# GETTLER-RYAN INC.

98 MAR 10 PM 2:15

## TRANSMITTAL

TO: ~~Ms. Susan Hugo~~ Scott Seery
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

DATE: March 6, 1998
G-R #: 180106

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

**RE: Tosco (Unocal) SS #7004**
**15599 Hesperian Blvd.**
**San Leandro, California**

WE HAVE ENCLOSED THE FOLLOWING:

| COPIES | DATED | DESCRIPTION |
|---|---|---|
| 1 | February 20, 1998 | Groundwater Monitoring and Sampling Report<br>First Quarter 1998-Event of January 15, 1998 |

COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on a semi-annual basis in January and July. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (510) 277-2321.

Enclosure

cc: Mr. Michael Bakaldin, City of San Leandro Fire Department, 835 East 14th Street, San Leandro, CA 94577
Mr. Doug Lee, Gettler-Ryan Inc., Dublin, CA 94568

agency/7004trb.qmt

TOSCO

**Tosco Marketing Company**
2000 Crow Canyon Place, Ste. 400
San Ramon, California 94583
Telephone: 510-277-2305
Facsimile: 510-277-2361

**Environmental Compliance Department**

To All Concerned:

The Environmental Compliance Group (San Ramon, CA Office) of Tosco Marketing Company (TMC) would like to provide information concerning the shifting of environmental projects from Kaprealian Engineering, Incorporated and MPDS Services, Incorporated of Concord, CA.

- Projects (monitoring and sampling) and assets formerly with MPDS Services, Inc. have been purchased by Gettler-Ryan, Inc. (GRI) of Dublin, CA. GRI will continue to provide the same services to the Tosco Marketing Company . This transaction was effective January 1, 1998.
- Environmental projects formerly with Kaprealian Engineering, Inc. (KEI) have been transferred to GRI, effective January 1, 1998.
- It is TMC's understanding that the original environmental consulting portion of Gettler-Ryan, the subsidiary known as GeoStrategies, has been dissolved (effective January 1, 1998) and all work will be completed through Gettler-Ryan, Inc.
- Gettler-Ryan, Inc. has been a consultant for TMC in the past and we do not anticipate problems with continuity of the environmental projects.

Should there be questions, please feel free to call:

David Camille 510-277-2335
Tina Berry 510-277-2321
Ed Ralston 510-277-2335
Dave De Witt 510-277-2384

# GETTLER-RYAN INC.

February 20, 1998
G-R Job #180106

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

RE: First Quarter 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

Dear Ms. Berry:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On January 15, 1998, field personnel monitored and sampled six wells (MW1 through MW6) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. Dissolved oxygen concentrations are summarized in Table 2. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Table 1, and a Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

Deanna L. Harding
Project Manager

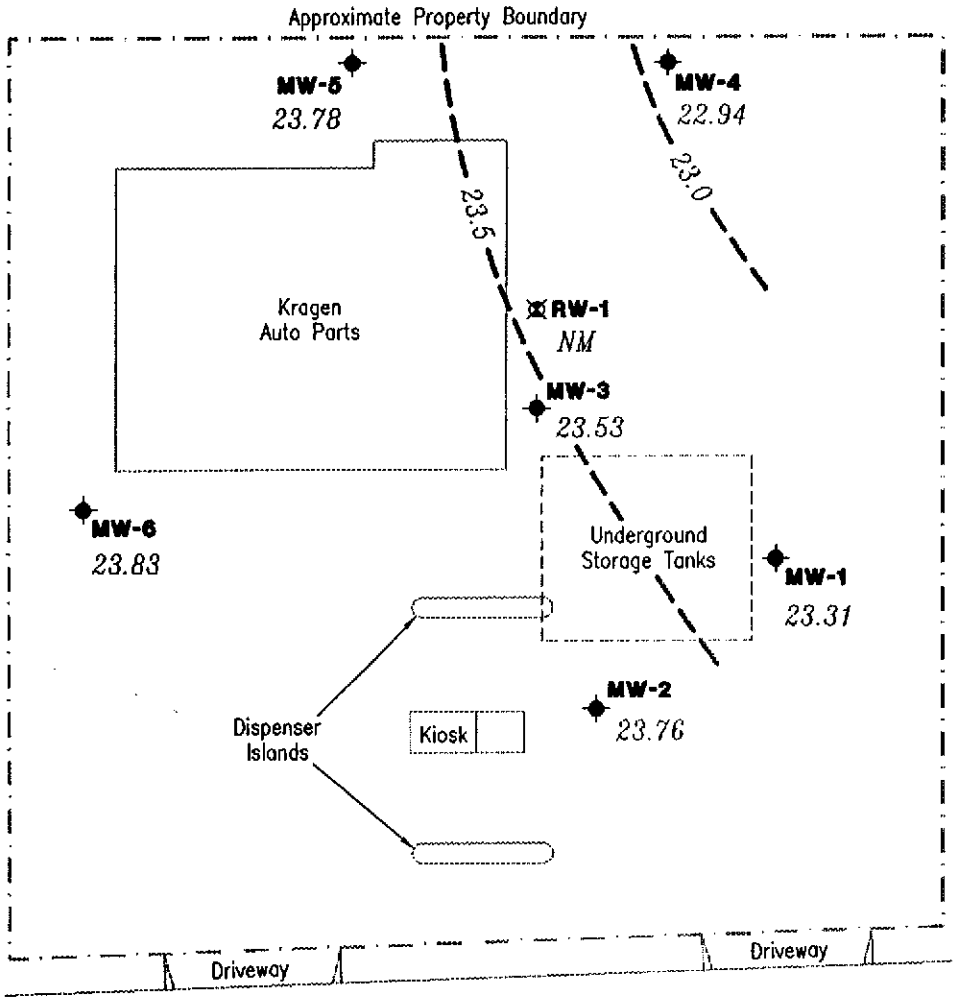
Stephen J. Carter
Senior Geologist, R.G. No. 5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

