Applied GeoSystems, Inc.
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Working To Restore Nature

TRANSMITTAL

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2435

TO: MR. ROB WESTON
ACHCSA-DEH
80 SWAN WAY, ROOM 200
OAKLAND, CALIFORNIA 94621

DATE: 5/8/92
PROJECT NUMBER: 69034.06
SUBJECT: ARCO STATION 601,
712 LEWELLING BOULEVARD,
SAN LEANDRO, CALIFORNIA.

FROM: LOU LEET
TITLE: STAFF GEOLOGIST

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COPIES	DATED	NO.	DESCRIPTION
1	5/4/92		FINAL-LETTER REPORT QUARTERLY GROUNDWATER MONITORING FIRST QUARTER 1992 AT THE ABOVE SUBJECT SITE.

THESE ARE TRANSMITTED as checked below:

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REMARKS: COPIES OF THIS REPORT HAS BEEN SENT TO YOU AT THE REQUEST OF MR. MICHAEL WHELAN, ARCO PRODUCTS COMPANY.

Copies: 1 to project file no. 69034.06

*Revision Date: 11/21/91
*File Name: TRANSMT.PRJ

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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2435

May 22, 1992
0505LSET.601
61026.01

Mr. Larry Seto
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94624

Subject: **Site Status Update for** ARCO Station 601, 712 Lewelling Blvd., San Leandro, California.

Dear Mr. Seto:

This letter provides an update on investigation and remedial activities conducted for the above-referenced site. This update covers **site activities performed during April 1992, and** site activities anticipated for the month of May 1992.

April 1992 Activities

- Performed groundwater monitoring.
- Performed monthly product removal from wells MW-1, MW-3, and MW-5.
- Continue with design and preparation of plans and specifications for a groundwater remediation system at the site.
- Submitted Fourth Quarter 1991 Groundwater Monitoring Report to ARCO and governing agencies.
- Sent Mr. Larry Seto of ACHCSA a correspondence on April 29, 1992, describing repeated attempts in gaining offsite access to install offsite wells MW-9 and MW-10. Enclosed in the correspondence were copies of all letters sent and responses from the subject property owner. A copy of the correspondence was sent to Mr. Eddy So of the Regional Water Quality Control Board.

Work Anticipated for May 1992

- Monthly groundwater monitoring will continue.
- Monthly removal of floating product will continue.
- Continue with design and preparation of plans and specifications for a groundwater remediation system at the site.

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

Sincerely,
RESNA Industries

Robert D. Campbell
Staff Geologist

Joel Coffman
Project Geologist

cc: Mr. Michael Whelan, ARCO Products Company

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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2435

LETTER REPORT
QUARTERLY GROUNDWATER MONITORING
First Quarter 1992
at
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

69034.06 5/4/92

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3315 Almaden Expressway, Suite 34
San Jose, CA 95118
Phone: (408) 264-7723
Fax: (408) 264-2435

May 4, 1992
0504MWHE
69034.06

Mr. Michael Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: First Quarter 1992 Groundwater Monitoring Report for ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), this letter report summarizes the results of first quarter 1992 groundwater monitoring performed by ARCO's contractor, EMCON Associates (EMCON) of San Jose, California at the above-referenced site. The objectives of this quarterly groundwater monitoring are to evaluate changes in the groundwater flow direction and gradient, and changes in concentrations of petroleum hydrocarbons in the local groundwater associated with four former underground gasoline-storage tanks and a former waste-oil tank at the site. The field work and laboratory analyses of groundwater samples during this quarter was performed under the direction of EMCON and included measuring depths to groundwater, subjectively analyzing groundwater for the presence of petroleum product, collecting groundwater samples from the wells for laboratory analyses, and directing a State-certified laboratory to analyze the groundwater samples. Field procedures and acquisition of field data were performed under the direction of EMCON; evaluation and warrant of their field data and field protocols is beyond RESNA Industries' (RESNA's) scope of work. RESNA's scope of work was limited to interpretation of field and laboratory analyses data, which included evaluating trends in reported hydrocarbon concentrations in the local groundwater, the groundwater gradient, and direction of groundwater flow beneath the site.

The operating Arco Station 601 is located on the southwestern corner of Lewelling Boulevard and Washington Avenue in San Leandro, California, as shown on the Site Vicinity Map, Plate 1.

Prior to the present monitoring, RESNA (formerly Applied GeoSystems [AGS]) and others performed limited subsurface environmental investigations related to the underground gasoline-storage tanks at the site. RESNA performed an environmental site assessment, including the drilling of five borings (B-1 through B-5), in August 1989 prior to tank replacement at the site (AGS, November 9, 1989). GeoStrategies (GSI) observed the 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 recovery well (RW-1) in the backfill of the former waste-oil tank excavation (GSI, June 29, 1990). In June 1990, RESNA drilled and sampled nine soil borings, and installed and sampled three groundwater monitoring wells (MW-1, MW-2, and MW-3) (AGS, December 14, 1990). RESNA began quarterly groundwater monitoring of the three onsite wells in July 1990. In May 1991, RESNA installed and sampled five additional groundwater monitoring wells (MW-4 through MW-8) and performed a vapor extraction test at the site (RESNA, October 17, 1991). The results of these investigations are presented in the reports listed in the references attached to this letter report. The locations of the groundwater monitoring wells and pertinent site features are shown on the Generalized Site Plan, Plate 2.

Groundwater Sampling and Gradient Evaluation

Depth to water measurements (DTW) were performed by EMCON field personnel on January 19, February 20, and March 23, 1992. Quarterly sampling was performed by EMCON field personnel on March 23, 1992. The results of EMCON's field work on the site, including DTW measurements and subjective analysis for the presence of product in the groundwater in MW-1 through MW-8, are presented on EMCON's field report sheets. These data are included in Appendix A.

The DTW levels, depth of well, wellhead elevations, groundwater elevations, and subjective observations for the presence of product in the groundwater from MW-1 through MW-8 for this quarter and previous quarterly groundwater monitoring at the site are summarized in Table 1, Cumulative Groundwater Monitoring Data. EMCON's DTW measurements were used to evaluate groundwater elevations.

According to EMCON's field data sheets, on March 23, 1992, product sheen was observed in the groundwater from MW-1 during DTW measurements and roughly 0.02 feet of floating product was measured in well MW-1 during the purging. Product sheen was noted in MW-2 on March 23, 1992. Roughly 0.01 feet of floating product was measured in MW-3 on January 19, and February 20, 1992, and product sheen was observed in MW-3 on March 23, 1992 (see Appendix A).

Groundwater elevations in wells MW-1 through MW-8 fluctuated up to about 2 feet between January 19 and March 23, 1992. Residual water, consisting of generally less than 6 inches of remnant groundwater trapped at the bottom of the well, was encountered in MW-4 during the

January through March monitorings, and in MW-6 during the January monitoring. As a result, DTW measurements from MW-4 were not used to evaluate groundwater gradients for January through March, and the DTW measurement from MW-6 was not used to evaluate groundwater gradients for January. Because the January to March DTW measurements from well MW-2 are significantly shallower than those in nearby wells by roughly 1 to 1-1/2 feet, the groundwater in MW-2 appears to be locally perched. Thus, the DTW measurements for MW-2 were not used to interpret the local groundwater gradient. The groundwater gradient interpreted from the January 1992 groundwater monitoring is shown on the Groundwater Gradient Map, Plates 3. The groundwater gradient was not interpreted from EMCON's February and March DTW measurements due to anomalous readings these months. The gradients was nearly flat with flow direction generally toward the west.

Groundwater monitoring wells MW-2 and MW-4 through MW-8 were purged and sampled by EMCON field personnel on March 23, 1992. Because subjective analysis indicated petroleum product was present in MW-2 and MW-3 groundwater samples were not taken from these wells for laboratory analyses. Approximately 1 to 5 well volumes were purged prior to sampling. EMCON's water sample field data sheets, field report sheets and Summary of Groundwater Monitoring Data, are included in Appendix A. The purge water was removed from the site by a licensed hazardous waste hauler; the Monitoring Well Purge Water Disposal Form is also included in Appendix A.

Laboratory Methods and Analyses

Under the direction of EMCON, groundwater samples collected from wells MW-2, and MW-4 through MW-8 were analyzed by Columbia Analytical Services, Inc. located in San Jose, California (Hazardous Waste Testing Laboratory Certification No. 1426). The water samples from MW-2, and MW-4 through MW-8 were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using modified Environmental Protection Agency (EPA) Methods 5030/8020. Concentrations of TPHg and benzene in the groundwater are shown on Plate 6, TPHg Concentrations in Groundwater and Plate 7, Benzene Concentrations in Groundwater. As requested by the California Environmental Protection Agency Department of Toxic Substance Control (Alameda County Health Care Services, December 26, 1991) one well, MW-8, was also analyzed for volatile organic compounds (VOCs) using EPA method 624. Well MW-5 was also analyzed for lead by EPA Method 7421. The Chain of Custody Records and Laboratory Analysis Reports are included in Appendix A. Results of these and previous water analyses are summarized in Table 2, Cumulative Results of Laboratory Analyses of Groundwater.

Results of this quarter's laboratory results indicate:

- TPHg was detected in groundwater samples from MW-5 at a concentration of 150,000 parts per billion (ppb), from MW-6 at 75,000 ppb, from MW-2 at 33,000 ppb, from MW-4 at 24,000 ppb, from MW-8 at 8,000 ppb, and from MW-7 at 270 ppb.

- Benzene was detected in groundwater samples from MW-5 at a concentration of 24,000 ppb, from MW-6 at 19,000 ppb, from MW-2 at 4,100 ppb, from MW-8 at 18 ppb, and from MW-7 at 10 ppb.

- Toluene was detected in groundwater samples from MW-5 at a concentration of 31,000 ppb, from MW-6 at 10,000 ppb, from MW-2 at 5,000 ppb, from MW-4 at 4,000 ppb, from MW-7 at 0.5 ppb, and nondetectable (less than 5.0 ppb) from MW-8. The detection limit for MW-8 was reportedly raised by the laboratory due to high analyte concentration requiring sample dilution.

- Ethylbenzene was detected in groundwater samples from MW-5 at a concentration of 4,400 ppb, from MW-6 at 1,600 ppb, from MW-2 at 1,100 ppb, from MW-4 at 580 ppb, from MW-8 at 320 ppb, and from MW-7 at 3.0 ppb.

- Total xylenes were detected in groundwater samples from MW-5 at a concentration of 23,000 ppb, from MW-6 at 8,600 ppb, from MW-2 at 5,300 ppb, from MW-4 at 3,100 ppb, from MW-8 at 42 ppb, and from MW-7 at 13 ppb.

