# QUARTERLY GROUNDWATER MONITORING REPORT FOURTH QUARTER 2001

## HERTZ RENT A CAR FACILITY
## 1 AIRPORT DRIVE
## OAKLAND, CALIFORNIA

January 26, 2002

*Prepared for:*

**THE HERTZ CORPORATION**

225 Brae Boulevard
Park Ridge, New Jersey 07656

*Prepared by:*

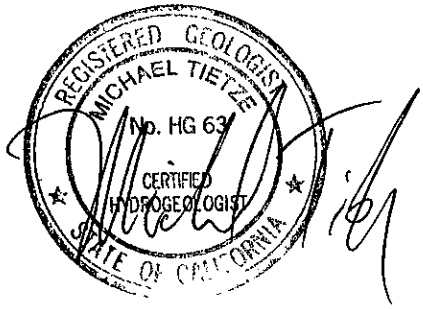
**MFG, INC.**
consulting scientists and engineers

180 Howard Street, Suite 200
San Francisco, California 94105
(415) 495-7110
Fax: (415) 495-7107

MFG Project No. 030062.2

## PROFESSIONAL CERTIFICATION

This report has been prepared by MFG, Inc. under the professional supervision of Michael Tietze. The findings, recommendations, specifications and/or professional opinions presented in this report have been prepared in accordance with generally accepted professional hydrogeologic and environmental consulting practice, and within the scope of the project. There is no other warranty, either express or implied.




Michael Tietze
C.HG. No. HG 63
Senior Consulting Hydrogeologist
MFG, INC.

## TABLE OF CONTENTS

Page

## LIST OF TABLES



## LIST OF FIGURES



## LIST OF APPENDICES

# 1.0 INTRODUCTION

This report summarizes the groundwater monitoring event conducted by MFG, Inc., in October 2001, at The Hertz Corporation (Hertz) facility located at 1 Airport Drive in Oakland, California (hereinafter the "Site") (Figure 1). The Site includes the adjoining Port of Oakland property to the south and west of the Hertz facility. The layout of the Site, including the location of the groundwater monitoring wells, is shown on Figure 2.

Groundwater monitoring at the Site is being conducted in accordance with MFG's *Implementation of ORC Injection Work Plan*, dated September 20, 2000 (MFG, 2000). Implementation of the groundwater monitoring program and injection of oxygen release compound (ORC) were requested in a letter from Mr. Barney Chan of the Alameda County Health Care Services Agency (ACHCSA) to Hertz, dated December 5, 2000 (ACHCSA, 2000). The methods and results of the previous quarterly groundwater monitoring events conducted by MFG in January 2001, April 2001 and July 2001 are discussed in quarterly groundwater monitoring reports dated April 4, 2001, August 1, 2001 and October 17, 2001 (MFG, 2001a, 2001b and 2001c). A description of ORC injection activities conducted in May 2001 are included in the August 1, 2001 report (MFG, 2001b).

This Quarterly Groundwater Monitoring Report is organized as follows: Section 2.0 describes the field methods and results of the groundwater sampling program. Section 3.0 presents an evaluation of the lateral hydraulic gradient in the shallow groundwater-bearing zone at the Site. Disposal of investigation-derived waste is discussed in Section 4.0. Conclusions and recommendations are presented in Section 5.0. References cited in this report are listed in Section 6.0.

## 2.0 GROUNDWATER SAMPLING AND CHEMICAL ANALYSIS

### 2.1 Field Methods

#### 2.1.1 Water Level Measurement

Groundwater levels were measured in monitoring wells MW-1 through MW-9 on October 11, 2001, using an electronic water level indicator. These data are presented in Table 1.

#### 2.1.2 Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-1, MW-4, MW-5 and MW-6 on October 11, 2001. Prior to sample collection, each well was purged using a clean disposable Teflon® bailer. Approximately 3.0 casing volumes (approximately 5.1, 1.7, 3.3 and 3.0 gallons) of groundwater were removed from monitoring wells MW-1, MW-4, MW-5 and MW-6, respectively, during the purging process. The temperature, pH and specific conductance of the purged water were monitored using a Myron L Ultrameter 6P water quality meter following field calibration. Monitoring wells MW-4 and MW-5 were purged almost dry and allowed to recover before sampling. The water levels in monitoring wells MW-4 and MW-5 recovered to 95 and 80 percent of their original levels prior to sampling, respectively. The field parameter measurements for wells MW-1 and MW-6 were relatively stable (within 10 percent for specific conductance, 0.05 pH units, and 1°C) at the end of purging. The field-measured values of these parameters at the end of purging were as follows:

| Well | Temperature (°C) | pH | Specific Conductance (µmhos/cm at field temp) | Dissolved Oxygen (mg/L) |
|---|---|---|---|---|
| MW-1 | 23 | 7.9 | 980 | 0.8 |
| MW-4 | 23 | 7.2 | 2,200 | 0.8 |
| MW-5 | 24 | 8.2 | 420 | 0.7 |
| MW-6 | 24 | 7.6 | 2,100 | 0.8 |

In addition to the above parameters, MFG measured the dissolved oxygen content and the oxidation-reduction potential (Eh) of the water just prior to sampling. Dissolved oxygen was measured using a down-hole probe connected to a YSI Model 55 dissolved oxygen meter. Eh was measured using a Myron L Ultrameter 6P. The current and historical values for field-measured dissolved oxygen and Eh are summarized in Table 2.

After purging, a groundwater sample was collected from near the top of the water column in each well. The groundwater samples were placed in the following containers prepared by the laboratory:

- Five 40-milliliter (ml) glass vials with hydrochloric acid for sample preservation and screw caps with Teflon®-lined septa for analysis of Total Purgeable Petroleum Hydrocarbons (TPPH) as gasoline and benzene, toluene, ethylbenzene and total xylenes (BTEX);
- One 1-liter plastic bottle for analysis of nitrate and sulfate; and
- One 500-ml amber glass bottle with hydrochloric acid for sample preservation for analysis of ferrous iron.

After filling, the groundwater sample containers were placed in an ice-cooled, insulated chest for transport to the laboratory for analysis. A chain-of-custody record was completed for the samples and accompanied the samples until receipt by the laboratory. A copy of the chain-of-custody record is included in Appendix A.

Reusable sampling equipment used in purging and sampling the monitoring wells was washed in a laboratory-grade detergent (Liquinox®) and water solution and triple rinsed with distilled water prior to use in each well and at the completion of sampling. The water generated during purging and sampling of the monitoring wells was placed into a 55-gallon drum for temporary storage at the Site (Section 4.0).

