July 15, 1991

Alameda County Department of Environmental Health
80 Swan Way
Oakland, California 94621

Attention: Mr. Rafat Shahid

ARCO Products Company Facilities in Alameda County - RWQCB Fuel Leaks List

Dear Mr. Shahid

Please find attached, Quarterly Summary Reports (QSRs) for ARCO Products Company Service Stations in Alameda County. The QSRs summarize activities conducted by ARCO at the respective sites during the second quarter of 1991; also included are projected site activities for the third quarter of 1991 and a bibliography of reports submitted for each location.

The QSRs are classified by address within the County. We are submitting this document and attached QSRs as agreed in our recent meeting with the RWQCB. Please note that we are forwarding copies of the QSRs to the RWQCB as well.

ARCO Products Company has reviewed the Regional Water Quality Control Board's (RWQCB) February 19, 1991 printout of ARCO fuel leak sites in the San Francisco Bay Area. We have evaluated each site with respect to ARCO's responsibility for investigation, monitoring, and/or remediation. It is ARCO's belief that several of the sites originally attributed to ARCO are actually the responsibility of other parties. We have therefore prepared QSRs and a brief discussion regarding those sites which we believe should either be removed from ARCO responsibility or be considered for closure.

ARCO is planning a subsequent comprehensive QSR submittal for ARCO sites on October 15, 1991. Please do not hesitate to contact us with any questions regarding this submittal.

Sincerely,

for Kyle A. Christie
Environmental Engineer

Attachments:
Non-ARCO Facility/Site Closure Discussion and QSRs
ARCO Facility QSRs

NON-ARCO FACILITY/SITE CLOSURE DISCUSSION AND QSRS

Alameda County

Alameda County Sites

Two ARCO facilities including Station Numbers 4977 and 6002 (located at 2770 Castro Valley Road, Castro Valley and 6235 Seminary Avenue, Oakland) experienced vapor/vent line failure during UST system precision testing. In accordance with State Water Resources Control Board (SWRCB) letter LG-43, ARCO requests that these facilities be removed from the RWQCB fuel leaks list.

A small volume of hydrocarbons were released from ARCO Station Number 498 located at 286 South Livermore Avenue, Livermore. The product was released to an on-site secondary containment trench and was subsequently removed; no product was released to the soil or groundwater. Alameda County issued a letter to ARCO on May 24, 1991 stating that no further action is necessary at this site.

A total of seven Alameda County ARCO facilities listed by the RWQCB were not ARCO-owned at the time of the release discovery and/or report. These sites include Station Numbers 188, 329, and 623 (respectively located at 4191 First Street, Pleasanton, 2032 12th Street, Oakland, and 2110 Mountain, Oakland) and facilities located at 2951 High Street, 4401 Market Street, 2844 Mountain Boulevard, and 2740 98th Street, Oakland.

ARCO has prepared QSRs for each of these facilities; however, we request that the cases be omitted from the leaks list or be referred to the actual responsible party, as appropriate. The ownership information for the individual sites is included on the attached QSRs.

Finally, the RWQCB February 19, 1991 printout lists two sites which are actually the same. The facility listed as 71 MacArthur Boulevard is actually ARCO Service Station Number 4931 located at 731 West MacArthur Boulevard in Oakland.

Attachment:
Non-ARCO Facility QSRs

UST LEAK SITE UPDATE | Date of Last Review/Update: | Current Date: July 15, 1991

SITE IDENTIFICATION

Name: ARCO SERVICE STATION #6113 | Case No.:

Address: 785 E. Stanley Boulevard
Street Number | Street

Livermore, CA
City | Zip Code

Alameda County | Substance: hydrocarbons
County

Local Agency: Alameda County Environmental Health Department

Regional Board: San Francisco Bay Region

LEAD STAFF PERSON: unknown

CASE TYPE

_____ Undetermined _____ Soil Only _____ Ground Water _____ Drinking Water

STATUS (Date indicates when case moved into status)

_____	No Action Taken	Date _____
_____	Leak Being Confirmed	Date _____
_____	Preliminary Site Assessment Workplan Submitted	Date _____
_____	Preliminary Site Assessment Underway	Date _____
_____	Pollution Characterization	Date _____
_____	Remediation Plan	Date _____
_____	Remedial Action Underway	Date _____
_____	Post Remedial Action Monitoring	Date _____
_____	Case Referred to Regional Board	Date _____
_____	Case Referred to Dept. of Health Services	Date _____
_____	Case Closed	Date _____

REMEDIAL ACTION

COMMENTS

ARCO is currently evaluating data from this site for further activities.

RESPONSIBLE PARTY IDENTIFICATION (Only if newly discovered or changed)

Name

Contact | Phone ( )

Address
Street Number | Street

City | State | Zip Code

Applied GeoSystems

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

91 JUL 15 PM 1:31

TRANSMITTAL

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

FROM: Marc Briggs
TITLE: Staff Geologist

DATE: July 12, 1991
PROJECT NUMBER: 69028.05
SUBJECT: Letter Report

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*File Name: TRANSMT.PRJ

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LETTER REPORT
QUARTERLY GROUND-WATER MONITORING
Second Quarter 1991
at
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

AGS 69028.05

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

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

July 11, 1991
0521ccar
AGS 69028.05

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

Subject: Second Quarter 1991 Ground-Water Monitoring Report for ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California.

Mr. Carmel:

As requested by ARCO Products Company (ARCO), this letter report summarizes the methods and results of second quarter 1991 ground-water monitoring performed by RESNA/Applied GeoSystems (AGS) at the above-referenced site. The station is on the southwestern corner of the intersection of East Stanley and Murrieta Boulevards in Livermore, California, as shown on the Site Vicinity Map (Plate 1). ARCO has contracted with AGS to perform monthly water level measurements and quarterly ground-water sampling and analyses to monitor fluctuations in the ground-water gradient and petroleum hydrocarbon concentrations in ground water at the site, and to evaluate trends related to fluctuations over time.

Prior to the present monitoring, Pacific Environmental Group (Pacific) and AGS performed limited subsurface environmental investigations related to the former underground waste-oil storage tank at the site. Pacific performed soil sampling and observation during removal of the waste-oil tank in January 1989. Work by AGS included the installation of three ground-water monitoring wells (MW-1, MW-2, and MW-3) in September 1989, the installation of one ground-water monitoring well (MW-4) in February 1991, and quarterly monitoring of these wells. Monitoring well MW-4 was installed at the request of Mr. Gil Wistar of the Alameda County Department of Environmental Health (ACDEH), in his letter dated September 21, 1990, stating the need for a monitoring well downgradient of the former waste-oil tank (AGS, April 16, 1991). 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 water level measurements on April 10, 1991 and June 20, 1991, and quarterly ground-water monitoring and sampling on May 20, 1991. Field work consisted of measuring depth-to-water (DTW) levels in wells MW-1 through MW-4; subjectively analyzing water from these wells for the presence of sheen and floating product; and purging and sampling ground water from these monitoring wells for laboratory analysis. The ground-water sampling protocol is attached.

The ground-water elevations for each well were calculated by subtracting the DTW measurements from the surveyed elevations of the wellheads. The DTW measurements, wellhead elevations, and ground-water elevations are presented in Table 1, Cumulative Ground-Water Monitoring Data. The ground-water gradient evaluated from the April 10, 1991 data is 0.005 to the east-northeast as shown on the Ground-Water Gradient Map (Plate 3). The ground-water gradient evaluated from the May 20, 1991 data is 0.008 to the west-southwest as shown on the Ground-Water Gradient Map (Plate 4). The ground-water gradient evaluated from the June 20, 1991 data (using wells MW-1 through MW-3, well MW-4 was dry) is 0.03 to the east-southeast as shown on the Ground-Water Gradient Map (Plate 5). The ground-water elevations decreased approximately 13-½ feet since April 1991. Gradient interpretations from the previous monitoring episodes incorporating data from wells MW-1 through MW-3 indicated a ground-water gradient direction to the northeast. Directional variations in the relatively flat ground-water gradient at the site and the significant decrease in groundwater elevations may result from pumping of nearby existing irrigation wells in the vicinity of the site that may produce artificial, temporary changes in the ground-water elevation and direction of flow.

Water samples were collected from wells MW-1 through MW-4 for subjective analysis before the monitoring wells were purged and sampled. No evidence of floating hydrocarbon product or noticeable hydrocarbon product odor was noted in the water samples from wells MW-1 through MW-3. A noticeable hydrocarbon product odor was noted from the water sample from MW-4. Cumulative results of subjective analyses are presented in Table 1.

Monitoring wells MW-1 through MW-4 were purged and sampled on May 20, 1991 in accordance with the attached protocol. Well purge data sheets and stabilization graphs for the parameters monitored are included in Attachment I.

Laboratory Methods

Water samples collected from the wells were delivered under chain of custody protocol to Sequoia Analytical Laboratories in Redwood City, California (Hazardous Waste Testing Laboratory Certification No. 1210). The water samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8015/602. The water samples were also analyzed for total oil and grease (TOG) using standard method 5520 B/F. Analyses for total petroleum hydrocarbons as diesel (TPHd) were not performed on water samples collected during this quarterly monitoring, per the letter from Mr. Gil Wistar of the ACDEH, dated November 16, 1990, since previous analyses for these compounds in ground water at the site have reported nondetectable concentrations (AGS, January 29, 1991).

Results of Analyses

Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Ground-Water Laboratory Analyses. The Chain of Custody Records and Laboratory Analysis Reports are included in Attachment I.

Laboratory analysis of ground-water samples collected from monitoring wells MW-1 through MW-4 reported:

- TPHg and BTEX were reported nondetectable in wells MW-1 and MW-2;
- TPHg concentrations were reported in wells MW-3 and MW-4 at levels of 97 parts per billion (ppb) and 1,400 ppb, respectively;
- concentrations of BTEX in the wells ranged from nondetectable (less than 0.5 ppb) to 150 ppb. BTEX levels were below the State of California Department of Health Services Maximum Contaminant Levels (MCLs) and recommended action levels for drinking water, (which for BTEX are 1.0 ppb, 100 ppb, 680 ppb, and 1,750 ppb, respectively)(State of California Department of Health Services, October 1990), with the exception of benzene in wells MW-3 (1.3 ppb) and MW-4 (150 ppb);
- the concentration of benzene has increased in MW-3 since the last monitoring episode, when it was reported as nondetectable;

- concentrations of TPHg continue to remain nondetectable in wells MW-1 and MW-2, which are generally downgradient of the former waste-oil tank; however, reported concentrations of TPHg increased from nondetectable in February 1991 to 97 ppb in well MW-3;

- the reported concentrations of benzene and TPHg have decreased in well MW-4 since the last monitoring episode.