- Lead was detected in a groundwater sample from well MW-5 at a concentration of 28 ppb.

The following general trends were noted in reported hydrocarbon concentrations in groundwater from the four monitoring wells since quarterly monitoring began at the site on July 1990. Generally, reported concentrations of TPHg and BTEX increased slightly to moderately in the groundwater from wells MW-2, MW-4, MW-5, and MW-8. Trends for the groundwater from wells MW-6 and MW-7 have not been established because these wells had previously been dry and were sampled for the first time this quarter. Relatively low concentrations TPHg and BTEX were detected in groundwater from MW-7 and relatively high concentrations of TPHg and BTEX were detected in groundwater from MW-6.

Product Removal

Floating product is removed on a monthly basis. A Horner EZY Product Skimmer was installed in well MW-3 on December 24, 1991. Quantities of floating product and water removed are presented on Table 3, Approximate Cumulative Product Recovered. The total product recovered at the site is 3.43 gallons; there was no product present during this quarter.

Conclusions and Recommendations

Groundwater at this site has been impacted by petroleum hydrocarbons. The extent of the petroleum hydrocarbons has not been defined.

RESNA recommends continuing quarterly groundwater sampling at this site, laboratory analyses of groundwater samples for TPHg and BTEX, and monthly measurements of groundwater levels to evaluate trends of petroleum hydrocarbons, and changes in groundwater gradient and floating product with time. RESNA also recommends continued monthly product removal as an interim remediation method.

Schedule

Monthly groundwater monitoring and quarterly groundwater sampling will continue to be performed by ARCO's contracted sampler. At ARCO's request, RESNA will continue to analyze and report monthly and quarterly groundwater monitoring data from this site to evaluate trends in petroleum hydrocarbons, and changes in groundwater gradient with time. RESNA will also make monthly site visits to measure and remove product from well MW-1 and MW-3 and adjust the skimmer as necessary. An offsite investigation to further delineate the extent of petroleum hydrocarbons is pending offsite access. A work plan for remediation at this site was submitted to the regulatory agencies on March 5, 1992 and work will be initiated upon approval.

RESNA also recommends that copies of this report be forwarded to:

Mr. Rob Weston
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

Mr. Eddy So
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

Mr. Guy Telham
San Leandro Fire Department
835 East 14th Street
San Leandro, California 94577

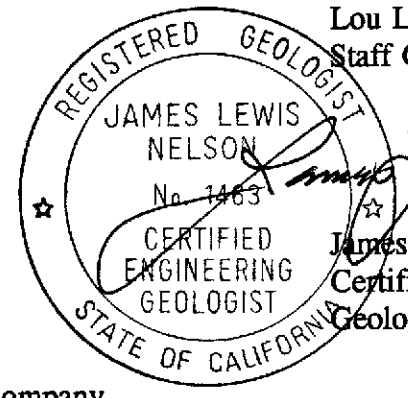
Ms. Eileen Hughes
California Environmental Protection Agency
Department of Toxic Substance Control
700 Heinze Avenue, Suite 200
Berkeley, California 94710

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

Sincerely,
RESNA Industries

L. J. Leet

Lou Leet
Staff Geologist



James L. Nelson
Certified Engineering
Geologist No. 1463

cc: H.C. Winsor, ARCO Products Company

RESNA

Enclosures: References
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan
Plate 3, Groundwater Gradient Map, January 19, 1992
Plate 4, Groundwater Gradient Map, February 20, 1992
Plate 5, Groundwater Gradient Map, March 23, 1992
Plate 6, TPHg Concentration in Groundwater, March 23, 1992
Plate 7, Benzene Concentration in Groundwater, March 23, 1992

Table 1, Cumulative Groundwater Monitoring Data
Table 2, Cumulative Results of Laboratory Analyses of Groundwater
Table 3, Approximate Cumulative Product Recovered

Appendix A: EMCON's Field Reports (3), Summary of Groundwater Monitoring Data, Certified Analytical reports with Chain-of-Custody, and Water Sample Field Data Sheets
Monitoring Well Purge Disposal Form

REFERENCES

Alameda County Health Care Services. December 26, 1991, Letter regarding CAL-EPA Regional Hydrogeology and Contamination Study, Central San Leandro.

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

Applied GeoSystems, November 30, 1990, Letter Report Quarterly Ground-Water Monitoring Fourth Quarter 1990. AGS Report 69034-3.

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

Applied GeoSystems, March 24, 1991, Letter Report Quarterly Ground-Water Monitoring First Quarter 1991. (Letter Report 0130ccar, AGS 69034-3).

Applied GeoSystems, July 3, 1991, Letter Report Quarterly Ground-Water Monitoring, Second Quarter 1991. AGS 69034.03.

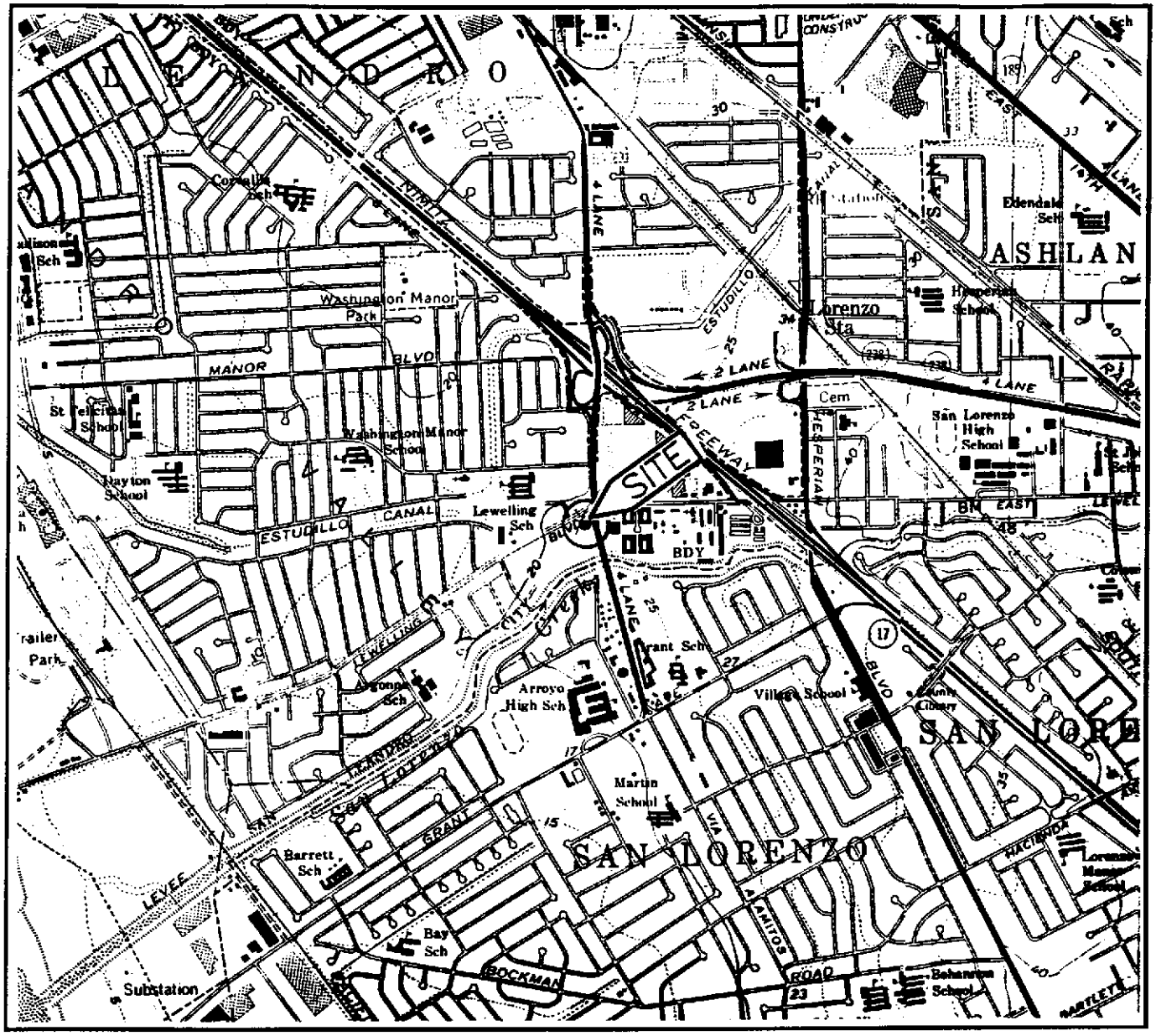
GeoStrategies, Inc., June 29, 1990, Tank Replacement Report, ARCO Service Station #601, San Leandro, California. GSI Report 7918-2.

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

RESNA Industries, October 17,1991, Subsurface Environmental Assessment and Vapor Extraction Test at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.04.

RESNA Industries, November 22, 1991, Letter Report Quarterly Groundwater Monitoring, Third Quarter 1991 at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.03.

RESNA Industries, April 9, 1992, Letter Report Quarterly Groundwater Monitoring, Fourth Quarter 1991, at ARCO Station 601, 712 Lewelling Boulevard, San Leandro, California. RESNA 69034.06.