## 2.2 Analytical Methods and Results

The groundwater samples were submitted for chemical analysis to Southern Petroleum Laboratories of Houston, Texas, an analytical laboratory certified by the California Department of Health Services (DHS). The groundwater samples were analyzed for:

- TPPH as gasoline (EPA Method 8015, extraction by EPA Method 5030);
- BTEX and fuel oxygenates (EPA Method 8260, extraction by EPA Method 5030); (P&T)
- Nitrate (EPA Method 353.2);
- Sulfate (EPA Method 375.4); and
- Ferrous Iron (EPA Method 3500-FeD).

A summary of laboratory analytical results for the groundwater samples is shown in Table 2. Copies of the laboratory reports are included in Appendix A.

TPPH as gasoline and BTEX were not detected in the groundwater samples collected from wells MW-1 and MW-5. TPPH as gasoline, benzene, toluene, ethylbenzene and total xylenes were detected in the groundwater sample collected from monitoring well MW-4 at concentrations of 1.0, 0.150, 0.018, 0.053 and 0.089 mg/L, respectively. TPPH as gasoline and ethylbenzene were detected in the groundwater sample collected from monitoring well MW-6 at concentrations of 0.25 and 0.082 mg/L, respectively. The groundwater samples collected from monitoring wells MW-4 and MW-6 contained methyl tertiary-butyl ether (MTBE) at concentrations of 0.130 and 0.780 mg/L, respectively.

Sulfate was detected in the groundwater samples collected from monitoring wells MW-1, MW-4, MW-5 and MW-6 at concentrations of 75, 45, 55 and 110 mg/L, respectively. Nitrate was detected in the groundwater sample collected from monitoring well MW-1 at a concentration of 2.35 mg/L. Ferrous iron was detected in the samples collected from monitoring wells MW-4, MW-5 and MW-6 at concentrations of 2.9, 0.89 and 2.4 mg/L, respectively.

## 3.0 EVALUATION OF LATERAL HYDRAULIC GRADIENT

Groundwater levels were measured in monitoring wells MW-1 through MW-9 prior to groundwater purging and sampling on October 11, 2001. Groundwater level elevations were calculated using the depth-to-water measurements and the Measuring Point (MP) elevations of the wells (Table 1). The water level elevations in the wells ranged from 1.37 to 4.59 feet NGVD.

The potentiometric surface of the shallow groundwater at the Site on October 11, 2001 is shown in Figure 3. The potentiometric surface contours illustrate that the lateral hydraulic gradient on that date was generally to the southwest with an approximate magnitude of 0.019 foot per foot.

## 4.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE

Monitoring well purge water and sampling equipment wash water were placed in 55-gallon drums affixed with non-hazardous labels. The drums will be temporarily stored at the Site and will be disposed of following completion of the next groundwater sampling event.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Since the injection of ORC at the site in May 2001, the concentrations of TPPH and BTEX detected in samples from well MW-4, which historically have contained the highest contaminant concentrations, have decreased by approximately 95 percent. The concentrations of MTBE detected in samples from this well decreased approximately 75 percent. During this time, the Eh of the water has also increased by approximately 96 to 262 millivolts, indicating a move towards a more oxidizing environment as oxygen is being released from the ORC near the wells. However, concentrations of nitrate, ferrous iron, sulfate and dissolved oxygen remain indicative of an anaerobic environment. This suggests that oxygen released from the ORC is being consumed by the degradation of petroleum hydrocarbons and by the groundwater system's other biological and chemical oxygen demands. Further reductions in gasoline hydrocarbon concentrations are expected.

MFG understands that Hertz plans to decommission its operation at the Site in the near future and to remove the existing fueling system. Additional subsurface sampling information will be obtained in connection with this activity. Pending the results of observation and sampling at the time of UST removal, no further work appears to be warranted at this time.

## 6.0 REFERENCES


Alemeda County Health Care Services Agency (ACHCSA), 2000, *Letter to The Hertz Corporation – Subject: Subsurface Investigation for Hertz Facility, 1 Airport Dr., Oakland, CA 94621*: December 5.

MFG, Inc., 2000, *Implementation of ORC Injection Work Plan, Hertz Facility, 1 Airport Drive, Oakland, California, StID # 2260*: September 20.

MFG, Inc., 2001a, *Quarterly Groundwater Monitoring Report, First Quarter 2001, Hertz Rent A Car Facility, 1 Airport Drive, Oakland, California*: April 4.

MFG, Inc., 2001b, *Quarterly Groundwater Monitoring Report, Second Quarter 2001, Hertz Rent A Car Facility, 1 Airport Drive, Oakland, California*: August 1.

MFG, Inc., 2001c, *Quarterly Groundwater Monitoring Report, Second Quarter 2001, Hertz Rent A Car Facility, 1 Airport Drive, Oakland, California*: October 17.

# TABLES

# TABLE 1
## WATER LEVEL DATA FOR GROUNDWATER MONITORING WELLS
1 Airport Drive
Oakland, California

| WELL ID | MEASURING POINT ELEVATION (ft NGVD) | MEASUREMENT DATE | DEPTH TO WATER (ft BMP) | WATER LEVEL ELEVATION (ft NGVD) |
|---|---|---|---|---|
| MW-1 | 7.45 | 04-Jan-01 | 4.22 | 3.23 |
| | | 19-Apr-01 | 3.52 | 3.93 |
| | | 31-Jul-01 | 3.96 | 3.49 |
| | | 11-Oct-01 | 4.40 | 3.05 |
| MW-2 | 8.09 | 04-Jan-01 | 3.56 | 4.53 |
| | | 19-Apr-01 | 2.83 | 5.26 |
| | | 31-Jul-01 | 3.30 | 4.79 |
| | | 11-Oct-01 | 3.50 | 4.59 |
| MW-3 | 7.66 | 04-Jan-01 | 3.99 | 3.67 |
| | | 19-Apr-01 | 3.13 | 4.53 |
| | | 31-Jul-01 | 3.68 | 3.98 |
| | | 11-Oct-01 | 3.91 | 3.75 |
| MW-4 | 7.11 | 04-Jan-01 | 4.61 | 2.50 |
| | | 19-Apr-01 | 4.00 | 3.11 |
| | | 31-Jul-01 | 4.54 | 2.57 |
| | | 11-Oct-01 | 4.60 | 2.51 |
| MW-5 | 7.76 | 04-Jan-01 | 3.93 | 3.83 |
| | | 19-Apr-01 | 3.28 | 4.48 |
| | | 31-Jul-01 | 3.81 | 3.95 |
| | | 11-Oct-01 | 3.87 | 3.89 |
| MW-6 | 7.17 | 04-Jan-01 | 4.60 | 2.57 |
| | | 19-Apr-01 | 3.69 | 3.48 |
| | | 31-Jul-01 | 4.29 | 2.88 |
| | | 11-Oct-01 | 4.57 | 2.60 |
| MW-7 | 6.93 | 04-Jan-01 | 4.82 | 2.11 |
| | | 19-Apr-01 | 3.76 | 3.17 |
| | | 31-Jul-01 | 4.38 | 2.55 |
| | | 11-Oct-01 | 4.61 | 2.32 |
| MW-8 | 6.75 | 31-Jul-01 | 4.70 | 2.05 |
| | | 11-Oct-01 | 4.94 | 1.81 |
| MW-9 | 6.55 | 04-Jan-01 | 5.20 | 1.35 |
| | | 19-Apr-01 | 4.27 | 2.28 |
| | | 31-Jul-01 | 4.91 | 1.64 |
| | | 11-Oct-01 | 5.18 | 1.37 |

