

**EMCON**

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

ENVIRONMENTAL
PROTECTION

96 OCT -1 PM 1:38

Date September 26, 1996
Project 20805-121.003

To:

Mr. Scott Seery
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway, Suite 250
Alameda, California 94502

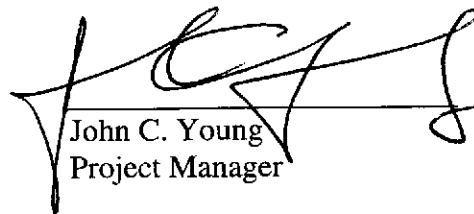
We are enclosing:

Copies	Description
<u>1</u>	<u>Second quarter 1996 groundwater monitoring results</u>
	<u>for ARCO service station 601, San Leandro, California</u>

For your:	<u>X</u>	Use	Sent by:	<u>X</u>	Regular Mail
		Approval			Standard Air
		Review			Courier
		Information			Other: <u>Cert. Mail</u>

Comments:

The enclosed groundwater monitoring report is being sent to you per the request of ARCO Products Company. Please call if you have questions or comments.


John C. Young
Project Manager

cc: Kevin Graves, RWQCB - SFBR
Mike Bakaldin, SLFD
Paul Supple, ARCO Products Company
File





Date: September 26, 1996

Re: ARCO Station #

601 • 712 Lewelling Boulevard • San Leandro, CA
Second Quarter 1996 Groundwater Monitoring Results

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached proposal or report are true and correct."

Submitted by:

A handwritten signature in black ink, appearing to read "Paul Supple". The signature is written in a cursive, flowing style.

Paul Supple
Environmental Engineer



EMCON

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

September 25, 1996
Project 20805-121.003

Mr. Paul Supple
ARCO Products Company
P.O. Box 6549
Moraga, California 94570

Re: Second quarter 1996 groundwater monitoring program results, ARCO service station 601, San Leandro, California

Dear Mr. Supple:

This letter presents the results of the second quarter 1996 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.

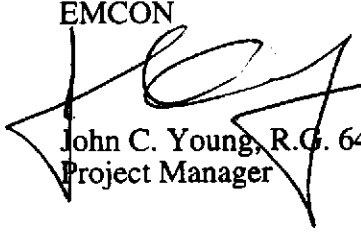
LIMITATIONS

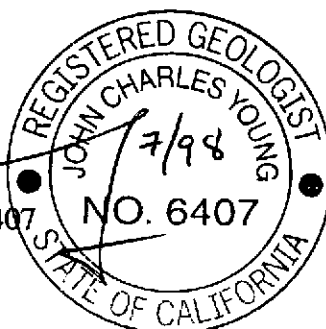
No monitoring event is thorough enough to describe all geologic and hydrogeologic conditions of interest at a given site. If conditions have not been identified during the monitoring event, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site,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

Please call if you have questions.

Sincerely,

EMCON


John C. Young, R.G. 6407
Project Manager



September 25, 1996

ARCO QUARTERLY REPORT

Station No.: 601 Address: 712 Lewelling Boulevard, San Leandro, California
EMCON Project No. 20805-121.003
ARCO Environmental Engineer/Phone No.: ~~Edna Sappala (415) 299-8891~~
EMCON Project Manager/Phone No.: John C. Young / (408) 453-7300
Primary Agency/Regulatory ID No.: ACHCSA / Scott Seery

WORK PERFORMED THIS QUARTER (Second- 1996):

1. Performed quarterly groundwater monitoring for second quarter 1996.
2. Prepared and submitted quarterly groundwater monitoring report for first quarter 1996.
3. **Installed oxygen releasing compounds (ORCs) in groundwater monitoring wells MW-2 and MW-5.**

WORK PROPOSED FOR NEXT QUARTER (Third- 1996):

1. Perform quarterly groundwater monitoring and sampling for third quarter 1996.
2. Prepare and submit quarterly groundwater monitoring report for second quarter 1996.
3. **Install ORCs into groundwater monitoring wells MW-6 and MW-8.**
4. **Discontinue analysis of total petroleum hydrocarbons as diesel (TPHD) and total recoverable petroleum hydrocarbons (TRPH) in wells MW-1 and MW-8. Based on four years of historical TPHD and TRPH results, it appears that samples from these wells contain lower boiling point hydrocarbons, possibly gasoline.**
5. **Discontinue quarterly metals analyses in wells MW-1 and MW-8, samples will be analyzed for metals annually.**

QUARTERLY MONITORING:

Current Phase of Project:	<u>Quarterly Groundwater Monitoring</u>
Frequency of Sampling:	<u>Quarterly (groundwater)</u>
Frequency of Monitoring:	<u>Quarterly (groundwater)</u>
Is Floating Product (FP) Present On-site:	☐ Yes ☒ No
Cumulative FP Recovered to Date :	<u>3.45 gallons, Well MW-1</u>
FP Recovered This Quarter :	<u>None</u>
Bulk Soil Removed to Date :	<u>1,565 cubic yards of TPH impacted soil</u>
Bulk Soil Removed This Quarter :	<u>None</u>
Water Wells or Surface Waters within 2000 ft., impacted by site:	<u>None</u>
Current Remediation Techniques:	<u>Enhanced bioremediation</u>
Approximate Depth to Groundwater:	<u>5.92 feet</u>
Groundwater Gradient (Average):	<u>0.007</u> ft/ft toward <u>southwest (consistent with past events)</u>

ATTACHED:

- Table 1 - Groundwater Monitoring Data, Second Quarter 1996
- Table 2 - Historical Groundwater Elevation and Analytical Data, Petroleum Hydrocarbons and Their Constituents
- Table 3 - Historical Groundwater Analytical Data, Metals
- Table 4 - Historical Groundwater Analytical Data, Volatile and Semivolatile Organic Compounds

- Table 5 - Approximate Cumulative Floating Product Recovered, Monitoring Well MW-1
- Figure 1 - Site Location
- Figure 2 - Groundwater Data, Second Quarter 1996
- Appendix A - Field Data Sheets, Second Quarter 1996 Groundwater Monitoring Event
- Appendix B - Analytical Results and Chain of Custody Documentation, Second Quarter 1996 Groundwater Monitoring Event

cc: Scott Seery, ACHCSA
Kevin Graves, RWQCB-SFBR
Mike Bakaldin, SLFD

Table 1
Groundwater Monitoring Data
Second Quarter 1996

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient ft/ft	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method µg/L
MW-1	05-20-96	22.26	7.03	15.23	ND	SW	0.007	05-21-96	340000	6600	240	4500	22000	<1000*	--	150	<2500^
MW-2	05-20-96	21.33	6.27	15.06	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-3	05-20-96	20.11	5.17	14.94	ND	SW	0.007	05-21-96	410000	4700	8000	6300	36000	<3000*	--	--	--
MW-4	05-20-96	20.75	7.30	13.45	ND	SW	0.007	05-21-96	6700	1100	330	120	1100	<100*	--	--	--
MW-5	05-20-96	20.90	5.87	15.03	ND	SW	0.007	05-21-96	55000	9300	3800	1100	5400	<500*	--	--	--
MW-6	05-20-96	22.08	7.07	15.01	ND	SW	0.007	05-21-96	16000	3700	<50*	1100	1100	<300*	--	--	--
MW-7	05-20-96	22.89	8.47	14.42	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-8	05-20-96	20.97	5.92	15.05	ND	SW	0.007	05-21-96	6100	<5*	<5*	26	<5*	240	--	--	--
MW-9	05-20-96	20.89	7.81	13.08	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-10	05-20-96	21.12	6.78	14.34	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-11	05-20-96	22.38	7.25	15.13	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-12	05-20-96	22.77	7.56	15.21	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-13	05-20-96	22.45	6.98	15.47	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-14	05-20-96	22.99	7.88	15.11	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-15	05-20-96	19.19	5.31	13.88	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

ft/ft: foot per foot

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

µg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: methyl-tert-butyl ether

TRPH: total recoverable petroleum hydrocarbons

TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method

SW: southwest

--: not analyzed

ND: none detected

*: method reporting limit was raised due to high analyte concentration requiring sample dilution

