EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

Date December 22, 1995
Project 20805-131.003

To:

Ms. Juliet Shin
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway, Suite 250
Alameda, California 94502-6577

We are enclosing:

| Copies | Description |
|---|---|
| 1 | Third quarter 1995 groundwater monitoring results for ARCO service station 6002, Oakland, California |

| | | | | | |
|---|---|---|---|---|---|
| For your: | X | Use | Sent by: | | Regular Mail |
| | | Approval | | | Standard Air |
| | | Review | | | Courier |
| | | Information | | X | Other: Cert. Mail |

Comments:
The enclosed groundwater monitoring report is being sent to you per the request of ARCO Products Company. Please call if you have questions or comments.

David Larsen
Project Coordinator

cc: Kevin Graves, RWQCB - SFBR
Michael Whelan, ARCO Products Company
David Larsen, EMCON
File

ARCO Products Company

Date:

December 22, 1995

Re: ARCO Station #

6002 • 6235 Seminary Avenue • Oakland, CA
Third Quarter 1995 Groundwater Monitoring Results

" I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached proposal or report are true and correct."

Submitted by:

Michael R. Whelan

Michael R. Whelan
Environmental Engineer

EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

November 30, 1995
Project 20805-131.003

Mr. Michael Whelan
ARCO Products Company
P.O. Box 612530
San Jose, California 95161

Re: Third quarter 1995 groundwater monitoring program results, ARCO service station 6002, Oakland, California

Dear Mr. Whelan:

This letter presents the results of the third quarter 1995 groundwater monitoring program at ARCO Products Company (ARCO) service station 6002, 6235 Seminary Avenue, Oakland, California (Figure 1). The quarterly monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

## BACKGROUND

Five on-site groundwater monitoring wells (MW-1 through MW-5), one off-site groundwater monitoring well (MW-6), four on-site vapor extraction wells (VW-1 through VW-4), and one on-site air-sparge well (AS-1) were installed as part of a comprehensive site assessment conducted at this site between January 1994 and June 1995. Please refer to (1) *Additional On-Site Subsurface Investigation and Second Quarter 1994 Groundwater Monitoring Report* (GeoStrategies, Inc., August 29, 1994); (2) *First Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 6002, Oakland, California* (EMCON, May 1995); and (3) *Additional Site Characterization, ARCO Service Station 6002, Oakland, California* (EMCON, November 1995), for more details.

## MONITORING PROGRAM FIELD PROCEDURES AND RESULTS

A program of quarterly groundwater monitoring was initiated during the first quarter of 1994 to provide information concerning water quality, flow direction, and gradient consistent with ACHCSA and Regional Water Quality Control Board (RWQCB) requirements for underground fuel tank investigations. Wells MW-1 through MW-6 are monitored quarterly.

EMCON performed the third quarter 1995 groundwater monitoring event on September 1, 1995. Field work this quarter included (1) measuring depths to groundwater and subjectively analyzing groundwater for the presence of floating product in wells MW-1 through MW-5, (2) purging and subsequently sampling groundwater

monitoring wells MW-1 through MW-5 for laboratory analysis, and (3) directing a state-certified laboratory to analyze the groundwater samples. Because of a oversight, well MW-6 was not monitored during the third quarter of 1995. Copies of all field data sheets from the third quarter 1995 groundwater monitoring event are included in Appendix A.

## ANALYTICAL PROCEDURES

Groundwater samples collected during third quarter 1995 monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and methyl-tert-butyl ether (MTBE). Groundwater samples were prepared for analysis by U.S. Environmental Protection Agency (USEPA) method 5030 (purge and trap). Groundwater was analyzed for TPHG by the methods accepted by the Department of Toxic Substances Control, California Environmental Protection Agency (Cal-EPA), and referenced in *Leaking Underground Fuel Tank* (LUFT) *Field Manual* (State Water Resources Control Board, October 1989). Samples were analyzed for BTEX and MTBE by USEPA method 8020, as described in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (EPA SW-846, November 1986, third edition). These methods are recommended in *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* (August 10, 1990) for analysis of samples from petroleum-hydrocarbon-impacted sites.

## MONITORING PROGRAM RESULTS

Results of the third quarter 1995 groundwater monitoring event are summarized in Table 1 and illustrated in Figure 2. Historical groundwater elevation data, including top-of-casing elevations, depth-to-water measurements, calculated groundwater elevations, floating-product thickness measurements, and groundwater flow direction and gradient data, are summarized in Table 2. Table 3 summarizes historical laboratory data for analysis of petroleum hydrocarbons and their constituents. Copies of the third quarter 1995 analytical results and chain-of-custody documentation are included in Appendix B.

Groundwater elevation data collected on September 1, 1995, indicate that groundwater beneath the site flows west-southwest with an approximate hydraulic gradient of 0.09 foot per foot. Figure 2 illustrates groundwater contours and analytical data for the third quarter of 1995.

Groundwater samples from wells MW-2 and MW-3 did not contain detectable concentrations of TPHG, BTEX, or MTBE. Samples from well MW-4 contained 78 micrograms per liter (µg/L) of TPHG, but did not contain detectable concentrations of benzene or MTBE. Samples from well MW-1 contained 14,000 µg/L TPHG, 1,300 µg/L benzene, and 24,000 µg/L MTBE; samples from well MW-5 contained 19,000 µg/L TPHG, 1,500 µg/L benzene, and 8,300 µg/L MTBE.

## LIMITATIONS

No monitoring event is thorough enough to describe all geologic and hydrogeologic conditions of interest at a given site. If conditions have not been identified during the monitoring event, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the scope, limitations, and cost of work performed during the monitoring event.

## SITE STATUS UPDATE

This update reports the site activities performed during the third quarter of 1995 and those anticipated for the fourth quarter of 1995.

### Third Quarter 1995 Activities

- Prepared and submitted quarterly groundwater monitoring report for second quarter 1995.
- Performed quarterly groundwater monitoring for third quarter 1995.
- Installed off-site groundwater monitoring well MW-6.
- Installed on-site vapor extraction wells VW-3 and VW-4, and air-sparge well AS-1.
- Drilled four soil borings adjacent to the pump islands.
- Continued pursuit of access to install off-site temporary monitoring points at two properties downgradient from ARCO service station 6002.

### Work Anticipated for Fourth Quarter 1995

- Prepare and submit quarterly groundwater monitoring report for third quarter 1995.
- Perform quarterly groundwater monitoring for fourth quarter 1995.
- Continue pursuit of access to install off-site temporary monitoring points at two properties downgradient from ARCO service station 6002.

Please call if you have questions.

Sincerely,

EMCON

David Larsen
Project Coordinator

Lynn A. Gallagher, R.G. 6090
Project Geologist

REGISTERED GEOLOGIST
LYNN A. GALLAGHER
RG6090
STATE OF CALIFORNIA

Attachments:

| | | |
|---|---|---|
| Table 1 - | Groundwater Monitoring Data, Third Quarter 1995 |
| Table 2 - | Historical Groundwater Elevation Data |
| Table 3 - | Historical Groundwater Analytical Data, Petroleum Hydrocarbons and Their Constituents |
| Figure 1 - | Site Location |
| Figure 2 - | Groundwater Data, Third Quarter 1995 |
| Appendix A - | Field Data Sheets, Third Quarter 1995 Groundwater Monitoring Event |
| Appendix B - | Analytical Results and Chain-of-Custody Documentation, Third Quarter 1995 |

