

LETTER OF TRANSMITTAL

R0401

| | | | |
|-----|-----------------------------|----------|--|
| To: | <i>Eva Chu</i> | Date: | <i>March 6, 2003</i> |
| | <i>Environmental Health</i> | | |
| | | Subject: | <i>Groundwater Monitoring Report</i> |
| | <i>QIC 30440</i> | | <i>165 13th Street, Oakland, CA</i> |

I am sending you:

Attached Under separate cover

via: US Mail Overnight/FedEx Hand carried Messenger

The following items:

Drawings Specifications Shop Drawings Submittals
 Samples Copy of Letter Change Order Other:

| Copies | Date | Description |
|--------|---------|---|
| 1 | 2/27/03 | <i>Groundwater Monitoring Report, Alcopark, Oakland, CA</i> |
| | | |
| | | |
| | | |

These are transmitted as checked below:

Approved as Submitted Resubmit __ Copies for Approval For Approval
 Approved as Noted Copies for Distribution For Your Use
 Returned for Correction Return __ Corrected Copies As Requested
 For Review and Comment Returning Loaned Item(s) Other

| |
|----------|
| Remarks: |
|----------|



Rod Freitag, Environmental Program Manager
 County of Alameda - General Services Agency
 Technical Services Department
 1401 Lakeside Drive, 11th Floor
 Oakland, CA 94612
 Tel. (510) 208-9522

Alameda County
 MAR 12 2003
Environmental Health

If Enclosures Are Not As Noted, Notify Me At Once

**GROUNDWATER MONITORING REPORT
FIRST QUARTER, 2003
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA**

Prepared for .

ALAMEDA COUNTY GENERAL SERVICES AGENCY
1401 Lakeside Drive, 11th Floor
Oakland, California

Prepared by

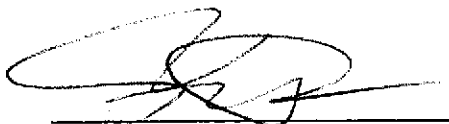
Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, California 94601
(510) 434-9200

February 27, 2003
575-0G041

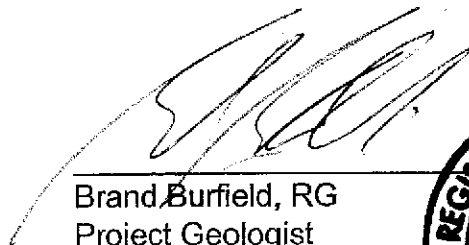
STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

Information provided in this report, prepared by Professional Service Industries, Inc. (PSI), is intended exclusively for the use of Alameda County General Services Agency (ACGSA), for the evaluation of subsurface conditions as they pertain to the subject site. The professional services provided have been performed in accordance with practices generally accepted by other geologists, hydrologists, hydrogeologists, engineers, and environmental scientists practicing in this field. No other warranty, either expressed or implied, is made. As with all subsurface investigations, there is no guarantee that the work conducted will identify any or all sources or locations of contamination.

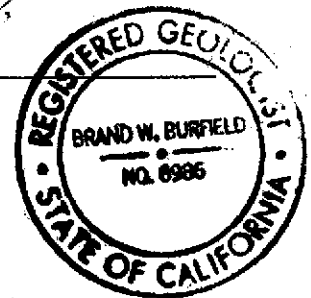
This report is issued with the understanding that ACGSA is responsible for ensuring that the information contained herein is brought to the attention of the appropriate regulatory agency.



Frank R. Poss, REA
Senior Hydrogeologist



Brand Burfield, RG
Project Geologist



1. INTRODUCTION

Professional Service Industries, Inc. (PSI) was retained by the Alameda County General Services Agency (ACGSA) to perform groundwater monitoring at the ACGSA Alcopark Fueling Facility-Site No. 2 located at 165 13th Street, Oakland, California. The site location is presented on Figure 1.

The groundwater monitoring was prompted by a request by the Alameda County Health Care Services Agency (ACHCSA), which requested additional information on the extent of petroleum hydrocarbon impacted groundwater (ACHCSA, 1997a).

1.1 SCOPE OF WORK

The scope of work consisted of the following tasks:

- Measure the depth to water in the site wells and prepare a groundwater elevation map.
- Determine the groundwater flow direction and gradient.
- Collect and chemically analyze groundwater samples from wells MW-1, MW-6 and MW-7.
- Prepare a report documenting the field procedures, analytical results, and conclusions regarding the site condition.

1.2 SITE BACKGROUND

The ACGSA operates two 10,000-gallon USTs at the Alcopark fueling station to fuel Alameda County vehicles. Three groundwater monitoring wells were installed at the site in March, 1989 to assess environmental conditions subsequent to the repair of a line leak at Dispenser No. 1. Initial sample results indicated the presence of BTEX in the groundwater. Subsequent sample results indicated the presence of TPH-G. Based on the analytical data, it was concluded that contaminants detected on-site had originated from a source area located upgradient of the site. Sampling activities were halted in 1992 pending investigation of an upgradient source (GSA, 1997).

In their letter dated May 30, 1997, the ACHCSA instructed ACGSA to resume groundwater monitoring at Alcopark (ACHCSA, 1997b). Sampling resumed in July, 1997. Analytical data from that sampling event indicated elevated TPH-G and BTEX concentrations in the downgradient well. MTBE was also detected. Additional samples

collected in October, 1997 provided similar results (GSA, 1997). In their letter dated September 11, 1997, the ACHCSA directed ACGSA to investigate the extent and stability of the plume.

To better define groundwater conditions downgradient of the USTs, two borings were drilled on March 23, 1998. A grab groundwater sample was collected from one of the borings, and Well MW-6 was installed in the other boring. One additional small-diameter groundwater monitoring well (MW-7) was installed by PSI in September, 1999 and the analytical results are presented in the PSI report dated October 14, 1999.

1.2.1 Storage Tank System Upgrades

In September of 1992, overfill protection, spill containment, and automatic tank gauging were installed on the two underground tanks. In July and August of 1996, additional upgrade work was done to comply with Title 23 of the California Code of Regulations. This included replacement of underground single-walled steel piping with double-wall fiberglass piping, and installation of dispenser sumps, piping sumps, and sump leak sensors (GSA, 1997).

2. GROUNDWATER MONITORING ACTIVITIES

A PSI representative performed groundwater-monitoring activities on February 10, 2003. The activities were performed in accordance with PSI standard procedures presented in Appendix A, and procedures described in an ACHCSA letter describing collection of samples without purging the wells (ACHCSA, 1997a).

2.1 Groundwater Elevation and Flow Direction

Prior to groundwater sampling, depth to groundwater was measured from the top of the well casings in monitoring wells MW-1, MW-4, and MW-5. The groundwater measurements were converted to groundwater elevations and the data plotted on a groundwater elevation map. A groundwater elevation map was prepared for February 10, 2002 (presented as Figure 2). The groundwater elevation data are presented in Table 1 and Appendix A.

PSI's interpretation of the groundwater elevation data indicates the groundwater is flowing to the east under a hydraulic gradient of 0.003. The flow direction is consistent with the flow direction determined for previous quarterly monitoring events.

2.2 Groundwater Sampling

Monitoring wells MW-1, MW-6, and MW-7 were sampled without purging, as requested in the ACHCSA letter dated September 11, 1997. The groundwater samples were collected with disposable polyethylene tubing equipped with a check valve. The groundwater samples were collected according to PSI's standard protocol, included in Appendix A, and were stored in an iced cooler through delivery to the analytical laboratory and maintained under Chain-of-Custody protocol.

To minimize the possibility of cross-contamination between sampling locations, most of the sampling equipment used is disposable. To further minimize the possibility of cross-contamination, the water sounder and all other reusable sampling equipment were cleaned with a non-phosphate detergent and rinsed twice with deionized water prior to their use in the next well.

3. LABORATORY ANALYSIS PROGRAM

The groundwater samples collected during this investigation were submitted to McCampbell Analytical, Inc. of Pacheco, California. McCampbell Analytical is a State of California Department of Health Services certified hazardous waste laboratory (Environmental Laboratory Accreditation Program #1644). A summary of the analytical methods is presented below.

The groundwater samples collected at the site were analyzed for the following constituents by the indicated methods:

- Total Petroleum Hydrocarbons as Gasoline (TPH-G) in accordance with Environmental Protection Agency (EPA) Method 8015-Modified.
- Volatile Organic Compounds by EPA Method 8260.

The samples were transported to the laboratory under Chain-of-Custody protocol. Copies of the chain of custody forms are included in Appendix B.

3.1 ANALYTICAL RESULTS

The analytical data is summarized in Table 1. Laboratory reports are presented in Appendix B.

VOCs and/or MTBE were detected in groundwater samples from all three groundwater-monitoring wells sampled for this monitoring event.