^: chromatogram fingerprint is not characteristic of diesel

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient ft/ft	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method µg/L
MW-1	02-14-94	22.26	7.72	14.54	Sheen	NR	NR	02-14-94	Not sampled: well contained floating product								
MW-1	05-05-94	22.26	8.47	13.79	Sheen	NR	NR	05-05-94	Not sampled: well contained floating product								
MW-1	08-04-94	22.26	8.72	13.54	Sheen	SW	0.004	08-04-94	Not sampled: well contained floating product								
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-1	03-17-95	22.26	6.57	15.69	ND	WSW	0.006	03-17-95	120000	5300	370	1500	13000	--	--	48000	6200^
MW-1	06-01-95	22.26	7.87	14.39	ND	SW	0.003	06-01-95	250000	7100	950	3500	21000	--	--	38000	190000^
MW-1	08-31-95	22.26	8.12	** 14.15	0.01	SSW	0.005	08-31-95	Not sampled: well contained floating product								
MW-1	11-27-95	22.26	8.42	13.84	Sheen	SSW	0.004	11-27-95	310000	4600	770	5700	21000	--	--	--	--
MW-1	02-22-96	22.26	6.01	** 16.26	0.01	NW	0.007	03-14-96	100000	6200	320	2500	12000	<1000*	--	--	--
MW-1	05-20-96	22.26	7.03	15.23	ND	SW	0.007	05-21-96	340000	6600	240	4500	22000	<1000*	--	150	<2500^
MW-2	02-14-94	21.33	6.88	14.45	ND	NR	NR	02-14-94	8700	670	370	50	1400	--	--	--	--
MW-2	05-05-94	21.33	7.51	13.82	ND	NR	NR	05-05-94	5600	390	140	120	480	--	--	--	--
MW-2	08-04-94	21.33	8.00	13.33	ND	SW	0.004	08-04-94	2300	180	<2.5*	<2.5*	230	--	--	--	--
MW-2	11-20-94	21.33	6.86	14.47	ND	SW	0.002	11-20-94	4900	170	150	120	390	--	--	--	--
MW-2	03-17-95	21.33	6.12	15.21	ND	WSW	0.006	03-17-95	10000	460	77	260	550	--	--	--	--
MW-2	06-01-95	21.33	6.56	14.77	ND	SW	0.003	06-01-95	13000	400	78	210	410	--	--	--	--
MW-2	08-31-95	21.33	7.18	14.15	ND	SSW	0.005	08-31-95	5000	280	18	120	140	<50*	--	--	--
MW-2	11-27-95	21.33	7.39	13.94	ND	SSW	0.004	11-27-95	3200	230	12	77	90	--	--	--	--
MW-2	02-22-96	21.33	5.78	15.55	ND	NW	0.007	03-14-96	11000	290	67	190	330	<50*	--	--	--
MW-2	05-20-96	21.33	6.27	15.06	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								

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Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method			
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
MW-3	02-14-94	20.11	5.81	14.30	ND	NR	NR	02-14-94	85000	4200	12000	2500	16000	--	--	--	--			
MW-3	05-05-94	20.11	6.81	13.30	ND	NR	NR	05-05-94	560000	4600	14000	5300	40000	--	--	--	--			
MW-3	08-04-94	20.11	7.31	12.80	ND	SW	0.004	08-04-94	64000	4200	7600	1700	12000	--	--	--	--			
MW-3	11-20-94	20.11	5.88	14.23	ND	SW	0.002	11-20-94	80000	4700	9700	2400	15000	--	--	--	--			
MW-3	03-17-95	20.11	5.46	14.65	ND	WSW	0.006	03-17-95	370000	4800	12000	5800	34000	--	--	--	--			
MW-3	06-01-95	20.11	6.34	13.77	ND	SW	0.003	06-01-95	270000	6000	11000	5200	28000	--	--	--	--			
MW-3	08-31-95	20.11	6.60	** 13.52	0.02	SSW	0.005	08-31-95	Not sampled; well contained floating product											
MW-3	11-27-95	20.11	6.76	** 13.36	0.01	SSW	0.004	11-27-95	150000	5100	8800	3900	21000	--	--	--	--			
MW-3	02-22-96	20.11	5.14	** 14.98	0.01	NW	0.007	03-14-96	150000	4400	7600	4100	22000	<3000*	--	--	--			
MW-3	05-20-96	20.11	5.17	14.94	ND	SW	0.007	05-21-96	410000	4700	8000	6300	36000	<3000*	--	--	--			
MW-4	02-14-94	20.75	DRY	DRY	ND	DRY	DRY	02-14-94	Not sampled: dry well											
MW-4	05-05-94	20.75	7.73	13.02	ND	NR	NR	05-05-94	1900	510	78	31	150	--	--	--	--			
MW-4	08-04-94	20.75	7.83	12.92	ND	SW	0.004	08-04-94	1300	360	17	<5*	190	--	--	--	--			
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-4	03-17-95	20.75	6.65	14.10	ND	WSW	0.006	03-17-95	16000	1800	970	310	2500	--	--	--	--			
MW-4	06-01-95	20.75	7.25	13.50	ND	SW	0.003	06-01-95	16000	2800	870	380	2700	--	--	--	--			
MW-4	08-31-95	20.75	7.75	13.00	ND	SSW	0.005	08-31-95	9000	2000	270	270	1400	<100*	--	--	--			
MW-4	11-27-95	20.75	7.87	12.88	ND	SSW	0.004	11-27-95	3800	890	130	130	550	--	--	--	--			
MW-4	02-22-96	20.75	7.29	13.46	ND	NW	0.007	03-14-96	940	150	82	19	130	<20*	--	--	--			
MW-4	05-20-96	20.75	7.30	13.45	ND	SW	0.007	05-21-96	6700	1100	330	120	1100	<100*	--	--	--			

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method		
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
MW-7	02-14-94	22.89	8.80	14.09	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-7	05-05-94	22.89	9.11	13.78	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-7	08-04-94	22.89	DRY	DRY	ND	DRY	DRY	08-04-94	Not sampled: dry well										
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-7	03-17-95	22.89	7.68	15.21	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-7	06-01-95	22.89	8.40	14.49	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-7	08-31-95	22.89	9.09	13.80	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	0.6	<0.5	<3	--	--	--		
MW-7	11-27-95	22.89	9.15	13.74	ND	SSW	0.004	11-27-95	<50	<0.5	<0.5	0.9	<0.5	--	--	--	--		
MW-7	02-22-96	22.89	7.44	15.45	ND	NW	0.007	03-14-96	110	1.4	<0.5	3.8	3	<3	--	--	--		
MW-7	05-20-96	22.89	8.47	14.42	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis										
MW-8	02-14-94	20.97	7.00	13.97	ND	NR	NR	02-14-94	3600	3	<1*	72	<1*	--	--	2000	3900^		
MW-8	05-05-94	20.97	7.46	13.51	ND	NR	NR	05-05-94	2100	<2.5*	<2.5*	8.3	<2.5*	--	--	700	440^		
MW-8	08-04-94	20.97	8.17	12.80	ND	SW	0.004	08-04-94	1200	1.5	<1*	6.7	<1*	--	--	700	<500		
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	--	--	<500	2100^		
MW-8	03-17-95	20.97	6.14	14.83	ND	WSW	0.006	03-17-95	5400	<5*	<5*	35	<5*	--	--	--	--		
MW-8	06-01-95	20.97	6.50	14.47	ND	SW	0.003	06-01-95	2600	<2.5*	<2.5*	15	<2.5*	--	--	--	--		
MW-8	08-31-95	20.97	7.35	13.62	ND	SSW	0.005	08-31-95	1400	<3*	<3*	5	<3*	520	--	900	--		
MW-8	11-27-95	20.97	7.60	13.37	ND	SSW	0.004	11-27-95	620	<0.5	<0.5	<0.5	0.5	--	560	900	510^		
MW-8	02-22-96	20.97	5.35	15.62	ND	NW	0.007	03-14-96	5800	<5*	<5*	28	<5*	110	--	1900	6800^		
MW-8	05-20-96	20.97	5.92	15.05	ND	SW	0.007	05-21-96	6100	<5*	<5*	26	<5*	240	--	--	--		

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-9	02-14-94	20.89	7.47	13.42	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-9	05-05-94	20.89	8.04	12.85	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-9	08-04-94	20.89	8.78	12.11	ND	SW	0.004	08-04-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
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-9	03-17-95	20.89	6.94	13.95	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-9	06-01-95	20.89	8.15	12.74	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-9	08-31-95	20.89	8.10	12.79	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-9	11-27-95	20.89	8.38	12.51	ND	SSW	0.004	11-27-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-9	02-22-96	20.89	7.36	13.53	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-9	05-20-96	20.89	7.81	13.08	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								
MW-10	02-14-94	21.12	7.13	13.99	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-10	05-05-94	21.12	8.08	13.04	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-10	08-04-94	21.12	8.84	12.28	ND	SW	0.004	08-04-94	<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-10	03-17-95	21.12	6.26	14.86	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-10	06-01-95	21.12	7.63	13.49	ND	SW	0.003	06-01-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-10	08-31-95	21.12	8.17	12.95	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-10	11-27-95	21.12	8.38	12.74	ND	SSW	0.004	11-27-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-10	02-22-96	21.12	5.41	15.71	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-10	05-20-96	21.12	6.78	14.34	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis								