Note: MW-5 MtBE not reported due to lab indicating ITVOC "pattern". This well next to Kragens - waste oil tank?

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

7004.qml




## EXPLANATION

- Groundwater monitoring well
- Aquifer testing well
- 99.99 — Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99 — Groundwater elevation contour, dashed where inferred.
- NM — Not Monitored

Approximate groundwater flow direction at a gradient of 0.01 Ft./Ft.

N

0 40

Scale in Feet

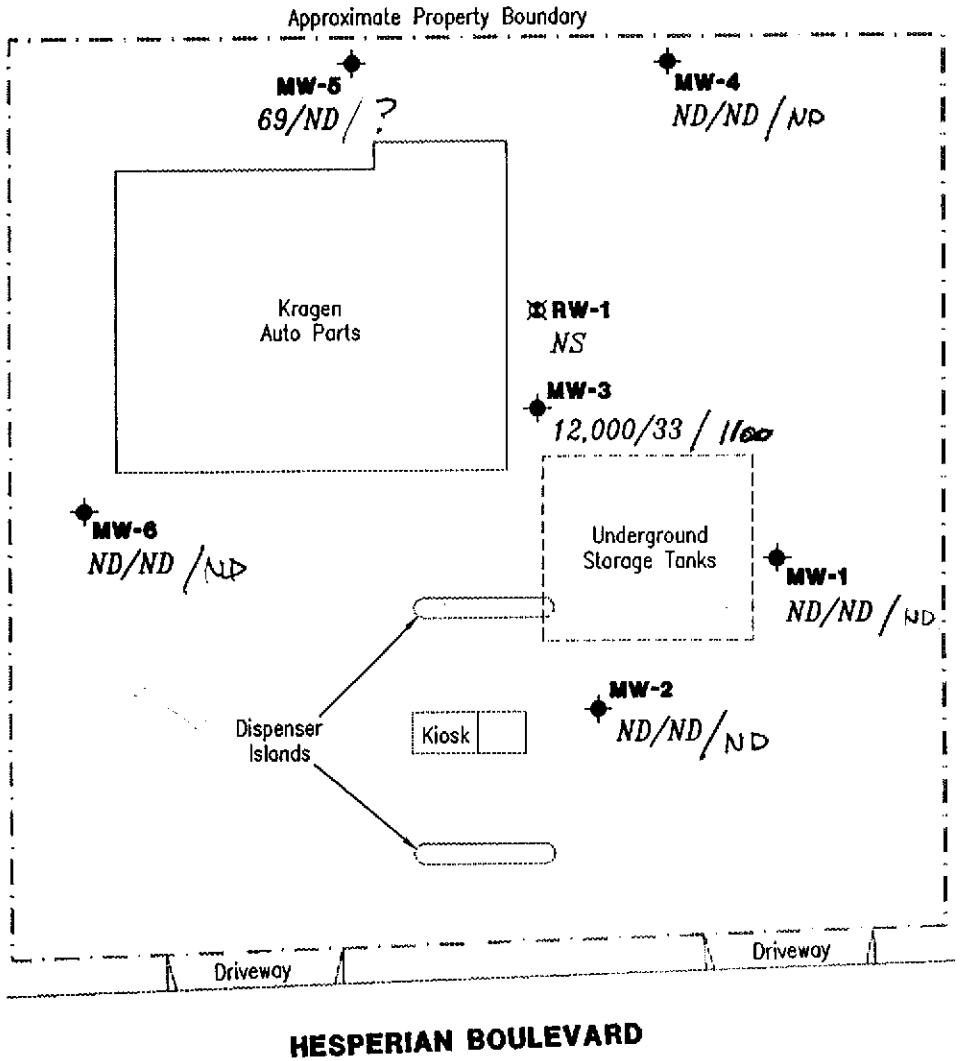
Source: Figure Modified From Drawing Provided By MPDS Services, Inc.

