

March 15, 1995

ENVIRONMENTAL
PROTECTION
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EMCON



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STUD
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SDS

March 17, 1995

Project 0805-121.01

95 APR -5 PM 12:53

ENVIRONMENTAL
PROTECTION

Mr. John Sullivan
17760 Sweetbriar Place
Castro Valley, California 94546

Re: Fourth quarter 1994 laboratory analytical results, groundwater samples, Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California

Dear Mr. Sullivan:

Enclosed please find copies of the laboratory analytical results for groundwater samples collected from wells MW-9 and MW-10 during the fourth quarter of 1994. These wells are located at Chateau Manor Apartments, 724 Lewelling Boulevard, San Leandro, California. The groundwater samples were collected on November 20, 1994, during quarterly sampling of ARCO Station 601, located at 712 Lewelling Boulevard in San Leandro. The laboratory analytical results indicate that concentrations of total petroleum hydrocarbons as gasoline, and the gasoline constituents benzene, toluene, ethylbenzene, and total xylenes, were not detected.

Please call if you have questions.

Sincerely,

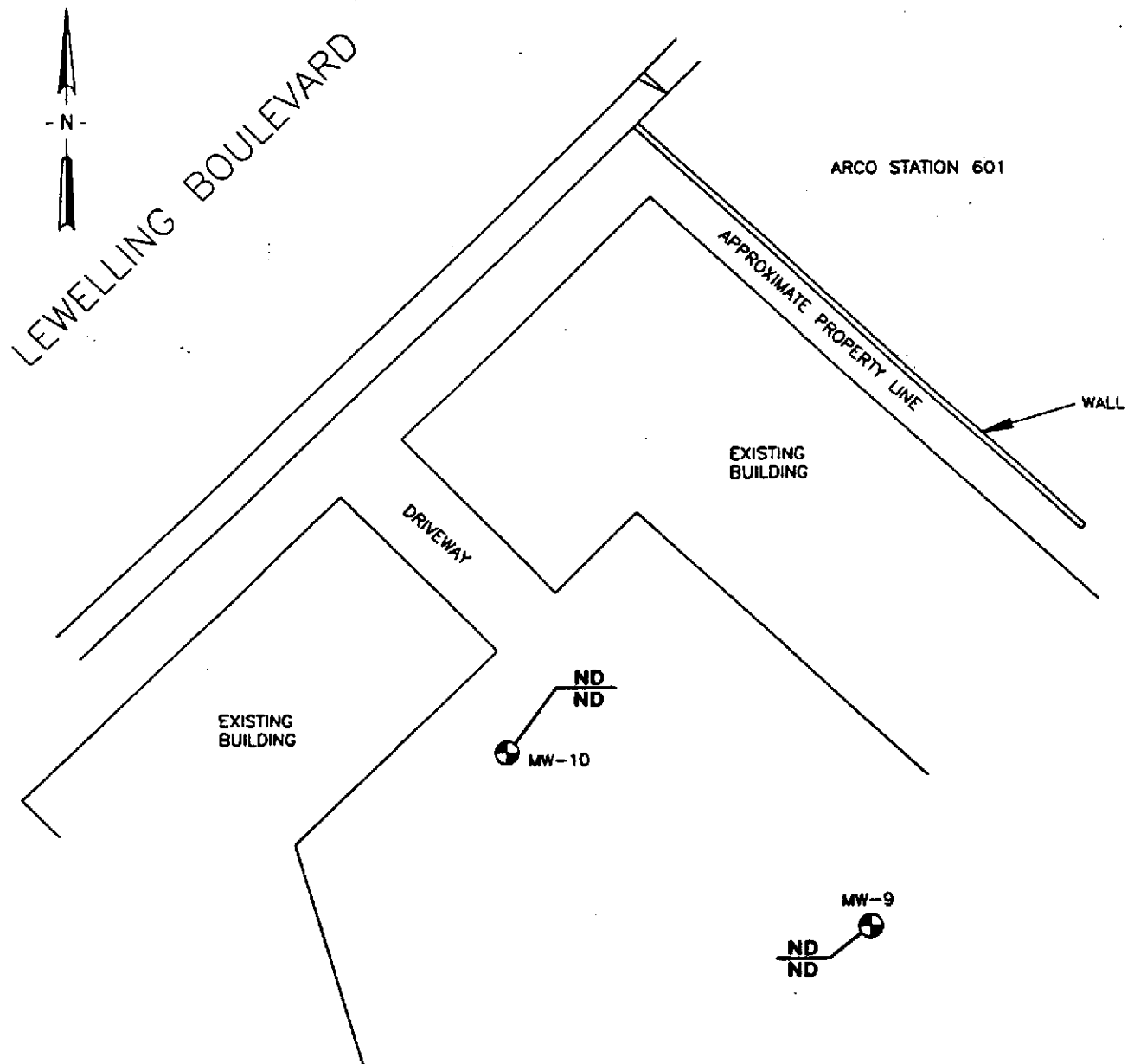
EMCON

David Larsen
Project Coordinator

Attachments: Figure 1 - Generalized Site Plan
Copy of Analytical Results and Chain-of-Custody Documentation,
Wells MW-9 and MW-10, Fourth Quarter 1994

cc: Mike Whelan, ARCO Products Company
John Meck, ARCO Products Company
Gary Grimm, RWQCB
John Jang, RWQCB
Scott Seery, ACHCSA





EXPLANATION



Groundwater monitoring well

ND
ND

TPHG concentration in groundwater (ppb)

Benzene concentration in groundwater (ppb)

ND = Not detected

SCALE: 0 40 FEET
(Approximate)

Base map modified from RESNA, 1994.



Emcon
Associates

CHATEAU MANOR APARTMENTS
724 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

GENERALIZED SITE PLAN

FIGURE

1

PROJECT NO.
805-121.01



January 13, 1995

Service Request No. S941502b

David Larsen
EMCON Associates
1921 Ringwood Ave.
San Jose, CA 95131

Re: **ARCO Facility No. 601**

Dear Mr. Larsen:

Attached are the results of the water samples submitted to our lab on November 22, 1994. For your reference, these analyses have been assigned our service request number S941502.

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

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

A handwritten signature in dark ink, appearing to read 'Keoni A. Murphy'.

Keoni A. Murphy
Program Director

A handwritten signature in dark ink, appearing to read 'Annelise J. Bazar'.

Annelise J. Bazar
Regional QA Coordinator

KAM/ajb
cc: Gina Austin, IWM, Milpitas, CA

COLUMBIA ANALYTICAL SERVICES, Inc.



Acronyms

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/94

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

Analyte:	TPH as				
Units:	Gasoline	Benzene	Toluene	Ethyl-	Xylenes,
Method Reporting Limit:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	benzene	Total
	50	0.5	0.5	ug/L (ppb)	ug/L (ppb)
				0.5	0.5

Sample Name	Lab Code					
MW-9 (9.1)	S941502-013	ND	ND	ND	ND	ND
MW-10 (10.5)	S941502-014	ND	ND	ND	ND	ND
Method Blank	S941130-WB	ND	ND	ND	ND	ND

Approved By:

Ami Spelma

Date:

1/17/95

SABTXGAS/061694



APPENDIX A
LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/95

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

Sample Name	Lab Code	Percent Recovery α,α,α -Trifluorotoluene
MW-9 (9.1)	S941502-013	100
MW-10 (10.5)	S941502-014	102
MS	S941502-006MS	111
DMS	S941502-006DMS	105
Method Blank	S941130-WB	102

CAS Acceptance Limits: 69-116

Approved By:

Ami Spetman

Date:

1/17/95

SUR 1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601

Service Request: S941502
Date Analyzed: 11/30/94

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.0	96	85-115
Toluene	25	24.5	98	85-115
Ethylbenzene	25	25.2	101	85-115
Xylenes, Total	75	67.3	90	85-115
Gasoline	500	509	102	90-110

Approved By: ami Spelma

Date: 1/17/95

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/94

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

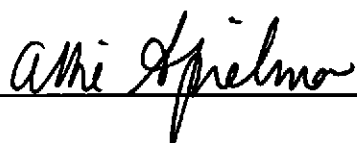
Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S941502-006

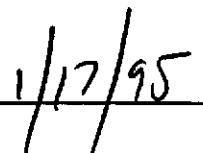
Percent Recovery

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS		
Benzene	25	25	ND	25.0	24.8	100	99	75-135	<1
Toluene	25	25	ND	24.3	25.7	97	103	73-136	6
Ethylbenzene	25	25	ND	26.2	27.0	105	108	69-142	3

Approved By:



Date:



DMS1S060194

**EMCON**

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

March 15, 1995
Project 0805-121.01

Mr. Michael Whelan
ARCO Products Company
2155 South Bascom Avenue, Suite 202
Campbell, California 95008

Re: Fourth quarter 1994 groundwater monitoring program results, ARCO service station 601, San Leandro, California

Dear Mr. Whelan:

This letter presents the results of the fourth quarter 1994 groundwater monitoring program at ARCO Products Company (ARCO) service station 601, 712 Lewelling Boulevard, San Leandro, California (Figure 1). The quarterly monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

BACKGROUND

In August 1989, Applied Geo Systems (AGS) performed a preliminary subsurface environmental investigation to evaluate the removal of underground storage tanks (USTs) from the site. This investigation included drilling five borings to evaluate the potential for hydrocarbons in soil in the vicinity of the USTs.

In January 1990, GeoStrategies, Inc. (GSI), observed the removal of gasoline USTs and a waste-oil tank from the site. During the tank removal, soil samples were collected from the tank pit to assess the presence of hydrocarbon-impacted soil beneath the former USTs. In June 1990, RESNA/AGS conducted an initial phase of subsurface environmental investigation, which included installing three groundwater monitoring wells (MW-1, MW-2, and MW-3) at the site.

Between May and June 1991, RESNA conducted a second phase of investigation, which included (1) installing four groundwater monitoring wells (MW-4 through MW-8), (2) performing a soil-vapor extraction (SVE) test, and (3) conducting a records survey to identify wells and potential off-site sources of hydrocarbons in groundwater within 0.5 mile of the site.

In October 1992, RESNA conducted an initial off-site subsurface investigation to delineate the extent of gasoline hydrocarbons previously discovered by Pacific Gas and Electric in a utility trench adjacent to the site. This investigation included drilling nine soil borings in the vicinity of the utility trench.



Between August 1992 and June 1993, RESNA conducted a third phase of investigation, which included (1) additional on-site and initial off-site subsurface investigation in August 1992 (installation of four additional monitoring wells, MW-11 through MW-14), and (2) additional off-site subsurface investigation (installation of monitoring well MW-15 in April 1993 and monitoring wells MW-9 and MW-10 in June 1993).

Groundwater monitoring at this site was initiated in July 1992. For additional background information, please refer to *Additional Subsurface Investigation at ARCO Station 601, 712 Lewelling Boulevard San Leandro, California* (RESNA, March 3, 1993).

Wells MW-1 through MW-15 are monitored quarterly.

MONITORING PROGRAM FIELD PROCEDURES AND RESULTS

The fourth quarter 1994 groundwater monitoring event was performed by Integrated Wastestream Management (IWM) on November 20, 1994. Well MW-8 was resampled on December 13, 1994, to collect samples not collected on November 20, 1994. Field work performed by IWM during this quarter included (1) measuring depths to groundwater and subjectively analyzing groundwater for the presence of floating product in wells MW-1 through MW-15, (2) purging and subsequently sampling groundwater monitoring wells MW-1 through MW-15 for laboratory analysis, and (3) directing a state-certified laboratory to analyze the groundwater samples. Well MW-1 contained a sheen of floating product and was not sampled during fourth quarter 1994. The results of IWM's field work were transmitted to EMCON in two reports dated December 30, 1994, and January 11, 1995. These data are presented in Appendix A.

ANALYTICAL PROCEDURES

Groundwater samples collected during fourth quarter 1994 monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Groundwater samples were prepared for analysis by U.S. Environmental Protection Agency (USEPA) method 5030 (purge and trap). Groundwater was analyzed for TPHG by the methods accepted by the Department of Toxic Substances Control, California Environmental Protection Agency (Cal-EPA), and referenced in the *Leaking Underground Fuel Tank (LUFT) Field Manual* (State Water Resources Control Board, October 1989). Samples were analyzed for BTEX by USEPA method 8020, as described in *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (USEPA, SW-846, November 1986, Third Edition). Groundwater samples collected from well MW-8 were also analyzed for semivolatile organic compounds (SVOCs) by USEPA method 3520/8270; total recoverable petroleum hydrocarbons (TRPH) by USEPA method 418.1; total petroleum hydrocarbons as diesel (TPHD) by USEPA method

3510/Cal-EPA LUFT method; cadmium, chromium, nickel, and zinc by USEPA method 6010A; and lead by USEPA method 7421. These methods are recommended for samples from petroleum-hydrocarbon-impacted sites in the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites* (August 10, 1990).

MONITORING PROGRAM RESULTS

Results of the fourth quarter 1994 groundwater monitoring event are summarized in Table 1 and illustrated in Figure 2. Historical groundwater elevation data, including top-of-casing elevations, depth-to-water measurements, calculated groundwater elevations, floating-product thickness measurements, and groundwater flow direction and gradient data, are summarized in Table 2. Table 3 summarizes historical laboratory data for TPHG and BTEX analyses. Table 4 summarizes historical laboratory data for TRPH, TPHD, and metals analyses for wells MW-2, MW-3, MW-5, and MW-8. Historical laboratory data for volatile organic compound (VOC) and SVOC analyses for wells MW-2 and MW-8 are summarized in Table 5. Historical floating product recovery data for well MW-1 are summarized in Table 6. Copies of the fourth quarter 1994 analytical results and chain-of-custody documentation are included in Appendix B.

MONITORING PROGRAM EVALUATION

Groundwater elevation data collected on November 20, 1994, illustrate that groundwater beneath the site flows southwest at an approximate hydraulic gradient of 0.002 foot per foot. Figure 2 illustrates groundwater contours and analytical data for the fourth quarter of 1994.

Groundwater samples collected from wells MW-7, MW-9, MW-10, and MW-12 through MW-15 did not contain detectable concentrations of TPHG or BTEX. Groundwater samples collected from wells MW-2, MW-3, MW-5, MW-6, MW-8, and MW-11 contained concentrations of TPHG from 1,300 to 80,000 parts per billion (ppb) and concentrations of benzene from 1.2 to 11,000 ppb. Groundwater samples collected from well MW-4 contained 2.9 ppb benzene, but did not contain detectable concentrations of TPHG (<50 ppb). Groundwater samples collected from well MW-8 did not contain detectable concentrations of TRPH (<500 ppb), cadmium (<3 ppb), chromium (<5 ppb), lead (<2 ppb), or nickel (<20 ppb.) Groundwater samples collected from well MW-8 did contain 2,100 ppb of TPHD, 14 ppb of zinc, 14 ppb of naphthalene, and 14 ppb of *bis* (2-ethylhexyl) phthalate. Similar analytical results were reported for these wells during previous monitoring events. The levels of chromium, lead, and zinc reported for well MW-8 are below the published maximum contaminant levels (MCLs) for these metals. Well MW-1 contained a sheen of floating product and was not sampled.