Base: U.S. Geological Survey
7.5–Minute Quadrangles
Hayward/San Leandro,
California
Photorevised 1984

N

LEGEND

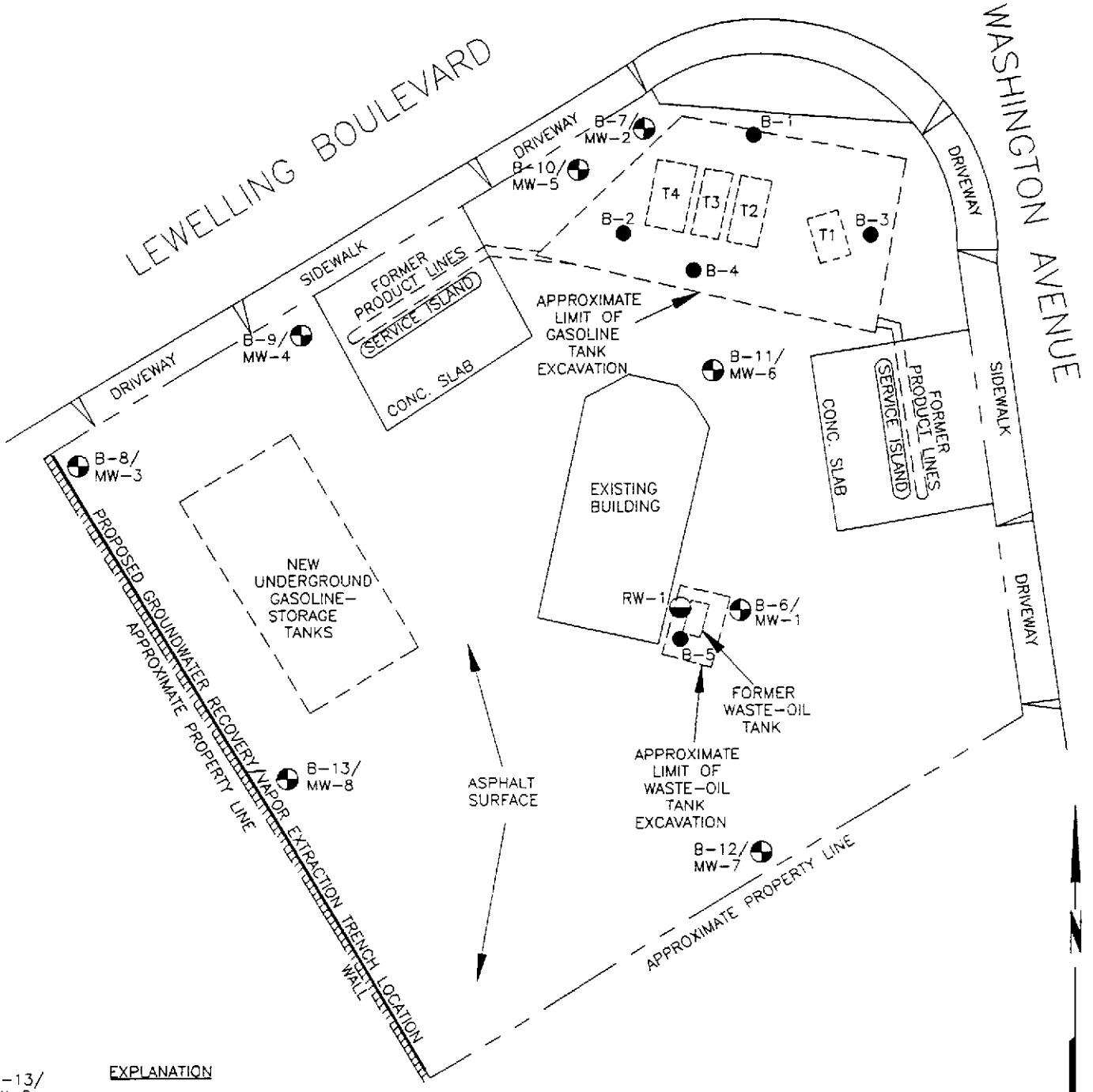
⊙ = Site Location

Approximate Scale

2000 1000 0 2000 4000

feet

RESNA	**SITE VICINITY MAP** **ARCO Station 601** **712 Lewelling Boulevard** **San Leandro, California**	**PLATE** **1**
PROJECT 69034.06		



EXPLANATION

B-13/ MW-8 = Groundwater monitoring well (RESNA, 1990 and 1991)

T4 = Former underground gasoline storage tank

RW-1 = Product recovery well (GeoStrategies, January 1990)

B-5 = Soil boring (Applied GeoSysytems, August 1989)

30 15 0 30 60

Approximate Scale in Feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

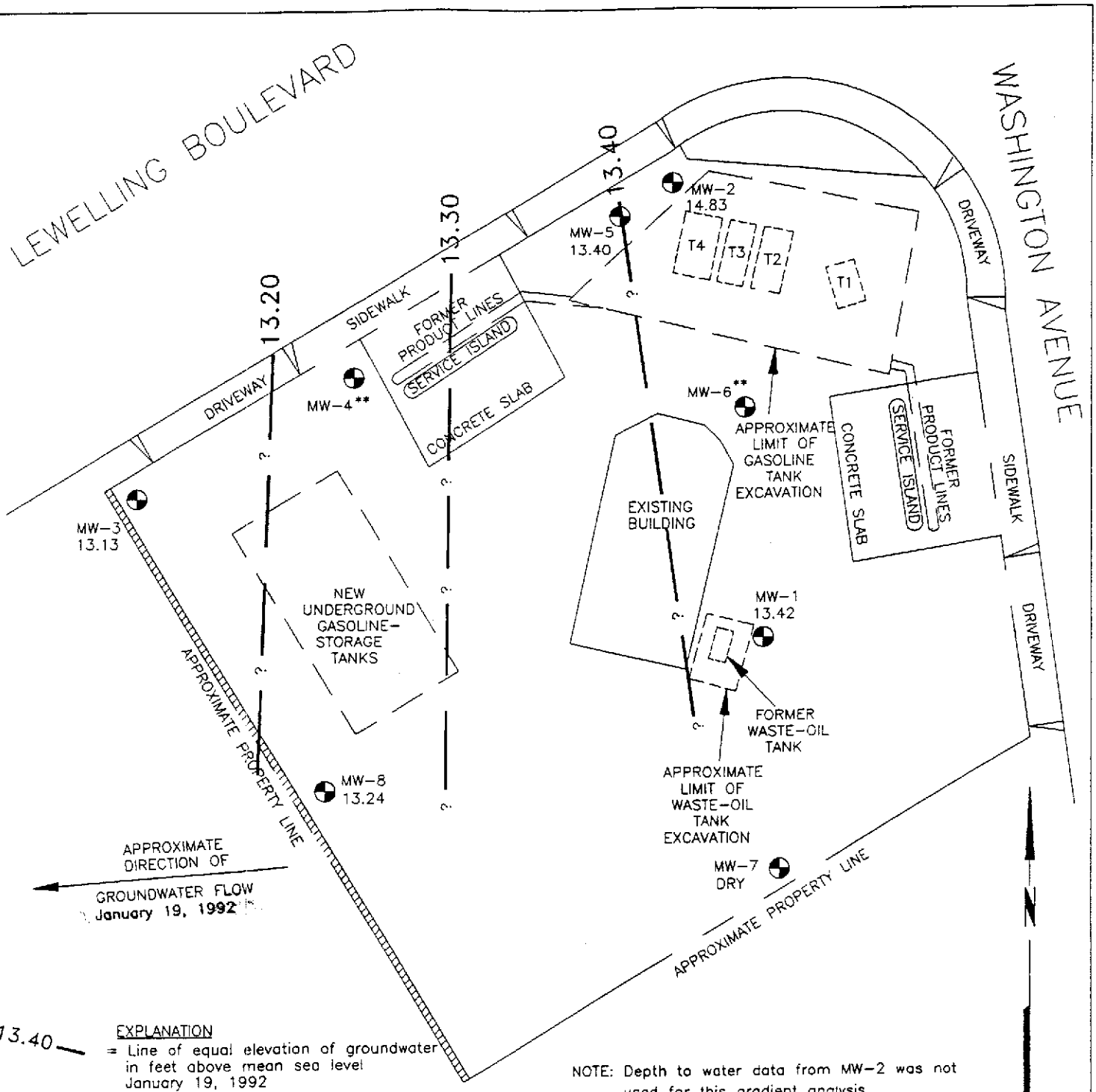
RESNA

PROJECT 69034.06

GENERALIZED SITE PLAN

ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 2



13.40 — EXPLANATION

= Line of equal elevation of groundwater in feet above mean sea level January 19, 1992

13.42 = Elevation of groundwater in feet above mean sea level, January 19, 1992

MW-8 = Groundwater monitoring well (RESNA, June 1990 and May 1991)

T4 = Former underground gasoline-storage tanks

** = Only residual water in well

NOTE: Depth to water data from MW-2 was not used for this gradient analysis.

Approximate Scale

30 15 0 30 60

feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

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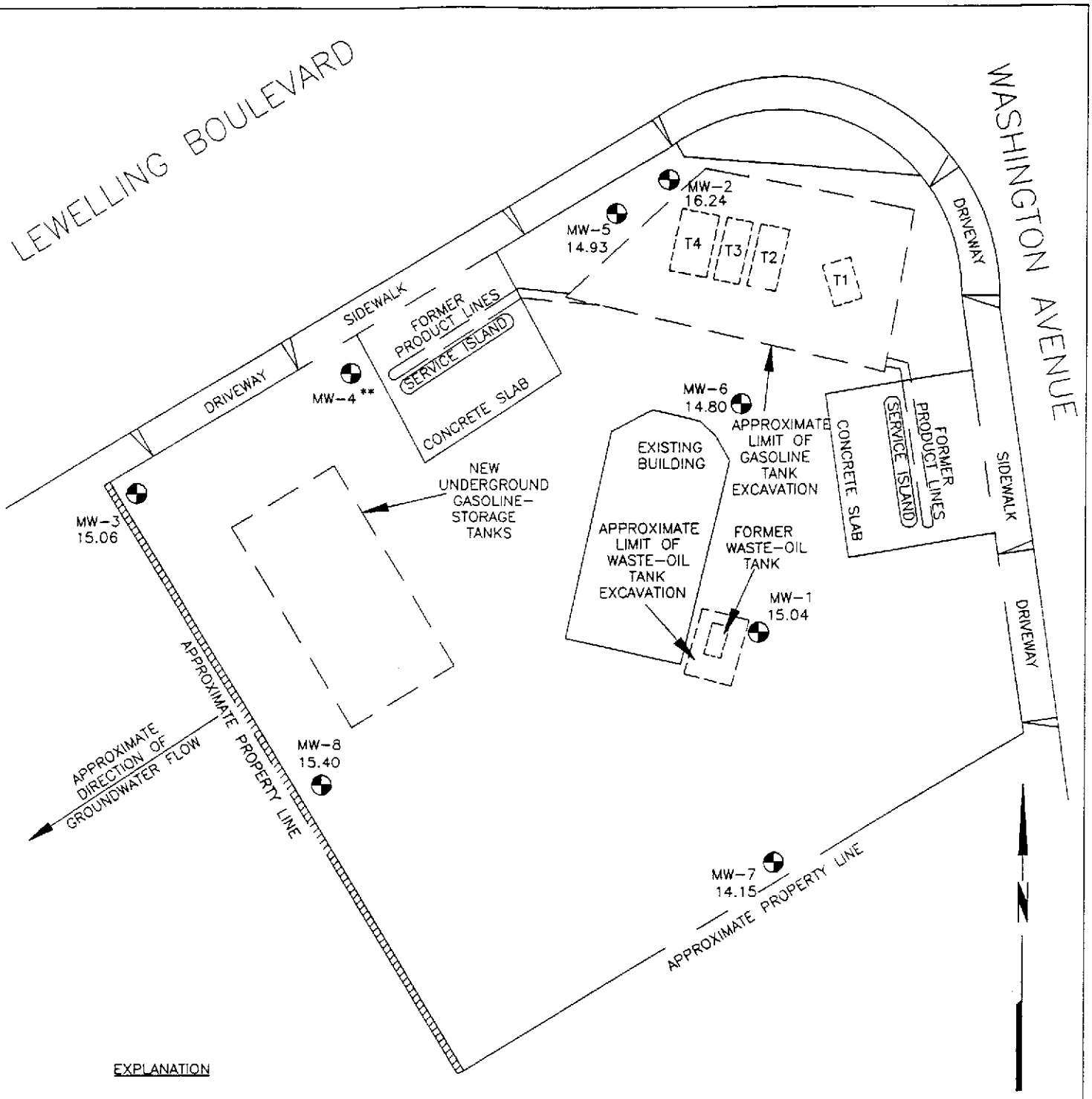
PROJECT 69034.06