- concentrations of TOG continue to remain nondetectable in wells MW-1 through MW-3, which are generally upgradient or crossgradient of the former waste oil tank;

- nondetectable concentrations of TOG were reported in the water sample obtained from MW-4, downgradient of the former waste-oil tank, and near the existing underground gasoline storage tanks; and,

- the highest concentrations of TPHg and benzene are in well MW-4, which is the nearest well to the underground gasoline-storage tanks.

An interpretation of the lateral extent of TPHg and benzene in the ground water, based on these laboratory analyses, are shown on Plate 6, TPHg Concentrations in Ground Water and Plate 7, Benzene Concentrations in Ground Water.

Conclusions and Recommendations

Based on the results of this monitoring episode and previous work at the site, AGS concludes:

- waste-oil related hydrocarbons, as represented by TOG, were not detected in any ground-water samples collected at the site;

- gasoline-related hydrocarbons appear to have impacted the ground water downgradient and in the vicinity of the underground gasoline-storage tanks;

- the extent of gasoline-related hydrocarbons in ground water at the site has not been delineated; and,

- the increased concentrations of TPHg in well MW-3, as well as the change in the ground-water gradient direction to west-southwest, indicates that the gasoline hydrocarbons may be migrating across the site. The last time

detectable concentrations of TPHg were reported in MW-3 was in September 1989.

Schedule

AGS will continue the quarterly ground-water monitoring at this site to evaluate trends in petroleum hydrocarbon concentrations and monthly DTW monitoring to evaluate changes in the 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 August 19, 1991.

Copies of this report should 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
2101 Webster Street, Suite 500
Oakland, California 94612

Mr. Randy Griffith
Livermore Fire Department
4550 East Avenue
Livermore, California 94550

If you have any questions or comments regarding this letter report, please call us at (408) 264-7723.

Sincerely,
RESNA/Applied GeoSystems

Marc A. Briggs
Staff Geologist

Greg Barclay
General Manager

Joan E. Tiernan
Registered Civil Engineer
No. 044600

Enclosures: References

Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Ground-Water Gradient Map (April 10, 1991)
Plate 4, Ground-Water Gradient Map (May 20, 1991)
Plate 5, Ground-Water Gradient Map (June 20, 1991)
Plate 6, TPHg Concentrations in Ground Water
Plate 7, Benzene Concentrations in Ground Water

Table 1, Cumulative Ground-Water Monitoring Data
Table 2, Cumulative Results of Ground-Water Laboratory Analyses

Attachment I
- Ground-Water Sampling Protocol
- Well Purge Data Sheets (4 pages)
- Stabilization Graphs (4 pages)
- Chain of Custody Record (1 page)
- Laboratory Analysis Reports (5 pages)
- Uniform Hazardous Waste Manifest (1 page)

cc: H.C. Winsor, ARCO Products Company

REFERENCES

Applied GeoSystems. December 6, 1989. Limited Subsurface Environmental Investigation at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-2.

Applied GeoSystems. August 29, 1990. Letter Report, Quarterly Ground-Water Monitoring Second Quarter 1990 at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-3.

Applied GeoSystems. November 2, 1990. Letter Report, Quarterly Ground-Water Monitoring Third Quarter 1990 at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-3.

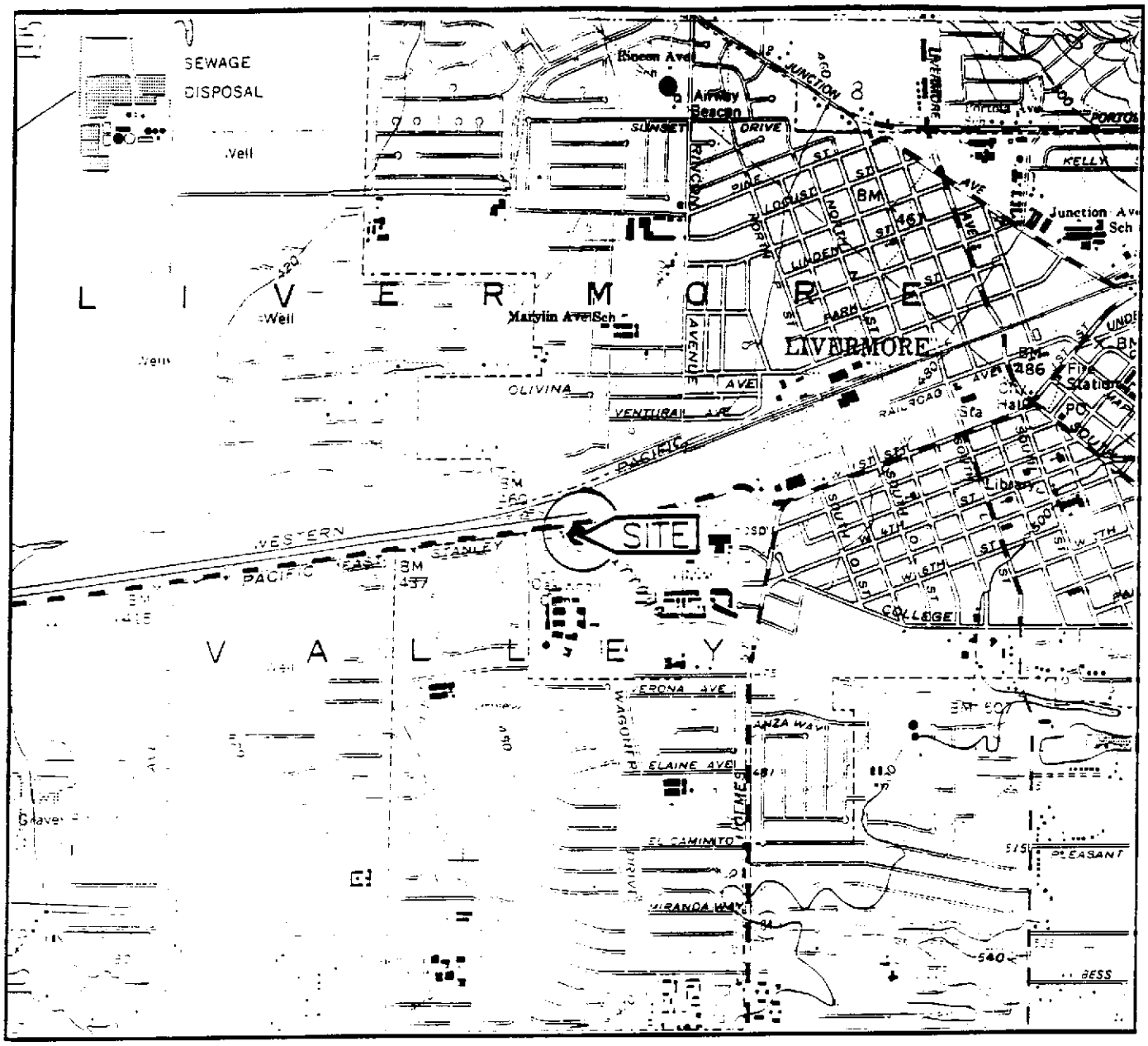
Applied GeoSystems. January 27, 1991. Letter Report, Quarterly Ground-Water Monitoring Fourth Quarter 1990 at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-3.

Applied GeoSystems. April 16, 1991. Limited Subsurface Environmental Investigation Related to the Former Waste-Oil Tank at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-4.

Applied GeoSystems. April 24, 1991. Letter Report, Quarterly Ground-Water Monitoring First Quarter 1991 at ARCO Station 6113, 785 East Stanley Boulevard, Livermore, California. AGS Report 69028-3.

California Department of Health Services, Office of Drinking Water, October 22, 1990, "Summary of California Drinking Water Standards", Berkeley, California.

Pacific Environmental Group. April 25, 1989. ARCO Station 6113, 785 E. Stanley Boulevard, Livermore, California. Project 330-53.01



Source: U.S. Geological Survey
7.5-Minute Quadrangle
Livermore, California
Photorevised 1980

