PACIFIC
ENVIRONMENTAL
GROUP, INC.

Quarterly Groundwater Monitoring Report
Third Quarter 1996

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Prepared for

Mr. Paul Supple
ARCO Products Company

November 19, 1996

Prepared by

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Project 330-107.2C

Kelly C. Brown
Project Manager

Debra J. Moser
Senior Geologist
CEG 1293

REGISTERED GEOLOGIST
DEBRA J. MOSER
No. 1293
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Date: November 19, 1996
Quarter: 3Q96

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 2162 Address: 15135 Hesperian Boulevard at Ruth Court, San Leandro
ARCO Environmental Engineer: Paul Supple
Consulting Co./Contact Person: Pacific Environmental Group, Inc./Kelly Brown
Consultant Project No.: 330-107.2C
Primary Agency/Regulatory ID No.: Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER (Third - 1996):

1. Performed third quarter 1996 groundwater monitoring event.
2. Prepared third quarter 1996 groundwater monitoring report.

WORK PROPOSED FOR NEXT QUARTER (Fourth - 1996):

1. Perform fourth quarter 1996 groundwater monitoring event.
2. Prepare fourth quarter 1996 groundwater monitoring report.
3. Pursue site closure with the Alameda County Health Care Service Agency.

Current Phase of Project:	Monitoring	(Assmnt, Remed., etc.)
Frequency of Groundwater Sampling:	Quarterly	(Quarterly, etc.)
Frequency of Groundwater Monitoring:	Quarterly	(Monthly, etc.)
Is Free Product (FP) Present On-Site:	No	(Yes/No)
FP Recovered this Quarter:	None	(gallons)
Cumulative FP Recovered to Date:	None	(gallons)
Bulk Soil Removed This Quarter:	None	(cubic yards)
Bulk Soil Removed to Date:	960	(cubic yards)
Current Remediation Techniques:	Natural Attenuation	(SVE/Sparge/FP Removal, etc.)
Approximate Depth to Groundwater:	7.8 to 9.3	(Measure Feet)
Groundwater Gradient:	South-southwest	(Direction)
	0.01	(Magnitude)

DISCUSSION:

- TPPH-g and benzene remain within historical levels.

ATTACHMENTS:

- Table 1 - Groundwater Sampling Schedule
- Table 2 - Groundwater Elevation and Analytical Data
- Figure 1 - Groundwater Elevation Contour Map
- Figure 2 - TPPH-g/Benzene Concentration Map
- Attachment A - Historical Groundwater Elevation and Analytical Data Tables
- Attachment B - Field and Laboratory Procedures
- Attachment C - Certified Analytical Report, Chain-of-Custody Documentation, and Field Data Sheets

cc: Mr. John Jang, Regional Water Quality Control Board - S.F. Bay Region
Mr. Mike Bakaldin, City of San Leandro Fire Department, Hazardous Materials Division
Mr. Scott Seery, Alameda County Health Care Services Agency

Table 1
Groundwater Sampling Schedule

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Sampling Frequency
MW-1	a	a	a	a	Quarterly
MW-2	a	a	a	a	Quarterly
MW-3	a	a	a	a	Quarterly
MW-4	a	a	a	a	Quarterly

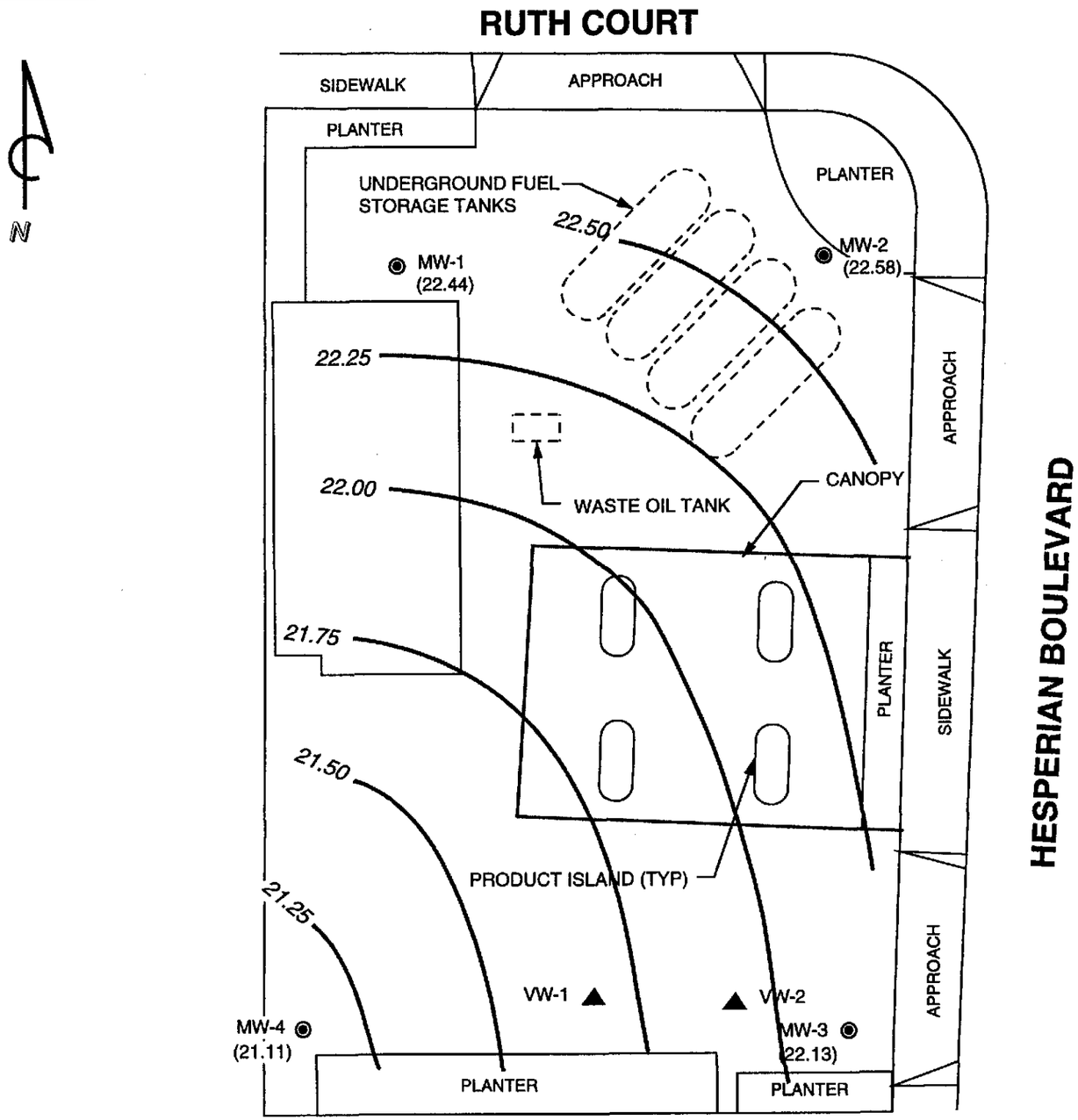
a. Samples analyzed for TPPH-g, BTEX compounds, and MtBE according to EPA Methods 8015 (modified) and 8020.