GROUNDWATER GRADIENT MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 3



EXPLANATION

15.40 = Elevation of groundwater in feet above MSL February 20, 1992

MW-8 = Groundwater monitoring well (RESNA, June 1990 and May 1991)

T4 = Former underground gasoline-storage tanks

** = Only residual water in well

30 15 0 30 60

Approximate Scale in Feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

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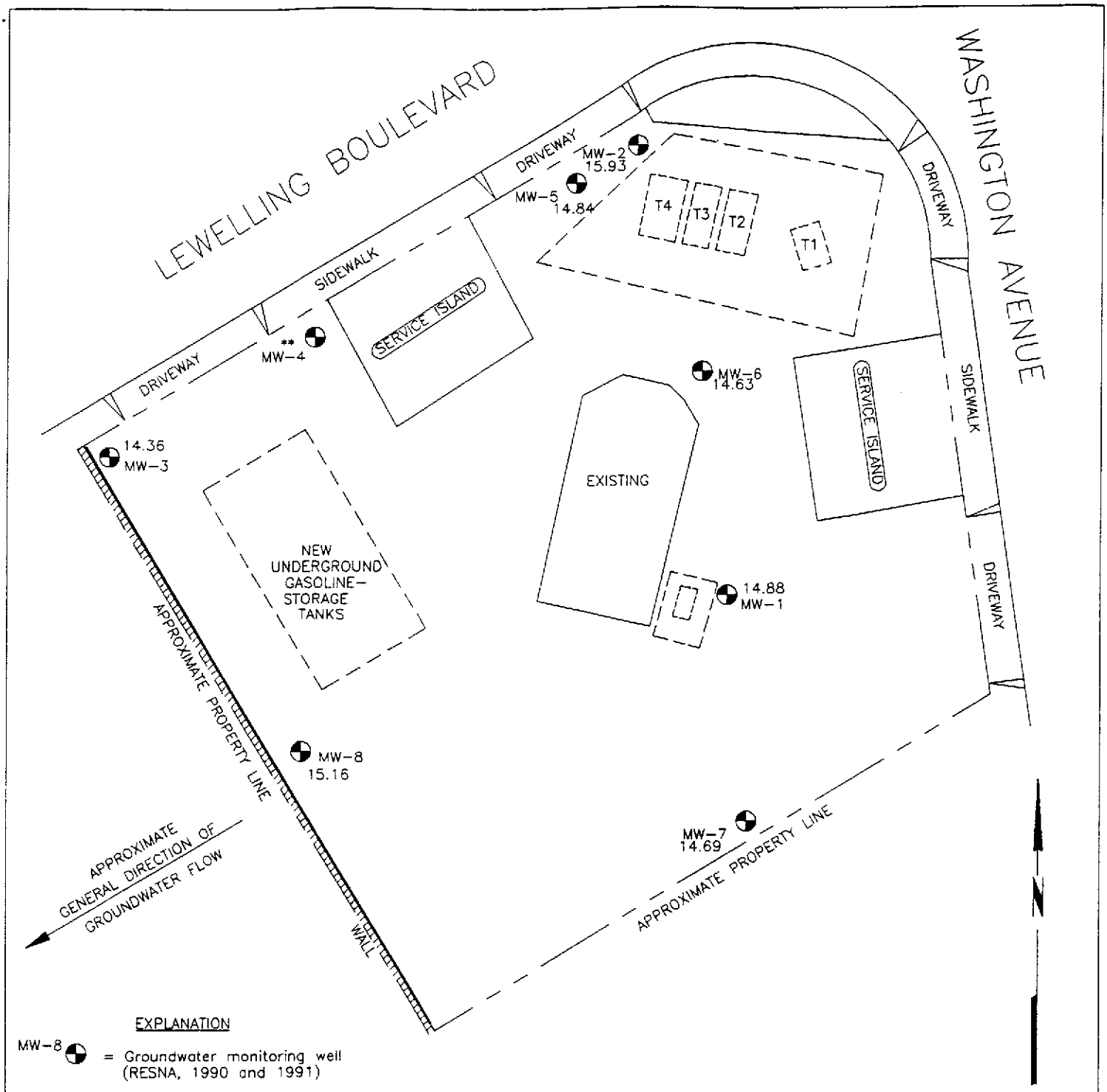
PROJECT 69034.06

GROUNDWATER ELEVATION MAP
ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE
4



EXPLANATION

MW-8 = Groundwater monitoring well (RESNA, 1990 and 1991)

15.16 = Elevation of groundwater in feet MSL March 23, 1992

** = Only residual water in well

30 15 0 30 60

Approximate Scale in Feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

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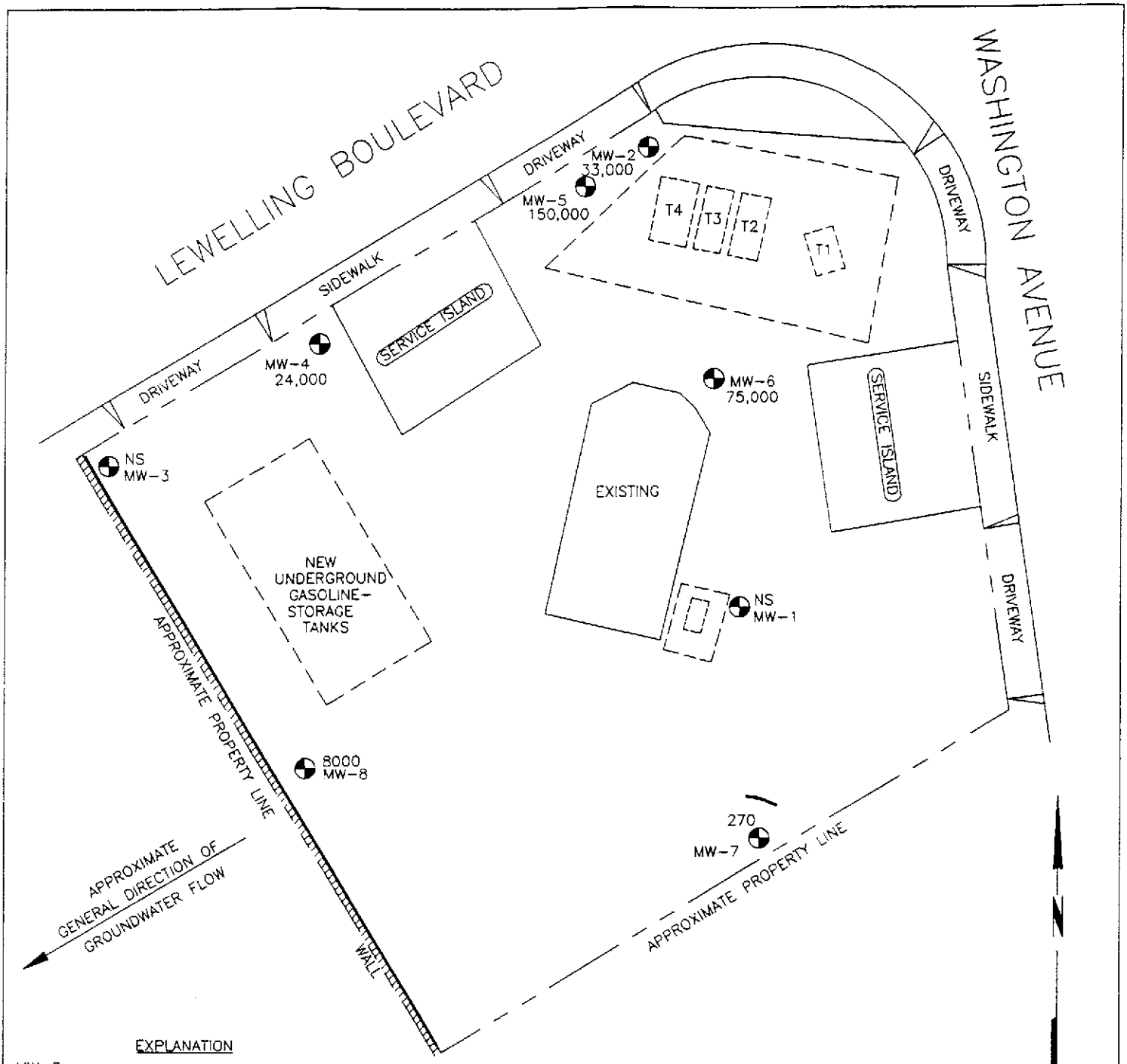
PROJECT 69034.06

GROUNDWATER ELEVATION MAP

ARCO Station 601
712 Lewelling Boulevard
San Leandro, California

PLATE 5



EXPLANATION

MW-8 ⊕ = Groundwater monitoring well (RESNA, 1990 and 1991)

150,000 = Concentration of PTHg in parts per billion in groundwater, March 23, 1992

