D. |
| Bis(2-chloroethoxy)methane | 5.0 | N.D. |
| Bis(2-chloroethyl)ether | 5.0 | N.D. |
| Bis(2-chloroisopropyl)ether | 5.0 | N.D. |
| Bis(2-ethylhexyl)phthalate | 10 | N.D. |
| 4-Bromophenyl phenyl ether | 5.0 | N.D. |
| Butyl benzyl phthalate | 5.0 | N.D. |
| 4-Chloroaniline | 5.0 | N.D. |
| 2-Chloronaphthalene | 5.0 | N.D. |
| 4-Chloro-3-methylphenol | 5.0 | N.D. |
| 2-Chlorophenol | 5.0 | N.D. |
| 4-Chlorophenyl phenyl ether | 5.0 | N.D. |
| Chrysene | 5.0 | N.D. |
| Dibenz(a,h)anthracene | 5.0 | N.D. |
| Dibenzofuran | 5.0 | N.D. |
| Di-N-butyl phthalate | 10 | N.D. |
| 1,3-Dichlorobenzene | 5.0 | N.D. |
| 1,4-Dichlorobenzene | 5.0 | N.D. |
| 1,2-Dichlorobenzene | 5.0 | N.D. |
| 3,3-Dichlorobenzidine | 10 | N.D. |
| 2,4-Dichlorophenol | 5.0 | N.D. |
| Diethyl phthalate | 5.0 | N.D. |
| 2,4-Dimethylphenol | 5.0 | N.D. |
| Dimethyl phthalate | 5.0 | N.D. |
| 4,6-Dinitro-2-methylphenol | 10 | N.D. |
| 2,4-Dinitrophenol | 10 | N.D. |
| 2,4-Dinitrotoluene | 5.0 | N.D. |
| 2,6-Dinitrotoluene | 5.0 | N.D. |
| Di-N-octyl phthalate | 5.0 | N.D. |

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| | | | | |
|---|---|---|---|---|
| MPDS Services | Client Project ID: | Unocal #1871, 96 MacArthur Blvd., Oakland | Sampled: | Jan 28, 1997 |
| 2401 Stanwell Dr., Ste. 300 | Sample Descript: | Water, MW-4 | Received: | Jan 28, 1997 |
| Concord, CA 94520 | Analysis Method: | EPA 8270 | Extracted: | Feb 4, 1997 |
| Attention: Jarrel Crider | Lab Number: | 701-1583 | Analyzed: | Feb 5, 1997 |
| | | | Reported: | Feb 11, 1997 |

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

| Analyte | Detection Limit µg/L | Sample Results µg/L |
|---|---|---|
| Fluoranthene | 5.0 | N.D. |
| Fluorene | 5.0 | N.D. |
| Hexachlorobenzene | 5.0 | N.D. |
| Hexachlorobutadiene | 5.0 | N.D. |
| Hexachlorocyclopentadiene | 5.0 | N.D. |
| Hexachloroethane | 5.0 | N.D. |
| Indeno(1,2,3-cd)pyrene | 5.0 | N.D. |
| Isophorone | 5.0 | N.D. |
| 2-Methylnaphthalene | 5.0 | N.D. |
| 2-Methylphenol | 5.0 | N.D. |
| 4-Methylphenol | 5.0 | N.D. |
| **Naphthalene** | **5.0** | **17** |
| 2-Nitroaniline | 10 | N.D. |
| 3-Nitroaniline | 10 | N.D. |
| 4-Nitroaniline | 10 | N.D. |
| Nitrobenzene | 5.0 | N.D. |
| 2-Nitrophenol | 5.0 | N.D. |
| 4-Nitrophenol | 10 | N.D. |
| N-Nitrosodiphenylamine | 5.0 | N.D. |
| N-Nitroso-di-N-propylamine | 5.0 | N.D. |
| Pentachlorophenol | 10 | N.D. |
| Phenanthrene | 5.0 | N.D. |
| Phenol | 5.0 | N.D. |
| Pyrene | 5.0 | N.D. |
| 1,2,4-Trichlorobenzene | 5.0 | N.D. |
| 2,4,5-Trichlorophenol | 10 | N.D. |
| 2,4,6-Trichlorophenol | 5.0 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

**SEQUOIA ANALYTICAL, #1210**

Signature on File

Alan B. Kemp
Project Manager

Sequoia Analytical

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404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
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MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 7011580-584