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method		
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
MW-11	02-14-94	22.38	7.94	14.44	ND	NR	NR	02-14-94	650	<1*	<1*	2	4	--	--	--	--		
MW-11	05-05-94	22.38	8.55	13.83	ND	NR	NR	05-05-94	210	<0.5	<0.5	2.5	0.6	--	--	--	--		
MW-11	08-04-94	22.38	9.13	13.25	ND	SW	0.004	08-04-94	390	<0.5	<0.7*	1.9	2.2	--	--	--	--		
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-11	03-17-95	22.38	6.94	15.44	ND	WSW	0.006	03-17-95	100	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-11	06-01-95	22.38	7.90	14.48	ND	SW	0.003	06-01-95	210	<0.5	<0.5	0.9	0.7	--	--	--	--		
MW-11	08-31-95	22.38	8.18	14.20	ND	SSW	0.005	08-31-95	680	<0.5	<0.5	4	1.8	<3	--	--	--		
MW-11	11-27-95	22.38	8.48	13.90	ND	SSW	0.004	11-27-95	340	<0.5	<0.5	2.2	1.6	--	--	--	--		
MW-11	02-22-96	22.38	6.63	15.75	ND	NW	0.007	03-14-96	150	<0.5	<0.5	<0.8*	0.8	<3	--	--	--		
MW-11	05-20-96	22.38	7.25	15.13	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis										
MW-12	02-14-94	22.77	8.24	14.53	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-12	05-05-94	22.77	8.97	13.80	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-12	08-04-94	22.77	9.57	13.20	ND	SW	0.004	08-04-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
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-12	03-17-95	22.77	7.09	15.68	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-12	06-01-95	22.77	8.40	14.37	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis										
MW-12	08-31-95	22.77	8.55	14.22	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--		
MW-12	11-27-95	22.77	8.95	13.82	ND	SSW	0.004	11-27-95	Not sampled: not scheduled for chemical analysis										
MW-12	02-22-96	22.77	6.81	15.96	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--		
MW-12	05-20-96	22.77	7.56	15.21	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis										

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method		
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
MW-13	02-14-94	22.45	7.78	14.67	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-13	05-05-94	22.45	8.38	14.07	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-13	08-04-94	22.45	8.78	13.67	ND	SW	0.004	08-04-94	<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-13	03-17-95	22.45	6.91	15.54	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-13	06-01-95	22.45	7.72	14.73	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis										
MW-13	08-31-95	22.45	7.58	14.87	ND	SSW	0.005	08-31-95	Not sampled: not scheduled for chemical analysis										
MW-13	11-27-95	22.45	7.98	14.47	ND	SSW	0.004	11-27-95	Not sampled: not scheduled for chemical analysis										
MW-13	02-22-96	22.45	6.71	15.74	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--		
MW-13	05-20-96	22.45	6.98	15.47	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis										
MW-14	02-14-94	22.99	8.80	14.19	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-14	05-05-94	22.99	9.49	13.50	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-14	08-04-94	22.99	10.11	12.88	ND	SW	0.004	08-04-94	<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-14	03-17-95	22.99	8.17	14.82	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--		
MW-14	06-01-95	22.99	8.57	14.42	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis										
MW-14	08-31-95	22.99	9.05	13.94	ND	SSW	0.005	08-31-95	Not sampled: not scheduled for chemical analysis										
MW-14	11-27-95	22.99	9.19	13.80	ND	SSW	0.004	11-27-95	Not sampled: not scheduled for chemical analysis										
MW-14	02-22-96	22.99	6.52	16.47	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--		
MW-14	05-20-96	22.99	7.88	15.11	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis										

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient ft/ft	Water Sample Field Date	TPHG LUFT Method µg/L	Benzene EPA 8020 µg/L	Toluene EPA 8020 µg/L	Ethylbenzene EPA 8020 µg/L	Total Xylenes EPA 8020 µg/L	MTBE EPA 8020 µg/L	MTBE EPA 8240 µg/L	TRPH EPA 418.1 µg/L	TPHD LUFT Method µg/L
MW-15	02-14-94	19.19	5.44	13.75	ND	NR	NR	02-14-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-15	05-05-94	19.19	6.18	13.01	ND	NR	NR	05-05-94	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-15	08-04-94	19.19	6.84	12.35	ND	SW	0.004	08-04-94	<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	--	--	--	--
MW-15	03-17-95	19.19	5.21	13.98	ND	WSW	0.006	03-17-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	--
MW-15	06-01-95	19.19	5.84	13.35	ND	SW	0.003	06-01-95	Not sampled: not scheduled for chemical analysis				<0.5	--	--	--	--
MW-15	08-31-95	19.19	6.18	13.01	ND	SSW	0.005	08-31-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-15	11-27-95	19.19	6.42	12.77	ND	SSW	0.004	11-27-95	Not sampled: not scheduled for chemical analysis				<0.5	--	--	--	--
MW-15	02-22-96	19.19	4.84	14.35	ND	NW	0.007	03-14-96	<50	<0.5	<0.5	<0.5	<0.5	12	--	--	--
MW-15	05-20-96	19.19	5.31	13.88	ND	SW	0.007	05-21-96	Not sampled: not scheduled for chemical analysis				<0.5	--	--	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1994 - Present*

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

Date: 07-15-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

ft-MSL: elevation in feet, relative to mean sea level

MWN: ground-water flow direction and gradient apply to the entire monitoring well network

ft/ft: foot per foot

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method

µg/L: micrograms per liter

EPA: United States Environmental Protection Agency

MTBE: Methyl-tert-butyl ether

TRPH: total recoverable petroleum hydrocarbons

TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method

NR: not reported; data not available or not measurable

ND: none detected

SW: southwest

WSW: west-southwest

SSW: south-southwest

NW: northwest

DRY: dry well; groundwater was not detected

- : not analyzed

^: chromatogram fingerprint is not characteristic of diesel

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

*: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 601, San Leandro, California*, (EMCON, March 14, 1996).

** : [corrected elevation (Z')] = Z + (h * 0.73) where: Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water

Table 3
Historical Groundwater Analytical Data
Metals*
1994 - Present**

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

Date: 08-09-96

Well Designation	Water Sample Field Date	Cadmium EPA 6010 µg/L	Chromium EPA 6010 µg/L	Lead EPA 7421 µg/L	Nickel EPA 6010 µg/L	Zinc EPA 6010 µg/L
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-1	03-17-95	<5	20	20	<40	60
MW-1	06-01-95	<5	20	22	70	100
MW-1	08-31-95	Not sampled: well contained floating product				
MW-1	11-27-95	Not sampled: well contained floating product				
MW-1	03-14-96	Not sampled: well contained floating product				
MW-1	05-21-96	6	<10	<5	<20	<20
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued				
MW-3	03-23-92	Not analyzed: sampling for additional parameters was discontinued				
MW-4	06-10-91	Not analyzed: sampling for additional parameters was not initiated				
MW-5	06-08-92	Not analyzed: sampling for additional parameters was discontinued				
MW-6	06-10-91	Not analyzed: sampling for additional parameters was not initiated				
MW-7	06-10-91	Not analyzed: sampling for additional parameters was not initiated				
MW-8	02-14-94	<5	<10	4	<40	20
MW-8	05-05-94	<3	<5	4	<20	60
MW-8	08-04-94	<3	6	3	<20	27
MW-8	11-20-94	<3	<5	<2	<20	14
MW-8	03-17-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8				
MW-8	06-01-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8				
MW-8	08-31-95	<5	40	16	50	90
MW-8	11-27-95	<5	130	77	170	280
MW-8	03-14-96	<5	30	7	40	60
MW-8	05-21-96	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8				
MW-9	06-11-93	Not analyzed: sampling for additional parameters was not initiated				
MW-10	06-11-93	Not analyzed: sampling for additional parameters was not initiated				
MW-11	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-12	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-13	11-16-92	Not analyzed: sampling for additional parameters was not initiated				
MW-14	09-15-92	Not analyzed: sampling for additional parameters was not initiated				
MW-15	05-13-93	Not analyzed: sampling for additional parameters was not initiated				

EPA: United States Environmental Protection Agency

µg/L: micrograms per liter

- : not analyzed

*: Historically samples were analyzed for total metals. Since March 14, 1996, the samples were filtered and analyzed for dissolved metals.

** : For previous historical analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 601, San Leandro, California*, (EMCON, March 14, 1996).

Table 4
Historical Groundwater Analytical Data
Volatile and Semivolatile Organic Compounds
1994 - Present*

ARCO Service Station 601

712 Lewelling Boulevard, San Leandro, California

Date: 07-15-96

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	Ethylbenzene	Total Xylenes	Naphthalene	2-Methyl- naphthalene	Bis (2-ethylhexyl) Phthalate	Phenol	2,4-Di-methyl- phenol
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
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-1	03-17-95	--	--	--	--	--	--	--	1300	730	<50	ND	150
MW-1	06-01-95	--	--	--	--	--	--	--	2200	1700	<100	240	<100
MW-1	08-31-95	Not sampled: well contained floating product											
MW-1	11-27-95	Not sampled: well contained floating product											
MW-1	03-14-96	Not sampled: well contained floating product											
MW-1	05-21-96	--	--	--	--	--	--	--	1200	860	<50	<50	<50
MW-2	03-23-92	Not analyzed: sampling for additional parameters was discontinued											
MW-8	02-14-94	--	--	--	--	--	--	--	350	65	ND	ND	ND
MW-8	05-05-94	<0.5	<0.5	0.7	--	--	--	--	23	<10	<10	ND	ND
MW-8	08-04-94	--	--	--	--	--	--	--	11	<10	10	ND	ND
MW-8	12-13-94	--	--	--	--	--	--	--	14	<10	14	ND	ND
MW-8	03-17-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8											
MW-8	06-01-95	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8											
MW-8	08-31-95	--	--	--	--	--	--	--	62	8	<5	<5	<5
MW-8	11-27-95	--	--	--	--	--	--	--	15	<5	<5	<5	<5
MW-8	03-14-96	--	--	--	--	--	--	--	400	55	<50	<50	<50
MW-8	05-21-96	Not analyzed: well MW-1 was sampled for additional parameters in lieu of well MW-8											

