August 7, 2000

CAMBRIA

Ms. Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Second Quarter 2000 Monitoring And Remediation System Performance Report**
ARCO Service Station No. 0771
899 Rincon Avenue
Livermore, California
Cambria Project #436-1607

Dear Ms. Chu:

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) is submitting the attached report which presents the results of the second quarter 2000 groundwater monitoring program at ARCO Service Station No. 0771, located at 899 Rincon Avenue, Livermore, California. An operation and performance summary for the site's soil vapor extraction (SVE) and air-bubbling systems is also presented. Additionally, this report documents charges to the groundwater monitoring schedule as requested in the Alameda County Health Care Services Agency (ACHSCA) letter to ARCO dated July 7, 2000. The monitoring program complies with ACHCSA requirements regarding underground tank investigations.

Please call if you have questions.

Sincerely,

Cambria Environmental Technology, Inc.

Darryk Ataide, REA
Senior Project Manager

Attachment: Quarterly Groundwater Monitoring Report, Second Quarter 2000
SVE Quarterly Operation and Performance, Second Quarter 2000

cc: Paul Supple, ARCO
Danielle Stefani, City of Livermore Fire Dept.

Oakland, CA
San Ramon, CA
Sonoma, CA
Portland, OR

Cambria Environmental Technology, Inc.

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

H:\ARCO\0771\QMR\0771Q200.doc

CAMBRIA

Quarterly Groundwater Monitoring Report

Second Quarter 2000

ARCO Service Station No. 0771
899 Rincon Avenue,
Livermore, California
Cambria Project #436-1607

Prepared For:

Mr. Paul Supple
ARCO
August 7, 2000

Prepared By:
Cambria Environmental Technology, Inc.
1144 65th St Suite B
Oakland, California 94608

REGISTERED GEOLOGIST • RONALD A. SCHEELE • No. 6842 • STATE OF CALIFORNIA

Written by:

Jason D. Olson
Staff Environmental Scientist

Ron Scheele, RG
Senior Project Manager

CAMBRIA

Date: August 7, 2000
Quarter: 2nd Quarter, 2000

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 0771 Address: 899 Rincon Avenue, Livermore, California

ARCO Environmental Engineer/Phone No.:	Paul Supple /(925) 299-8891
Consulting Co./Contact Person:	Cambria Environmental Technology, Inc./Darryk Ataide, REA
Consultant Project No.:	436-1607
Primary Agency/Regulatory ID No.:	ACHCSA

WORK PERFORMED THIS QUARTER (SECOND - 2000):

1. Performed quarterly groundwater monitoring and sampling for second quarter 2000.
2. Operated air-bubbling system.

WORK PROPOSED FOR NEXT QUARTER (THIRD - 2000):

1. Prepare and submit quarterly groundwater monitoring report for second quarter 2000.
2. Perform quarterly groundwater monitoring and sampling for third quarter 2000.
3. Operate air-bubbling system.
4. Implement changes to groundwater monitoring schedule per ACHCSA letter dated July 7, 2000.
5. Develop site conceptual model per ACHCSA letter dated July 7, 2000.

QUARTERLY MONITORING:

Current Phase of Project:	Quarterly Groundwater Monitoring and Operation and Maintenance of Remediation Systems. Soil Vapor Extraction (SVE) system was shut down on 10-10-95 due to low hydrocarbon concentrations in extracted vapor. Air bubbling system pulses hourly at 1 to 2 scfm per well in wells VW-1, MW-1, MW-2, MW-4, MW-5, MW-7, and RW-1.
Frequency of Sampling:	Annual (3rd Quarter): MW-2, MW-5, MW-11 Semi-Annual (1st/3rd Quarter): MW-4, MW-6, MW-7, RW-1, VW-1 Monthly (SVE)
Frequency of Monitoring:	Semi-annual (groundwater), Monthly (SVE and air-bubbling systems)
Is Free Product (FP) Present On-site:	No
Cumulative FP Recovered to Date :	3.06 gallons, Wells MW-1, MW-2, and MW-5
FP Recovered This Quarter :	None (FP was last recovered in 1992.)
Bulk Soil Removed to Date :	1,700 cubic yards of TPH-impacted soil
Water Wells or Surface Waters Within 2000 ft., impacted by site:	None
Current Remediation Techniques:	Enhanced Bioremediation (Air-Bubbling)
Average Depth to Groundwater:	26.8 feet
Groundwater Flow Direction and Gradient (Average):	0.050 ft/ft towards north-northwest