Notes:

| | |
|---|---|
| BMP | Below Measuring Point. Measuring Point is at top of well casing. |
| NGVD | National Geodetic Vertical Datum of 1929. |

# TABLE 2

## CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FOR TPPH, BTEX, FUEL OXYGENATES AND NATURAL ATTENUATION PARAMETERS

1 Airport Drive
Oakland, California

| WELL ID | SAMPLE ID | DATE SAMPLED | TPPH AS GASOLINE (mg/L) | BENZENE (mg/L) | TOLUENE (mg/L) | ETHYL-BENZENE (mg/L) | TOTAL XYLENES (mg/L) | MTBE (mg/L) | TBA (mg/L) | NITRATE (mg/L as N) | FERROUS IRON (mg/L) | SULFATE (mg/L) | DO (mg/L) | Eh (mV) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | MW-1 | 23-Jun-99 [1] | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.48 | -- |
| | MW-1 | 24-Nov-99 [1] | 0.086 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.085 | 0.18 | -- | -- | -- | -- | -- |
| | MW-1 | 04-Jan-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | 1.92 | <0.1 | 85 | -- | -- |
| | MW-1 | 19-Apr-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | 2.52 | <0.1 | 58 | -- | -- |
| | MW-1 | 31-Jul-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | 2.84 | <0.1 | 56 | 1.6 | -22 |
| | MW-1 | 11-Oct-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | 2.35 | <0.1 | 75 | 0.8 | 284 |
| MW-4 | MW-4 | 23-Jun-99 [1] | 29 | 4.9 | 1.9 | 1.4 | 3.6 | 0.59 | -- | -- | -- | -- | 0.19 | -- |
| | MW-4 | 24-Nov-99 [1] | 9.2 | 1.1 | 0.49 | 0.56 | 1.1 | 0.12 | <0.2 | -- | -- | -- | 4.3 [2] | -- |
| | MW-4 | 04-Jan-01 | 6.9 | 1.300 | 0.180 | 0.790 | 0.560 | 0.200 | <0.5 | <0.1 | 2.2 | 25 | -- | -- |
| | MW-4 | 19-Apr-01 | 26 | 3.400 | 0.340 | 1.100 | 1.430 | 0.510 | <0.5 | <0.1 | 3.9 | 3.0 | -- | -- |
| | MW-4 | 31-Jul-01 | 4.9 | 0.970 | 0.250 | 0.290 | 0.620 | 0.300 | <0.5 | <0.1 | 2.4 | 66.5 | 2.0 | 0 |
| | MW-4 | 11-Oct-01 | 1.0 | 0.150 | 0.018 | 0.053 | 0.089 | 0.130 | <0.5 | <0.1 | 2.9 | 45 | 0.8 | 96 |
| MW-5 | MW-5 | 23-Jun-99 [1] | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.26 | -- |
| | MW-5 | 24-Nov-99 [1] | 0.082 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | 0.081 | 0.22 | -- | -- | -- | 2.25 [2] | -- |
| | MW-5 | 04-Jan-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | 0.010 | <0.5 | <0.1 | 2.0 | 45.6 | -- | -- |
| | MW-5 | 19-Apr-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | 0.005 | <0.5 | <0.1 | 0.21 | 15.8 | -- | -- |
| | MW-5 | 31-Jul-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | <0.1 | 0.41 | 26 | 0.9 | 30 |
| | MW-5 | 11-Oct-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.5 | <0.1 | 0.89 | 55 | 0.7 | 246 |
| MW-6 | MW-6 | 23-Jun-99 [1] | 0.53 | <0.001 | <0.001 | 0.09 | 0.0023 | <0.01 | -- | -- | -- | -- | 0.12 | -- |
| | MW-6 | 24-Nov-99 [1] | 1.1 | 0.056 | <0.0025 | 0.15 | 0.006 | 0.550 | <0.10 | -- | -- | -- | 3.2 [2] | -- |
| | MW-6 | 04-Jan-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | 0.500 | <0.5 | <0.1 | 3.8 | 165 | -- | -- |
| | MW-6 | 19-Apr-01 | <0.05 | <0.005 | <0.005 | <0.005 | <0.005 | 0.077 | <0.5 | <0.1 | 2.7 | 132 | -- | -- |
| | MW-6 | 31-Jul-01 | <0.05 | <0.005 | <0.005 | 0.005 | <0.005 | 0.180 | <0.5 | <0.1 | 3.7 | 103 | 0.4 | -64 |
| | MW-6 | 11-Oct-01 | 0.25 | <0.005 | <0.005 | 0.082 | <0.005 | 0.780 | <0.5 | <0.1 | 2.4 | 110 | 0.8 | 100 |

Notes:

| | |
|---|---|
| TPPH | Total purgeable petroleum hydrocarbons. Analyzed using modified EPA Method 8015M and quantified against a gasoline standard. |
| BTEX | Benzene, toluene, ethylbenzene and total xylenes. June 23, 1999 samples analyzed by EPA Method 8020. All others analyzed using EPA Method 8260B. |
| MTBE | Methyl tertiary butyl ether. Analyzed using EPA Method 8260B. |
| TBA | Tertiary butyl alcohol. Analyzed using EPA Method 8260B. |
| Nitrate | Analyzed using EPA Method 353.2. |
| Ferrous Iron | Analyzed using EPA Method 3500-FeD. |
| Sulfate | Analyzed using EPA Method 375.4. |
| DO | Field measured dissolved oxygen. |