Reported: Feb 11, 1997

# QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl Benzene | Xylenes | Diesel | Oil & Grease |
|---|---|---|---|---|---|---|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8015 | SM 5520BF |
| Analyst: | K. Nill | K. Nill | K. Nill | K. Nill | D. Sharma | I. Dalvand |
| MS/MSD Batch#: | 7011478 | 7011478 | 7011478 | 7011478 | BLK013097 | BLK013197 |
| Date Prepared: | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/30/97 | 1/31/97 |
| Date Analyzed: | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 |
| Instrument I.D.#: | HP-2 | HP-2 | HP-2 | HP-2 | HP-3A | Manual |
| Conc. Spiked: | 20 µg/L | 20 µg/L | 20 µg/L | 60 µg/L | 300 µg/L | 100 mg/L |
| Matrix Spike % Recovery: | 85 | 100 | 95 | 90 | 103 | 94 |
| Matrix Spike Duplicate % Recovery: | 85 | 100 | 95 | 93 | 100 | 94 |
| Relative % Difference: | 0.0 | 0.0 | 0.0 | 3.6 | 3.3 | 0.0 |
| LCS Batch#: | 2LCS013197 | 2LCS013197 | 2LCS013197 | 2LCS013197 | LCS013097 | LCS013197 |
| Date Prepared: | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/30/97 | 1/31/97 |
| Date Analyzed: | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 | 1/31/97 |
| Instrument I.D.#: | HP-2 | HP-2 | HP-2 | HP-2 | HP-3A | Manual |
| LCS % Recovery: | 85 | 95 | 90 | 87 | 90 | 95 |
| % Recovery Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp
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.

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

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 7011580-584

Reported: Feb 11, 1997

# QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl Benzene | Xylenes |
|---|---|---|---|---|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 |
| Analyst: | K. Nill | K. Nill | K. Nill | K. Nill |
| MS/MSD Batch#: | 7011660 | 7011660 | 7011660 | 7011660 |
| Date Prepared: | 2/3/97 | 2/3/97 | 2/3/97 | 2/3/97 |
| Date Analyzed: | 2/3/97 | 2/3/97 | 2/3/97 | 2/3/97 |
| Instrument I.D.#: | HP-4 | HP-4 | HP-4 | HP-4 |
| Conc. Spiked: | 20 µg/L | 20 µg/L | 20 µg/L | 60 µg/L |
| Matrix Spike % Recovery: | 90 | 95 | 95 | 97 |
| Matrix Spike Duplicate % Recovery: | 80 | 80 | 80 | 80 |
| Relative % Difference: | 12 | 17 | 17 | 19 |
| LCS Batch#: | 4LCS020397 | 4LCS020397 | 4LCS020397 | 4LCS020397 |
| Date Prepared: | 2/3/97 | 2/3/97 | 2/3/97 | 2/3/97 |
| Date Analyzed: | 2/3/97 | 2/3/97 | 2/3/97 | 2/3/97 |
| Instrument I.D.#: | HP-4 | HP-4 | HP-4 | HP-4 |
| LCS % Recovery: | 100 | 105 | 105 | 105 |
| % Recovery Control Limits: | 60-140 | 60-140 | 60-140 | 60-140 |

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp
Project Manager

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Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 7011580-584

Reported: Feb 11, 1997

# QUALITY CONTROL DATA REPORT

| ANALYTE | 1,1-Dichloro-ethene | Trichloro-ethene | Chloro-benzene |
|---|---|---|---|
| Method: | EPA 8010 | EPA 8010 | EPA 8010 |
| Analyst: | P. Horton | P. Horton | P. Horton |
| MS/MSD Batch#: | 7011536 | 7011536 | 7011536 |
| Date Prepared: | 2/4/97 | 2/4/97 | 2/4/97 |
| Date Analyzed: | 2/4/97 | 2/4/97 | 2/4/97 |
| Instrument I.D.#: | HP-7 | HP-7 | HP-7 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L |
| Matrix Spike % Recovery: | 113 | 114 | 105 |
| Matrix Spike Duplicate % Recovery: | 114 | 113 | 104 |
| Relative % Difference: | 0.90 | 0.90 | 1.0 |
| LCS Batch#: | LCS020497 | LCS020497 | LCS020497 |
| Date Prepared: | 2/4/97 | 2/4/97 | 2/4/97 |
| Date Analyzed: | 2/4/97 | 2/4/97 | 2/4/97 |
| Instrument I.D.#: | HP-7 | HP-7 | HP-7 |
| LCS % Recovery: | 113 | 114 | 102 |
| % Recovery Control Limits: | 60-140 | 60-140 | 60-140 |