- TPH-G was detected only in Wells MW-1 (210 ug/l) and MW-6 (4,000 ug/l).
- Benzene was detected in Wells MW-1 (14 ug/l) and MW-6 (1,000 ug/l). The benzene concentrations have decreased in MW-1 and MW-6 since the previous sampling event. Figure 3 depicts the benzene concentration with time in MW-1, MW-6, and MW-7. Benzene concentrations have varied with time and have not shown a consistent overall trend.
- MTBE was detected in Wells MW-1 (11 ug/l), MW-6 (830 ug/l) and MW-7 (140 ug/l). Figure 4 depicts the MTBE concentration with time in MW-1, MW-6, and MW-7. MTBE concentrations have generally declined at the site since groundwater monitoring commenced.

- Additional VOCs, commonly associated with gasoline impacted groundwater, were detected in the groundwater samples. The maximum concentrations for each of the additional VOCs detected are presented below.

- Naphthalene at 190 ug/L in MW-6
- 1,2,4 Trimethylbenzene at 14 ug/L in MW-1
- Xylenes at 4.0 ug/L in MW-1
- Tert-Amyl methyl ether (TAME) at 150 ug/L in MW-6

4. CONCLUSIONS

Based on the information presented in this report, the following conclusions have been reached:

- Groundwater elevations measured at the site range from approximately 14.83 to 14.94 feet above msl.
- Groundwater flow direction is to the east with a gradient of 0.003.
- The groundwater samples collected from wells MW-1, MW-6 and MW-7 contained measurable concentrations of TPH-G and/or VOCs with MTBE and benzene being the primary contaminants of concern. Concentrations are generally higher than the previous sampling event in MW-6 and lower in MW-1 and in MW-7.

REFERENCES

- ACGSA, 1997, Request For Proposal (RFP) for Groundwater Services, December 2.
- ACHCSA, 1997a, Workplan Request Letter to Mr. Rodman Freitag, September 11.
- ACHCSA, 1997b, Continuation of Groundwater Monitoring Request, Letter to Mr. Jim DeVos, May 20.
- ACHCSA, 1998, Quarterly Groundwater Monitoring Report Approval Letter, June 22.
- Lawrence Livermore National Laboratory, 1995a, *Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks*, prepared for California State Water Resources Control Board, October 16.
- Lawrence Livermore National Laboratory, 1995b, *California Leaking Underground Fuel Tank Historical Case Analyses*, prepared for California State Water Resources Control Board, November 16.
- Lawrence Livermore National Laboratory, 1998, *An Evaluation of MTBE Impacts to California Groundwater Resources*, prepared for California State Water Resources Control Board, June 11.
- Personal Communication, 1998, Mr. Rod Freitag of the Alameda General Services Agency, Discussion of the leak detection system at the Alcopark facility, April 15.
- PSI, 2000, Quarterly Report, Alcopark Fueling Facility, prepared for Alameda GSA March 15, 2001.
- USGS, 1980, Oakland West, California, topographic map.

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

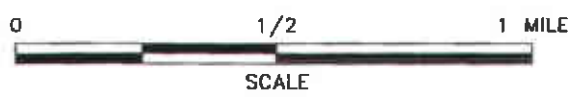
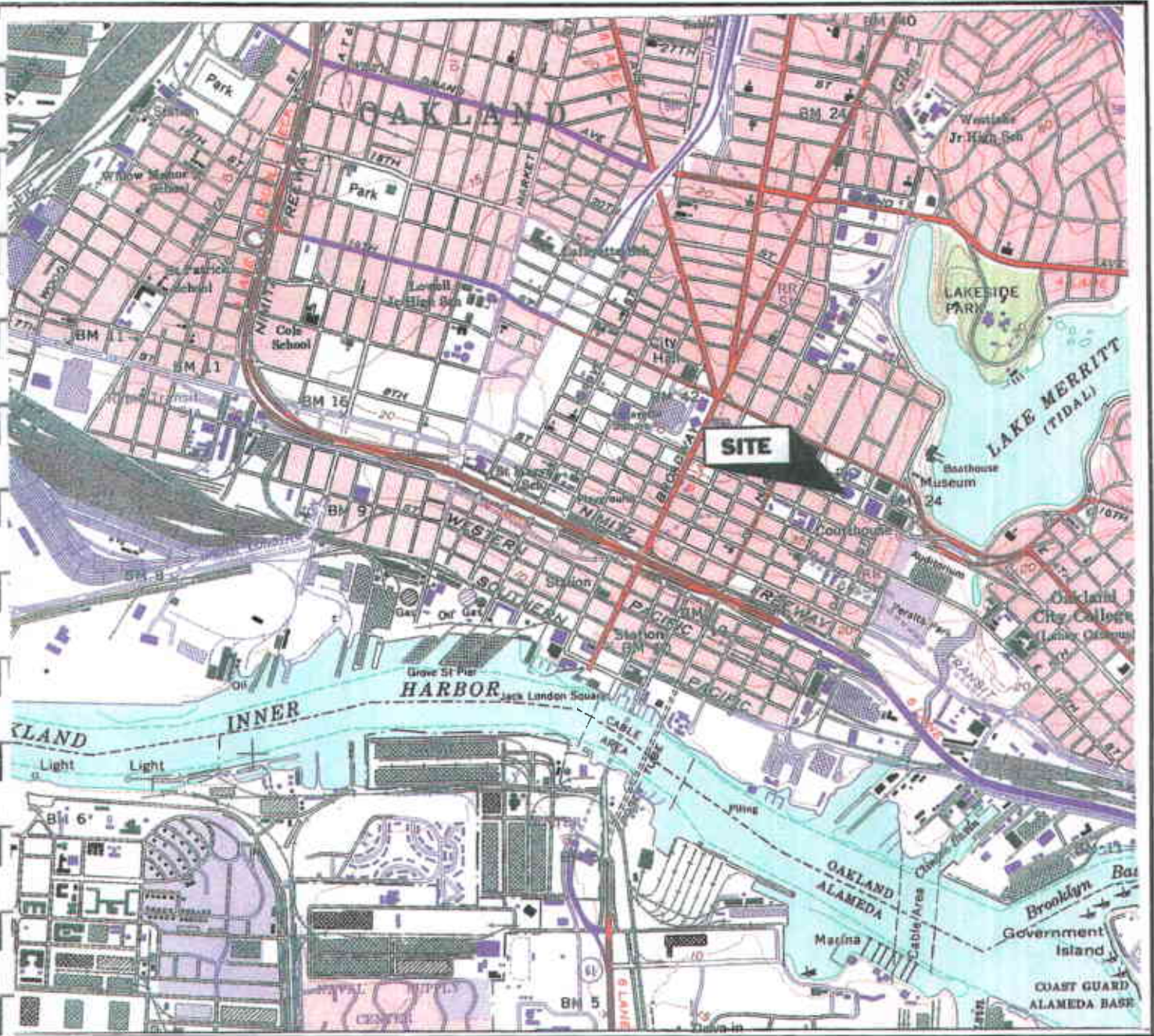
| <i>All concentrations in ug/l (PPB).</i> | | | | | | | | |
|--|----------|-----------------------|---------|----------|----------|----------|--------------|----------|
| Well | Date | Groundwater Elevation | TPH-G | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes |
| W-MW1 | 3/21/89 | 12.2 | ND | NA | 21 | 3.9 | 0.4 | 4.5 |
| W-MW1 | 7/26/90 | 12.3 | 1,400 | NA | 200 | 45 | ND | 53 |
| W-MW1 | 10/25/90 | 12.1 | 1,200 | NA | ND | 7.3 | 2.2 | 46 |
| W-MW1 | 1/25/91 | 11.9 | 270 | NA | 23 | 1.5 | ND | 3.1 |
| W-MW1 | 4/25/91 | 11.8 | 230 | NA | ND | ND | ND | ND |
| W-MW1 | 8/27/91 | 11.8 | 8,300 | NA | 370 | 64 | ND | 120 |
| W-MW1 | 11/25/91 | 11.7 | 810 | NA | 9.3 | ND | 7.8 | 32 |
| W-MW1 | 6/11/92 | 12.85 | 2,600 | NA | 810 | 16 | 21 | 42 |
| W-MW1 | 7/16/97 | 14.38 | 19,000 | ND (150) | 1,400 | 2,800 | 500 | 2,600 |
| W-MW1 | 10/21/97 | 13.92 | 14,000 | 29 | 1,200 | 1,000 | 590 | 2,800 |
| W-MW1 | 3/11/98 | 17.14 | NS | NS | NS | NS | NS | NS |
| W-MW1 | 4/1/98 | 17.14 | ND (50) | 6.3 | 5.4 | ND (0.5) | ND (0.5) | 0.82 |
| W-MW1 | 7/15/98 | 16.41 | 71 | 57 | 31 | ND (0.5) | ND (0.5) | 3.1 |
| W-MW1 | 10/22/98 | 15.62 | 5,100 | 360 | 520 | 140 | 250 | 950 |
| W-MW1 | 9/9/99 | 15.42 | 2,400 | 400 | 680 | 140 | 130 | 370 |
| W-MW1 | 1/18/00 | 14.49 | 4,100 | 180 | 420 | 11 | 210 | 350 |
| W-MW1 | 5/4/00 | 16.19 | NS | NS | NS | NS | NS | NS |
| W-MW1 | 8/22/00 | 15.34 | 9,400 | 410 | 1,200 | 130 | 410 | 920 |
| W-MW1 | 2/8/01 | 14.53 | NS | NS | NS | NS | NS | NS |
| W-MW1 | 7/20/01 | 14.60 | 9,600 | ND (50) | 1,000 | 300 | 350 | 2,000 |
| W-MW1 | 2/18/02 | 15.08 | 1,500 | ND (100) | 260 | 6.5 | 2.8 | 49 |
| W-MW1 | 7/19/02 | 14.84 | 180 | 28 | 68 | ND (1.7) | ND (1.7) | 6.8 |
| W-MW1 | 2/10/03 | 14.83 | 210 | 11 | 14 | 0.75 | ND (0.5) | 4.0 |
| W-MW4 | 3/21/89 | 12.4 | ND | NA | 13 | 1.4 | 1.0 | ND |
| W-MW4 | 7/26/90 | 12.5 | NA | NA | 0.8 | ND | ND | ND |
| W-MW4 | 10/25/90 | 12.2 | NA | NA | 120 | 1.2 | 1.1 | 0.9 |
| W-MW4 | 1/25/91 | 12.0 | NA | NA | 230 | 2.8 | 1.2 | 2.0 |
| W-MW4 | 4/25/91 | 13.0 | 170 | NA | 12 | ND | ND | 2.3 |
| W-MW4 | 8/27/91 | 11.8 | ND | NA | 87 | 1.3 | 0.8 | 0.8 |
| W-MW4 | 11/25/91 | 11.8 | 1,400 | NA | ND | 1.7 | 8.6 | 3.6 |
| W-MW4 | 6/11/92 | 12.93 | 560 | NA | 150 | 1.8 | 1.8 | 1.1 |
| W-MW4 | 7/16/97 | 14.46 | 50 | ND | ND | ND | ND | ND |
| W-MW4 | 10/21/97 | 14.10 | ND | ND | ND | ND | ND | ND |
| W-MW4 | 3/11/98 | 17.39 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 4/1/98 | 17.40 | ND (50) | ND (5.0) | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW4 | 7/15/98 | 16.92 | ND (50) | ND (5.0) | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW4 | 10/22/98 | 15.75 | ND (50) | ND (5.0) | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW4 | 9/9/99 | 15.57 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 1/18/00 | 14.32 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 5/4/00 | 16.34 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 8/22/00 | 15.47 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 2/8/01 | 14.73 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 7/20/01 | 14.72 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 2/18/02 | 15.05 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 7/19/02 | 14.97 | NS | NS | NS | NS | NS | NS |
| W-MW4 | 2/10/03 | 14.94 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 3/21/89 | 12.2 | ND | NA | ND | ND | ND | ND |
| W-MW5 | 7/26/90 | 12.4 | 670 | NA | 0.8 | ND | ND | ND |
| W-MW5 | 10/25/90 | 12.1 | 120 | NA | 13 | ND | ND | ND |
| W-MW5 | 1/25/91 | 11.9 | 120 | NA | 3.2 | ND | ND | ND |
| W-MW5 | 4/25/91 | 12.3 | ND | NA | ND | ND | ND | ND |
| W-MW5 | 8/27/91 | 11.5 | ND | NA | 20 | ND | 0.5 | ND |
| W-MW5 | 11/25/91 | 11.7 | 190 | NA | 2.7 | ND | 0.8 | 2.5 |
| W-MW5 | 6/11/92 | 12.85 | 150 | NA | 37 | ND | ND | ND |
| W-MW5 | 7/16/97 | 14.33 | ND | 22 | ND | ND | ND | ND |
| W-MW5 | 10/21/97 | 13.88 | ND | 14 | ND | ND | ND | ND |
| W-MW5 | 3/11/98 | 17.14 | NS | NS | NS | NS | NS | NS |