## TABLE 2

## CHEMICAL ANALYSES OF GROUNDWATER SAMPLES FOR TPPH, BTEX, FUEL OXYGENATES AND NATURAL ATTENUATION PARAMETERS

1 Airport Drive
Oakland, California

| | |
|---|---|
| Eh | Field measured oxidation-reduction potential. |
| mV | Millivolts (relative to a hydrogen reference electrode). |
| mg/L | Milligrams per liter. |
| <0.5 | Not detected at or above the laboratory reporting limit indicated. |
| -- | Not measured/analyzed |
| 1 | 1999 sample results from Table 1 of Clearwater Group, Inc. report |
| 2 | DO was measured after removing oxygen release compound (ORC) sock(s) from well. |

## Tietze, Mike -- MFG, Inc.

**From:** Cafferty, Patrick [CaffertyPJ@MTO.com]
**Sent:** Friday, March 29, 2002 5:40 PM
**To:** 'James R. Campbell'; Pogoncheff; O'Brien
**Cc:** Parsons; Yeich; Tietze; Ross; Pollard; Melvin; Lardiere; Epperson; Cafferty, Patrick; Benjamin
**Subject:** RE: 801 Royal Oaks

Whittaker is also "on-board" with the phased approach recommended by PES.

-----Original Message-----
**From:** James R. Campbell [mailto:jrc@e-emi.com]
**Sent:** Friday, March 29, 2002 10:30 AM
**To:** Pogoncheff; O'Brien
**Cc:** Parsons; Yeich; Tietze; Ross; Pollard; Melvin; Lardiere; Epperson; Cafferty; Benjamin
**Subject:** 801 Royal Oaks

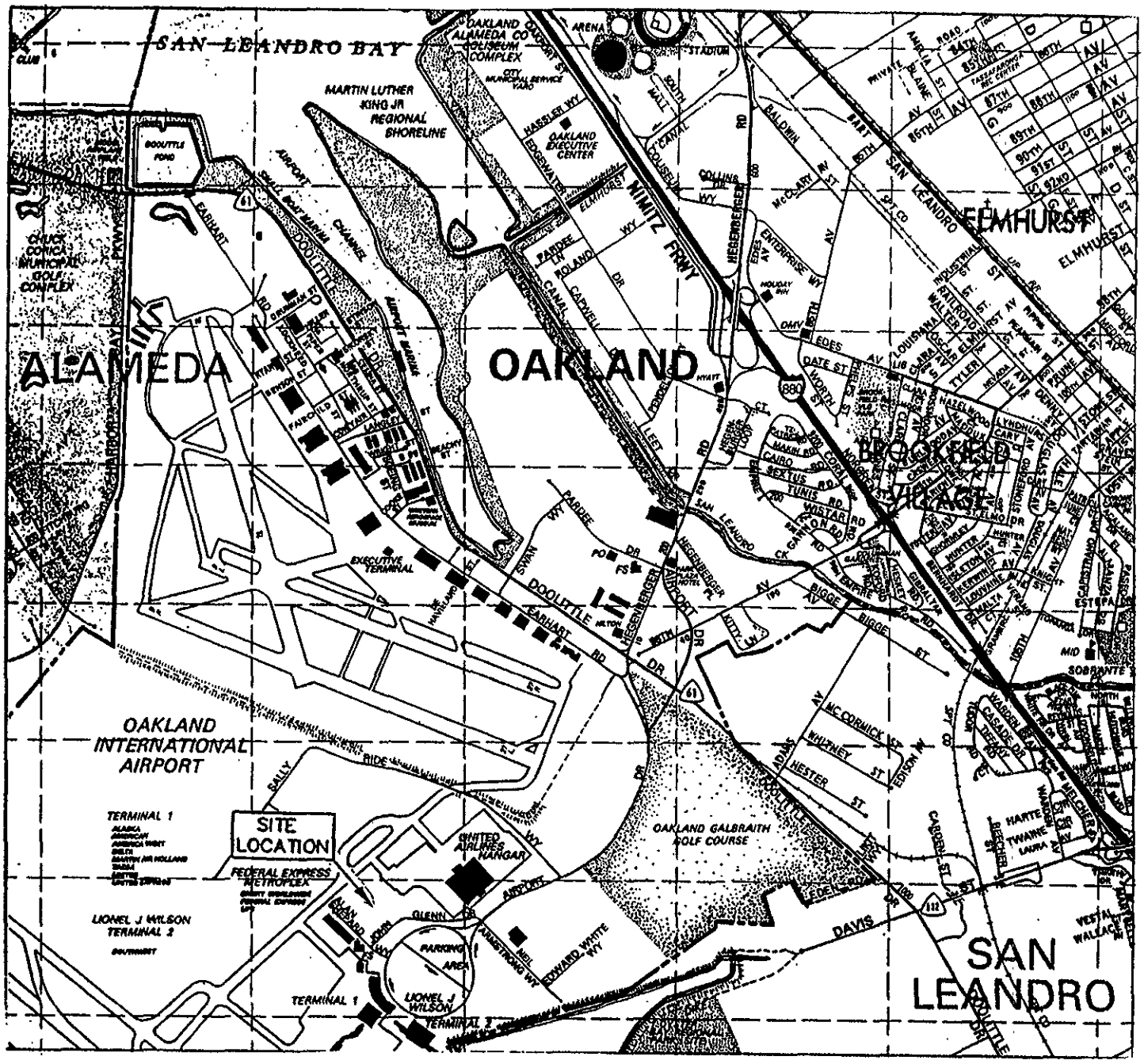
Alcoa supports PES's thoughts on the initial response to the RWQCB's RAP letter.