CAMBRIA

Date: August 7, 2000
Quarter: 2nd Quarter, 2000

ATTACHMENTS:

- Table 1 - Groundwater Monitoring Data
- Table 2 - Groundwater Flow Direction and Gradient
- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map
- Appendix A - Sampling and Analysis Procedures
- Appendix B - Certified Analytical Reports and Chain-of-Custody Documentation
- Appendix C - Field Data Sheets

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-1	03-20-95	451.73	24.50	427.23	ND	03-20-95	90,000	1,800	1,100	1,000	5,600	--	--	--		
MW-1	06-02-95	451.73	25.60	426.13	ND	06-03-95	81,000	2,000	1,400	990	4,600	--	--	--		
MW-1	08-23-95	451.73	29.04	422.69	ND	08-23-95	44,000	2,400	1,900	670	3,800	<300	--	--		
MW-1	12-04-95	451.73	31.31	420.42	ND	12-04-95	22,000	870	660	390	2,200	--	100	--		
MW-1	02-20-96	451.73	22.26	429.47	ND	02-20-96	21,000	1,500	1,200	650	3,500	<300	--	--		
MW-1	05-15-96	451.73	23.42	428.31	ND	05-15-96	36,000	3,000	2,500	960	5,700	<250	--	--		
MW-1	08-13-96	451.73	26.83	424.90	ND	08-13-96	19,000	730	580	450	2,500	<200	--	--		
MW-1	11-13-96	451.73	31.05	420.68	ND	11-13-96	6,600	47	16	74	160	<30	--	--		
MW-1	03-26-97	451.73	26.29	425.44	ND	03-27-97	1,900	100	55	37	200	<30	--	--		
MW-1	05-15-97	451.73	28.65	423.08	ND	05-15-97	16,000	490	250	250	1,100	<120	--	--		
MW-1	08-26-97	451.73	31.53	420.20	ND	08-26-97	190	7	3	6	25	<3	--	--		
MW-1	11-05-97	451.73	33.93	417.80	ND	11-05-97	63	1	<0.5	1	2	29	--	--		
MW-1	02-18-98	451.73	20.46	431.27	ND	02-18-98	23,000	1,500	610	550	3,000	<120	--	--		
MW-1	05-20-98	451.73	23.84	427.89	ND	05-21-98	50,000	4,400	1,900	1,400	80,000	<300	--	--		
MW-1	07-30-98	451.73	26.94	424.79	ND	07-30-98	150	<0.5	<0.5	<0.5	2	<3	--	--	8.7	P
MW-1	10-29-98	451.73	32.58	419.15	ND	10-29-98	<50	<0.5	<0.5	<0.5	2	<3	--	--	2.0	NP
MW-1	03-16-99	451.73	26.20	425.53	ND	03-16-99	3,200	160	32	89	390	270	--	--	2.0	P
MW-1	05-05-99	451.73	27.57	424.16	ND	05-05-99	3,600	140	46	76	290	170	--	--	11.65	P
MW-1	08-26-99	451.73	30.25	421.48	ND	08-26-99	3,200	210	29	100	220	120	--	--	1.43	P
MW-1	12-03-99	451.73	32.70	419.03	ND	12-03-99	53	<0.5	<0.5	<0.5	1	<3	--	--	2.12	NP
MW-1	03-13-00	451.73	24.45	427.28	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	5.81	P
DUP	**06-20-00**	--	--	--	--	**06-20-00**	**67.4**	**3.88**	**<0.500**	**1.78**	**1.48**	**<2.50**	--	--	--	--
MW-1	**06-20-00**	**451.73**	**27.79**	**423.94**	**ND**	**06-20-00**	**356**	**40.1**	**7.17**	**11.9**	**22.7**	**<2.50**	--	--	**5.10**	**P**