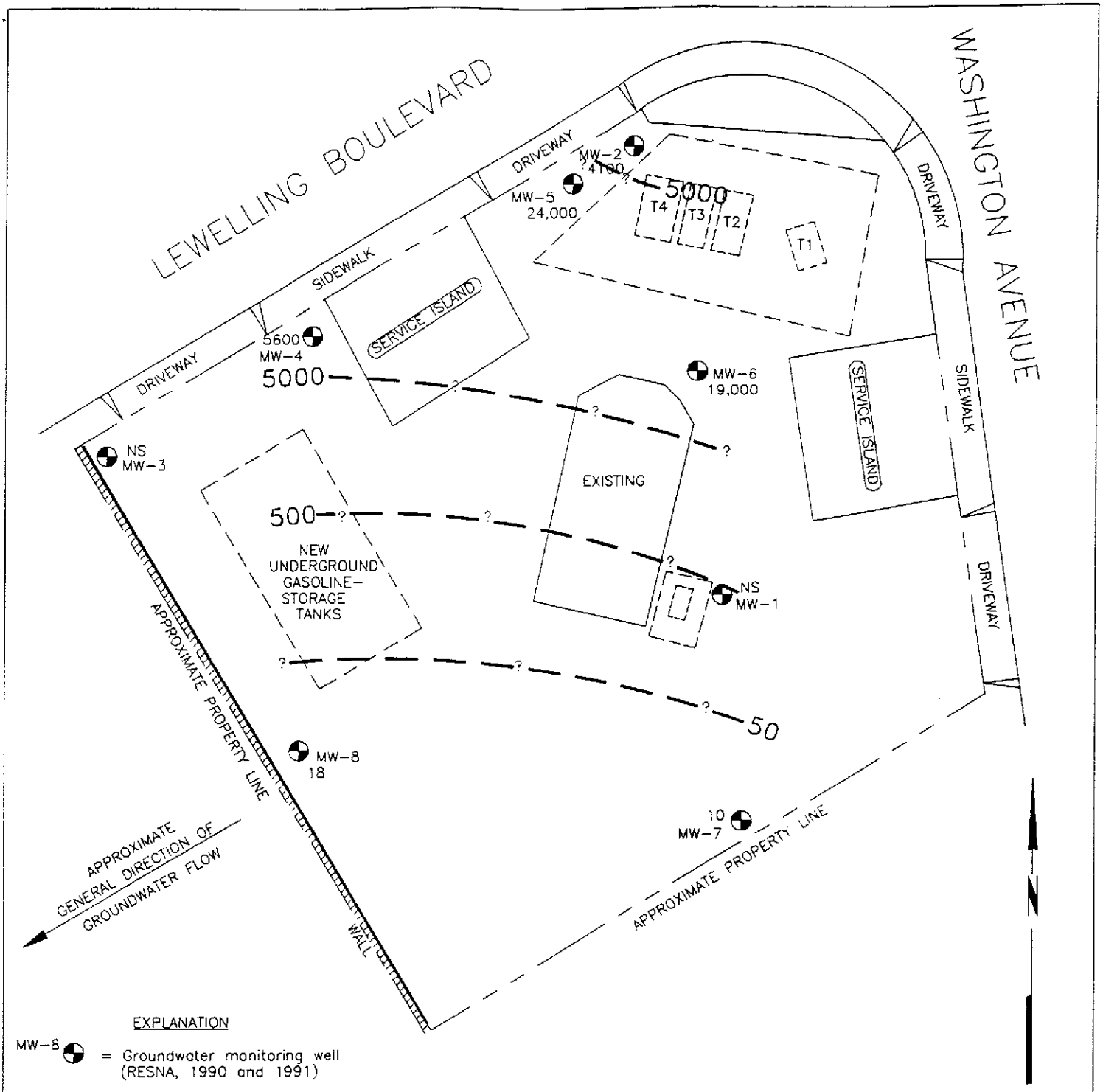
NS = Not sampled due to product or product sheen

30 15 0 30 60

Approximate Scale in Feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

RESNA	**TPHg CONCENTRATIONS IN GROUNDWATER ARCO Station 601 712 Lewelling Boulevard San Leandro, California**	**PLATE 6**
PROJECT 69034.06		



EXPLANATION

MW-8 = Groundwater monitoring well (RESNA, 1990 and 1991)

5000 = Line of equal concentration of benzene in parts per billion in groundwater March 23, 1992

24,000 = Concentration of benzene in ppb in groundwater, March 23, 1992

NS = Not sampled due to product or product sheen

30 15 0 30 60

Approximate Scale in Feet

Source: Surveyed by Ron Archer, Civil Engineer Inc. and John Koch, Licensed Surveyor.

RESNA	**BENZENE CONCENTRATION IN GROUNDWATER ARCO Station 601 712 Lewelling Boulevard San Leandro, California**	**PLATE 7**
PROJECT 69034.06		

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 1 of 3)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
MW-1					
07/17/90	11.20	22.98	9.03	13.95	Emulsion
08/07/90			9.19	13.79	None
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
02/27/91			9.31*	13.67*	0.03
03/20/91**			7.81	15.17	Sheen
04/16/91			6.12	16.86	Sheen
05/16/91		22.26	8.60*	13.66*	0.01
06/10/91			9.00	13.26	Sheen
07/18/91			9.33*	12.93*	0.01
08/22/91			9.49*	12.77*	0.04
09/18/91			9.63*	12.63*	0.04
10/10/91			9.73*	12.53*	0.04
11/21/91			8.40*	13.86*	0.01
12/24/91			9.68*	13.30*	0.13
01/19/92	11.10		8.84	13.42	None
02/20/92			7.22	15.04	None
03/23/92			7.40	14.86	Sheen
MW-2					
07/17/90	12.33	22.06	7.86	14.20	None
08/07/90			8.03	14.03	None
10/15/90			8.61	13.45	None
11/20/90			8.76	13.30	None
12/21/90			8.28	13.78	None
01/09/91			8.43	13.63	None
02/27/91			8.28	13.78	None
03/20/91**			7.26	14.80	None
04/16/91			6.97	15.09	None
05/16/91		22.79	7.52	15.27	None
06/10/91			7.91	14.88	None
07/18/91			8.30	14.49	None
08/22/91			8.50	14.29	None
09/18/91			8.63	14.16	None
10/10/91			8.82	13.97	None
11/21/91			8.46	14.33	None
12/24/91			8.72	14.07	None
01/19/92	12.20		7.96	14.83	None
02/20/92			6.55	16.24	None
03/23/92			6.86	15.93	None

See notes on page 3 of 3.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 2 of 3)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
MW-3					
07/17/90	11.99	20.84	7.03	13.81	Sheen
08/07/90			7.21	13.63	None
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
02/27/91			7.37*	13.47*	0.02
03/20/91**			5.79	15.05	Sheen
04/16/91			7.95	12.89	Sheen
05/16/91		20.11	7.50	12.61	None
06/10/91			7.14	12.97	Sheen
07/18/91			7.55	12.56	None
08/22/91			7.64	12.47	Sheen
09/18/91			7.89*	12.22*	0.12
10/10/91			7.82*	12.29*	0.26
11/21/91			7.59*	12.52*	0.04
12/24/91			8.74*	11.37*	0.01
01/19/92	11.94		6.98	13.13	0.01
02/20/92			5.05	15.06	0.01
03/23/92			5.75	14.36	Sheen
MW-4					
06/10/91	8.30	20.75	Dry	—	—
07/18/91			7.86	12.89	None
08/22/91			7.85	12.90	None
09/18/91			7.84	12.91	None
10/10/91			Dry	—	None
11/21/91			Dry	—	—
12/24/91			Dry	—	—
03/23/92			7.94	12.81	None
01/19/92	***		8.20	Residual Water	None
02/20/92	8.50		8.13	Residual Water	None
03/23/92			7.94	Residual Water	None
MW-5					
06/10/91	9.88	20.90	7.58	13.32	None
07/18/91			7.97	12.93	None
08/22/91			8.18	12.72	None
09/18/91			8.31	12.59	None
10/10/91			8.51	12.39	Sheen
11/21/91			8.13	12.77	None
12/24/91			8.32	12.58	None
01/19/92	10.10		7.50	13.40	None
02/20/92			5.97	14.93	None
03/23/92			6.06	14.84	None

See notes on page 3 of 3.

TABLE 1
CUMULATIVE GROUNDWATER MONITORING DATA
ARCO Station 601
San Leandro, California
(Page 3 of 3)

Date Well Measured	Depth of Well	Well Elevation	Depth-to-Water	Water Elevation	Floating Product
MW-6					
06/10/91	8.40	22.08	Dry	____	____
07/18/91			Dry	____	____
08/22/91			Dry	____	____
09/18/91			Dry	____	____
10/10/91			Dry	____	____
11/21/91			Dry	____	____
12/24/91			Dry	____	____
01/19/92	8.60		8.58	Residual water	None
02/20/92			7.28	14.80	None
03/23/92			7.45	14.63	None
MW-7					
06/10/91	9.36	22.89	Dry	____	____
07/18/91			Dry	____	____
08/22/91			Dry	____	____
09/18/91			Dry	____	____
10/10/91			Dry	____	____
11/21/91			Dry	____	____
12/24/91			Dry	____	____
01/19/92	9.55		Dry	____	____
02/20/92			8.74	14.15	None
03/23/92			8.20	14.69	None
MW-8					
06/10/91	10.00	20.97	7.80	13.17	None
07/18/91			8.36	12.61	None
08/22/91			8.53	12.44	None
09/18/91			8.68	12.29	None
10/10/91			8.87	12.10	None
11/21/91			8.43	12.54	None
12/24/91			8.68	12.29	None
01/19/92	10.15		7.73	13.24	None
02/20/92			5.57	15.40	None
03/23/92			5.81	15.16	None

Measurements in feet.
Datum mean sea level.
Depth-to-Water measured in feet below top of casing.
ND = Not detected.
*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 groundwater 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 groundwater elevations.
** Anomalous due to extensive rainfall and non-functioning storm drain.
*** A misreading of 12.02 feet was recorded on EMCON's Field Report.