**Gettler - Ryan Inc.**
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station No. 7004
15599 Hesperian Boulevard
San Leandro, California

FIGURE 1

| JOB NUMBER | REVIEWED BY | DATE | REVISED DATE |
|---|---|---|---|
| 180106 | | January 15, 1998 | |




## EXPLANATION

- Groundwater monitoring well
- Aquifer testing well
- 99/9.9/MTBE — TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene concentrations in ppb
- ND — Not Detected
- NS — Not Sampled

N

0 40

Scale in Feet

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


**Gettler - Ryan Inc.**
6747 Sierra Ct., Suite J (510) 551-7555
Dublin, CA 94568


CONCENTRATION MAP
Tosco (Unocal) Service Station No. 7004
15599 Hesperian Boulevard
San Leandro, California

FIGURE 2

| JOB NUMBER | REVIEWED BY | DATE | REVISED DATE |
|---|---|---|---|
| 180106 | | January 15, 1998 | |

# Table1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID/ TOC* | Date Sampled | DTW (ft.) | GWE (msl) | TPH(G) | B | T | E | X | MTBE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | <-------- | | ppb | | | --------> |
| MW1 | 05/04/91 | | | ND | ND | ND | ND | ND | -- |
| | 07/23/91 | | | ND | ND | ND | ND | ND | -- |
| | 10/14/91 | | | ND | ND | ND | ND | ND | -- |
| | 01/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 04/14/92 | | | 76[1] | ND | ND | ND | ND | -- |
| | 07/09/92 | | | 70[1] | ND | ND | ND | ND | 130 |
| | 10/28/92 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/21/93 | | | ND | ND | ND | ND | ND | 42 |
| | 04/20/93 | | | -- | -- | -- | -- | -- | 56 |
| | 07/22/93 | | | ND | ND | ND | ND | ND | 77 |
| | 01/11/94 | | | ND | ND | ND | ND | ND | -- |
| | 04/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 07/08/94 | | | ND | ND | ND | ND | ND | -- |
| | 10/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/05/95 | | | ND | ND | ND | ND | ND | -- |
| | 07/14/95 | | | ND | 0.65 | 2.2 | ND | 2.3 | -- |
| | 10/12/95 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| 36.39 | 01/08/96 | 14.18 | 22.21 | ND | ND | ND | ND | ND | -- |
| | 07/08/96 | 12.74 | 23.65 | ND | ND | ND | ND | ND | ND |
| | 01/03/97 | 12.89 | 23.50 | 87[1] | ND | ND | ND | ND | ND |
| | 07/02/97 | 13.66 | 22.73 | ND | ND | ND | ND | ND | ND |
| | **01/15/98** | **13.08** | **23.31** | **ND** | **ND** | **ND** | **ND** | **ND** | **ND** |
| MW2 | 05/04/91 | | | ND | ND | ND | ND | ND | -- |
| | 07/23/91 | | | ND | ND | ND | ND | ND | -- |
| | 10/14/91 | | | ND | ND | ND | ND | ND | -- |
| | 01/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 04/14/92 | | | 45[1] | ND | ND | ND | ND | -- |
| | 07/09/92 | | | ND | ND | ND | ND | ND | 49 |
| | 10/28/92 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/21/93 | | | ND | ND | ND | ND | ND | 17 |
| | 04/20/93 | | | -- | -- | -- | -- | -- | 80 |

# Table1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID/ TOC* | Date Sampled | DTW (ft.) | GWE (msl) | TPH(G) | B | T | E | X | MTBE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | <----------ppb----------> | | | | | |
| MW2 | 07/22/93 | | | 62[1] | ND | ND | ND | ND | 42 |
| (cont) | 01/11/94 | | | 120[1] | ND | ND | ND | ND | -- |
| | 04/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 07/08/94 | | | 140[1] | ND | ND | ND | ND | -- |
| | 10/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/05/95 | | | 310[1] | ND | ND | ND | ND | -- |
| | 07/14/95 | | | 86[1] | ND | ND | ND | ND | -- |
| | 10/12/95 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| 37.07 | 01/08/96 | 14.81 | 22.26 | 91[1] | ND | ND | ND | ND | -- |
| | 07/08/96 | 13.37 | 23.70 | 100[1] | ND | ND | ND | ND | ND |
| | 01/03/97 | 13.14 | 23.93 | 160[1] | ND | ND | ND | ND | ND |
| | 07/02/97 | 14.26 | 22.81 | 91[1] | ND | ND | ND | ND | ND |
| | **01/15/98** | **13.31** | **23.76** | **ND** | **ND** | **ND** | **ND** | **ND** | **ND** |
| MW3 | 05/04/91 | | | 34,000 | 6,100 | 32 | 1,200 | 6,100 | -- |
| | 07/23/91 | | | 17,000 | 5,500 | 26 | 1,800 | 2,800 | -- |
| | 10/14/91 | | | 25,000 | 6,300 | 78 | 2,000 | 1,400 | -- |
| | 01/14/92 | | | 13,000 | 6,600 | 19 | 2,600 | 1,800 | -- |
| | 04/14/92 | | | 16,000 | 3,400 | 19 | 1,400 | 1,300 | -- |
| | 07/09/92 | | | 13,000 | 3,200 | 12 | 1,900 | 1,100 | -- |
| | 10/28/92 | | | 15,000 | 4,400 | 15 | 2,400 | 800 | -- |
| | 01/21/93 | | | 12,000 | 2,800 | 11 | 1,600 | 590 | -- |
| | 04/20/93 | | | 18,000 | 3,700 | 11 | 2,300 | 1,300 | 410 |
| | 07/22/93 | | | 16,000 | 4,500 | 17 | 3,600 | 1,900 | 440 |
| | 10/06/93 | | | 24,000 | 4,100 | ND | 3,600 | 2,000 | ND |
| | 01/11/94 | | | 19,000 | 3,300 | 31 | 3,300 | 890 | -- |
| | 04/06/94 | | | 24,000 | 3,100 | ND | 3,300 | 820 | -- |
| | 07/08/94 | | | 18,000 | 2,200 | 25 | 2,500 | 860 | -- |
| | 10/06/94 | | | 20,000 | 2,100 | 26 | 3,000 | 900 | -- |
| | 01/05/95 | | | 20,000 | 2,100 | ND | 3,200 | 3,800 | -- |
| | 04/05/95 | | | 18,000 | 2,100 | ND | 3,700 | 690 | -- |