TABLE 1
GROUNDWATER ELEVATION AND ANALYTICAL DATA, SITE NO. 2
ALCOPARK FUELING FACILITY
OAKLAND, CALIFORNIA

| <i>All concentrations in ug/l (PPB).</i> | | | | | | | | |
|--|----------|-----------------------|---------|----------|----------|----------|--------------|----------|
| Well | Date | Groundwater Elevation | TPH-G | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes |
| W-MW5 | 4/1/98 | 17.14 | ND (50) | 11 | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW5 | 7/15/98 | 16.43 | ND (50) | ND (5.0) | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW5 | 10/22/98 | 15.60 | ND (50) | ND (5.0) | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW5 | 9/9/99 | 15.44 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 1/18/00 | 14.67 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 5/4/00 | 16.18 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 8/22/00 | 15.32 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 2/8/01 | 14.53 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 7/20/01 | 14.59 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 2/18/02 | 14.94 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 7/19/02 | 14.83 | NS | NS | NS | NS | NS | NS |
| W-MW5 | 2/10/03 | 14.83 | NS | NS | NS | NS | NS | NS |
| W-MW6 | 4/1/98 | NA | 740 | 4,600 | 9.8 | 3.2 | 3.0 | 15 |
| W-MW6 | 7/15/98 | NA | 6,200 | 11,000 | 280 | 43 | 180 | 350 |
| W-MW6 | 7/15/98 | NA | NA | 13,000 | ND (500) | ND (500) | ND (500) | ND (500) |
| W-MW6 | 10/22/98 | NA | 4,700 | 9,600 | 450 | 13 | 200 | 200 |
| W-MW6 | 10/22/98 | NA | NA | 9,100 | 470 | ND (250) | ND (250) | ND (250) |
| W-MW6 | 9/9/99 | NA | 6,600 | 3,700 | 2,500 | 43 | 310 | 250 |
| W-MW6 | 1/18/00 | NA | 3,500 | 4,600 | 800 | ND (5.0) | 40 | 13 |
| W-MW6 | 5/4/00 | NA | NS | NS | NS | NS | NS | NS |
| W-MW6 | 8/22/00 | NA | 1,400 | 1,700 | 370 | 4.8 | 12 | 35 |
| W-MW6 | 2/8/01 | NA | NS | NS | NS | NS | NS | NS |
| W-MW6 | 7/20/01 | NA | 1,100 | 800 | 240 | 2.9 | 2.3 | 3.4 |
| W-MW6 | 2/18/02 | NA | 1,500 | 570 | 260 | ND (2.0) | 11 | 4.3 |
| W-MW6 | 7/19/02 | NA | 1,800 | 800 | 1400 | ND (50) | ND (50) | ND (50) |
| W-MW6 | 2/10/03 | NA | 4,000 | 830 | 1000 | ND (50) | ND (50) | ND (50) |
| W-MW7 | 9/9/99 | NA | 92 | 1,200 | 1.6 | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 1/18/00 | NA | ND | 2,100 | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 5/4/00 | NA | 140 | 1,100 | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 8/22/00 | NA | 160 | 830 | 0.62 | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 2/8/01 | NA | 130 | 650 | ND (0.5) | 0.53 | ND (0.5) | ND (0.5) |
| W-MW7 | 7/20/01 | NA | 56 | 400 | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 2/18/02 | NA | ND (50) | 200 | ND (0.5) | ND (0.5) | ND (0.5) | ND (0.5) |
| W-MW7 | 7/19/02 | NA | ND (50) | 300 | ND (5.0) | ND (5.0) | ND (5.0) | ND (5.0) |
| W-MW7 | 2/10/03 | NA | ND (50) | 140 | ND (5.0) | ND (5.0) | ND (5.0) | ND (5.0) |
| W-B1 | 3/23/98 | NA | 3,100 | 4,200 | 250 | 18 | 160 | 290 |

Notes:

TPH-G denotes Total Petroleum Hydrocarbons as Gasoline. MTBE denotes Methyl tert-Butyl Ether.
 NA denotes Not Analyzed. NS denotes Not Sampled. ND denotes Not Detected. () denotes detection limit.
 Data collected prior to 1998 was reported in Alameda County Request for Proposal dated December 2, 1997.
 Duplicate results presented in *italics* performed by EPA method 8260.