Approximate Scale

2000 1000 0 2000 4000

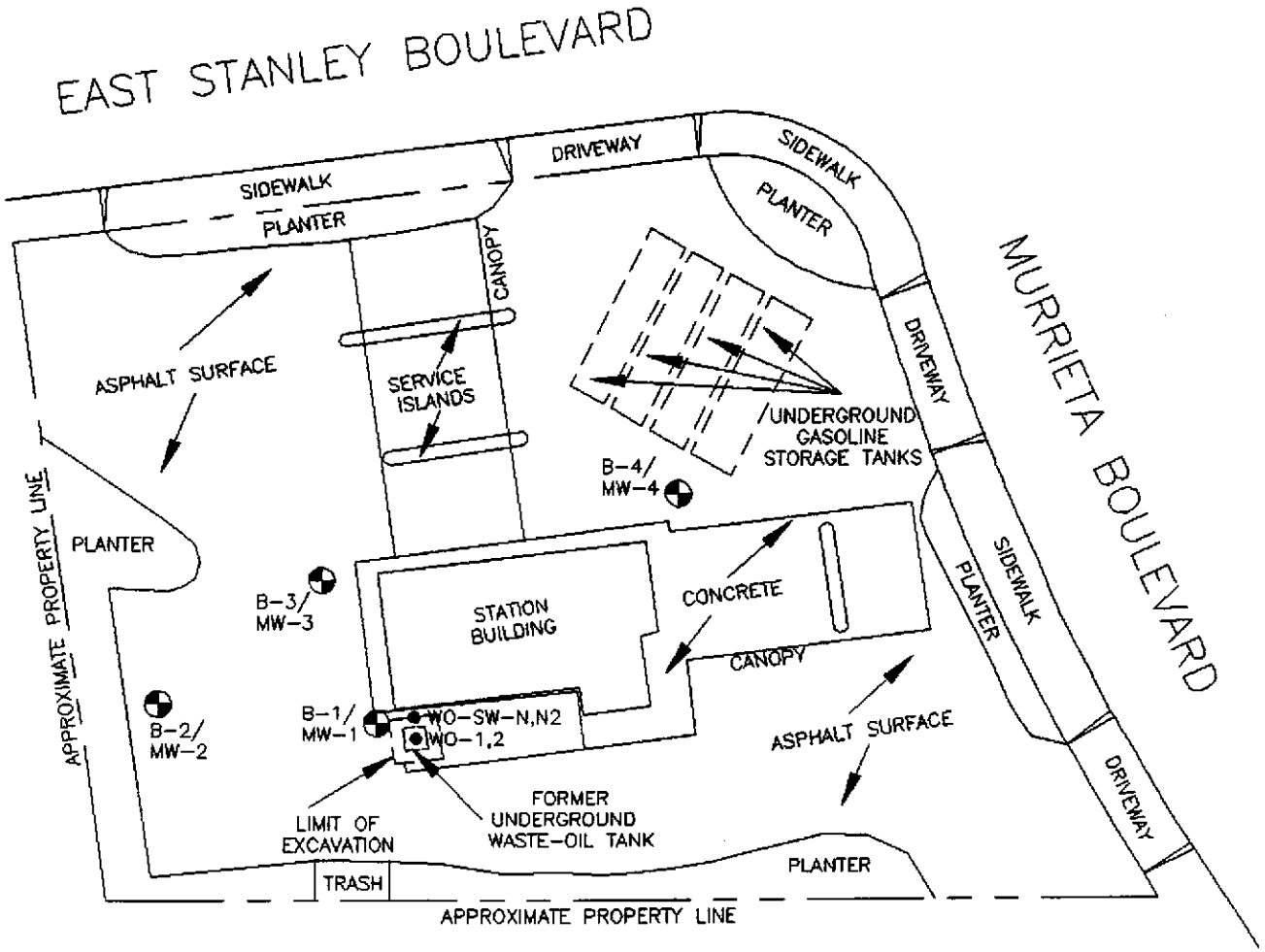
feet

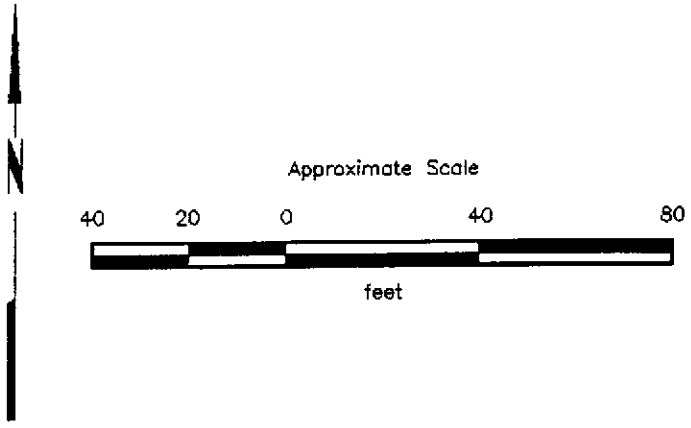
Applied GeoSystems

PROJECT 69028-5

SITE VICINITY MAP
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE 1





EXPLANATION

WO-SW-N,N2 ● = Soil sample collected by Pacific (1989)

B-4/MW-4 ◐ = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

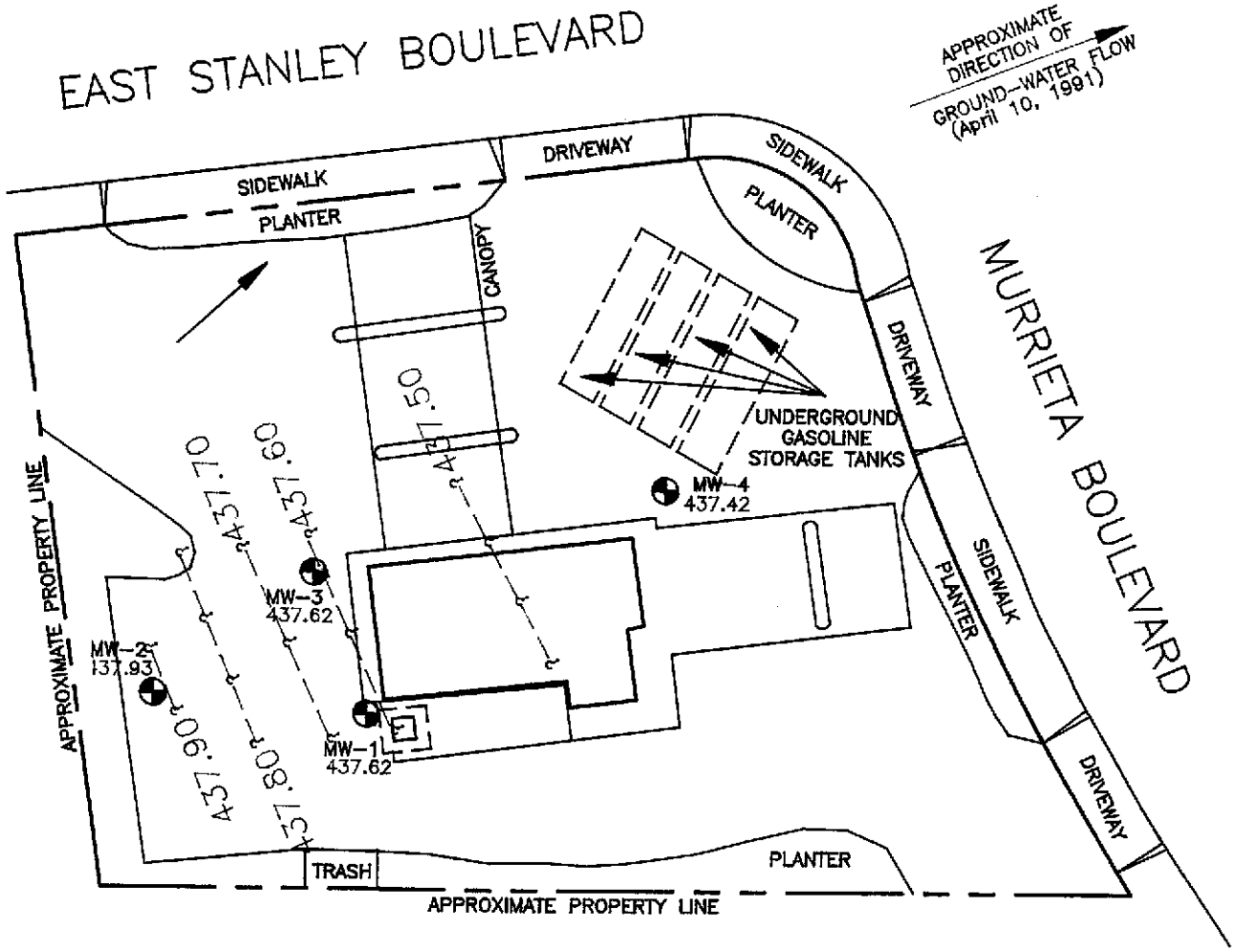
Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., February 1991

Applied GeoSystems

PROJECT: 69028-5

GENERALIZED SITE PLAN
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
2



EXPLANATION

437.90 = Line of equal elevation of ground water above Mean Sea Level (MSL)

437.93 = Elevation of ground water in feet April 10, 1991

MW-4 = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

N

Approximate Scale

40 20 0 40 80

feet

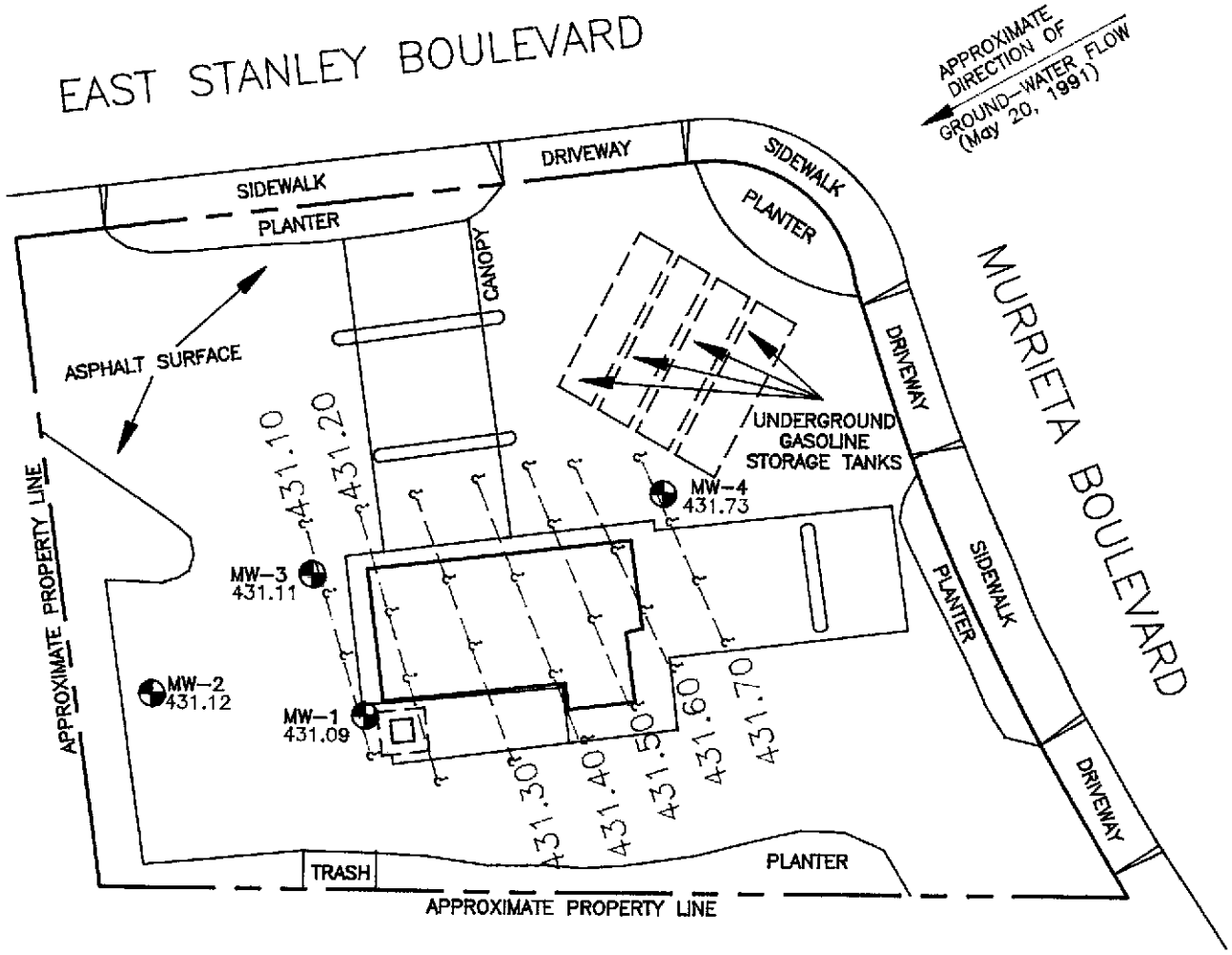
Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., February 1991