# Table1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID/ TOC* | Date Sampled | DTW (ft.) | GWE (msl) | TPH(G) | B | T | E | X | MTBE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | <----------ppb----------> | | | | | |
| MW3 | 07/14/95 | | | 21,000 | 1,600 | ND | 3,900 | 1,500 | -- |
| (cont) | 10/12/95 | | | 17,000 | 1,000 | ND | 3,600 | 1,000 | [3] |
| 36.79 | 01/08/96 | 14.70 | 22.09 | 14,000 | 760 | ND | 3,100 | 380 | [4] |
| | 07/08/96 | 13.29 | 23.50 | 16,000 | 470 | 45 | 4,400 | 1,000 | 340 |
| | 01/03/97 | 13.09 | 23.70 | 14,000 | 160 | ND | 2,100 | 120 | 620 |
| | 07/02/97 | 13.96 | 22.83 | 23,000 | 110 | ND | 3,600 | 1,600 | 1,200 |
| | **01/15/98** | **13.26** | **23.53** | **12,000** | **33** | **ND[5]** | **2,800** | **120** | **1,100** |
| **MW4** | 07/23/91 | | | ND | ND | ND | ND | ND | -- |
| | 10/14/91 | | | ND | ND | ND | ND | ND | -- |
| | 01/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 04/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 07/09/92 | | | ND | ND | ND | ND | ND | -- |
| | 10/28/92 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/21/93 | | | ND | ND | ND | ND | ND | -- |
| | 04/20/93 | | | -- | -- | -- | -- | -- | 65 |
| | 07/22/93 | | | ND | ND | ND | ND | ND | 54 |
| | 01/11/94 | | | ND | ND | ND | ND | ND | -- |
| | 04/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 07/08/94 | | | ND | ND | ND | ND | ND | -- |
| | 10/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/05/95 | | | ND | ND | ND | ND | ND | -- |
| | 07/14/95 | | | ND | ND | ND | ND | ND | -- |
| | 10/12/95 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| 35.44 | 01/08/96 | 13.43 | 22.01 | ND | ND | ND | ND | ND | [4] |
| | 07/08/96 | 12.04 | 23.40 | ND | ND | ND | ND | ND | ND |
| | 01/03/97 | 12.38 | 23.06 | 80[1] | ND | ND | ND | ND | ND |
| | 07/02/97 | 13.00 | 22.44 | ND | ND | ND | ND | ND | 25 |
| | **01/15/98** | **12.50** | **22.94** | **ND** | **ND** | **ND** | **ND** | **ND** | **ND** |

# Table1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID/ TOC* | Date Sampled | DTW (ft.) | GWE (msl) | TPH(G) | B | T | E | X | MTBE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | < | | ppb | | | > |
| **MW5** | 07/23/91 | | | 260 | 1.2 | 0.39 | 10 | 0.71 | -- |
| | 10/14/91 | | | 140 | 0.72 | ND | 1.3 | 0.89 | -- |
| | 01/14/92 | | | 60[1] | ND | ND | ND | ND | -- |
| | 04/14/92 | | | 86[1] | ND | ND | ND | ND | -- |
| | 07/09/92 | | | ND | ND | ND | ND | ND | 71 |
| | 10/28/92 | | | ND | ND | ND | ND | ND | 45 |
| | 01/21/93 | | | 100[1] | ND | ND | ND | ND | 160 |
| | 04/20/93 | | | 99[1] | ND | ND | ND | ND | 120 |
| | 07/22/93 | | | 59[2] | ND | ND | 2.6 | ND | 42 |
| | 10/06/93 | | | 150 | 1.1 | ND | 3.1 | 0.85 | 57 |
| | 01/11/94 | | | 160 | ND | 0.79 | 0.54 | ND | -- |
| | 04/06/94 | | | 260 | 1.4 | ND | 0.88 | ND | -- |
| | 07/08/94 | | | 200 | ND | ND | ND | ND | -- |
| | 10/06/94 | | | 350 | 1.3 | ND | ND | ND | -- |
| | 01/05/95 | | | 85 | ND | ND | ND | ND | -- |
| | 04/05/95 | | | ND | ND | ND | ND | ND | -- |
| | 07/14/95 | | | 180 | 1.3 | ND | 7.9 | ND | -- |
| | 10/12/95 | | | 310 | ND | ND | 31 | 1.2 | [3] |
| 36.81 | 01/08/96 | 14.85 | 21.96 | ND | 0.55 | ND | ND | 0.58 | [4] |
| | 07/08/96 | 13.52 | 23.29 | 140 | 2.1 | 1.4 | 5.6 | 0.51 | 110 |
| | 07/12/96 | 14.50 | 22.31 | -- | -- | -- | -- | -- | -- |
| | 01/03/97 | 12.85 | 23.96 | 12,000 | 150 | ND | 2,100 | 120 | 660 |
| | 07/02/97 | 13.79 | 23.02 | ND | ND | ND | ND | ND | 72 |
| | **01/15/98** | **13.03** | **23.78** | **69[6]** | **ND** | **ND** | **ND** | **ND** | [7] |
| **MW6** | 07/23/91 | | | ND | ND | ND | ND | ND | -- |
| | 10/14/91 | | | ND | ND | ND | ND | ND | -- |
| | 01/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 04/14/92 | | | ND | ND | ND | ND | ND | -- |
| | 07/09/92 | | | ND | ND | ND | ND | ND | -- |
| | 10/28/92 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/21/93 | | | ND | ND | ND | ND | ND | -- |