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp
Project Manager

Please Note:
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MPDS Services
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Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 7011580-584
Reported: Feb 11, 1997

# QUALITY CONTROL DATA REPORT

| ANALYTE | Phenol | 2-Chlorophenol | 1,4-Dichloro-benzene | N-Nitroso-Di-N-propylamine | 1,2,4-Trichloro-benzene | 4-Chloro-3-Methylphenol |
|---|---|---|---|---|---|---|
| Prep. Method: | EPA 3510 | EPA 3510 | EPA 3510 | EPA 3510 | EPA 3510 | EPA 3510 |
| Method: | EPA 8270 | EPA 8270 | EPA 8270 | EPA 8270 | EPA 8270 | EPA 8270 |
| Analyst: | E. Manuel | E. Manuel | E. Manuel | E. Manuel | E. Manuel | E. Manuel |
| MS/MSD Batch#: | BLK020496 | BLK020496 | BLK020496 | BLK020496 | BLK020496 | BLK020496 |
| Date Prepared: | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 |
| Date Analyzed: | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 |
| Instrument I.D.#: | F-4 | F-4 | F-4 | F-4 | F-4 | F-4 |
| Conc. Spiked: | 200 µg/L | 200 µg/L | 100 µg/L | 100 µg/L | 100 µg/L | 200 µg/L |
| Matrix Spike % Recovery: | 39 | 77 | 64 | 76 | 73 | 93 |
| Matrix Spike Duplicate % Recovery: | 39 | 80 | 88 | 83 | 78 | 95 |
| Relative % Difference: | 1.30 | 4.5 | 6.1 | 8.8 | 6.7 | 2.1 |
| RPD Limit: | 0-20 | 0-15 | 0-13 | 0-18 | 0-18 | 0-20 |
| LCS Batch#: | - | - | - | - | - | - |
| Date Prepared: | - | - | - | - | - | - |
| Date Analyzed: | - | - | - | - | - | - |
| Instrument I.D.#: | - | - | - | - | - | - |
| LCS % Recovery: | - | - | - | - | - | - |
| % Recovery Control Limits: | 12-110 | 27-123 | 36-97 | 41-116 | 39-98 | 23-97 |

**SEQUOIA ANALYTICAL, #1210**

Signature on File

Alan B. Kemp
Project Manager

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

Client Project ID: Unocal #1871, 96 MacArthur Blvd., Oakland
Matrix: Liquid
QC Sample Group: 7011580-584

Reported: Feb 11, 1997

# QUALITY CONTROL DATA REPORT

| ANALYTE | Acenaphthene | 4-Nitrophenol | 2,4-Dinitro-toluene | Pentachloro-phenol | Pyrene |
|---|---|---|---|---|---|
| Prep. Method: | EPA 3510 | EPA 3510 | EPA 3510 | EPA 3510 | EPA 3510 |
| Method: | EPA 8270 | EPA 8270 | EPA 8270 | EPA 8270 | EPA 8270 |
| Analyst: | E. Manuel | E. Manuel | E. Manuel | E. Manuel | E. Manuel |
| MS/MSD Batch#: | BLK020496 | BLK020496 | BLK020496 | BLK020496 | BLK020496 |
| Date Prepared: | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 |
| Date Analyzed: | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 | 2/4/97 |
| Instrument I.D.#: | F-4 | F-4 | F-4 | F-4 | F-4 |
| Conc. Spiked: | 100 µg/L | 200 µg/L | 100 µg/L | 200 µg/L | 100 µg/L |
| Matrix Spike % Recovery: | 66 | 30 | 75 | 79 | 87 |
| Matrix Spike Duplicate % Recovery: | 69 | 29 | 75 | 79 | 89 |
| Relative % Difference: | 3.7 | 1.7 | 0.70 | 0.0 | 2.3 |
| RPD Limit: | 0-18 | 0-47 | 0-13 | 0-27 | 0-17 |
| LCS Batch#: | - | - | - | - | - |
| Date Prepared: | - | - | - | - | - |
| Date Analyzed: | - | - | - | - | - |
| Instrument I.D.#: | - | - | - | - | - |
| LCS % Recovery: | - | - | - | - | - |
| % Recovery Control Limits: | 46-118 | 10-80 | 24-96 | 9-103 | 26-127 |

**SEQUOIA ANALYTICAL, #1210**

Signature on File

Alan B. Kemp
Project Manager

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mpds SERVICES, INCORPORATED
2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: (510) 602-5100, Fax: (510) 689-1918

# CHAIN OF CUSTODY

SAMPLER: VARTKES TASHDJIAN

WITNESSING AGENCY:

UNOCAL S/S # 1871 CITY: Oakland

ADDRESS: 96 MacArthur Blvd.