REFERENCE:
 U.S.G.S. OAKLAND WEST, CALIFORNIA, 1959
 PHOTOREVISED 1980

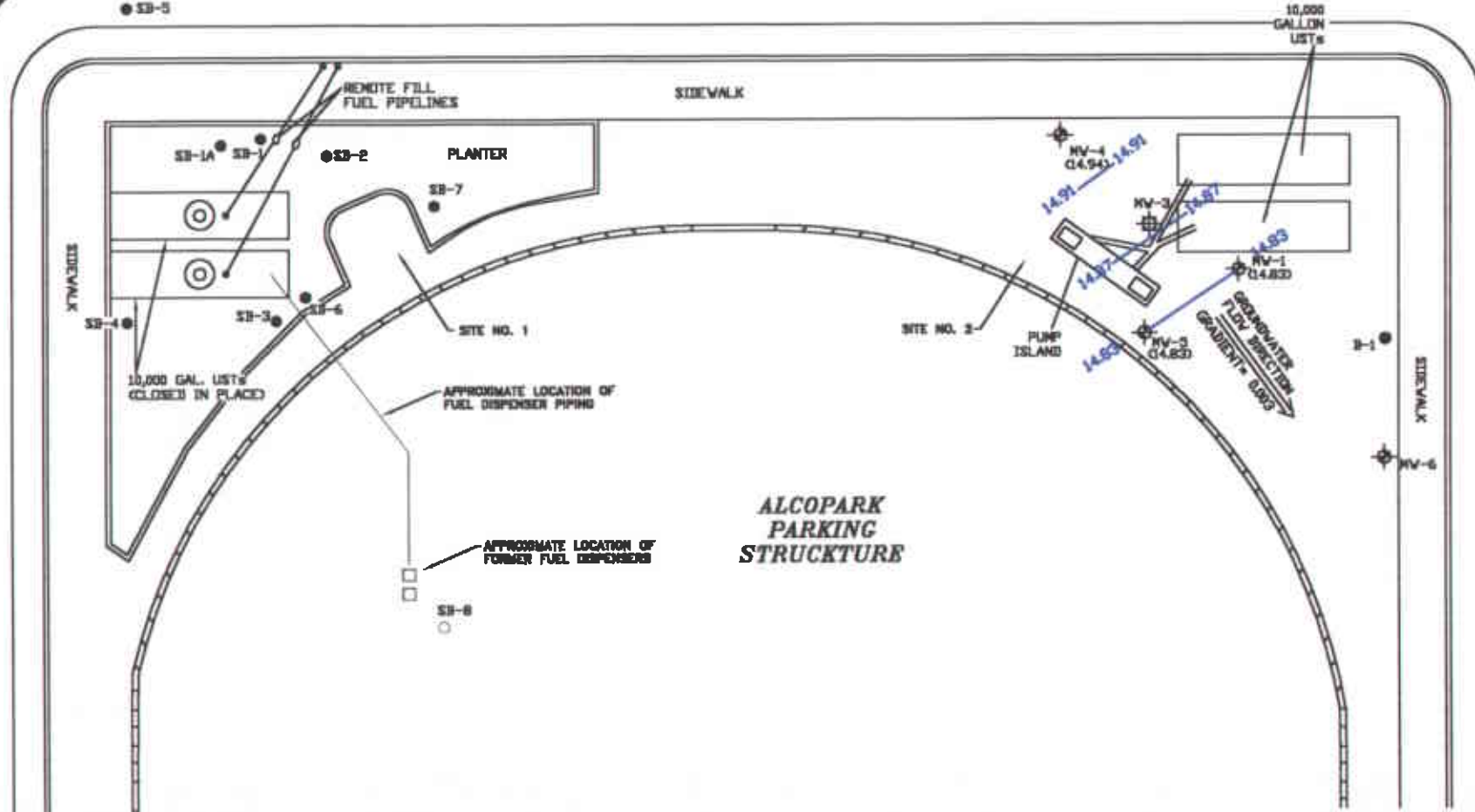
| | | |
|---|-----------|-----------------------------|
|  ENVIRONMENTAL GEOTECHNICAL CONSTRUCTION <small>CONSULTING • ENGINEERING • TESTING</small> | | |
| SITE LOCATION ALCOPARK FUELING STATION 165 13TH STREET OAKLAND, CALIFORNIA PROJECT NUMBER: 575-0E041 | | |
| DATE: 10/27/00 | CKD'D BY: | FIGURE NO.: 1 |
| FILE NO.: 0E041-1 | | DRAWN BY: A. CONSTANTINESCU |

JACKSON STREET



12TH STREET

13TH STREET



LEGEND:

- MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION INDICATED IN FEET MSL
- GROUNDWATER CONTOUR (ELEVATION INDICATED IN FEET MSL)
- VADOSE MONITORING WELL LOCATION
- SOIL BORING
- UNDERGROUND PIPING

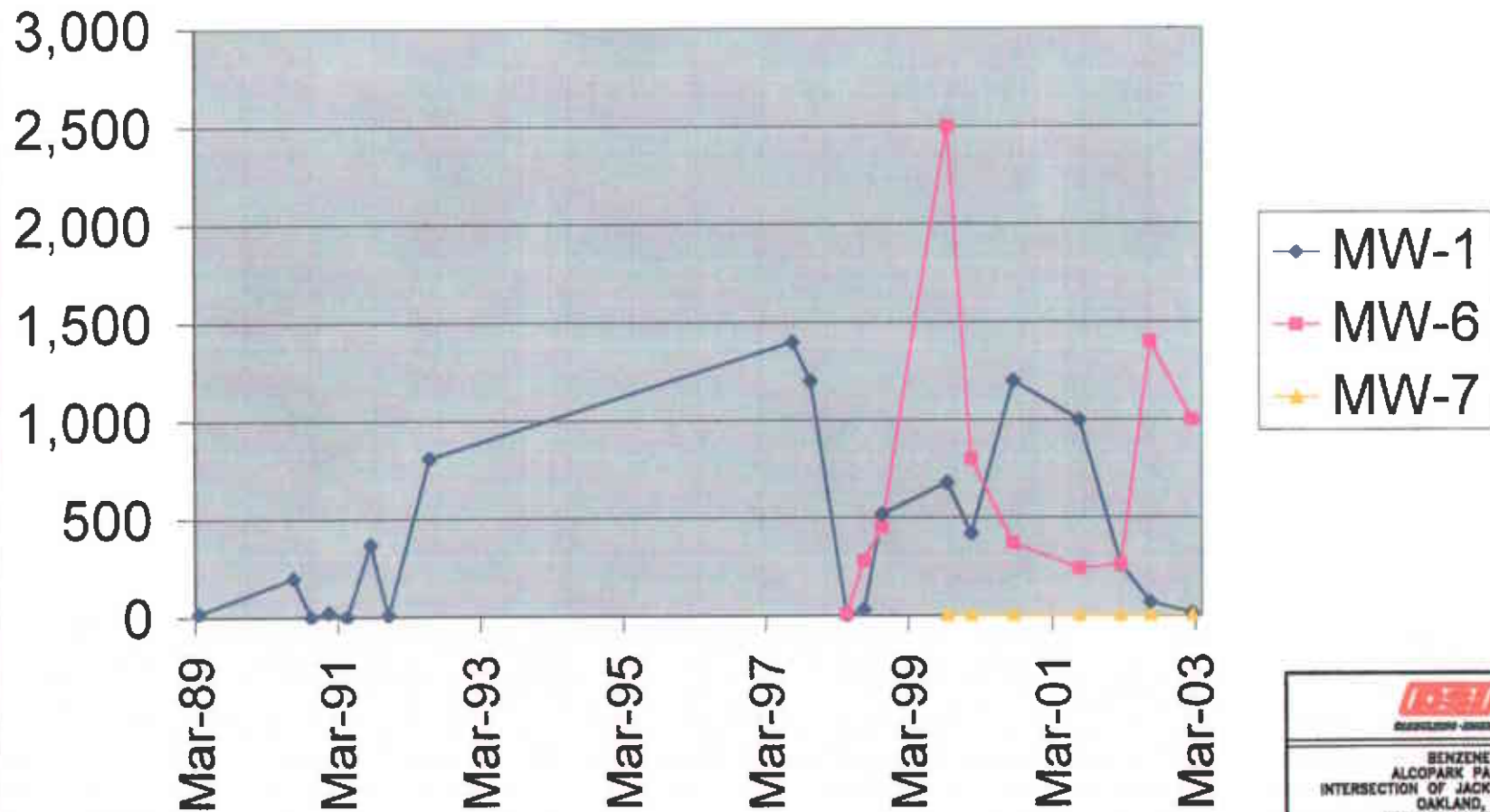
0 10 20
APPROXIMATE SCALE (FEET)