Table 2
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MtBE)

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	MtBE (ppb)
MW-1	02/26/96	31.19	7.14	24.05	<50	<0.50	<0.50	<0.50	<0.50	NA
	05/23/96		7.70	23.49	<50	<0.50	<0.50	<0.50	<0.50	NA
	08/21/96		8.75	22.44	210	<0.50	<0.50	<0.50	<0.50	<2.5
MW-2	02/26/96	30.38	6.41	23.97	770	<0.50	<0.50	45	28	NA
	05/23/96		6.80	23.58	590	0.50	<0.50	35	18	NA
	08/21/96		7.80	22.58	170	<0.50	<0.50	21	6.3	<2.5
MW-3	02/26/96	30.30	6.72	23.58	120	5.0	<0.50	<0.50	<0.50	NA
	05/23/96		7.18	23.12	140	12	<0.50	<0.50	<0.50	NA
	08/21/96		8.17	22.13	<50	1.1	<0.50	<0.50	<0.50	130
MW-4	02/26/96	30.39	7.59	22.80	110	9.9	<0.50	<0.50	<0.50	NA
	05/23/96		8.22	22.17	69	8.0	<0.50	<0.50	<0.50	NA
	08/21/96		9.28	21.11	<50	6.8	<0.50	<0.50	<0.50	<2.5

MtBE = Methyl tert-butyl ether
MSL = Mean sea level
TOC = Top of casing
ppb = Parts per billion
NA = Not analyzed
< = Less than the laboratory detection limit stated to the right.