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

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
MW-1														
07/18/90	Not sampled--floating product													
10/15/90	Not sampled--floating product													
01/09/91	Not sampled--floating product													
04/16/91	Not sampled--sheen													
06/10/91	Not sampled--sheen													
10/10/91	Not sampled--floating product													
03/23/92	Not sampled--floating product													
MW-2														
07/18/90	35,000	850[a]	3,800 (3,200)	2,900 (2,400)	690 (270)	3,600 (2,900)	<5,000	340[a] 170[b]	39[c]	<20	50	50	NA	120
10/15/90	6,400	NA	650	290	110	560	NA	NA	18[c]	NA	NA	NA	NA	NA
01/09/91	13,000	NA	1500 (1700)	970 (1200)	390 (370)	1500 (2400)	NA	NA	6.5[d]	NA	NA	NA	NA	NA
04/16/91	54,000	NA	5,200	9,000	1,500	7,700	NA	NA	NA	NA	NA	NA	NA	NA
06/10/91	26,000	NA	3,000	2,500	880	4,200	NA	NA	NA	NA	NA	NA	NA	NA
10/10/91	10,000	NA	1,600	910	280	1,400	<5,000	NA	1.7[d]	<10	<10	11	72	91
03/23/92	33,000	NA	4,100	5,000	1,100	5,300	NA	NA	NA	NA	NA	NA	NA	NA
MW-3														
07/18/90	NA	NA	NA	NA	NA	NA	<5,000	NA	NA	NA	NA	NA	NA	NA
10/15/90	Not sampled--floating product													
01/09/91	Not sampled--floating product													
04/16/91	Not sampled--sheen													
06/10/91	Not sampled--sheen													
10/10/91	Not sampled--floating product													
03/23/92	Not sampled--floating product													
MW-4														
06/10/91	Not sampled--dry													
10/10/91	15,000	NA	5,300	1,500	470	1,300	NA	NA	NA	NA	NA	NA	NA	NA
03/23/92	24,000	NA	5,600	4,000	580	3,100	NA	NA	NA	NA	NA	NA	NA	NA
MW-5														
06/10/91	100,000	NA	25,000	20,000	2,600	12,000	NA	NA	NA	NA	NA	NA	NA	NA
10/10/91	Not sampled--sheen													
03/23/92	150,000	NA	24,000	31,000	4,400	23,000	NA	NA	NA	NA	NA	28	NA	NA
MW-6														
06/10/91	Not sampled--dry													
10/10/91	Not sampled--dry													
03/23/92	75,000	NA	19,000	10,000	1,600	8,600	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on page 2 of 2.

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

Sample	TPHg	TPHd	B	T	E	X	TOG	BNAs	VOCs	Cd	Cr	Pb	Ni	Zn
MW-7														
06/10/91	Not sampled—dry													
10/10/91	Not sampled—dry													
03/23/92	270	NA	10	0.5	3.0	13	NA	NA	NA	NA	NA	NA	NA	NA
MW-8														
06/10/91	5,800	NA	73	7.2	150	21	<5,000	NA	NA	NA	NA	NA	NA	NA
10/10/91	2,800	NA	31	6.1	4.5	3.9	NA	NA	NA	NA	NA	NA	NA	NA
03/23/92	8,000	NA	18 (23**)	<5.0‴ (<5.0‴)	320 (450**)	42 (23**)	NA	NA	ND	NA	NA	NA	NA	NA
DWAL:	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MCLs:	—	—	1	NA	680	1,750	—	—	—	10	50	50	—	5,000
Als:	—	—	—	100	—	—	—	—	—	—	—	—	—	

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

NA: Not analyzed.

<: Results reported as less than the detection limit.

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

‴: Laboratory reported raised maximum reporting limit due to high analyte concentration requiring sample dilution.

( ): BTEX results analyzed as VOCs.

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, X: Total Xylene isomers.

BTEX: Measured by EPA method 8020/602.

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

BNAs: Base neutral and acid extractables including polynuclear aromatics concentrations are below laboratory reporting limits for respective compounds except as indicated. ([a] = naphthalene, [b] = 2-methylnaphthalene)

VOCs: volatile organics except for BTEX concentrations are below laboratory reporting limits for respective compounds except as indicated. ([c] = methylene chloride) ([d] = 1,2-DCA)

Cd: Cadmium

Cr: Chromium

Pb: Lead (by EPA Method 7421)

Zn: Zinc

ND: Below detection limits. Detection limits for VOCs varied according to analyte.

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

MCLs: Maximum Contaminant Level in ppb.

Als: Action Levels in ppb.

TABLE 3
APPROXIMATE CUMULATIVE PRODUCT RECOVERED
ARCO Station 601
San Leandro, California

Year	Floating Product Removed (gallons)
1991	TOTAL: 3.43

Date	Floating Product Removed (gallons)
MW-1	
01/29/92	None present
02/28/92	None present
03/25/92	None present
MW-3	
01/29/92	None present
02/28/92	None present
03/25/92	None present
	TOTAL: 0

APPENDIX A

EMCON'S FIELD REPORTS
SUMMARY OF GROUNDWATER MONITORING DATA
CERTIFIED ANALYTICAL REPORTS WITH CHAIN OF CUSTODY RECORD
WATER SAMPLE FIELD DATA SHEETS
EMCON'S WATER SAMPLE FIELD DATA SHEET
MONITORING WELL PURGE WATER DISPOSAL FORM
WELL PURGE WATER DISPOSAL FORM

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

Date January 29, 1992
Project G70-07.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	DTW/FP Survey Form, January 1992 monthly water level survey, ARCO station 601, 712 Lewelling Boulevard, San Leandro, CA

For your: X Information Sent by: X Mail

Comments:
Monthly water level data for the above mentioned site are attached. Please call if you have any questions: (408) 453-2266.

Mark Knuttel MK

Reviewed by:

6/30/92

Robert Porter, Senior P.E. #4094

Field Services: 1938 Junction Avenue, San Jose, California 95131-2102 (408) 453-0719 Fax (408) 453-0452

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-07.01 STATION ADDRESS : 712 Lewelling Blvd. San Leandro DATE : 1-19-92

ARCO STATION # : 601 FIELD TECHNICIAN : J. Williams DAY : Sunday

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-8	ob	ye	ok	yes	yes	7.73	7.73	NA	NA	10.15	—
2	MW-2						7.96	7.96	NA	NA	12.20	—
3	MW-4						8.20	8.20	NA	NA	12.02	—
4	MW-6						8.58	8.58	ND	ND	8.60	—
5	MW-7						DRY	DRY	ND	ND	9.55	—
6	MW-5						7.50	7.50	ND	ND	10.10	—
7	MW-3						6.99	6.99	6.98	.01	11.94	—
8	MW-1						8.84	8.84	ND	NA	11.10	

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

RECEIVED
MAR 2 - 1992
RESNA CARMOSE

Date February 25, 1992
Project G70-07.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Almaden Expressway, Suite 34
San Jose, California 95118

We are enclosing:

Copies	Description
1	Depth To Water/Floating Product Survey Form, February 1992 monthly water level survey, ARCO station 601, 712 Lewelling Blvd., San Leandro, CA

For your: X Information Sent by: X Mail

Comments:
Monthly water level data for the above mentioned site are attached. Please call if you have any questions: (408) 453-2266.

Reviewed by:

Mark Knuttel MK

Robert Porter, Senior Project Engineer.

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-07.01 STATION ADDRESS : 712 Lewelling Blvd. San Leandro DATE : 2/20/92

ARCO STATION # : 601 FIELD TECHNICIAN : Vince Barlock DAY : Thursday

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-8	OK	YES	OK	YES	YES	5.57	5.57	ND	ND	10.20	—
2	MW-2	OK	YES	OK	YES	YES	6.55	6.55	ND	ND	12.28	—
3	MW-4	OK	YES	OK	YES	YES	8.12	8.13	ND	ND	8.50	—
4	MW-6	OK	YES	OK	YES	YES	7.27	7.28	ND	ND	8.60	—
5	MW-7	OK	YES	OK	YES	YES	8.73	8.74	ND	ND	9.58	—
6	MW-5	OK	YES	OK	YES	YES	5.96	5.97	ND	ND	10.10	—
7	MW-1	OK	YES	OK	YES	YES	7.20	7.22	ND	ND	10.11	H_2O IN BOX
8	MW-3	OK	YES	OK	YES	YES	5.05	5.06	5.04	.01	11.95	—

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

Date April 8, 1992
Project G70-07.01

To:
Mr. Joel Coffman
RESNA/ Applied Geosystems
3315 Alamden Expressway, Suite 34
San Jose, California 95050

APR 1 1992

We are enclosing:

Copies	Description
1	Depth To Water / Floating Product Survey Results
2	Summary of Groundwater Monitoring Data
1	Certified Analytical Reports with Chain-of-Custody
8	Water Sample Field Data Sheets

For your: X Information Sent by: X Mail

Comments:

Enclosed are the data from the first quarter 1992 monitoring event at ARCO service station 601, 712 Lewelling Boulevard, San Leandro, California. Please call if you have any questions: (408) 453-2266.

Reviewed by:

REGISTERED PROFESSIONAL ENGINEER ROBERT CURTIS PORTER No. 4084 Exp 6/30/92 INDUSTRIAL STATE OF CALIFORNIA

Mark Knuttel MF

Robert Porter, Senior Project Engineer.

1938 Junction Avenue, San Jose, California 95131-2102, (408) 453-0719, Fax (408) 453-0452

Summary of Groundwater Monitoring Data
First Quarter 1992
ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California
micrograms per liter (µg/l) or parts per billion (ppb)

Well ID and Sample Depth	Sampling Date	Depth To Water (feet)	Floating Product Thickness (feet)	TPH[1] as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
MW-1	NS.[2]	7.40	0.01	NS.	NS.	NS.	NS.	NS.
MW-2(11)	03/23/92	6.86	ND.[3]	33,000.	4,100.	5,000.	1,100.	5,300.
MW-3	NS.	5.75	0.02	NS.	NS.	NS.	NS.	NS.
MW-4(7)	03/23/92	7.95	ND.	24,000.	5,600.	4,000.	580.	3,100.
MW-5(9)	03/23/92	6.06	ND.	150,000.	24,000.	31,000.	4,400.	23,000.
MW-6(8)	03/23/92	7.45	ND.	75,000.	19,000.	10,000.	1,600.	8,600.
MW-7(9)	03/23/92	8.21	ND.	270.	10.	0.5	3.0	13.
MW-8(9)	03/23/92	5.82	ND.	8,000.	18.	<5.0*	320.	42.
FB-1[4]	03/23/92	NA.[5]	NA.	<50	<0.5	<0.5	<0.5	<0.5

1. TPH. = Total petroleum hydrocarbons
2. NS. = Not sampled; well was not sampled due to detection of floating product
3. ND. = Not detected
4. FB. = Field blank
5. NA. = Not applicable
*. = Raised method reporting limit due to high analyte concrentration requiring sample dilution

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	03/24/92
Project:	EMCON Project No. G70-07.01	**Work Order #:**	SJ92-0300
	Arco Facility No. 601	**Sample Matrix:**	Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
µg/L (ppb)

Sample Name:		MW-8 (9)	MW-2 (11)	MW-4 (7)
Date Analyzed:		03/26/92	03/25/92	03/25/92
Analyte	**MRL**			
Benzene	0.5	18.	4,100.	5,600.
Toluene	0.5	<5.0*	5,000.	4,000.
Ethylbenzene	0.5	320.	1,100.	580.
Total Xylenes	0.5	42.	5,300.	3,100.
TPH as Gasoline	50	8,000.	33,000.	24,000.

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Raised MRL due to high analyte concentration requiring sample dilution.