**********

James R. Campbell
Engineering Management, Inc.
1500 Ardmore Blvd., Suite 502
Pittsburgh, Pennsylvania 15221-4468
(412) 244-0917
(412) 243-3704 (fax)
jrc@e-emi.com

**FIGURES**

J:\030062\TASK-03\FIGURES\LOCATION.DWG PLOT SCALE 1:1




SOURCE: THE THOMAS GUIDE
ALAMEDA/CONTRA COSTA COUNTIES
1995 EDITION

N

0 2,200 FEET
APPROXIMATE SCALE

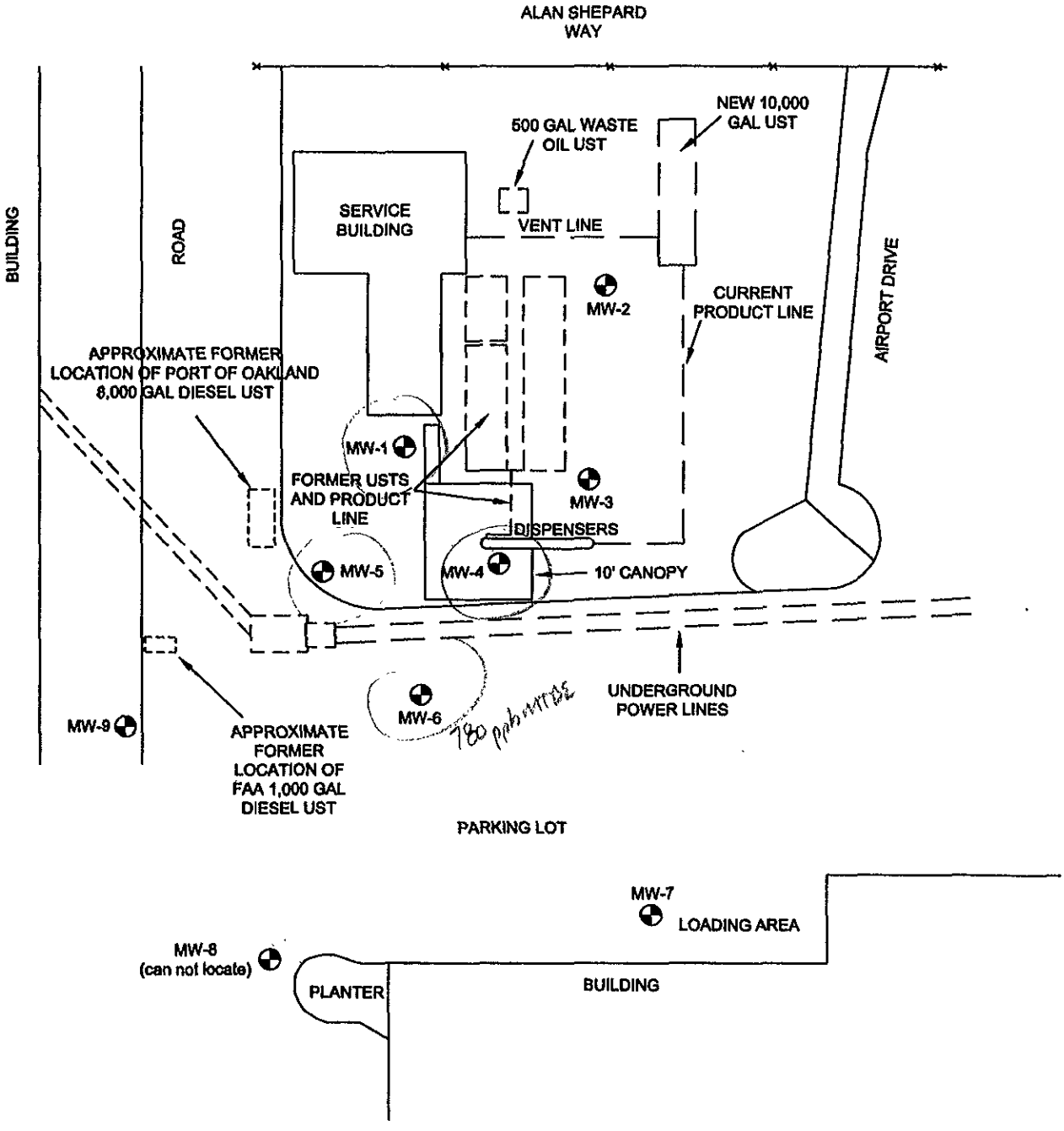
**SITE LOCATION MAP**

**Hertz Service Center**
**1 Airport Drive**
**Oakland, California**

| | | |
|---|---|---|
| PROJECT NO. 030062 | BY: N. JOHNSON | FIGURE |
| DATE: 3/21/01 | CHECKED: CBW | 1 |

**MFG, Inc.**
consulting scientists and engineers

J:\030062\TASK-02\FIGURES\FIGURE2.DWG PLOT SCALE: 1:1




## EXPLANATION

GROUNDWATER MONITORING WELL

FENCELINE

N

0 40 FEET

APPROXIMATE SCALE

SITE PLAN BASED ON MAP BY ESE, INC. JANUARY 4, 1994

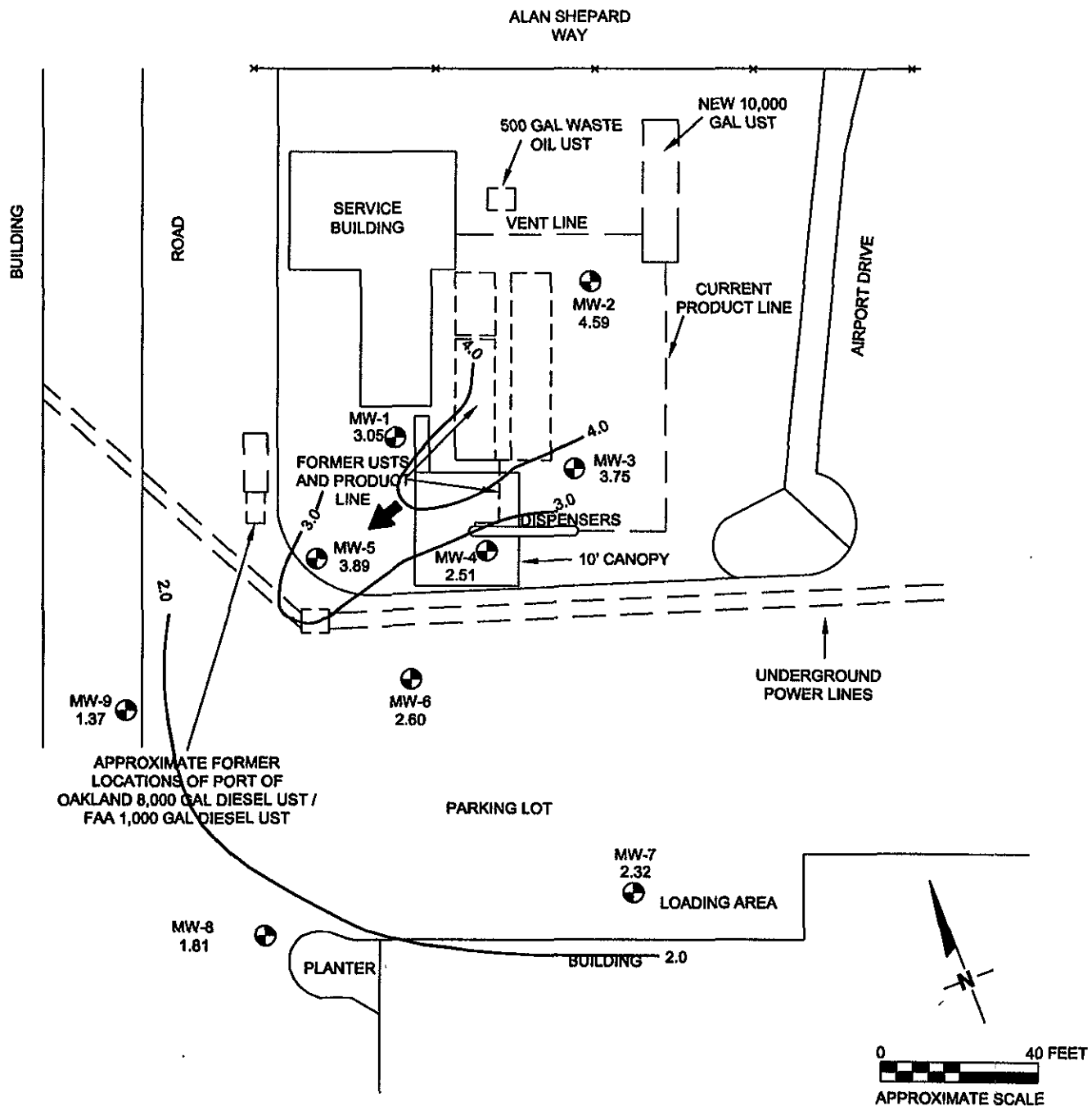
**SITE PLAN**

**Hertz Service Center**
**1 Airport Drive**
**Oakland, California**

| | | |
|---|---|---|
| PROJECT NO. 030062 | BY: G. STEPPEN | FIGURE 2 |
| DATE: 07/27/01 | CHECKED: CBW | |

**MFG, Inc.**
consulting scientists and engineers

J:\030062\TASK-02\2001Q4\FIGURES\CONTOUR.DWG PLOT SCALE: 1:1




## EXPLANATION

- LOCATION AND DESIGNATION OF MONITORING WELL (FEET NGVD)
- APPROXIMATE LINE OF EQUAL ELEVATION OF POTENTIOMETRIC SURFACE (FEET NGVD). CONTOUR INTERVAL IS ONE FOOT.
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SOURCE: SITE PLAN BASED ON MAP BY ESE, INC. JANUARY 4, 1994

**POTENTIOMETRIC SURFACE OF SHALLOW GROUNDWATER**
**October 11, 2001**

**Hertz Service Center**
**1 Airport Drive**
**Oakland, California**

| | | |
|---|---|---|
| PROJECT NO. 030062 | BY: S. SMITH | FIGURE 3 |
| DATE: 10/08/01 | CHECKED: | |

**MFG, Inc.**
consulting scientists and engineers

# APPENDIX A

## Laboratory Reports and Chain-of-Custody Records for Groundwater Samples Submitted for Analysis

# CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

## MFG, INC.

COC No. 42202


☐ Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-5817
Tel: (707) 826-8430
Fax: (707) 826-8437

☐ Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

☐ Missoula Office
P.O. Box 7158
Missoula, MT
59807-7158
Tel: (406) 728-4600