LIMITATIONS

Field procedures were performed by, and field data acquired from, IWM. EMCON does not warrant the accuracy of data supplied by IWM. EMCON's scope of work was limited to interpreting field data, which included evaluating trends in the groundwater gradient, groundwater flow direction, and dissolved-petroleum-hydrocarbon concentrations beneath the site.

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

SITE STATUS UPDATE

This update reports site activities performed during the fourth quarter of 1994 and the anticipated site activities for the first quarter of 1995.

Fourth Quarter 1994 Activities

- Prepared and submitted quarterly groundwater monitoring report for third quarter 1994.
- Performed quarterly groundwater monitoring for fourth quarter 1994.

Work Anticipated First Quarter 1995

- Prepare and submit quarterly groundwater monitoring report for fourth quarter 1994.
- Perform quarterly groundwater monitoring for first quarter 1995.

Mr. Michael Whelan
March 15, 1995
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Project 0805-121.01

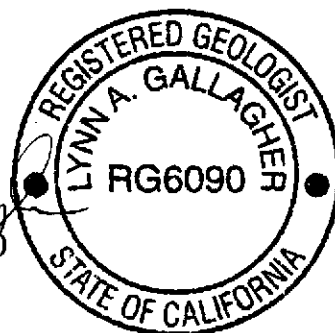
Please call if you have questions.

Sincerely,

EMCON


David Larson
Project Coordinator


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



Attachments: Table 1 - Groundwater Monitoring Data, Fourth Quarter 1994
Table 2 - Historical Groundwater Elevation Data
Table 3 - Historical Groundwater Analytical Data (TPHG and BTEX)
Table 4 - Historical Groundwater Analytical Data (TRPH, TPHD, and Metals)
Table 5 - Historical Groundwater Analytical Data (VOCs and SVOCs)
Table 6 - Approximate Cumulative Floating Product Recovered (Well MW-1)
Figure 1 - Site Location
Figure 2 - Groundwater Data, Fourth Quarter 1994
Appendix A - Field Data Report, Integrated Wastestream Management, December 30, 1994 and January 11, 1995
Appendix B - Analytical Results and Chain-of-Custody Documentation, Fourth Quarter 1994

cc:


John Jang, RWQCB-SFBR
Gary Grimm, RWQCB-SFBR
Mike Bakaldin, SLFD
John Meck, ARCO Legal Department

Table 1
Groundwater Monitoring Data
Fourth Quarter 1994
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-1	11-20-94	22.26	7.81	14.45	Sheen	SW	0.002	11-20-94	Not sampled: well contained floating product				
MW-2	11-20-94	21.33	6.86	14.47	ND	SW	0.002	11-20-94	4900	170	150	120	390
MW-3	11-20-94	20.11	5.88	14.23	ND	SW	0.002	11-20-94	80000	4700	9700	2400	15000
MW-4	11-20-94	20.75	7.73	13.02	ND	SW	0.002	11-20-94	<50	2.9	0.5	<0.5	1.4
MW-5	11-20-94	20.90	6.34	14.56	ND	SW	0.002	11-20-94	33000	5700	1800	720	4700
MW-6	11-20-94	22.08	7.41	14.67	ND	SW	0.002	11-20-94	30000	11000	<100*	1200	2300
MW-7	11-20-94	22.89	8.72	14.17	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	11-20-94	20.97	6.78	14.19	ND	SW	0.002	11-20-94	2300	1.2	1.1	20	2.2
MW-9	11-20-94	20.89	6.83	14.06	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	11-20-94	21.12	7.05	14.07	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-11	11-20-94	22.38	7.73	14.65	ND	SW	0.002	11-20-94	1300	1.3	0.5	1.5	21
MW-12	11-20-94	22.77	8.06	14.71	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	11-20-94	22.45	7.68	14.77	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-20-94	22.99	8.66	14.33	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	11-20-94	19.19	5.31	13.88	ND	SW	0.002	11-20-94	<50	<0.5	<0.5	<0.5	<0.5

TOC = Top of casing

ft-MSL = Elevation in feet, relative to mean sea level

MWN = Ground-water flow direction and gradient apply to the entire monitoring well network

TPHG = Total petroleum hydrocarbons as gasoline

ppb = Parts per billion or micrograms per liter (µg/l)

SW = Southwest

ND = None detected

* = Method reporting limit was raised due to high analyte concentration requiring sample dilution

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	07-17-90	22.98	9.03	13.95	Emulsion	NR	NR
MW-1	08-07-90	22.98	9.19	13.79	ND	NR	NR
MW-1	10-15-90	22.98	^9.85	^13.13	0.25	NR	NR
MW-1	11-20-90	22.98	^9.79	^13.19	0.46	NR	NR
MW-1	12-21-90	22.98	9.18	13.80	Sheen	NR	NR
MW-1	01-09-91	22.98	^9.47	^13.51	0.02	NR	NR
MW-1	02-27-91	22.98	^9.31	^13.67	0.03	NR	NR
MW-1	03-20-91	22.98	^^7.81	^^15.17	Sheen	NR	NR
MW-1	04-16-91	22.98	6.12	16.86	Sheen	NR	NR
MW-1	05-16-91	22.98	^8.60	^13.66	0.01	NR	NR
MW-1	06-10-91	22.26	9.00	13.26	Sheen	NR	NR
MW-1	07-18-91	22.26	^9.33	^12.93	0.01	NR	NR
MW-1	08-22-91	22.26	^9.49	^12.77	0.04	NR	NR
MW-1	09-18-91	22.26	^9.63	^12.63	0.04	NR	NR
MW-1	10-10-91	22.26	^9.73	^12.53	0.04	NR	NR
MW-1	11-21-91	22.26	^8.40	^13.86	0.01	NR	NR
MW-1	12-24-91	22.26	^9.68	^13.30	0.13	NR	NR
MW-1	01-19-92	22.26	8.84	13.42	ND	NR	NR
MW-1	02-20-92	22.26	7.22	15.04	ND	NR	NR
MW-1	03-23-92	22.26	7.40	14.86	Sheen	NR	NR
MW-1	04-21-92	22.26	8.30	13.96	ND	NR	NR
MW-1	05-15-92	22.26	^8.77	^13.49	0.01	NR	NR
MW-1	06-08-92	22.26	^9.08	^13.18	0.02	NR	NR
MW-1	07-15-92	22.26	9.40	12.86	ND	NR	NR
MW-1	08-25-92	22.26	8.21	14.05	ND	NR	NR
MW-1	09-15-92	22.26	^8.18	^14.08	0.02	NR	NR
MW-1	10-28-92	22.26	8.62	13.64	ND	NR	NR
MW-1	11-16-92	22.26	^9.09	^13.17	0.02	NR	NR
MW-1	12-16-92	22.26	^8.10	^14.16	0.02	NR	NR
MW-1	01-15-93	22.26	6.53	15.73	ND	NR	NR
MW-1	02-16-93	22.26	^7.03	^15.23	0.01	NR	NR
MW-1	03-30-93	22.26	6.86	15.40	ND	NR	NR
MW-1	04-28-93	22.26	^6.77	^15.49	0.01	NR	NR
MW-1	05-13-93	22.26	^8.08	^14.18	0.01	NR	NR
MW-1	06-17-93	22.26	^8.48	^13.78	0.01	NR	NR
MW-1	07-28-93	22.26	^8.80	^13.46	0.01	NR	NR
MW-1	08-17-93	22.26	^8.81	^13.45	0.01	NR	NR
MW-1	11-08-93	22.26	^9.22	^13.04	0.01	NR	NR
MW-1	02-14-94	22.26	7.72	14.54	Sheen	NR	NR
MW-1	05-05-94	22.26	8.47	13.79	Sheen	NR	NR
MW-1	08-04-94	22.26	8.72	13.54	Sheen	SW	0.004
MW-1	11-20-94	22.26	7.81	14.45	Sheen	SW	0.002

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-2	07-17-90	22.06	7.86	14.20	ND	NR	NR
MW-2	08-07-90	22.06	8.03	14.03	ND	NR	NR
MW-2	10-15-90	22.06	8.61	13.45	ND	NR	NR
MW-2	11-20-90	22.06	8.76	13.30	ND	NR	NR
MW-2	12-21-90	22.06	8.28	13.78	ND	NR	NR
MW-2	01-09-91	22.06	8.43	13.63	ND	NR	NR
MW-2	02-27-91	22.06	8.28	13.78	ND	NR	NR
MW-2	03-20-91	22.06	7.26	14.80	ND	NR	NR
MW-2	04-16-91	22.06	6.97	15.09	ND	NR	NR
MW-2	05-16-91	22.06	7.52	14.54	ND	NR	NR
MW-2	06-10-91	21.33	7.91	13.42	ND	NR	NR
MW-2	07-18-91	21.33	8.30	13.03	ND	NR	NR
MW-2	08-22-91	21.33	8.50	12.83	ND	NR	NR
MW-2	09-18-91	21.33	8.63	12.70	ND	NR	NR
MW-2	10-10-91	21.33	8.82	12.51	ND	NR	NR
MW-2	11-21-91	21.33	8.46	12.87	ND	NR	NR
MW-2	12-24-91	21.33	8.72	12.61	ND	NR	NR
MW-2	01-19-92	21.33	7.96	13.37	ND	NR	NR
MW-2	02-20-92	21.33	6.55	14.78	ND	NR	NR
MW-2	03-23-92	21.33	6.86	14.47	ND	NR	NR
MW-2	04-21-92	21.33	7.15	14.18	ND	NR	NR
MW-2	05-15-92	21.33	7.61	13.72	ND	NR	NR
MW-2	06-08-92	21.33	7.95	13.38	ND	NR	NR
MW-2	07-15-92	21.33	8.45	12.88	ND	NR	NR
MW-2	08-25-92	21.33	8.53	12.80	ND	NR	NR
MW-2	09-15-92	21.33	8.71	12.62	ND	NR	NR
MW-2	10-28-92	21.33	8.89	12.44	ND	NR	NR
MW-2	11-16-92	21.33	7.93	13.40	ND	NR	NR
MW-2	12-16-92	21.33	7.44	13.89	ND	NR	NR
MW-2	01-15-93	21.33	6.13	15.20	ND	NR	NR
MW-2	02-16-93	21.33	6.02	15.31	ND	NR	NR
MW-2	03-30-93	21.33	5.98	15.35	ND	NR	NR
MW-2	04-28-93	21.33	6.58	14.75	ND	NR	NR
MW-2	05-13-93	21.33	6.99	14.34	ND	NR	NR
MW-2	06-17-93	21.33	7.40	13.93	ND	NR	NR
MW-2	07-28-93	21.33	7.79	13.54	ND	NR	NR
MW-2	08-17-93	21.33	7.85	13.48	ND	NR	NR
MW-2	11-08-93	21.33	8.12	13.21	ND	NR	NR
MW-2	02-14-94	21.33	6.88	14.45	ND	NR	NR
MW-2	05-05-94	21.33	7.51	13.82	ND	NR	NR
MW-2	08-04-94	21.33	8.00	13.33	ND	SW	0.004
MW-2	11-20-94	21.33	6.86	14.47	ND	SW	0.002

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ARCO Service Station 601
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Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-3	07-17-90	20.84	7.03	13.81	Sheen	NR	NR
MW-3	08-07-90	20.84	7.21	13.63	ND	NR	NR
MW-3	10-15-90	20.84	^8.19	^12.65	0.75	NR	NR
MW-3	11-20-90	20.84	^7.98	^12.85	1.08	NR	NR
MW-3	12-21-90	20.84	^7.22	^13.62	0.01	NR	NR
MW-3	01-09-91	20.84	^7.46	^13.38	0.30	NR	NR
MW-3	02-27-91	20.84	^7.37	^13.47	0.02	NR	NR
MW-3	03-20-91	20.84	^5.79	^15.05	Sheen	NR	NR
MW-3	04-16-91	20.84	7.95	12.89	Sheen	NR	NR
MW-3	05-16-91	20.84	7.50	13.34	ND	NR	NR
MW-3	06-10-91	20.11	7.14	12.97	Sheen	NR	NR
MW-3	07-18-91	20.11	7.55	12.56	ND	NR	NR
MW-3	08-22-91	20.11	7.64	12.47	Sheen	NR	NR
MW-3	09-18-91	20.11	^7.89	^12.22	0.12	NR	NR
MW-3	10-10-91	20.11	^7.82	^12.29	0.26	NR	NR
MW-3	11-21-91	20.11	^7.59	^12.52	0.04	NR	NR
MW-3	12-24-91	20.11	^8.74	^11.37	0.01	NR	NR
MW-3	01-19-92	20.11	6.98	13.13	0.01	NR	NR
MW-3	02-20-92	20.11	5.05	15.06	0.01	NR	NR
MW-3	03-23-92	20.11	5.75	14.36	Sheen	NR	NR
MW-3	04-21-92	20.11	6.55	13.56	ND	NR	NR
MW-3	05-15-92	20.11	^7.11	^13.00	0.03	NR	NR
MW-3	06-08-92	20.11	^7.52	^12.59	0.02	NR	NR
MW-3	07-15-92	20.11	7.92	12.19	ND	NR	NR
MW-3	08-25-92	20.11	8.00	12.11	ND	NR	NR
MW-3	09-15-92	20.11	^8.01	^12.10	0.02	NR	NR
MW-3	10-28-92	20.11	8.66	11.45	ND	NR	NR
MW-3	11-16-92	20.11	7.11	13.00	Sheen	NR	NR
MW-3	12-16-92	20.11	6.62	13.49	ND	NR	NR
MW-3	01-15-93	20.11	4.44	15.67	ND	NR	NR
MW-3	02-16-93	20.11	^5.93	^14.18	0.01	NR	NR
MW-3	03-30-93	20.11	5.48	14.63	ND	NR	NR
MW-3	04-28-93	20.11	^6.02	^14.09	0.01	NR	NR
MW-3	05-13-93	20.11	^6.37	^13.74	0.01	NR	NR
MW-3	06-17-93	20.11	^6.52	^13.59	0.01	NR	NR
MW-3	07-28-93	20.11	6.95	13.16	ND	NR	NR
MW-3	08-17-93	20.11	^7.00	^13.11	0.01	NR	NR
MW-3	11-08-93	20.11	7.31	12.80	ND	NR	NR
MW-3	02-14-94	20.11	5.81	14.30	ND	NR	NR
MW-3	05-05-94	20.11	6.81	13.30	ND	NR	NR
MW-3	08-04-94	20.11	7.31	12.80	ND	SW	0.004
MW-3	11-20-94	20.11	5.88	14.23	ND	SW	0.002