Table 4
Historical Groundwater Analytical Data
Volatile and Semivolatile Organic Compounds
1994 - Present*

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

Date: 07-15-96

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 µg/L	1,2-Dichloro- ethane µg/L	1,1-Dichloro- ethane µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	Naphthalene µg/L	2-Methyl- naphthalene µg/L	Bis (2-ethylhexyl) Phthalate µg/L	Phenol µg/L

EPA: United States Environmental Protection Agency

µg/L: micrograms per liter

-- : not analyzed

ND: not detected at or above the method detection limit

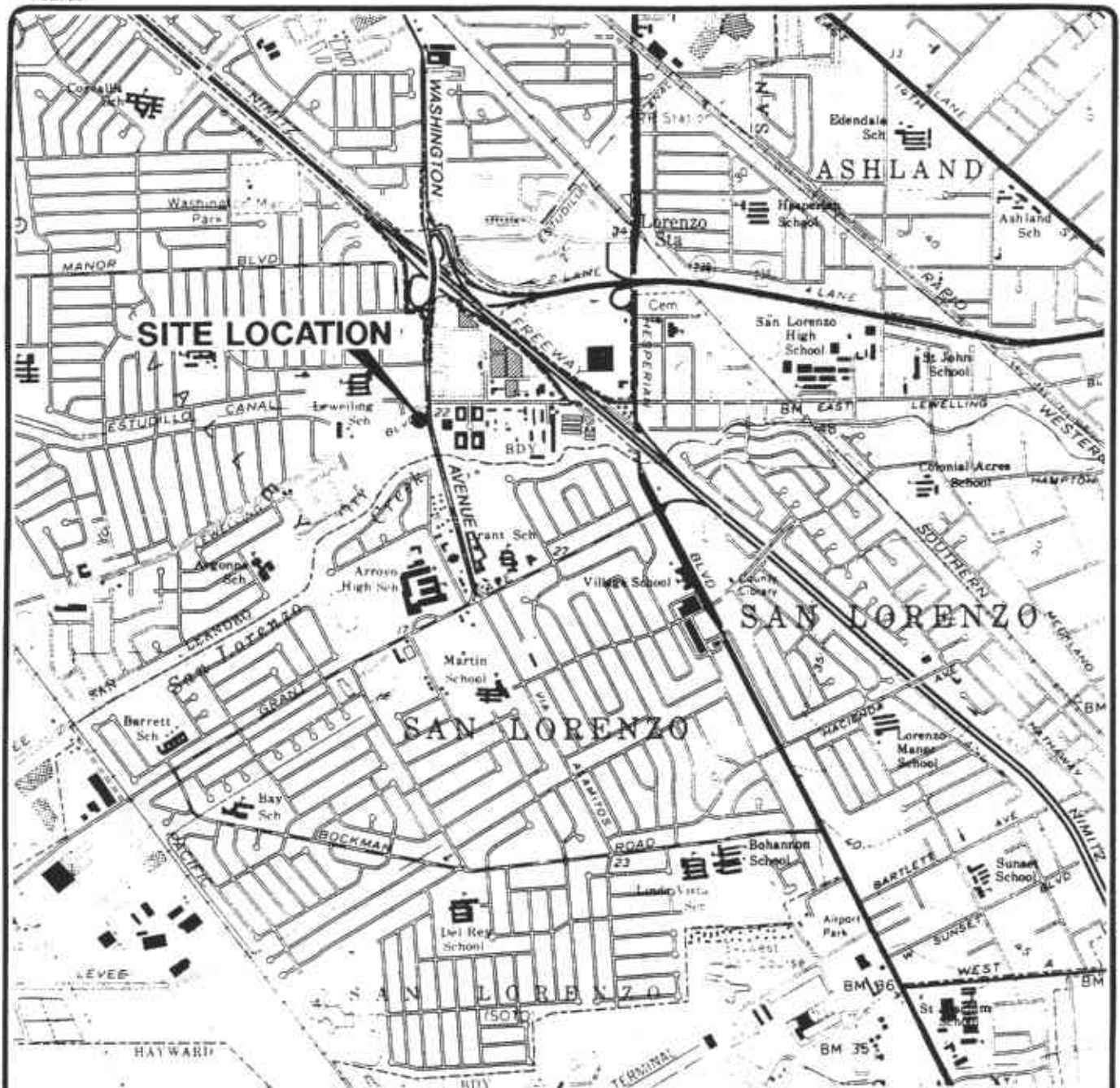
*: For previous historical analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results, ARCO Service Station 601, San Leandro, California*, (EMCON, March 14, 1996).

Table 5
Approximate Cumulative Floating Product Recovered

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

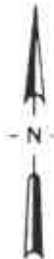
Date: 07-15-96

Well Designation	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
MW-1	1995	0.00
MW-1	1996	0.00
1991 to 1996 Total:		3.45



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

Scale : 0 2000 4000 Feet



EMCON

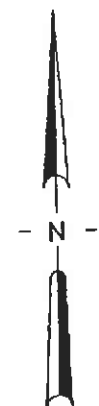
ARCO PRODUCTS COMPANY
SERVICE STATION 801, 712 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA

SITE LOCATION

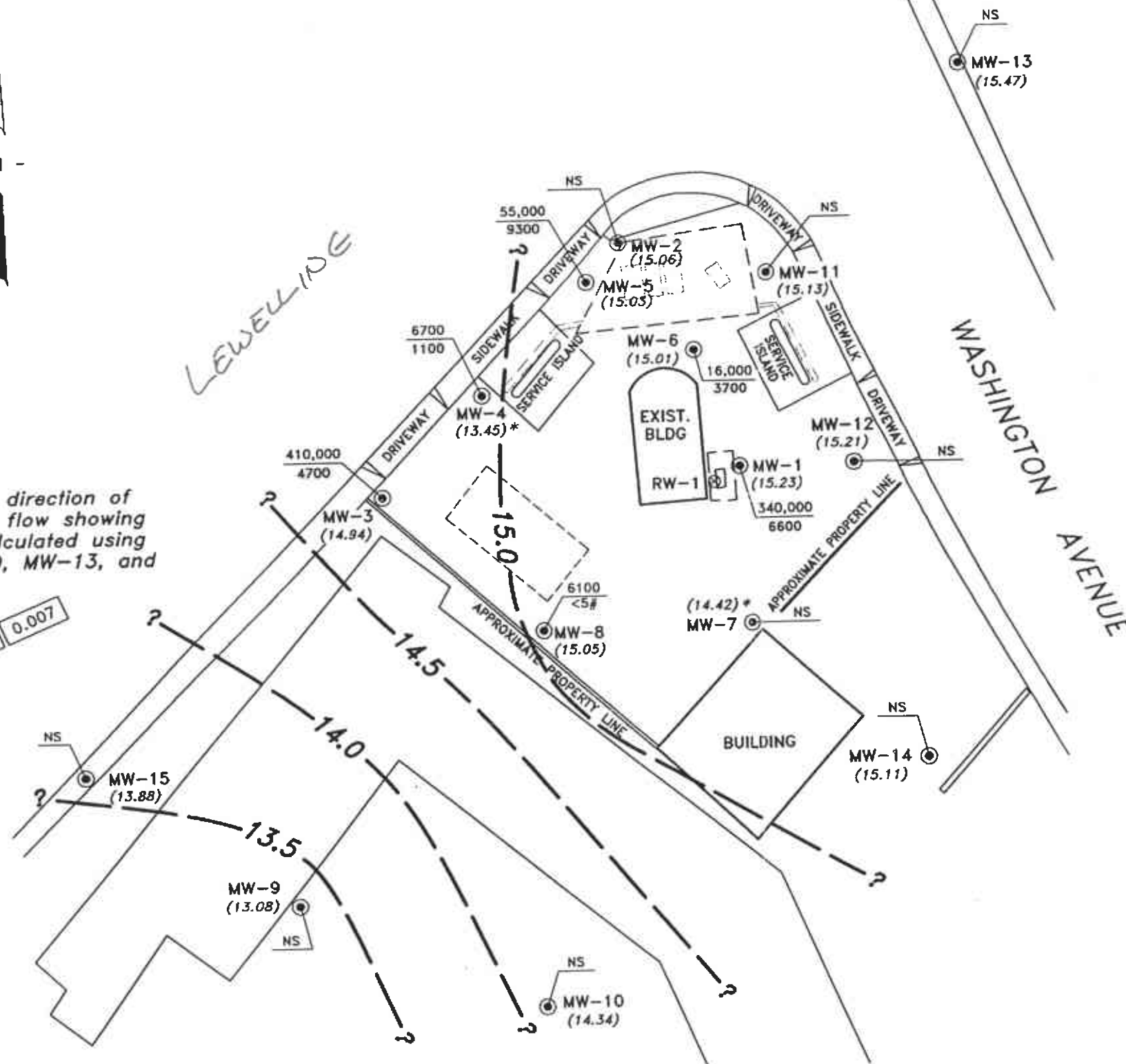
FIGURE

1

PROJECT NO.
805-121.03



Approximate direction of groundwater flow showing gradient (calculated using wells MW-10, MW-13, and MW-15)



EXPLANATION

- Groundwater monitoring well
- Vapor extraction well
- Former underground gasoline storage tank
- Existing underground gasoline storage tank
- Approximate limit of gasoline tank excavation
- Former product line
- (15.23) Groundwater elevation (Ft.-MSL) measured 5/20/96
- ? --- Groundwater elevation contour (Ft.-MSL)
- 340,000 / 6600 TPHG, concentration in groundwater (ug/L); sampled 5/21/96
- 340,000 / 6600 Benzene concentration in groundwater (ug/L); sampled 5/21/96
- * The groundwater elevation was not used in contouring
- ND Not detected at or above the method reporting limit for TPHG (50 ug/L) or benzene (0.5 ug/L)
- # Method reporting limit was raised due to high analyte concentration requiring sample location
- NS Not sampled; not scheduled for chemical analysis



SCALE: 0 50 100 FEET
(Approximate)

ARCO PRODUCTS COMPANY
SERVICE STATION 601, 712 LEWELLING BLVD.
QUARTERLY GROUNDWATER MONITORING
SAN LEANDRO, CALIFORNIA
GROUNDWATER DATA
SECOND QUARTER 1996

FIGURE NO.