Fax: (406) 728-4698

☐ Osburn Office
P.O. Box 30
Wallace, ID
83873-0030
Tel: (208) 556-6811
Fax: (208) 556-7271

☒ San Francisco Office
~~71 Stevenson Street Suite 1450~~
180 Howard Street Suite 200
San Francisco, CA 94105-2941
Tel: (415) 495-7110
Fax: (415) 495-7107

☐ Santa Ana Office
640 North Tustin Avenue
Suite 101
Santa Ana, CA 92705-3731
Tel: (714) 973-3090
Fax: (714) 973-3097

☐ Seattle Office
19203 36th Avenue
Suite 101
Lynnwood, WA 98036-5707
Tel: (425) 921-4000
Fax: (425) 921-4040

☐ _____


PROJECT NO: 030062 (2) PROJECT NAME: Hertz / Oakland PAGE: 1 OF: 2

SAMPLER (Signature): [signature] PROJECT MANAGER: CBW DATE: 10/11/01

METHOD OF SHIPMENT: FedEx CARRIER/WAYBILL NO: 8296 7267 8905 DESTINATION: SPL - Houston

### SAMPLES

| Field Sample Identification | Sample DATE | Sample TIME | Sample Matrix* | Preservation HCl | Preservation $HNO_3$ | Preservation $H_2SO_4$ | Preservation COLD | Preservation | FILTRATION* | Containers VOLUME (ml/oz) | Containers TYPE* | Containers NO. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trip Blank | 10/11/01 | — | AQ | X | | | X | | U | 40 | G | 2 |
| MW-1 | 10/11/01 | 1051 | | X | | | X | | U | 40 | G | 5 |
| | | | | X | | | X | | U | 500 | G | 1 |
| | | | | | | | X | | U | 1000 | P | 1 |
| MW-4 | 10/11/01 | 1230 | AQ | X | | | X | | U | 40 | G | 5 |
| | | | | X | | | X | | J | 500 | G | 1 |
| | | | | | | | X | | J | 1000 | P | 1 |
| — | | | | | | | | | | | | |
| — | | | | | | | | | | | | |
| Temp Blank | — | — | | | | | | | | | | 1 |

TOTAL NUMBER OF CONTAINERS 17

### ANALYSIS REQUEST

| Constituents/Method TPH-G 8015 | BTEX + Fuel Oxy (8260) | N. Heat/Sulfur | Ferrous Iron | Handling HOLD | RUSH | STANDARD | Remarks |
|---|---|---|---|---|---|---|---|
| | X | | | | | X | |
| X | X | | | | | X | |
| | | | X | | | X | |
| | | X | | | | X | |
| X | X | | | | | X | |
| | | | X | | | X | |
| | | X | | | | X | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | Please Record Temp |

LABORATORY COMMENTS/CONDITION OF SAMPLES

Cooler Temp: 4

### RELINQUISHED BY:

| SIGNATURE | PRINTED NAME | COMPANY | DATE | TIME |
|---|---|---|---|---|
| [signature] | Steve Smith | MFG | 10/11/01 | 1402 |
| — | — | — | — | — |
| — | — | Fed Ex | 10/12/01 | |