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Date: 03-03-95
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Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-4	06-10-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	07-18-91	20.75	7.86	12.89	ND	NR	NR
MW-4	08-22-91	20.75	7.85	12.90	ND	NR	NR
MW-4	09-18-91	20.75	7.84	12.91	ND	NR	NR
MW-4	10-10-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	11-21-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	12-24-91	20.75	DRY	DRY	ND	DRY	DRY
MW-4	01-19-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	02-20-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	03-23-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	04-21-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	05-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	06-08-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	07-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	08-25-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	09-15-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	10-28-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	11-16-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	12-16-92	20.75	DRY	DRY	ND	DRY	DRY
MW-4	01-15-93	20.75	7.48	13.27	ND	NR	NR
MW-4	02-16-93	20.75	7.10	13.65	ND	NR	NR
MW-4	03-30-93	20.75	7.51	13.24	ND	NR	NR
MW-4	04-28-93	20.75	7.10	13.65	ND	NR	NR
MW-4	05-13-93	20.75	7.02	13.73	ND	NR	NR
MW-4	06-17-93	20.75	7.98	12.77	ND	NR	NR
MW-4	07-28-93	20.75	7.90	12.85	ND	NR	NR
MW-4	08-17-93	20.75	7.85	12.90	ND	NR	NR
MW-4	11-08-93	20.75	DRY	DRY	ND	DRY	DRY
MW-4	02-14-94	20.75	DRY	DRY	ND	DRY	DRY
MW-4	05-05-94	20.75	7.73	13.02	ND	NR	NR
MW-4	08-04-94	20.75	7.83	12.92	ND	SW	0.004
MW-4	11-20-94	20.75	7.73	13.02	ND	SW	0.002

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ARCO Service Station 601
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Date: 03-03-95
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Well Desig- nation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-5	06-10-91	20.90	7.58	13.32	ND	NR	NR
MW-5	07-18-91	20.90	7.97	12.93	ND	NR	NR
MW-5	08-22-91	20.90	8.18	12.72	ND	NR	NR
MW-5	09-18-91	20.90	8.31	12.59	ND	NR	NR
MW-5	10-10-91	20.90	8.51	12.39	Sheen	NR	NR
MW-5	11-21-91	20.90	8.13	12.77	ND	NR	NR
MW-5	12-24-91	20.90	8.32	12.58	ND	NR	NR
MW-5	01-19-92	20.90	7.50	13.40	ND	NR	NR
MW-5	02-20-92	20.90	5.97	14.93	ND	NR	NR
MW-5	03-23-92	20.90	6.06	14.84	ND	NR	NR
MW-5	04-21-92	20.90	6.90	14.00	ND	NR	NR
MW-5	05-15-92	20.90	7.32	13.58	ND	NR	NR
MW-5	06-08-92	20.90	7.66	13.24	ND	NR	NR
MW-5	07-15-92	20.90	8.34	12.56	ND	NR	NR
MW-5	08-25-92	20.90	8.18	12.72	ND	NR	NR
MW-5	09-15-92	20.90	8.40	12.50	ND	NR	NR
MW-5	10-28-92	20.90	8.83	12.07	ND	NR	NR
MW-5	11-16-92	20.90	7.70	13.20	ND	NR	NR
MW-5	12-16-92	20.90	6.92	13.98	ND	NR	NR
MW-5	01-15-93	20.90	5.52	15.38	ND	NR	NR
MW-5	02-16-93	20.90	5.64	15.26	ND	NR	NR
MW-5	03-30-93	20.90	5.56	15.34	ND	NR	NR
MW-5	04-28-93	20.90	6.28	14.62	ND	NR	NR
MW-5	05-13-93	20.90	6.68	14.22	ND	NR	NR
MW-5	06-17-93	20.90	7.07	13.83	ND	NR	NR
MW-5	07-28-93	20.90	7.41	13.49	ND	NR	NR
MW-5	08-17-93	20.90	7.49	13.41	ND	NR	NR
MW-5	11-08-93	20.90	7.93	12.97	ND	NR	NR
MW-5	02-14-94	20.90	6.49	14.41	ND	NR	NR
MW-5	05-05-94	20.90	7.18	13.72	ND	NR	NR
MW-5	08-04-94	20.90	7.83	13.07	ND	SW	0.004
MW-5	11-20-94	20.90	6.34	14.56	ND	SW	0.002

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Date: 03-03-95
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Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-6	06-10-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	07-18-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-22-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	09-18-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	10-10-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-21-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	12-24-91	22.08	DRY	DRY	ND	DRY	DRY
MW-6	01-19-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	02-20-92	22.08	7.28	14.80	ND	NR	NR
MW-6	03-23-92	22.08	7.45	14.63	ND	NR	NR
MW-6	04-21-92	22.08	7.74	14.34	ND	NR	NR
MW-6	05-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	06-08-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	07-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-25-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	09-15-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	10-28-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-16-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	12-16-92	22.08	DRY	DRY	ND	DRY	DRY
MW-6	01-15-93	22.08	7.22	14.86	ND	NR	NR
MW-6	02-16-93	22.08	6.79	15.29	ND	NR	NR
MW-6	03-30-93	22.08	6.68	15.40	ND	NR	NR
MW-6	04-28-93	22.08	7.28	14.80	ND	NR	NR
MW-6	05-13-93	22.08	7.73	14.35	ND	NR	NR
MW-6	06-17-93	22.08	8.15	13.93	ND	NR	NR
MW-6	07-28-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	08-17-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-08-93	22.08	DRY	DRY	ND	DRY	DRY
MW-6	02-14-94	22.08	7.78	14.30	ND	NR	NR
MW-6	05-05-94	22.08	8.24	13.84	ND	NR	NR
MW-6	08-04-94	22.08	DRY	DRY	ND	DRY	DRY
MW-6	11-20-94	22.08	7.41	14.67	ND	SW	0.002

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Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-7	06-10-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	07-18-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-22-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	09-18-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	10-10-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-21-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	12-24-91	22.89	DRY	DRY	ND	DRY	DRY
MW-7	01-19-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	02-20-92	22.89	8.74	14.15	ND	NR	NR
MW-7	03-23-92	22.89	8.20	14.69	ND	NR	NR
MW-7	04-21-92	22.89	8.86	14.03	ND	NR	NR
MW-7	05-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	06-08-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	07-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-25-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	09-15-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	10-28-92	22.89	^^10.38	12.51	ND	NR	NR
MW-7	11-16-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	12-16-92	22.89	DRY	DRY	ND	DRY	DRY
MW-7	01-15-93	22.89	8.37	14.52	ND	NR	NR
MW-7	02-16-93	22.89	7.84	15.05	ND	NR	NR
MW-7	03-30-93	22.89	8.03	14.86	ND	NR	NR
MW-7	04-28-93	22.89	8.33	14.56	ND	NR	NR
MW-7	05-13-93	22.89	8.56	14.33	ND	NR	NR
MW-7	06-17-93	22.89	9.30	13.59	ND	NR	NR
MW-7	07-28-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	08-17-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-08-93	22.89	DRY	DRY	ND	DRY	DRY
MW-7	02-14-94	22.89	8.80	14.09	ND	NR	NR
MW-7	05-05-94	22.89	9.11	13.78	ND	NR	NR
MW-7	08-04-94	22.89	DRY	DRY	ND	DRY	DRY
MW-7	11-20-94	22.89	8.72	14.17	ND	SW	0.002

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Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-8	06-10-91	20.97	7.80	13.17	ND	NR	NR
MW-8	07-18-91	20.97	8.36	12.61	ND	NR	NR
MW-8	08-22-91	20.97	8.53	12.44	ND	NR	NR
MW-8	09-18-91	20.97	8.68	12.29	ND	NR	NR
MW-8	10-10-91	20.97	8.87	12.10	ND	NR	NR
MW-8	11-21-91	20.97	8.43	12.54	ND	NR	NR
MW-8	12-24-91	20.97	8.68	12.29	ND	NR	NR
MW-8	01-19-92	20.97	7.73	13.24	ND	NR	NR
MW-8	02-20-92	20.97	5.57	15.40	ND	NR	NR
MW-8	03-23-92	20.97	5.81	15.16	ND	NR	NR
MW-8	04-21-92	20.97	7.05	13.92	ND	NR	NR
MW-8	05-15-92	20.97	7.79	13.18	ND	NR	NR
MW-8	06-08-92	20.97	8.01	12.96	ND	NR	NR
MW-8	07-15-92	20.97	8.46	12.51	ND	NR	NR
MW-8	08-25-92	20.97	8.64	12.33	ND	NR	NR
MW-8	09-15-92	20.97	8.80	12.17	ND	NR	NR
MW-8	10-28-92	20.97	8.80	12.17	ND	NR	NR
MW-8	11-16-92	20.97	8.19	12.78	ND	NR	NR
MW-8	12-16-92	20.97	6.66	14.31	ND	NR	NR
MW-8	01-15-93	20.97	5.18	15.79	ND	NR	NR
MW-8	02-16-93	20.97	5.84	15.13	ND	NR	NR
MW-8	03-30-93	20.97	4.98	15.99	ND	NR	NR
MW-8	04-28-93	20.97	6.17	14.80	ND	NR	NR
MW-8	05-13-93	20.97	6.93	14.04	ND	NR	NR
MW-8	06-17-93	20.97	7.36	13.61	ND	NR	NR
MW-8	07-28-93	20.97	7.80	13.17	ND	NR	NR
MW-8	08-17-93	20.97	7.87	13.10	ND	NR	NR
MW-8	11-08-93	20.97	8.31	12.66	ND	NR	NR
MW-8	02-14-94	20.97	7.00	13.97	ND	NR	NR
MW-8	05-05-94	20.97	7.46	13.51	ND	NR	NR
MW-8	08-04-94	20.97	8.17	12.80	ND	SW	0.004
MW-8	11-20-94	20.97	6.78	14.19	ND	SW	0.002

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Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-9	06-11-93	20.89	8.15	12.74	ND	NR	NR
MW-9	07-28-93	20.89	8.49	12.40	ND	NR	NR
MW-9	08-17-93	20.89	8.53	12.36	ND	NR	NR
MW-9	11-08-93	20.89	8.87	12.02	ND	NR	NR
MW-9	02-14-94	20.89	7.47	13.42	ND	NR	NR
MW-9	05-05-94	20.89	8.04	12.85	ND	NR	NR
MW-9	08-04-94	20.89	8.78	12.11	ND	SW	0.004
MW-9	11-20-94	20.89	6.83	14.06	ND	SW	0.002
MW-10	06-11-93	21.12	8.14	12.98	ND	NR	NR
MW-10	07-28-93	21.12	8.43	12.69	ND	NR	NR
MW-10	08-17-93	21.12	8.54	12.58	ND	NR	NR
MW-10	11-08-93	21.12	8.70	12.42	ND	NR	NR
MW-10	02-14-94	21.12	7.13	13.99	ND	NR	NR
MW-10	05-05-94	21.12	8.08	13.04	ND	NR	NR
MW-10	08-04-94	21.12	8.84	12.28	ND	SW	0.004
MW-10	11-20-94	21.12	7.05	14.07	ND	SW	0.002
MW-11	11-16-92	22.38	9.02	13.36	ND	NR	NR
MW-11	12-16-92	22.38	8.48	13.90	ND	NR	NR
MW-11	01-15-93	22.38	7.14	15.24	ND	NR	NR
MW-11	02-16-93	22.38	7.11	15.27	ND	NR	NR
MW-11	03-30-93	22.38	7.01	15.37	ND	NR	NR
MW-11	04-28-93	22.38	7.62	14.76	ND	NR	NR
MW-11	05-13-93	22.38	8.04	14.34	ND	NR	NR
MW-11	06-17-93	22.38	8.44	13.94	ND	NR	NR
MW-11	07-28-93	22.38	8.80	13.58	ND	NR	NR
MW-11	08-17-93	22.38	8.78	13.60	ND	NR	NR
MW-11	11-08-93	22.38	9.23	13.15	ND	NR	NR
MW-11	02-14-94	22.38	7.94	14.44	ND	NR	NR
MW-11	05-05-94	22.38	8.55	13.83	ND	NR	NR
MW-11	08-04-94	22.38	9.13	13.25	ND	SW	0.004
MW-11	11-20-94	22.38	7.73	14.65	ND	SW	0.002

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-12	11-16-92	22.77	9.65	13.12	ND	NR	NR
MW-12	12-16-92	22.77	8.71	14.06	ND	NR	NR
MW-12	01-15-93	22.77	7.19	15.58	ND	NR	NR
MW-12	02-16-93	22.77	7.88	14.89	ND	NR	NR
MW-12	03-30-93	22.77	7.43	15.34	ND	NR	NR
MW-12	04-28-93	22.77	8.22	14.55	ND	NR	NR
MW-12	05-13-93	22.77	8.63	14.14	ND	NR	NR
MW-12	06-17-93	22.77	8.98	13.79	ND	NR	NR
MW-12	07-28-93	22.77	9.32	13.45	ND	NR	NR
MW-12	08-17-93	22.77	9.30	13.47	ND	NR	NR
MW-12	11-08-93	22.77	9.72	13.05	ND	NR	NR
MW-12	02-14-94	22.77	8.24	14.53	ND	NR	NR
MW-12	05-05-94	22.77	8.97	13.80	ND	NR	NR
MW-12	08-04-94	22.77	9.57	13.20	ND	SW	0.004
MW-12	11-20-94	22.77	8.06	14.71	ND	SW	0.002
MW-13	11-16-92	22.45	9.02	13.43	ND	NR	NR
MW-13	12-16-92	22.45	8.23	14.22	ND	NR	NR
MW-13	01-15-93	22.45	6.89	15.56	ND	NR	NR
MW-13	02-16-93	22.45	7.14	15.31	ND	NR	NR
MW-13	03-30-93	22.45	7.01	15.44	ND	NR	NR
MW-13	04-28-93	22.45	7.57	14.88	ND	NR	NR
MW-13	05-13-93	22.45	7.95	14.50	ND	NR	NR
MW-13	06-17-93	22.45	8.32	14.13	ND	NR	NR
MW-13	07-28-93	22.45	8.59	13.86	ND	NR	NR
MW-13	08-17-93	22.45	8.57	13.88	ND	NR	NR
MW-13	11-08-93	22.45	8.86	13.59	ND	NR	NR
MW-13	02-14-94	22.45	7.78	14.67	ND	NR	NR
MW-13	05-05-94	22.45	8.38	14.07	ND	NR	NR
MW-13	08-04-94	22.45	8.78	13.67	ND	SW	0.004
MW-13	11-20-94	22.45	7.68	14.77	ND	SW	0.002

Table 2
Historical Groundwater Elevation Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 03-03-95
Project Number: 0805-121.01

