# M P D S

SERVICES, INCORPORATED

JQC
4/13

MPDS-UN5901-02
April 4, 1994

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

Attention: Mr. Adadu Yemane

RE: Quarterly Data Report
Former Unocal Service Station #5901
11976 Dublin Boulevard
Dublin, California

Dear Mr. Yemane:

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 March 3, 1994. Prior to sampling, the wells were each purged of between 4.5 and 8 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.

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 Table 2. 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

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Concord, California 94520
Tel: (510) 602-5120 Fax: (510) 689-1918

analytical results and the Chain of Custody documentation are attached to this report.

DISTRIBUTION

A copy of this report should be sent to Ms. Eva Chu of the Alameda County Health Care Services, and to Mr. Lester Feldman of the Regional Water Quality Control Board, San Francisco Bay Region.

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

Sincerely,

MPDS Services, Inc.

Talin Kaloustian
Staff Engineer

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


License No. EG 1633
Exp. Date 6/30/94

/dlh

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

cc: Mr. Timothy R. Ross, Kaprealian Engineering, Inc.

## TABLE 1

SUMMARY OF MONITORING DATA

| Well # | Ground Water Elevation (feet) | Depth to Water (feet)◆ | Product Thickness (feet) | Sheen | Water Purged (gallons) | Total Well Depth (feet)◆ |
|---|---|---|---|---|---|---|
| **(Monitored and Sampled on March 3, 1994)** | | | | | | |
| MW1* | 362.05 | 4.75 | 0 | -- | 0 | 19.81 |
| MW3* | 352.05 | 14.81 | 0 | -- | 0 | 19.71 |
| MW4* | 362.42 | 5.16 | 0 | -- | 0 | 19.74 |
| MW5 | 351.64 | 13.91 | 0 | No | 8 | 25.03 |
| MW6 | 346.47 | 19.21 | 0 | No | 4.5 | 25.11 |
| **(Monitored and Sampled on December 9, 1993)** | | | | | | |
| MW1 | 362.22 | 4.58 | 0 | No | 10.5 | 19.80 |
| MW3 | 352.26 | 14.60 | 0 | No | 3.5 | 19.65 |
| MW4* | 362.53 | 5.05 | 0 | -- | 0 | 19.76 |
| MW5 | 352.01 | 13.54 | 0 | No | 8 | 25.04 |
| MW6 | 344.03 | 21.65 | 0 | No | 2.5 | 25.12 |
| **(Monitored and Sampled on October 9, 1993)** | | | | | | |
| MW1 | 361.96 | 4.84 | 0 | No | 10.5 | |
| MW3 | 351.59 | 15.27 | 0 | No | 3 | |
| MW4* | 362.29 | 5.29 | 0 | -- | 0 | |
| MW5 | 351.20 | 14.35 | 0 | No | 7.5 | |
| MW6 | 341.54 | 24.14 | 0 | No | 1 | |
| **(Monitored and Sampled on September 16, 1993)** | | | | | | |
| MW1 | 362.00 | 4.80 | 0 | No | 11 | |
| MW3 | 351.57 | 15.29 | 0 | No | 3 | |
| MW4* | 362.33 | 5.25 | 0 | -- | 0 | |

**TABLE 1 (Continued)**

SUMMARY OF MONITORING DATA

| Well # | Well Casing Elevation (feet)** |
|---|---|
| MW1 | 366.80 |
| MW3 | 366.86 |
| MW4 | 367.58 |
| MW5 | 365.55 |
| MW6 | 365.68 |

♦ 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 have been surveyed relative to Mean Sea Level (MSL), per the National Geodetic Survey disk stamped "I-1257, reset 1975" (elevation = 439.93 MSL).

-- Sheen determination was not performed.

Note: - Wells MW1 and MW4, wells MW3 and MW5, and well MW6 are reportedly located in three separate hydrologic regions caused by fault splays.

- Monitoring data prior to December 9, 1993, were provided by Kaprealian Engineering, Inc.

## TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER ppb

| Date | Well # | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 3/03/94 | MW5 | -- | ND | ND | 0.84 | ND | 0.60 |
| | MW6 | -- | 150 | 2.4 | 2.8 | ND | 1.2 |
| 12/09/93 | MW1♦ | -- | -- | -- | -- | -- | -- |
| | MW3 | -- | ND | ND | ND | ND | ND |
| | MW5 | -- | ND | ND | ND | ND | ND |
| | MW6 | -- | 790 | 0.64 | 1.0 | ND | ND |
| 10/09/93 | MW5 | -- | ND | ND | ND | ND | ND |
| | MW6 | -- | 480 | 1.8 | 0.63 | 0.81 | ND |
| 9/16/93 | MW1♦ | -- | -- | -- | -- | -- | -- |
| | MW3 | -- | ND | ND | ND | ND | ND |
| 6/18/93 | MW1♦ | -- | -- | -- | -- | -- | -- |
| | MW3 | -- | ND | ND | ND | ND | ND |
| 4/03/92 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3 | -- | ND | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |
| 1/02/92 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3** | -- | 38 | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |
| 10/03/91 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3 | -- | 32 | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |
| 7/02/91 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3 | -- | ND | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |

**TABLE 2 (Continued)**

SUMMARY OF LABORATORY ANALYSES
WATER

| Date | Well # | TPH as Diesel | TPH as Gasoline | Benzene | Toluene | Ethyl-benzene | Xylenes |
|---|---|---|---|---|---|---|---|
| 4/01/91 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3 | -- | ND | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |
| 11/16/90 | MW1* | ND | ND | ND | ND | ND | ND |
| | MW2 | -- | ND | ND | ND | ND | ND |
| | MW3 | -- | ND | ND | ND | ND | ND |
| | MW4 | -- | ND | ND | ND | ND | ND |

♦ All EPA method 8100 constituents (polynuclear aromatic hydrocarbons) were non-detectable.

* TOG and all EPA method 8010 constituents were non-detectable.

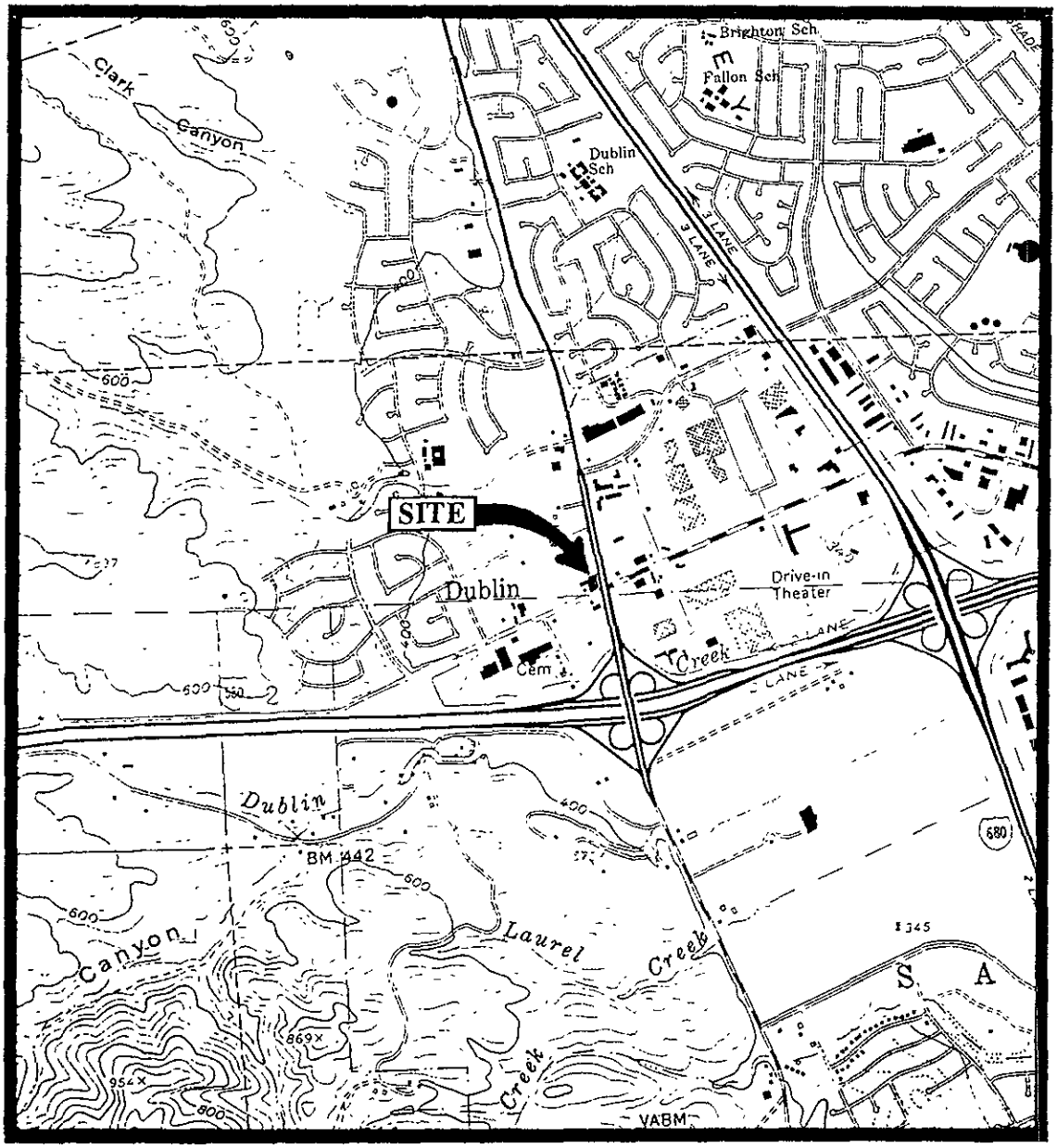
** All EPA method 8010 constituents were non-detectable.