LEGEND

MW-4 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

(22.44) GROUNDWATER ELEVATION IN FEET - MSL, 8-21-96

22.25 GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 8-21-96

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.010

SOURCE: MAP BY RESNA

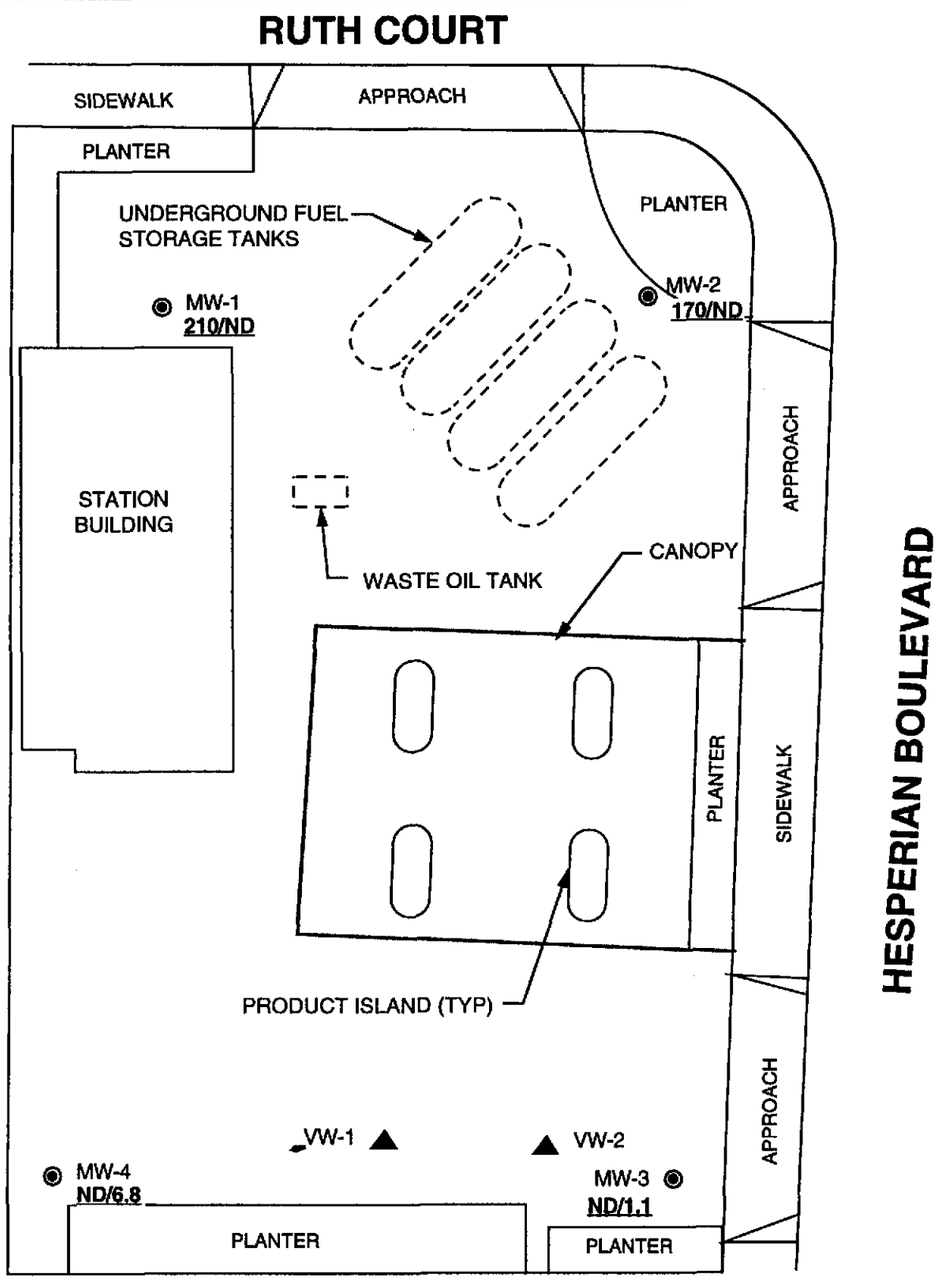
PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

ARCO SERVICE STATION 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

GROUNDWATER ELEVATION CONTOUR MAP

FIGURE: 1
PROJECT: 330-107.2C



N

LEGEND

MW-4 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VW-1 ▲ SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

210/ND TPPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 8-21-96

ND NOT DETECTED

APPROXIMATE DIRECTION OF GROUNDWATER FLOW

SOURCE: MAP BY RESNA

PACIFIC ENVIRONMENTAL GROUP, INC.

SCALE
0 20 40 FEET

ARCO SERVICE STATION 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

TPPH-g/BENZENE CONCENTRATION MAP

FIGURE:
2
PROJECT:
330-107.2C

ATTACHMENT A

HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA TABLES

Table A-1
Historical Groundwater Elevation Data

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-1	09/30/92	31.19	10.68	20.51
	10/16/92		10.83	20.36
	01/14/93		7.25	23.94
	02/24/93		7.23	23.96
	03/30/93		7.58	23.61
	04/14/93		7.96	23.23
	05/19/93		8.26	22.93
	06/17/93		8.42	22.77
	07/28/93		8.68	22.51
	08/11/93		9.07	22.12
	09/28/93		9.60	21.59
	10/15/93		9.51	21.68
	11/16/93		— Well Inaccessible —	
	12/16/93		8.70	22.49
	02/15/94		8.51	22.68
	03/18/94		8.46	22.73
	05/05/94		8.66	22.53
	08/05/94		9.50	21.69
	11/21/94		8.83	22.36
	02/24/95		7.90	23.29
	05/31/95		7.86	23.33
	08/23/95		8.74	22.45
	11/22/95		9.50	21.69
MW-2	09/30/92	30.38	9.74	20.64
	10/16/92		9.91	20.47
	01/14/93		6.56	23.82
	02/24/93		6.67	23.71
	03/30/93		6.76	23.62
	04/14/93		7.10	23.28
	05/19/93		7.40	22.98
	06/17/93		7.51	22.87
	07/28/93		7.73	22.65
	08/11/93		8.11	22.27
	09/28/93		8.57	21.81
	10/15/93		8.56	21.82
	11/16/93		8.87	21.51
	12/16/93		7.92	22.46
	02/15/94		7.62	22.76
	03/18/94		7.57	22.81
	05/05/94		7.75	22.63
	08/05/94		8.53	21.85
	11/21/94		7.92	22.46
	02/24/95		6.98	23.40
	05/31/95		6.97	23.41
	08/23/95		7.83	22.55
	11/22/95		8.54	21.84
MW-3	09/30/92	30.30	9.93	20.37
	10/16/92		10.13	20.17
	01/14/93		6.71	23.59
	02/24/93		6.82	23.48
	03/30/93		7.07	23.23
	04/14/93		7.41	22.89
	05/19/93		7.72	22.58
	06/17/93		7.86	22.44
	07/25/93		8.13	22.17