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground- Water Elevation ft-MSL	Floating Product Thickness feet	Ground- Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-14	09-15-92	22.99	10.66	12.33	ND	NR	NR
MW-14	10-28-92	22.99	10.91	12.08	ND	NR	NR
MW-14	11-16-92	22.99	10.33	12.66	ND	NR	NR
MW-14	12-16-92	22.99	9.20	13.79	ND	NR	NR
MW-14	01-15-93	22.99	7.06	15.93	ND	NR	NR
MW-14	02-16-93	22.99	8.18	14.81	ND	NR	NR
MW-14	03-30-93	22.99	7.97	15.02	ND	NR	NR
MW-14	04-28-93	22.99	8.63	14.36	ND	NR	NR
MW-14	05-13-93	22.99	9.05	13.94	ND	NR	NR
MW-14	06-17-93	22.99	9.55	13.44	ND	NR	NR
MW-14	07-28-93	22.99	9.89	13.10	ND	NR	NR
MW-14	08-17-93	22.99	9.90	13.09	ND	NR	NR
MW-14	11-08-93	22.99	10.25	12.74	ND	NR	NR
MW-14	02-14-94	22.99	8.80	14.19	ND	NR	NR
MW-14	05-05-94	22.99	9.49	13.50	ND	NR	NR
MW-14	08-04-94	22.99	10.11	12.88	ND	SW	0.004
MW-14	11-20-94	22.99	8.66	14.33	ND	SW	0.002
MW-15	04-28-93	19.19	5.51	13.68	ND	NR	NR
MW-15	05-13-93	19.19	5.91	13.28	ND	NR	NR
MW-15	06-17-93	19.19	6.18	13.01	ND	NR	NR
MW-15	07-28-93	19.19	6.45	12.74	ND	NR	NR
MW-15	08-17-93	19.19	6.54	12.65	ND	NR	NR
MW-15	11-08-93	19.19	6.98	12.21	ND	NR	NR
MW-15	02-14-94	19.19	5.44	13.75	ND	NR	NR
MW-15	05-05-94	19.19	6.18	13.01	ND	NR	NR
MW-15	08-04-94	19.19	6.84	12.35	ND	SW	0.004
MW-15	11-20-94	19.19	5.31	13.88	ND	SW	0.002

TOC = Top of casing

ft-MSL = Elevation in feet, relative to mean sea level

MWN = Ground-water flow direction and gradient apply to the entire monitoring well network

NR = Not reported; data not available or not measurable

ND = None detected

^ = Groundwater elevation (GWE) and depth to water (DTW) adjusted to include 80 percent of the floating product thickness (FPT):

$$[GWE = (TOC - DTW) + (FPT \times 0.8)]$$

^^ = Anomalous data

SW = Southwest

DRY = Dry well; groundwater was not detected

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Design- ation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl- benzene	Total Xylenes
		ppb	ppb	ppb	ppb	ppb
MW-1	07-18-90	Not sampled: well contained floating product				
MW-1	10-15-90	Not sampled: well contained floating product				
MW-1	01-09-91	Not sampled: well contained floating product				
MW-1	04-16-91	Not sampled: well contained floating product				
MW-1	06-10-91	Not sampled: well contained floating product				
MW-1	10-10-91	Not sampled: well contained floating product				
MW-1	03-23-92	Not sampled: well contained floating product				
MW-1	06-08-92	Not sampled: well contained floating product				
MW-1	09-15-92	Not sampled: well contained floating product				
MW-1	11-16-92	Not sampled: well contained floating product				
MW-1	02-16-93	Not sampled: well contained floating product				
MW-1	05-13-93	Not sampled: well contained floating product				
MW-1	08-17-93	Not sampled: well contained floating product				
MW-1	11-08-93	Not sampled: well contained floating product				
MW-1	02-14-94	Not sampled: well contained floating product				
MW-1	05-05-94	Not sampled: well contained floating product				
MW-1	08-04-94	Not sampled: well contained floating product				
MW-1	11-20-94	Not sampled: well contained floating product				
MW-2	07-18-90	35000	3800	2900	690	3600
MW-2	10-15-90	6400	650	290	110	560
MW-2	01-09-91	13000	1500	970	390	1500
MW-2	04-16-91	54000	5200	9000	1500	7700
MW-2	06-10-91	26000	3000	2500	880	4200
MW-2	10-10-91	10000	1600	910	280	1400
MW-2	03-23-92	33000	4100	5000	1100	5300
MW-2	06-08-92	18000	1200	980	330	1800
MW-2	09-15-92	13000	430	500	340	1800
MW-2	11-16-92	13000	900	940	300	1400
MW-2	02-16-93	20000	1800	1200	530	2700
MW-2	05-13-93	13000	1000	470	370	1900
MW-2	08-17-93	9100	770	160	310	1500
MW-2	11-08-93	9200	380	62	130	630
MW-2	02-14-94	8700	670	370	50	1400
MW-2	05-05-94	5600	390	140	120	480
MW-2	08-04-94	2300	180	<2.5*	<2.5*	230
MW-2	11-20-94	4900	170	150	120	390

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-3	07-18-90	NA	NA	NA	NA	NA
MW-3	10-15-90	Not sampled: well contained floating product				
MW-3	01-09-91	Not sampled: well contained floating product				
MW-3	04-16-91	Not sampled: well contained floating product				
MW-3	06-10-91	Not sampled: well contained floating product				
MW-3	10-10-91	Not sampled: well contained floating product				
MW-3	03-23-92	Not sampled: well contained floating product				
MW-3	06-08-92	Not sampled: well contained floating product				
MW-3	09-15-92	Not sampled: well contained floating product				
MW-3	11-16-92	Not sampled: well contained floating product				
MW-3	02-16-93	Not sampled: well contained floating product				
MW-3	05-13-93	Not sampled: well contained floating product				
MW-3	08-17-93	Not sampled: well contained floating product				
MW-3	11-08-93	430000	4100	14000	6400	37000
MW-3	02-14-94	85000	4200	12000	2500	16000
MW-3	05-05-94	560000	4600	14000	5300	40000
MW-3	08-04-94	64000	4200	7600	1700	12000
MW-3	11-20-94	80000	4700	9700	2400	15000
MW-4	06-10-91	Not sampled: dry well				
MW-4	10-10-91	15000	5300	1500	470	1300
MW-4	03-23-92	24000	5600	4000	580	3100
MW-4	06-08-92	5700	2000	170	92	270
MW-4	09-15-92	Not sampled: dry well				
MW-4	11-16-92	Not sampled: dry well				
MW-4	02-16-93	12000	920	1100	130	750
MW-4	05-13-93	19000	2900	2800	360	1900
MW-4	08-17-93	8100	1600	1300	170	730
MW-4	11-08-93	2000	540	110	10	240
MW-4	02-14-94	Not sampled: dry well				
MW-4	05-05-94	1900	510	78	31	150
MW-4	08-04-94	1300	360	17	<5*	190
MW-4	11-20-94	<50	2.9	0.5	<0.5	1.4

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-5	06-10-91	100000	25000	20000	2600	12000
MW-5	10-10-91	Not sampled: well contained floating product				
MW-5	03-23-92	150000	24000	31000	4400	23000
MW-5	06-08-92	120000	17000	13000	2400	11000
MW-5	09-15-92	Not sampled: floating product entered the well during purging				
MW-5	11-16-92	110000	16000	16000	3200	18000
MW-5	02-16-93	150000	12000	15000	3000	17000
MW-5	05-13-93	Not sampled: floating product entered the well during purging				
MW-5	08-17-93	87000	15000	8500	1900	11000
MW-5	11-08-93	87000	12000	8300	2000	12000
MW-5	02-14-94	46000	7300	5300	940	5200
MW-5	05-05-94	54000	9700	4700	1000	6400
MW-5	08-04-94	57000	14000	3200	1200	7200
MW-5	11-20-94	33000	5700	1800	720	4700
MW-6	06-10-91	Not sampled: dry well				
MW-6	10-10-91	Not sampled: dry well				
MW-6	03-23-92	75000	19000	10000	1600	8600
MW-6	06-08-92	Not sampled: dry well				
MW-6	09-15-92	Not sampled: dry well				
MW-6	11-16-92	Not sampled: dry well				
MW-6	02-16-93	65000	14000	3500	1300	6100
MW-6	05-13-93	36000	8200	870	1000	5200
MW-6	08-17-93	Not sampled: dry well				
MW-6	11-08-93	Not sampled: dry well				
MW-6	02-14-94	47000	14000	390	1000	5100
MW-6	05-05-94	45000	14000	<200*	1300	4500
MW-6	08-04-94	Not sampled: dry well				
MW-6	11-20-94	30000	11000	<100*	1200	2300

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-7	06-10-91	Not sampled: dry well				
MW-7	10-10-91	Not sampled: dry well				
MW-7	03-23-92	270	10	0.5	3	13
MW-7	06-08-92	Not sampled: dry well				
MW-7	09-15-92	Not sampled: dry well				
MW-7	11-16-92	Not sampled: dry well				
MW-7	02-16-93	120	3.6	<0.5	<0.5	1.2
MW-7	05-13-93	<50	0.8	<0.5	<0.5	<0.5
MW-7	08-17-93	Not sampled: dry well				
MW-7	11-08-93	Not sampled: dry well				
MW-7	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-7	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-7	08-04-94	Not sampled: dry well				
MW-7	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	06-10-91	5800	73	7.2	150	21
MW-8	10-10-91	2800	31	6.1	4.5	3.9
MW-8	03-23-92	8000	18	<5.0*	320	42
MW-8	06-08-92	4000	<10*	<10*	110	<10*
MW-8	09-15-92	4200	6.4	<5*	120	<5*
MW-8	11-16-92	2600	4	<2.5*	21	5.2
MW-8	02-16-93	8700	<5*	<5*	200	<5*
MW-8	05-13-93	2300	<5*	<5*	42	<5*
MW-8	08-17-93	1700	1.8	<1.3*	16	1.2
MW-8	11-08-93	1200	2.4	<1*	19	2.3
MW-8	02-14-94	3600	3	<1*	72	<1*
MW-8	05-05-94	2100	<2.5*	<2.5*	8.3	<2.5*
MW-8	08-04-94	1200	1.5	<1*	6.7	<1*
MW-8	11-20-94	2300	1.2	1.1	20	2.2

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Design- ation	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-9	06-11-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-9	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-9	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	06-11-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-10	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-10	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-11	11-16-92	7000	21	<10*	18	230
MW-11	02-16-93	2200	<10*	<10*	11	<10*
MW-11	05-13-93	1600	<2.5*	<2.5*	41	6.8
MW-11	08-17-93	830	1.4	<1.0*	25	15
MW-11	11-08-93	370	<1.0*	<1.0*	2.5	2.1
MW-11	02-14-94	650	<1*	<1*	2	4
MW-11	05-05-94	210	<0.5	<0.5	2.5	0.6
MW-11	08-04-94	390	<0.5	<0.7*	1.9	2.2
MW-11	11-20-94	1300	1.3	0.5	1.5	21
MW-12	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-12	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-12	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-12	11-20-94	<50	<0.5	<0.5	<0.5	<0.5

Table 3
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb
MW-13	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-13	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-13	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-13	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	09-15-92	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-16-92	<50	<0.5	<0.5	<0.5	<0.5
MW-14	02-16-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-14	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-14	11-20-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	05-13-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	08-17-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	11-08-93	<50	<0.5	<0.5	<0.5	<0.5
MW-15	02-14-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	05-05-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	08-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-15	11-20-94	<50	<0.5	<0.5	<0.5	<0.5

TPHG = Total petroleum hydrocarbons as gasoline

ppb = Parts per billion or micrograms per liter (µg/l)

NA = Not analyzed

* = Method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

Table 4
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	TRPH	TPHD	Cadmium by EPA 6010	Chromium by EPA 6010	Lead by EPA 7421	Nickel by EPA 6010	Zinc by EPA 6010
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
MW-2	07-18-90	<5000	850*	<20	<50	50	NA	120
MW-2	10-15-90	NA	NA	NA	NA	NA	NA	NA
MW-2	01-09-91	NA	NA	NA	NA	NA	NA	NA
MW-2	04-16-91	NA	NA	NA	NA	NA	NA	NA
MW-2	06-10-91	NA	NA	NA	NA	NA	NA	NA
MW-2	10-10-91	<5000	NA	<10	<10	11	72	91
MW-2	03-23-92	NA	NA	NA	NA	NA	NA	NA
MW-2	06-08-92	NA	NA	NA	NA	NA	NA	NA
MW-2	09-15-92	NA	NA	NA	NA	NA	NA	NA
MW-2	11-16-92	NA	NA	NA	NA	NA	NA	NA
MW-2	02-16-93	NA	NA	NA	NA	NA	NA	NA
MW-2	05-13-93	NA	NA	NA	NA	NA	NA	NA
MW-2	08-17-93	NA	NA	NA	NA	NA	NA	NA
MW-2	11-08-93	NA	NA	NA	NA	NA	NA	NA
MW-2	02-14-94	NA	NA	NA	NA	NA	NA	NA
MW-2	05-05-94	NA	NA	NA	NA	NA	NA	NA
MW-2	08-04-94	NA	NA	NA	NA	NA	NA	NA
MW-2	11-20-94	NA	NA	NA	NA	NA	NA	NA
MW-3	07-18-90	<5000	NA	NA	NA	NA	NA	NA
MW-3	10-15-90	Not sampled: well contained floating product						
MW-3	01-09-91	Not sampled: well contained floating product						
MW-3	04-16-91	Not sampled: well contained floating product						
MW-3	06-10-91	Not sampled: well contained floating product						
MW-3	10-10-91	Not sampled: well contained floating product						
MW-3	03-23-92	Not sampled: well contained floating product						
MW-3	06-08-92	Not sampled: well contained floating product						
MW-3	09-15-92	Not sampled: well contained floating product						
MW-3	11-16-92	Not sampled: well contained floating product						
MW-3	02-16-93	Not sampled: well contained floating product						
MW-3	05-13-93	Not sampled: well contained floating product						
MW-3	08-17-93	Not sampled: well contained floating product						
MW-3	11-08-93	NA	NA	NA	NA	NA	NA	NA
MW-3	02-14-94	NA	NA	NA	NA	NA	NA	NA
MW-3	05-05-94	NA	NA	NA	NA	NA	NA	NA
MW-3	08-04-94	NA	NA	NA	NA	NA	NA	NA
MW-3	11-20-94	NA	NA	NA	NA	NA	NA	NA