ACE ENVIRONMENTAL
GEOCHEMICAL
CONSTRUCTION
CONSULTING - ENGINEERING - TESTING

GROUNDWATER ELEVATION MAP - 2/10/03
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-90028

| | | |
|--------------------|--------------|---------------------|
| DATE: 2/03 | CKD BY: F.P. | FIGURE NO.: 3 |
| FILE NO.: 90028-07 | | DRAWN BY: B. STOZEK |

Benzene Concentrations (ug/L)

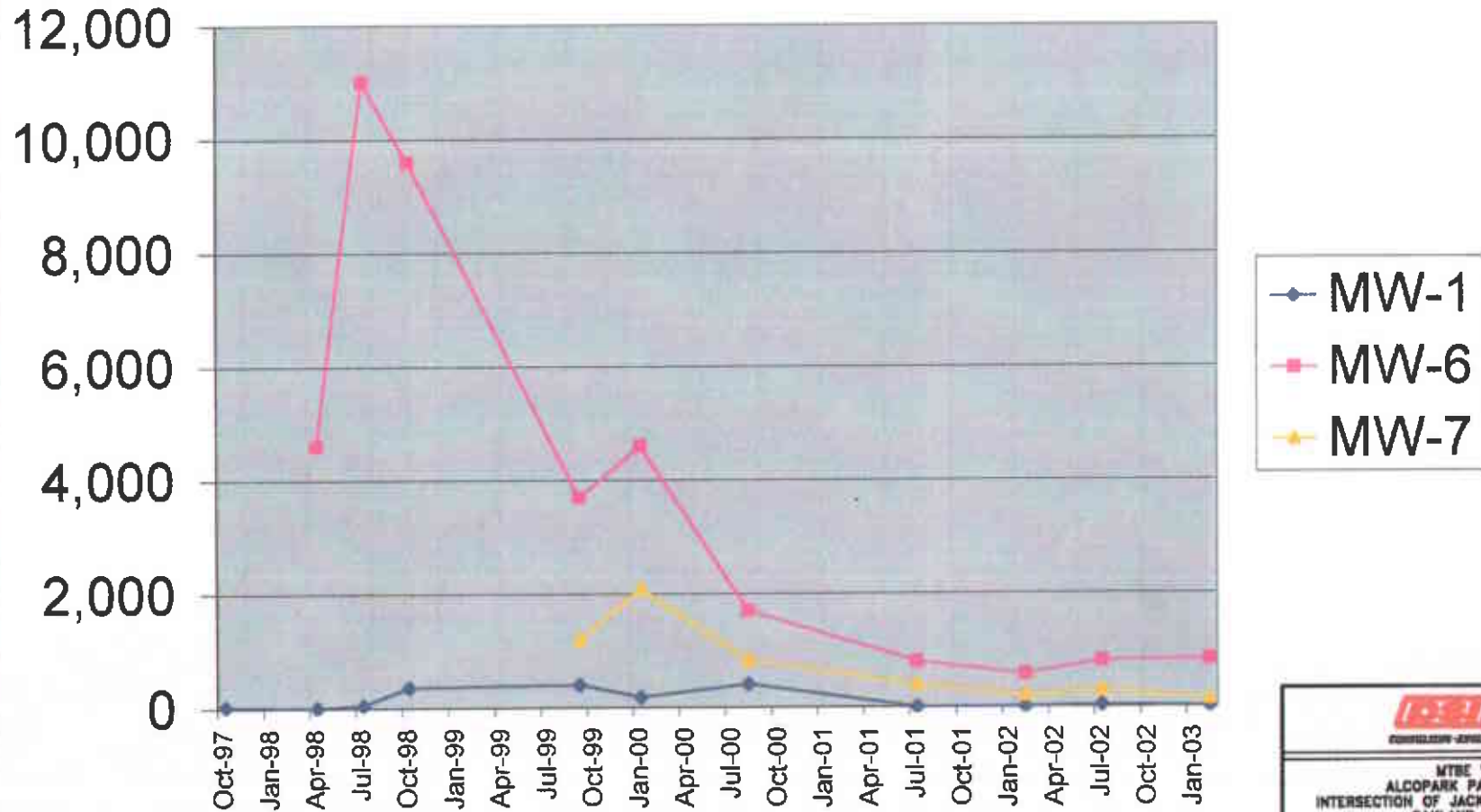


IC-311 ENVIRONMENTAL GEOTECHNICAL
CONSULTING ENGINEERS - GEOTECHNICAL

BENZENE VS. TIME
ALCOPARK PARKING FACILITY
INTERSECTION OF JACKSON AND 13TH STREETS
OAKLAND, CALIFORNIA
PROJECT NUMBER: 575-90028

| | | |
|--------------------|--------------|---------------------|
| DATE: 2/03 | CHK BY: F.P. | FIGURE NO.: 3 |
| FILE NO.: 90028-08 | | DRAWN BY: G. STOECK |

MTBE Concentrations (ug/L)



◆ MW-1
 ■ MW-6
 ▲ MW-7


**ENVIRONMENTAL
 GEOTECHNICAL
 CONSTRUCTION**
CONSULTING - ENGINEERING - TESTING

MTBE VS. TIME
 ALCOPARK PARKING FACILITY
 INTERSECTION OF JACKSON AND 13TH STREETS
 OAKLAND, CALIFORNIA
 PROJECT NUMBER: 575-9028

| | | |
|--------------------|--------------|---------------------|
| DATE: 2/03 | DWG BY: F.P. | FIGURE NO.: 4 |
| FILE NO.: 90028-08 | | DRAWN BY: B. STOECK |

APPENDIX A

GROUNDWATER SAMPLING FIELD PROCEDURES & WATER ELEVATIONS

APPENDIX A

GROUND-WATER SAMPLING

The following procedures will be used for ground water sampling:

1. All equipment shall be washed prior to entering the well with an Alconox solution, followed by two tap water rinses and a deionized water rinse.
2. Prior to purging wells, depth-to-water will be measured using an electronic sounder with an accuracy of approximately 0.01 foot. The measurements will be made to the top of the well casing on the north side.
4. Free floating product thickness and depth-to-ground water will be measured in wells containing free floating product using a Solinst oil-water interface probe to an accuracy of approximately 0.003 meters (0.01 foot). The measurements will be made to the top of the well casing on the north side.
5. Water samples will be collected with a Teflon disposable bailer. In the case of grab groundwater sampling, samples will be collected with a disposable Teflon lined plastic tube equipped with a check valve. The water collected will be immediately decanted into laboratory-supplied vials and bottles. The containers will be overfilled, capped, labeled, and placed in a chilled cooler, prior to delivery to the laboratory for analysis.
6. Chain of custody procedures, including chain of custody forms, will be used to document water sample handling and transport from collection to delivery to the laboratory for analysis.
7. Ground-water samples will be delivered to a State-certified hazardous waste laboratory within approximately 24 hours of collection.

FLUID MEASUREMENT FIELD DATA

SHEET: | OF |

DATE: 2/10/03 PROJECT NAME: Alameda GSA - Alco park PROJECT NO:
 WATER LEVEL MEASUREMENT INSTRUMENT: Solinst SERIAL NO:
 PRODUCT DETECTION INSTRUMENT: SERIAL NO:

EQUIP. DECON: ALCONOX WASH DIST/DEION 1 RINSE ISOPROPANOL ANALYTE FREE FINAL RINSE TAP WATER FINAL RINSE
 TAP WATER WASH LIQUINOX WASH DIST/DEION 2 RINSE OTHER SOLVENT DIST/DEION FINAL RINSE AIR DRY

| WELL NUMBER | GROUND SURFACE ELEVATION | TOP OF CASING ELEVATION | DEPTH TO PRODUCT BELOW TOC | DEPTH TO WATER BELOW TOC | WELL DEPTH BELOW TOC. | PRODUCT THICKNESS | WATER TABLE ELEVATION | ACTUAL TIME |
|-------------|--------------------------|-------------------------|----------------------------|--------------------------|-----------------------|-------------------|-----------------------|-------------|
| Mw-1 | | | | 18.17 | | | | 13:17 |
| Mw-4 | | | | 18.69 | | | | 13:19 |
| Mw-5 | | | | 18.18 | | | | 13:23 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

REMEMBER TO CORRECT PRODUCT THICKNESS FOR DENSITY BEFORE CALCULATING WATER TABLE ELEVATION

PREPARED BY: cm

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mcccampbell.com E-mail: main@mcccampbell.com

Professional Service Industries
4703 Tidewater Ave., Suite B
Oakland, CA 94601

Client Project ID: #9G028; Alco Park
Client Contact: Chris Merritt
Client P.O.:

Date Sampled: 02/10/03
Date Received: 02/10/03
Date Extracted: 02/11/03-02/13/03
Date Analyzed: 02/11/03-02/13/03