# Table1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID/ TOC* | Date Sampled | DTW (ft.) | GWE (msl) | TPH(G) | B | T | E | X | MTBE |
|---|---|---|---|---|---|---|---|---|---|
| | | | | < | | ppb | | | > |
| MW6 | 04/20/93 | | | -- | -- | -- | -- | -- | ND |
| (cont) | 07/22/93 | | | ND | ND | ND | ND | ND | ND |
| | 01/11/94 | | | ND | ND | ND | ND | ND | -- |
| | 04/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 07/08/94 | | | ND | ND | ND | ND | ND | -- |
| | 10/06/94 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| | 01/05/95 | | | ND | ND | ND | ND | ND | -- |
| | 07/14/95 | | | ND | ND | ND | ND | ND | -- |
| | 10/12/95 | | | SAMPLED SEMI-ANNUALLY | | | | | |
| 37.13 | 01/08/96 | 15.05 | 22.08 | ND | ND | ND | ND | ND | -- |
| | 07/08/96 | 13.71 | 23.42 | ND | ND | ND | ND | ND | ND |
| | 01/03/97 | 13.12 | 24.01 | 97[1] | ND | ND | ND | ND | ND |
| | 07/02/97 | 14.57 | 22.56 | ND | ND | ND | ND | ND | ND |
| | **1/15/98** | **13.30** | **23.83** | **ND** | **ND** | **ND** | **ND** | **ND** | **ND** |
| **Trip Blank** | | | | | | | | | |
| **TB-LB** | **1/15/98** | **--** | **--** | **ND** | **ND** | **ND** | **ND** | **ND** | **ND** |

# Table 1

## Groundwater Monitoring Data and Analytical Results

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

**EXPLANATIONS:**

Groundwater monitoring data and laboratory analytical results prior to January 15, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
msl = Relative to mean sea level

TPH(G) = Total Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes

MTBE = Methyl tertiary butyl ether
ppb = Parts per billion
ND = Not detected
-- = Not Measured/Not Analyzed

* Top of casing elevations are relative to mean sea level (msl), based on the City of San Leandro Benchmark (Elevation = 36.04 feet msl).

1 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.

2 Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

3 Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.

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

5 Detection limit raised. Refer to analytical results.

6 Laboratory report indicates unidentified hydrocarbons C6-C8.

7 Laboratory narrative: MTBE was not reported due to the presence of a chlorinated hydrocarbon pattern.

*Depth to water and groundwater elevation history will be updated in future reports.*

# Table 2

**Dissolved Oxygen Concentrations**
Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID | Date | Before Purging (ppb) | After Purging (ppb) |
|---|---|---|---|
| **MW5** | 07/02/97 | 3.82 | 3.97 |
| | 01/03/97 | 4.35 | 4.27 |
| | 07/12/96 | 3.44 | 3.67 |
| | **01/15/98** | **4.19** | **4.38** |

**EXPLANATIONS:**

ppb = Parts per billion

# Table 2

## Dissolved Oxygen Concentrations

Unocal Service Station #7004
15599 Hesperian Boulevard
San Leandro, California

| Well ID | Date | Before Purging (ppb) | After Purging (ppb) |
|---|---|---|---|
| **MW5** | 07/02/97 | 3.82 | 3.97 |
| | 01/03/97 | 4.35 | 4.27 |
| | 07/12/96 | 3.44 | 3.67 |
| | **01/15/98** | **4.19** | **4.38** |

EXPLANATIONS:

ppb = Parts per billion

# STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe or equivalent. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15599 Hesperian Blvd. Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-1 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 24.48 ft.

Depth to Water 13.08 ft.

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

11.4 X VF 0.17 = 1.94 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) Bailer, Stack, Suction, Grundfos, Other: ____

Sampling Equipment: (Disposable Bailer) ~~Bailer~~, Pressure Bailer, Grab Sample, Other: ____

---

Starting Time: 8:45 Weather Conditions: Rainy

Sampling Time: 9:10 Am Water Color: clear Odor: None

Purging Flow Rate: 0.6 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm X100 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 8:50 | 0 | 7.15 | 7.35 | 67.2 | | | |
| 8:53 | 2 | 6.90 | 7.38 | 66.5 | | | |
| 8:57 | 4 | 7.20 | 7.45 | 66.8 | | | |
| 9:00 | 6 | 7.24 | 7.60 | 66.9 | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-1 | 2 VOA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: ____

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15599 Hesperian Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-2 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 24.56 ft.