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 December 9, 1993, were provided by Kaprealian Engineering, Inc.

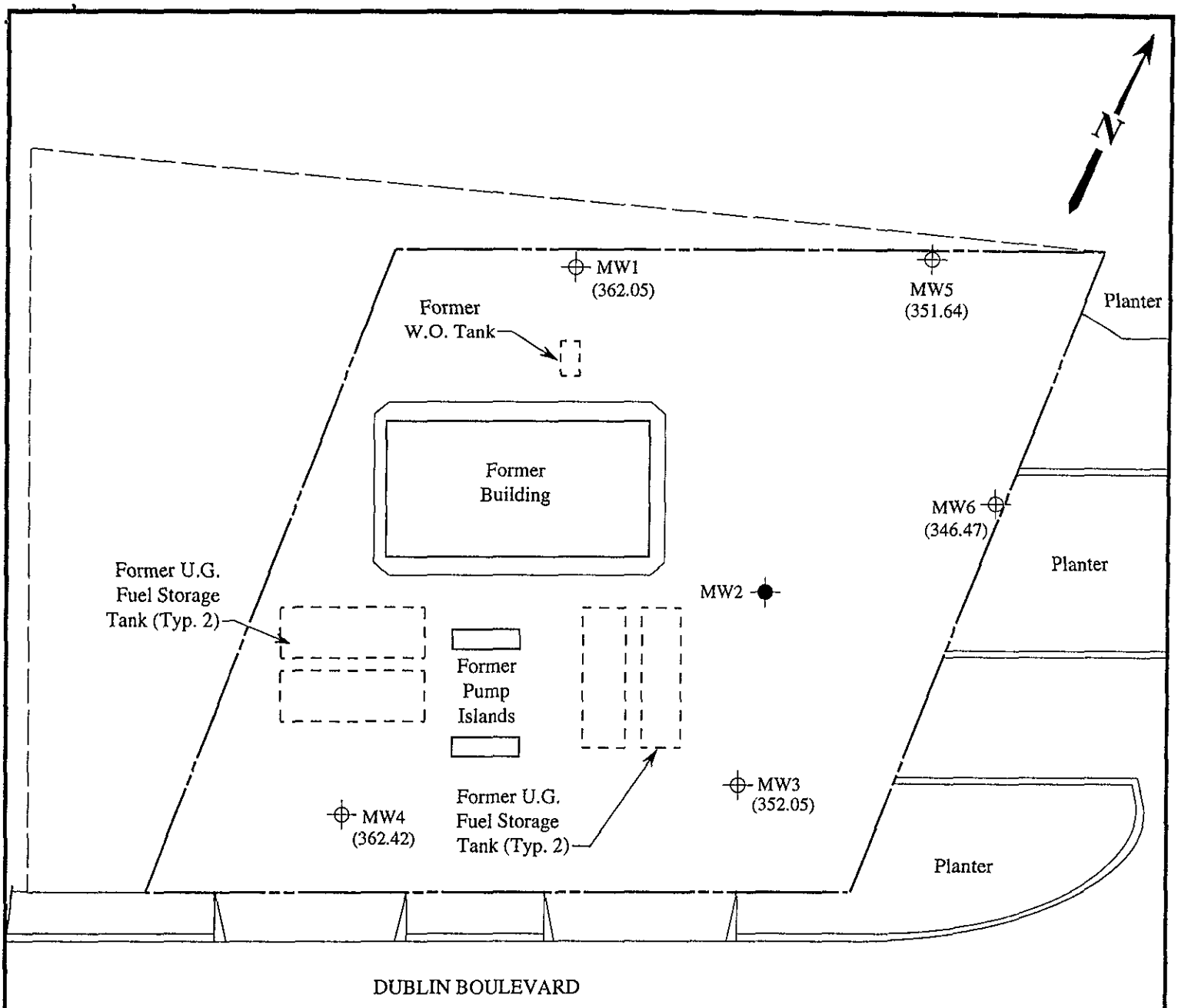



Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)

0 2000 4000

Approx. scale feet

| | | |
|---|---|---|
| **M P D S**<br>SERVICES, INCORPORATED | **FORMER UNOCAL S/S #5901**<br>**11976 DUBLIN BOULEVARD**<br>**DUBLIN, CALIFORNIA** | **LOCATION MAP** |