2

PROJECT NO.
805-121.003

APPENDIX A

**FIELD DATA SHEETS, SECOND QUARTER 1996
GROUNDWATER MONITORING EVENT**

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 21775-208.002

STATION ADDRESS : 712 Lewelling Blvd., San Leandro

DATE : 5/20/96

ARCO STATION # : 601

FIELD TECHNICIAN : D. Gambel

DAY : Mon.

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	MW-9	X	Y	Y	ALLO	Y	7.81	7.81	ND	ND	16.2	
2	MW-10				ALLO	Y	6.78	6.78	ND	ND	18.5	
3	MW-12					Y	7.56	7.56	ND	ND	11.6	
4	MW-13					Y	6.98	6.98	ND	ND	12.9	
5	MW-14					Y	7.88	7.88	ND	ND	13.0	
6	MW-15					Y	5.31	5.31	ND	ND	10.0	
7	MW-7					Y	8.47	8.47	ND	ND	9.6	
8	MW-11					Y	7.25	7.25	ND	ND	11.9	
9	MW-4					Y	7.30	7.30	ND	ND	8.5	
10	MW-8					Y	5.92	5.92	ND	ND	10.2	
11	MW-2					Y	6.27	6.27	ND	ND	12.3	
12	MW-6					Y	7.07	7.07	ND	ND	8.6	
13	MW-5					Y	5.87	5.87	ND	ND	10.1	
14	MW-3					Y	5.17	5.17	ND	ND	11.9	
15	MW-1	↓	↓	↓	↓	Y	7.03	7.03	ND	ND	12.0	

SURVEY POINTS ARE TOP OF WELL CASINGS

ORC installed in
MW-2 and -5
- Request RBCA
evaluation

EMCON
ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 21775-208.002SAMPLE ID: MW-1(12)PURGED BY: D. GamelinCLIENT NAME: ARCO 601SAMPLED BY: D. GamelinLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 3.25DEPTH TO WATER (feet): 7.03 CALCULATED PURGE (gal.): 9.74DEPTH OF WELL (feet): 12.0 ACTUAL PURGE VOL. (gal.): 50DATE PURGED: 5/2/96Start (2400 Hr) 1335 End (2400 Hr) 1340DATE SAMPLED: 5/2/96Start (2400 Hr) 1345 End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1340</u>	<u>3.5</u>	<u>6.96</u>	<u>1473</u>	<u>70.7</u>	<u>Brn</u>	<u>Mod</u>

<u>1341</u>	<u>Well Dry at 50g</u>					
-------------	------------------------	--	--	--	--	--

<u>1345</u>	<u>Recharge</u>	<u>6.90</u>	<u>1403</u>	<u>68.4</u>	<u>Brn</u>	<u>Mod</u>
-------------	-----------------	-------------	-------------	-------------	------------	------------

D. O. (ppm): NR ODOR: Strong COLOR: NR TURBIDITY: NRField QC samples collected at this well: NR Parameters field filtered at this well: NR Metals

(COBALT 0 - 500) (NTU 0 - 200 or 0 - 1000)

PURGING EQUIPMENT

☐ 2" Bladder Pump
☐ Centrifugal Pump
☐ Submersible Pump
☐ Well Wizard™
☐ Bailer (Teflon®)
☒ Bailer (PVC)
☐ Bailer (Stainless Steel)
☐ Dedicated

Other:

SAMPLING EQUIPMENT

☐ 2" Bladder Pump
☐ DDL Sampler
☐ Dipper
☐ Well Wizard™
☒ Bailer (Teflon®)
☐ Bailer (Stainless Steel)
☐ Submersible Pump
☐ Dedicated

Other: WELL INTEGRITY: Good LOCK #: ARCOREMARKS: Heavy Shear on purgwaterWell Dry at 50gMeter Calibration: Date: 5/2/96 Time: 1200 Meter Serial #: Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-4Signature: Don Bluh Reviewed By: SA Page 1 of 6

**WATER SAMPLE FIELD DATA SHEET**PROJECT NO: 21775-208.002SAMPLE ID: MW3(11)PURGED BY: D. GambelinCLIENT NAME: ARCOSAMPLED BY: D. GambelinLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL):	<u>NR</u>	VOLUME IN CASING (gal.):	<u>4.40</u>
DEPTH TO WATER (feet):	<u>5.17</u>	CALCULATED PURGE (gal.):	<u>13.19</u>
DEPTH OF WELL (feet):	<u>11.9</u>	ACTUAL PURGE VOL. (gal.):	<u>13.5</u>

DATE PURGED:	<u>5/21/96</u>	Start (2400 Hr)	<u>1415</u>	End (2400 Hr)	<u>1420</u>
DATE SAMPLED:	<u>5/21/96</u>	Start (2400 Hr)	<u>1425</u>	End (2400 Hr)	<u> </u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1415</u>	<u>4.5</u>	<u>7.64</u>	<u>1129</u>	<u>69.9</u>	<u>13.0</u>	<u>NR</u>
<u>1418</u>	<u>9.0</u>	<u>7.23</u>	<u>1108</u>	<u>70.0</u>	<u>↓</u>	<u>↓</u>
<u>1420</u>	<u>13.5</u>	<u>7.18</u>	<u>1122</u>	<u>70.0</u>	<u>↓</u>	<u>↓</u>

D. O. (ppm):	<u>NR</u>	ODOR:	<u>Strong</u>		<u>NR</u>	<u>NR</u>
					(COBALT 0 - 500)	(NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well:
NRParameters field filtered at this well:
NR**PURGING EQUIPMENT**

☐ 2" Bladder Pump	☐ Bailer (Teflon®)
☐ Centrifugal Pump	☒ Bailer (PVC)
☐ Submersible Pump	☐ Bailer (Stainless Steel)
☐ Well Wizard™	☐ Dedicated

Other: **SAMPLING EQUIPMENT**

☐ 2" Bladder Pump	☒ Bailer (Teflon®)
☐ DDL Sampler	☐ Bailer (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: WELL INTEGRITY: Good LOCK #: ARCOREMARKS: Spots of SheenMeter Calibration: Date: 5/21/96 Time: 1200 Meter Serial #: 4972 Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-4Signature: D. Gambelin Reviewed By: SJA Page 2 of 6

**WATER SAMPLE FIELD DATA SHEET**

PROJECT NO: 21775-208.002(8) SAMPLE ID: MW-4(8)
PURGED BY: D. Gambelin CLIENT NAME: ARCO 601
SAMPLED BY: D. Gambelin LOCATION: San Leandro, CA

TYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐

CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): ~~235~~ 78
DEPTH TO WATER (feet): 7.30 CALCULATED PURGE (gal.): ~~235~~ 235
DEPTH OF WELL (feet): 8.5 ACTUAL PURGE VOL. (gal.): 1.0

DATE PURGED: 5/21/96 Start (2400 Hr) 1215 End (2400 Hr) 1225
DATE SAMPLED: 5/21/96 Start (2400 Hr) 1225 End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1219</u>	<u>1.0</u>	<u>6.94</u>	<u>1695</u>	<u>71.0</u>	<u>Tan</u>	<u>Light</u>
<u>1220</u>	<u>Well Dry at</u>	<u>1.0g</u>				

<u>1225</u>	<u>Recharge</u>	<u>7.41</u>	<u>1256</u>	<u>68.2</u>	<u>Tan</u>	<u>Light</u>
D. O. (ppm): <u>NR</u>	ODOR: <u>None</u>				<u>NR</u>	<u>NR</u>

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

(COBALT 0 - 500)

(NTU 0 - 200
or 0 - 1000)

PURGING EQUIPMENT

☐ 2" Bladder Pump ☒ Bailer (Teflon®)
☐ Centrifugal Pump ☐ Bailer (PVC)
☐ Submersible Pump ☐ Bailer (Stainless Steel)
☐ Well Wizard™ ☐ Dedicated

Other:

SAMPLING EQUIPMENT

☐ 2" Bladder Pump ☒ Bailer (Teflon®)
☐ DDL Sampler ☐ Bailer (Stainless Steel)
☐ Dipper ☐ Submersible Pump
☐ Well Wizard™ ☐ Dedicated

Other:

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS:

Meter Calibration: Date: 5/21/96 Time: 1200 Meter Serial #: 4472 Temperature °F: 69.4
(EC 1000 1033/1000) (DI —) (pH 7 7.04 / 7.00) (pH 10 9.91/10.00) (pH 4 3.87/)

Location of previous calibration:

Signature: D. Gambelin Reviewed By: SLA Page 3 of 6

**WATER SAMPLE FIELD DATA SHEET**PROJECT NO: 20805-121002SAMPLE ID: MW-5(10)PURGED BY: D. GumbelinCLIENT NAME: ARCO 601SAMPLED BY: D. GumbelinLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 2.76DEPTH TO WATER (feet): 587 CALCULATED PURGE (gal.): 8.29DEPTH OF WELL (feet): 10.1 ACTUAL PURGE VOL. (gal.): 4.0DATE PURGED: 5/21/96 Start (2400 Hr) 1310 End (2400 Hr) 1314DATE SAMPLED: 5/21/96 Start (2400 Hr) 1320 End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (μmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1312</u>	<u>30</u>	<u>6.92</u>	<u>1693</u>	<u>69.8</u>	<u>Grey</u>	<u>Light</u>

Well Dry at 4.0g

<u>1320</u>	<u>Recharge</u>	<u>6.93</u>	<u>1663</u>	<u>69.8</u>	<u>Grey</u>	<u>Mod</u>
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D. O. (ppm): NR ODOR: Strong (COBALT 0 - 500) NR (NTU 0 - 200 or 0 - 1000) NRField QC samples collected at this well: NR Parameters field filtered at this well: NR**PURGING EQUIPMENT**

☐ 2" Bladder Pump	☐ Bailer (Teflon®)
☐ Centrifugal Pump	☒ Bailer (PVC)
☐ Submersible Pump	☐ Bailer (Stainless Steel)
☐ Well Wizard™	☐ Dedicated

Other: **SAMPLING EQUIPMENT**

☐ 2" Bladder Pump	☒ Bailer (Teflon®)
☐ DDL Sampler	☐ Bailer (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: WELL INTEGRITY: Good LOCK #: ARCOREMARKS: Spots of Shear on PurgometerWell Dry at 4.0gMeter Calibration: Date: 5/21/96 Time: 1200 Meter Serial #: 4972 Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-4Signature: D. Gumbelin Reviewed By: JA Page 4 of 6



WATER SAMPLE FIELD DATA SHEET

Rev. 3, 2/94

PROJECT NO: 21775-208.002SAMPLE ID: MW-6(8)PURGED BY: D. GambelinCLIENT NAME: ARCO 601SAMPLED BY: D. GambelinLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): .99DEPTH TO WATER (feet): 307 CALCULATED PURGE (gal.): 2.99DEPTH OF WELL (feet): 8.6 ACTUAL PURGE VOL. (gal.): 1.0DATE PURGED: 5/21/96 Start (2400 Hr) 1254 End (2400 Hr) 1259DATE SAMPLED: 5/21/96 Start (2400 Hr) 1305 End (2400 Hr)

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1258</u>	<u>1.0</u>	<u>6.97</u>	<u>1287</u>	<u>67.4</u>	<u>Brn</u>	<u>Light</u>
<u>1259</u>	<u>Well Dry at 1.0g</u>					

D. O. (ppm): NR ODOR: StrongField QC samples collected at this well: NR Parameters field filtered at this well: NR

PURGING EQUIPMENT

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

SAMPLING EQUIPMENT

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

WELL INTEGRITY: Good LOCK #: ARCOREMARKS: Well Dry at 1.0gMeter Calibration: Date: 5/21/96 Time: 1200 Meter Serial #: Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-4Signature: [Signature] Reviewed By: SA Page 5 of 6

**WATER SAMPLE FIELD DATA SHEET**PROJECT NO: 21775-202.002SAMPLE ID: MW-8(10)PURGED BY: D. GambelinCLIENT NAME: ARCO 601SAMPLED BY: D. GambelinLOCATION: San LeandroTYPE: Ground Water ☒ Surface Water ☐ Treatment Effluent ☐ Other ☐CASING DIAMETER (inches): 2 ☐ 3 ☐ 4 ☒ 4.5 ☐ 6 ☐ Other ☐

CASING ELEVATION (feet/MSL):	<u>NR</u>	VOLUME IN CASING (gal.):	<u>2.09</u>
DEPTH TO WATER (feet):	<u>5.92</u>	CALCULATED PURGE (gal.):	<u>8.39</u>
DEPTH OF WELL (feet):	<u>10.2</u>	ACTUAL PURGE VOL. (gal.):	<u>8.5</u>

DATE PURGED:	<u>5/21/96</u>	Start (2400 Hr)	<u>1235</u>	End (2400 Hr)	<u>1242</u>
DATE SAMPLED:	<u>5/21/96</u>	Start (2400 Hr)	<u>1245</u>	End (2400 Hr)	<u> </u>

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
<u>1237</u>	<u>2.5</u>	<u>6.89</u>	<u>971</u>	<u>67.8</u>	<u>Grey</u>	<u>Mod</u>
<u>1239</u>	<u>4.5</u>	<u>6.92</u>	<u>972</u>	<u>67.8</u>	<u>↓</u>	<u>↓</u>
<u>1242</u>	<u>8.5</u>	<u>6.97</u>	<u>957</u>	<u>67.3</u>	<u>↓</u>	<u>↓</u>

D. O. (ppm):	<u>NR</u>	ODOR:	<u>Strong</u>	<u>NR</u>	<u>NR</u>
				(COBALT 0 - 500)	(NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well:

Parameters field filtered at this well:

PURGING EQUIPMENT

☐ 2' Bladder Pump	☐ Bailer (Teflon®)
☐ Centrifugal Pump	☒ Bailer (PVC)
☐ Submersible Pump	☐ Bailer (Stainless Steel)
☐ Well Wizard™	☐ Dedicated

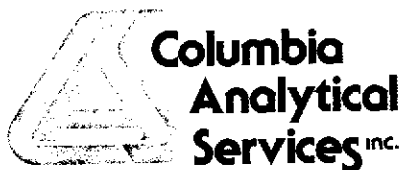
Other: **SAMPLING EQUIPMENT**

☐ 2' Bladder Pump	☒ Bailer (Teflon®)
☐ DDL Sampler	☐ Bailer (Stainless Steel)
☐ Dipper	☐ Submersible Pump
☐ Well Wizard™	☐ Dedicated

Other: WELL INTEGRITY: Good LOCK #: ARCOREMARKS: Meter Calibration: Date: 5/21/96 Time: 1200 Meter Serial #: 4972 Temperature °F: (EC 1000 /) (DI) (pH 7 /) (pH 10 /) (pH 4 /)Location of previous calibration: MW-4Signature: D. Gambelin Reviewed By: SLA Page 6 of 6

APPENDIX B

ANALYTICAL RESULTS AND CHAIN OF CUSTODY DOCUMENTATION, SECOND QUARTER 1996 GROUNDWATER MONITORING EVENT



June 4, 1996

Service Request No: S9600808

Mr. John Young
EMCON
1921 Ringwood Ave.
San Jose, Ca 95131

Re: 601 San Leandro / 20805-121.003 / TO# 19350.00

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on May 21, 1996. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. Listed above -- to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 23, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

If you have questions or further needs, please call me at (408) 428-1283.

Sincerely,

A handwritten signature in black ink, appearing to read "S. L. Green", written over the word "Sincerely,".

Steven L. Green
Project Chemist

A handwritten signature in black ink, appearing to read "Cristina V. Rayburn for Greg Anderson", written in a cursive style.