Depth to Water 13.31 ft.

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

11.25 X VF 0.17 = 1.91 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other: ____

Sampling Equipment: (Disposable Bailer) Bailer Pressure Bailer Grab Sample Other: ____

---

Starting Time: 9:25 Weather Conditions: Rainy

Sampling Time: 9:50 A.M. Water Color: clear Odor: None

Purging Flow Rate: 0.5 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm x100 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 9:30 | 0 | 7.66 | 6.80 | 65.7 | | | |
| 9:34 | 2 | 7.35 | 6.41 | 65.2 | | | |
| 9:38 | 4 | 7.09 | 6.49 | 65.3 | | | |
| 9:42 | 6 | 7.14 | 6.43 | 65.4 | | | |
| | | | | | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-2 | 2 voA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: ____

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15599 Hesperian Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-3 Well Condition: O, K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.00 ft.

Depth to Water 13.26 ft.

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

11.74 X VF 0.17 = 2.00 X 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: (Disposable Bailer) Bailer Stack Suction Grundfos Other: ____

Sampling Equipment: (Disposable Bailer) ~~Bailer~~ Pressure Bailer Grab Sample Other: ____

---

Starting Time: 12:20 Weather Conditions: Rainy

Sampling Time: 12:45 P.M Water Color: clear Odor: ~~None~~ Some

Purging Flow Rate: 0.6 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm x1000 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 12:25 | 0 | 7.06 | 2.84 | 65.0 | | | |
| 12:28 | 2 | 6.92 | 2.80 | 65.2 | | | |
| 12:32 | 4 | 6.95 | 2.65 | 65.3 | | | |
| 12:35 | 6 | 6.94 | 2.61 | 65.5 | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-3 | 2 VOA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: ____

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15594 Hesperian Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-4 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.68 ft.

Depth to Water 12.50 ft.

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

13.18 X VF 0.17 = 2.24 X 3 (case volume) = Estimated Purge Volume: 7 (gal.)

**Purge Equipment:** (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other: ____

**Sampling Equipment:** (Disposable Bailer) Bailer Pressure Bailer Grab Sample Other: ____

---

Starting Time: 10:05 Weather Conditions: Raining

Sampling Time: 10:35 A.M. Water Color: clear Odor: None

Purging Flow Rate: 0.5 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm x100 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 10:12 | 0 | 8.02 | 8.15 | 66.3 | | | |
| 10:16 | 2.5 | 7.45 | 8.02 | 66.1 | | | |
| 10:22 | 5 | 7.40 | 8.11 | 65.8 | | | |
| 10:38 | 7 | 7.38 | 8.09 | 65.7 | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-4 | 2 VOA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: ____

9/97-fieldet.fm

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15599 Hesperian Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-5 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.68 ft.

Depth to Water 12.50 ft.

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

13.18 X VF 0.17 = 2.24 X 3 (case volume) = Estimated Purge Volume: 7 (gal.)

**Purge Equipment:** ~~Disposable Bailer~~ Bailer, Stack, Suction, Grundfos, Other: ____

**Sampling Equipment:** ~~Disposable Bailer~~ Bailer, Pressure Bailer, Grab Sample, Other: ____

---

Starting Time: 11:32 Weather Conditions: ____

Sampling Time: 12:12 p.m. Water Color: Clear Odor: None

Purging Flow Rate: 0.5 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm X100 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 11:40 | 0 | 7.36 | 4.06 | 67.0 | | | |
| 11:43 | 2.5 | 7.30 | 3.95 | 66.6 | | | |
| 11:49 | 5 | 7.28 | 3.92 | 66.7 | | | |
| 11:53 | 7 | 7.30 | 3.94 | 66.4 | | | |
| | | | | | | | |

---

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-5 | 2 VOA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: This well has ORC.

DO2 data: Before Purging 4.19 mg/L After Purging 4.38 mg/L

# WELL MONITORING/SAMPLING
# FIELD DATA SHEET

Client/
Facility # 7004 Job#: 180106

Address: 15599 Hesperian Date: 1-15-98

City: San Leandro Sampler: Joe

---

Well ID MW-6 Well Condition: O, K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.70 ft.

Depth to Water 13.30 ft.

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

12.4 X VF 0.17 = 2.11 X 3 (case volume) = Estimated Purge Volume: 6.5 (gal.)

**Purge Equipment:** (Disposable Bailer) ~~Bailer~~ Stack Suction Grundfos Other: ____

**Sampling Equipment:** (Disposable Bailer) ~~Bailer~~ Pressure Bailer Grab Sample Other: ____

---

Starting Time: 10:47 Weather Conditions: Rainy

Sampling Time: 11:15 A.M Water Color: clear Odor: None

Purging Flow Rate: 0.6 gpm. Sediment Description: None

Did well de-water? ____ If yes; Time: ____ Volume: ____ (gal.)

| Time | Volume (gal.) | pH | Conductivity µmhos/cm X100 | Temperature °F | D.O. (mg/L) | ORP (mV) | Alkalinity (ppm) |
|---|---|---|---|---|---|---|---|
| 10:55 | 0 | 7.90 | 7.63 | 65.5 | | | |
| 10:58 | 2 | 7.15 | 7.61 | 65.6 | | | |
| 11:02 | 4 | 7.10 | 7.62 | 65.5 | | | |
| 11:05 | 6.5 | 7.07 | 7.58 | 65.5 | | | |
| | | | | | | | |