ANALYSES REQUESTED

TURN AROUND TIME:

| SAMPLE ID NO. | DATE | TIME | WATER | GRAB | COMP | NO. OF CONT. | SAMPLING LOCATION | TPH-GAS BTEX | TPH-DIESEL | TOG (5520 B&F) | 8010 | 8270 | MTBE | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW 1 | 1/28/97 | 1:10 PM | X | X | | 2 VOAs | Well | X | | | | | X | 7011580 | A-B | MTBE DETECTION LIMIT 5ppb. |
| MW 2 | " | 11:00 AM | X | X | | 2 VOAs | " | X | | | | | X | 7011581 | | |
| MW 3 | " | 11:50 AM | X | X | | 2 VOAs | " | X | | | | | X | 7011582 | | |
| MW 4 | " | 10:13 AM | X | X | | 4 VOAs 3 Ambers | " | X | X | X | X | X | X | 7011583 | A-G | |
| MW 5 | " | 12:25 PM | X | X | | 2 VOAs | " | X | | | | | X | 7011584 | A-B | |

| RELINQUISHED BY: | DATE/TIME | RECEIVED BY: | DATE/TIME |
|---|---|---|---|
| Vartkes Tashdjian (SIGNATURE) | 1/28/97 5:40 PM | Abed (SIGNATURE) | 1/28/97 17:40 |
| Abed (SIGNATURE) | 1/29/97 | (SIGNATURE) | 1-29 1330 |
| (SIGNATURE) | 1-29 1501/746 | (SIGNATURE) | 1/29/97 1510 |
| (SIGNATURE) | | (SIGNATURE) | |
| (SIGNATURE) | | (SIGNATURE) | |

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Yes
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Yes
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? No
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Yes

SIGNATURE: Abed TITLE: Lab DATE: 1/28/97

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 HNO3. All other containers are

**MPDS Services Inc.**
2401 Stanwell Drive
Concord, California 94520

Tel: (510) 602-5120
Fax: (510) 689-1918

# PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #1871- Oakland
96 MacArthur Blvd.

DATE & TIME SAMPLED 1/28/97 1110 A.M. (P.M.)

FIELD TECHNICIAN Yarthes

PURGE METHOD Pump

DATE(S) PURGED 1/28/97

WELL NUMBER MW 1

WATER LEVEL-**INITIAL** 11.25

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 17.03

CONTAINERS 2

WELL DEPTH 24.13

PRESERVATIVES VOA's HCl

WELL CASING VOLUME 8.37

†CASING DIAMETER 4"

| TIME | GALLONS PURGED | TEMPERATURE (°F) (± 1°F) | ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL | pH (± 0.2) |
|---|---|---|---|---|
| 12:43 | 0 | 70.1 | 3.14 | 7.51 |
| | 8.5 | 68.9 | 3.03 | 7.32 |
| | 17 | 69.3 | 2.98 | 7.25 |
| 12:59 | 18.5 | Dewatered | — | — |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

† Correction Factors:

| Well Diameter | Factor |
|---|---|
| 2" | 0.17 |
| 3" | 0.37 |
| 4" | 0.65 |
| 4.5" | 0.82 |
| 6" | 1.46 |
| 8" | 2.6 |
| 12" | 5.87 |

/P&S

**MPDS Services Inc.**
2401 Stanwell Drive
Concord, California 94520

Tel: (510) 602-5120
Fax: (510) 689-1918

# PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #1871- Oakland
96 MacArthur Blvd-

DATE & TIME SAMPLED 1/28/97 11:00 (A.M) P.M.

FIELD TECHNICIAN Vasthes

PURGE METHOD Pump

DATE(S) PURGED 1/28/97

WELL NUMBER MW 2

WATER LEVEL-**INITIAL** 7.70

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 12.24

CONTAINERS 2

WELL DEPTH 24.73

PRESERVATIVES VOA's HCl

WELL CASING VOLUME 11.07

†CASING DIAMETER 4"

| TIME | GALLONS PURGED | TEMPERATURE (°F) (± 1°F) | ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL | pH (± 0.2) |
|---|---|---|---|---|
| 10:30 | 0 | 65.3 | 2.36 | 7.73 |
| | 11 | 66.8 | 2.43 | 7.59 |
| | 22 | 67.4 | 2.33 | 7.50 |
| 10:48 | 33.5 | 68.0 | 2.27 | 7.42 |
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† Correction Factors:

| Well Diameter | Factor |
|---|---|
| 2" | 0.17 |
| 3" | 0.37 |
| 4" | 0.65 |
| 4.5" | 0.82 |
| 6" | 1.46 |
| 8" | 2.6 |
| 12" | 5.87 |