cc: Juliet Shin, ACHCSA
Kevin Graves, RWQCB - SFBR

# Table 1
## Groundwater Monitoring Data
## Third Quarter 1995

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 11-30-95

| Well Designation | Water Level Field Date | Top of Casing Elevation | Depth to Water | Groundwater Elevation | Floating Product Thickness | Groundwater Flow Direction | Hydraulic Gradient | Water Sample Field Date | TPHG LUFT Method | Benzene EPA 8020 | Toluene EPA 8020 | Ethylbenzene EPA 8020 | Total Xylenes EPA 8020 | MTBE EPA 8020 | MTBE EPA 8240 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ft-MSL | feet | ft-MSL | feet | MWN | ft/ft | | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| MW-1 | 09-01-95 | 247.06 | 9.47 | 237.59 | ND | WSW | 0.09 | 09-01-95 | 14000 | 1300 | 28 | 480 | 780 | 24000 | -- |
| MW-2 | 09-01-95 | 249.30 | 10.69 | 238.61 | ND | WSW | 0.09 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- |
| MW-3 | 09-01-95 | 248.35 | 8.65 | 239.70 | ND | WSW | 0.09 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- |
| MW-4 | 09-01-95 | 242.91 | 12.28 | 230.63 | ND | WSW | 0.09 | 09-01-95 | 78 | <0.5 | 0.7 | <0.5 | <0.5 | <3 | -- |
| MW-5 | 09-01-95 | 244.82 | 14.03 | 230.79 | ND | WSW | 0.09 | 09-01-95 | 19000 | 1500 | 25 | 1600 | 880 | 8300 | -- |
| MW-6 | 09-01-95 | NR Not surveyed: | | | | | | 09-01-95 Not sampled: | | | | | | | |
| AS-1 | 06-29-95 | NR | 9.20 | NR | ND | NR | NR | 06-30-95 | <50 | 1.6 | <0.5 | 0.9 | 0.9 | -- | -- |
| MW-6 | 06-29-95 | NR | 6.63 | NR | ND | NR | NR | 06-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level
MWN: groundwater flow direction and gradient apply to the entire monitoring well network
TPHG: total petroleum hydrocarbons as gasoline
µg/L: micrograms per liter
ND: none detected
WSW: west-southwest
-- : not analyzed
NR; not reported; data not available or not measurable

esj/h:\6002\6002mdb.xls\Table 1:dcl
20805-131.003

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 11-28-95

| Well Designation | Water Level Field Date | Top of Casing Elevation ft-MSL | Depth to Water feet | Groundwater Elevation ft-MSL | Floating Product Thickness feet | Groundwater Flow Direction MWN | Hydraulic Gradient foot/foot |
|---|---|---|---|---|---|---|---|
| MW-1 | 01-21-94 | 247.06 | 7.82 | 239.24 | ND | NR | NR |
| MW-1 | 07-08-94 | 247.06 | 8.32 | 238.74 | ND | W | 0.08 |
| MW-1 | 09-24-94 | 247.06 | 8.84 | 238.22 | ND | WSW | 0.08 |
| MW-1 | 11-21-94 | 247.06 | 7.27 | 239.79 | ND | SW | 0.07 |
| MW-1 | 03-15-95 | 247.06 | 7.37 | 239.69 | ND | WSW | 0.08 |
| MW-1 | 05-30-95 | 247.06 | 8.48 | 238.58 | ND | WSW | 0.08 |
| MW-1 | 09-01-95 | 247.06 | 9.47 | 237.59 | ND | WSW | 0.09 |
| MW-2 | 07-08-94 | 249.30 | 9.51 | 239.79 | ND | W | 0.08 |
| MW-2 | 09-24-94 | 249.30 | 10.02 | 239.28 | ND | WSW | 0.08 |
| MW-2 | 11-21-94 | 249.30 | 7.83 | 241.47 | ND | SW | 0.07 |
| MW-2 | 03-15-95 | 249.30 | 8.25 | 241.05 | ND | WSW | 0.08 |
| MW-2 | 05-30-95 | 249.30 | 9.93 | 239.37 | ND | WSW | 0.08 |
| MW-2 | 09-01-95 | 249.30 | 10.69 | 238.61 | ND | WSW | 0.09 |
| MW-3 | 07-08-94 | 248.35 | 7.75 | 240.60 | ND | W | 0.08 |
| MW-3 | 09-24-94 | 248.35 | 8.14 | 240.21 | ND | WSW | 0.08 |
| MW-3 | 11-21-94 | 248.35 | 6.80 | 241.55 | ND | SW | 0.07 |
| MW-3 | 03-15-95 | 248.35 | 6.76 | 241.59 | ND | WSW | 0.08 |
| MW-3 | 05-30-95 | 248.35 | 7.81 | 240.54 | ND | WSW | 0.08 |
| MW-3 | 09-01-95 | 248.35 | 8.65 | 239.70 | ND | WSW | 0.09 |
| MW-4 | 07-08-94 | 242.91 | 10.97 | 231.94 | ND | W | 0.08 |
| MW-4 | 09-24-94 | 242.91 | 11.81 | 231.10 | ND | WSW | 0.08 |
| MW-4 | 11-21-94 | 242.91 | 9.14 | 233.77 | ND | SW | 0.07 |
| MW-4 | 03-15-95 | 242.91 | 9.37 | 233.54 | ND | WSW | 0.08 |
| MW-4 | 05-30-95 | 242.91 | 11.47 | 231.44 | ND | WSW | 0.08 |
| MW-4 | 09-01-95 | 242.91 | 12.28 | 230.63 | ND | WSW | 0.09 |

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 11-28-95

| Well Designation | Water Level Field Date | Top of Casing Elevation ft-MSL | Depth to Water feet | Groundwater Elevation ft-MSL | Floating Product Thickness feet | Groundwater Flow Direction MWN | Hydraulic Gradient foot/foot |
|---|---|---|---|---|---|---|---|
| MW-5 | 07-08-94 | 244.82 | 12.94 | 231.88 | ND | W | 0.08 |
| MW-5 | 09-24-94 | 244.82 | 13.60 | 231.22 | ND | WSW | 0.08 |
| MW-5 | 11-21-94 | 244.82 | 12.45 | 232.37 | ND | SW | 0.07 |
| MW-5 | 03-15-95 | 244.82 | 11.99 | 232.83 | ND | WSW | 0.08 |
| MW-5 | 05-30-95 | 244.82 | 12.97 | 231.85 | ND | WSW | 0.08 |
| MW-5 | 09-01-95 | 244.82 | 14.03 | 230.79 | ND | WSW | 0.09 |
| MW-6 | 06-29-95 | NR | 6.63 | NR | ND | NR | NR |
| MW-6 | 09-01-95 | NR | Not surveyed: | | | | |
| AS-1 | 06-29-95 | NR | 9.20 | NR | ND | NR | NR |

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ND: none detected
NR: not reported; data not available or not measurable
W: west
WSW: west-southwest
SW: southwest

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 11-28-95

| Well Designation | Water Sample Field Date | TPHG LUFT Method | Benzene EPA 8020 | Toluene EPA 8020 | Ethylbenzene EPA 8020 | Total Xylenes EPA 8020 | MTBE EPA 8020 | MTBE EPA 8240 |
|---|---|---|---|---|---|---|---|---|
| | | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| MW-1 | 01-21-94 | 18000 | 1300 | 1600 | 250 | 1900 | -- | -- |
| MW-1 | 07-08-94 | 21000 | 5200 | <50 | 1000 | 1500 | -- | -- |
| MW-1 | 09-24-94 | 13000 | 2900 | 37 | 830 | 640 | -- | -- |
| MW-1 | 11-21-94 | 12000 | 2800 | 160 | 640 | 1300 | -- | -- |
| MW-1 | 03-15-95 | 13000 | 1200 | 44 | 770 | 1100 | -- | -- |
| MW-1 | 05-30-95 | 19000 | 1600 | 30 | 890 | 1400 | -- | -- |
| MW-1 | 09-01-95 | 14000 | 1300 | 28 | 480 | 780 | 24000 | -- |
| MW-2 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 09-24-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-2 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | -- |
| MW-3 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 09-24-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-3 | 09-01-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <3 | - |
| MW-4 | 07-08-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | - |
| MW-4 | 09-24-94 | 140 | <0.5 | <0.5 | <0.9 | <0.5 | -- | -- |
| MW-4 | 11-21-94 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 03-15-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 05-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-4 | 09-01-95 | 78 | <0.5 | 0.7 | <0.5 | <0.5 | <3 | -- |