Applied GeoSystems

PROJECT: 69028-5

GROUND-WATER GRADIENT MAP
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
3



EXPLANATION

431.70 = Line of equal elevation of ground water above Mean Sea Level (MSL)

431.73 = Elevation of ground water in feet May 20, 1991

MW-4 = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

N

Approximate Scale

40 20 0 40 80

feet

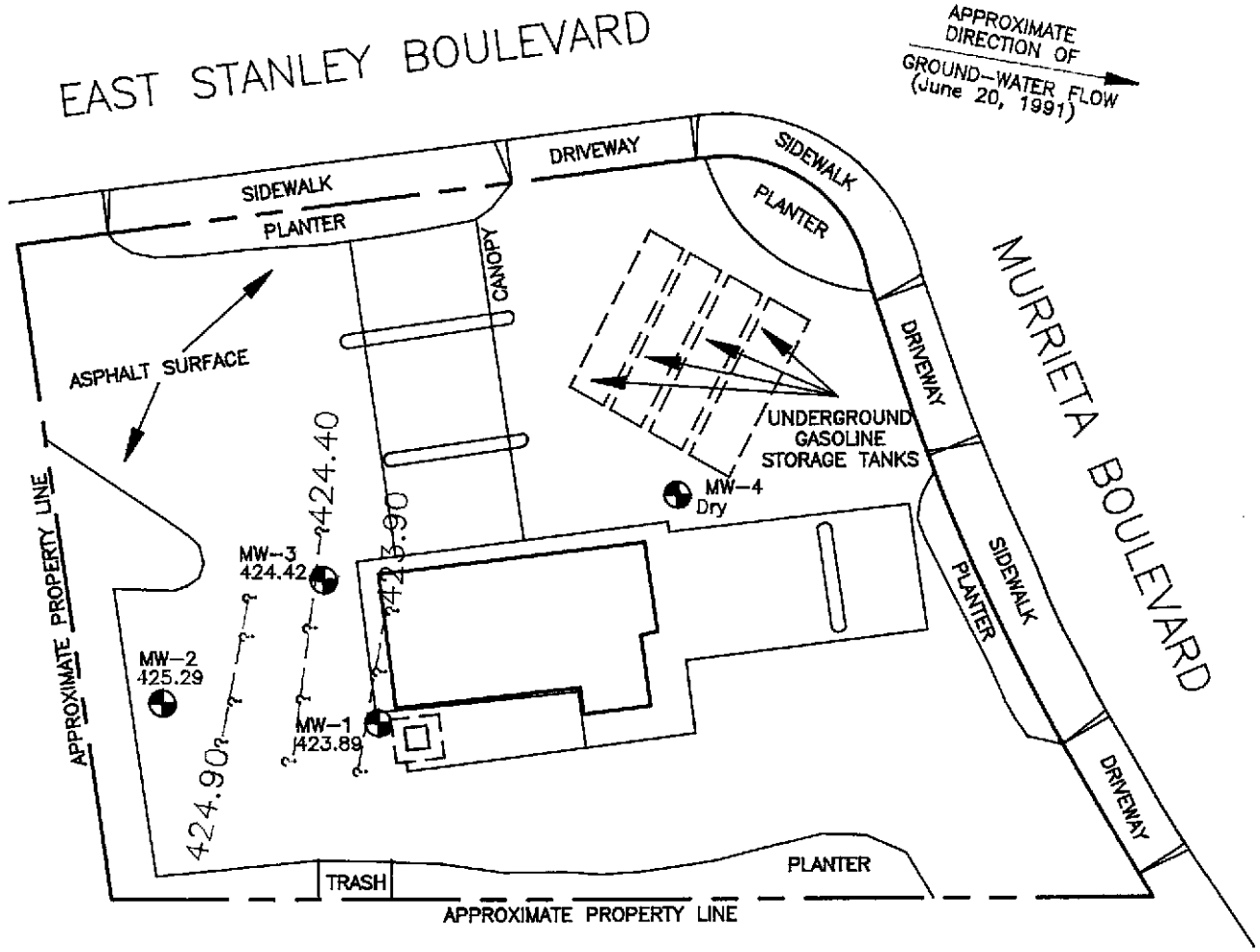
Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., February 1991

Applied GeoSystems

PROJECT: 69028-5

GROUND-WATER GRADIENT MAP
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
4



EXPLANATION

424.90 = Line of equal elevation of ground water above Mean Sea Level (MSL)

425.29 = Elevation of ground water in feet June 20, 1991

MW-4 = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

N

Approximate Scale

40 20 0 40 80

feet

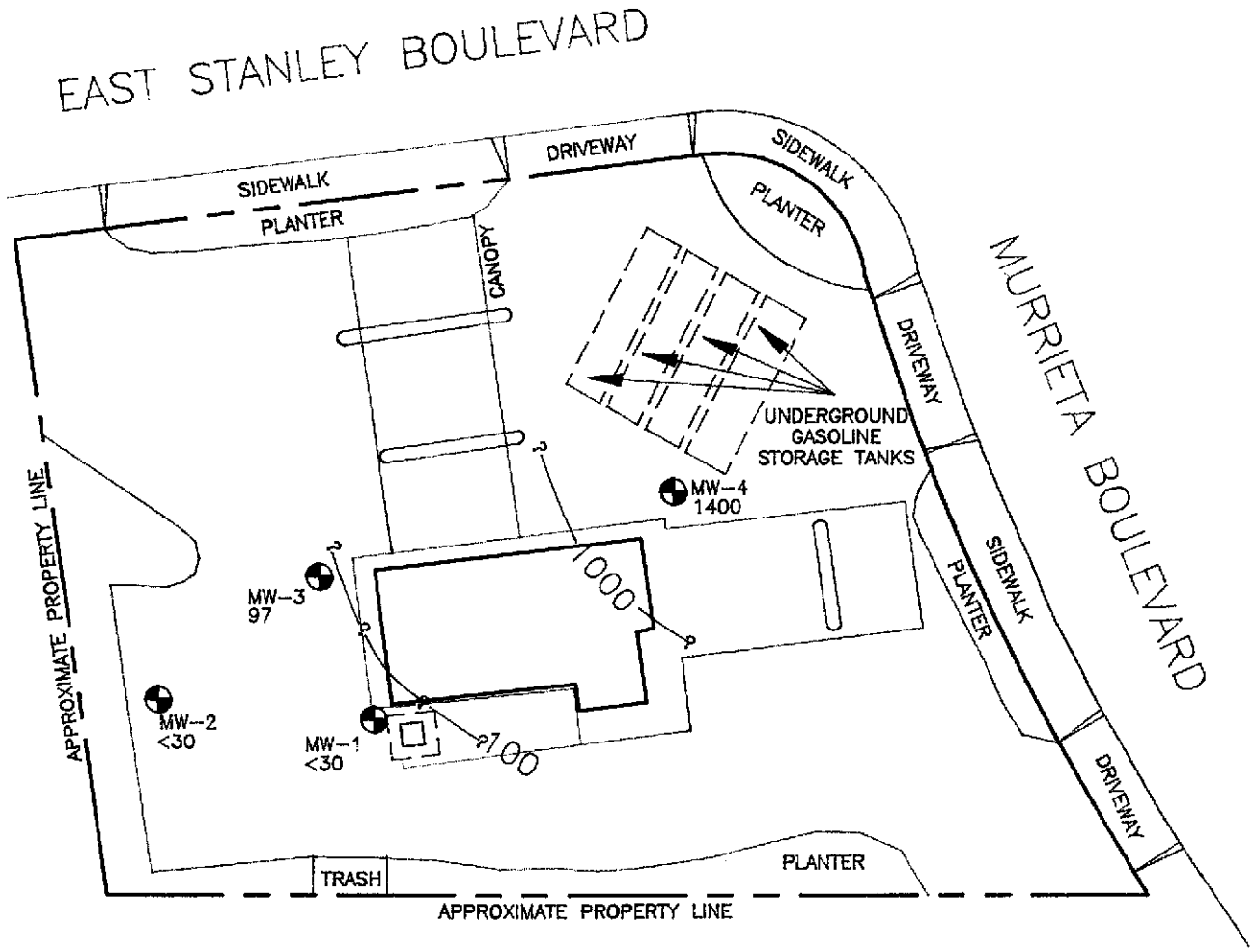
Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., February 1991

Applied GeoSystems

PROJECT: 69028-5

GROUND-WATER GRADIENT MAP
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE
5