Table 4
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Design- ation	Water Sample Field Date	TRPH	TPHD	Cadmium by EPA 6010	Chromium by EPA 6010	Lead by EPA 7421	Nickel by EPA 6010	Zinc by EPA 6010
		ppb	ppb	ppb	ppb	ppb	ppb	ppb
MW-5	06-10-91	NA	NA	NA	NA	NA	NA	NA
MW-5	10-10-91	Not sampled: well contained floating product						
MW-5	03-23-92	NA	NA	NA	NA	28	NA	NA
MW-5	06-08-92	NA	NA	NA	NA	NA	NA	NA
MW-5	09-15-92	Not sampled: floating product entered the well during purging						
MW-5	11-16-92	NA	NA	NA	NA	NA	NA	NA
MW-5	02-16-93	NA	NA	NA	NA	NA	NA	NA
MW-5	05-13-93	Not sampled: floating product entered the well during purging						
MW-5	08-17-93	NA	NA	NA	NA	NA	NA	NA
MW-5	11-08-93	NA	NA	NA	NA	NA	NA	NA
MW-5	02-14-94	NA	NA	NA	NA	NA	NA	NA
MW-5	05-05-94	NA	NA	NA	NA	NA	NA	NA
MW-5	08-04-94	NA	NA	NA	NA	NA	NA	NA
MW-5	11-20-94	NA	NA	NA	NA	NA	NA	NA
MW-8	06-10-91	<5000	NA	NA	NA	NA	NA	NA
MW-8	10-10-91	NA	NA	NA	NA	NA	NA	NA
MW-8	03-23-92	NA	NA	NA	NA	NA	NA	NA
MW-8	06-08-92	NA	NA	NA	NA	NA	NA	NA
MW-8	09-15-92	NA	460*	ND	59	18	78	128
MW-8	11-16-92	1200	1100*	7	42	20	69	123
MW-8	02-16-93	150000	5300*	<3	7	4	24	54
MW-8	05-13-93	2000	2300*	<3	17	10	31	49
MW-8	08-17-93	1200	1000*	<5	16	7	<40	180
MW-8	11-08-93	4200	<1000	<5	50	25	60	100
MW-8	02-14-94	2000	3900*	<5	<10	4	<40	20
MW-8	05-05-94	700	440*	<3	<5	4	<20	60
MW-8	08-04-94	700	<50	<3	6	3	<20	27
MW-8	11-20-94	<500	2100*	<3	<5	<2	<20	14

TRPH = Total recoverable petroleum hydrocarbons by EPA Method 418.1

TPHD = Total petroleum hydrocarbons as diesel by EPA Method 3510/California DHS LUFT Method

ppb = Parts per billion or micrograms per liter (µg/l)

* = Chromatogram does not match the typical diesel fingerprint

NA = Not analyzed

ND = None detected at or above the method reporting limit

Table 5
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	Volatile Organic Compounds by EPA Method 601/8010 or 624/8240							Semivolatile Organic Compounds by EPA Method 3520/8270		
		Methylene Chloride ppb	1,2- Dichloro- ethane ppb	1,1- Dichloro- ethane ppb	Benzene ppb	Toluene ppb	Ethyl- benzene ppb	Total Xylenes ppb	Naphthalene ppb	2-Methyl- naphthalene ppb	Bis (2- ethylhexyl) Phthalate ppb
MW-2	07-18-90	39	ND	ND	3200	2400	270	2900	340	170	ND
MW-2	10-15-90	18	ND	ND	NA	NA	NA	NA	NA	NA	NA
MW-2	01-09-91	ND	6.5	ND	1700	1200	370	2400	NA	NA	NA
MW-2	04-16-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	06-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	10-10-91	ND	1.7	ND	NA	NA	NA	NA	NA	NA	NA
MW-2	03-23-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	06-08-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	09-15-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	11-16-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	02-16-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	05-13-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	08-17-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	11-08-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	02-14-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	05-05-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	08-04-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2	12-13-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 5
Historical Groundwater Analytical Data
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

Date: 02-28-95
Project Number: 0805-121.01

Well Designation	Water Sample Field Date	Volatile Organic Compounds by EPA Method 601/8010 or 624/8240							Semivolatile Organic Compounds by EPA Method 3520/8270		
		Methylene Chloride	1,2- Dichloro- ethane	1,1- Dichloro- ethane	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphthalene	2-Methyl- naphthalene	Bis (2- ethylhexyl) Phthalate
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
MW-8	06-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	10-10-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	03-23-92	ND	ND	ND	23	<5.0*	450	23	NA	NA	NA
MW-8	06-08-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-8	09-15-92	ND	ND	ND	NA	NA	NA	NA	ND	ND	6
MW-8	11-16-92	ND	ND	ND	NA	NA	NA	NA	32	ND	ND
MW-8	02-16-93	ND	ND	ND	NA	NA	NA	NA	730	130	ND
MW-8	05-13-93	ND	ND	ND	NA	NA	NA	NA	97	20	ND
MW-8	08-17-93	ND	ND	ND	NA	NA	NA	NA	26	ND	ND
MW-8	11-08-93	ND	ND	ND	NA	NA	NA	NA	20	ND	19
MW-8	02-14-94	NA	NA	NA	NA	NA	NA	NA	350	65	ND
MW-8	05-05-94	<0.5	<0.5	0.7	NA	NA	NA	NA	23	<10	<10
MW-8	08-04-94	NA	NA	NA	NA	NA	NA	NA	11	<10	10
MW-8	12-13-94	NA	NA	NA	NA	NA	NA	NA	14	<10	14

ppb = Parts per billion or micrograms per liter (µg/l)

ND = Not detected at or above the method detection limit

NA = Not analyzed

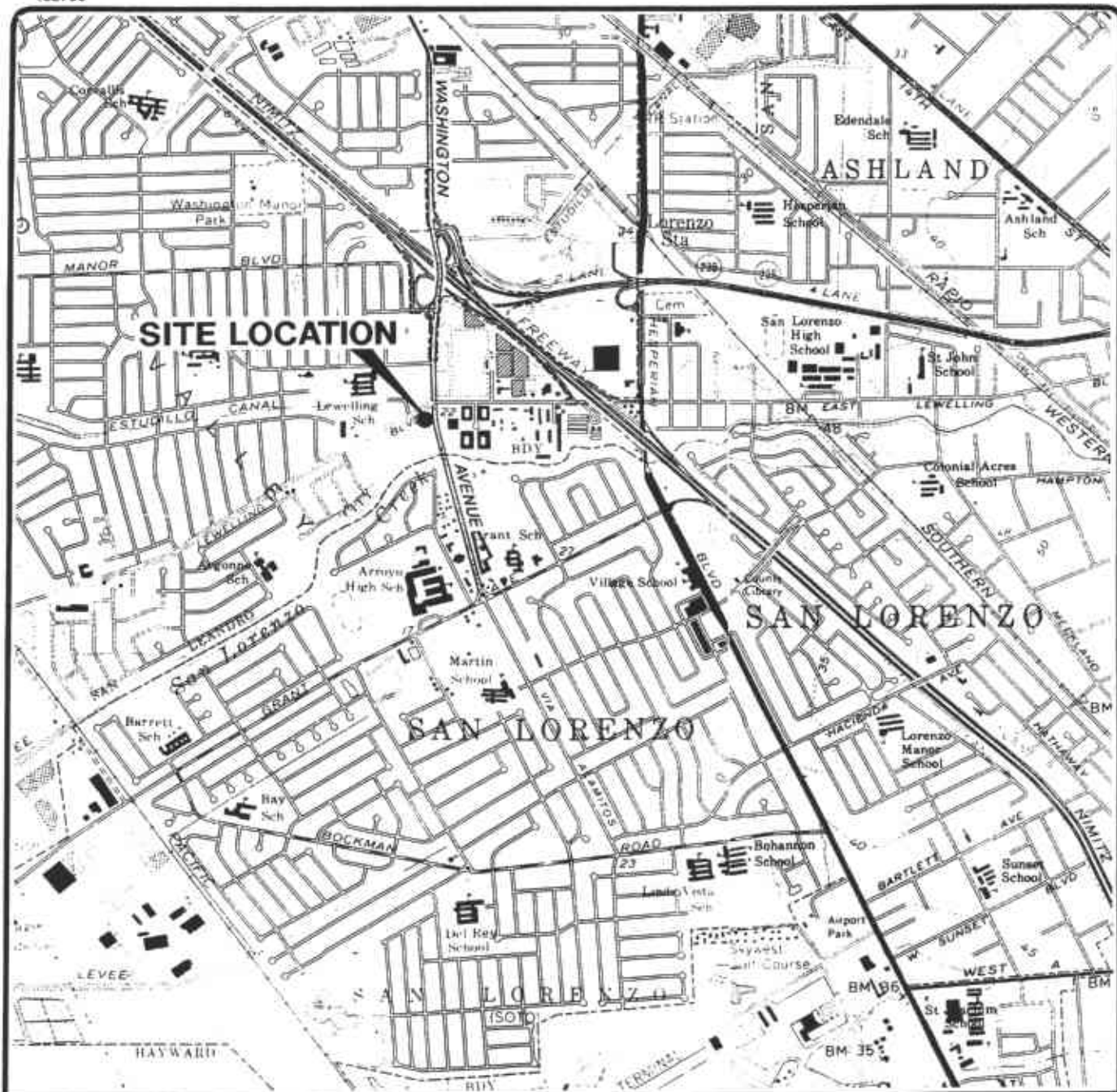
* = Method reporting limit was raised due to: (1) high analyte concentration requiring sample dilution, or (2) matrix interference

Table 6
Approximate Cumulative Floating Product Recovered
Summary Report

ARCO Service Station 601
712 Lewelling Boulevard, San Leandro, California

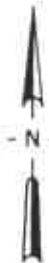
Date: 02-28-95
Project Number: 0805-121.01

Well Design- nation	Date	Floating Product Recovered gallons
MW-1	1991	3.43
MW-1	1992	0.02
MW-1	1993	0.00
MW-1	1994	0.00
1991 to 1994 Total:		3.45



Base map from USGS 7.5' Quad. Maps:
Hayward and San Leandro, California.
Photorevised 1980.

Scale : 0 2000 4000 Feet



EMCON
Associates

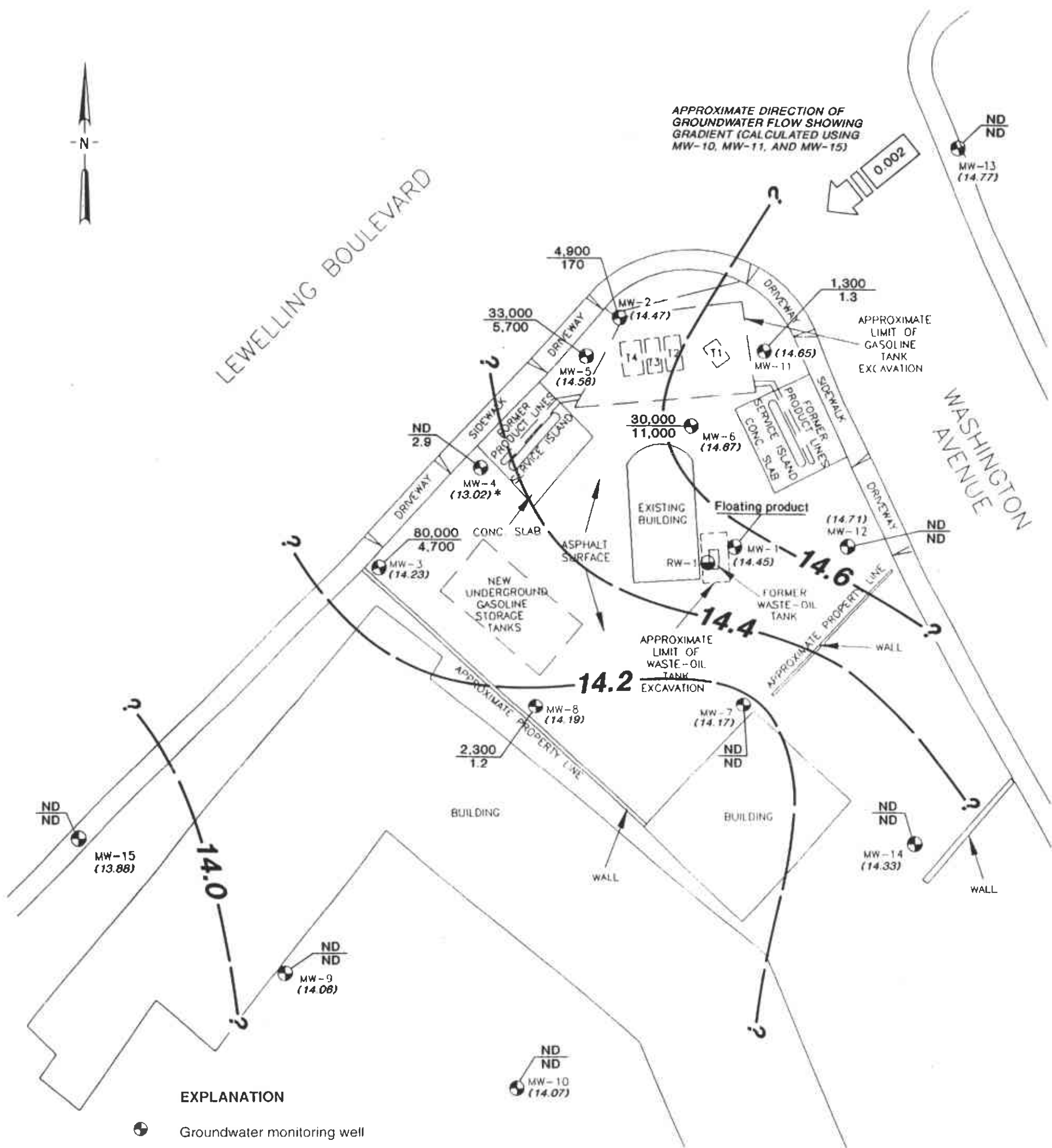
ARCO PRODUCTS COMPANY
SERVICE STATION 601, 712 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

SITE LOCATION

FIGURE

1

PROJECT NO.
805-121.01



EXPLANATION

● Groundwater monitoring well

● Recovery well

□ Former underground gasoline storage tank

(14.19) Groundwater elevation (Ft.-MSL); measured 11/20/94

— Groundwater elevation contour (Ft.-MSL)

1,300 1.3 — TPHG concentration in groundwater (ppb); sampled 11/20/94

— Benzene concentration in groundwater (ppb); sampled 11/20/94

ND Not detected above method reporting limit for TPHG (50 ppb) and benzene (0.5 ppb)

* Groundwater elevation not used in contouring (well contained less than 0.9 foot of water)

SCALE: 0 40 FEET
(Approximate)

Base map modified from RESNA, 1994.