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

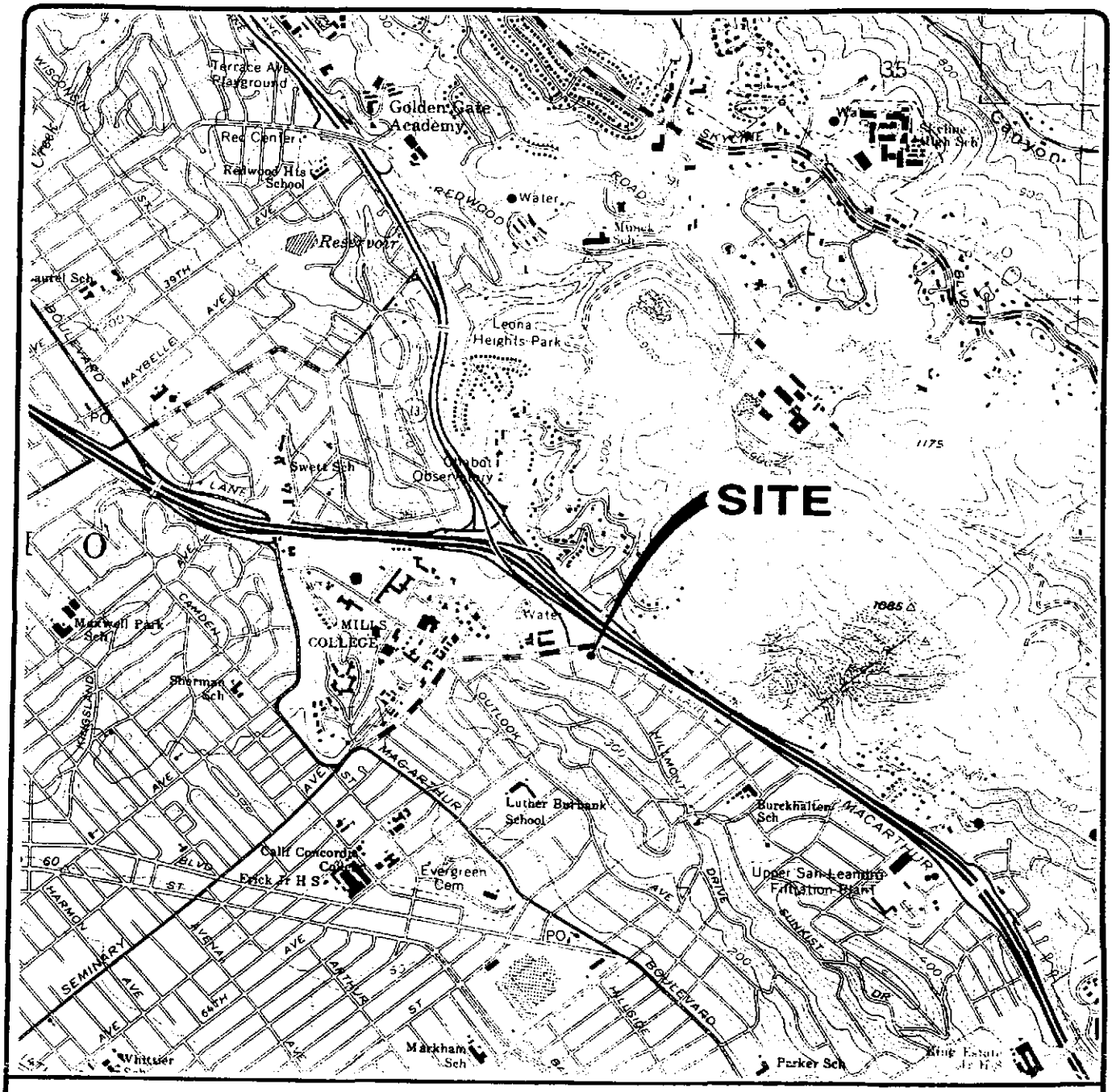
ARCO Service Station 6002
6235 Seminary Avenue, Oakland, California

Date: 11-28-95

| Well Designation | Water Sample Field Date | TPHG LUFT Method | Benzene EPA 8020 | Toluene EPA 8020 | Ethylbenzene EPA 8020 | Total Xylenes EPA 8020 | MTBE EPA 8020 | MTBE EPA 8240 |
|---|---|---|---|---|---|---|---|---|
| | | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| MW-5 | 07-08-94 | 41000 | 3300 | <50 | 2200 | 2900 | -- | -- |
| MW-5 | 09-24-94 | 28000 | 4000 | <50 | 2400 | 2100 | -- | -- |
| MW-5 | 11-21-94 | 38000 | 3100 | <50 | 3100 | 4100 | -- | -- |
| MW-5 | 03-15-95 | 21000 | 870 | 22 | 1600 | 1900 | -- | -- |
| MW-5 | 05-30-95 | 17000 | 2100 | 250 | 1000 | 520 | -- | -- |
| MW-5 | 09-01-95 | 19000 | 1500 | 25 | 1600 | 880 | 8300 | -- |
| MW-6 | 06-30-95 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- |
| MW-6 | 09-01-95 | Not sampled: | | | | | | |
| AS-1 | 06-30-95 | <50 | 1.6 | <0.5 | 0.9 | 0.9 | -- | -- |

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United Statest Environmental Protection Agency
MTBE: Methyl-tert-butyl ether
- - : not analyzed

152753





Base map from USGS 7.5' Quad. Map:
Oakland East, California.
Photorevised 1980.

N

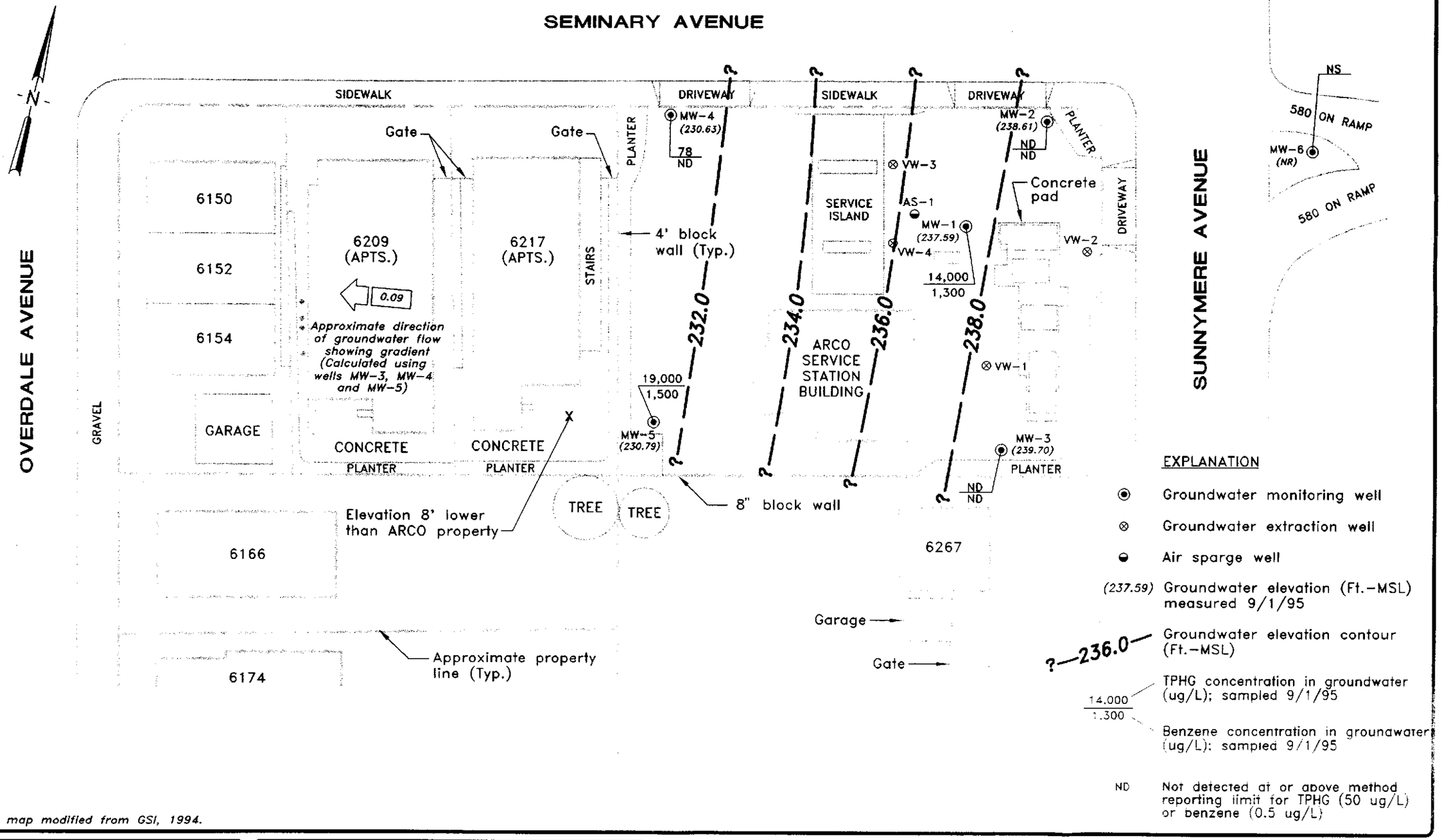
Scale : 0 2000 4000 Feet

EMCON

ARCO PRODUCTS COMPANY
SERVICE STATION 6002, 6235 SEMINARY AVE.
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
805-131.03