/P&S

**MPDS Services Inc.**
2401 Stanwell Drive
Concord, California 94520

Tel: (510) 602-5120
Fax: (510) 689-1918

# PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #1871- Oakland
96 MacArthur Blvd.

DATE & TIME SAMPLED 11/28/97 11:50 (A.M.) P.M.

FIELD TECHNICIAN Varthes

PURGE METHOD Pump

DATE(S) PURGED 11/28/97

WELL NUMBER MW 3

WATER LEVEL-**INITIAL** 9.50

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 14.36

CONTAINERS 2

WELL DEPTH 23.70

PRESERVATIVES VOA's HCl

WELL CASING VOLUME 9.23

†CASING DIAMETER 4"

| TIME | GALLONS PURGED | TEMPERATURE (°F) (± 1°F) | ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL | pH (± 0.2) |
|---|---|---|---|---|
| 11:20 | 0 | 69.4 | 2.89 | 7.68 |
| | 9 | 69.0 | 2.96 | 7.51 |
| | 18 | 68.6 | 3.03 | 7.40 |
| 11:36 | 28 | 68.3 | 3.11 | 7.30 |
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† Correction Factors:

| Well Diameter | Factor |
|---|---|
| 2" | 0.17 |
| 3" | 0.37 |
| 4" | 0.65 |
| 4.5" | 0.82 |
| 6" | 1.46 |
| 8" | 2.6 |
| 12" | 5.87 |

/P&S

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# PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 1871 - Oakland
96 MacArthur Blvd.

DATE & TIME SAMPLED 1/28/97 10:13 (A.M.) P.M.

FIELD TECHNICIAN Vaithis

PURGE METHOD Pump

DATE(S) PURGED 1/28/97

WELL NUMBER MW4

WATER LEVEL-**INITIAL** 7.94

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 8.12

CONTAINERS 7

WELL DEPTH 19.57

PRESERVATIVES VOA; HCl

WELL CASING VOLUME 1.98

†CASING DIAMETER 2"

| TIME | GALLONS PURGED | TEMPERATURE (°F) (± 1°F) | ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL | pH (± 0.2) |
|---|---|---|---|---|
| 9:53 | 0 | 67.7 | 3.59 | 7.89 |
| | 2 | 64.5 | 3.61 | 7.68 |
| | 4 | 65.2 | 3.66 | 7.57 |
| 10:00 | 6 | 65.7 | 3.70 | 7.50 |
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† Correction Factors:

| Well Diameter | Factor |
|---|---|
| 2" | 0.17 |
| 3" | 0.37 |
| 4" | 0.65 |
| 4.5" | 0.82 |
| 6" | 1.46 |
| 8" | 2.6 |
| 12" | 5.87 |

/P&S

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# PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 1871 Oakland
96 MacArthur Blvd.

DATE & TIME SAMPLED 1/28/97 12:25 A.M. (P.M.)

FIELD TECHNICIAN Kartles

PURGE METHOD Pump

DATE(S) PURGED 1/28/97

WELL NUMBER MW 5

WATER LEVEL-**INITIAL** 7.76

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 12.81

CONTAINERS 2

WELL DEPTH 19.99

PRESERVATIVES VOA's HCl

WELL CASING VOLUME 2.08

†CASING DIAMETER ~~2~~ 2"

| TIME | GALLONS PURGED | TEMPERATURE (°F) (± 1°F) | ELECTRICAL CONDUCTIVITY ([µmhos/cm]x100) (± 10% of TOTAL | pH (± 0.2) |
|---|---|---|---|---|
| 12:05 | 0 | 69.5 | 4.07 | 7.71 |
| | 2 | 68.9 | 4.09 | 7.54 |
| | 4 | 68.8 | 4.11 | 7.40 |
| 12:13 | 6.5 | 69.1 | 4.12 | 7.34 |
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† Correction Factors:

| Well Diameter | Factor |
|---|---|
| 2" | 0.17 |
| 3" | 0.37 |
| 4" | 0.65 |
| 4.5" | 0.82 |
| 6" | 1.46 |
| 8" | 2.6 |
| 12" | 5.87 |

/P&S