EMCON
Associates

ARCO PRODUCTS COMPANY
SERVICE STATION 601, 712 LEWELLING BLVD
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

GROUNDWATER DATA
FOURTH QUARTER 1994

FIGURE

2

PROJECT NO.
805-121.01

APPENDIX A

**FIELD DATA REPORTS, INTEGRATED WASTESTREAM
MANAGEMENT, DECEMBER 30, 1994 AND JANUARY 11, 1995**

I NTEGRATED
W ASTESTREAM
M ANAGEMENT

December 30, 1994

John Young
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Young:

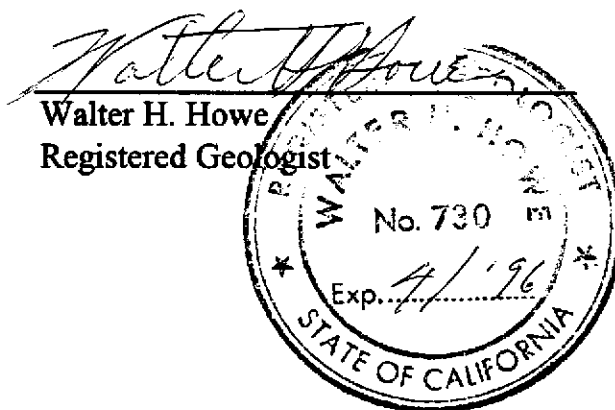
Attached are the field data sheets and analytical results for quarterly ground water sampling at ARCO Facility No. 601 in San Leandro, California. Integrated Wastestream Management measured the depth to water and collected samples from wells at this site on November 20, 1994.

Sampling was carried out in accordance with the protocols described in the "Request for Bid for Quarterly Sampling at ARCO Facilities in Northern California".

Please call us if you have any questions.

Sincerely,
Integrated Wastestream Management


Tom DeLon
Project Manager



EMCON ASSOCIATES

JAN 09 1995

RECEIVED

950 AMES AVENUE

MILPITAS, CA 95035

(408) 942-8955

Summary of Ground Water Sample Analyses for ARCO Facility A-601, San Leandro, California

WELL NUMBER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15
DATE SAMPLED	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94
DEPTH TO WATER	7.81	6.86	5.88	7.73	6.34	7.41	8.72	6.78	6.83	7.05	7.73	8.06	7.68	8.66	5.31
SHEEN	HEAVY	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
PRODUCT THICKNESS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPHg	NA	4,900	80,000	ND	33,000	30,000	ND	2,300	ND	ND	1,300	ND	ND	ND	ND
BTEX															
BENZENE	NA	170	4,700	2.9	5,700	11,000	ND	1.2	ND	ND	1.3	ND	ND	ND	ND
TOLUENE	NA	150	9,700	0.5	1,800	<100#	ND	1.1	ND	ND	0.5	ND	ND	ND	ND
ETHYLBENZENE	NA	120	2,400	ND	720	1,200	ND	20	ND	ND	1.5	ND	ND	ND	ND
XYLENES	NA	390	15,000	1.4	4,700	2,300	ND	2.2	ND	ND	21	ND	ND	ND	ND
TPHd															
DIESEL	NA	NA	NA	NA	NA	NA	NA	2,100	NA	NA	NA	NA	NA	NA	NA
TOTAL METALS															
ARSENIC	NA	NA	NA	NA	NA	NA	NA	106	NA	NA	NA	NA	NA	NA	NA
BARIUM	NA	NA	NA	NA	NA	NA	NA	101	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	NA	NA	15	NA	NA	NA	NA	NA	NA	NA
MOLYBDENUM	NA	NA	NA	NA	NA	NA	NA	48	NA	NA	NA	NA	NA	NA	NA
ZINC	NA	NA	NA	NA	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA
EPA 418.1															
PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	NA	NA	ND	NA	NA	NA	NA	NA	NA	NA

FOOTNOTES:

Concentrations reported in ug/L (ppb)

TPHg = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015 Modified)

BTEX Distinction (USEPA Method 8020)

PCE = Tetrachloroethene (USEPA Method 8010)

* = Well inaccessible

** = Not sampled per consultant request

DCE = cis-1, 2-Dichloroethene (USEPA Method 8010)

TCE = Trichloroethene (USEPA Method 8010)

ND = Not Detected

NA = Not applicable

FP = Floating product

= See laboratory analytical report

FIELD REPORT

Depth To Water / Floating Product Survey

Site Arrival Time: 1200

Site Departure Time: 1900

Weather Conditions: cloudy
cool

DTW: Well Box or Well Casing (circle one)

Project No.: _____

Location: 712 Sewing Blvd.

Date: November 20, 1994

Client / Station#: Area 601

Field Technician: Vince Valdes

Day of Week: Sunday

DTW ORDER	WELL ID	SURFACE SEAL	LID SECURE	GASKET	LOCK	EXPANDING CAP	TOTAL DEPTH (Feet)	FIRST DEPTH TO WATER (Feet)	SECOND DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	SHEEN (Y= YES, N=NO) FP= FLOATING PRODUCT	COMMENTS	MATERIALS
15	mw-1	OK	yes	OK	OK	OK	N/A	7.81	7.81	N/A	N/S	yes	4" nearly clean observed during sub. seal - no sample	hole in deck
12	mw-2	OK	yes	OK	22	OK	12.40	6.86	6.86	N/A	N/A	N	4" H2O filled Box	15/16
14	mw-3	OK	yes	OK	22	OK	12.00	5.88	5.88	N/A	N/A	N	4" H2O in Box	7/11/94
11	mw-4	OK	yes	OK	22	OK	8.60	7.73	7.73	N/A	N/A	N	4"	15/16
13	mw-5	OK	yes	OK	22	OK	10.40	6.34	6.34	N/A	N/A	N	4"	15/16
9	mw-6	OK	yes	OK	22	OK	8.63	7.41-	7.41-	N/A	N/A	N	4" H2O in Box	15/16
4	mw-7	OK	yes	OK	22	OK	9.72	8.72+	8.72+	N/A	N/A	N	4"	15/16
10	mw-8	OK	yes	OK	22	OK	10.30	6.78	6.78	N/A	N/A	N	4" H2O in Box	
1	mw-9	OK	yes	OK	OK	OK	16.40	6.83	6.83	N/A	N/A	N	2" Replace broken Ex. CAP	15/16
2	mw-10	OK	yes	OK	OK	OK	19.60	7.05+	7.05+	N/A	N/A	N	2" inside chamber vapor comp.	15/16
8	mw-11	OK	yes	OK	22	OK	12.00	7.73+	7.73+	N/A	N/A	N	4"	15/16
5	mw-12	OK	yes	OK	22	OK	11.90	8.06+	8.06+	N/A	N/A	N	4"	15/16
7	mw-13	OK	yes	OK	22	OK	13.31	7.68	7.68	N/A	N/A	N	2"	15/16
6	mw-14	OK	yes	OK	22	R	13.11	8.66	8.66	N/A	N/A	N	2" offsite well side walk	15/16
3	mw-15	OK	yes	OK	OK	OK	10.45	5.31	5.31	N/A	N/A	N	2" sidewalk	15/16

WELL ID: MW-9 TD 16.4 DTW 6.83 X 0.17 Gal. X 3 Casing - 4.87 Calculated
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1419 END (2400 HR): 1422
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1424 DTW: 9.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1421</u>	<u>1</u>	<u>7.31</u>	<u>1.42</u>	<u>66.8</u>	<u>cloudy</u>
<u>1422</u>	<u>3</u>	<u>7.25</u>	<u>0.93</u>	<u>66.5</u>	<u>clear</u>
<u>1422</u>	<u>5</u>	<u>7.23</u>	<u>0.94</u>	<u>66.4</u>	<u>clear</u>

Total purge: 5

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS:

WELL ID: MW-10 TD 11.60 DTW 7.05 X 0.17 Gal. X 3 Casing - 6.39 Calculated
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1434 END (2400 HR): 1436
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1438 DTW: 10.5

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1435</u>	<u>1</u>	<u>6.87</u>	<u>0.91</u>	<u>69.7</u>	<u>clear</u>
<u>1436</u>	<u>3</u>	<u>6.91</u>	<u>1.01</u>	<u>69.5</u>	<u>clear</u>
<u>1436</u>	<u>7</u>	<u>6.91</u>	<u>1.03</u>	<u>69.3</u>	<u>cloudy</u>

Total purge: 7

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS:

WELL ID: MW-15 TD 10.45 DTW 5.31 X 0.17 Gal. X 3 Casing - 2.61 Calculated
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1445 END (2400 HR): 1453
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1455 DTW: 8.2

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1448</u>	<u>1</u>	<u>6.94</u>	<u>0.74</u>	<u>65.6</u>	<u>cloudy</u>
<u>1449</u>	<u>2</u>	<u>6.90</u>	<u>0.85</u>	<u>65.3</u>	<u>cloudy</u>
<u>1453</u>	<u>2.5</u>	<u>6.89</u>	<u>0.86</u>	<u>64.9</u>	<u>cloudy</u>

Total purge: 2.5

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS:

WELL ID: MW-7 TD 9.72 DTW 8.72 X 0.46 Gal. X 3 Casing - 1.98 Calculated
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1500 END (2400 HR): 1503
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1506 DTW: 9.3

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1503</u>	<u>.75</u>	<u>7.11</u>	<u>1.26</u>	<u>63.4</u>	<u>clear</u>

Total purge: .75

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: could not extract 3 casing volumes b/c well was drying up.

PRINT NAME: Vince Valdes SIGNATURE: Vince Valdes

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: _____

GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: _____

WELL ID: MW-14 TD 13.11 DTW 3.66 X 0.17 X 3 - 2.26
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1517 END (2400 HR): 1524
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1526 DTW: 11.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1520</u>	<u>1</u>	<u>7.08</u>	<u>1.21</u>	<u>67.0</u>	<u>cloudy</u>
<u>1522</u>	<u>2</u>	<u>7.06</u>	<u>1.18</u>	<u>66.3</u>	<u>cloudy</u>
<u>1524</u>	<u>2.5</u>	<u>7.05</u>	<u>1.17</u>	<u>65.9</u>	<u>cloudy</u>

Total purge: 2.5

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS:

WELL ID: MW-12 TD 11.9 DTW 8.06 X 0.66 X 3 - 7.60
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1539 END (2400 HR): 1545
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1547 DTW: 9.5

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1542</u>	<u>1</u>	<u>6.96</u>	<u>0.80</u>	<u>63.2</u>	<u>cloudy</u>
<u>1543</u>	<u>2</u>	<u>6.93</u>	<u>1.28</u>	<u>63.0</u>	<u>cloudy</u>
<u>1545</u>	<u>3</u>	<u>6.93</u>	<u>1.26</u>	<u>62.9</u>	<u>cloudy</u>

Total purge: 3

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: well pumped dry at 3 gallons.

WELL ID: MW-13 TD 13.31 DTW 7.68 X 0.17 X 3 - 2.87
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1555 END (2400 HR): 1604
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1612 DTW: 10.6

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1558</u>	<u>1</u>	<u>7.12</u>	<u>1.11</u>	<u>66.3</u>	<u>clear</u>
<u>1601</u>	<u>2</u>	<u>7.09</u>	<u>0.96</u>	<u>65.4</u>	<u>cloudy</u>
<u>1604</u>	<u>3</u>	<u>7.08</u>	<u>0.94</u>	<u>65.0</u>	<u>cloudy</u>

Total purge: 3

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS:

WELL ID: MW-11 TD 12.0 DTW 7.73 X 0.66 X 3 - 8.45
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1622 END (2400 HR): 1626
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1628 DTW: 10.8

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1624</u>	<u>1</u>	<u>6.86</u>	<u>1.01</u>	<u>66.0</u>	<u>clear</u>
<u>1625</u>	<u>3</u>	<u>6.83</u>	<u>0.97</u>	<u>65.7</u>	<u>cloudy</u>
<u>1626</u>	<u>9</u>	<u>6.82</u>	<u>0.97</u>	<u>65.3</u>	<u>clear</u>

Total purge: 9

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: well pumped dry at 9 gallons

PRINT NAME: Vince Valdes SIGNATURE: Vince Valdes

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: _____

GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: _____

WELL ID: MW-6 TD 8.63 DTW 7.41 X 0.66 X 3 - 2.41
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1640 END (2400 HR): 1644
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1646 DTW: 8.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1644</u>	<u>.75</u>	<u>7.04</u>	<u>0.98</u>	<u>65.9</u>	<u>Clear</u>

Total purge: .75

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: could not extract 3 casing volumes
well was bailing dry, well had low recovery.

WELL ID: MW-8 TD 10.30 DTW 6.78 X 0.66 X 3 - 6.96
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1651 END (2400 HR): 1703
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1726 DTW: 8.0

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1700</u>	<u>1</u>	<u>7.12</u>	<u>0.91</u>	<u>65.9</u>	<u>Clear</u>
<u>1703</u>	<u>3</u>	<u>7.15</u>	<u>0.97</u>	<u>65.7</u>	<u>Clear</u>

Total purge: 3

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: well pumped dry at 3 gallons
allowed well to recover prior to sampling

WELL ID: MW-4 TD 8.60 DTW 7.73 X 0.66 X 3 - 1.72
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1742 END (2400 HR): 1744
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1746 DTW: 8.29

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1744</u>	<u>.75</u>	<u>6.89</u>	<u>1.12</u>	<u>65.7</u>	<u>Clear</u>

Total purge: .75

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: well bailed dry at .75 gallons

WELL ID: MW-2 TD 12.40 DTW 6.86 X 0.66 X 3 - 10.96
 Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1754 END (2400 HR): 1758
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1801 DTW: 10.3

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1755</u>	<u>1</u>	<u>7.13</u>	<u>1.32</u>	<u>68.2</u>	<u>Clear</u>
<u>1756</u>	<u>5</u>	<u>7.10</u>	<u>1.19</u>	<u>68.0</u>	<u>Clear</u>
<u>1758</u>	<u>8</u>	<u>7.08</u>	<u>1.21</u>	<u>67.8</u>	<u>Clear</u>

Total purge: 8

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP.: Bailer Disp.

REMARKS: well pumped dry at 8 gallons

PRINT NAME: Vince Calder

SIGNATURE: Vince Calder

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: _____
 GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: _____

WELL ID: MW-5 TD 10.40 DTW 6.34 X 0.60 X 3 - 8.03
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1812 END (2400 HR): 1815
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1818 DTW: 8.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1813</u>	<u>1</u>	<u>7.22</u>	<u>1.29</u>	<u>66.9</u>	<u>clear</u>
<u>1815</u>	<u>3</u>	<u>7.18</u>	<u>1.25</u>	<u>66.5</u>	<u>clear</u>

Total purge: 3
 PURGING EQUIP.: Centrifugal Pump Bailer Disp.
 REMARKS: Well pumped dry at 3 gallons

WELL ID: MW-3 TD 12.0 DTW 5.88 X 0.66 X 3 - 12.11
Linear Ft. Volume Purge

DATE PURGED: 11-20-94 START (2400 HR): 1834 END (2400 HR): 1837
 DATE SAMPLED: 11-20-94 TIME (2400 HR): 1841 DTW: 9.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>1835</u>	<u>2</u>	<u>7.81</u>	<u>0.91</u>	<u>66.8</u>	<u>black</u>
<u>1836</u>	<u>6</u>	<u>6.73</u>	<u>0.93</u>	<u>66.1</u>	<u>dark</u>
<u>1837</u>	<u>8</u>	<u>6.70</u>	<u>0.93</u>	<u>65.9</u>	<u>clear</u>

Total purge: 8
 PURGING EQUIP.: Centrifugal Pump Bailer Disp.
 REMARKS: Well pumped dry at 8 gallons

WELL ID: _____ TD _____ DTW _____ X _____ X _____ - _____
Linear Ft. Volume Purge

DATE PURGED: _____ START (2400 HR): _____ END (2400 HR): _____
 DATE SAMPLED: _____ TIME (2400 HR): _____ DTW: _____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)

Total purge: _____
 PURGING EQUIP.: Centrifugal Pump Bailer Disp.
 REMARKS: _____

WELL ID: _____ TD _____ DTW _____ X _____ X _____ - _____
Linear Ft. Volume Purge

DATE PURGED: _____ START (2400 HR): _____ END (2400 HR): _____
 DATE SAMPLED: _____ TIME (2400 HR): _____ DTW: _____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)

Total purge: _____
 PURGING EQUIP.: Centrifugal Pump Bailer Disp.
 REMARKS: _____

PRINT NAME: Vince Valdes SIGNATURE: Vince Valdes

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: _____
 GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: _____

I NTEGRATED
W ASTESTREAM
M ANAGEMENT

January 11, 1995

John Young
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Dear Mr. Young:

Attached are the analytical results for sampling at ARCO Facility No. 601 located in San Leandro, California. Integrated Wastestream Management resampled well MW-8 on December 13, 1994.