LEGEND

- Monitoring well (existing)
- Monitoring well (previously destroyed)
- ( ) Ground water elevation in feet above Mean Sea Level

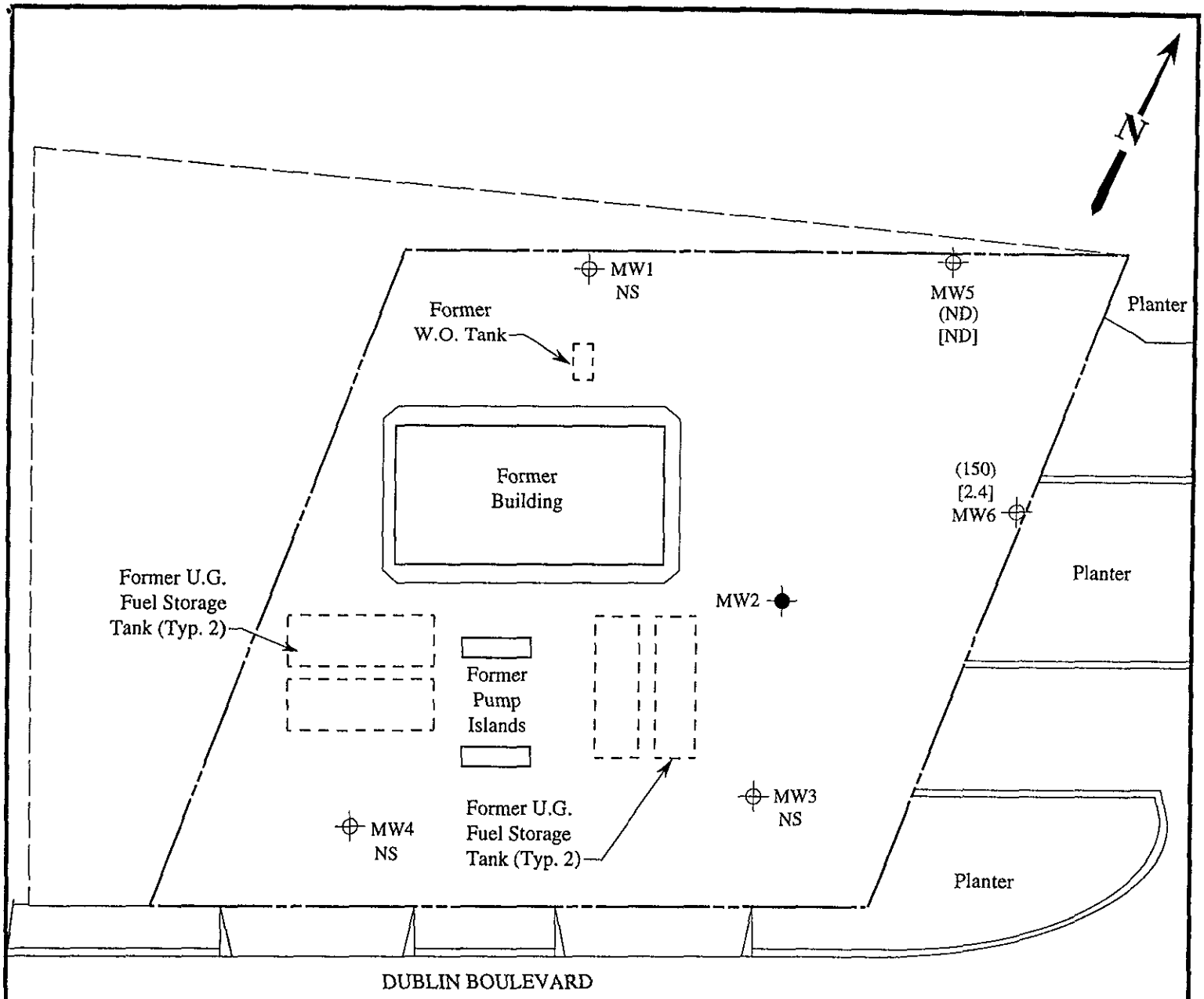
Note: The monitoring wells are reportedly located in separate hydrologic regimes caused by fault splays; therefore, ground water elevation contours are not shown.