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-2	03-20-95	449.49	20.27	429.22	ND	03-20-95	54,000	2,600	1,600	1,200	7,600	--	--	--		
MW-2	06-02-95	449.49	22.32	427.17	ND	06-03-95	37,000	2,200	800	980	4,800	--	--	--		
MW-2	08-23-95	449.49	25.69	423.80	ND	08-23-95	65,000	1,100	310	840	3,000	<500	--	--		
MW-2	12-04-95	449.49	28.52	420.97	ND	12-04-95	19,000	680	150	410	1,600	--	--	--		
MW-2	02-20-96	449.49	19.00	430.49	ND	02-20-96	22,000	1,200	240	590	2,200	<300	--	--		
MW-2	05-15-96	449.49	20.03	429.46	ND	05-15-96	25,000	1,200	240	610	2,100	<300	--	--		
MW-2	08-13-96	449.49	24.44	425.05	ND	08-13-96	19,000	640	110	420	1,200	<300	--	--		
MW-2	11-13-96	449.49	28.42	421.07	ND	11-13-96	15,000	260	52	220	640	<200	--	--		
MW-2	03-26-97	449.49	22.98	426.51	ND	03-27-97	17,000	580	120	360	980	<120	--	--		
MW-2	05-15-97	449.49	25.40	424.09	ND	05-15-97	18,000	420	63	340	730	<120	--	--		
MW-2	08-26-97	449.49	28.38	421.11	ND	08-26-97	5,300	210	26	140	270	<120	--	--		
MW-2	11-05-97	449.49	31.93	417.56	ND	11-05-97	560	42	3	7	9	<40	--	--		
MW-2	02-18-98	449.49	16.87	432.62	ND	02-18-98	18,000	710	120	480	1,100	130	--	--		
MW-2	05-20-98	449.49	20.29	429.20	ND	05-21-98	16,000	480	72	440	1,100	<120	--	--		
MW-2	07-30-98	449.49	23.51	425.98	ND	07-30-98	9,700	240	33	210	490	<120	--	--	9.2	P
MW-2	10-29-98	449.49	30.08	419.41	ND	10-29-98	58	<0.5	<0.5	<0.5	1	<3	--	--	1.0	NP
MW-2	03-16-99	449.49	23.22	426.27	ND	03-16-99	4,700	120	13	90	220	60	--	--	2.0	P
MW-2	05-05-99	449.49	24.05	425.44	ND	05-05-99	5,500	58	7.1	58	98	17	--	--	9.09	P
MW-2	08-26-99	449.49	26.44	423.05	ND	08-26-99	3,700	55	11	60	64	26	--	--	1.90	P
MW-2	12-03-99	449.49	30.15	419.34	ND	12-03-99	130	<0.5	<0.5	0.7	1.8	<3	--	--	1.96	NP
MW-2	03-13-00	449.49	20.68	428.81	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	NM	P
MW-2	**06-20-00**	**449.49**	**23.08**	**426.41**	**ND**	**06-20-00**	**226**	**2.20**	**<0.500**	**4.83**	**7.88**	**<2.50**	**--**	**--**	**4.90**	**P**
MW-3	03-20-95	450.28	22.19	428.09	ND	03-20-95	94	<0.5	<0.5	<0.5	<0.5	--	--	--		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-3	06-02-95	450.28	23.28	427.00	ND	06-02-95	72	<0.5	<0.5	<0.5	<0.5	--	--	--		
MW-3	08-23-95	450.28	26.55	423.73	ND	08-23-95	98	<0.5	<0.5	<0.6	1	<3	--	--		
MW-3	12-04-95	450.28	29.52	420.76	ND	12-04-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
MW-3	02-20-96	450.28	19.83	430.45	ND	02-20-96	130	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	05-15-96	450.28	21.03	429.25	ND	05-15-96	120	<0.5	<0.5	<0.5	<0.5	<0.5	--	--		
MW-3	08-13-96	450.28	25.67	424.61	ND	08-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	11-13-96	450.28	21.57	428.71	ND	11-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	03-26-97	450.28	24.15	426.13	ND	03-26-97	<50	1	<0.5	<0.5	<0.5	<3	--	--		
MW-3	05-15-97	450.28	26.85	423.43	ND	05-15-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	08-26-97	450.28	30.07	420.21	ND	08-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	11-05-97	450.28	32.46	417.82	ND	11-05-97	<50	<0.5	1	<0.5	<0.5	<3	--	--		
MW-3	02-18-98	450.28	17.82	432.46	ND	02-18-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	05-20-98	450.28	21.41	428.87	ND	05-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-3	07-30-98	450.28	26.41	423.87	ND	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	9.6	P