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*

Extraction method: SW5030B

Analytical methods: 8015Cm

Work Order: 0302102

| Lab ID | Client ID | Matrix | TPH(g) | DF | % SS |
|--------|-----------|--------|----------|----|------|
| 001A | MW-1 | W | 210,a | 1 | 94.8 |
| 002A | MW-6 | W | 4000,a,i | 10 | 102 |
| 003A | MW-7 | W | ND,i | 1 | 97.9 |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Reporting Limit for DF=1;
ND means not detected at or
above the reporting limit


W
S

50
NA

µg/L
NA

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.
cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mccampbell.com E-mail: main@mccampbell.com

| | | |
|--|--------------------------------------|--------------------------|
| Professional Service Industries 4703 Tidewater Ave., Suite B Oakland, CA 94601 | Client Project ID: #9G028; Alco Park | Date Sampled: 02/10/03 |
| | | Date Received: 02/10/03 |
| | Client Contact: Chris Merritt | Date Extracted: 02/13/03 |
| | Client P.O.: | Date Analyzed: 02/13/03 |

Volatiles Organics + Oxygenates by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0302102

| | |
|-----------|--------------|
| Lab ID | 0302102-001B |
| Client ID | MW-1 |
| Matrix | Water |

| Compound | Concentration * | DF | Reporting Limit | Compound | Concentration * | DF | Reporting Limit |
|-----------------------------|-----------------|-----|-----------------|-------------------------------|-----------------|-----|-----------------|
| Acetone | ND | 1.0 | 5.0 | tert-Amyl methyl ether (TAME) | 2.6 | 1.0 | 0.5 |
| Benzene | 14 | 1.0 | 0.5 | Bromobenzene | ND | 1.0 | 0.5 |
| Bromochloromethane | ND | 1.0 | 0.5 | Bromodichloromethane | ND | 1.0 | 0.5 |
| Bromoform | ND | 1.0 | 0.5 | Bromomethane | ND | 1.0 | 0.5 |
| 2-Butanone (MEK) | ND | 1.0 | 1.0 | t-Butyl alcohol (TBA) | 12 | 1.0 | 5.0 |
| n-Butyl benzene | ND | 1.0 | 0.5 | sec-Butyl benzene | ND | 1.0 | 0.5 |
| tert-Butyl benzene | ND | 1.0 | 0.5 | Carbon Disulfide | ND | 1.0 | 0.5 |
| Carbon Tetrachloride | ND | 1.0 | 0.5 | Chlorobenzene | ND | 1.0 | 0.5 |
| Chloroethane | ND | 1.0 | 0.5 | 2-Chloroethyl Vinyl Ether | ND | 1.0 | 0.5 |
| Chloroform | ND | 1.0 | 0.5 | Chloromethane | ND | 1.0 | 0.5 |
| 2-Chlorotoluene | ND | 1.0 | 0.5 | 4-Chlorotoluene | ND | 1.0 | 0.5 |
| Dibromochloromethane | ND | 1.0 | 0.5 | 1,2-Dibromo-3-chloropropane | ND | 1.0 | 0.5 |
| 1,2-Dibromoethane (EDB) | ND | 1.0 | 0.5 | Dibromomethane | ND | 1.0 | 0.5 |
| 1,2-Dichlorobenzene | ND | 1.0 | 0.5 | 1,3-Dichlorobenzene | ND | 1.0 | 0.5 |
| 1,4-Dichlorobenzene | ND | 1.0 | 0.5 | Dichlorodifluoromethane | ND | 1.0 | 0.5 |
| 1,1-Dichloroethane | ND | 1.0 | 0.5 | 1,2-Dichloroethane (1,2-DCA) | ND | 1.0 | 0.5 |
| 1,1-Dichloroethene | ND | 1.0 | 0.5 | cis-1,2-Dichloroethene | ND | 1.0 | 0.5 |
| trans-1,2-Dichloroethene | ND | 1.0 | 0.5 | 1,2-Dichloropropane | ND | 1.0 | 0.5 |
| 1,3-Dichloropropane | ND | 1.0 | 0.5 | 2,2-Dichloropropane | ND | 1.0 | 0.5 |
| 1,1-Dichloropropene | ND | 1.0 | 0.5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.5 |
| trans-1,3-Dichloropropene | ND | 1.0 | 0.5 | Diisopropyl ether (DIPE) | ND | 1.0 | 0.5 |
| Ethylbenzene | ND | 1.0 | 0.5 | Ethyl tert-butyl ether (ETBE) | ND | 1.0 | 0.5 |
| Hexachlorobutadiene | ND | 1.0 | 0.5 | 2-Hexanone | ND | 1.0 | 0.5 |
| Iodomethane (Methyl iodide) | ND | 1.0 | 0.5 | Isopropylbenzene | ND | 1.0 | 0.5 |
| 4-Isopropyl toluene | ND | 1.0 | 0.5 | Methyl-t-butyl ether (MTBE) | 11 | 1.0 | 0.5 |
| Methylene chloride | ND | 1.0 | 0.5 | 4-Methyl-2-pentanone (MIBK) | 0.60 | 1.0 | 0.5 |
| Naphthalene | 13 | 1.0 | 0.5 | n-Propyl benzene | ND | 1.0 | 0.5 |
| Styrene | ND | 1.0 | 0.5 | 1,1,1,2-Tetrachloroethane | ND | 1.0 | 0.5 |
| 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.5 | Tetrachloroethene | ND | 1.0 | 0.5 |
| Toluene | 0.75 | 1.0 | 0.5 | 1,2,3-Trichlorobenzene | ND | 1.0 | 0.5 |
| 1,2,4-Trichlorobenzene | ND | 1.0 | 0.5 | 1,1,1-Trichloroethane | ND | 1.0 | 0.5 |
| 1,1,2-Trichloroethane | ND | 1.0 | 0.5 | Trichloroethene | ND | 1.0 | 0.5 |
| Trichlorofluoromethane | ND | 1.0 | 0.5 | 1,2,3-Trichloropropane | ND | 1.0 | 0.5 |
| 1,2,4-Trimethylbenzene | 14 | 1.0 | 0.5 | 1,3,5-Trimethylbenzene | ND | 1.0 | 0.5 |
| Vinyl Acetate | ND | 1.0 | 5.0 | Vinyl Chloride | ND | 1.0 | 0.5 |
| Xylenes | 4.0 | 1.0 | 0.5 | | | | |

Surrogate Recoveries (%)

| | | | |
|-------|-----|-------|------|
| %SS1: | 118 | %SS2: | 98.9 |
| %SS3: | 106 | | |

Comments:

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

| | | |
|--|--------------------------------------|--------------------------|
| Professional Service Industries 4703 Tidewater Ave., Suite B Oakland, CA 94601 | Client Project ID: #9G028; Alco Park | Date Sampled: 02/10/03 |
| | | Date Received: 02/10/03 |
| | Client Contact: Chris Merritt | Date Extracted: 02/13/03 |
| | Client P.O.: | Date Analyzed: 02/13/03 |

Volatiles Organics + Oxygenates by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0302102

| | |
|-----------|--------------|
| Lab ID | 0302102-002B |
| Client ID | MW-6 |
| Matrix | Water |