Approved by Kevin Murphy Date April 8, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	03/24/92
Project:	EMCON Project No. G70-07.01	**Work Order #:**	SJ92-0300
	Arco Facility No. 601	**Sample Matrix:**	Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
µg/L (ppb)

Sample Name:		MW-6 (8)	MW-7 (9)	MW-5 (9)
Date Analyzed:		03/26/92	03/25/92	03/25/92
Analyte	**MRL**			
Benzene	0.5	19,000.	10.	24,000.
Toluene	0.5	10,000.	0.5	31,000.
Ethylbenzene	0.5	1,600.	3.0	4,400.
Total Xylenes	0.5	8,600.	13.	23,000.
TPH as Gasoline	50	75,000.	270.	150,000.

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Keenan Murphy Date April 8, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	03/24/92
Project:	EMCON Project No. G70-07.01	**Work Order #:**	SJ92-0300
	Arco Facility No. 601	**Sample Matrix:**	Water

BTEX and TPH as Gasoline
EPA Methods 5030/8020/DHS LUFT Method
µg/L (ppb)

Sample Name:		FB-1	Method Blank	Method Blank
Date Analyzed:		03/25/92	03/25/92	03/26/92
Analyte	**MRL**			
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND

TPH Total Petroleum Hydrocarbons
MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Kenneth Murphy Date April 8, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: EMCON Project No. G70-07.01
Arco Facility No. 601

Date Received: 03/24/92
Work Order #: SJ92-0300
Sample Matrix: Water

Volatile Organic Compounds
EPA Method 624
µg/L (ppb)

Sample Name:		MW-8 (9)*	Method Blank
Date Analyzed:		03/27/92	03/27/92
Analyte	**MRL**		
Chloromethane	1	<5.	ND
Vinyl Chloride	1	<5.	ND
Bromomethane	1	<5.	ND
Chloroethane	1	<5.	ND
Trichlorofluoromethane (Freon 11)	1	<5.	ND
Trichlorotrifluoroethane (Freon 113)	10	<50.	ND
1,1-Dichloroethene	1	<5.	ND
Acetone	20	<100.	ND
Carbon Disulfide	1	<5.	ND
Methylene Chloride	10	<50.	ND
trans-1,2-Dichloroethene	1	<5.	ND
cis-1,2-Dichloroethene	1	<5.	ND
2-Butanone (MEK)	10	<50.	ND
1,1-Dichloroethane	1	<5.	ND
Chloroform	1	<5.	ND
1,1,1-Trichloroethane (TCA)	1	<5.	ND
Carbon Tetrachloride	1	<5.	ND
Benzene	1	23.	ND
1,2-Dichloroethane	1	<5.	ND
Vinyl Acetate	10	<50.	ND
Trichloroethene (TCE)	1	<5.	ND
1,2-Dichloropropane	1	<5.	ND
Bromodichloromethane	1	<5.	ND
2-Chloroethyl Vinyl Ether	10	<50.	ND
trans-1,3-Dichloropropene	1	<5.	ND
2-Hexanone	10	<50.	ND
4-Methyl-2-pentanone (MIBK)	10	<50.	ND
Toluene	1	<5.	ND
cis-1,3-Dichloropropene	1	<5.	ND
1,1,2-Trichloroethane	1	<5.	ND
Tetrachloroethene (PCE)	1	<5.	ND
Dibromochloromethane	1	<5.	ND
Chlorobenzene	1	<5.	ND
Ethylbenzene	1	450.	ND
Styrene	1	<5.	ND
Total Xylenes	1	23.	ND
Bromoform	1	<5.	ND
1,1,2,2-Tetrachloroethane	1	<5.	ND
1,3-Dichlorobenzene	1	<5.	ND
1,4-Dichlorobenzene	1	<5.	ND
1,2-Dichlorobenzene	1	<5.	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Raised MRL due to high analyte concentration requiring sample dilution.

Approved by Kevin P. Murphy Date April 8, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: EMCON Project No. G70-07.01
Arco Facility No. 601

Date Received: 03/24/92
Work Order #: SJ92-0300
Sample Matrix: Water

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

Sample Name	Date Analyzed	Percent Recovery *a,a,a*-Trifluorotoluene
MW-8 (9)	03/26/92	95.
MW-2 (11)	03/25/92	90.
MW-4 (7)	03/25/92	85.
MW-6 (8)	03/26/92	83.
MW-7 (9)	03/25/92	94.
MW-5 (9)	03/25/92	83.
FB-1	03/25/92	88.
Method Blank	03/25/92	88.
Method Blank	03/26/92	87.
	CAS Acceptance Criteria	70-130

TPH Total Petroleum Hydrocarbons

Approved by Kevin A Murphy Date April 8, 1992

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: EMCON Project No. G70-07.01
Arco Facility No. 601

Date Received: 03/24/92
Work Order #: SJ92-0300
Sample Matrix: Water

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 624

		Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
Sample Name	Date Analyzed			
MW-8 (9)	03/27/92	99.	103.	106.
Method Blank	03/27/92	98.	109.	104.
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by Kevin Murphy Date April 8, 1992

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. EMCG-92-1

Chain of Custody

ARCO Facility no. 601 | City (Facility) San Leandro | Project manager (Consultant) Mark Knuttel

ARCO engineer Kyle Christie | Telephone no. (ARCO) 415-571-2434 | Telephone no. (Consultant) 408-453-6710 | Fax no. (Consultant) 408-453-0452

Consultant name Emcon Associates | Address (Consultant) 1438 Junction Ave, San Jose, CA

Laboratory name: CAS

Contract number: 07077

Method of shipment: Sampler will deliver

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 (Gas) 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 ☐ VOA ☐ VOA ☐ Semi	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-8(9)	1-2	2		X		X	HCl	3-23-92	1300		X					X						
MW-2(11)	3-4	2		X		X	HCl		1325		X											
MW-4(7)	5-6	2		X		X	HCl		1345		X											
MW-6(8)	7-8	2		X		X	HCl		1435		X											
MW-7(9)	9-10	2		X		X	HCl		1416		X											
MW-5(9)	11-12	2		X		X	HCl		1505		X											
~~MW-1(10)~~		~~2~~		~~X~~		~~X~~	~~HCl~~				~~X~~											
~~MW-3(11)~~		~~2~~		~~X~~		~~X~~	~~HCl~~				~~X~~											
FB-1	13-14	2		X		X	HCl		1500		X											
~~MW-1(10)~~		~~2~~		~~X~~		~~X~~	~~HCl~~									~~X~~						
MW-5(9)		1		X		X	HNO3	↓	1505											X		

Special detection Limit/reporting: Lowest possible

Special QA/QC: normal

Remarks: G70-07.01
TPH g/BTXE
2-40 ml VOA HCL
EPA 624
2-40 ml VOA HCL
Total Lead
1-500 ml LPE HNO3
-NOT FILTERED-

Lab number: SJ92-0300

Turnaround time:
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☑

Condition of sample: OK | Temperature received: Cool

Relinquished by sampler	Date	Time	Received by	Date	Time
[signature]	3-24-92	852	[signature]	3-24-92	9:00
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by laboratory	Date	Time

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

Columbia Analytical Services inc.

April 3, 1992

Mark Knuttel
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **ARCO #601 - San Leandro/Project #G70-07.01/SJ920300**

Dear Mark:

Enclosed are the results of the sample submitted to our lab on March 24, 1992. For your reference, these analyses have been assigned our work order number K921867C.

All analyses were performed in accordance with our laboratory's quality assurance program.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin B. Elliott
Senior Project Chemist

CBE/tlt

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	03/24/92
Project:	ARCO #601 - San Leandro	**Date Analyzed:**	03/30/92
Sample Matrix:	Water	**Work Order No.:**	K921867C

Total Lead
EPA Method 7421
µg/L (ppb)

Sample Name	Lab Code	MRL	Result
MW-5	K1867-1	2	28
Method Blank	K1867-MB	2	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Allen Ellenstein Date 4/3/92

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-07.01 STATION ADDRESS : 712 Lewelling Blvd. San Leandro DATE : 3-23-92

ARCO STATION # : 601 FIELD TECHNICIAN : J. Williams / K. Stafford DAY : Monday

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-8	OK	Yes	OK	3259	Yes	5.82	5.81	ND	NA	10.11	—
2	MW-2	OK	Yes	OK	3259	Yes	6.86	6.86	ND	NA	12.17	☆ Strong Odor
3	MW-4	OK	Yes	OK	3259	Yes	7.93	7.94	ND	ND	8.5	☆
4	MW-6	OK	Yes	OK	3259	Yes	7.45	7.45	ND	ND	8.4	☆
5	MW-7	OK	Yes	OK	3259	Yes	8.21	8.20	ND	ND	9.5	—
6	MW-5	OK	Yes	OK	3259	Yes	6.06	6.06	ND	ND	9.9	—
7	MW-1	OK	Yes	OK	3259	Yes	7.40	7.40	ND	ND	11.1	☆ Sheen on water in well.
8	MW-3	OK	Yes	OK	3259	Yes	5.75	5.75	ND	ND	11.55	☆ V. Strong Odor. Sheen on water in well

☆ Water in Christy Box

Rev. 2, 5/91

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 670-07.01 SAMPLE ID: MW-1
PURGED BY: B. Stafford CLIENT NAME: Arco 601
SAMPLED BY: " LOCATION: San Leandro

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___
CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): ___ VOLUME IN CASING (gal.): 2.42
DEPTH TO WATER (feet): 7.40 CALCULATED PURGE (gal.): 12.13
DEPTH OF WELL (feet): 11.1 ACTUAL PURGE VOL. (gal.): 5.0

DATE PURGED: 3-23-92 Start (2400 Hr) 1522 End (2400 Hr) 1527
DATE SAMPLED: " Start (2400 Hr) NR End (2400 Hr) NR

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
	2.5					
	5.0					
	7.5	PPD	duct'd			
	10.0					
	12.5					

D. O. (ppm): NA ODOR: V. Strong NA (COBALT 0 - 100) NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

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

WELL INTEGRITY: Good LOCK #: 3254

REMARKS: While purging, product became obvious. Five gallons was purged and approximately 0.02 feet of product was detected. No sample was collected.