### RECIEVED BY:

| SIGNATURE | PRINTED NAME | COMPANY |
|---|---|---|
| — | — | Fed Ex |
| — | — | — |
| | | LABORATORY |

*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered

DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

# McCulley, Frick & Gilman, Inc.

## Certificate of Analysis Number:

## 01100512

**Report To:** McCulley, Frick & Gilman, Inc.
Chris White
71 Stevenson Street, Suite 1450

San Francisco
CA
94105-
ph: (415) 495-7110 fax: (415) 495-7107

**Fax To:** McCulley, Frick & Gilman, Inc.
Chris White fax : (415) 495-7107

**Project Name:** Hertz-Oakland #030062 (2)
**Site:** Hertz-Oakland
**Site Address:**

**PO Number:**
**State:** California
**State Cert. No.:** 1903
**Date Reported:** 10/19/01

| Client Sample ID | Lab Sample ID | Matrix | Date Collected | Date Received | COC ID | HOLD |
|---|---|---|---|---|---|---|
| rip Blank 10/04/01 | 01100512-01 | Water | 10/11/01 10:51:00 AM | 10/12/01 10:00:00 AM | 42202 | ☐ |
| W-1 | 01100512-02 | Water | 10/11/01 10:51:00 AM | 10/12/01 10:00:00 AM | 42202 | ☐ |
| MW-4 | 01100512-03 | Water | 10/11/01 12:30:00 PM | 10/12/01 10:00:00 AM | 42202 | ☐ |
| MW-5 | 01100512-04 | Water | 10/11/01 11:33:00 AM | 10/12/01 10:00:00 AM | 42201 | ☐ |
| W-6 | 01100512-05 | Water | 10/11/01 | 10/12/01 10:00:00 AM | 42201 | ☐ |

10/19/01

nia West
nior Project Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** Trip Blank 10/04/01 **Collected:** 10/11/01 10:51:0 **SPL Sample ID:** 01100512-01

**Site:** Hertz-Oakland

| Analyses/Method | Result | | Rep.Limit | Dil. Factor | QUAL | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | | **Units: ug/L** | | |
| Benzene | ND | | 5 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Diisopropyl Ether | ND | | 10 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Ethylbenzene | ND | | 5 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Methyl tert-butyl ether | ND | | 5 | 1 | | 10/15/01 21:29 | JN | 864071 |
| t-Butyl alcohol | ND | | 500 | 1 | | 10/15/01 21:29 | JN | 864071 |
| tert-Amyl methyl ether | ND | | 10 | 1 | | 10/15/01 21:29 | JN | 864071 |
| tert-Butyl ethyl ether | ND | | 10 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Toluene | ND | | 5 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Xylenes,Total | ND | | 5 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | % | 62-130 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Surr: 4-Bromofluorobenzene | 84.0 | % | 70-130 | 1 | | 10/15/01 21:29 | JN | 864071 |
| Surr: Toluene-d8 | 94.0 | % | 74-122 | 1 | | 10/15/01 21:29 | JN | 864071 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-1 **Collected:** 10/11/01 10:51:0 **SPL Sample ID:** 01100512-02

**Site:** Hertz-Oakland

| Analyses/Method | Result | | Rep.Limit | | Dil. Factor | QUAL | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | **MCL** | **CA_GRO** | | **Units: mg/L** | | |
| Gasoline Range Organics | ND | | 0.05 | | 1 | | 10/18/01 13:53 | D_R | 867585 |
| Surr: 1,4-Difluorobenzene | 110 | % | 62-144 | | 1 | | 10/18/01 13:53 | D_R | 867585 |
| Surr: 4-Bromofluorobenzene | 82.3 | % | 44-153 | | 1 | | 10/18/01 13:53 | D_R | 867585 |
| **IRON, FERROUS** | | | | **MCL** | **M3500-FE D** | | **Units: mg/L** | | |
| Iron, Ferrous | ND | | 0.10 | | 1 | | 10/12/01 12:00 | SN | 864685 |
| **NITRATE NITROGEN (AS N), TOTAL** | | | | **MCL** | **E353.2** | | **Units: mg/L** | | |
| Nitrogen,Nitrate (As N) | 2.35 | | 0.100 | | 1 | | 10/12/01 14:26 | CV | 863190 |
| **SULFATE, TOTAL** | | | | **MCL** | **E375.4** | | **Units: mg/L** | | |
| Sulfate | 75 | | 10.0 | | 10 | | 10/12/01 13:00 | SN | 864728 |
| **VOLATILE ORGANICS BY METHOD 8260B** | | | | **MCL** | **SW8260B** | | **Units: ug/L** | | |
| Benzene | ND | | 5 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Diisopropyl Ether | ND | | 10 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Ethylbenzene | ND | | 5 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Methyl tert-butyl ether | ND | | 5 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| t-Butyl alcohol | ND | | 500 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| tert-Amyl methyl ether | ND | | 10 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| tert-Butyl ethyl ether | ND | | 10 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Toluene | ND | | 5 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Xylenes,Total | ND | | 5 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | % | 62-130 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Surr: 4-Bromofluorobenzene | 86.0 | % | 70-130 | | 1 | | 10/15/01 21:57 | JN | 864074 |
| Surr: Toluene-d8 | 94.0 | % | 74-122 | | 1 | | 10/15/01 21:57 | JN | 864074 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-4 **Collected:** 10/11/01 12:30:0 **SPL Sample ID:** 01100512-03

**Site:** Hertz-Oakland

| Analyses/Method | Result | | Rep.Limit | | Dil. Factor | QUAL | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | MCL | CA_GRO | | Units: mg/L | | |
| Gasoline Range Organics | 1 | | 0.05 | | 1 | | 10/18/01 14:19 | D_R | 867587 |
| Surr: 1,4-Difluorobenzene | 144 | % | 62-144 | | 1 | | 10/18/01 14:19 | D_R | 867587 |
| Surr: 4-Bromofluorobenzene | 108 | % | 44-153 | | 1 | | 10/18/01 14:19 | D_R | 867587 |
| **IRON, FERROUS** | | | | MCL | M3500-FE D | | Units: mg/L | | |
| Iron, Ferrous | 2.9 | | 0.10 | | 1 | | 10/12/01 12:00 | SN | 864688 |
| **NITRATE NITROGEN (AS N), TOTAL** | | | | MCL | E353.2 | | Units: mg/L | | |
| Nitrogen,Nitrate (As N) | ND | | 0.100 | | 1 | | 10/12/01 14:26 | CV | 863193 |
| **SULFATE, TOTAL** | | | | MCL | E375.4 | | Units: mg/L | | |
| Sulfate | 45 | | 5.00 | | 5 | | 10/12/01 13:00 | SN | 864729 |
| **VOLATILE ORGANICS BY METHOD 8260B** | | | | MCL | SW8260B | | Units: ug/L | | |
| Benzene | 150 | | 5 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Diisopropyl Ether | ND | | 10 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Ethylbenzene | 53 | | 5 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Methyl tert-butyl ether | 130 | | 5 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| t-Butyl alcohol | ND | | 500 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| tert-Amyl methyl ether | ND | | 10 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| tert-Butyl ethyl ether | ND | | 10 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Toluene | 18 | | 5 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Xylenes,Total | 89 | | 5 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | % | 62-130 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Surr: 4-Bromofluorobenzene | 88.0 | % | 70-130 | | 1 | | 10/15/01 22:25 | JN | 864077 |
| Surr: Toluene-d8 | 94.0 | % | 74-122 | | 1 | | 10/15/01 22:25 | JN | 864077 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-5 **Collected:** 10/11/01 11:33:0 **SPL Sample ID:** 01100512-04