## LABORATORY INFORMATION

| SAMPLE ID | (#) - CONTAINER | REFRIG. | PRESERV. TYPE | LABORATORY | ANALYSES |
|---|---|---|---|---|---|
| MW-6 | 2 VOA | | HCL | | TPHG, BTEX, MTBE |
| | | | | | |
| | | | | | |
| | | | | | |

COMMENTS: ____

9/97-fieldst.frm

# Chain-of-Custody-Record

**TOSCO**

Tosco Marketing Company
2000 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL SS# 7004
Facility Address: 15599 Hesperian Blvd, San Leandro, CA
Consultant Project Number: 180-106
Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name): Deanna L. Harding
(Phone): 510-551-7555 (Fax Number): 510-551-7888

Contact (Name): MS. TINA BERRY
(Phone): 510-277-2321
Laboratory Name: Sequoia Analytical
Laboratory Release Number:
Samples Collected by (Name): JOE AJEMIAN
Collection Date: 1-15-98
Signature: Joe Ajemian

Analyses To Be Performed: 8010/8021

| Sample Number | Lab Sample Number | Number of Containers | Matrix S = Soil A = Air W = Water C = Charcoal | Type G = Grab C = Composite D = Discrete | Time | Sample Preservation | Iced (Yes or No) | TPH Gas + BTEX w/MTBE (8015) | TPH Diesel (8015) | Oil and Grease (5520) | Purgeable Halocarbons (8010) | Purgeable Aromatics (8020) | Purgeable Organics (8240) | Extractable Organics (8270) | Metals Cd,Cr,Pb,Zn,Ni (TCAP or AA) | | | | | DO NOT BILL TB-LB ANALYSIS Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TB-LB | 1 | ~~2~~ 1 VOA | W | ~~G~~ G | — | HCL | YES | ✓ | | | | | | | | | | | | |
| MW-1 | 2 | 2 VOA | W | G | 9:10 AM | HCL | Yes | ✓ | | | | | | | | | | | | |
| MW-2 | 3 | " | " | " | 9:50 AM | " | " | ✓ | | | | | | | | | | | | |
| MW-3 | 4 | " | " | " | 12:45 PM | " | " | ✓ | | | | | | | | | | | | |
| MW-4 | 5 | " | " | " | 10:35 AM | " | " | ✓ | | | | | | | | | | | | |
| MW-5 | 6 | " | " | " | 12:12 PM | " | " | ✓ | | | | | | | | | | | | |
| MW-6 | 7 | " | " | " | 11:15 AM | " | " | ✓ | | | | | | | | | | | | |

| Relinquished By (Signature) | Organization | Date/Time | Received By (Signature) | Organization | Date/Time |
|---|---|---|---|---|---|
| Joe Ajemian | G-R Inc. | 1-15-98 | D. Harding | GR | 1/16/98 |
| Relinquished By (Signature) | Organization | Date/Time | Received By (Signature) | Organization | Date/Time |
| D. Harding | GR | 1/15/98 | Steve Tan | SEQ | 1/16/98 |
| Relinquished By (Signature) | Organization | Date/Time | Received For Laboratory By (Signature) | | Date/Time |
| | SEQ | 1/16/98 | Jeni Dennis | | 1/16/98 1143 |

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

JA 16 1 4

Sequoia Analytical

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



Gettler Ryan/Geostrategies
6747 Sierra Court Suite J
Dublin, CA 94568

Attention: Deanna Harding

Client Proj. ID: Unocal SS#7004
Sample Descript: TB-LB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9801881-01

Sampled: 01/15/98
Received: 01/16/98
Analyzed: 01/29/98
Reported: 02/02/98

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| TPPH as Gas | 50 | N.D. |
| Methyl t-Butyl Ether | 2.5 | N.D. |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 99 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-1 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-02 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| TPPH as Gas | 50 | N.D. |
| Methyl t-Butyl Ether | 2.5 | N.D. |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 94 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-2 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-03 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| TPPH as Gas | 50 | N.D. |
| Methyl t-Butyl Ether | 2.5 | N.D. |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 100 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-3 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-04 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| **TPPH as Gas** | **2000** | **12000** |
| **Methyl t-Butyl Ether** | **100** | **1100** |
| **Benzene** | **20** | **33** |
| Toluene | 20 | N.D. |
| **Ethyl Benzene** | **20** | **2800** |
| **Xylenes (Total)** | **20** | **120** |
| **Chromatogram Pattern:** | | **Gas** |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 106 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-4 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-05 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| TPPH as Gas | 50 | N.D. |
| Methyl t-Butyl Ether | 2.5 | N.D. |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 90 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-5 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-06 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX03A
Instrument ID: GCHP3

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| **TPPH as Gas** | **50** | **69** |
| **Methyl t-Butyl Ether** | **2.5** | **-** |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |
| **Unidentified HC** | | **C6-C8** |

| **Surrogates** | **Control Limits %** | | **% Recovery** |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 129 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Sampled: 01/15/98 |
| 6747 Sierra Court Suite J | Sample Descript: MW-6 | Received: 01/16/98 |
| Dublin, CA 94568 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 01/29/98 |
| Attention: Deanna Harding | Lab Number: 9801881-07 | Reported: 02/02/98 |