0 30 60

Approx. scale feet

**GROUND WATER ELEVATION MAP FOR THE MARCH 3, 1994 MONITORING EVENT**

| | | |
|---|---|---|
| **M P D S**<br>SERVICES, INCORPORATED | **FORMER UNOCAL S/S #5901**<br>**11976 DUBLIN BOULEVARD**<br>**DUBLIN, CALIFORNIA** | FIGURE<br>**1** |




LEGEND

- Monitoring well (existing)
- Monitoring well (destroyed)
- ( ) Concentration of TPH as gasoline in µg/L
- [ ] Concentration of benzene in µg/L

ND = Non-detectable, NS = Not sampled

0 30 60

Approx. scale feet

**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON MARCH 3, 1994**

| | | |
|---|---|---|
| **MPDS**<br>SERVICES, INCORPORATED | **FORMER UNOCAL S/S #5901**<br>**11976 DUBLIN BOULEVARD**<br>**DUBLIN, CALIFORNIA** | FIGURE<br>**2** |

# SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689


| | | | | |
|---|---|---|---|---|
| MPDS Services, Inc. | Client Project ID: | Unocal #5901, 11976 Dublin Blvd., Dublin | Sampled: | Mar 3, 1994 |
| 2401 Stanwell Dr., Ste. 400 | Sample Matrix: | Water | Received: | Mar 4, 1994 |
| Concord, CA 94520 | Analysis Method: | EPA 5030/8015/8020 | Reported: | Mar 21, 1994 |
| Attention: Avo Avedissian | First Sample #: | 403-0362 | | |

## TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

| Analyte | Reporting Limit µg/L | Sample I.D. 403-0362 MW-5 | Sample I.D. 403-0363 MW-6 | Sample I.D. Matrix Blank |
|---|---|---|---|---|
| Purgeable Hydrocarbons | 50 | N.D. | 150 | |
| Benzene | 0.5 | N.D. | 2.4 | |
| Toluene | 0.5 | 0.84 | 2.8 | |
| Ethyl Benzene | 0.5 | N.D. | N.D. | |
| Total Xylenes | 0.5 | 0.60 | 1.2 | |
| Chromatogram Pattern: | | -- | Gasoline | |