MW-3	10-29-98	450.28	31.33	418.95	ND	10-29-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	P
MW-3	03-16-99	450.28	24.61	425.67	ND	03-16-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	P
MW-3	05-05-99	450.28	25.75	424.53	ND	05-05-99	140	<0.5	<0.5	0.6	<0.5	<3	--	--	4.43	P
MW-3	08-26-99	450.28	28.49	421.79	ND	08-26-99	80	0.6	0.6	0.6	1	<3	--	--	1.69	P
MW-3	12-03-99	450.28	31.45	418.83	ND	12-03-99	<50	<0.5	<0.5	<0.5	<1	<3	--	--	2.26	P
MW-3	03-13-00	450.28	22.18	428.10	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	4.41	P
MW-3	**06-20-00**	**450.28**	**26.03**	**424.25**	**ND**	**06-20-00**	**<50.0**	**<0.500**	**<0.500**	**<0.500**	**<0.500**	**<2.50**	**--**	**--**	**2.30**	**P**
MW-4	03-20-95	451.09	22.68	428.41	ND	03-20-95	12,000	1,000	100	450	700	--	--	--		
MW-4	06-02-95	451.09	24.41	426.68	ND	06-02-95	9,000	850	56	380	430	--	--	--		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-4	08-23-95	451.09	27.72	423.37	ND	08-23-95	5,300	400	25	240	170	<100	--	--		
MW-4	12-04-95	451.09	29.85	421.24	ND	12-04-95	6,700	100	<10	90	38	--	--	--		
MW-4	02-20-96	451.09	21.16	429.93	ND	02-20-96	7,000	360	22	180	160	<70	--	--		
MW-4	05-15-96	451.09	22.18	428.91	ND	05-15-96	Not sampled: well sampled annually, during the first quarter									
MW-4	08-13-96	451.09	26.20	424.89	ND	08-13-96	Not sampled: well sampled annually, during the first quarter									
MW-4	11-13-96	451.09	29.72	421.37	ND	11-13-96	Not sampled: well sampled annually, during the first quarter									
MW-4	03-26-97	451.09	21.86	429.23	ND	03-27-97	8,900	390	33	200	250	<70	--	--		
MW-4	05-15-97	451.09	26.92	424.17	ND	05-15-97	Not sampled: well sampled annually, during the first quarter									
MW-4	08-26-97	451.09	29.30	421.79	ND	08-26-97	Not sampled: well sampled annually, during the first quarter									
MW-4	11-05-97	451.09	32.14	418.95	ND	11-05-97	Not sampled: well sampled annually, during the first quarter									
MW-4	02-18-98	451.09	19.30	431.79	ND	02-18-98	5,300	220	19	160	130	120	--	--		
MW-4	05-20-98	451.09	22.40	428.69	ND	05-21-98	Not sampled: well sampled annually, during the first quarter									
MW-4	07-30-98	451.09	25.74	425.35	ND	07-30-98	Not sampled: well sampled annually, during the first quarter									
MW-4	10-29-98	451.09	31.26	419.83	ND	10-29-98	Not sampled: well sampled annually, during the first quarter									
MW-4	03-16-99	451.09	25.05	426.04	ND	03-16-99	1,900	49	<5	43	<5	82	--	--	1.5	P
MW-4	05-05-99	451.09	26.15	424.94	ND	05-05-99	Not sampled: well sampled annually, during the first quarter									
MW-4	08-26-99	451.09	28.60	422.49	ND	08-26-99	Not sampled: well sampled annually, during the first quarter								1.43	
MW-4	12-03-99	451.09	31.53	419.56	ND	12-03-99	Not sampled: well sampled annually, during the first quarter									
MW-4	03-13-00	451.09	23.61	427.48	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	3.82	P
MW-4	**06-20-00**	**451.09**	**26.38**	**424.71**	**ND**	**06-20-00**	**Not sampled: well sampled annually, during the first quarter**							**--**	**0.40**	
MW-5	03-20-95	451.40	23.20	428.20	ND	03-20-95	26,000	1,300	180	890	2,900	--	--	--		
MW-5	06-02-95	451.40	24.80	426.60	ND	06-02-95	39,000	940	160	740	1,900	--	--	--		