1000 — = Line of equal concentration of TPHg in ground water

1400 = Concentration of TPHg in ground water, in ppb, May 20, 1991

MW-4 = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

N

Approximate Scale

40 20 0 40 80

feet

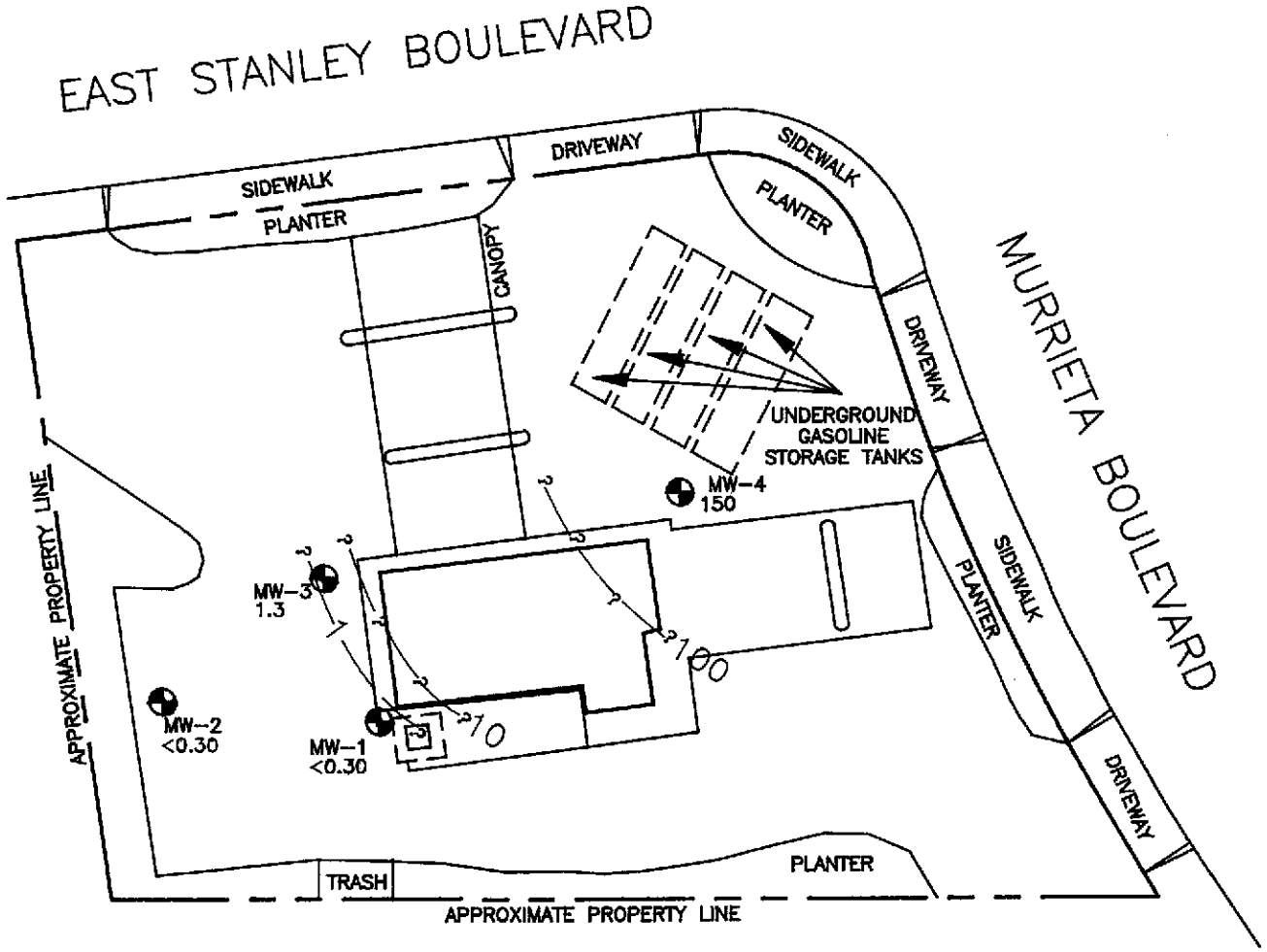
Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., October 1988.

Applied GeoSystems

PROJECT: 69028-5

TPHg CONCENTRATIONS IN GROUND WATER
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE 6



EXPLANATION

100 = Line of equal concentration of Benzene in ground water

150 = Concentration of Benzene in ground water in ppb, May 1991

MW-4 = Boring/monitoring well (Applied GeoSystems, September 1989 and February 1991)

N

Approximate Scale

40 20 0 40 80

feet

Source: Modified from plan supplied by Ron Archer, Civil Engineer Inc., October 1988.

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PROJECT: 69028-5

BENZENE CONCENTRATIONS IN GROUND WATER
ARCO Service Station 6113
785 East Stanley Boulevard
Livermore, California

PLATE 7

TABLE 1
CUMULATIVE GROUND-WATER MONITORING DATA
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California

Well / Date	Elevation of Wellhead	Depth to Water	Elevation of Ground-Water	Floating Product
MW-1				
09/20/89	457.04	21.03	436.01	NONE
10/12/89		19.64	437.40	NONE
06/21/90		21.72	435.32	NONE
09/20/90		19.79	437.25	NONE
12/18/90		19.28	437.76	NONE
02/21/91		22.45	434.59	NONE
03/20/91		19.87	437.17	NONE
04/10/91		19.42	437.62	NONE
05/20/91		25.95	431.09	NONE
06/20/91		33.15	423.89	NONE
MW-2				
09/20/89	457.74	20.67	437.07	NONE
10/12/89		18.98	438.76	NONE
06/21/90		21.88	435.86	NONE
09/20/90		19.90	437.84	NONE
12/18/90		19.32	438.42	NONE
02/21/91		23.02	434.72	NONE
03/20/91		20.01	437.73	NONE
04/10/91		19.81	437.93	NONE
05/20/91		26.62	431.12	NONE
06/20/91		32.45	425.29	NONE
MW-3				
09/20/89	456.97	20.98	435.99	NONE
10/12/89		19.66	437.31	NONE
06/21/90		21.72	435.25	NONE
09/20/90		19.72	437.25	NONE
12/18/90		19.21	437.76	NONE
02/21/91		22.36	434.61	NONE
03/20/91		19.79	437.18	NONE
04/10/91		19.35	437.62	NONE
05/20/91		25.86	431.11	NONE
06/20/91		32.55	424.42	NONE
MW-4				
02/21/91	456.97	22.01	434.96	NONE, ODOR
03/20/91		20.31	436.66	NONE, ODOR
04/10/91		19.55	437.42	NONE, ODOR
05/20/91		25.24	431.73	NONE, ODOR
06/20/91		DRY	---	---

Wellhead Elevation based on benchmark: Top of pin set in concrete in the most westerly monument at the intersection of East Stanley Boulevard and Fenton Avenue. Elevation taken as 455.896 mean sea level, City of Livermore datum.
Depth-to-water measurements in feet below the top of the well casing.

TABLE 2
CUMULATIVE RESULTS OF GROUND-WATER LABORATORY ANALYSES
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California
(Page 1 of 2)

Well Date	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1					
09/20/89	[illegible]	[illegible]	1.0	0.7	1
06/21/90	<20	<0.50	0.66	<0.50	<0.50
09/20/90	<50	<0.5	1.0	<0.5	1.8
12/18/90	<50	<0.5	1.8	<0.5	1.7
02/21/91	<50	[illegible]	2.3	<0.5	2.2
05/20/91	<30	[illegible]	<0.30	<0.30	<0.30
MW-2					
09/20/89	<50	<0.5	<0.5	<0.5	<1
06/21/90	<20	<0.50	<0.50	<0.50	<0.50
09/20/90	<50	<0.5	0.7	<0.5	1.4
12/18/90	<50	0.6	1.5	<0.5	1.9
02/21/91	<50	<0.5	<0.5	<0.5	<0.5
05/20/91	<30	<0.30	<0.30	<0.30	<0.30
MW-3					
09/20/89	[illegible]	[illegible]	0.6	1.1	<1
06/21/90	<20	<0.50	1.0	<0.50	<0.50
09/20/90	<50	<0.5	1.0	<0.5	1.9
12/18/90	<50	<0.5	1.7	<0.5	2.0
02/21/91	<50	<0.5	<0.5	<0.5	<0.5
05/20/91	[illegible]	[illegible]	1.1	6.2	8.4
MW-4					
02/21/91	[illegible]	410	7.6	30	47
05/20/91	[illegible]	150	6.0	4.4	3.1
Jan. 1990					
MCLs	---	1.0	—	680	1,750
ALs	---	-.-	100	---	---

See Notes on Page 2 of 2

TABLE 2
CUMULATIVE RESULTS OF GROUND-WATER LABORATORY ANALYSES
ARCO Station 6113
785 East Stanley Boulevard
Livermore, California
(Page 2 of 2)

Well Date	TPHd	TOG
MW-1		
09/20/89	<50	<5,000
06/21/90	<100	[illegible]
09/20/90	<50	[illegible]
12/18/90	NA	<5,000
02/21/91	NA	<5,000
05/20/91	NA	[illegible]
MW-2		
09/20/89	<50	<5,000
06/21/90	<100	<5,000
09/20/90	<50	<5,000
12/18/90	NA	<5,000
02/21/91	NA	<5,000
05/20/91	NA	[illegible]
MW-3		
09/20/89	<50	<5,000
06/21/90	<100	10,000
09/20/90	<50	<5,000
12/18/90	NA	<5,000
02/21/91	NA	<5,000
05/20/91	NA	[illegible]
MW-4		
02/21/91	NA	<5,000
05/20/91	NA	[illegible]

Results in parts per billion (ppb).
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
TOG = Total Oil and Grease
< = Less than the detection limits shown.
MCLs = Adopted Maximum Contaminant Levels in Drinking Water, DHS (October 1990)
Als = Recommended Drinking Water Action Levels, DHS (October 1990)
NA = Not Analyzed

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 in February 1991 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.

Before water samples were collected from the ground-water monitoring wells, the wells were purged until they were dewatered, or stabilization of the temperature, pH, and conductivity was obtained. Approximately 4 to 30 well casing volumes of water were purged before these characteristics stabilized. Turbidity measurements were also collected from the purged well water. The quantity of water purged from the wells was calculated as follows:

1 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 the approximate 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 ARCO's contract California-certified laboratory. The purge water was removed by H & H Ship Service Company on May 20, 1991. The Uniform Hazardous Waste Manifest is attached.

WELL PURGE DATA SHEET

Project Name: ARCO 6113 Job No. 69028.05

Date: May 20, 1991 Page 1 of 1

Well No. MW-1 Time Started 12:20

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
12:20	Begin purging MW-1			
12:26	5	72.7	7.99	6.08
12:32	10	67.0	7.88	5.44
12:38	15	64.1	7.70	5.52
12:44	20	64.5	7.80	5.54
12:51	25	65.0	7.77	5.58
12:58	30	65.7	7.81	5.61
13:04	35	65.4	7.77	5.59
13:10	40	64.9	7.78	5.60
13:17	45	64.6	7.76	5.58
13:23	50	65.0	7.80	5.53
13:30	55	65.5	7.79	5.54
13:30	Stop purging MW-1			

Notes:

Depth to Bottom (feet)	:	43.0
Depth to Water - initial (feet)	:	25.95
Depth to Water - final (feet)	:	26.00
% recovery	:	99.7%
Time Sampled	:	16:00
Gallons per Well Casing Volume	:	2.78
Gallons Purged	:	55.0
Well Casing Volumes Purged	:	19.77
Approximate Pumping Rate (gpm)	:	0.79

WELL PURGE DATA SHEET

Project Name: ARCO 6113 Job No. 69028.05

Date: May 20, 1991 Page 1 of 1

Well No. MW-2 Time Started 10:55

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
10:55	Begin purging MW-2			
11:01	5	63.2	8.03	5.61
11:07	10	63.2	7.80	5.47
11:13	15	63.3	7.81	5.42
11:19	20	63.4	7.86	5.41
11:25	25	64.8	8.01	5.43
11:33	30	64.9	7.80	5.48
11:40	35	64.9	7.81	5.47
11:46	40	64.8	7.81	5.51
11:52	45	65.5	7.85	5.51
11:58	50	64.4	7.82	5.44
12:05	55	64.5	7.80	5.47
12:05	Stop purging MW-2			