Greg Anderson
Regional QA Coordinator

CVR/smh

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCs	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
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
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
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 method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

ACRONYST.DOC 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: NA

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name:	MW-4 (8)	MW-8 (10)	MW-6 (8)
Lab Code:	S9600808-001	S9600808-002	S9600808-003
Date Analyzed:	5/29/96	5/29/96	5/30/96

Analyte	MRL			
TPH as Gasoline	50	6,700	6,100	16,000
Benzene	0.5	1,100	<5*	3,700
Toluene	0.5	330	<5*	<50*
Ethylbenzene	0.5	120	26	1,100
Total Xylenes	0.5	1,100	<5*	1,100
Methyl <i>tert</i> -Butyl Ether	3	<100*	240	<300*

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: NA

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name:	MW-5 (10)	MW-1 (12)	MW-3 (11)
Lab Code:	S9600808-004	S9600808-005	S9600808-006
Date Analyzed:	5/30/96	5/30/96	5/30/96

Analyte	MRL			
TPH as Gasoline	50	55,000	340,000	410,000
Benzene	0.5	9,300	6,600	4,700
Toluene	0.5	3,800	240	8,000
Ethylbenzene	0.5	1,100	4,500	6,300
Total Xylenes	0.5	5,400	22,000	36,000
Methyl <i>tert</i> -Butyl Ether	3	<500*	<1000*	<3000*

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

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: NA

BTEX, MTBE and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name:	Method Blank	Method Blank
Lab Code:	S960529-WB1	S960530-WB1
Date Analyzed:	5/29/96	5/30/96

Analyte	MRL		
TPH as Gasoline	50	ND	ND
Benzene	0.5	ND	ND
Toluene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Total Xylenes	0.5	ND	ND
Methyl <i>tert</i> -Butyl Ether	3	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Digested: NA

Dissolved Metals
Units: mg/L (ppm)

Sample Name: MW-1 (12) **Method Blank**
Lab Code: S9600808-005 S9600808-WB
Date Analyzed: 6/3/96 6/3/96

Analyte	EPA Method	MRL		
Cadmium	3005/6010A	0.005	0.006	ND
Chromium	3005/6010A	0.01	ND	ND
Nickel	3005/6010A	0.02	ND	ND
Zinc	3005/6010A	0.02	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Digested: 5/28/96

Total Metals
Units: mg/L (ppm)

Sample Name:	MW-1 (12)	Method Blank
Lab Code:	S9600808-005	S9600808-WB
Date Analyzed:	5/28/96	5/28/96

Analyte	EPA Method	MRL		
Lead	3005/7421	0.005	0.031	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: 5/29/96

Total Petroleum Hydrocarbons as Diesel
EPA Methods 3510/Modified 8015/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name	Lab Code	Date Analyzed	MRL	Result
MW-1 (12)	L9602562-001	5/31/96	50	* <2500
Method Blank	L9602562-MB	5/30/96	50	ND

* Chromatogram fingerprint is not indicative of diesel; however, 91000 ug/L (ppb) of fuel-hydrocarbons in the gasoline range were detected.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: 5/24/96
Date Analyzed: 5/24/96

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

Sample Name	Lab Code	MRL	Result
MW-1 (12)	L9602562-001	0.5	150
Method Blank	L9602562-MB	0.5	*0.7

* In accordance with EPA guidelines, since the level of petroleum hydrocarbons found in the sample was more than 20 times the level found in the Method Blank, the quality of the sample data is not considered to be significantly affected. No corrective action was taken.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: 5/24/96

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 Units: ug/L (ppb)

Sample Name:	MW-1 (12)	Method Blank
Lab Code:	L9602562-001*	L9602562-MB
Date Analyzed:	5/29/96	5/28/96

Base Neutral Analyte	MRL		
N-Nitrosodimethylamine	5	<50	ND
Aniline	5	<50	ND
Bis(2-chloroethyl) Ether	5	<50	ND
1,2-Dichlorobenzene	5	<50	ND
1,3-Dichlorobenzene	5	<50	ND
1,4-Dichlorobenzene	5	<50	ND
Bis(2-chloroisopropyl) Ether	5	<50	ND
N-Nitrosodi-n-propylamine	5	<50	ND
Hexachloroethane	5	<50	ND
Nitrobenzene	5	<50	ND
Isophorone	5	<50	ND
Bis(2-chloroethoxy)methane	5	<50	ND
1,2,4-Trichlorobenzene	5	<50	ND
Naphthalene	5	1200	ND
4-Chloroaniline	5	<50	ND
Hexachlorobutadiene	5	<50	ND
2-Methylnaphthalene	5	860	ND
Hexachlorocyclopentadiene	10	<100	ND
2-Chloronaphthalene	5	<50	ND
2-Nitroaniline	20	<200	ND
Dimethyl Phthalate	5	<50	ND
Acenaphthylene	5	<50	ND
3-Nitroaniline	20	<200	ND
Acenaphthene	5	<50	ND
Dibenzofuran	5	<50	ND
2,4-Dinitrotoluene	5	<50	ND
N-Methyl-2-Pyrrolidone	5	<50	ND

* MRL is elevated because of matrix interferences and because the sample required diluting.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: 5/24/96

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 Units: ug/L (ppb)

Sample Name:	MW-1 (12)	Method Blank
Lab Code:	L9602562-001*	L9602562-MB
Date Analyzed:	5/29/96	5/28/96

Base Neutral Analyte	MRL		
2,6-Dinitrotoluene	5	<50	ND
Diethyl Phthalate	5	<50	ND
4-Chlorophenyl Phenyl Ether	5	<50	ND
Fluorene	5	<50	ND
4-Nitroaniline	20	<200	ND
N-Nitrosodiphenylamine	5	<50	ND
4-Bromophenyl Phenyl Ether	5	<50	ND
Hexachlorobenzene	5	<50	ND
Phenanthrene	5	<50	ND
Anthracene	5	<50	ND
Di-n-butyl Phthalate	5	<50	ND
Fluoranthene	5	<50	ND
Pyrene	5	<50	ND
Butylbenzyl Phthalate	5	<50	ND
3,3'-Dichlorobenzidine	20	<200	ND
Benzo(a)anthracene	5	<50	ND
Bis(2-ethylhexyl) Phthalate	5	<50	ND
Chrysene	5	<50	ND
Di-n-octyl Phthalate	5	<50	ND
Benzo(b)fluoranthene	5	<50	ND
Benzo(k)fluoranthene	5	<50	ND
Benzo(a)pyrene	5	<50	ND
Indeno(1,2,3-c,d)pyrene	5	<50	ND
Dibenz(a,h)anthracene	5	<50	ND
Benzo(g,h,i)perylene	5	<50	ND
Pyridine	10	<100	ND

* MRL is elevated because of matrix interferences and because the sample required diluting.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: 5/24/96

Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 Units: ug/L (ppb)

Sample Name:	MW-1 (12)	Method Blank
Lab Code:	L9602562-001*	L9602562-MB
Date Analyzed:	5/29/96	5/28/96

Acid Analyte	MRL		
Phenol	5	<50	ND
2-Chlorophenol	5	<50	ND
Benzyl Alcohol	10	<100	ND
2-Methylphenol	5	<50	ND
3- and 4-Methylphenol ^a	5	<50	ND
2-Nitrophenol	5	<50	ND
2,4-Dimethylphenol	5	<50	ND
Benzoic Acid	50	<500	ND
2,4-Dichlorophenol	5	<50	ND
4-Chloro-3-methylphenol	5	<50	ND
2,4,6-Trichlorophenol	5	<50	ND
2,4,5-Trichlorophenol	5	<50	ND
2,4-Dinitrophenol	50	<500	ND
4-Nitrophenol	50	<500	ND
2-Methyl-4,6-dinitrophenol	20	<200	ND
Pentachlorophenol	30	<300	ND

^a Quantified as 4-Methylphenol.

* MRL is elevated because of matrix interferences and because the sample required diluting.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Extracted: NA
Date Analyzed: 5/29-30/96

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

Sample Name	Lab Code	PID Detector	FID Detector
		Percent Recovery 4-Bromofluorobenzene	Percent Recovery α,α,α -Trifluorotoluene
MW-4 (8)	S9600808-001	101	105
MW-8 (10)	S9600808-002	105	106
MW-6 (8)	S9600808-003	95	102
MW-5 (10)	S9600808-004	101	105
MW-1 (12)	S9600808-005	92	113*
MW-3 (11)	S9600808-006	98	116
Batch QC (MS)	S9600833-015MS	105	99
Batch QC (DMS)	S9600833-015DMS	104	97
Method Blank	S960529-WB1	101	100
Method Blank	S960530-WB1	100	98

CAS Acceptance Limits: 69-116 69-116

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

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	Service Request:	S9600808
Project:	601 SAN LEANDRO/20805-121.003/TO#19350.00	Date Collected:	5/21/96
Sample Matrix:	Water	Date Received:	5/21/96
		Date Extracted:	NA
		Date Analyzed:	5/30/96

Matrix Spike/Duplicate Matrix Spike Summary

BTE

EPA Methods 5030/8020

Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S9600833-015

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	24.7	23.9	99	96	75-135	3	
Toluene	25	25	ND	24.8	24.1	99	96	73-136	3	
Ethylbenzene	25	25	ND	24.9	24.0	100	96	69-142	4	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00

Service Request: S9600808
Date Analyzed: 5/29/96

Initial Calibration Verification (ICV) Summary
BTEX, MTBE 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	25.0	100	85-115
Toluene	25	25.4	102	85-115
Ethylbenzene	25	25.1	100	85-115
Xylenes, Total	75	79.8	106	85-115
Gasoline	250	258	103	90-110
Methyl <i>tert</i> -Butyl Ether	50	45	90	85-115

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600808
Date Collected: 5/21/96
Date Received: 5/21/96
Date Digested: 5/28/96
Date Analyzed: 5/28/96

Matrix Spike/Duplicate Matrix Spike Summary
 Total Metals
 Units: mg/L (ppm)

Sample Name: Batch QC
Lab Code: S9600826-001

Analyte	MRL	Spike Level	Sample Result	Percent Recovery					
				Spike Result				CAS	Relative Percent Difference
				MS	DMS	MS	DMS	Acceptance Limits	
Cadmium	0.05	1	ND	0.91	0.91	91	91	75-125	<1
Chromium	0.01	1	ND	0.89	0.89	89	89	75-125	<1
Nickel	0.02	1	ND	0.88	0.88	88	88	75-125	<1
Zinc	0.02	1	ND	0.94	0.94	94	94	75-125	<1
Lead *	0.005	0.04	0.036	0.052	0.052	40	40	75-125	<1