Table A-1 (continued)
Historical Groundwater Elevation Data

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-3	08/11/93		8.45	21.85
(cont.)	09/28/93		8.96	21.34
	10/15/93		8.85	21.45
	11/16/93		9.09	21.21
	12/16/93		8.10	22.20
	02/15/94		7.88	22.42
	03/18/94		7.88	22.42
	05/05/94		8.08	22.22
	08/05/94		8.82	21.48
	11/21/94		8.17	22.13
	02/24/95		7.40	22.90
	05/31/95		7.35	22.95
	08/23/95		8.15	22.15
	11/22/95		8.84	21.46
MW-4	09/30/92	30.39	11.15	19.24
	10/16/92		11.33	19.06
	01/14/93		7.49	22.90
	02/24/93		7.57	22.82
	03/30/93		8.06	22.33
	04/14/93		8.48	21.91
	05/19/93		7.80	22.59
	06/17/93		8.94	21.45
	07/25/93		9.28	21.11
	05/11/93		9.61	20.78
	09/25/93		10.14	20.25
	10/15/93		10.00	20.39
	11/16/93		10.22	20.17
	12/16/93		9.11	21.28
	02/15/94		8.97	21.42
	03/15/94		8.99	21.40
	05/05/94		9.21	21.18
	08/05/94		10.02	20.37
	11/21/94		9.30	21.09
	02/24/95		8.46	21.93
	05/31/95		8.41	21.98
	08/23/95		9.32	21.07
	11/22/95		9.98	20.41

MSL = Mean sea level
TOC = Top of casing

Table A-2
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-1	09/30/92	1,100	6.2	<0.50	6.9	<0.50
	10/16/92	790	3.0	0.8	5.6	2.9
	01/14/93	660	1.2	<1 a	15	4.6
	04/14/93	310	<1 a	<1 a	<1 a	<1 a
	08/11/93	660	0.8	<0.7	9.0	<1 b
	10/15/93	620	0.7	<0.5	5.9	2.2
	02/15/94	650	1.9	<0.5	4.5	4.9 b
	05/05/94	510	<0.5	<0.5	<1	1.6
	08/05/94	310	<0.5	<0.5	1.5	1.2
	11/21/94	330	<0.5	<0.5	1.5	1.1
	02/24/95	120	<0.50	<0.50	<0.50	<0.50
	05/31/95	<50	<0.50	<0.50	<0.50	<0.50
	08/23/95	160	<0.50	<0.50	<0.50	<0.50
	11/22/95	70	<0.50	<0.50	<0.50	<0.50
MW-2	09/30/92	1,000	9.6	<0.50	45	110
	10/16/92	630	8	<1 a	37	64
	01/14/93	7,800	33	5	340	920
	04/14/93	1,600	7	<5 a	220	520
	08/11/93	1,600	4.3	<1 a	80	120
	10/15/93	1,100	1.7	<1 a	62	70
	02/15/94	490	1.8	1.5	49	37
	05/05/94	360	<0.5	<0.5	27	18
	08/05/94	680	<0.5	<0.5	42	37
	11/21/94	500	<0.5	<0.5	40	25
	02/24/95	650	<0.50	<0.50	52	48
	05/31/95	450	<0.50	<0.50	33	33
	08/23/95	180	<0.50	<0.50	12	9.5
	11/22/95	88	<0.50	<0.50	2.1	1.3
MW-3	09/30/92	<50	<0.50	<0.50	<0.50	<0.50
	10/16/92	<50	<0.50	<0.50	<0.50	<0.50
	01/14/93	52	<0.50	<0.50	<0.50	<0.50
	04/14/93	360	86	2.1	5.1	4.0
	08/11/93	69	1.1	<0.5	<0.5	<0.5
	10/15/93	<50	<0.5	<0.5	<0.5	<0.5
	02/15/94	<50	<0.5	<0.5	<0.5	<0.5
	05/05/94	<50	<0.5	<0.5	<0.5	<0.5
	08/05/94	<50	<0.5	<0.5	<0.5	<0.5
	11/21/94	<50	<0.5	<0.5	<0.5	<0.5
	02/24/95	<50	0.93	<0.50	<0.50	<0.50
	05/31/95	120	24	<0.50	<0.50	<0.50
	08/23/95	85	<0.5	<0.5	<0.5	<0.5
	11/22/95	<50	<0.50	<0.50	<0.50	<0.50
MW-4	09/30/92	330	81	<0.50	<0.50	<0.50
	10/16/92	250	44	<0.50	<0.50	0.7
	01/14/93	260	29	0.6	<0.50	1.1
	04/14/93	NS	NS	NS	NS	NS
	08/11/93	150	21	<0.5	<0.5	<0.5
	10/15/93	190	12	<0.5	<0.5	<0.5
	02/15/94	<50	2.0	<0.5	<0.5	<0.5
	05/05/94	160	17	<0.5	<0.5	0.6
	08/05/94	120	10	<0.5	<0.5	<0.5
	11/21/94	120	17	<0.5	<0.5	0.6

Table A-2 (continued)
Historical Groundwater Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)
MW-4	02/24/95	110	14	<0.50	<0.50	<0.50
(cont.)	05/31/95	97	11	<0.50	<0.50	<0.50
	08/23/95	110	16	<0.50	<0.50	<0.50
	11/22/95	71	6.2	<0.50	<0.50	<0.50

ppb = Parts per billion
NS = Not sampled, separate-phase hydrocarbon entered well during purging.
< = Less than the laboratory detection limit stated to the right.
a. Raised MRL due to high analyte concentration requiring sample dilution
b. Raised MRL due to matrix interference

Table A-3
Historical Groundwater Analytical Data
Total Methyl tert-Butyl Ether

ARCO Service Station 2162
15135 Hesperian Boulevard at Ruth Court
San Leandro, California

Well Number	Date Sampled	Methyl tert-Butyl Ether (ppb)
MW-1	08/23/95	<2.5
MW-2	08/23/95	<2.5
MW-3	08/23/95	41
MW-4	08/23/95	<2.5

ppb = Parts per billion
< = Less than the detection limit stated to the right.