*Base map modified from GSI, 1994.*

emcon

SCALE: 0 30 60 FEET

ARCO PRODUCTS COMPANY
SERVICE STATION 6002, 6235 SEMINARY AVE.
QUARTERLY GROUNDWATER MONITORING
OAKLAND, CALIFORNIA

GROUNDWATER DATA
THIRD QUARTER 1995

FIGURE NO.
**2**
PROJECT NO.
805-131.03

G:\805-131\GWCHEM REV 0 11/29/95 16:07:08 klt DJ

**FIELD REPORT**
**WATER LEVEL / FLOATING PRODUCT SURVEY**

**EMCON ASSOCIATES**
1921 Ringwood Avenue
San Jose, California 95131
(408) 453-7300

PROJECT NO : 1775-241.01
CLIENT : ARCO #6002
LOCATION : 6235 Seminary Ave. Oakland, CA
SAMPLER : Chris Chaco
DATE : 6-29-95
DAY OF WEEK : Thursday

| WELL ID | TOTAL DEPTH (Feet) | FIRST DTW (Feet) | SECOND DTW (Feet) | DEPTH TO FLOATING PRODUCT (Feet) | FLOATING PRODUCT THICKNESS (Feet) | COMMENTS |
|---|---|---|---|---|---|---|
| MW-6 | 31.95 | 6.63 | 6.63 | ND | ND | |
| AS-1 | 22.80 | 9.20 | 9.20 | ND | ND | |
| VW-3 | 14.4 | 7.98 | 7.98 | ND | ND | |
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DTW = Depth to Water

# WELL DEVELOPMENT FIELD DATA SHEET

Project Number: 1775-241.01 Performed By: Chris

Client: ARCO 6002 Date: 6-29-95

Location: Oakland Well ID: mw-6

Casing Diameter: ✓ 2 inch ___ 3 inch ___ 4 inch ___ 4.5 inch ___ 6 inch Other ___

Depth to Water (feet): Start 6.63 End 28.6

Well Total Depth (feet): Start 31.95 End 32.0

One Casing Volume at Start (gal): ~~4~~ 3.79 Total Volume Purged (gal): 38

## DEVELOPMENT METHOD

✓ Centrifugal Pump ___ Bailer (Teflon ®) ___ Surge Block (Swab)

___ Submersible Pump ✓ Bailer (PVC) ___ Other ___

## FIELD INSTRUMENTS

✓ pH, EC, Temp. Meter ✓ NTU Meter ✓ Imhoff Cone ___ Colorimeter Other ___

Purge Water Disposal Method: Transfer to Holding tank

| Date | Time | Cumulative Discharge (gal) | Temp. (° F) | E.C. @ 25° C (µmho/cm) | pH (Stnd) | Turbidity Visual (Heavy, Moderate, Light, Trace) NTU (Scale e 0 - 200 or 0 - 1000) | Color Visual (Clear, Cloudy, Yellow, Brown) Cobalt (Scale e 0 to 500) | Odor | Settleable Solids (%) |
|---|---|---|---|---|---|---|---|---|---|
| 6-29 | 08:45 | 10 | 66.8 | 1238 | 759 | Hvy 385 | Brn | Nine ~~Brn~~ | < 1% |
| | 08:53 | 15 | 66.7 | 1384 | 782 | Hvy | Brn | None | |
| | 12:20 | 23 | 71.6 | 682 | 777 | Hvy | Brn | None | 0 |
| 6-30 | 10:02 | 28 | 66.4 | 570 | 749 | Hvy | Brn | None | 0 |
| | 10:11 | 33 | 68.9 | 580 | 754 | Hvy | Brn | None | |
| | 10:20 | 38 | 69.9 | 574 | 755 | Hvy | Brn | None | |
| | | | | | | | | | |
| | | | | | | | | | |

WELL INTEGRITY: Good LOCK #: Dolphin

REMARKS: ___

| Calibration | TEMP | EC | PH |
|---|---|---|---|
| 08:15 | 71.2 | 926 1600 | 708-700 685 1000 |

SIGNATURE: [signature] REVIEWED BY: [signature] Page 1 of 2

Rev. 1, 4/90

# WELL DEVELOPMENT FIELD DATA SHEET

Project Number: 1775-241.01
Client: ARCO 6002
Location: OAKLAND

Performed By: Chace
Date: 6-29-95
Well ID: MS-1

Casing Diameter: ✓ 2 inch ___ 3 inch ___ 4 inch ___ 4.5 inch ___ 6 inch Other ___

Depth to Water (feet): Start 9.20 End 22.4
Well Total Depth (feet): Start 22.80 End 22.8
One Casing Volume at Start (gal): 2.04
Total Volume Purged (gal): 13 gal

## DEVELOPMENT METHOD

✓ Centrifugal Pump ___ Bailer (Teflon ®) ✓ Surge Block (Swab)
___ Submersible Pump ✓ Bailer (PVC) ___ Other ___

## FIELD INSTRUMENTS

✓ pH, EC, Temp. Meter ✓ NTU Meter ✓ Imhoff Cone ___ Colorimeter Other ___

Purge Water Disposal Method: ~~Drummed~~ & water hose to holding tank

| Date | Time | Cumulative Discharge (gal) | Temp. (° F) | E.C. @ 25° C (µmho/cm) | pH (Stnd) | Turbidity Visual (Heavy, Moderate, Light, Trace) NTU (Scale = 0-200 or 0-1000) | Color Visual (Clear, Cloudy, Yellow, Brown...) Cobalt (Scale = 0 to 500) | Odor | Settleable Solids (%) |
|---|---|---|---|---|---|---|---|---|---|
| 6-29 | 11:40 | 5 | 68.8 | 1180 | 7.49 | Hvy | Brn | NONE | 10% |
| | 13:32 | 8 | 68.2 | 1068 | 7.41 | Hvy | Brn | NONE | <1% |
| 6-30 | 09:36 | 11 | 66.9 | 971 | 7.42 | Hvy | Brn | NONE | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

WELL INTEGRITY: Good LOCK #: Dolphin

REMARKS: Well dried after bailing 3 gallons
DTW up to 21.5 after 15 minutes
DTW up to 17.6 after 50 min
~~6-29~~ 6-30-95
Calibration Temp 68.4 EC 1024-1010 pH 714-700/989 1000/357
08:35

SIGNATURE: Chace REVIEWED BY: SH Page 2 of 2

Rev. 1, 4/90

Rev. 3, 2/94

# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.001 SAMPLE ID: MW-6 (31)

PURGED BY: C. Chaco CLIENT NAME: ARCO 6002

SAMPLED BY: C. Chaco LOCATION: Oakland

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ✓ 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): ___ VOLUME IN CASING (gal.): .80

DEPTH TO WATER (feet): 27.1 CALCULATED PURGE (gal.): 2.40

DEPTH OF WELL (feet): 32.0 ACTUAL PURGE VOL. (gal.): 3.0

DATE PURGED: 6-30-95 Start (2400 Hr) 10:48 End (2400 Hr) 10:56

DATE SAMPLED: 6-30-95 Start (2400 Hr) 10:59 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 10:50 | # 1 | 7.52 | 555 | 69.1 | Brn | Hvy |
| 10:53 | 2 | 7.51 | 575 | 68.7 | Brn | Hvy |
| 10:56 | 3 | 7.51 | 568 | 68.4 | Brn | Hvy |
| | | | | | | |
| | | | | | | |

D. O. (ppm): — ODOR: None — —

(COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: ___

Parameters field filtered at this well: —

| PURGING EQUIPMENT | | SAMPLING EQUIPMENT | |
|---|---|---|---|
| ___ 2" Bladder Pump | ___ Bailer (Teflon®) | ___ 2" Bladder Pump | ✓ Bailer (Teflon®) |
| ___ Centrifugal Pump | ✓ Bailer (PVC) | ___ DDL Sampler | ___ Bailer (Stainless Steel) |
| ___ Submersible Pump | ___ Bailer (Stainless Steel) | ___ Dipper | ___ Submersible Pump |
| ___ Well Wizard™ | ___ Dedicated | ___ Well Wizard™ | ___ Dedicated |
| Other: ___ | | Other: ___ | |

WELL INTEGRITY: Good LOCK #: Polphin

REMARKS: ___

Meter Calibration: Date: 6-30 Time: 08:35 Meter Serial #: ___ Temperature °F: 68.4

(EC 1000 1024 / 1000) (DI ___) (pH 7 714 / 700) (pH 10 989 / 1000) (pH 4 397 / ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: [signature] Page 1 of 3

Rev. 3, 2/94

# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.001 SAMPLE ID: AS-1 (22)

PURGED BY: C. Chaco CLIENT NAME: ARCO 6002

SAMPLED BY: C. Chaco LOCATION: Oakland

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ✓ 3 ___ 4 ___ 4.5 ___ 6 ___ Other ___

| | | | |
|---|---|---|---|
| CASING ELEVATION (feet/MSL): | — | VOLUME IN CASING (gal.): | .29 |
| DEPTH TO WATER (feet): | 21.0 | CALCULATED PURGE (gal.): | .88 |
| DEPTH OF WELL (feet): | 22.8 | ACTUAL PURGE VOL. (gal.): | 1.5 |

DATE PURGED: 6-30-95 Start (2400 Hr) 11:35 End (2400 Hr) 11:44

DATE SAMPLED: 6-30-95 Start (2400 Hr) 11:48 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 11:40 | .5 | 7.44 | 1006 | 69.0 | BRN | HVY |
| 11:42 | 1.0 | 7.40 | 990 | 68.7 | BRN | HVY |
| 11:44 | 1.5 | 7.41 | 988 | 67.5 | BRN | HVY |
| | | | | | | |
| | | | | | | |

D. O. (ppm): — ODOR: NONE — —

(COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: —

Parameters field filtered at this well: —

PURGING EQUIPMENT

___ 2" Bladder Pump ___ Bailer (Teflon®)

___ Centrifugal Pump ✓ Bailer (PVC)

___ Submersible Pump ___ Bailer (Stainless Steel)

___ Well Wizard™ ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump ✓ Bailer (Teflon®)

___ DDL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: Padlock

REMARKS: ___

Meter Calibration: Date: 7-1-95 Time: 08:35 Meter Serial #: ___ Temperature °F: 69.4

( EC 1000 1024 / 1000 ) ( DI ___ ) ( pH 7 714 / 700 ) ( pH 10 985 / 1000 ) ( pH 4 397 / ___ )

Location of previous calibration: Well MW-6

Signature: Christopher Chaco Reviewed By: [signature] Page 2 of 3

## FIELD REPORT
## DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 1775-241.01 STATION ADDRESS : 6235 Seminary Avenue DATE : 9-1-95

ARCO STATION # : 6002 FIELD TECHNICIAN : M. Ross DAY : FRIDAY

| DTW Order | WELL ID | Well Box Seal | Well Lid Secure | Gasket | Lock | Locking Well Cap | FIRST DEPTH TO WATER (feet) | SECOND DEPTH TO WATER (feet) | DEPTH TO FLOATING PRODUCT (feet) | FLOATING PRODUCT THICKNESS (feet) | WELL TOTAL DEPTH (feet) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **MW-2** | OK | Yes | Yes | Yes | Yes | 10.69 | 10.69 | NA | NA | 18.6 | |
| 2 | **MW-3** | OK | Yes | Yes | Yes | Yes | 8.65 | 8.65 | NA | NA | 25.6 | |
| 3 | **MW-4** | OK | Yes | Yes | Yes | Yes | 12.28 | 12.28 | NA | NA | 25.2 | |
| 4 | **MW-1** | OK | Yes | Yes | Yes | Yes | 9.47 | 9.47 | NA | NA | 25.3 | |
| 5 | **MW-5** | OK | Yes | Yes | Yes | Yes | 14.03 | 14.03 | NA | NA | 25.5 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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**SURVEY POINTS ARE TOP OF WELL CASINGS**

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# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.21 SAMPLE ID: MW-1(25)

PURGED BY: M. Ross CLIENT NAME: ARCO 6029

SAMPLED BY: M. Ross LOCATION: OAKLAND, CA

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 ✓ 4.5 ___ 6 ___ Other ___

| | | | |
|---|---|---|---|
| CASING ELEVATION (feet/MSL): | NA | VOLUME IN CASING (gal.): | 10.34 |
| DEPTH TO WATER (feet): | 9.42 | CALCULATED PURGE (gal.): | 31.02 |
| DEPTH OF WELL (feet): | 25.3 | ACTUAL PURGE VOL. (gal.): | 21.0 |

DATE PURGED: 9-1-95 Start (2400 Hr) 1245 End (2400 Hr) 1249

DATE SAMPLED: 9-1-95 Start (2400 Hr) 1255 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 1247 | 10.5 | 6.23 | 823 | 69.5 | GREY | MOD |
| 1249 | 21.0 | 6.50 | 862 | 67.2 | clr | TRACE |
| 1249 | DRY at 21.0 GALLONS | | | | | |
| 1253 | DTW - 21.12 | | | | | |
| 1255 | Recharge | 6.44 | 839 | 62.5 | clr | clr |

D. O. (ppm): NA ODOR: Strong

COLOR (visual): NA (COBALT 0 - 500)

TURBIDITY (visual): NA (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NA

Parameters field filtered at this well: NA

PURGING EQUIPMENT

- ___ 2" Bladder Pump
- ✓ Centrifugal Pump
- ___ Submersible Pump
- ___ Well Wizard™
- ___ Bailer (Teflon®)
- ___ Bailer (PVC)
- ___ Bailer (Stainless Steel)
- ___ Dedicated
- Other: ___

SAMPLING EQUIPMENT

- ___ 2" Bladder Pump
- ___ DDL Sampler
- ___ Dipper
- ___ Well Wizard™
- ✓ Bailer (Teflon®)
- ___ Bailer (Stainless Steel)
- ___ Submersible Pump
- ___ Dedicated
- Other: ___

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: Slight sheen noted

Dry at 21.0 gallons

Meter Calibration: Date: 9-1-95 Time: 1045 Meter Serial #: 8210 Temperature °F: ___

( EC 1000 ___ / ___ ) ( DI ___ ) ( pH 7 ___ / ___ ) ( pH 10 ___ / ___ ) ( pH 4 ___ / ___ )

Location of previous calibration: MW-2

Signature: Mike Ross Reviewed By: ___ Page 1 of 5

Rev. 3, 2/94

# WATER SAMPLE FIELD DATA SHEET

1.96

EMCON ASSOCIATES

PROJECT NO: 1775-241.01 SAMPLE ID: MW-2(8)

PURGED BY: M. ROSS CLIENT NAME: ARCO 6002

SAMPLED BY: M. ROSS LOCATION: OAKLAND, CA

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 ✓ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 5.16

DEPTH TO WATER (feet): 10.69 CALCULATED PURGE (gal.): 15.50

DEPTH OF WELL (feet): 18.6 ACTUAL PURGE VOL. (gal.): 15.5

DATE PURGED: 9-1-95 Start (2400 Hr) 1123 End (2400 Hr) 1129

DATE SAMPLED: 9-1-95 Start (2400 Hr) 1135 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 1125 | 5.5 | 6.99 | 486 | 68.1 | BRN | Hemy |
| 1127 | 10.5 | 6.03 | 358 | 69.6 | " | " |
| 1129 | 15.5 | 6.03 | 356 | 70.1 | " | " |
| | | | | | | |
| | | | | | | |

D. O. (ppm): NA ODOR: NONE

NA (COBALT 0 - 500) NA (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NA

Parameters field filtered at this well: NA

PURGING EQUIPMENT

| | |
|---|---|
| ___ 2" Bladder Pump | ✓ Bailer (Teflon®) |
| ✓ Centrifugal Pump | ___ Bailer (PVC) |
| ___ Submersible Pump | ___ Bailer (Stainless Steel) |
| ___ Well Wizard™ | ___ Dedicated |

Other: ___

SAMPLING EQUIPMENT

| | |
|---|---|
| ___ 2" Bladder Pump | ✓ Bailer (Teflon®) |
| ___ DDL Sampler | ___ Bailer (Stainless Steel) |
| ___ Dipper | ___ Submersible Pump |
| ___ Well Wizard™ | ___ Dedicated |

Other: ___

WELL INTEGRITY: GOOD LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 9-1-95 Time: 1045 Meter Serial #: 9210 Temperature °F: 65.3

( EC 1000 974 / 1000 ) ( DI — ) ( pH 7 6.96 / 700 ) ( pH 10 1009 / 1000 ) ( pH 4 ___ / — )

Location of previous calibration: —

Signature: Mike Ross Reviewed By: [signature] Page 2 of 5

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# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.01 SAMPLE ID: MW-3(25) 1.86

PURGED BY: M. Ross CLIENT NAME: ARCO 6002

SAMPLED BY: M. Ross LOCATION: OAKLAND, CA

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 ✓ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 11.07

DEPTH TO WATER (feet): 8.65 CALCULATED PURGE (gal.): ~~33.2~~ 33.2

DEPTH OF WELL (feet): 25.6 ACTUAL PURGE VOL. (gal.): 33.5

DATE PURGED: 9-1-95 Start (2400 Hr) 1145 End (2400 Hr) 1155

DATE SAMPLED: 9-1-95 Start (2400 Hr) 1205 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 1149 | 11.5 | 6.12 | 346 | 66.7 | Light Brn | mod |
| 1152 | 22.5 | 6.48 | 359 | 66.8 | " | " |
| 1155 | 33.5 | 6.73 | 388 | 66.3 | " | " |
| | | | | | | |
| | | | | | | |

D. O. (ppm): NA ODOR: None NA (COBALT 0 - 500) NA (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NA

Parameters field filtered at this well: NA

| PURGING EQUIPMENT | | SAMPLING EQUIPMENT | |
|---|---|---|---|
| ___ 2" Bladder Pump | ___ Bailer (Teflon®) | ___ 2" Bladder Pump | ✓ Bailer (Teflon®) |
| ✓ Centrifugal Pump | ___ Bailer (PVC) | ___ DDL Sampler | ___ Bailer (Stainless Steel) |
| ___ Submersible Pump | ___ Bailer (Stainless Steel) | ___ Dipper | ___ Submersible Pump |
| ___ Well Wizard™ | ___ Dedicated | ___ Well Wizard™ | ___ Dedicated |
| Other: ___ | | Other: ___ | |

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 9-1-95 Time: 1045 Meter Serial #: 9216 Temperature °F: ___

( EC 1000 ___ / ___ ) ( DI ___ ) ( pH 7 ___ / ___ ) ( pH 10 ___ / ___ ) ( pH 4 ___ / ___ )

Location of previous calibration: MW-2

Signature: Mike Ross Reviewed By: SH Page 3 of 5

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# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.01 SAMPLE ID: MW-4(25)

PURGED BY: M. ROSS CLIENT NAME: ARCO 6002

SAMPLED BY: M ROSS LOCATION: OAKLAND

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 ✓ 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NA VOLUME IN CASING (gal.): 8.63

DEPTH TO WATER (feet): 12.27 CALCULATED PURGE (gal.): 25.91

DEPTH OF WELL (feet): 25.2 ACTUAL PURGE VOL. (gal.): 17.5

DATE PURGED: 9-1-95 Start (2400 Hr) 1218 End (2400 Hr) 1224

DATE SAMPLED: 9-1-95 Start (2400 Hr) 1235 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| ~~1220~~ | 9.0 | 6.06 | 381 | 68.5 | BRN | MOD |
| 1224 | 17.5 | 5.96 | 356 | 68.1 | " | " |
| 1224 | ~~24.0~~ | DRY at | 17.5 | gallons | | |
| 1233 | DTW - | 19.59 | | | | |
| 1235 | Recharge | 6.03 | 357 | 66.8 | BRN | MOD |

D. O. (ppm): NA ODOR: NONE

COLOR (COBALT 0 - 500): NA

TURBIDITY (NTU 0 - 200 or 0 - 1000): NA

Field QC samples collected at this well: NP

Parameters field filtered at this well: NA

## PURGING EQUIPMENT

___ 2" Bladder Pump
✓ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

## SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
✓ Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: GOOD LOCK #: ARCO

REMARKS: Dry at 17.5 gallons

Meter Calibration: Date 9-1-95 Time: 1045 Meter Serial #: 9210 Temperature °F: ___

( EC 1000 ___ / ___ ) ( DI ___ ) ( pH 7 ___ / ___ ) ( pH 10 ___ / ___ ) ( pH 4 ___ / ___ )

Location of previous calibration: MW-2

Signature: Mike Ross Reviewed By: [signature] Page 4 of 5

Rev. 3, 2/94

# WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775-241.01 SAMPLE ID: MW-5(25)

PURGED BY: M. ROSS CLIENT NAME: ARCO 6002

SAMPLED BY: M. ROSS LOCATION: OAKLAND, CA

TYPE: Ground Water ✓ Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 ✓ 4.5 ___ 6 ___ Other ___

| | | | |
|---|---|---|---|
| CASING ELEVATION (feet/MSL): | NA | VOLUME IN CASING (gal.): | 7.49 |
| DEPTH TO WATER (feet): | 14.03 | CALCULATED PURGE (gal.): | 22.42 |
| DEPTH OF WELL (feet): | 25.5 | ACTUAL PURGE VOL. (gal.): | 14.0 |

DATE PURGED: 9-1-95 Start (2400 Hr) 1313 End (2400 Hr) 1317

DATE SAMPLED: 9-1-95 Start (2400 Hr) 1325 End (2400 Hr) —

| TIME (2400 Hr) | VOLUME (gal.) | pH (units) | E.C. (µmhos/cm @ 25° C) | TEMPERATURE (°F) | COLOR (visual) | TURBIDITY (visual) |
|---|---|---|---|---|---|---|
| 1315 | 7.5 | 6.35 | 826 | 67.0 | clr | Trace |
| 1317 | DRY | at | 14.0 | gallons | | |
| 1323 | DTW - | 21.43 | | | | |
| | | | | | | |
| 1325 | Recharge | 6.74 | 816 | 66.6 | Light Brn | Trace |

D. O. (ppm): NA ODOR: Slight NA Light Brn Trace

(COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NA

Parameters field filtered at this well: NA

| PURGING EQUIPMENT | | SAMPLING EQUIPMENT | |
|---|---|---|---|
| ✓ 2" Bladder Pump | Bailer (Teflon®) | 2" Bladder Pump | ✓ Bailer (Teflon®) |
| Centrifugal Pump | Bailer (PVC) | DDL Sampler | Bailer (Stainless Steel) |
| Submersible Pump | Bailer (Stainless Steel) | Dipper | Submersible Pump |
| Well Wizard™ | Dedicated | Well Wizard™ | Dedicated |
| Other: | | Other: | |

WELL INTEGRITY: Good LOCK #: Arco

REMARKS:

Meter Calibration: Date: 9-1-95 Time: 1045 Meter Serial #: 9210 Temperature °F: ___

( EC 1000 ___ / ___ ) ( DI ___ ) ( pH 7 ___ / ___ ) ( pH 10 ___ / ___ ) ( pH 4 ___ / ___ )

Location of previous calibration: MW-2

Signature: [signature] Reviewed By: [signature] Page 5 of 5

Columbia
Analytical
Services INC.

July 11, 1995

Service Request No. S950839

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **ARCO Facility No. 6002 / EMCON Project No. 0805-131.03**

Dear Mr. Young:

Attached are the results of the water sample(s) submitted to our lab on June 30, 1995. For your reference, these analyses have been assigned our service request number S950839.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Steven L. Green
Project Chemist

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

## COLUMBIA ANALYTICAL SERVICES, Inc.

### Acronyms

| | |
|---|---|
| **ASTM** | American Society for Testing and Materials |
| **A2LA** | American Association for Laboratory Accreditation |
| **CARB** | California Air Resources Board |
| **CAS Number** | Chemical Abstract Service registry Number |
| **CFC** | Chlorofluorocarbon |
| **CFU** | Colony-Forming Unit |
| **DEC** | Department of Environmental Conservation |
| **DEQ** | Department of Environmental Quality |
| **DHS** | Department of Health Services |
| **DOE** | Department of Ecology |
| **DOH** | Department of Health |
| **EPA** | U. S. Environmental Protection Agency |
| **ELAP** | Environmental Laboratory Accreditation Program |
| **GC** | Gas Chromatography |
| **GC/MS** | Gas Chromatography/Mass Spectrometry |
| **LUFT** | Leaking Underground Fuel Tank |
| **M** | Modified |
| **MCL** | Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA. |
| **MDL** | Method Detection Limit |
| **MPN** | Most Probable Number |
| **MRL** | Method Reporting Limit |
| **NA** | Not Applicable |
| **NAN** | Not Analyzed |
| **NC** | Not Calculated |
| **NCASI** | National Council of the paper industry for Air and Stream Improvement |
| **ND** | Not Detected at or above the MRL |
| **NIOSH** | National Institute for Occupational Safety and Health |
| **PQL** | Practical Quantitation Limit |
| **RCRA** | Resource Conservation and Recovery Act |
| **SIM** | Selected Ion Monitoring |
| **TPH** | Total Petroleum Hydrocarbons |

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | EMCON | **Service Request:** | S950839 |
| **Project:** | ARCO Facility No. 6002/EMCON Project No.0805-131.03 | **Date Collected:** | 6/30/95 |
| **Sample Matrix:** | Water | **Date Received:** | 6/30/95 |
| | | **Date Extracted:** | NA |
| | | **Date Analyzed:** | 7/10-11/95 |

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

| Analyte: | **TPH as Gasoline** | **Benzene** | **Toluene** | **Ethyl-benzene** | **Xylenes, Total** |
|---|---|---|---|---|---|
| Units: | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) | ug/L (ppb) |
| Method Reporting Limit: | 50 | 0.5 | 0.5 | 0.5 | 0.5 |
| **Sample Name** / **Lab Code** | | | | | |
| MW-6 (31) / S950839-001 | ND | ND | ND | ND | ND |
| AS-1 (22) / S950839-002 | ND | 1.6 | ND | 0.9 | 0.9 |
| Method Blank / S950710-WB2 | ND | ND | ND | ND | ND |
| Method Blank / S950711-WB1 | ND | ND | ND | ND | ND |

Approved By: _____ Date: 7/11/95

5ABTXGAS/061694

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | EMCON | **Service Request:** | S950839 |
| **Project:** | ARCO Facility No. 6002/EMCON Project No.0805-131.03 | **Date Collected:** | 6/30/95 |
| **Sample Matrix:** | Water | **Date Received:** | 6/30/95 |
| | | **Date Extracted:** | NA |
| | | **Date Analyzed:** | 7/10-11/95 |

Matrix Spike/Duplicate Matrix Spike Summary
BTE
EPA Methods 5030/8020
Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S950833-001

| | Spike Level | | Sample | Spike Result | | Percent Recovery | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte** | MS | DMS | **Result** | MS | DMS | MS | DMS | CAS Acceptance Limits | **Relative Percent Difference** |
| Benzene | 25 | 25 | 21.2 | 47.1 | 46.5 | 104 | 101 | 75-135 | 1 |
| Toluene | 25 | 25 | ND | 23.9 | 23.7 | 96 | 95 | 73-136 | 1 |
| Ethylbenzene | 25 | 25 | ND | 24.4 | 24.2 | 98 | 97 | 69-142 | 1 |

Approved By: _____ Date: 7/14/95

DMS1S/060194

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | EMCON | **Service Request:** | S950839 |
| **Project:** | ARCO Facility No. 6002/EMCON Project No.0805-131.03 | **Date Collected:** | 6/30/95 |
| **Sample Matrix:** | Water | **Date Received:** | 6/30/95 |
| | | **Date Extracted:** | NA |
| | | **Date Analyzed:** | 7/10-11/95 |

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

| **Sample Name** | **Lab Code** | **Percent Recovery** α,α,α-Trifluorotoluene |
|---|---|---|
| MW-6 (31) | S950839-001 | 88 |
| AS-1 (22) | S950839-002 | 94 |
| (MS) | S950833-001MS | 92 |
| (DMS) | S950833-001DMS | 92 |
| Method Blank | S950710-WB2 | 93 |
| Method Blank | S950711-WB1 | 89 |

CAS Acceptance Limits: 69-116

Approved By: _____ Date: 7/11/95

SUR1/062994

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | EMCON | **Service Request:** | S950839 |
| **Project:** | ARCO Facility No. 6002/EMCON Project No.0805-131.03 | **Date Analyzed:** | 7/10/95 |

Initial Calibration Verification (ICV) Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ppb

| Analyte | True Value | Result | Percent Recovery | CAS Percent Recovery Acceptance Limits |
|---|---|---|---|---|
| Benzene | 25 | 26.1 | 104 | 85-115 |
| Toluene | 25 | 24.9 | 100 | 85-115 |
| Ethylbenzene | 25 | 25.1 | 100 | 85-115 |
| Xylenes, Total | 75 | 72.1 | 96 | 85-115 |
| Gasoline | 250 | 231 | 92 | 90-110 |

Approved By: _____ Date: 7/11/95

ICV25AL/060194

**ARCO Products Company**
Division of AtlanticRichfieldCompany

**Task Order No.** 17075.00

**Chain of Custody**

| | | | |
|---|---|---|---|
| ARCO Facility no. 6002 | City (Facility) Oakland | Project manager (Consultant) John Young | Laboratory name CAS |
| ARCO engineer Mike Whelan | Telephone no. (ARCO) | Telephone no. (Consultant) (408) 453-7300 | Fax no. (Consultant) (408) 453-0452 |
| Consultant name EMCON | Address (Consultant) 1921 Ringwood Ave. San Jose, CA 95131 | | Contract number |

| | Sample I.D. | Lab no. | Container no. | Matrix: Soil | Matrix: Water | Matrix: Other | Preservation: Ice | Preservation: Acid | Sampling date | Sampling time | BTEX 602/EPA 8020 | BTEX/TPH EPA 8020/8015 | TPH Modified 8015 Gas ☐ Diesel ☐ | Oil and Grease 413.1 ☐ 413.2 ☐ | TPH EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCLP Metals ☐ Semi VOA ☐ VOA ☐ | CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐ | Lead Org./DHS ☐ Lead EPA 7420/7421 ☐ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-6(31) | | 2 | | X | | X | HCL | 6-30 | 10:59 | | X | | | | | | | | | |
| 2 | AS-1(22) | | 2 | | X | | X | HCL | 6-30 | 11:48 | | X | | | | | | | | | |
| | [illegible] | | [illegible] | | [illegible] | | [illegible] | [illegible] | | | | [illegible] | | | | | | | | | |

Method of shipment: Sampler Will Deliver

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: 2 - 40ml HCL VOAs

#0805-131.03

Lab number: 5950839

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐ Changed 7/5/95 per John Young
- Expedited 5 Business Days ☒ 7/5/95
- Standard 10 Business Days ☒

| | | | |
|---|---|---|---|
| Condition of sample: | | Temperature received: | |
| Relinquished by sampler: Chris Clare | Date 6-30-95 Time 13:20 | Received by | |
| Relinquished by | Date Time | Received by | |
| Relinquished by | Date Time | Received by laboratory: Joanne Brown | Date 6/30/95 Time 1320 |

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APC-3292 (2-91)

Due 7/17

Columbia Analytical Services, Inc.

September 18, 1995

Service Request No: S951098

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **0805-131.03 / TO# 17075.00 / 6002 Oakland**

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on September 1, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 8, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely:

Steven L. Green
Project Chemist

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb



1921 Ringwood Avenue • San Jose, California 95131 • Telephone 408/437-2400 • Fax 408/437-9356

## COLUMBIA ANALYTICAL SERVICES, Inc.

### Acronyms

| | |
|---|---|
| **A2LA** | American Association for Laboratory Accreditation |
| **ASTM** | American Society for Testing and Materials |
| **BOD** | Biochemical Oxygen Demand |
| **BTEX** | Benzene, Toluene, Ethylbenzene, Xylenes |
| **CAM** | California Assessment Metals |
| **CARB** | California Air Resources Board |
| **CAS Number** | Chemical Abstract Service registry Number |
| **CFC** | Chlorofluorocarbon |
| **CFU** | Colony-Forming Unit |
| **COD** | Chemical Oxygen Demand |
| **DEC** | Department of Environmental Conservation |
| **DEQ** | Department of Environmental Quality |
| **DHS** | Department of Health Services |
| **DLCS** | Duplicate Laboratory Control Sample |
| **DMS** | Duplicate Matrix Spike |
| **DOE** | Department of Ecology |
| **DOH** | Department of Health |
| **EPA** | U. S. Environmental Protection Agency |
| **ELAP** | Environmental Laboratory Accreditation Program |
| **GC** | Gas Chromatography |
| **GC/MS** | Gas Chromatography/Mass Spectrometry |
| **IC** | Ion Chromatography |
| **ICB** | Initial Calibration Blank sample |
| **ICP** | Inductively Coupled Plasma atomic emission spectrometry |
| **ICV** | Initial Calibration Verification sample |
| **J** | Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding. |
| **LCS** | Laboratory Control Sample |
| **LUFT** | Leaking Underground Fuel Tank |
| **M** | Modified |
| **MBAS** | Methylene Blue Active Substances |
| **MCL** | Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA. |
| **MDL** | Method Detection Limit |
| **MPN** | Most Probable Number |
| **MRL** | Method Reporting Limit |
| **MS** | Matrix Spike |
| **MTBE** | Methyl tert-Butyl Ether |
| **NA** | Not Applicable |
| **NAN** | Not Analyzed |
| **NC** | Not Calculated |
| **NCASI** | National Council of the paper industry for Air and Stream Improvement |
| **ND** | Not Detected at or above the method reporting/detection limit (MRL/MDL) |
| **NIOSH** | National Institute for Occupational Safety and Health |
| **NTU** | Nephelometric Turbidity Units |
| **ppb** | Parts Per Billion |
| **ppm** | Parts Per Million |
| **PQL** | Practical Quantitation Limit |
| **QA/QC** | Quality Assurance/Quality Control |
| **RCRA** | Resource Conservation and Recovery Act |
| **RPD** | Relative Percent Difference |
| **SIM** | Selected Ion Monitoring |
| **SM** | Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992 |
| **STLC** | Solubility Threshold Limit Concentration |
| **SW** | Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB. |
| **TCLP** | Toxicity Characteristic Leaching Procedure |
| **TDS** | Total Dissolved Solids |
| **TPH** | Total Petroleum Hydrocarbons |
| **tr** | Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding. |
| **TRPH** | Total Recoverable Petroleum Hydrocarbons |
| **TSS** | Total Suspended Solids |
| **TTLC** | Total Threshold Limit Concentration |
| **VOA** | Volatile Organic Analyte(s) |

ACRONLST.DOC 7/14/95

## COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

**Client:** ARCO Products Company
**Project:** 0805-131.03 / TO# 17075.00 /6002 Oakland
**Sample Matrix:** Water

**Service Request:** S951098
**Date Collected:** 9/1/95
**Date Received:** 9/1/95
**Date Extracted:** NA

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

| | Sample Name: | MW-2 (18) | MW-3 (25) | MW-4 (25) |
|---|---|---|---|---|
| | Lab Code: | S951098-001 | S951098-002 | S951098-003 |
| | Date Analyzed: | 9/12/95 | 9/12/95 | 9/12/95 |
| **Analyte** | **MRL** | | | |
| TPH as Gasoline | 50 | ND | ND | 78 |
| Benzene | 0.5 | ND | ND | ND |
| Toluene | 0.5 | ND | ND | 0.7 |
| Ethylbenzene | 0.5 | ND | ND | ND |
| Total Xylenes | 0.5 | ND | ND | ND |
| Methyl-tert-butyl ether | 3 | ND | ND | ND |

3S22/060194

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S951098 |
| **Project:** | 0805-131.03 / TO# 17075.00 /6002 Oakland | **Date Collected:** | 9/1/95 |
| **Sample Matrix:** | Water | **Date Received:** | 9/1/95 |
| | | **Date Extracted:** | NA |

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

| | | Sample Name: | **MW-1 (25)** | **MW-5 (25)** | **Method Blank** |
|---|---|---|---|---|---|
| | | Lab Code: | S951098-004 | S951098-005 | S950912-WB |
| | | Date Analyzed: | 9/12/95 | 9/12/95 | 9/12/95 |
| **Analyte** | **MRL** | | | | |
| TPH as Gasoline | 50 | | 14,000 | 19,000 | ND |
| Benzene | 0.5 | | 1,300 | 1,500 | ND |
| Toluene | 0.5 | | 28 | 25 | ND |
| Ethylbenzene | 0.5 | | 480 | 1,600 | ND |
| Total Xylenes | 0.5 | | 780 | 880 | ND |
| Methyl-tert-butyl ether | 3 | | 24,000 | 8,300 | ND |

3S22/060194

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S951098 |
| **Project:** | 0805-131.03 / TO# 17075.00 /6002 Oakland | **Date Collected:** | 9/1/95 |
| **Sample Matrix:** | Water | **Date Received:** | 9/1/95 |
| | | **Date Extracted:** | NA |
| | | **Date Analyzed:** | 9/12/95 |

Surrogate Recovery Summary
BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

| **Sample Name** | **Lab Code** | **Percent Recovery** α,α,α-Trifluorotoluene |
|---|---|---|
| MW-2 (18) | S951098-001 | 98 |
| MW-3 (25) | S951098-002 | 98 |
| MW-4 (25) | S951098-003 | 95 |
| MW-1 (25) | S951098-004 | 93 |
| MW-5 (25) | S951098-005 | 95 |
| MW-2 (18) MS | S951098-001MS | 107 |
| MW-2 (18) DMS | S951098-001DMS | 105 |
| Method Blank | S950912-WB | 97 |

CAS Acceptance Limits: 69-116

SUR1/062994

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S951098 |
| **Project:** | 0805-131.03 / TO# 17075.00 /6002 Oakland | **Date Analyzed:** | 9/12/95 |

Initial Calibration Verification (ICV) Summary
BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ppb

| Analyte | True Value | Result | Percent Recovery | CAS Percent Recovery Acceptance Limits |
|---|---|---|---|---|
| Benzene | 25 | 23.5 | 94 | 85-115 |
| Toluene | 25 | 23.3 | 93 | 85-115 |
| Ethylbenzene | 25 | 23.2 | 93 | 85-115 |
| Xylenes, Total | 75 | 70.1 | 93 | 85-115 |
| Gasoline | 250 | 252 | 101 | 90-110 |
| Methyl-tert-butyl Ether | 50 | 49.7 | 99 | 85-115 |

ICV25AL/060194

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

| | | | |
|---|---|---|---|
| **Client:** | ARCO Products Company | **Service Request:** | S951098 |
| **Project:** | 0805-131.03 / TO# 17075.00 /6002 Oakland | **Date Collected:** | 9/1/95 |
| **Sample Matrix:** | Water | **Date Received:** | 9/1/95 |
| | | **Date Extracted:** | NA |
| | | **Date Analyzed:** | 9/12/95 |

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: MW-2 (18)
Lab Code: S951098-001

| | Spike Level | | Sample | Spike Result | | Percent Recovery | | CAS Acceptance | Relative Percent |
|---|---|---|---|---|---|---|---|---|---|
| **Analyte** | MS | DMS | **Result** | MS | DMS | MS | DMS | Limits | **Difference** |
| Gasoline | 250 | 250 | ND | 252 | 261 | 101 | 104 | 67-121 | 4 |

DMS1S/060194

**ARCO Products Company**
Division of AtlanticRichfieldCompany

**Task Order No.** 17075.00

**Chain of Custody**

| | | | |
|---|---|---|---|
| ARCO Facility no. 6007 | City (Facility) Oakland | Project manager (Consultant) John Young | Laboratory name CAS |
| ARCO engineer Mike Whelan | Telephone no. (ARCO) | Telephone no. (Consultant) (408) 453-7300 | Fax no. (Consultant) (408) 453-0452 |
| Consultant name EMCON | Address (Consultant) 1921 Ringwood Ave San Jose, CA 95131 | | Contract number |

| Sample I.D. | Lab no. (1095 -) | Container no. | Matrix: Soil | Matrix: Water | Matrix: Other | Preservation: Ice | Preservation: Acid | Sampling date | Sampling time | BTEX 602/EPA 8020 | BTEX/TPH EPA M602/8020/8015 + MTBE | TPH Modified 8015 Gas ☐ Diesel ☐ | Oil and Grease 413.1 ☐ 413.2 ☐ | TPH EPA 418.1/SM503E | EPA 601/8010 | EPA 624/8240 | EPA 625/8270 | TCLP Metals ☐ Semi VOA ☐ VOA ☐ | CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐ | Lead Org./DHS ☐ Lead EPA 7420/7421 ☐ | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2(38) | 1 | 2 | | X | | X | HCL | 9-1-95 | 1135 | | X | | | | | | | | | | | |
| MW-3(25) | 2 | 2 | | X | | X | HCL | | 1205 | | X | | | | | | | | | | | |
| MW-4(25) | 3 | 2 | | X | | X | HCL | | 1235 | | X | | | | | | | | | | | |
| MW-1(25) | 4 | 2 | | X | | X | HCL | | 1255 | | X | | | | | | | | | | | |
| MW-5(25) | 5 | 2 | | X | | X | HCL | ↓ | 1325 | | X | | | | | | | | | | | |

Special detection Limit/reporting: Lowest Possible MTBE by 8020

Special QA/QC: As Normal

Remarks: 2-40ml HCL VOAs

#0805-131.03

Lab number: 5951098

Method of shipment: sampler will deliver

| | | | |
|---|---|---|---|
| Condition of sample: | | Temperature received: | |
| Relinquished by sampler: Mike Whelan | Date: 9-1-95 | Time: 1445 | Received by |
| Relinquished by | Date | Time | Received by |
| Relinquished by | Date | Time | Received by laboratory: Jane Brown — Date: 9-1-95 — Time: 1445 |

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard ~~10~~ Business Days ☒

Due 9/18

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

APPC-3292 (2-91)