| Compound | Concentration * | DF | Reporting Limit | Compound | Concentration * | DF | Reporting Limit |
|-----------------------------|-----------------|-----|-----------------|-------------------------------|-----------------|-----|-----------------|
| Acetone | ND<500 | 100 | 5.0 | tert-Amyl methyl ether (TAME) | 150 | 100 | 0.5 |
| Benzene | 1000 | 100 | 0.5 | Bromobenzene | ND<50 | 100 | 0.5 |
| Bromochloromethane | ND<50 | 100 | 0.5 | Bromodichloromethane | ND<50 | 100 | 0.5 |
| Bromoform | ND<50 | 100 | 0.5 | Bromomethane | ND<50 | 100 | 0.5 |
| 2-Butanone (MEK) | ND<100 | 100 | 1.0 | t-Butyl alcohol (TBA) | ND<500 | 100 | 5.0 |
| n-Butyl benzene | ND<50 | 100 | 0.5 | sec-Butyl benzene | ND<50 | 100 | 0.5 |
| tert-Butyl benzene | ND<50 | 100 | 0.5 | Carbon Disulfide | ND<50 | 100 | 0.5 |
| Carbon Tetrachloride | ND<50 | 100 | 0.5 | Chlorobenzene | ND<50 | 100 | 0.5 |
| Chloroethane | ND<50 | 100 | 0.5 | 2-Chloroethyl Vinyl Ether | ND<50 | 100 | 0.5 |
| Chloroform | ND<50 | 100 | 0.5 | Chloromethane | ND<50 | 100 | 0.5 |
| 2-Chlorotoluene | ND<50 | 100 | 0.5 | 4-Chlorotoluene | ND<50 | 100 | 0.5 |
| Dibromochloromethane | ND<50 | 100 | 0.5 | 1,2-Dibromo-3-chloropropane | ND<50 | 100 | 0.5 |
| 1,2-Dibromoethane (EDB) | ND<50 | 100 | 0.5 | Dibromomethane | ND<50 | 100 | 0.5 |
| 1,2-Dichlorobenzene | ND<50 | 100 | 0.5 | 1,3-Dichlorobenzene | ND<50 | 100 | 0.5 |
| 1,4-Dichlorobenzene | ND<50 | 100 | 0.5 | Dichlorodifluoromethane | ND<50 | 100 | 0.5 |
| 1,1-Dichloroethane | ND<50 | 100 | 0.5 | 1,2-Dichloroethane (1,2-DCA) | ND<50 | 100 | 0.5 |
| 1,1-Dichloroethene | ND<50 | 100 | 0.5 | cis-1,2-Dichloroethene | ND<50 | 100 | 0.5 |
| trans-1,2-Dichloroethene | ND<50 | 100 | 0.5 | 1,2-Dichloropropane | ND<50 | 100 | 0.5 |
| 1,3-Dichloropropane | ND<50 | 100 | 0.5 | 2,2-Dichloropropane | ND<50 | 100 | 0.5 |
| 1,1-Dichloropropene | ND<50 | 100 | 0.5 | cis-1,3-Dichloropropene | ND<50 | 100 | 0.5 |
| trans-1,3-Dichloropropene | ND<50 | 100 | 0.5 | Diisopropyl ether (DIPE) | ND<50 | 100 | 0.5 |
| Ethylbenzene | ND<50 | 100 | 0.5 | Ethyl tert-butyl ether (ETBE) | ND<50 | 100 | 0.5 |
| Hexachlorobutadiene | ND<50 | 100 | 0.5 | 2-Hexanone | ND<50 | 100 | 0.5 |
| Iodomethane (Methyl iodide) | ND<50 | 100 | 0.5 | Isopropylbenzene | ND<50 | 100 | 0.5 |
| 4-Isopropyl toluene | ND<50 | 100 | 0.5 | Methyl-t-butyl ether (MTBE) | 830 | 100 | 0.5 |
| Methylene chloride | ND<50 | 100 | 0.5 | 4-Methyl-2-pentanone (MIBK) | ND<50 | 100 | 0.5 |
| Naphthalene | 190 | 100 | 0.5 | n-Propyl benzene | ND<50 | 100 | 0.5 |
| Styrene | ND<50 | 100 | 0.5 | 1,1,1,2-Tetrachloroethane | ND<50 | 100 | 0.5 |
| 1,1,2,2-Tetrachloroethane | ND<50 | 100 | 0.5 | Tetrachloroethene | ND<50 | 100 | 0.5 |
| Toluene | ND<50 | 100 | 0.5 | 1,2,3-Trichlorobenzene | ND<50 | 100 | 0.5 |
| 1,2,4-Trichlorobenzene | ND<50 | 100 | 0.5 | 1,1,1-Trichloroethane | ND<50 | 100 | 0.5 |
| 1,1,2-Trichloroethane | ND<50 | 100 | 0.5 | Trichloroethene | ND<50 | 100 | 0.5 |
| Trichlorofluoromethane | ND<50 | 100 | 0.5 | 1,2,3-Trichloropropane | ND<50 | 100 | 0.5 |
| 1,2,4-Trimethylbenzene | ND<50 | 100 | 0.5 | 1,3,5-Trimethylbenzene | ND<50 | 100 | 0.5 |
| Vinyl Acetate | ND<500 | 100 | 5.0 | Vinyl Chloride | ND<50 | 100 | 0.5 |
| Xylenes | ND<50 | 100 | 0.5 | | | | |

Surrogate Recoveries (%)

| | | | |
|-------|-----|-------|------|
| %SS1: | 110 | %SS2: | 99.4 |
| %SS3: | 108 | | |

Comments: i

* water and vapor samples and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



| | | |
|--|--------------------------------------|--------------------------|
| Professional Service Industries 4703 Tidewater Ave., Suite B Oakland, CA 94601 | Client Project ID: #9G028; Alco Park | Date Sampled: 02/10/03 |
| | | Date Received: 02/10/03 |
| | Client Contact: Chris Merritt | Date Extracted: 02/13/03 |
| | Client P.O.: | Date Analyzed: 02/13/03 |

Volatiles Organics + Oxygenates by P&T and GC/MS (Basic Target List)*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0302102

| | |
|-----------|--------------|
| Lab ID | 0302102-003B |
| Client ID | MW-7 |
| Matrix | Water |

| Compound | Concentration * | DF | Reporting Limit | Compound | Concentration * | DF | Reporting Limit |
|-----------------------------|-----------------|----|-----------------|-------------------------------|-----------------|----|-----------------|
| Acetone | ND<5.0 | 10 | 5.0 | tert-Amyl methyl ether (TAME) | 7.1 | 10 | 0.5 |
| Benzene | ND<5.0 | 10 | 0.5 | Bromobenzene | ND<5.0 | 10 | 0.5 |
| Bromochloromethane | ND<5.0 | 10 | 0.5 | Bromodichloromethane | ND<5.0 | 10 | 0.5 |
| Bromoform | ND<5.0 | 10 | 0.5 | Bromomethane | ND<5.0 | 10 | 0.5 |
| 2-Butanone (MEK) | ND<10 | 10 | 1.0 | t-Butyl alcohol (TBA) | ND<50 | 10 | 5.0 |
| n-Butyl benzene | ND<5.0 | 10 | 0.5 | sec-Butyl benzene | ND<5.0 | 10 | 0.5 |
| tert-Butyl benzene | ND<5.0 | 10 | 0.5 | Carbon Disulfide | ND<5.0 | 10 | 0.5 |
| Carbon Tetrachloride | ND<5.0 | 10 | 0.5 | Chlorobenzene | ND<5.0 | 10 | 0.5 |
| Chloroethane | ND<5.0 | 10 | 0.5 | 2-Chloroethyl Vinyl Ether | ND<5.0 | 10 | 0.5 |
| Chloroform | ND<5.0 | 10 | 0.5 | Chloromethane | ND<5.0 | 10 | 0.5 |
| 2-Chlorotoluene | ND<5.0 | 10 | 0.5 | 4-Chlorotoluene | ND<5.0 | 10 | 0.5 |
| Dibromochloromethane | ND<5.0 | 10 | 0.5 | 1,2-Dibromo-3-chloropropane | ND<5.0 | 10 | 0.5 |
| 1,2-Dibromoethane (EDB) | ND<5.0 | 10 | 0.5 | Dibromomethane | ND<5.0 | 10 | 0.5 |
| 1,2-Dichlorobenzene | ND<5.0 | 10 | 0.5 | 1,3-Dichlorobenzene | ND<5.0 | 10 | 0.5 |
| 1,4-Dichlorobenzene | ND<5.0 | 10 | 0.5 | Dichlorodifluoromethane | ND<5.0 | 10 | 0.5 |
| 1,1-Dichloroethane | ND<5.0 | 10 | 0.5 | 1,2-Dichloroethane (1,2-DCA) | ND<5.0 | 10 | 0.5 |
| 1,1-Dichloroethene | ND<5.0 | 10 | 0.5 | cis-1,2-Dichloroethene | ND<5.0 | 10 | 0.5 |
| trans-1,2-Dichloroethene | ND<5.0 | 10 | 0.5 | 1,2-Dichloropropane | ND<5.0 | 10 | 0.5 |
| 1,3-Dichloropropane | ND<5.0 | 10 | 0.5 | 2,2-Dichloropropane | ND<5.0 | 10 | 0.5 |
| 1,1-Dichloropropene | ND<5.0 | 10 | 0.5 | cis-1,3-Dichloropropene | ND<5.0 | 10 | 0.5 |
| trans-1,3-Dichloropropene | ND<5.0 | 10 | 0.5 | Diisopropyl ether (DIPE) | ND<5.0 | 10 | 0.5 |
| Ethylbenzene | ND<5.0 | 10 | 0.5 | Ethyl tert-butyl ether (ETBE) | ND<5.0 | 10 | 0.5 |
| Hexachlorobutadiene | ND<5.0 | 10 | 0.5 | 2-Hexanone | ND<5.0 | 10 | 0.5 |
| Iodomethane (Methyl iodide) | ND<5.0 | 10 | 0.5 | Isopropylbenzene | ND<5.0 | 10 | 0.5 |
| 4-Isopropyl toluene | ND<5.0 | 10 | 0.5 | Methyl-t-butyl ether (MTBE) | 140 | 10 | 0.5 |
| Methylene chloride | ND<5.0 | 10 | 0.5 | 4-Methyl-2-pentanone (MIBK) | ND<5.0 | 10 | 0.5 |
| Naphthalene | ND<5.0 | 10 | 0.5 | n-Propyl benzene | ND<5.0 | 10 | 0.5 |
| Styrene | ND<5.0 | 10 | 0.5 | 1,1,1,2-Tetrachloroethane | ND<5.0 | 10 | 0.5 |
| 1,1,2,2-Tetrachloroethane | ND<5.0 | 10 | 0.5 | Tetrachloroethene | ND<5.0 | 10 | 0.5 |
| Toluene | ND<5.0 | 10 | 0.5 | 1,2,3-Trichlorobenzene | ND<5.0 | 10 | 0.5 |
| 1,2,4-Trichlorobenzene | ND<5.0 | 10 | 0.5 | 1,1,1-Trichloroethane | ND<5.0 | 10 | 0.5 |
| 1,1,2-Trichloroethane | ND<5.0 | 10 | 0.5 | Trichloroethene | ND<5.0 | 10 | 0.5 |
| Trichlorofluoromethane | ND<5.0 | 10 | 0.5 | 1,2,3-Trichloropropane | ND<5.0 | 10 | 0.5 |
| 1,2,4-Trimethylbenzene | ND<5.0 | 10 | 0.5 | 1,3,5-Trimethylbenzene | ND<5.0 | 10 | 0.5 |
| Vinyl Acetate | ND<50 | 10 | 5.0 | Vinyl Chloride | ND<5.0 | 10 | 0.5 |
| Xylenes | ND<5.0 | 10 | 0.5 | | | | |