ATTACHMENT B

FIELD AND LABORATORY PROCEDURES

ATTACHMENT B
FIELD AND LABORATORY PROCEDURES

Sampling Procedures

The sampling procedure for each well consists of first measuring the water level and checking for the presence of separate-phase hydrocarbons (SPH) using either an electronic indicator and a clear Teflon® bailer or an oil-water interface probe. Wells not containing SPH are then purged of approximately three casing volumes of water (or to dryness) using a centrifugal pump, gas displacement pump, or bailer. Equipment used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored in order to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially recover. Groundwater samples are collected using a Teflon® bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to a California State-certified laboratory.

Laboratory Procedures

The groundwater samples were analyzed for the presence of total purgeable petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, xylenes, methyl tert-butyl ether. The analyses were performed according to EPA Methods 8015 (modified) and 8020 utilizing a purge-and-trap extraction technique. Final detection was by gas chromatography using flame- and photo-ionization detectors. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment C.

ATTACHMENT C

CERTIFIED ANALYTICAL REPORT, CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD DATA SHEETS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Kelly Brown

Project: 330-107.2I/2162,San Leandro

Enclosed are the results from samples received at Sequoia Analytical on August 22, 1996. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9608E88 -01	LIQUID, MW-1	08/21/96	MTBE_W Methyl t-Butyl Ethe
9608E88 -01	LIQUID, MW-1	08/21/96	TPHGBW Purgeable TPH/BTEX
9608E88 -02	LIQUID, MW-2	08/21/96	MTBE_W Methyl t-Butyl Ethe
9608E88 -02	LIQUID, MW-2	08/21/96	TPHGBW Purgeable TPH/BTEX
9608E88 -03	LIQUID, MW-3	08/21/96	MTBE_W Methyl t-Butyl Ethe
9608E88 -03	LIQUID, MW-3	08/21/96	TPHGBW Purgeable TPH/BTEX
9608E88 -04	LIQUID, MW-4	08/21/96	MTBE_W Methyl t-Butyl Ethe
9608E88 -04	LIQUID, MW-4	08/21/96	TPHGBW Purgeable TPH/BTEX
9608E88 -05	LIQUID, TB-1	08/21/96	MTBE_W Methyl t-Butyl Ethe
9608E88 -05	LIQUID, TB-1	08/21/96	TPHGBW Purgeable TPH/BTEX

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

Very truly yours,

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Quality Assurance Department

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9608E88-01

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX07A
Instrument ID: GCHP07

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

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

SEQUOIA ANALYTICAL - ELAP #1210

laudia Hirotsu
roject Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9608E88-01

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX07A
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**210**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Unidentified HC		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9608E88-02

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX07A
Instrument ID: GCHP07

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	95

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9608E88-02

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX07A
nstrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**170**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**21**
Xylenes (Total)	**0.50**	**6.3**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	91

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

EQUOIA ANALYTICAL - ELAP #1210

audia Hirotsu
oject Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9608E88-03

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	130

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	79

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

EQUOIA ANALYTICAL - ELAP #1210

audia Hirotsu
oject Manager

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9608E88-03

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**1.1**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	79

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

EQUOIA ANALYTICAL - ELAP #1210

laudia Hirotsu
roject Manager

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9608E88-04

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	81

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9608E88-04

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**6.8**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	81

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: TB-1
Matrix: LIQUID
Analysis Method: EPA 8020
Lab Number: 9608E88-05

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.5	N.D.

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Kelly Brown

Client Proj. ID: 330-107.2I/2162,San Leandro
Sample Descript: TB-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9608E88-05

Sampled: 08/21/96
Received: 08/22/96

Analyzed: 09/03/96
Reported: 09/05/96

QC Batch Number: GC090396BTEX22A
Instrument ID: GCHP22

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Surrogates	**Control Limits %**	**% Recovery**
Trifluorotoluene	70 130	89

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

SEQUOIA ANALYTICAL - ELAP #1210

Claudia Hirotsu
Project Manager

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Kelly Brown

Client Project ID: 330-107.2I / 2162, San Leandro
Matrix: LIQUID
Work Order #: 9608E88 01, 02