MW-5	08-23-95	451.40	28.10	423.30	ND	08-23-95	14,000	490	74	250	890	<300	--	--		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-5	12-04-95	451.40	29.83	421.57	ND	12-04-95	7,600	230	13	61	80	--	--	--		
MW-5	02-20-96	451.40	21.63	429.77	ND	02-20-96	4,300	220	12	45	130	<50	--	--		
MW-5	05-15-96	451.40	22.87	428.53	ND	05-15-96	2,200	380	17	58	84	<40	--	--		
MW-5	08-13-96	451.40	26.48	424.92	ND	08-13-96	1,700	150	16	24	35	47	--	--		
MW-5	11-13-96	451.40	29.68	421.72	ND	11-13-96	850	150	11	19	37	66	--	--		
MW-5	03-26-97	451.40	25.14	426.26	ND	03-26-97	2,400	440	21	79	210	68	--	--		
MW-5	05-15-97	451.40	27.38	424.02	ND	05-15-97	3,900	510	19	140	240	48	--	--		
MW-5	08-26-97	451.40	29.89	421.51	ND	08-26-97	76	5	<0.5	2	2	9	--	--		
MW-5	11-05-97	451.40	32.57	418.83	ND	11-05-97	63	1	<0.5	<0.5	1	34	--	--		
MW-5	02-18-98	451.40	19.99	431.41	ND	02-18-98	6,200	630	70	320	640	320	--	--		
MW-5	05-20-98	451.40	23.21	428.19	ND	05-20-98	2,300	340	21	110	140	62	--	--		
MW-5	07-30-98	451.40	26.19	425.21	ND	07-30-98	<50	1	<0.5	1	1	<3	--	--	8.8	P
MW-5	10-29-98	451.40	31.92	419.48	ND	10-29-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	2.0	NP
MW-5	03-16-99	451.40	25.80	425.60	ND	03-16-99	1,300	170	8	59	65	120	--	--	2.0	P
MW-5	05-05-99	451.40	27.09	424.31	ND	05-05-99	320	31	1.1	13	13	19	--	--	12.09	P
MW-5	08-26-99	451.40	29.67	421.73	ND	08-26-99	260	13	1.7	4.2	6.3	150	--	--	1.31	P
MW-5	12-03-99	451.40	Not surveyed: well inaccessible													
MW-5	03-13-00	451.40	24.51	426.89	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	4.41	P
MW-5	**06-20-00**	**451.40**	**27.37**	**424.03**	**ND**	**06-20-00**	**60.8**	**4.84**	**<0.500**	**1.90**	**1.59**	**<2.50**	**--**	**--**	**5.30**	**P**
MW-6	03-20-95	451.37	25.19	426.18	ND	03-20-95	2,600	210	87	82	140	--	--	2		
MW-6	06-02-95	451.37	25.75	425.62	ND	06-02-95	1,600	55	8	40	26	--	--	1		
MW-6	08-23-95	451.37	29.53	421.84	ND	08-23-95	1,400	42	3	36	13	<20	--	2		
MW-6	12-04-95	451.37	32.28	419.09	ND	12-04-95	2,500	52	6	59	13	--	--	2		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-6	02-20-96	451.37	22.27	429.10	ND	02-20-96	2,500	120	16	73	12	<30	--	2		
MW-6	05-15-96	451.37	23.86	427.51	ND	05-15-96	2,000	71	6	47	25	<15	--	--		
MW-6	08-13-96	451.37	28.55	422.82	ND	08-13-96	3,800	91	8	69	25	<20	--	--		
MW-6	11-13-96	451.37	32.04	419.33	ND	11-13-96	1,900	55	3	55	9	16	--	--		
MW-6	03-26-97	451.37	26.84	424.53	ND	03-26-97	1,800	51	5	32	15	<30	--	--		
MW-6	05-15-97	451.37	29.58	421.79	ND	05-15-97	2,400	46	3	29	9	<12	--	--		
MW-6	08-26-97	451.37	32.67	418.70	ND	08-26-97	1,400	61	6	33	10	<12	--	--		
MW-6	11-05-97	451.37	34.62	416.75	ND	11-05-97	690	29	3	18	3	9	--	--		
MW-6	02-18-98	451.37	20.09	431.28	ND	02-18-98	1,800	74	5	24	12	19	--	--		
MW-6	05-20-98	451.37	24.05	427.32	ND	05-20-98	1,900	280	4	31	16	9	--	--		
MW-6	07-30-98	451.37	28.72	422.65	ND	07-30-98	2,300	110	7	36	20	<15	--	--	NM	P
MW-6	10-29-98	451.37	32.77	418.60	ND	10-29-98	2,500	14	13	17	12	<12	--	--	1.0	P
MW-6	03-16-99	451.37	26.45	424.92	ND	03-16-99	1,200	65	4	27	13	18	--	--	0.5	P
MW-6	05-05-99	451.37	27.86	423.51	ND	05-05-99	2,200	53	4	26	6	25	--	--	5.59	P
MW-6	08-26-99	451.37	30.49	420.88	ND	08-26-99	1,100	11	6	10	4	13	--	--	2.35	P