Surrogate Recoveries (%)

| | | | |
|-------|-----|-------|------|
| %SS1: | 116 | %SS2: | 99.7 |
| %SS3: | 109 | | |

Comments: i

* water and vapor samples and all TCLP & SPL extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) sample diluted due to high organic content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0302102

| EPA Method: SW8021B/8015Cm | | Extraction: SW5030B | | BatchID: 5847 | | Spiked Sample ID: N/A | | | | |
|----------------------------|--------|---------------------|--------|---------------|---------|-----------------------|--------|----------|-------------------------|------|
| Compound | Sample | Spiked | MS* | MSD* | MS-MSD* | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | |
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | Low | High |
| TPH(gas) | N/A | 60 | N/A | N/A | N/A | 109 | 111 | 2.20 | 80 | 120 |
| MTBE | N/A | 10 | N/A | N/A | N/A | 91.3 | 93 | 1.91 | 80 | 120 |
| Benzene | N/A | 10 | N/A | N/A | N/A | 104 | 108 | 3.61 | 80 | 120 |
| Toluene | N/A | 10 | N/A | N/A | N/A | 105 | 109 | 3.50 | 80 | 120 |
| Ethylbenzene | N/A | 10 | N/A | N/A | N/A | 104 | 108 | 3.51 | 80 | 120 |
| Xylenes | N/A | 30 | N/A | N/A | N/A | 110 | 113 | 2.99 | 80 | 120 |
| %SS: | N/A | 100 | N/A | N/A | N/A | 88.8 | 89.4 | 0.686 | 80 | 120 |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR SW8260B

Matrix: W

WorkOrder: 0302102

| EPA Method: SW8260B | | Extraction: SW5030B | | | BatchID: 5837 | | Spiked Sample ID: N/A | | | |
|-------------------------------|--------|---------------------|--------|--------|---------------|--------|-----------------------|----------|-------------------------|------|
| Compound | Sample | Spiked | MS* | MSD* | MS-MSD* | LCS | LCSD | LCS-LCSD | Acceptance Criteria (%) | |
| | µg/L | µg/L | % Rec. | % Rec. | % RPD | % Rec. | % Rec. | % RPD | Low | High |
| Benzene | N/A | 10 | N/A | N/A | N/A | 102 | 100 | 1.71 | 70 | 130 |
| tert-Amyl methyl ether (TAME) | N/A | 10 | N/A | N/A | N/A | 105 | 103 | 2.30 | 70 | 130 |
| Chlorobenzene | N/A | 10 | N/A | N/A | N/A | 97.9 | 97.8 | 0.0676 | 70 | 130 |
| 1,1-Dichloroethene | N/A | 10 | N/A | N/A | N/A | 93.1 | 96.4 | 3.42 | 70 | 130 |
| Methyl-t-butyl ether (MTBE) | N/A | 10 | N/A | N/A | N/A | 93.9 | 87.6 | 6.91 | 70 | 130 |
| Toluene | N/A | 10 | N/A | N/A | N/A | 104 | 105 | 1.11 | 70 | 130 |
| Trichloroethene | N/A | 10 | N/A | N/A | N/A | 91.9 | 90.2 | 1.86 | 70 | 130 |
| Diisopropyl ether (DIPE) | N/A | 10 | N/A | N/A | N/A | 97.9 | 95.5 | 2.51 | 70 | 130 |
| Ethyl tert-butyl ether (ETBE) | N/A | 10 | N/A | N/A | N/A | 103 | 99.9 | 3.37 | 70 | 130 |
| %SS1: | N/A | 100 | N/A | N/A | N/A | 100 | 96.5 | 3.83 | 70 | 130 |
| %SS2: | N/A | 100 | N/A | N/A | N/A | 99.6 | 100 | 0.577 | 70 | 130 |
| %SS3: | N/A | 100 | N/A | N/A | N/A | 105 | 105 | 0.489 | 70 | 130 |

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS - Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

McCAMPBELL ANALYTICAL INC.

110 2ND AVENUE SOUTH, #D7
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HR 48 HR 72 HR 5 DAY

EDF Required? Yes No

Report To: CHRIS MERRITT / ROD SRIETAL Bill To: ROD SRIETAL
 Company: PBI ALAMEDA CSA
4703 TIDE WATER AVE STE B
OAKLAND, CA 94661 E-Mail:
 Tele: (510) 434-9260 Fax: ()
 Project #: 96028 Project Name: ALCO PARK
 Project Location: OAKLAND
 Sampler Signature: CHRIS MERRITT

Analysis Request

Other

Comments

| SAMPLE ID (Field Point Name) | LOCATION | SAMPLING | | # Containers | Type Containers | MATRIX | | | | | METHOD PRESERVED | | | | | | | |
|---------------------------------|----------|----------|------|--------------|-----------------|--------|------|-----|--------|-------|------------------|-----|------------------|-------|--|--|--|--|
| | | Date | Time | | | Water | Soil | Air | Sludge | Other | Ice | HCl | HNO ₃ | Other | | | | |
| ✓ MW-1 | | 2/10/03 | 1330 | 4 | SOA | X | | | | | | X | | | | | | |
| + MW-6 | | | 1354 | | | X | | | | | | X | | | | | | |
| + MW-7 | | | 1415 | | | X | | | | | | X | | | | | | |

| | |
|---|--|
| BTEX & TPH as Gas (602/8020 + 8015)/MTBE | |
| TPH as Diesel (8015) | |
| Total Petroleum Oil & Grease (5520 E&F/B&F) | |
| Total Petroleum Hydrocarbons (418.1) | |
| EPA 601 / 8010 | |
| BTEX ONLY (EPA 602 / 8020) | |
| EPA 608 / 8080 | |
| EPA 608 / 8080 PCB's ONLY | |
| EPA 624 / 8240 / 8260 | |
| EPA 625 / 8270 | |
| PAH's / PNA's by EPA 625 / 8270 / 8310 | |
| CAM-17 Metals | |
| LUFT 5 Metals | |
| Lead (7240/7421/259.2/6010) | |
| RCI | |

| | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

| | | | |
|---------------------------------------|----------------------|-------------------|---------------------------------|
| Relinquished By: <u>CHRIS MERRITT</u> | Date: <u>2/10/03</u> | Time: <u>1516</u> | Received By: <u>[Signature]</u> |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

| | | | | | |
|---|--|--|------------------------------|---------------------------------|--------------------------------|
| ICE/A* <input checked="" type="checkbox"/> | PRESERVATION <input checked="" type="checkbox"/> | VOAS <input checked="" type="checkbox"/> | O&G <input type="checkbox"/> | METALS <input type="checkbox"/> | OTHER <input type="checkbox"/> |
| GOOD CONDITION <input checked="" type="checkbox"/> | APPROPRIATE CONTAINERS <input checked="" type="checkbox"/> | | | | |
| HEAD SPACE ABSENT <input checked="" type="checkbox"/> | PERSERVED IN LAB <input checked="" type="checkbox"/> | | | | |
| DECHLORINATED IN LAB <input type="checkbox"/> | | | | | |

L: M.Y