Revision of Field Sheets BS

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F
(EC 1000 ___/___) (DI ___) (pH 7 ___/___) (pH 10 ___/___) (pH 4 ___)
Location of previous calibration: MW-8

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670.07.01 SAMPLE ID: MW-2 (11)

PURGED BY: J.W.Williams CLIENT NAME: ARCO 601

SAMPLED BY: " LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 3.45

DEPTH TO WATER (feet): 6.86 CALCULATED PURGE (gal.): 17.25

DEPTH OF WELL (feet): 12.12 ACTUAL PURGE VOL. (gal.): 18.0

DATE PURGED: 3-23-92 Start (2400 Hr) 1300 End (2400 Hr) 1320

DATE SAMPLED: " Start (2400 Hr) 1321 End (2400 Hr) 1323

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
1304	3.5	6.76	1702	70.0	Gray	Low
1306	7	6.78	1801	67.5	Gray	Moderate
1309	10.5	6.75	1802	66.7	"	"
1313	14	6.83	1809	68.4	"	"
1318	17.5	6.87	1822	66.4	"	"

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

N/A (COBALT 0 - 100) Nil (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): Nil

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 #: 3239

REMARKS: Listen in Christ, Boy Product odor & sheen on purge water

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: MW-8(9)

Signature: [signature] / J.Williams Reviewed By: MC Page 2 of 8

WATER SAMPLE FIELD DATA SHEET

Rev. 2. 5/91

EMCON ASSOCIATES

PROJECT NO: 670-07.01 SAMPLE ID: MW-3

PURGED BY: S Williams CLIENT NAME: ARCO 601

SAMPLED BY: S Williams LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 4.00

DEPTH TO WATER (feet): 5.75' CALCULATED PURGE (gal.): 20.00

DEPTH OF WELL (feet): 11.85' ACTUAL PURGE VOL. (gal.): 9.0

DATE PURGED: 03-23-92 Start (2400 Hr) 1538 End (2400 Hr) 1543

DATE SAMPLED: 03-23-92 Start (2400 Hr) NR End (2400 Hr) NR

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1540	4.0	6.87	2110	63.2	Cloudy	low
1541	8.0	6.82	2060	63.1	Brown	High
	12.0					
	16.0	1/10 duct ~ 0.01"			Stopped	
	20.0					

D. O. (ppm): NM ODOR: V. Strong

N/A (COBALT 0 - 100) N/A (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

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®)

___ ODL Sampler ___ Bailer (Stainless Steel)

___ Dipper ___ Submersible Pump

___ Well Wizard™ ___ Dedicated

Other: NR

WELL INTEGRITY: Poor LOCK #: 3289

REMARKS: Water in Box

Product in purge water ~ 0.01" NP Sample

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: MW-3

Signature: Brent Stafford S. Williams Reviewed By: MK Page 3 of 3

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: G70-07.01 SAMPLE ID: MW-4(7)

PURGED BY: J. Williams CLIENT NAME: ARCO 601

SAMPLED BY: " LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): .36

DEPTH TO WATER (feet): 17.94 CALCULATED PURGE (gal.): 1.83

DEPTH OF WELL (feet): 8.5 ACTUAL PURGE VOL. (gal.): 0.5

DATE PURGED: 03-23-92 Start (2400 Hr) 1330 End (2400 Hr) 1340

DATE SAMPLED: 03-23-92 Start (2400 Hr) 1341 End (2400 Hr) 1345

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1333	0.5	7.22	2980	69.2	Grey	Hi
----	1.0	Dry at	0.5 gallons	1333		
	1.5					
	2.0	Recharge				
	8.5 Not	enough water for	Field	readings.		

D. O. (ppm): NR ODOR: ND

COLOR (COBALT 0 - 100): NR TURBIDITY (NTU 0 - 200): NR

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

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 #: 3257

REMARKS: Water in Christy box

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: MW-8

Signature: Brent Stanton / J. Williams Reviewed By: MC Page 4 of 8

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-07.01 SAMPLE ID: MW-5 (9)
PURGED BY: S Williams CLIENT NAME: ARCO 601
SAMPLED BY: G Stafford LOCATION: SAN LEANDRO

TYPE: Ground Water ✓ Surface Water ____ Treatment Effluent ____ Other ____
CASING DIAMETER (inches): 2 ____ 3 ____ 4 ✓ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 2.51
DEPTH TO WATER (feet): 6.06 CALCULATED PURGE (gal.): 13.59
DEPTH OF WELL (feet): 9.90 ACTUAL PURGE VOL. (gal.): 4

DATE PURGED: 3-23-92 Start (2400 Hr) 14:51 End (2400 Hr) 1458
DATE SAMPLED: 3-23-92 Start (2400 Hr) 1500 End (2400 Hr) 1510

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
14:54	3	6.96	2160	63.5	GRAY	HEAVY
14:56	6	DRY	4.0 gallons			
	9					
	12	Recharge				
1500	13	6.95	2180	61.5	Gray	High

D. O. (ppm): NR ODOR: STRONG N/A (COBALT 0 - 100) NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

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: OK LOCK #: 3259

REMARKS: ____

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____
(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)
Location of previous calibration: MW-8

Signature: [signature] Reviewed By: MK Page 5 of 8

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 470-07.01 SAMPLE ID: MW-6(8)

PURGED BY: B. Stafford CLIENT NAME: ARCO 601

SAMPLED BY: " LOCATION: San Leandro

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

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

CASING ELEVATION (feet/MSL): ___ VOLUME IN CASING (gal.): 0.6

DEPTH TO WATER (feet): 7.95 CALCULATED PURGE (gal.): 3.0

DEPTH OF WELL (feet): 8.4 ACTUAL PURGE VOL. (gal.): 1.0

DATE PURGED: 3-23-92 Start (2400 Hr) 1417 End (2400 Hr) 1429

DATE SAMPLED: " Start (2400 Hr) 1429 End (2400 Hr) 1436

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (Visual)	TURBIDITY (Visual)
1415	0.6	6.52	1875	64.6	Cloudy	100
—	1.2 —	Day at	1.0 Gallons	—	1420	
	1.8					
	2.4 ←	Recharge	→			
1425	3.0	6.56	1845	63.5	V. Cloudy	Medium
					NA	NA

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

(COBALT 0 - 100) (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	X Bailer (Teflon®)	___ 2" Bladder Pump	X 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 #: 3259

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: MW-8

Signature: B. Stafford Reviewed By: ___ Page 6 of 8

WATER SAMPLE FIELD DATA SHEET

Rev. 2. 5/91

EMCON ASSOCIATES

PROJECT NO: 670.07.01 SAMPLE ID: MW-7 (9)

PURGED BY: Williams CLIENT NAME: ARCO 601

SAMPLED BY: Williams LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): WP VOLUME IN CASING (gal.): 9.8

DEPTH TO WATER (feet): 8.20 CALCULATED PURGE (gal.): 4.92

DEPTH OF WELL (feet): 9.5 ACTUAL PURGE VOL. (gal.): 1

DATE PURGED: 03-23-92 Start (2400 Hr) 1406 End (2400 Hr) 1410

DATE SAMPLED: 03-23-92 Start (2400 Hr) 1415 End (2400 Hr) 1416

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1410	1	6.98	2080	67.4	Gray	low
Dry	2	Dry	at 1 gallon			
	3					
1422	4	7.07	Recharged 2190	69.5	BROWN	HEAVY
	5					

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

COLOR (COBALT 0 - 100): NA

TURBIDITY (NTU 0 - 200): NA

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): FB-1

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: OK LOCK #: 3259

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: MW-8

Signature: [signature] Reviewed By: MC Page 1 of 8

WATER SAMPLE FIELD DATA SHEET

Rev. 2. 5/91

EMCON ASSOCIATES

PROJECT NO: 610.07.01 SAMPLE ID: MW-8(9)

PURGED BY: J. Williams CLIENT NAME: ARCO 601

SAMPLED BY: " LOCATION: SAN LEANDRO

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

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

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 2.82

DEPTH TO WATER (feet): 5.81 CALCULATED PURGE (gal.): 14.10

DEPTH OF WELL (feet): 10.11 ACTUAL PURGE VOL. (gal.): 8

DATE PURGED: 3-23-92 Start (2400 Hr) 1240 End (2400 Hr) 1252

DATE SAMPLED: " Start (2400 Hr) 1258 End (2400 Hr) 1305

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1244	3	6.59	1554	69.7	Gray	High
1248	6	6.88	1492	69.0	Gray	High
— Dry —	9	— Dry - at	1250 —	8 gallons		
	12	← Recharge				
	X					

D. O. (ppm): Not ODOR: Slight Not Not

(COBALT 0 - 100) (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X 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 #: 3253

REMARKS: BS Forgot to get reading after recharge.

Meter Calibration: Date: 3-23-92 Time: 1230 Meter Serial #: 5517 Temperature °F: 73.9

(EC 1000 1087 / 1003) (DI ___) (pH 7 7.05 / 7.00) (pH 10 9.96 / 10.00) (pH 4 3.97 / ___)

Location of previous calibration: ___

Signature: [signature] Reviewed By: MK Page 8 of 8

GIB-92-026

MONITORING WELL PURGE WATER DISPOSAL FORM

TO BE COMPLETED BY GENERATOR

NAME ARCO PRODUCTS

ADDRESS P.O. BOX 5811

CITY, STATE, ZIP SAN MATEO, CA 94402 PHONE NO (415)571-2434

Description of Water: Purge water generated during sampling or development of monitoring wells located at various ARCO sites. Auger rinsate generated during the installation of monitoring wells at various ARCO sites. The water may contain dissolved hydrocarbons.

	STA #	ADDRESS	GAL
1.	#2107	3310 PARK BLVD., OAKLAND, CALIFORNIA	993
2.	2169	889 W. GRAND AVE., OAKLAND, CALIFORNIA	1775
3.	601	712 LEWELLING BLVD., SAN LEANDRO, CALIFORNIA	52
4.			
5.			
6.			
7.			
8.			
9.			
10.			

THE GENERATOR CERTIFIES THAT THIS WATER AS DESCRIBED IS NON-HAZARDOUS

KYLE CHRISTIE Kyle Christie by Jon Doten 4-1-92
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TRANSPORTER

NAME ALLIED OIL & PUMPING /BALCH PETROLEUM

ADDRESS P.O. BOX 32128

CITY, STATE, ZIP SAN JOSE, CA

PHONE NO (408)432-0333

ED TAYLOR 4-1-92
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

TRUCK UNIT I.D. NO

TSD FACILITY

NAME GIBSON OIL & REFINING

ADDRESS 475 SEAPORT BLVD ☒ RECYCLE ☐ OTHER

CITY, STATE, ZIP REDWOOD CITY, CA 94063

PHONE NO (415)368-5511 RELEASE#11320

GAL

BILL LEDD 4-1-92
TYPED OR PRINTED FULL NAME & SIGNATURE DATE

GON08115