Reported: Sep 5, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC090396BTEX07A	GC090396BTEX07A	GC090396BTEX07A	GC090396BTEX07A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	9608E3101	9608E3101	9608E3101	9608E3101
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/3/96	9/3/96	9/3/96	9/3/96
Analyzed Date:	9/3/96	9/3/96	9/3/96	9/3/96
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.9	9.9	10	30
MS % Recovery:	99	99	100	100
Dup. Result:	9.4	9.4	9.5	28
MSD % Recov.:	94	94	95	93
RPD:	5.2	5.2	5.1	6.9
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK090396	BLK090396	BLK090396	BLK090396
Prepared Date:	9/3/96	9/3/96	9/3/96	9/3/96
Analyzed Date:	9/3/96	9/3/96	9/3/96	9/3/96
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	9.5	9.5	9.6	29
LCS % Recov.:	95	95	96	97
MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

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

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Kelly Brown

Client Project ID: 330-107.2I / 2162, San Leandro
Matrix: LIQUID
Work Order #: 9608E88 03-05
Reported: Sep 5, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC090396BTEX22A	GC090396BTEX22A	GC090396BTEX22A	GC090396BTEX22A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	Porter	Porter	Porter	Porter
MS/MSD #:	9508E3102	9508E3102	9508E3102	9508E3102
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/3/96	9/3/96	9/3/96	9/3/96
Analyzed Date:	9/3/96	9/3/96	9/3/96	9/3/96
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	9.9	29
MS % Recovery:	100	100	99	97
Dup. Result:	10	9.7	9.7	28
MSD % Recov.:	100	97	97	93
RPD:	0.0	3.0	2.0	3.5
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK090396	BLK090396	BLK090396	BLK090396
Prepared Date:	9/3/96	9/3/96	9/3/96	9/3/96
Analyzed Date:	9/3/96	9/3/96	9/3/96	9/3/96
Instrument I.D.#:	GCHP22	GCHP22	GCHP22	GCHP22
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	10	9.8	30
LCS % Recov.:	100	100	98	100
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

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

SEQUOIA ANALYTICAL

Claudia Hirotsu
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT): Lisa Hale

WORKORDER: 9608E88
DATE OF LOG-IN: 8/26/96

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal(s): Present / (Absent)
   Intact / Broken*
2. Custody Seal Nos.: Put in Remarks Section
3. Chain-of-Custody Records: (Present) / Absent*
4. Traffic Reports or Packing List: Present / (Absent)
5. Airbill: Airbill / Sticker
   Present / (Absent)
6. Airbill No.: —
7. Sample Tags: (Present) / Absent*
   Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody
8. Sample Condition: (Intact) / Broken* / Leaking*
9. Does information on custody reports, traffic reports and sample tags agree? (Yes) / No*
10. Proper preservatives used: (Yes) / No*
11. Date Rec. at Lab: 8/26/96
12. Temp. Rec. at Lab: 9°C
13. Time Rec. at Lab: 1114

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1	A-C	MW-1	(3) VOA	LIQ	8/21	
2		MW-2				
3		MW-3				
4		MW-4				
5	A,B	TB-1	(2) VOA			

LH 8/26/96

* If Circled, contact Project manager and attach record of resolution

ARCO Products Company

Division of AtlanticRichfieldCompany

330 107 21

Task Order No. 1934800 9608E68

Chain of Custody

ARCO Facility no. 2162	City (Facility) Hesperian blvd. San Leandro	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408) 441 7500	Fax no. (Consultant) (408) 441 7539
Consultant name Pacific Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid HCl	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH/Gas/MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	
MW-1	1	3		X		X	X	8/21/96	11:00		X										
MW-2	2	↓		↓		↓	↓	↓	12:00		↓										
MW-3	3	↓		↓		↓	↓	↓	11:35		↓										
MW-4	4	↓		↓		↓	↓	↓	11:20		↓										
TB-1	5	2		↓		↓	↓	↓	n/a		↓										

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Business Days ☒

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler: Wahaj Kazi	8/21/96	13:35	Received by: Denise Alarcon	8/21/96	13:35
Relinquished by: Denise Alarcon	8/22/96	1030	Received by: Matthew Mc		
Relinquished by: Matthew Mc			Received by laboratory:	8/22/96	1114

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

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

Project #:330-107.2I

Station #:2162

Site Address:15135 Hesperian blvd. San Leandro, California

County: Alameda

Project Manager:Kelly Brown

Requestor: Kelly Romero

Client:Arco

Prefield contacts:

☐ **1st time visit**

☐ **1st** ☐ **2nd** ☒ **3rd** ☐ **4th**

☐ **Monthly**

☐ **Semi-Monthly**

☐ **Weekly**

☐ **One time Event**

Other._____

Client P.O.C.:Mike Whelan

Date of Request: 3Q

Ideal Field Date:

Budget Hrs._____

Actual Hrs. 3

Mob de Mob 1.5

Total Purge - 61.50 Gal

Field Tasks: For General Description

Third quarter 1996 groundwater sampling event: DTW/DTL on all wells from TOB/TOC
Sample per attached protocol

WA# 19348 00

Comments, remarks, from Field Staff (include problems encountered)

Completed by: W Reich Date: 8/21/96

Checked by:_____

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

Project #:330-107.2I

Station #:2162

Site Address:15135 Hesperian blvd.
San Leandro, California

County: Alameda

Project Manager:Kelly Brown

Requestor: Kelly Romero

Client:Arco

Prefield contacts:

☐ **1st time visit**

☐ **1st** ☐ **2nd** ☒ **3rd** ☐ **4th**

☐ **Monthly**

☐ **Semi-Monthly**

☐ **Weekly**

☐ **One time Event**

Other._____

Date of Request: 3Q

Ideal Field Date:

Budget Hrs._____

Actual Hrs. 3

Mob de Mob 1.5

Client P.O.C.:Mike Whelan

Total Purge = 61.50 Gal

Field Tasks: For General Description

Third quarter 1996 groundwater sampling event: DTW/DTL on all wells from TOB/TOC
Sample per attached protocol

WA# 19348 00

Comments, remarks, from Field Staff (include problems encountered)

Completed by: W Reed Date: 8/21/96

Checked by:_____

WELL SAMPLING REQUEST

SAMPLING PROTOCOL								
Project No.	Station #	Project Name	SEQUENCE	Project Manager	Approval	Date/s	Laboratory:	Client Engineer:
330-107.21	2162	5135 Hesperian San Lorenz	3Q96	Kelly Brown	6/25/96		Sequoia	Mike Whelan

Well Number	Ideal Sampling Order	Sample I.D.	Sampling Frequency	Analyses	TOB TOC	Well Depth	Casing Diameter	Well goes Dry?	Comments
MW-1	1		QLY	MtBE/GAS/BTEX	TOB/TOC	16'	4"		
MW-2	4		QLY	MtBE/GAS/BTEX	TOB/TOC	16'	4"		
MW-3	3		QLY	MtBE/GAS/BTEX	TOB/TOC	15'	4"		
MW-4	2		QLY	MtBE/GAS/BTEX	TOB/TOC	18'	4"		
TB-1			QLY	MtBE/GAS/BTEX					

6/27/96SMPLRQST.XLS

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330 107 21 LOCATION: 15135 Hesperian blvd San Leandro DATE: 8/21/96

CLIENT/STATION NO.: Arco 2162 FIELD TECHNICIAN: W. Peck DAY OF WEEK: Wed

PROBE TYPE/ID No.
- ☐ Oil/Water IF/ _____
- ☒ H_2O level indicator _____
- ☐ Other: _____

Casing Size	Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	TOC Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	SEPARATE-PHASE HYDROCARBONS (SPH) COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons) SPH / H_2O
4"	1	mw-1	10:26	Y	Y	Y	Y	Y	15.96	8.75 / 8.75	8.94 / 8.94										/ H_2O
4"	4	mw-2	10:33	Y	Y	Y	Y	Y	15.95	7.80 / 7.80	8.12 / 8.12										/ H_2O
4"	3	mw-3	10:31	Y	Y	Y	Y	Y	14.95	8.17 / 8.17	8.38 / 8.38										/ H_2O
4"	2	mw-4	10:29	Y	Y	Y	Y	Y	17.72	9.28 / 9.28	9.51 / 9.51										/ H_2O
										/	/										/ H_2O
										/	/										/ H_2O
										/	/										/ H_2O
										/	/										/ H_2O
										/	/										/ H_2O

Comments:

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21 LOCATION: 15135 Hesperian blvd San Leandro WELL ID #: MW-1

CLIENT/STATION No.: Arco #2162 FIELD TECHNICIAN: W Reed

WELL INFORMATION

Depth to Liquid:	—	TOB —	TOC
Depth to water:	8.94	TOB 8.75	TOC
Total depth:	—	TOB 15.96	TOC
Date: 8/21/96	Time (2400): 10:26		

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other:

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other:

TD 15.96 - DTW 8.75 = 7.21 x Gal/Linear Foot .66 = 4.75 x Number of Casings 3 = Calculated Purge 14.27

DATE PURGED: 8/21/96 START: 10:45 END (2400 hr): 10:56 PURGED BY: W Reed

DATE SAMPLED: 8/21/96 START: 10:56 END (2400 hr): 11:00 SAMPLED BY: W Reed

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:50	4.75	7.72	1000	69.0	Brown	Mod	None
10:53	9.50	7.03	980	68.0	Brown	Mod	None
10:56	14.25	6.87	950	65.0	Cloudy	Light	None

Pumped dry Yes / No

Color: Cobalt 0-100, Clear, Cloudy, Yellow, Brown
Turbidity: NTU 0-200, Heavy, Moderate, Light, Trace
Odor: Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-1
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-1	8/21/96	11:00	3	40ml	VOA	HCL	GasBtex/MTBE

REMARKS:

W Reed

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21 LOCATION: 15135 Hesperian blvd San Leandro WELL ID #: MW-2

CLIENT/STATION No.: Arco #2162 FIELD TECHNICIAN: W Reed

WELL INFORMATION

Depth to Liquid: ~ TOB ~ TOC
Depth to water: 8.12 TOB 7.80 TOC
Total depth: ~ TOB 15.95 TOC
Date: 8/21/96 Time (2400): 10:33

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 15.95 - DTW 7.80 = 8.15 x Gal/Linear Foot 0.66 = 5.37 x Number of Casings 3 = Calculated Purge 16.13

DATE PURGED: 8/21/96 START: 11:40 END (2400 hr): 11:52 PURGED BY: W Reed

DATE SAMPLED: 8/21/96 START: 11:52 END (2400 hr): 12:00 SAMPLED BY: W Reed

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
11:45	5.50	7.36	820	71.5	Brown	Heavy	None
11:49	11.0	7.43	800	72.3	Cloudy	Light	None
11:52	16.50	7.49	790	71.5	Cloudy	Light	None