MW-6	12-03-99	451.37	32.35	419.02	ND	12-03-99	370	<0.5	<0.5	0.8	<1	4	--	--	2.36	P
MW-6	03-13-00	451.37	28.36	423.01	ND	03-13-00	54	2.1	0.5	0.9	1.4	<3	--	--	4.22	P
MW-6	**06-20-00**	**451.37**	**28.35**	**423.02**	**ND**	**06-20-00**	**195**	**1.83**	**<0.500**	**0.528**	**<0.500**	**<2.50**	**--**	**--**	**3.50**	**P**
MW-7	03-20-95	450.33	22.07	428.26	ND	03-20-95	31,000	2,300	400	620	2,900	--	--	--		
MW-7	06-02-95	450.33	23.42	426.91	ND	06-03-95	40,000	1,400	280	610	2,400	--	--	--		
MW-7	08-23-95	450.33	27.13	423.20	ND	08-23-95	25,000	1,400	200	600	1,600	350	--	--		
MW-7	12-04-95	450.33	29.45	420.88	ND	12-04-95	23,000	1,100	74	490	720	--	--	--		
MW-7	02-20-96	450.33	20.25	430.08	ND	02-20-96	39,000	1,200	140	640	1,800	<400	--	--		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-7	05-15-96	450.33	21.38	428.95	ND	05-15-96	Not sampled: well sampled annually, during the first quarter									
MW-7	08-13-96	450.33	25.52	424.81	ND	08-13-96	Not sampled: well sampled annually, during the first quarter									
MW-7	11-13-96	450.33	29.38	420.95	ND	11-13-96	Not sampled: well sampled annually, during the first quarter									
MW-7	03-26-97	450.33	24.36	425.97	ND	03-27-97	35,000	1,100	180	460	1,700	<300	--	--		
MW-7	05-15-97	450.33	26.90	423.43	ND	05-15-97	Not sampled: well sampled annually, during the first quarter									
MW-7	08-26-97	450.33	30.21	420.12	ND	08-26-97	Not sampled: well sampled annually, during the first quarter									
MW-7	11-05-97	450.33	32.49	417.84	ND	11-05-97	Not sampled: well sampled annually, during the first quarter									
MW-7	02-18-98	450.33	18.10	432.23	ND	02-18-98	19,000	1,100	120	460	1,700	240	--	--		
MW-7	05-20-98	450.33	21.68	428.65	ND	05-21-98	Not sampled: well sampled annually, during the first quarter									
MW-7	07-30-98	450.33	26.07	424.26	ND	07-30-98	Not sampled: well sampled annually, during the first quarter									
MW-7	10-29-98	450.33	31.13	419.20	ND	10-29-98	Not sampled: well sampled annually, during the first quarter									
MW-7	03-16-99	450.33	24.45	425.88	ND	03-16-99	8,600	430	51	200	680	<120	--	--	1.5	P
MW-7	05-05-99	450.33	25.84	424.49	ND	05-05-99	Not sampled: well sampled annually, during the first quarter									
MW-7	08-26-99	450.33	28.28	422.05	ND	08-26-99	Not sampled: well sampled annually, during the first quarter								1.51	
MW-7	12-03-99	450.33	31.57	418.76	ND	12-03-99	Not sampled: well sampled annually, during the first quarter									
MW-7	03-13-00	450.33	Not surveyed: well inaccessible													
MW-7	**06-20-00**	**450.33**	**25.91**	**424.42**	**ND**	**06-20-00**	**Not sampled: well sampled annually, during the first quarter**								**5.40**	
MW-8	03-20-95	449.43	24.75	424.68	ND	03-20-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
MW-8	06-02-95	449.43	24.95	424.48	ND	06-02-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	08-23-95	449.43	30.94	418.49	ND	08-23-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-8	12-04-95	449.43	31.99	417.44	ND	12-04-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	02-20-96	449.43	21.13	428.30	ND	02-20-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-8	05-15-96	449.43	21.96	427.47	ND	05-15-96	Not sampled: well sampled semi-annually, during the first and third quarters									