Notes:

Depth to Bottom (feet)	:	37.8
Depth to Water - initial (feet)	:	26.62
Depth to Water - final (feet)	:	26.76
% recovery	:	98.8%
Time Sampled	:	13:10
Gallons per Well Casing Volume	:	1.82
Gallons Purged	:	55.0
Well Casing Volumes Purged	:	30.15
Approximate Pumping Rate (gpm)	:	0.79

WELL PURGE DATA SHEET

Project Name: ARCO 6113 Job No. 69028.05

Date: May 20, 1991 Page 1 of 1

Well No. MW-3 Time Started 9:30

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
9:30	Begin purging MW-3			
9:37	5	62.5	7.73	7.18
9:45	10	59.9	7.86	6.62
9:52	15	60.6	7.81	6.56
9:58	20	60.6	7.74	6.52
10:04	25	60.7	7.82	6.46
10:10	30	60.6	7.79	6.45
10:16	35	60.8	7.79	6.47
10:22	40	60.7	7.81	6.46
10:28	45	60.9	7.80	6.45
10:34	50	61.9	7.78	6.46
10:40	55	62.4	7.81	6.47
10:40	Stop purging MW-3			

Notes:

Depth to Bottom (feet)	:	38.1
Depth to Water - initial (feet)	:	25.86
Depth to Water - final (feet)	:	25.96
% recovery	:	99.2%
Time Sampled	:	12:45
Gallons per Well Casing Volume	:	2.00
Gallons Purged	:	55.0
Well Casing Volumes Purged	:	27.50
Approximate Pumping Rate (gpm)	:	0.79

WELL PURGE DATA SHEET

Project Name: ARCO 6113 Job No. 69028.05

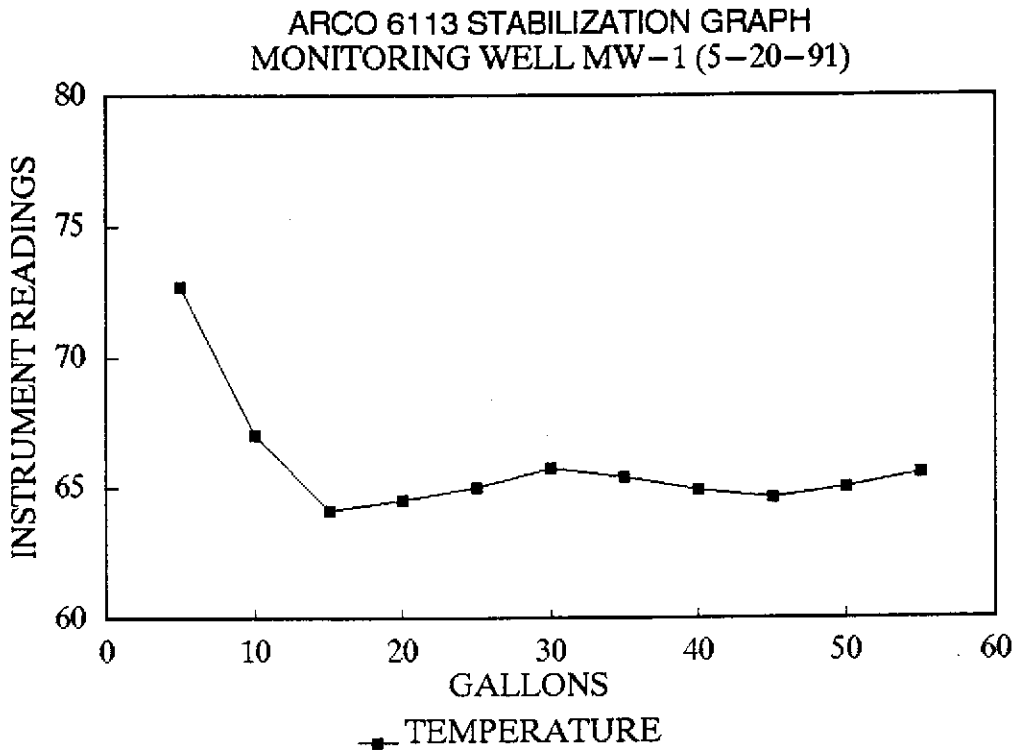
Date: May 20, 1991 Page 1 of 1

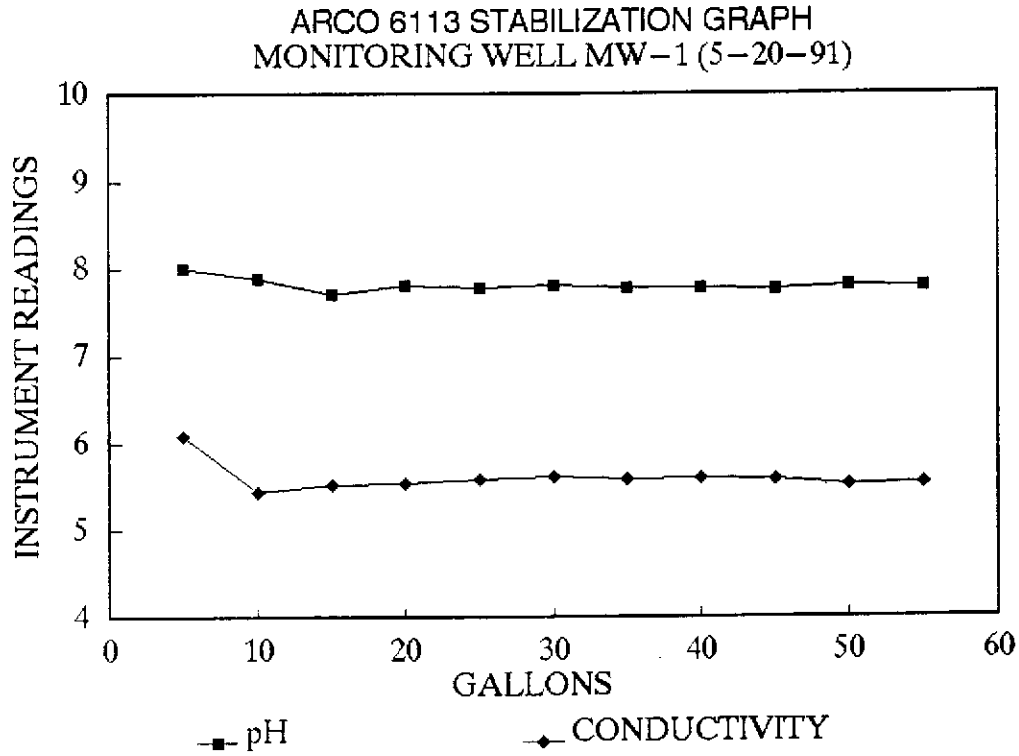
Well No. MW-4 Time Started 10:00

Time (hr)	Gallons (cum.)	Temp. (F)	pH	Conduct. (micromoh)
10:00	Begin bailing MW-4			
10:00	0.5	72.8	8.09	7.89
10:15	1	67.9	7.74	7.86
10:30	1.5	66.1	7.50	7.90
11:00	2	65.4	7.45	7.79
11:20	2.5	66.3	7.39	7.75
11:40	2.75	66.6	7.22	7.73
13:50	3	66.1	7.17	7.70
14:10	3.75	65.6	7.20	7.58
14:20	4	64.6	7.08	7.60
15:10	5	64.4	7.20	7.56
15:10	Stop purging MW-4			

Notes:

Depth to Bottom (feet)	:	26.8
Depth to Water - initial (feet)	:	25.24
Depth to Water - final (feet)	:	25.64
% recovery	:	74.5%
Time Sampled	:	16:30
Gallons per Well Casing Volume	:	1.02
Gallons Purged	:	5.0
Well Casing Volumes Purged	:	4.91
Approximate Pumping Rate (gpm)	:	0.02


ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-1 (5-20-91)
INSTRUMENT READINGS
80
75
70
65
60
0
10
20
30
40
50
60
GALLONS
TEMPERATURE


ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-1 (5-20-91)
INSTRUMENT READINGS
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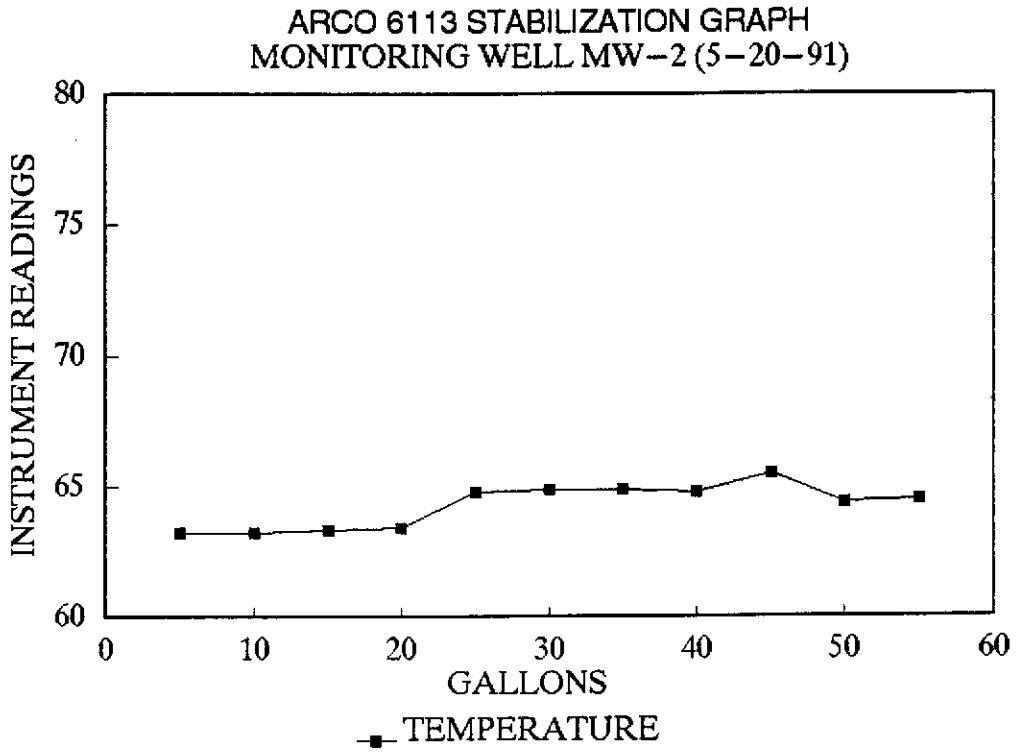
8
7
6
5
4
0
10
20
30
40
50
60
GALLONS
pH
CONDUCTIVITY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MONITORING WELL MW-2 (5-20-91)
INSTRUMENT READINGS
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65
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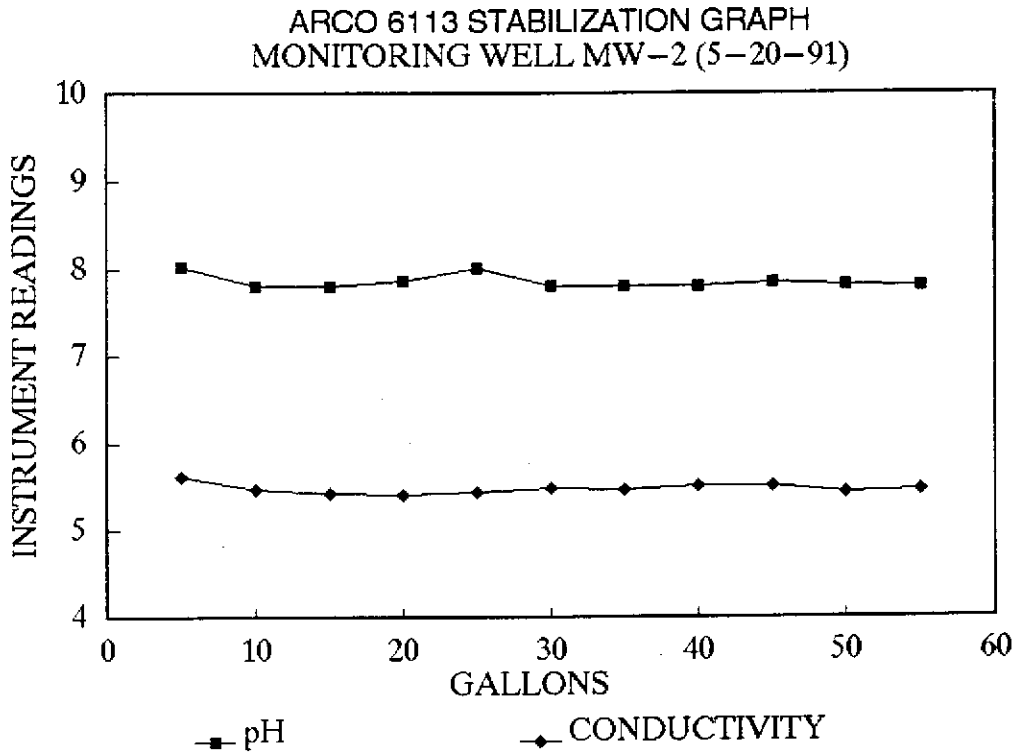
0
10
20
30
40
50
60
GALLONS
TEMPERATURE


ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-2 (5-20-91)
INSTRUMENT READINGS
10
9
8
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6
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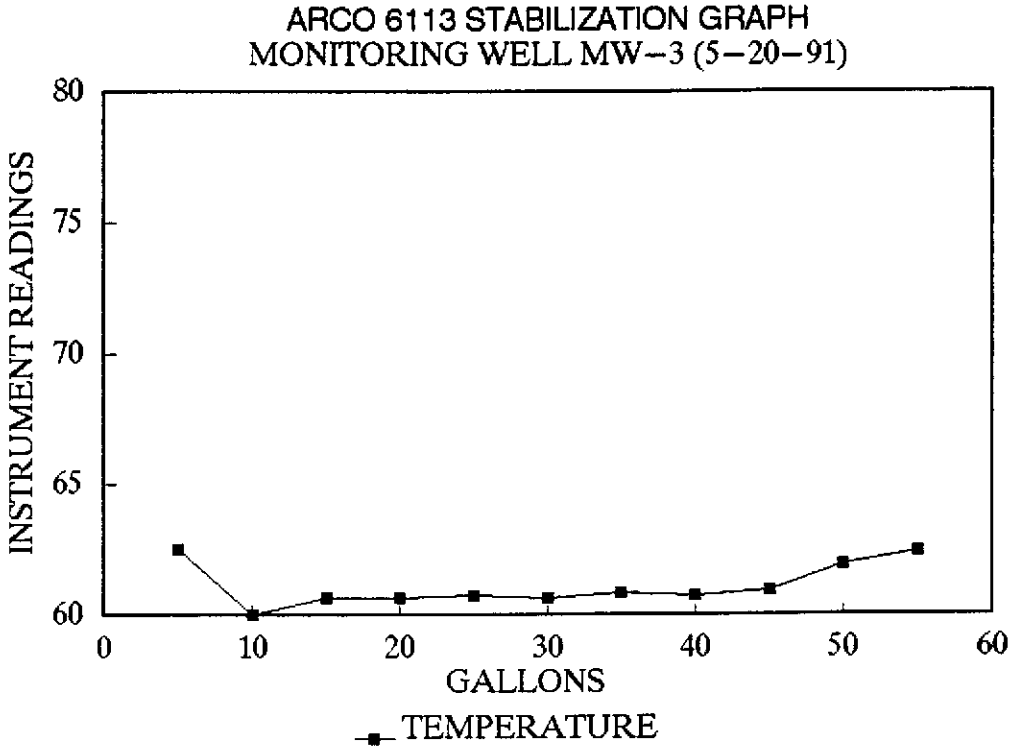
4
0
10
20
30
40
50
60
GALLONS
pH
CONDUCTIVITY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MONITORING WELL MW-3 (5-20-91)
INSTRUMENT READINGS
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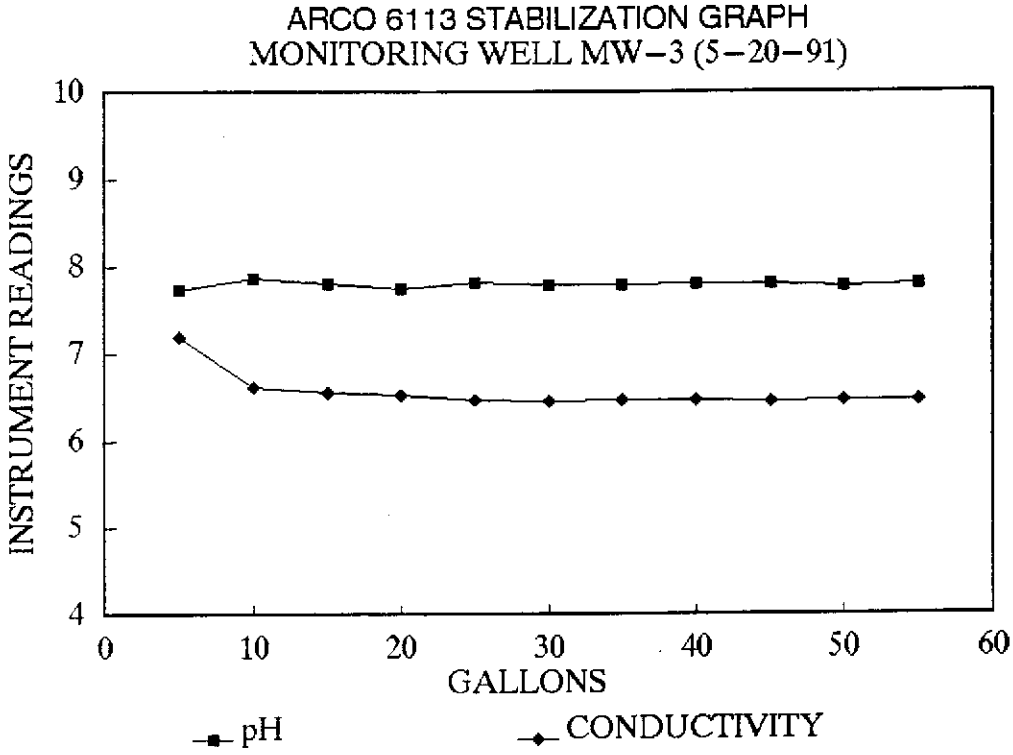
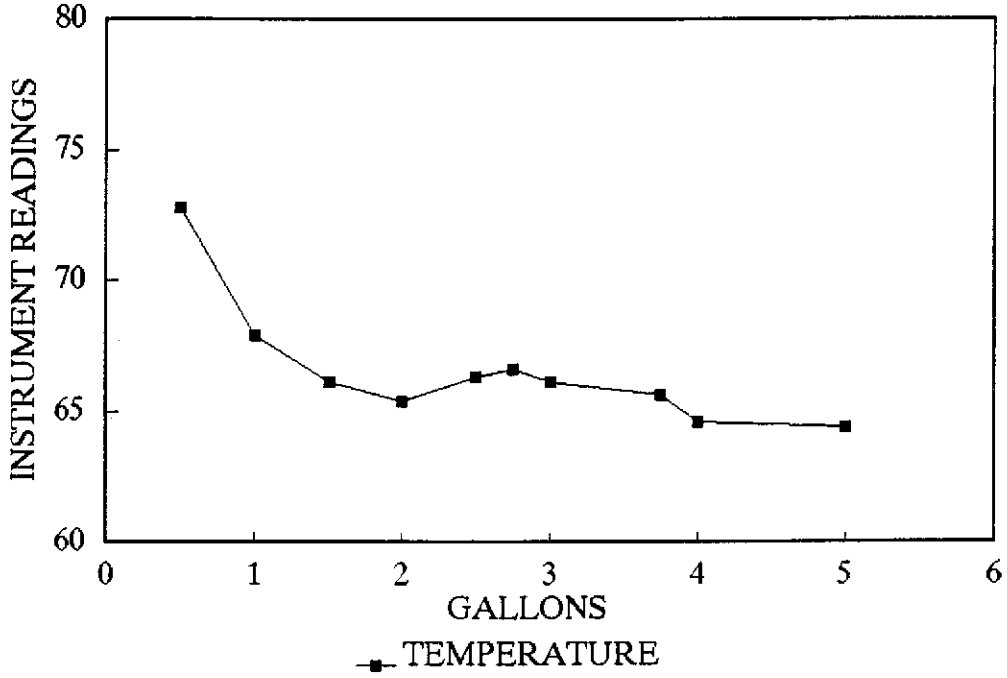
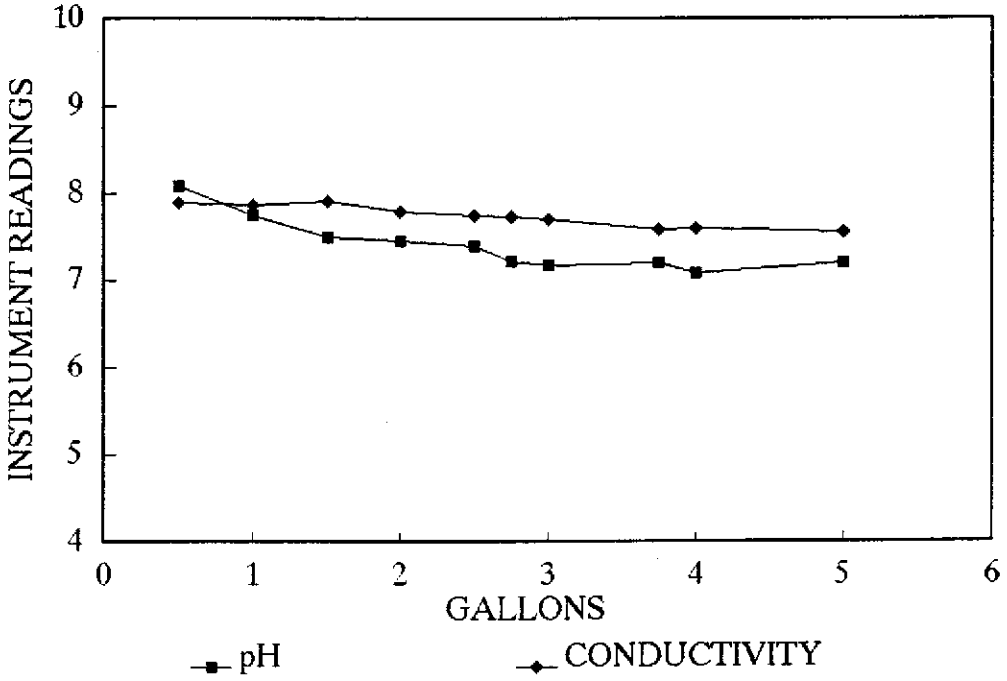
75
70
65
60
0
10
20
30
40
50
60
GALLONS
TEMPERATURE


ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-3 (5-20-91)
INSTRUMENT READINGS
10
9
8
7
6
5
4
0
10
20
30
40
50
60
GALLONS
pH
CONDUCTIVITY

ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-4 (5-20-91)



ARCO 6113 STABILIZATION GRAPH
MONITORING WELL MW-4 (5-20-91)



ARCO Products Company
Division of Atlantic Richfield Company

Task Order No. 6113-91-5A

Chain of Custody

ARCO Facility no. 6113	City (Facility) LIVERMORE	Project manager (Consultant) MARC A BRIGGS	Laboratory name SEQUOIA
ARCO engineer CHUCK CARMEL	Telephone no. (ARCO) 415-571-2434	Telephone no. (Consultant) 408-264-7723	Fax no. (Consultant) 408-264-2435
Consultant name APPLIED GEOSYSTEMS	Address (Consultant) 3315 ALMADEN EXPRESSWAY, #34, SAN JOSE CA 95118		Contract number 07-073

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 M602/8020/8015	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 ☐		HOLD
W-RINSATE-MW3				X		X	X	5/20/91	1220		X								105285	7		
W-25-MW3				X		X	X		1220		X								105285	8		
W-RINSATE-MW2				X		X	X		1310													X
W-26-MW2				X		X	X		1310		X								105285	9		
W-RINSATE-MW1				X		X	X		1600													X
W-26-MW1				X		X	X		1600		X								105286	0		
W-RINSATE-MW4				X		X	X		1630													X
W-25-MW4				X		X	X	5/20/91	1630		X								105286	1		

Method of shipment: COURIER

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

Condition of sample: GOOD

Temperature received: COLD

	Date	Time	
Relinquished by sampler: Marc A Briggs	5/21/91	1030	Received by: Craig Lee 5/21/91 1030 AM
Relinquished by: Craig Lee	5/21/91	1207 PM	Received by:
Relinquished by:	Date	Time	Received by laboratory: BNCL Date 5/21/91 Time 1207

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APPC-3292 (2-91)

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems
3315 Almaden Expressway, Ste 34
San Jose, CA 95118
Attention: Marc Briggs

Project: Arco, #6113, Livermore

Enclosed are the results from 5 water samples received at Sequoia Analytical on May 21,1991. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
1052857	Water, W- Rinsate, MW3	5/20/91	EPA 5030/8015/8020
1052858 A-D	Water, W-25-MW3	5/20/91	EPA 5030/8015/8020
1052859 A-D	Water, W-26-MW2	5/20/91	EPA 5030/8015/8020
1052860 A-D	Water, W-26-MW1	5/20/91	EPA 5030/8015/8020
1052861 A-D	Water, W-25-MW4	5/20/91	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems	Client Project ID:	Arco, #6113, Livermore	Sampled:	May 20, 1991
3315 Almaden Expressway, Ste 34	Matrix Descript:	Water	Received:	May 21, 1991
San Jose, CA 95118	Analysis Method:	EPA 5030/8015/8020	Analyzed:	5/22-23/91
Attention: Marc Briggs	First Sample #:	105-2857	Reported:	Jun 3, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
105-2857	W- Rinsate, MW3	N.D.	N.D.	N.D.	N.D.	N.D.
1052858 A-D	W-25-MW3	97	1.3	1.1	6.2	8.4
1052859 A-D	W-26-MW2	N.D.	N.D.	N.D.	N.D.	N.D.
1052860 A-D	W-26-MW1	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems	Client Project ID:	Arco, #6113, Livermore	Sampled:	May 20, 1991
3315 Almaden Expressway, Ste 34	Matrix Descript:	Water	Received:	May 21, 1991
San Jose, CA 95118	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 23, 1991
Attention: Marc Briggs	First Sample #:	105-2861 A - D	Reported:	Jun 3, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
1052861 A-D	W-25-MW4	1,400	150	6.0	4.4	3.1
Detection Limits:		**300**	**3.0**	**3.0**	**3.0**	**3.0**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems
3315 Almaden Expressway, Ste 34
San Jose, CA 95118
Attention: Marc Briggs

Client Project ID: Arco, #6113, Livermore

QC Sample Group: 1052857 - 2861

Reported: Jun 3, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	S. Hoffman	S. Hoffman	S. Hoffman	S. Hoffman
Reporting Units:	ng	ng	ng	ng
Date Analyzed:	May 23, 1991	May 23, 1991	May 23, 1991	May 23, 1991
QC Sample #:	GBLK052391 MS/MSD	GBLK052391 MS/MSD	GBLK052391 MS/MSD	GBLK052391 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	100	100	100	300
Conc. Matrix Spike:	110	110	110	320
Matrix Spike % Recovery:	110	110	110	110
Conc. Matrix Spike Dup.:	110	110	110	320
Matrix Spike Duplicate % Recovery:	110	110	110	110
Relative % Difference:	0.0	0.0	9.5	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

$$\text{\% Recovery:} \quad \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$$

SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems
3315 Almaden Expressway, Ste 34
San Jose, CA 95118
Attention: Marc Briggs

Client Project ID: Arco, #6113, Livermore

QC Sample Group: 1052857 - 2861

Reported: Jun 3, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	S. Hoffman	S. Hoffman	S. Hoffman	S. Hoffman
Reporting Units:	ng	ng	ng	ng
Date Analyzed:	May 22, 1991	May 22, 1991	May 22, 1991	May 22, 1991
QC Sample #:	GBLK052291 MS/MSD	GBLK052291 MS/MSD	GBLK052291 MS/MSD	GBLK052291 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	100	100	100	300
Conc. Matrix Spike:	98	98	98	300
Matrix Spike % Recovery:	98	98	98	100
Conc. Matrix Spike Dup.:	100	99	100	300
Matrix Spike Duplicate % Recovery:	100	99	100	100
Relative % Difference:	2.0	1.0	2.0	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems	Client Project ID:	Arco.#6113, Livermore, (Additional Analysis)	Sampled:	May 20, 1991
3315 Almaden Expressway, Ste 34	Matrix Descript:	Water	Received:	Jun 6, 1991
San Jose, CA 95118	Analysis Method:	SM 5520 B&F (Gravimetric)	Extracted:	Jun 7, 1991
Attention: Marc Briggs	First Sample #:	A1052858	Analyzed:	Jun 7, 1991
			Reported:	Jun 10, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
1052858 A-C	W-25-MW3	N.D.
1052859 A-C	W-26-MW2	N.D.
1052860 A-B	W-26-MW1	N.D.
1052861 A-B	W-25-MW4	N.D.

Detection Limits:	75

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

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Applied GeoSystems
3315 Almaden Expressway, Ste 34
San Jose, CA 95118
Attention: Marc Briggs

Client Project ID: Arco,#6113, Livermore, (Additional Analysis)
QC Sample Group: 1052858 - 61
Reported: Jun 11, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Ttl. Oil & Grease
Method:	SM5520B&F
Analyst:	L.Laikhtman
Reporting Units:	mg/L
Date Analyzed:	Jun 7, 1991
QC Sample #:	BLK060791
Sample Conc.:	N.D.
Spike Conc. Added:	100
Conc. Matrix Spike:	86
Matrix Spike % Recovery:	86
Conc. Matrix Spike Dup.:	90
Matrix Spike Duplicate % Recovery:	90
Relative % Difference:	4.5

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Bjorn A. Bjorkman
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-91)
Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on Back of Page 6 and Front of Page 7

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address	A. State Manifest Document Number: 30523047
4. Generator's Phone ( )	B. State Generator's ID
5. Transporter 1 Company Name / 6. US EPA ID Number	C. State Transporter's ID: 200545
	D. Transporter's Phone
7. Transporter 2 Company Name / 8. US EPA ID Number	E. State Transporter's ID
	F. Transporter's Phone
9. Designated Facility Name and Site Address / 10. US EPA ID Number	G. State Facility's ID
	H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.			20		State / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above	K. Handling Codes for Wastes Listed Above
	a. / b. / c. / d.

15. Special Handling Instructions and Additional Information

16.

GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR

IN CASE OF AN EMERGENCY CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A
EPA 8700—22
(Rev. 6-89) Previous editions are obsolete.

Do Not Write Below This Line