Pumped dry Yes / No

Cobalt 0-100 Clear Cloudy Yellow Brown | NTU 0-200 Heavy Moderate Light Trace | Strong Moderate Faint None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-2
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-2	8/21/96	1200	3	40ml	VOA	HCL	GasBtex/MTBE

REMARKS:

W Reed

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21 LOCATION: 5135 Hesperian blvd San Leandro WELL ID #: MW-3

CLIENT/STATION No.: Arco = 2162 FIELD TECHNICIAN: W Reed

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.38 TOB 8.17 TOC
Total depth: — TOB 14.95 TOC
Date: 8/21/96 Time (2400): 10:31

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other:

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other:

TD 14.95 - DTW 8.17 = 6.78 x Gal/Linear Foot .66 = 4.47 x Number of Casings 3 = Calculated Purge 13.42

DATE PURGED: 8/21/96 START: 11:25 END (2400 hr): 11:32 PURGED BY: W Reed

DATE SAMPLED: 8/21/96 START: 11:32 END (2400 hr): 11:35 SAMPLED BY: W Reed

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
11:28	4.50	7.37	950	72.0	Brown	Mod	None
11:30	9.0	7.34	970	71.9	Brown	Mod	None
11:32	13.50	7.33	960	70.1	Brown	Mod	None

Pumped dry Yes / No

Cobalt 0-100: Clear, Cloudy, Yellow, Brown
NTU 0-200: Heavy, Moderate, Light, Trace
Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: — TOB/TOC —

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-5
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-3	8/21/96	11:35	3	40ml	VOA	HCL	Gas/BTEX/MTBE

REMARKS:

Water Heat

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21 LOCATION: 15135 Hesperian blvd San Leandro WELL ID #: MW-4

CLIENT/STATION No.: Arco #2162 FIELD TECHNICIAN: CW Reed

WELL INFORMATION

Depth to Liquid: ~ TOB ~ TOC
Depth to water: 9.51 TOB 9.28 TOC
Total depth: ~ TOB 17.72 TOC
Date: 8/21/96 Time (2400): 10:29

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 17.72 - DTW 9.28 = 8.44 x Gal/Linear Foot .66 = 5.57 x Number of Casings 3 = Calculated Purge 16.71

DATE PURGED: 8/21/96 START: 11:05 END (2400 hr): 11:15 PURGED BY: CW Reed

DATE SAMPLED: 8/21/96 START: 11:15 END (2400 hr): 11:20 SAMPLED BY: CW Reed

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 2 5°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR
11:09	5.75	7.17	960	65.0	Brown	Mod	None
11:12	11.50	7.21	970	67.1	Brown	Mod	None
11:15	17.25	7.24	970	69.3	Brown	Mod	None

Pumped dry Yes / No

Cobalt 0-100 Clear Cloudy Yellow Brown | NTU 0-200 Heavy Moderate Light Trace | Strong Moderate Faint None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-13
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-4	8/21/96	11:20	3	40ml	VOA	HCL	GasBtex/MTBE

REMARKS:

Waterloo Rep

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330 107 21 LOCATION: 15135 Hesperian blvd SanLeandro WELL ID #: TB-1

CLIENT/STATION No.: Arco #2162 FIELD TECHNICIAN: W Reed

WELL INFORMATION

Depth to Liquid: ~ TOB ~ TOC
Depth to water: ~ TOB ~ TOC
Total depth: ~ TOB ~ TOC
Date: 8/21/96 Time (2400): ~

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☐	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ ~~Groundwater~~ WP
- ☐ Duplicate
- ☐ Extraction well
- ☒ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD ____ - DTW ____ = ____ x Gal/Linear Foot ____ = ____ x Number of Casings 3 = Calculated Purge ____

DATE PURGED: 8/21/96 START: ____ END (2400 hr): ____ PURGED BY: W Reed

DATE SAMPLED: 8/21/96 START: ____ END (2400 hr): ____ SAMPLED BY: W Reed

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
		TRIP BLANK					

Pumped dry Yes / No

Cobalt 0-100: Clear, Cloudy, Yellow, Brown
NTU 0-200: Heavy, Moderate, Light, Trace
Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Other:
- ☐ Airlift Pump:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer:
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
TB-1	8/21/96	N/A	2	40ml	VOA	HCL	Gas/BTEX/MTBE

REMARKS:

W Reed

RACEW

ARCO Products Company ◆ 330 107 21 — Division of AtlanticRichfieldCompany

Task Order No. 1934800

Chain of Custody

ARCO Facility no. 2162	City (Facility) 15135 Hesperian blvd, San Leandro	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408) 441 7500	Fax no. (Consultant) (408) 441 7539
Consultant name Pacific Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid (HCl)	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH Gas/MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 8240/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-1		3		X		X	X	8/21/96	11:00		X											
MW-2		3		X		X	X	8/21/96	12:00		X											
MW-3		3		X		X	X	8/21/96	11:35		X											
MW-4		3		X		X	X	8/21/96	11:20		X											
TB-1		2		X		X	X	8/21/96	n/a		X											

Condition of sample:

Temperature received:

Relinquished by sampler Walter Kool	Date 8/21/96	Time 13:35	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory / Date / Time

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

Distribution: White copy — Laboratory Company copy — ARCO Environmental Engineer Pink