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-8	08-13-96	449.43	30.20	419.23	ND	08-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-8	11-13-96	449.43	33.24	416.19	ND	11-13-96	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	03-26-97	449.43	26.85	422.58	ND	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-8	05-15-97	449.43	29.69	419.74	ND	05-15-97	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	08-26-97	449.43	34.00	415.43	ND	08-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-8	11-05-97	449.43	35.94	413.49	ND	11-05-97	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	02-18-98	449.43	18.18	431.25	ND	02-18-98	<50	1	1	<0.5	1	<3	--	--		
MW-8	05-20-98	449.43	22.85	426.58	ND	05-20-98	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	07-30-98	449.43	30.31	419.12	ND	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	8.2	NP
MW-8	10-29-98	449.43	35.88	413.55	ND	10-29-98	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	03-16-99	449.43	28.50	420.93	ND	03-16-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	NP
MW-8	05-05-99	449.43	29.76	419.67	ND	05-05-99	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	08-26-99	449.43	33.51	415.92	ND	08-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	4.93	P
MW-8	12-03-99	449.43	35.83	413.60	ND	12-03-99	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-8	03-13-00	449.43	26.12	423.31	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	2.81	P
MW-8	**06-20-00**	**449.43**	**30.91**	**418.52**	**ND**	**06-20-00**	**Not sampled: well sampled semi-annually, during the first and third quarter**								**5.80**	
MW-9	03-20-95	449.21	19.11	430.10	ND	03-20-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
MW-9	06-02-95	449.21	21.23	427.98	ND	06-02-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-9	08-23-95	449.21	24.33	424.88	ND	08-23-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-9	12-04-95	449.21	27.90	421.31	ND	12-04-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-9	02-20-96	449.21	17.86	431.35	ND	02-20-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-9	05-15-96	449.21	18.69	430.52	ND	05-15-96	Not sampled: well sampled annually, during the first quarter									
MW-9	08-13-96	449.21	24.17	425.04	ND	08-13-96	Not sampled: well sampled annually, during the first quarter									