**Quality Control Data**

| | | | |
|---|---|---|---|
| Report Limit Multiplication Factor: | 1.0 | 1.0 | 1.0 |
| Date Analyzed: | 3/16/94 | 3/16/94 | 3/16/94 |
| Instrument Identification: | ML #2 | ML #2 | ML #2 |
| Surrogate Recovery, %: (QC Limits = 70-130%) | 109 | 127 | 97 |

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

**SEQUOIA ANALYTICAL #1271**

Alan B. Kemp
Project Manager

# SEQUOIA ANALYTICAL

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MPDS Services, Inc.
2401 Stanwell Dr., Ste. 400
Concord, CA 94520
Attention: Avo Avedissian

Client Project ID: Unocal #5901, 11976 Dublin Blvd., Dublin
Matrix: Liquid

QC Sample Group: 4030362-63

Reported: Mar 21, 1994

## QUALITY CONTROL DATA REPORT

| ANALYTE | Benzene | Toluene | Ethyl Benzene | Xylenes |
|---|---|---|---|---|
| Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 |
| Analyst: | M. Nguyen | M. Nguyen | M. Nguyen | M. Nguyen |
| MS/MSD Batch#: | 4030362 | 4030362 | 4030362 | 4030362 |
| Date Prepared: | 3/16/94 | 3/16/94 | 3/16/94 | 3/16/94 |
| Date Analyzed: | 3/16/94 | 3/16/94 | 3/16/94 | 3/16/94 |
| Instrument I.D.#: | ML #2 | ML #2 | ML #2 | ML #2 |
| Conc. Spiked: | 20 µg/L | 20 µg/L | 20 µg/L | 60 µg/L |
| Matrix Spike % Recovery: | 85 | 85 | 85 | 82 |
| Matrix Spike Duplicate % Recovery: | 100 | 100 | 100 | 100 |
| Relative % Difference: | 16 | 16 | 16 | 20 |
| LCS Batch#: | LCS031694 | LCS031694 | LCS031694 | LCS031694 |
| Date Prepared: | 3/16/94 | 3/16/94 | 3/16/94 | 3/16/94 |
| Date Analyzed: | 3/16/94 | 3/16/94 | 3/16/94 | 3/16/94 |
| Instrument I.D.#: | ML #2 | ML #2 | ML #2 | ML #2 |
| LCS % Recovery: | 75 | 85 | 95 | 92 |
| % Recovery Control Limits: | 71-133 | 72-128 | 72-130 | 71-120 |

SEQUOIA ANALYTICAL #1271

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.

**M P D S Services, Inc.**
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Tel: (510) 602-5120 Fax: (510) 689-1918

# CHAIN OF CUSTODY

SAMPLER: NICHOLAS PERROW
WITNESSING AGENCY:

UNOCAL S/S # 5901 CITY: DUBLIN
ADDRESS: 11976 DUBLIN BLVD

ANALYSES REQUESTED

TURN AROUND TIME: REGULAR

| SAMPLE ID NO. | DATE | TIME | WATER | GRAB | COMP | NO OF CONT. | SAMPLING LOCATION | TPH-GAS BTEX | TPH-DIESEL | TOG | 8010 | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-5 | 3/3/94 | | X | X | | 2 VOA | WELL | X | | | | | | | 10362 A-B | |
| MW-6 | 3/3/94 | | X | X | | 2 VOA | WELL | X | | | | | | | 10363 | |
| | | | | | | | | | | | | | | | | |
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| RELINQUISHED BY: | DATE/TIME | RECEIVED BY: | THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES: |
|---|---|---|---|
| (SIGNATURE) | 3/3/94 | (SIGNATURE) 8:35 O Phillips 3-4-94 | 1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? YES |
| (SIGNATURE) | | (SIGNATURE) | 2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? YES |
| (SIGNATURE) | | (SIGNATURE) | 3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? NO |
| (SIGNATURE) | | (SIGNATURE) | 4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? YES |
| (SIGNATURE) | | (SIGNATURE) | SIGNATURE: O Phillips TITLE: F-S DATE: 3-4-94 |