**Site:** Hertz-Oakland

| Analyses/Method | Result | | Rep.Limit | | Dil. Factor | QUAL | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | | **MCL** | **CA_GRO** | | **Units: mg/L** | | |
| Gasoline Range Organics | ND | | 0.05 | | 1 | | 10/18/01 14:44 | D_R | 867588 |
| Surr: 1,4-Difluorobenzene | 105 | % | 62-144 | | 1 | | 10/18/01 14:44 | D_R | 867588 |
| Surr: 4-Bromofluorobenzene | 75.3 | % | 44-153 | | 1 | | 10/18/01 14:44 | D_R | 867588 |
| **IRON, FERROUS** | | | | **MCL** | **M3500-FE D** | | **Units: mg/L** | | |
| Iron, Ferrous | 0.89 | | 0.10 | | 1 | | 10/12/01 12:00 | SN | 864689 |
| **NITRATE NITROGEN (AS N), TOTAL** | | | | **MCL** | **E353.2** | | **Units: mg/L** | | |
| Nitrogen,Nitrate (As N) | ND | | 0.100 | | 1 | | 10/12/01 14:26 | CV | 863194 |
| **SULFATE, TOTAL** | | | | **MCL** | **E375.4** | | **Units: mg/L** | | |
| Sulfate | 55 | | 5.00 | | 5 | | 10/12/01 13:00 | SN | 864730 |
| **VOLATILE ORGANICS BY METHOD 8260B** | | | | **MCL** | **SW8260B** | | **Units: ug/L** | | |
| Benzene | ND | | 5 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Diisopropyl Ether | ND | | 10 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Ethylbenzene | ND | | 5 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Methyl tert-butyl ether | ND | | 5 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| t-Butyl alcohol | ND | | 500 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| tert-Amyl methyl ether | ND | | 10 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| tert-Butyl ethyl ether | ND | | 10 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Toluene | ND | | 5 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Xylenes,Total | ND | | 5 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Surr: 1,2-Dichloroethane-d4 | 94.0 | % | 62-130 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Surr: 4-Bromofluorobenzene | 86.0 | % | 70-130 | | 1 | | 10/15/01 22:53 | JN | 864080 |
| Surr: Toluene-d8 | 94.0 | % | 74-122 | | 1 | | 10/15/01 22:53 | JN | 864080 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

**Client Sample ID:** MW-6 **Collected:** 10/11/01 **SPL Sample ID:** 01100512-05

**Site:** Hertz-Oakland

| Analyses/Method | Result | | Rep.Limit | Dil. Factor | QUAL | Date Analyzed | Analyst | Seq. # |
|---|---|---|---|---|---|---|---|---|
| **GASOLINE RANGE ORGANICS** | | | **MCL** | **CA_GRO** | | **Units: mg/L** | | |
| Gasoline Range Organics | 0.25 | | 0.05 | 1 | | 10/18/01 15:09 | D_R | 867589 |
| Surr: 1,4-Difluorobenzene | 122 | % | 62-144 | 1 | | 10/18/01 15:09 | D_R | 867589 |
| Surr: 4-Bromofluorobenzene | 107 | % | 44-153 | 1 | | 10/18/01 15:09 | D_R | 867589 |
| **IRON, FERROUS** | | | **MCL** | **M3500-FE D** | | **Units: mg/L** | | |
| Iron, Ferrous | 2.4 | | 0.10 | 1 | | 10/12/01 12:00 | SN | 864690 |
| **NITRATE NITROGEN (AS N), TOTAL** | | | **MCL** | **E353.2** | | **Units: mg/L** | | |
| Nitrogen,Nitrate (As N) | ND | | 0.100 | 1 | | 10/12/01 14:26 | CV | 863195 |
| **SULFATE, TOTAL** | | | **MCL** | **E375.4** | | **Units: mg/L** | | |
| Sulfate | 110 | | 10.0 | 10 | | 10/12/01 13:00 | SN | 864732 |
| **VOLATILE ORGANICS BY METHOD 8260B** | | | **MCL** | **SW8260B** | | **Units: ug/L** | | |
| Benzene | ND | | 5 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Diisopropyl Ether | ND | | 10 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Ethylbenzene | 82 | | 5 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Methyl tert-butyl ether | 780 ✓ | | 50 | 10 | | 10/17/01 10:54 | JN | 867469 |
| t-Butyl alcohol | ND | | 500 | 1 | | 10/15/01 23:21 | JN | 864083 |
| tert-Amyl methyl ether | ND | | 10 | 1 | | 10/15/01 23:21 | JN | 864083 |
| tert-Butyl ethyl ether | ND | | 10 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Toluene | ND | | 5 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Xylenes,Total | ND | | 5 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Surr: 1,2-Dichloroethane-d4 | 96.0 | % | 62-130 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Surr: 1,2-Dichloroethane-d4 | 98.0 | % | 62-130 | 10 | | 10/17/01 10:54 | JN | 867469 |
| Surr: 4-Bromofluorobenzene | 92.0 | % | 70-130 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Surr: 4-Bromofluorobenzene | 86.0 | % | 70-130 | 10 | | 10/17/01 10:54 | JN | 867469 |
| Surr: Toluene-d8 | 92.0 | % | 74-122 | 1 | | 10/15/01 23:21 | JN | 864083 |
| Surr: Toluene-d8 | 94.0 | % | 74-122 | 10 | | 10/17/01 10:54 | JN | 867469 |

**Qualifiers:**

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference