

## TRANSMITTAL

91 MAR 28 AM 10:44

3315 Almaden Expressway, Suite 34  
San Jose, California 95118  
(408) 264-7723 FAX (408) 264-2435

LS  
TO: MR. GIL WISTAR  
ALAMEDA COUNTY DEPT. OF  
ENVIRONMENTAL HEALTH  
80 SWAN WAY, ROOM 200  
OAKLAND, CA 94621  
FROM: MIKE BARMINSKI  
TITLE: STAFF GEOLOGIST

DATE: 3/24/91  
PROJECT NUMBER: 69034.03  
SUBJECT: REPORT

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via \_\_\_\_\_ the following items:

☐ Shop drawings ☐ Prints ☒ Reports ☐ Specifications

☐ Letters ☐ Change Orders ☐ \_\_\_\_\_

| COPIES | DATED   | NO.      | DESCRIPTION  |
|--------|---------|----------|--|
| 1      | 3/24/91 | 69034.03 | <del>LETTER REPORT QUARTERLY GROUND-WATER MONITORING</del> |
|        |         |          | FIRST QUARTER 1991 AT ARCO STATION 601, 712                |
|        |         |          | LEWELLING BOULEVARD, SAN LEANDRO, CA.                      |
|        |         |          |  |

THESE ARE TRANSMITTED as checked below:

☐ For review and comment ☐ Approved as submitted ☐ Resubmit \_\_\_ copies for approval  
☒ As requested ☐ Approved as noted ☐ Submit \_\_\_ copies for distribution  
☐ For approval ☐ Return for corrections ☐ Return \_\_\_ corrected prints  
☐ For your files ☐ \_\_\_\_\_

## REMARKS:

PER ARCO'S AUTHORIZATION REPORT HAS BEEN FORWARDED FOR YOUR  
REVIEW.

Copies: 1 to AGS project file no. 69034.03 SJ READER'S FILE

\*Revision Date: 10/15/90  
\*File Name: TRANSMT.PRJ



**Applied GeoSystems**

3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

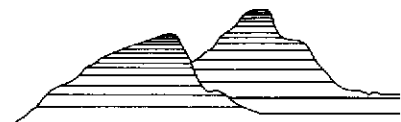
• FREMONT • IRVINE • HOUSTON • BOSTON • SACRAMENTO • CULVER CITY • SAN JOSE

LETTER REPORT  
**QUARTERLY GROUND-WATER MONITORING**  
~~Final Report 1991~~

at  
ARCO Station 601  
712 Lewelling Boulevard  
San Leandro, California

AGS 69034-3





**Applied GeoSystems**

3315 Almaden Expressway, Suite 34, San Jose, CA 95118 (408) 264-7723

• FREMONT • IRVINE • HOUSTON • BOSTON • SACRAMENTO • CULVER CITY • SAN JOSE

~~XXXXXXXXXX~~  
0130ccar  
AGS 69034-3

Mr. Chuck Carmel  
ARCO Products Company  
P.O. Box 5811  
San Mateo, California 94402

Subject: First Quarter 1991 Ground-Water Monitoring Report for ARCO Station 601,  
712 Lewelling Boulevard, San Leandro, California.

Mr. Carmel:

This letter report summarizes the methods and results of first quarter 1991 ground-water monitoring performed by Applied GeoSystems (AGS) at the above-referenced site. The station is on the southwest corner of the intersection of Lewelling Boulevard and Washington Avenue in San Leandro, California, as shown on the Site Vicinity Map (Plate 1). ARCO has requested that AGS perform quarterly ground-water sampling and analyses to monitor hydrocarbon concentrations associated with the former waste-oil and gasoline-storage tanks at the site, and to evaluate trends related to fluctuations of these hydrocarbon concentrations. ~~AGS has also requested that AGS perform monthly monitoring of~~  
~~ground-water levels in the wells of the site, and evaluate fluctuations in the ground-water~~  
~~gradient over time.~~

Prior to the present monitoring, AGS and others performed limited subsurface environmental investigations related to the underground gasoline-storage tanks at the site. A limited environmental site assessment including the drilling of five borings (B-1 through B-5) was performed in August 1989 prior to tank replacement at the site. GeoStrategies Inc. (GSI) observed removal of four underground gasoline-storage tanks and one underground waste-oil storage tank in January 1990. GSI also installed a 6-inch diameter product recover well (RW-1) in the backfill of the former waste-oil tank excavation. Our work included drilling and sampling nine soil borings and installing three ground-water monitoring wells (MW-1, MW-2, and MW-3) in June 1990. The results of these investigations are presented in the reports listed in the references attached to this letter

report. The locations of the ground-water monitoring wells and pertinent site features are shown on the Generalized Site Plan (Plate 2).

### Ground-Water Sampling and Gradient Evaluation

AGS personnel performed monthly monitoring of ground-water elevations and subjective analysis on December 21, 1990 and January 9, 1991, and quarterly ground-water monitoring and sampling on January 9, 1991. Field work consisted of measuring depth-to-water (DTW) levels in wells MW-1, MW-2, and MW-3; subjectively analyzing water from these wells for the presence of petroleum hydrocarbon sheen and floating product; and purging and sampling ground water from these monitoring wells for laboratory analysis. The ground-water sampling protocol is attached (Appendix A).

The DTW levels, wellhead elevations, and ground-water elevations for this and previous monitoring episodes at the site are summarized in Table 1, Cumulative Ground-Water Monitoring Data. ~~The interpreted ground-water gradients of 0.001 to the west from the December 21, 1990 and 0.002 to the southwest from the January 9, 1991,~~ monitoring episodes are shown on the Ground-Water Gradient Maps (Plates 3 and 4, respectively). Due to floating product in wells MW-1 and MW-3, these interpreted gradients are considered approximate ground-water elevations in wells containing floating product and were calculated as stated in Appendix A. These gradients are generally consistent with the previously interpreted ground-water gradients for this site.

Water samples were collected from wells MW-1, MW-2, and MW-3 for subjective analysis on December 21, 1990 and January 9, 1991. Subjective analysis of wells MW-1 and MW-3 on December 21, 1990 indicated a product sheen in well MW-1 and .01 feet of floating product in well MW-3. Subjective analysis on January 9, 1991 indicated approximately .02 and .30 feet of floating product in wells MW-1 and MW-3, respectively. No evidence of floating product was noted in well MW-2. Cumulative results of subjective analyses are presented in Table 1.

Monitoring well MW-2 was purged and sampled in accordance with the attached protocol. A well purge data sheet for the parameters monitored and a stabilization graph for well MW-2 are also attached.

### Laboratory Analysis

Water samples collected from the well MW-2 were delivered to Applied Analytical Environmental Laboratories in Fremont, California (Hazardous Waste Testing Laboratory Certification No. 1211). The water samples from well MW-2 were analyzed for total

petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8015/8020/602. Water samples from well MW-2 were also analyzed for volatile organic compounds (VOC's) by EPA method 8240. The Chain of Custody Records and Laboratory Analysis Reports are attached. Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Ground-Water Laboratory Analyses.

Results of this quarter's laboratory analyses of water samples from well MW-2 indicate:

- o 13,000 parts per billion (ppb) TPHg and 1500, 970, 390, and 1500 ppb BTEX; and
- o 18 ppb methylene chloride.

#### Conclusions and Recommendations

The ground water at the site has been impacted by gasoline hydrocarbons. The lateral and vertical extent of the gasoline hydrocarbons at the site have not been delineated. We recommend continued ground-water monitoring at the site.

#### Schedule

Applied GeoSystems will continue the quarterly ground-water monitoring at this site to evaluate trends in petroleum hydrocarbons and changes in ground-water gradient with time. Routine well maintenance and quality control will be performed as necessary during these site visits. The next quarterly monitoring episode is scheduled for April 16, 1991.

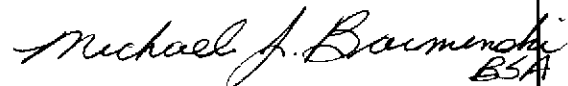
We recommend that copies of this report be forwarded to:

Mr. Gil Wistar  
Alameda County Department of  
Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

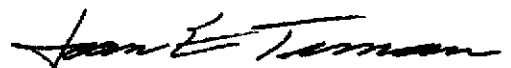
Mr. Lester Feldman  
Regional Water Quality Control Board  
San Francisco Bay Region  
1800 Harrison Street  
Oakland, California 94612

If you have any questions or comments, please call Mr. Greg Barclay at (408) 264-7723.

Sincerely,  
Applied GeoSystems

Handwritten signature of Michael J. Barminski in cursive script, with the initials "BSA" written below it.

Michael J. Barminski  
Staff Geologist

Handwritten signature of Joan E. Tiernan in cursive script.

Joan E. Tiernan  
Registered Civil  
Engineer #044600

Enclosures:

References

Plate 1, Site Vicinity Map

Plate 2, Generalized Site Plan

Plate 3, Ground-Water Gradient Map, December 21, 1991

Plate 4, Ground-Water Gradient Map, January 9, 1991

Table 1, Cumulative Ground-Water Monitoring Data

Table 2, Cumulative Results of Laboratory Analyses of Ground Water

Appendix A: Ground-Water Sampling Protocol

Well Purge Data Sheets and Stabilization Graphs

Chain of Custody Records (2 pages)

Laboratory Analysis Reports (2 pages)

## REFERENCES

Applied GeoSystems, November 9, 1989, Limited Environmental Site Assessment at ARCO Service Station No. 601, San Leandro, California, AGS Report 69034-1.

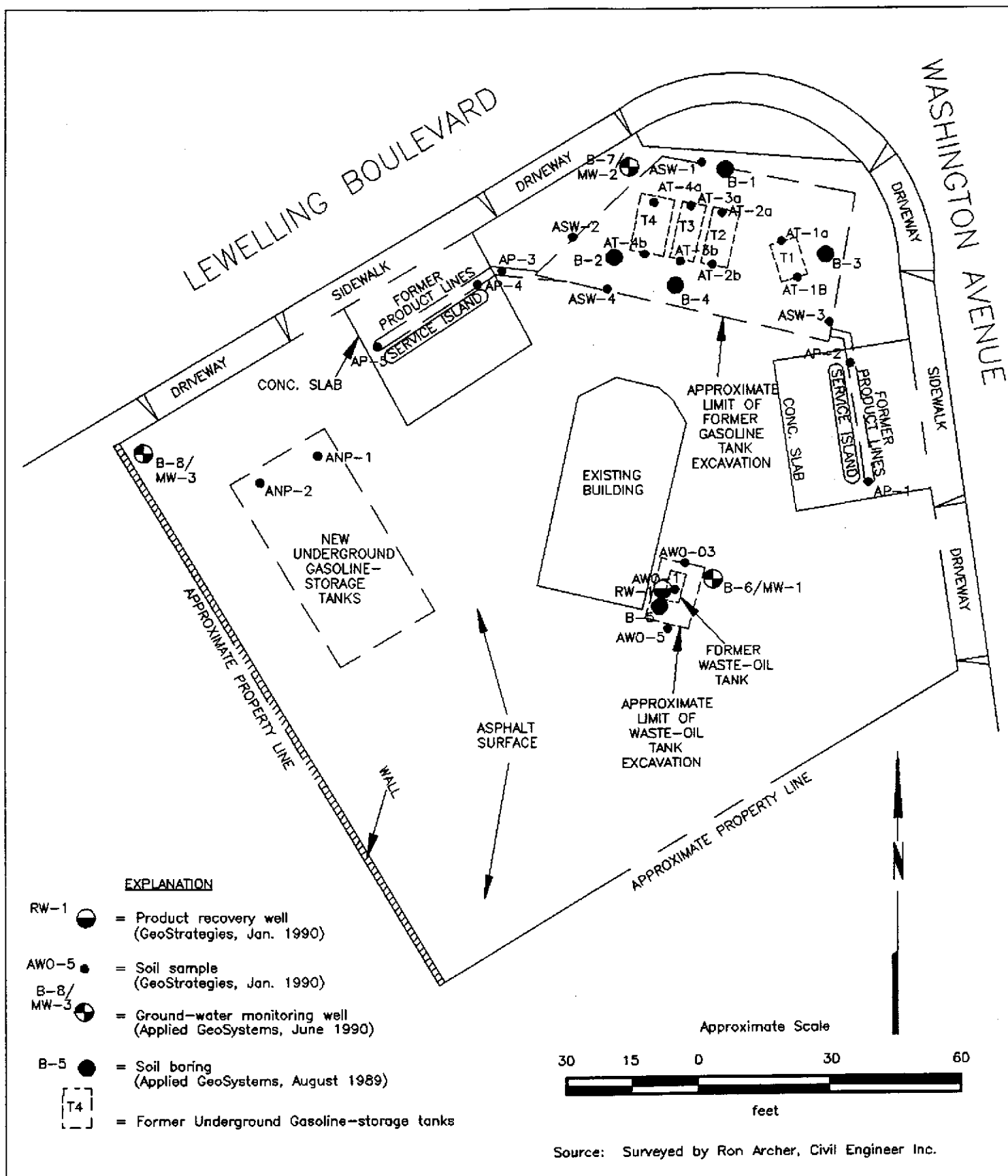
Applied GeoSystems, December 14, 1990, Subsurface Environmental Assessment at ARCO Station 601, San Leandro, California, AGS Report 69034-2.

GeoStrategies, Inc, November 14, 1989, Proposed Scope of Work, ARCO Service Station #601, San Leandro, California, GSI Report 7918-1.

GeoStrategies, Inc., June 29, 1990, Tank Replacement Report, ARCO Service Station #601, San Leandro, California, GSI Report 7918-2.







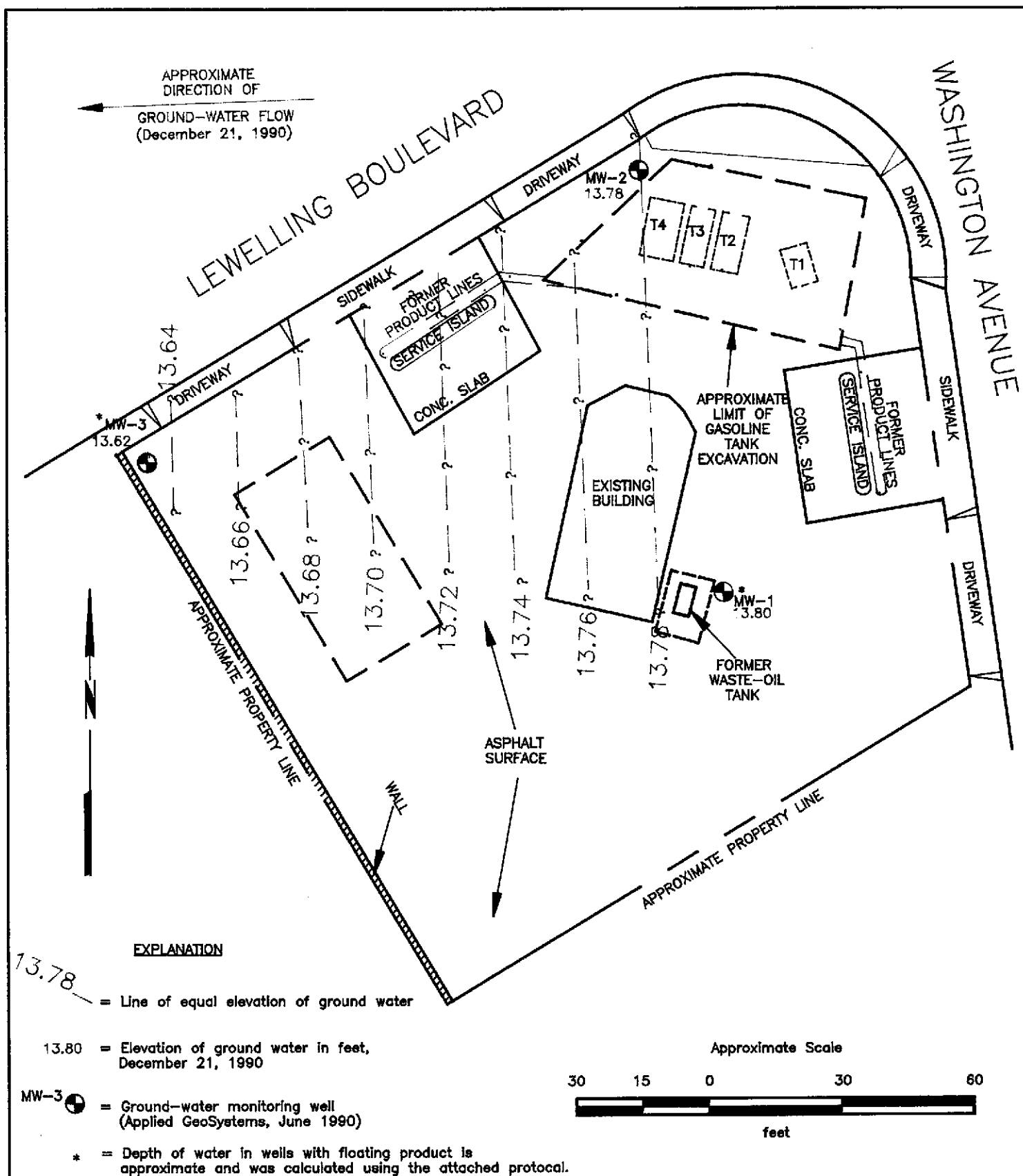
**PROJECT**

**69034-3**

**GENERALIZED SITE PLAN  
ARCO Station 601  
712 Lewelling Boulevard  
San Leandro, California**

**PLATE**

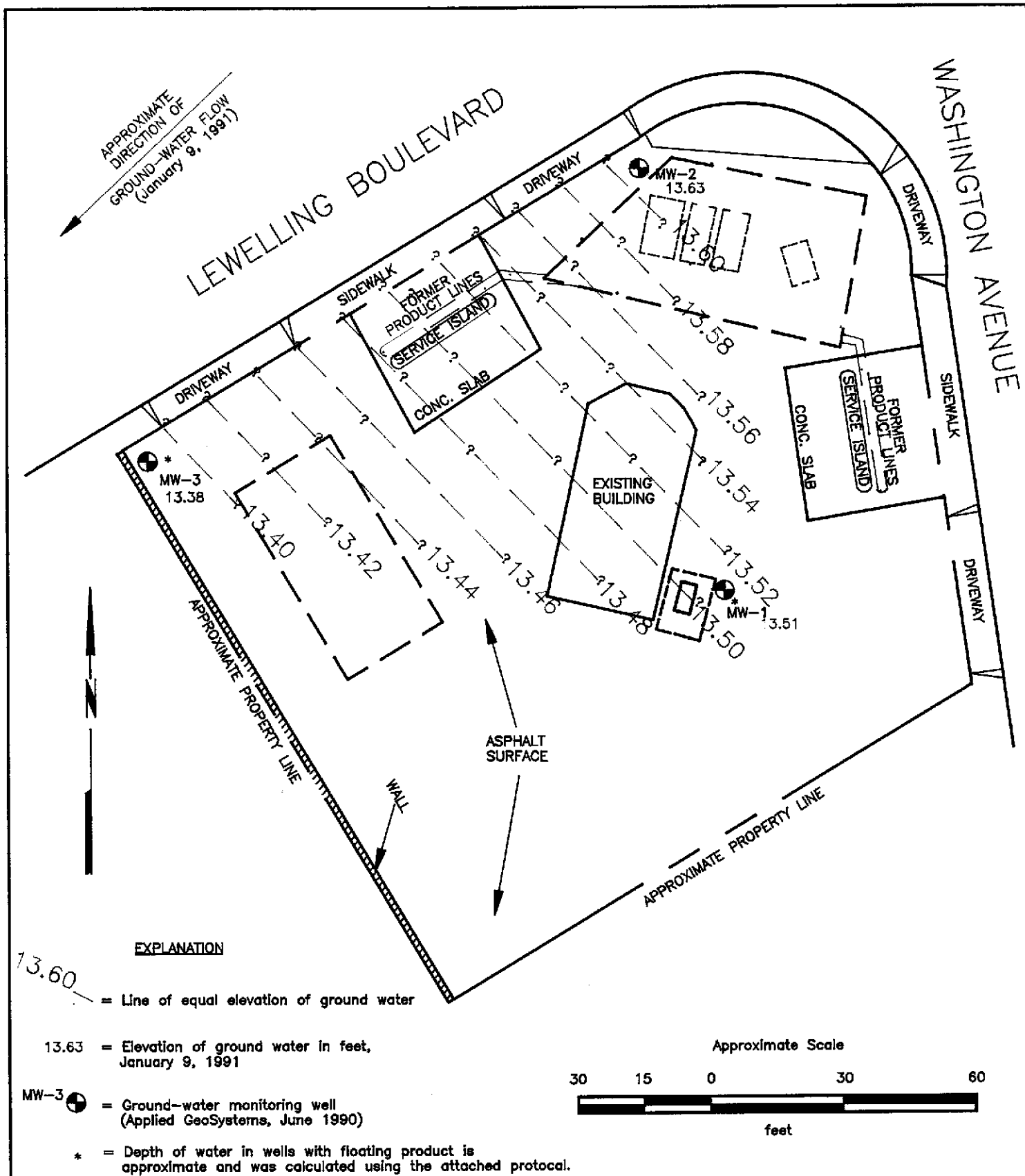
**2**



PROJECT 69034-3

**GROUND-WATER GRADIENT MAP**  
**December 21, 1990**  
**ARCO Station 601**  
**712 Lewelling Boulevard**  
**San Leandro, California**

**PLATE**  
**3**



PROJECT

69034-3

**GROUND-WATER GRADIENT MAP**  
**January 9, 1991**  
**ARCO Station 601**  
**712 Lewelling Boulevard**  
**San Leandro, California**

PLATE

4

TABLE 1  
CUMULATIVE GROUND-WATER MONITORING DATA  
ARCO Station 601  
San Leandro, California

| Date Well Measured | Depth of Well | Well Elevation | Depth-to-Water | Water Elevation | Product Evidence |
|--------------------|---------------|----------------|----------------|-----------------|------------------|
| <u>MW-1</u>        |               |                |                |                 |                  |
| 07/17/90           | 11.20         | 22.98          | 9.03           | 13.95           | Emulsion         |
| 08/07/90           |               |                | 9.19           | 13.79           | Odor             |
| 10/15/90           |               |                | 9.85*          | 13.13           | 0.25             |
| 11/20/90           |               |                | 9.79*          | 13.19           | 0.46             |
| 12/21/90           |               |                | 9.18           | 13.80           | Sheen            |
| 01/09/91           |               |                | 9.47*          | 13.51*          | 0.02             |
| <u>MW-2</u>        |               |                |                |                 |                  |
| 07/17/90           | 12.33         | 22.06          | 7.86           | 14.20           | Odor             |
| 08/07/90           |               |                | 8.03           | 14.03           | ND               |
| 10/15/90           |               |                | 8.61           | 13.45           | ND               |
| 11/20/90           |               |                | 8.76           | 13.30           | ND               |
| 12/21/90           |               |                | 8.28           | 13.78           | Odor             |
| 01/09/91           |               |                | 8.43           | 13.63           | Odor             |
| <u>MW-3</u>        |               |                |                |                 |                  |
| 07/17/90           | 11.99         | 20.84          | 7.03           | 13.81           | Sheen            |
| 08/07/90           |               |                | 7.21           | 13.63           | Odor             |
| 10/15/90           |               |                | 8.19*          | 12.65           | 0.75             |
| 11/20/90           |               |                | 7.98*          | 12.85           | 1.08             |
| 12/21/90           |               |                | 7.22*          | 13.62*          | 0.01             |
| 01/09/91           |               |                | 7.46*          | 13.38*          | 0.30             |

Measurements in feet.

Datum mean sea level.

Depth-to-Water measured in feet below top of casing.

ND = Not detected.

\* Depth to water was calculated using the attached protocol (Appendix A).

TABLE 2  
CUMULATIVE RESULTS OF LABORATORY ANALYSES  
OF GROUND WATER  
ARCO Service Station 601  
San Leandro, California  
(Page 1 of 2)

| Sample      | TPHg   | TPHd | B                | T                | E            | X                | TOG    |
|-------------|--------|------|------------------|------------------|--------------|------------------|--------|
| <u>MW-1</u> |        |      |                  |                  |              |                  |        |
| 07/17/90    | NA     | NR   | NA               | NA               | NA           | NA               | NR     |
| 10/15/90    | NA     | NR   | NA               | NA               | NA           | NA               | NR     |
| 01/09/91    | NA     | NR   | NA               | NA               | NA           | NA               | NR     |
| <u>MW-2</u> |        |      |                  |                  |              |                  |        |
| 07/17/90    | 35,000 | 850* | 3,800<br>(3,200) | 2,900<br>(2,400) | 690<br>(270) | 3,600<br>(2,900) | <5,000 |
| 10/15/90    | 6,400  | NR   | 650              | 290              | 110          | 560              | NR     |
| 01/09/91    |        | NR   |                  |                  |              |                  | NR     |
| <u>MW-3</u> |        |      |                  |                  |              |                  |        |
| 07/17/90    | NA     | NR   | NA               | NA               | NA           | NA               | <5,000 |
| 10/15/90    | NA     | NR   | NA               | NA               | NA           | NA               | NR     |
| 01/09/91    | NA     | NR   | NA               | NA               | NA           | NA               | NR     |

Results in micrograms per liter (ug/L) = parts per billion (ppb).

NA: Not analyzed, floating product.

NR: Not requested.

TPHg: Total petroleum hydrocarbons as gasoline by EPA method 8015.

TPHd: Total petroleum hydrocarbons as diesel by EPA method 3550/3510.

B: Benzene, T: Toluene, E: Ethylbenzene, T: Total Xylene isomers.

BTEX: Measured by EPA method 8020/602.

TOG: Total oil and grease measured by Standard Method 503A/E.

<: Results reported as less than the detection limit.

\*: Applied analytical laboratories reports that the chromatograph resembled gasoline not diesel.

( ): BTEX results analyzed as VOCs.

TABLE 2  
CUMULATIVE RESULTS OF LABORATORY ANALYSES  
OF GROUND WATER  
ARCO Station 601  
San Leandro, California  
(page 2 of 2)

| Well<br>Number | BNAs                               | VOCs            | Cadmium | Chromium | Lead | Zinc |
|----------------|------------------------------------|-----------------|---------|----------|------|------|
| MW-2           |                                    |                 |         |          |      |      |
| 07/17/90       | 340 <sup>a</sup> ,170 <sup>b</sup> | 39 <sup>c</sup> | <20     | 50       | 50   | 120  |
| 01/09/91       | NA                                 | 18 <sup>c</sup> | NA      | NA       | NA   | NA   |
| DWAL           | --                                 | 40 <sup>c</sup> | 10      | 50       | 50   | 5000 |

Results are in parts per billion (ppb)

BNAs: base neutral and acid extractables including polynuclear aromatics  
Concentrations are below laboratory reporting limits for respective compounds  
except as indicated.

(<sup>a</sup> = naphthalene, <sup>b</sup> = 2-methylnaphthalene)

VOCs: volatile organics except for BTEX

Concentrations are below laboratory reporting limits for respective compounds  
except as indicated.

(<sup>c</sup> = methylene chloride)

<: Below indicated laboratory reporting limit

DWAL: California Department of Health Services recommended drinking water action  
levels (July 1990)

## GROUND-WATER SAMPLING PROTOCOL

The static water level in each well that contained water was measured with a Solinst® water-level indicator; this instrument is accurate to the nearest 0.01 foot. These ground-water depths were subtracted from wellhead elevations measured by Ron Archer, Civil Engineer, Inc., of Pleasanton, California, a licensed land surveyor, to calculate the differences in ground-water elevations.

The static water level in each well that was suspected to contain floating product was measured with an ORS® interface probe; this instrument is accurate to the nearest 0.01 foot. The probe contains two different sensor units, one for detecting the liquid/air interface, and one for distinguishing between water and hydrocarbon. The thickness of the floating product and the ground-water depths were recorded. The recorded thickness of the floating product was then multiplied by 0.80 to obtain an approximate value for the displacement of water by the floating product. This approximate displacement value is then subtracted from the measured depth to water to obtain a calculated depth to water. These calculated ground-water depths were subtracted from wellhead elevations measured by Ron Archer, Civil Engineer, Inc., of Pleasanton, California, a licensed land surveyor, to calculate the differences in ground-water elevations.

Water samples collected for subjective evaluation were collected by gently lowering approximately half the length of a clean Teflon® bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples were checked for measurable floating hydrocarbon product and sheen.

Before water samples were collected from the ground-water monitoring wells, the wells were purged until stabilization of the temperature, Ph, and conductivity was obtained. Approximately 3 well casing volumes of water were purged before these characteristics stabilized. The quantity of water purged from the wells was calculated as follows:

$$1 \text{ well casing volume} = \pi r^2 h(7.48)$$

where:

$r$  = radius of the well casing in feet.

$h$  = column of water in the well in feet  
(well depth - depth to water).

7.48 = conversion constant from cubic feet to gallons

gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.



After purging, each well was allowed to recharge to within 80% of the initial water level. Water samples were then collected with an Environmental Protection Agency (EPA) approved Teflon® bailer which had been cleaned with Alconox® and deionized water. The water samples were carefully poured into 40-milliliter glass vials, which were filled so as to produce a positive meniscus. Each sample container was preserved with hydrochloric acid, sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace which would allow volatilization to occur. The samples were promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain of Custody Record, to a California-certified laboratory.

# WELL PURGE DATA SHEET

Project Name: ARCO 601 Job No. 69034-3

Date: 10/15/90 Page 1 of 1

Well No. MW-1 Time Started 3:00

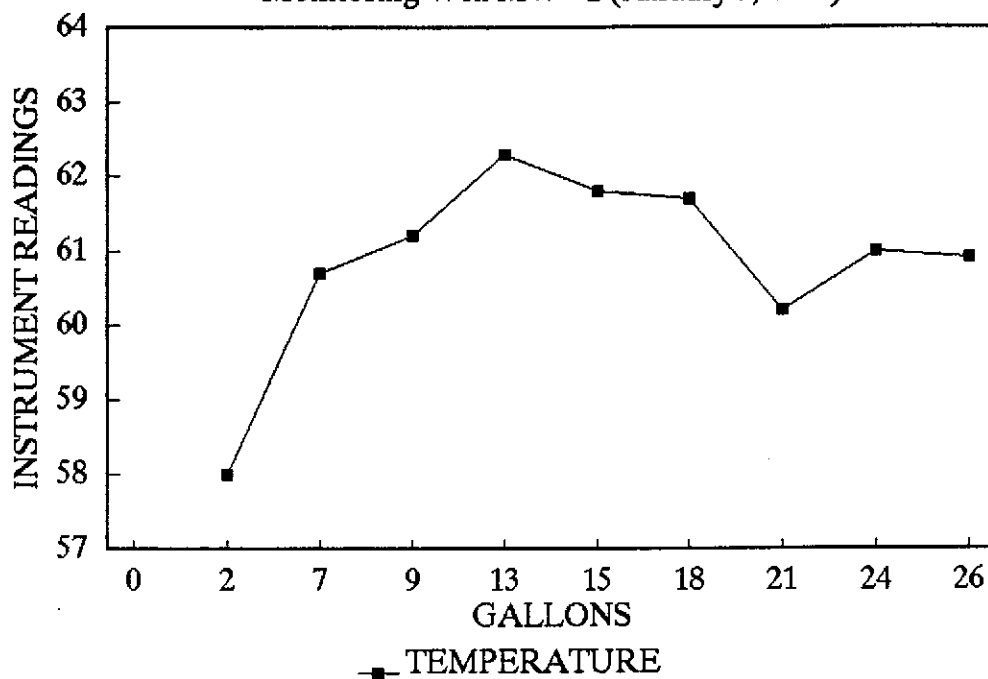
| Time<br>(hr) | Gallons<br>(cum.)       | Temp.<br>(F) | pH   | Conduct.<br>(micromoh) |
|--------------|-------------------------|--------------|------|------------------------|
| 3:00         | Begin pumping well MW-1 |              |      |                        |
| 3:05         | .2                      | 78.6         | 8.15 | 1.55                   |
| 3:27         | 9                       | 72.8         | 8.28 | 1.50                   |
| 3:44         | 15                      | 71.4         | 8.21 | 1.47                   |
| 4:05         | 20                      | 70.5         | 8.32 | 1.46                   |
| 4:13         | 22                      | 71.0         | 8.31 | 1.47                   |
| 4:20         | 23                      | 70.8         | 8.29 | 1.46                   |

|      |                               |  |  |  |
|------|-------------------------------|--|--|--|
| 4:21 | Well dewatered, stop pumping. |  |  |  |
|------|-------------------------------|--|--|--|

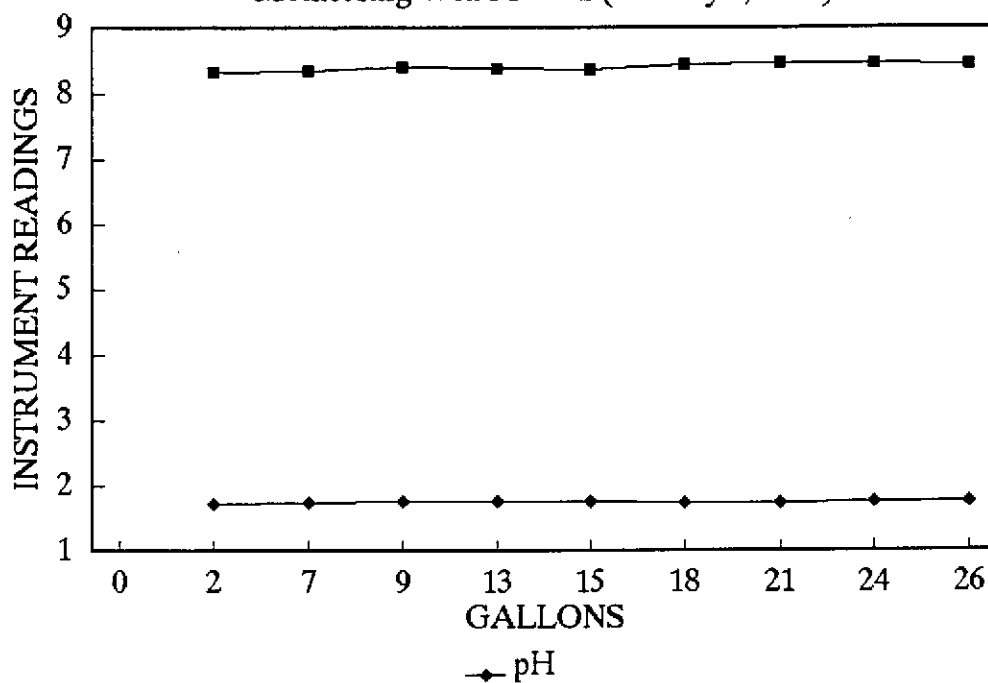
## Notes:

Depth to Bottom (feet) : 12.35  
 Depth to Water - initial (feet) : 8.61  
 Depth to Water - final (feet) : 8.95  
 % recovery : 91.0  
 Time Sampled : 6:05  
 Gallons per Well Casing Volume : 9.56  
 Gallons Purged : 23  
 Well Casing Volumes Purged : 2.4  
 Approximate Pumping Rate (gpm) : 0.28

ARCO STATION 601 STABILIZATION GRAPH  
Monitoring Well MW-2 (January 9, 1991)



ARCO STATION 601 STABILIZATION GRAPH  
Monitoring Well MW-2 (January 9, 1991)





# APPLIED ANALYTICAL

## Environmental Laboratories

42501 Albrae St., Suite 100

Fremont, CA 94538

Bus: (415) 623-0775

Fax: (415) 651-8647

### ANALYSIS REPORT

1020lab.frm

Attention: Mr. Mike Barminski  
Applied GeoSystems  
3315 Almaden Expressway  
San Jose, CA 95118  
Project: AGS 69034-3

Date Sampled: 01-09-91  
Date Received: 01-09-91  
BTEX Analyzed: 01-10-91  
TPHg Analyzed: 01-10-91  
TPHd Analyzed: NR  
Matrix: Water

|                  | Benzene    | Toluene    | Ethyl-<br>benzene | Total<br>Xylenes | TPHg       | TPHd       |
|------------------|------------|------------|-------------------|------------------|------------|------------|
|                  | <u>ppb</u> | <u>ppb</u> | <u>ppb</u>        | <u>ppb</u>       | <u>ppb</u> | <u>ppb</u> |
| Detection Limit: | 25         | 25         | 25                | 25               | 2500       | 100        |

#### SAMPLE

##### Laboratory Identification

|          |      |     |     |      |       |    |
|----------|------|-----|-----|------|-------|----|
| W-8-MW2  | 1500 | 970 | 390 | 1500 | 13000 | NR |
| W1101113 |      |     |     |      |       |    |

ppb = parts per billion =  $\mu\text{g/L}$  = micrograms per liter.

ND = Not detected. Compound(s) may be present at concentrations below the detection limit.

NR = Analysis not requested.

#### ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are measured by extraction using EPA Method 5030 followed by analysis using EPA Method 8020/602, which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID) and a flame-ionization detector (FID) in series.

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are measured by extraction using EPA Method 5030, followed by analysis using modified EPA Method 8015, which utilizes a GC equipped with an FID.

TPHd--Total petroleum hydrocarbons as diesel (high boiling points) are measured by extraction using EPA Method 3550 for soils and EPA Method 3510 for water, followed by modified EPA Method 8015 with direct sample injection into a GC equipped with an FID.

  
Laboratory Representative

January 17, 1991

Date Reported



# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

January 21, 1991

RECEIVED

Jan 21 1991

APPLIED GEOSYSTEMS  
SAN JOSE BRANCH

ChromaLab File #0191050

- Environmental Analysis
- Hazardous Waste (#E694)
- Drinking Water (#955)
- Waste Water
- Consultation

Client: APPLIED GEOSYSTEMS

Date Sampled: Jan. 9, 1991

Date of Analysis: January 18, 1991

Project Name: ARCO

Sample I.D.: W-8-MW2

Method of Analysis: EPA 8240

Attn: Mike Barminski


Date Submitted: Jan. 11, 1991

Project No.: 69034-3

Detection Limit: 2 µg/L

| COMPOUND NAME              | µg/L | Spike Recovery |       |
|----------------------------|------|----------------|-------|
| CHLOROMETHANE              | N.D. | ---            | ---   |
| VINYL CHLORIDE             | N.D. | ---            | ---   |
| BROMOMETHANE               | N.D. | ---            | ---   |
| CHLOROETHANE               | N.D. | ---            | ---   |
| TRICHLOROFLUOROMETHANE     | N.D. | ---            | ---   |
| 1,1-DICHLOROETHENE         | N.D. | 102.6%         | 98.9% |
| METHYLENE CHLORIDE         | 18   | ---            | ---   |
| 1,2-DICHLOROETHENE (TOTAL) | N.D. | ---            | ---   |
| 1,1-DICHLOROETHANE         | N.D. | ---            | ---   |
| CHLOROFORM                 | N.D. | ---            | ---   |
| 1,1,1-TRICHLOROETHANE      | N.D. | ---            | ---   |
| CARBON TETRACHLORIDE       | N.D. | ---            | ---   |
| BENZENE                    | 1700 | ---            | ---   |
| 1,2-DICHLOROETHANE         | N.D. | 88.5%          | 82.1% |
| TRICHLOROETHENE            | N.D. | ---            | ---   |
| 1,2-DICHLOROPROPANE        | N.D. | ---            | ---   |
| BROMODICHLOROMETHANE       | N.D. | ---            | ---   |
| 2-CHLOROETHYL VINYLETHYR   | N.D. | ---            | ---   |
| TRANS-1,3-DICHLOROPROPENE  | N.D. | ---            | ---   |
| TOLUENE                    | 1200 | ---            | ---   |
| CIS-1,3-DICHLOROPROPENE    | N.D. | ---            | ---   |
| 1,1,2-TRICHLOROETHANE      | N.D. | ---            | ---   |
| TETRACHLOROETHENE          | N.D. | ---            | ---   |
| DIBROMOCHLOROMETHANE       | N.D. | ---            | ---   |
| CHLOROBENZENE              | N.D. | ---            | ---   |
| ETHYL BENZENE              | 370  | 101.6%         | 80.7% |
| BROMOFORM                  | N.D. | ---            | ---   |
| 1,1,2,2-TETRACHLOROETHANE  | N.D. | ---            | ---   |
| 1,3-DICHLOROBENZENE        | N.D. | ---            | ---   |
| 1,4-DICHLOROBENZENE        | N.D. | ---            | ---   |
| 1,2-DICHLOROBENZENE        | N.D. | 98.1%          | 88.6% |
| TOTAL XYLENES              | 2400 | ---            | ---   |

ChromaLab, Inc.

  
David Duong  
Chief Chemist

  
Eric Tam  
Lab Director