* Outside of acceptance limits because of matrix interferences.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
Total Petroleum Hydrocarbons as Diesel
EPA Methods 3510/Modified 8015/California DHS LUFT Method

Sample Name	Lab Code	Percent Recovery
		<i>p</i> -Terphenyl
MW-1 (12)	L9602562-001	*
Method Blank	L9602562-MB	70
Laboratory Control Sample	L9602562-LCS	70
Duplicate LCS	L9602562-DLCS	70

CAS Acceptance Limits: 50-140

* Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the surrogate concentration was diluted below the method reporting limit.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
LCS Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: 5/29/96
Date Analyzed: 5/21/96

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary*

Total Petroleum Hydrocarbons as Diesel

EPA Methods 3510/Modified 8015/California DHS LUFT Method

Units: ug/L (ppb)

Analyte	True Value		Result		Percent Recovery		CAS	Relative Percent Difference
							Acceptance	
	LCS	DLCS	LCS	DLCS	LCS	DLCS	Limits	
Diesel	2000	2000	1620	1690	81	84	70-140	4

* Sample quantity was insufficient to perform matrix spike and matrix spike duplicate. Three separate, replicate one liter samples are required to analyze sample and spikes.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
LCS Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: 5/24/96
Date Analyzed: 5/24/96

Laboratory Control Sample/Duplicate Laboratory Control Sample Summary*
 Total Recoverable Petroleum Hydrocarbons (TRPH)
 EPA Method 418.1
 Units: mg/L (ppm)

Analyte	True Value		Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	LCS	DLCS	LCS	DLCS	LCS	DLCS		
TRPH	2.11	2.11	1.93	1.96	91	93	75-125	2

* Sample quantity was insufficient to perform matrix spike and matrix spike duplicate. Three separate, replicate one liter samples are required to analyze sample and spikes.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: NA
Date Analyzed: NA

Surrogate Recovery Summary
 Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270

Sample Name	Lab Code	P e r c e n t			R e c o v e r y		
		2FP	PHL	TBP	NBZ	FBP	TPH
MW-1 (12)	L9602562-001	57	40	92	94	110	100
Method Blank	L9602562-MB	49	35	65	83	82	90
Matrix Spike	L9602562-1MS	60	39	89	90	103	96
Duplicate Matrix Spike	L9602562-1DMS	48	36	99	87	106	94
Laboratory Control Sample	L9602562-LCS	48	35	96	75	89	99

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

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: 5/24/96
Date Analyzed: 5/29/96

Matrix Spike/Duplicate Matrix Spike Summary
Base Neutral/Acid Semivolatile Organic Compounds
EPA Methods 3510/8270
Units: ug/L (ppb)

Sample Name: MW-1 (12)
Lab Code: L9602562-001

Analyte	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference
	MS	DMS		MS	DMS	MS	DMS		
Phenol	50.0	50.0	<50	26.2	28.5	52	57	12-89	8
2-Chlorophenol	50.0	50.0	<50	40.9	41.5	82	83	27-123	1
1,4-Dichlorobenzene	50.0	50.0	<50	48.6	50.3	97	*	36-97	3
N-Nitrosodi-n-propylamine	50.0	50.0	<50	55.4	47.5	111	95	41-116	15
1,2,4-Trichlorobenzene	50.0	50.0	<50	46.1	51.8	92	*	39-98	12
4-Chloro-3-methylphenol	50.0	50.0	<50	44.4	48.7	89	97	23-97	9
Acenaphthene	50.0	50.0	<50	62.3	66.4	*	*	46-118	6
4-Nitrophenol	50.0	50.0	<500	5.5	10.3	11	21	10-80	61
2,4-Dinitrotoluene	50.0	50.0	<50	38.5	42.3	77	85	24-96	9
Pentachlorophenol	50.0	50.0	<300	33.9	36.5	68	73	9-103	7
Pyrene	50.0	50.0	<50	53.5	52.9	107	106	26-127	1

* Matrix spike outside acceptance criteria. Laboratory control sample was acceptable, therefore data was approved.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 San Leandro/#20805-121.003/TO#19350.00
LCS Matrix: Water

Service Request: L9602562
Date Collected: NA
Date Received: NA
Date Extracted: 5/24/96
Date Analyzed: 5/28/96

Laboratory Control Sample Summary
 Base Neutral/Acid Semivolatile Organic Compounds
 EPA Methods 3510/8270
 Units: µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Phenol	50.0	18.7	37	5-112
2-Chlorophenol	50.0	41.2	82	23-134
1,4-Dichlorobenzene	50.0	34.6	69	20-124
N-Nitrosodi-n-propylamine	50.0	42.5	85	D-230
1,2,4-Trichlorobenzene	50.0	36.3	73	44-142
4-Chloro-3-methylphenol	50.0	41.7	83	22-147
Acenaphthene	50.0	47.7	95	47-145
4-Nitrophenol	50.0	5.8	12	D-132
2,4-Dinitrotoluene	50.0	47.3	95	39-139
Pentachlorophenol	50.0	27.5	55	14-176
Pyrene	50.0	49.0	98	52-115

**Columbia
Analytical
Services^{inc.}**

June 12, 1996

Service Request No: S9600898

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: 601 SAN LEANDRO/20805-121.003/TO#19350.00

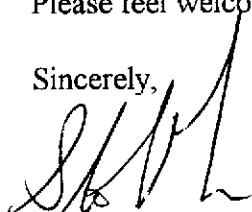
Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on June 5, 1996. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. Listed above -- to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 5, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely,



Steven L. Green
Project Chemist

SLG/cvr

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
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
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
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 method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

ACRONLST.DOC 7/14/95

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600898
Date Collected: 5/21/96
Date Received: 6/5/96
Date Digested: NA

Dissolved Metals
Units: mg/L (ppm)

Sample Name: MW-1(12) **Method Blank**
Lab Code: S9600898-001 S9600898-WB
Date Analyzed: 6/11/96 6/11/96

Analyte	EPA Method	MRL		
Lead	3005/7421	0.005	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 601 SAN LEANDRO/20805-121.003/TO#19350.00
Sample Matrix: Water

Service Request: S9600898
Date Collected: 5/21/96
Date Received: 6/5/96
Date Digested: NA
Date Analyzed: 6/11/96

Matrix Spike/Duplicate Matrix Spike Summary

Metals

Units: mg/L (ppm)

Sample Name: MW-1(12)
Lab Code: S9600898-001

Analyte	MRL	Spike Level	Sample Result	Percent Recovery						Relative Percent Difference
				Spike MS	Result DMS	CAS Acceptance Limits				
						MS	DMS	MS	DMS	
Lead	0.005	0.05	ND	0.05	0.05	100	100	75-125	<1	

Division of Atlantic Richfield Company

Task Order No. 19350.00

Chain of Custody

ARCO Facility no. 601		City (Facility) San Leandro		Project manager (Consultant) John Young		Laboratory name CAS																	
ARCO engineer Mike Whelan		Telephone no. (ARCO)		Telephone no. (Consultant) (408) 453-7300		Fax no. (Consultant) (408) 453-0452																	
Consultant name EMCON		Address (Consultant) 1921 Ringwood Ave. San Jose, CA 95131				Contract number																	
Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 8020 EPA 8020/8020/8015	TPH Modified 8015 Gas Diesel	Oil and Grease 413.1 413.2	TPH EPA 418. JSM600E	EPA 801/8010	EPA 824/8240	EPA 826/8270	TCLP Metals VOA VOC	CAMEL EPA 801/8010	Lead Org. DMS Lead EPA 7000/7000	Dissolved Metals (Cd, Cu, Zn, Ni)	TPH-Diesel	Method of shipment Sampler will deliver	
			Soil	Water	Other	Ice	Acid																
MW-4(8) ① 2				X		X	HCL	5/21/96	1225	X													
MW-8(10) ② 2				X		X	HCL		1245	X													
MW-6(8) ③ 2				X		X	HCL		1305	X													
MW-5(10) ④ 2				X		X	HCL		1320	X													
MW-1(12) ⑤ 10				X		X	HCL		1345	X		X		X				X	X	X			
MW-3(11) ⑥ 2				X		X	HCL		1425	X													
6/5/96 Dissolved Pb by 6 FAA only Analysis Requested by Ivy Engr 6/5/96																						Special detection Limit/reporting Lowest Possible	
																						Special QA/QC As Normal	
																						Remarks	
																						S9600898	
																						#20805-171.003	
																						Lab number S96-00808	
																						Turnaround time	
																						Priority Rush 1 Business Day ☐	
																						Rush 2 Business Days ☐	
																						Expedited 5 Business Days ☐	
																						Standard 10 Business Days ☒	
Condition of sample: ok										Temperature received: 10/1													
Relinquished by sampler B-ebb										Date 5/21/96		Time 1512		Received by [Signature]									
Relinquished by										Date		Time		Received by									
Relinquished by										Date		Time		Received by laboratory				Date		Time			

R8, R20/S49