Please call us if you have any questions.

Sincerely,
Integrated Wastestream Management



Tom DeLon
Project Manager

WELL ID: MW-8 TD 10.30 DTW 5.31 X 0.66 3 4.88
Linear Ft. Volume Casing - Calculated
Purge

DATE PURGED: 12-13-94 START (2400 HR): 845 END (2400 HR): 912
DATE SAMPLED: 12-13-94 TIME (2400 HR): 950 DTW: 844 (10.1)

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
<u>851</u>	<u>1</u>	<u>7.16</u>	<u>1.18</u>	<u>66.1</u>	<u>clear</u>
<u>857</u>	<u>2</u>	<u>7.09</u>	<u>1.14</u>	<u>65.8</u>	<u>clear</u>
<u>912</u>	<u>3</u>	<u>7.08</u>	<u>1.16</u>	<u>65.6</u>	<u>clear</u>

Total purge: 3

PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS: well bailed dry at 3 gallons.

WELL ID: _____ TD _____ DTW _____ X _____ Gal. _____ X _____ Casing _____ - _____ Calculated _____
Linear Ft. Volume Purge

DATE PURGED: _____ START (2400 HR): _____ END (2400 HR): _____
DATE SAMPLED: _____ TIME (2400 HR): _____ DTW: _____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total purge: _____

PURGING EQUIP.: _____ Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS: _____

WELL ID: _____ TD _____ DTW _____ X _____ Gal. _____ X _____ Casing _____ - _____ Calculated _____
Linear Ft. Volume Purge

DATE PURGED: _____ START (2400 HR): _____ END (2400 HR): _____
DATE SAMPLED: _____ TIME (2400 HR): _____ DTW: _____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total purge: _____

PURGING EQUIP.: _____ Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.

REMARKS: _____

WELL ID: _____ TD _____ DTW _____ X _____ Gal. _____ X _____ Casing _____ - _____ Calculated _____
Linear Ft. Volume Purge

DATE PURGED: _____ START (2400 HR): _____ END (2400 HR): _____
DATE SAMPLED: _____ TIME (2400 HR): _____ DTW: _____

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Total purge: _____

PURGING EQUIP.: _____ Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.

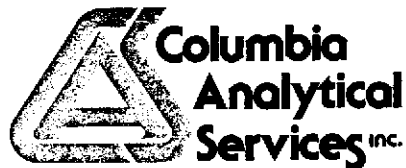
REMARKS: _____

PRINT NAME: Vince Valdes SIGNATURE: Vince Valdes

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: _____
GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: _____

APPENDIX B

**ANALYTICAL RESULTS AND CHAN-OF-CUSTODY
DOCUMENTATION, FOURTH QUARTER 1994**



January 13, 1995

Service Request No. S941502b

David Larsen
EMCON Associates
1921 Ringwood Ave.
San Jose, CA 95131

Re: **ARCO Facility No. 601**

Dear Mr. Larsen:

Attached are the results of the water samples submitted to our lab on November 22, 1994. For your reference, these analyses have been assigned our service request number S941502.

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

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Keoni A. Murphy
Keoni A. Murphy
Program Director

Annelise J. Bazar
Annelise J. Bazar
Regional QA Coordinator

KAM/ajb
cc: Gina Austin, IWM, Milpitas, CA

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/94

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

Analyte:	TPH as					
Units:	Gasoline	Benzene	Toluene	Ethyl-	Xylenes,	
Method Reporting Limit:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	benzene	Total	
	50	0.5	0.5	ug/L (ppb)	ug/L (ppb)	0.5

Sample Name

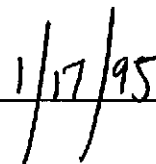
Lab Code

MW-9 (9.1)	S941502-013	ND	ND	ND	ND	ND
MW-10 (10.5)	S941502-014	ND	ND	ND	ND	ND
Method Blank	S941130-WB	ND	ND	ND	ND	ND

Approved By:



Date:



SABTXGAS/061694

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/95

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

Sample Name	Lab Code	Percent Recovery α,α,α -Trifluorotoluene
MW-9 (9.1)	S941502-013	100
MW-10 (10.5)	S941502-014	102
MS	S941502-006MS	111
DMS	S941502-006DMS	105
Method Blank	S941130-WB	102

CAS Acceptance Limits: 69-116

Approved By: _____

Ami Spetman

Date: _____

1/17/95

SUR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601

Service Request: S941502
Date Analyzed: 11/30/94

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.0	96	85-115
Toluene	25	24.5	98	85-115
Ethylbenzene	25	25.2	101	85-115
Xylenes, Total	75	67.3	90	85-115
Gasoline	500	509	102	90-110

Approved By:

ami Spetina

Date:

1/17/95

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/94

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S941502-006

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery				Relative Percent Difference
						CAS		Acceptance Limits		
	MS	DMS		MS	DMS	MS	DMS			
Benzene	25	25	ND	25.0	24.8	100	99	75-135	<1	
Toluene	25	25	ND	24.3	25.7	97	103	73-136	6	
Ethylbenzene	25	25	ND	26.2	27.0	105	108	69-142	3	

Approved By: Ami SpielmanDate: 1/17/95

DMSIS/060194

[illegible]



January 13, 1995

Service Request No. S941502a

David Larsen
EMCON Associates
1921 Ringwood Ave.
San Jose, CA 95131

Re: **ARCO Facility No. 601**

Dear Mr. Larsen:

Attached are the results of the water samples submitted to our lab on November 22, 1994. For your reference, these analyses have been assigned our service request number S941502.

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

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Keoni A. Murphy
Keoni A. Murphy
Program Director

Annelise J. Bazar
Annelise J. Bazar
Regional QA Coordinator

KAM/ajb
cc: Gina Austin, IWM, Milpitas, CA

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: 12/2/94
Date Analyzed: 12/6,7/94

TPH as Diesel
EPA Method 3510/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name	Lab Code	MRL	Result
MW-8 (8.0)	S941502-007	50	2,100 *
Method Blank	S941202-WB	50	ND

* This sample contains a lower boiling point hydrocarbon mixture, quantified as diesel. The chromatogram does not match the typical diesel fingerprint.

Approved By: _____

Annie Aprilina

Date: _____

1/17/95

IAMRL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
 Project: ARCO Facility # 601
 Sample Matrix: Water

Service Request: S941502
 Date Collected: 11/20,22/94
 Date Received: 11/22/94
 Date Extracted: NA
 Date Analyzed: 11/30-12/2/94

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

Analyte:	TPH as Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes, Total
Units:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:	50	0.5	0.5	0.5	0.5

Sample Name	Lab Code	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes, Total
MW-2 (10.3)	S941502-001	4,900	170	150	120	390
MW-3 (9.1)	S941502-002	80,000	4,700	9,700	2,400	15,000
MW-4 (8.2)	S941502-003	ND	2.9	0.5	ND	1.4
MW-5 (8.7)	S941502-004	33,000	5,700	1,800	720	4,700
MW-6 (8.1)	S941502-005	30,000	11,000	<100 *	1,200	2,300
MW-7 (9.3)	S941502-006	ND	ND	ND	ND	ND
MW-8 (8.0)	S941502-007	2,300	1.2	1.1	20	2.2
MW-11 (10.8)	S941502-008	1,300	1.3	0.5	1.5	21
MW-12 (9.5)	S941502-009	ND	ND	ND	ND	ND
MW-13 (10.6)	S941502-010	ND	ND	ND	ND	ND
MW-14 (11.1)	S941502-011	ND	ND	ND	ND	ND
MW-15 (8.2)	S941502-012	ND	ND	ND	ND	ND
Method Blank	S941130-WB	ND	ND	ND	ND	ND
Method Blank	S941201-WB	ND	ND	ND	ND	ND
Method Blank	S941202-WB	ND	ND	ND	ND	ND

* Raised MRL due to high analyte concentration requiring sample dilution.

Approved By: Amie Spelman

Date: 1/17/95

5ABTXGAS/061694

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: 12/2/94
Date Analyzed: 12/6,7/94

Surrogate Recovery Summary
TPH as Diesel
EPA Method 3510/California DHS LUFT Method

Sample Name	Lab Code	Percent Recovery p-Terphenyl
MW-8 (8.0)	S941502-007	99
MS	S941497-020MS	93
DMS	S941497-020DMS	102
Method Blank	S941202-WB	83

CAS Acceptance Limits: 66-123

Approved By:

ami Aprilma

Date:

1/17/95

SUR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601

Service Request: S941502
Date Analyzed: 12/6/94

Initial Calibration Verification (ICV) Summary
TPH as Diesel
California DHS LUFT Method
Units: ppm

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
TPH as Diesel	1,000	1,090	109	90-110

Approved By:

Amie Spielma

Date:

1/17/95

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: 12/2/94
Date Analyzed: 12/6/94

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Diesel
EPA Method 3510/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S941497-020

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS		
TPH as Diesel	4,000	4,000	ND	4,050	4,280	101	107	61-141	6

Approved By: Amie SpilmaDate: 1/17/95

DMSIS/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30-12/2/94

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

Sample Name	Lab Code	Percent Recovery α,α,α -Trifluorotoluene
MW-2 (10.3)	S941502-001	106 *
MW-3 (9.1)	S941502-002	98
MW-4 (8.2)	S941502-003	92
MW-5 (8.7)	S941502-004	103
MW-6 (8.1)	S941502-005	93
MW-7 (9.3)	S941502-006	107
MW-8 (8.0)	S941502-007	115
MW-11 (10.8)	S941502-008	116
MW-12 (9.5)	S941502-009	100
MW-13 (10.6)	S941502-010	99
MW-14 (11.1)	S941502-011	112
MW-15 (8.2)	S941502-012	92
MW-7 (9.3) MS	S941502-006MS	111
MW-7 (9.3) DMS	S941502-006DMS	105
Method Blank	S941130-WB	102
Method Blank	S941201-WB	92
Method Blank	S941202-WB	91

CAS Acceptance Limits: 69-116

* The surrogate used for this sample was 4-bromofluorobenzene.

Approved By: Amie Sprilma

Date: 1/17/95

SUR1/062994

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601

Service Request: S941502
Date Analyzed: 11/30/94

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

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.0	96	85-115
Toluene	25	24.5	98	85-115
Ethylbenzene	25	25.2	101	85-115
Xylenes, Total	75	67.3	90	85-115
Gasoline	500	509	102	90-110

Approved By: Amie Spelma

Date: 1/17/95

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility # 601
Sample Matrix: Water

Service Request: S941502
Date Collected: 11/20,22/94
Date Received: 11/22/94
Date Extracted: NA
Date Analyzed: 11/30/94

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

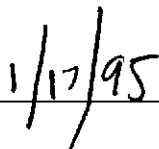
Sample Name: MW-7 (9.3)
Lab Code: S941502-006

Analyte	Percent Recovery								
	Spike Level		Sample Result	Spike Result		CAS Acceptance Limits			Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS		
Benzene	25	25	ND	25.0	24.8	100	99	75-135	<1
Toluene	25	25	ND	24.3	25.7	97	103	73-136	6
Ethylbenzene	25	25	ND	26.2	27.0	105	108	69-142	3

Approved By:



Date:



DMS1S/060194

ARCO Facility no. **A601**

City (Facility) **San Leandro**

ARCO engineer **M.W.**

Telephone no. (ARCO) **4155712134**

Project manager (Consultant) **TOM De San/R. Davis**

Telephone no. (Consultant) **408/442 8955**

Fax no. (Consultant) **408/442 1499**

Consultant name **G.W.M./EMCON**

Address (Consultant) **950 Ames av. Mulp. CA 95035**

Laboratory name **Columbia**

Contract number

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA 8020/8020/8015	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	Semi Metals VOA	EPA 8210/7000 TLCLC STLCLC	Lead Org./DHS Lead EPA 8210/8210	TPH Diesel	Method of shipment
			Soil	Water	Other	Ice	Acid																
FB-1	15	2		✓		✓	✓	11-20-94	1120		✓	✓											
10.3 mw-2	1	2		✓		✓	✓		1801		✓	✓											
9.1 mw-3	2	2		✓		✓	✓		1841		✓	✓											
8.2 mw-4	3	2		✓		✓	✓		1746		✓	✓											
8.7 mw-5	4	2		✓		✓	✓		1818		✓	✓											
8.1 mw-6	5	2		✓		✓	✓		1646		✓	✓											
9.3 mw-7	6	2		✓		✓	✓		1506		✓	✓											
3.0 mw-8	7	12		✓		✓	✓		1726		✓	✓		✓		✓		✓	✓	✓			
mw-9																							
mw-10																							
0.8 mw-11	8	2		✓		✓	✓	11-20-94	1628		✓	✓											
1.5 mw-12	9	2		✓		✓	✓		1547		✓	✓											
10.6 mw-13	10	2		✓		✓	✓		1612		✓	✓											
11.1 mw-14	11	2		✓		✓	✓		1526		✓	✓											
8.2 mw-15	12	2		✓		✓	✓		1455		✓	✓											

Condition of sample:

Relinquished by sampler **John Davis**

Relinquished by

Relinquished by

Date **11/22/94** Time **4:15pm**

Date

Date

Temperature received:

Received by **John Davis**

Received by

Received by laboratory

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days ☒

RECEIVED MAR 09 1995



March 7, 1995

Service Request No.: K947393S

Gina Austin
Tom DeLon
IWM
950 Ames Avenue
Milpitas, CA 95035

Re: **ARCO 601/Project #SJ94-1502**

Dear Ms. Austin/Mr. DeLon:

Enclosed are the revised report pages for the sample(s) submitted to our laboratory on November 28, 1994. For your reference, these analyses have been assigned our service request number K947393S.