QC Batch Number: GC012998BTEX02A
Instrument ID: GCHP2

## Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| TPPH as Gas | 50 | N.D. |
| Methyl t-Butyl Ether | 2.5 | N.D. |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| Xylenes (Total) | 0.50 | N.D. |
| Chromatogram Pattern: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 89 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory
Project Manager

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

| | | |
|---|---|---|
| Gettler Ryan/Geostrategies | Client Proj. ID: Unocal SS#7004 | Received: 01/16/98 |
| 6747 Sierra Court Suite J | | |
| Dublin, CA 94568 | Lab Proj. ID: 9801881 | Reported: 02/02/98 |
| Attention: Deanna Harding | | |

## LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 11 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

TPGBMW: MTBE was not reported for sample #6 due to the presence of a chlorinated hydrocarbon pattern. GCMS confirmation is required.

pH analysis:
The voas had a pH = 1.0

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

Client Project ID: Unocal SS#7004
Matrix: Liquid
Work Order #: 9801881 -01-05, 07
Reported: Feb 2, 1998

# QUALITY CONTROL DATA REPORT

| Analyte: | Benzene | Toluene | Ethyl Benzene | Xylenes | Gas |
|---|---|---|---|---|---|
| QC Batch#: | GC012998BTEX02A | GC012998BTEX02A | GC012998BTEX02A | GC012998BTEX02A | GC012998BTEX02A |
| Analy. Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8015M |
| Prep. Method: | EPA 5030 | EPA 5030 | EPA 5030 | EPA 5030 | EPA 5030 |
| Analyst: | A. Miraftab | A. Miraftab | A. Miraftab | A. Miraftab | A. Miraftab |
| MS/MSD #: | 980197203 | 980197203 | 980197203 | 980197203 | 980197203 |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Prepared Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Analyzed Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Instrument I.D.#: | GCHP2 | GCHP2 | GCHP2 | GCHP2 | GCHP2 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| Result: | 8.0 | 7.7 | 8.0 | 24 | 53 |
| MS % Recovery: | 80 | 77 | 80 | 80 | 88 |
| Dup. Result: | 9.5 | 8.8 | 9.1 | 28 | 61 |
| MSD % Recov.: | 95 | 88 | 91 | 93 | 102 |
| RPD: | 17 | 13 | 13 | 15 | 14 |
| RPD Limit: | 0-25 | 0-25 | 0-25 | 0-25 | 0-25 |
| LCS #: | BLK012998 | BLK012998 | BLK012998 | BLK012998 | BLK012998 |
| Prepared Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Analyzed Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Instrument I.D.#: | GCHP2 | GCHP2 | GCHP2 | GCHP2 | GCHP2 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| LCS Result: | 8.8 | 8.5 | 8.8 | 27 | 58 |
| LCS % Recov.: | 88 | 85 | 88 | 90 | 97 |
| MS/MSD Control Limits | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS Control Limits | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |

SEQUOIA ANALYTICAL

Mike Gregory
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.

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

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

Client Project ID: Unocal SS#7004
Matrix: Liquid
Work Order #: 9801881-06
Reported: Feb 2, 1998

# QUALITY CONTROL DATA REPORT

| Analyte: | Benzene | Toluene | Ethyl Benzene | Xylenes | Gas |
|---|---|---|---|---|---|
| QC Batch#: | GC012998BTEX03A | GC012998BTEX03A | GC012998BTEX03A | GC012998BTEX03A | GC012998BTEX03A |
| Analy. Method: | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8020 | EPA 8015M |
| Prep. Method: | EPA 5030 | EPA 5030 | EPA 5030 | EPA 5030 | EPA 5030 |
| Analyst: | A. Miraftab | A. Miraftab | A. Miraftab | A. Miraftab | A. Miraftab |
| MS/MSD #: | 980197202 | 980197202 | 980197202 | 980197202 | 980197202 |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Prepared Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Analyzed Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Instrument I.D.#: | GCHP3 | GCHP3 | GCHP3 | GCHP3 | GCHP3 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| Result: | 8.5 | 8.5 | 8.7 | 26 | 52 |
| MS % Recovery: | 85 | 85 | 87 | 87 | 87 |
| Dup. Result: | 8.4 | 8.3 | 8.6 | 26 | 52 |
| MSD % Recov.: | 84 | 83 | 86 | 87 | 87 |
| RPD: | 1.2 | 2.4 | 1.2 | 0.0 | 0.0 |
| RPD Limit: | 0-25 | 0-25 | 0-25 | 0-25 | 0-25 |
| LCS #: | BLK012998 | BLK012998 | BLK012998 | BLK012998 | BLK012998 |
| Prepared Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Analyzed Date: | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 | 1/29/98 |
| Instrument I.D.#: | GCHP3 | GCHP3 | GCHP3 | GCHP3 | GCHP3 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| LCS Result: | 9.2 | 9.2 | 9.5 | 29 | 57 |
| LCS % Recov.: | 92 | 92 | 95 | 97 | 95 |
| MS/MSD | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |
| Control Limits | | | | | |

SEQUOIA ANALYTICAL

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Project Manager

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