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

Please call if you have any questions. My extension is 239.

Respectfully submitted,

Columbia Analytical Services, Inc.

A handwritten signature in dark ink, appearing to read "Howard Boorse", is written over a horizontal line.

Howard Boorse
Project Chemist

HB/td

Page 1 of 11

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

00002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: ARCO 601 / # 601
Sample Matrix: Water

Service Request: K947393S
Date Collected: 11/20/94
Date Received: 11/28/94
Date Extracted: NA

Total Metals
Units: µg/L (ppb)

Sample Name: MW-8
Lab Code: K739301
Date Analyzed: 11/30/94

Method Blank
K7393MB
11/30/94

Analyte	EPA Method	MRL		
Cadmium	6010A	3	ND	ND
Chromium	6010A	5	ND	ND
Lead	7421	2	ND	ND
Nickel	6010A	20	ND	ND
Zinc	6010A	10	14	ND

Approved By: _____

Howard Fournier

Date: _____

3/7/95

00003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO PRODUCTS COMPANY
Project: ARCO 601/#601
Sample Matrix: Water

Service Request: K947393S
Date Collected: 11/20/94
Date Received: 11/28/94
Date Extracted: 11/30/94
Date Analyzed: 12/1/94

Total Recoverable Petroleum Hydrocarbons
EPA Methods 418.1
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
MW-8	K947393-001	0.5	ND
Method Blank	K941130-WB	0.5	ND

Approved By: _____



Date: 3/7/95

00004

APPENDIX A
LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: ARCO 601 / #601
Sample Matrix: Water

Service Request: K947393S
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 11/30/94

Duplicate Summary
Total Metals
Units: µg/L (ppb)

Sample Name: Batch QC
Lab Code: K739601

Analyte	EPA Method	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Cadmium	6010A	3	ND	ND	ND	-
Chromium	6010A	5	ND	ND	ND	-
Lead	7421	2	ND	ND	ND	-
Nickel	6010A	20	ND	ND	ND	-
Zinc	6010A	10	ND	ND	ND	-

a Duplicate analysis was performed on Sample Batch QC; Lab Code K721808.

Approved By: _____

Date: _____

3/7/95

00006

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: ARCO 601 / #601
Sample Matrix: Water

Service Request: K947393S
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: 11/30/94

Matrix Spike Summary
Total Metals
Units: $\mu\text{g/L}$ (ppb)

Sample Name: Batch QC
Lab Code: K739601

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS
						Percent Recovery Acceptance Limits
Cadmium	3	50	ND	47	94	75-125
Chromium	5	200	ND	204	102	75-125
Lead	2	20	ND	21	105	75-125
Nickel	20	500	ND	514	103	75-125
Zinc	10	500	ND	506	101	75-125

a Matrix spike analysis was performed on Sample Batch QC; Lab Code K721808.

Approved By: 

Date: 3/7/95

00007

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO PRODUCTS COMPANY
Project: ARCO 601/#601
LCS Matrix: Water

Service Request: K947393S
Date Collected: NA
Date Received: NA
Date Extracted: 11/30/94
Date Analyzed: 12/1/94

Laboratory Control Sample Summary
Total Recoverable Petroleum Hydrocarbons
EPA Methods 418.1
Units: mg/L (ppm)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Oil	20	18	90	81-110

Approved By: _____

LCS/102194

K947393S.XLS - 418wLCS 3/7/95

Date: _____

3/7/95

00008

APPENDIX B
CHAIN OF CUSTODY INFORMATION

$\frac{01000}{00010}$

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 609/EPA 8020	BTEX/TPH EPA Method 8210/8015	TPH Modified 8015 Gas Dissol □ Diesel □	Oil and Grease 413.1 □ 413.2 □	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCUP Metals □ VOA □ VOC □ Semi Metals □	CAMP Metals EPA 8210/7000 HTG □ STLC □	Lead Org./OHS □ Lead EPA 724/8270 □	PH Read
			Soil	Water	Other	Ice	Acid														
FB-1	15	2		✓		✓	✓	11-20-94	1120		✓	✓									
MW-2	1	2		✓		✓	✓		1801		✓	✓									
MW-3	2	2		✓		✓	✓		1841		✓	✓									
MW-4	3	2		✓		✓	✓		1746		✓	✓									
MW-5	4	2		✓		✓	✓		1818		✓	✓									
MW-6	5	2		✓		✓	✓		1646		✓	✓									
MW-7	6	2		✓		✓	✓	1506		✓	✓										
MW-8	7	12		✓		✓	✓	1726		✓	✓		✓			✓		✓	✓	✓	
Pack-10																					
Pack-11																					
MW-11	8	2		✓		✓	✓	11-20-94	1628		✓	✓									
MW-12	9	2		✓		✓	✓		1547		✓	✓									
MW-13	10	2		✓		✓	✓		1612		✓	✓									
MW-14	11	2		✓		✓	✓		1526		✓	✓									
MW-15	12	2		✓		✓	✓		1455		✓	✓									

Lab number
S941502

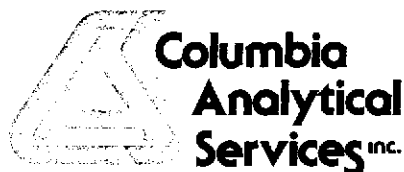
Turnaround time

Priority Rush

Temperature received:		
Received by <i>J. J. Jones</i>	CAS SJ	11/24/94 ^{K15}
Received by <i>G. J. Jones</i>	CAS	11/28/94 ⁹¹⁵
Received by laboratory	Date	Time

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

RECEIVED DEC 30 1994



December 29, 1994

Service Request No.: K947777S

Tom Delon
IWM
950 Ames Avenue
Milpitas, CA 95035

Re: ARCO A601/Project #IWM-94-5CC/SJ941618

Dear Tom:

Enclosed are the results of the sample(s) submitted to our laboratory on December 14, 1994. For your reference, these analyses have been assigned our service request number K947777S.

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

Please call if you have any questions. My extension is 239.

Respectfully submitted,
Columbia Analytical Services, Inc.


Howard Boorse
Project Chemist

HB/rr

Page 1 of 11

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

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

00002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: Arco A601
Sample Matrix: Water

Service Request: K947777S
Date Collected: 12/13/94
Date Received: 12/14/94
Date Extracted: 12/19/94

Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3520/8270
Units: µg/L (ppb)

Sample Name: MW-8 Method Blank
Lab Code: K947777-001 K941219-WB1
Date Analyzed: 12/22/94 12/21/94

Base Neutral Analyte	MRL		
N-Nitrosodimethylamine	25	ND	ND
Aniline	25	ND	ND
Bis(2-chloroethyl) Ether	10	ND	ND
1,2-Dichlorobenzene	10	ND	ND
1,3-Dichlorobenzene	10	ND	ND
1,4-Dichlorobenzene	10	ND	ND
Bis(2-chloroisopropyl) Ether	10	ND	ND
N-Nitrosodi-n-propylamine	10	ND	ND
Hexachloroethane	10	ND	ND
Nitrobenzene	10	ND	ND
Isophorone	10	ND	ND
Bis(2-chloroethoxy)methane	10	ND	ND
1,2,4-Trichlorobenzene	10	ND	ND
Naphthalene	10	14	ND
4-Chloroaniline	10	ND	ND
Hexachlorobutadiene	10	ND	ND
2-Methylnaphthalene	10	ND	ND
Hexachlorocyclopentadiene	10	ND	ND
2-Chloronaphthalene	10	ND	ND
2-Nitroaniline	25	ND	ND
Dimethyl Phthalate	10	ND	ND
Acenaphthylene	10	ND	ND
3-Nitroaniline	25	ND	ND
Acenaphthene	10	ND	ND
Dibenzofuran	10	ND	ND
2,4-Dinitrotoluene	10	ND	ND

Approved By: _____

Date: _____

7777SSVM.JA1 - 7777-1.mh 12/28/94

Page No.: 00003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: Arco A601
Sample Matrix: Water

Service Request: K947777S
Date Collected: 12/13/94
Date Received: 12/14/94
Date Extracted: 12/19/94

Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3520/8270
Units: µg/L (ppb)

Sample Name: MW-8 Method Blank
Lab Code: K947777-001 K941219-WB1
Date Analyzed: 12/22/94 12/21/94

Base Neutral Analyte	MRL		
2,6-Dinitrotoluene	10	ND	ND
Diethyl Phthalate	10	ND	ND
4-Chlorophenyl Phenyl Ether	10	ND	ND
Fluorene	10	ND	ND
4-Nitroaniline	25	ND	ND
N-Nitrosodiphenylamine	10	ND	ND
4-Bromophenyl Phenyl Ether	10	ND	ND
Hexachlorobenzene	10	ND	ND
Phenanthrene	10	ND	ND
Anthracene	10	ND	ND
Di-n-butyl Phthalate	10	ND	ND
Fluoranthene	10	ND	ND
Pyrene	10	ND	ND
Butylbenzyl Phthalate	10	ND	ND
3,3'-Dichlorobenzidine	25	ND	ND
Benz(a)anthracene	10	ND	ND
Bis(2-ethylhexyl) Phthalate	10	14	ND
Chrysene	10	ND	ND
Di-n-octyl Phthalate	10	ND	ND
Benzo(b)fluoranthene	10	ND	ND
Benzo(k)fluoranthene	10	ND	ND
Benzo(a)pyrene	10	ND	ND
Indeno(1,2,3-cd)pyrene	10	ND	ND
Dibenz(a,h)anthracene	10	ND	ND
Benzo(g,h,i)perylene	10	ND	ND

Approved By: _____

Date: _____

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: Arco A601
Sample Matrix: Water

Service Request: K947777S
Date Collected: 12/13/94
Date Received: 12/14/94
Date Extracted: 12/19/94

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3520/8270
 Units: µg/L (ppb)

Sample Name:	MW-8	Method Blank
Lab Code:	K947777-001	K941219-WB1
Date Analyzed:	12/22/94	12/21/94

Acid Analyte	MRL		
Phenol	10	ND	ND
2-Chlorophenol	10	ND	ND
Benzyl Alcohol	10	ND	ND
2-Methylphenol	10	ND	ND
3- and 4-Methylphenol*	10	ND	ND
2-Nitrophenol	10	ND	ND
2,4-Dimethylphenol	10	ND	ND
Benzoic Acid	25	ND	ND
2,4-Dichlorophenol	10	ND	ND
4-Chloro-3-methylphenol	10	ND	ND
2,4,6-Trichlorophenol	10	ND	ND
2,4,5-Trichlorophenol	10	ND	ND
2,4-Dinitrophenol	25	ND	ND
4-Nitrophenol	25	ND	ND
2-Methyl-4,6-dinitrophenol	25	ND	ND
Pentachlorophenol	25	ND	ND

* Quantified as 4-methylphenol.

Approved By: _____

Date: _____

3S3PBN/A/102094

7777SSVM.JA1 - 7777-1.mh 12/28/94

Page No.:

00005

APPENDIX A
LABORATORY QC RESULTS

00000

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: Arco A601
Sample Matrix: Water

Service Request: K947777S
Date Collected: 12/13/94
Date Received: 12/14/94
Date Extracted: 12/19/94
Date Analyzed: 12/21,22/94

Surrogate Recovery Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3520/8270

Sample Name	Lab Code	2FP	P e r c e n t		R e c o v e r y		
			PHL	TBP	NBZ	FBP	TPH
MW-8	K947777-001	<5(a)	7(a)	<5(a)	63	69	51
MW-8	K947777-001MS	17(a)	24	23	66	69	58
MW-8	K947777-001DMS	25	32	32	75	73	57
Lab Control Sample	K941219-WL1	68	80	104	80	84	83
Method Blank	K941219-WB1	62	70	102	72	81	75

CAS Acceptance Limits: 21-100 10-94 10-123 35-114 43-116 33-141

2FP 2-Fluorophenol
 PHL Phenol-d6
 TBP 2,4,6-Tribromophenol
 NBZ Nitrobenzene-d5
 FBP 2-Fluorobiphenyl
 TPH Terphenyl-d14

a Outside of acceptance limits because of matrix effects.

Approved By: _____

Date: _____

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: Arco A601
Sample Matrix: Water

Service Request: K947777S
Date Collected: 12/13/94
Date Received: 12/14/94
Date Extracted: 12/19/94
Date Analyzed: 12/22/94

Matrix Spike/Duplicate Matrix Spike Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3520/8270
Units: µg/L (ppb)

Sample Name: MW-8
Lab Code: K947777-001

Analyte	Percent Recovery								Relative Percent Difference
	Spike Level		Sample Result	Spike Result				CAS	
	MS	DMS		MS	DMS	MS	DMS	Acceptance Limits	
Phenol	400	400	ND	92	121	23	30	12-89	27
2-Chlorophenol	400	400	ND	113	140	28	35	27-123	21
1,4-Dichlorobenzene	200	200	ND	120	137	60	68	36-97	13
N-Nitrosodi-n-propylamine	200	200	ND	146	164	73	82	41-116	12
1,2,4-Trichlorobenzene	200	200	ND	129	142	64	71	39-98	10
4-Chloro-3-methylphenol	400	400	ND	128	157	32	39	23-97	20
Acenaphthene	200	200	ND	136	140	68	70	46-118	3
4-Nitrophenol	400	400	ND	375(a)	301	94(b)	75	10-80	22
2,4-Dinitrotoluene	200	200	ND	151	149	76	74	24-96	1
Pentachlorophenol	400	400	ND	161	127	40	32	9-103	24
Pyrene	200	200	ND	135	141	68	70	26-127	4

a Result is from the analysis of a diluted sample, performed on 12/23/94. Dilution factor: 2
b Outside of acceptance limits. Since no acid target analytes were detected in the sample, it is the opinion of CAS that the quality of the sample data has not been significantly affected by the elevated recovery.

Approved By: _____

Date: _____

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: Arco A601
LCS Matrix: Water

Service Request: K947777S
Date Collected: NA
Date Received: NA
Date Extracted: 12/19/94
Date Analyzed: 12/21/94

Laboratory Control Sample Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3520/8270
Units: µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Phenol	100	78	78	5-112
2-Chlorophenol	100	89	89	23-134
1,4-Dichlorobenzene	100	75	75	20-124
N-Nitrosodi-n-propylamine	100	84	84	D-230
1,2,4-Trichlorobenzene	100	80	80	44-142
4-Chloro-3-methylphenol	100	85	85	22-147
Acenaphthene	100	85	85	47-145
4-Nitrophenol	100	85	85	D-132
2,4-Dinitrotoluene	100	80	80	39-139
Pentachlorophenol	100	95	95	14-176
Pyrene	100	90	90	52-115

D Detected; result must be greater than zero.

Approved By: _____

LCS/120594

7777SSVM.JA1 - 1219-w1 12/28/94

Date: 12/29/94

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Page No.:

APPENDIX B
CHAIN OF CUSTODY INFORMATION

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