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-9	11-13-96	449.21	28.01	421.20	ND	11-13-96	Not sampled: well sampled annually, during the first quarter									
MW-9	03-26-97	449.21	22.58	426.63	ND	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-9	05-15-97	449.21	25.12	424.09	ND	05-15-97	Not sampled: well sampled annually, during the first quarter									
MW-9	08-26-97	449.21	28.28	420.93	ND	08-26-97	Not sampled: well sampled annually, during the first quarter									
MW-9	11-05-97	449.21	31.18	418.03	ND	11-05-97	Not sampled: well sampled annually, during the first quarter									
MW-9	02-18-98	449.21	16.03	433.18	ND	02-18-98	<50	1	1	<0.5	1	<3	--	--		
MW-9	05-20-98	449.21	19.31	429.90	ND	05-20-98	Not sampled: well sampled annually, during the first quarter									
MW-9	07-30-98	449.21	24.90	424.31	ND	07-30-98	Not sampled: well sampled annually, during the first quarter									
MW-9	10-29-98	449.21	30.08	419.13	ND	10-29-98	Not sampled: well sampled annually, during the first quarter									
MW-9	03-16-99	449.21	22.68	426.53	ND	03-16-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	P
MW-9	05-05-99	449.21	23.82	425.39	ND	05-05-99	Not sampled: well sampled annually, during the first quarter									
MW-9	08-26-99	449.21	26.57	422.64	ND	08-26-99	Not sampled: well sampled annually, during the first quarter								5.08	
MW-9	12-03-99	449.21	Not surveyed: well inaccessible													
MW-9	03-13-00	449.21	25.62	423.59	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	5.43	P
MW-9	**06-20-00**	**449.21**	**23.55**	**425.66**	**ND**	**06-20-00**	**Not sampled: well sampled annually, during the first quarter**							**--**	**6.20**	
MW-10	03-20-95	449.22	20.96	428.26	ND	03-20-95	Not sampled: well sampled annually, during the third quarter									
MW-10	06-02-95	449.22	22.15	427.07	ND	06-02-95	Not sampled: well sampled annually, during the third quarter									
MW-10	08-23-95	449.22	24.47	424.75	ND	08-23-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-10	12-04-95	449.22	26.97	422.25	ND	12-04-95	Not sampled: well sampled annually, during the third quarter									
MW-10	02-20-96	449.22	18.40	430.82	ND	02-20-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-10	05-15-96	449.22	NM	NM	--	05-15-96	Not surveyed: vehicle was parked on well									
MW-10	08-13-96	449.22	23.70	425.52	ND	08-13-96	Not sampled: well sampled annually, during the first quarter									
MW-10	11-13-96	449.22	27.15	422.07	ND	11-13-96	Not sampled: well sampled annually, during the first quarter									

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	MTBE EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-10	03-26-97	449.22	22.23	426.99	ND	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-10	05-15-97	449.22	24.57	424.65	ND	05-15-97	Not sampled: well sampled annually, during the first quarter									
MW-10	08-26-97	449.22	27.62	421.60	ND	08-26-97	Not sampled: well sampled annually, during the first quarter									
MW-10	11-05-97	449.22	30.79	418.43	ND	11-05-97	Not sampled: well sampled annually, during the first quarter									
MW-10	02-18-98	449.22	NM	NM	--	02-18-98	Not sampled: car parked on well									
MW-10	05-20-98	449.22	NM	NM	--	05-20-98	Not sampled: well sampled annually, during the first quarter									
MW-10	07-30-98	449.22	23.90	425.32	ND	07-30-98	Not sampled: well sampled annually, during the first quarter									
MW-10	10-29-98	449.22	30.55	418.67	ND	10-29-98	Not sampled: well sampled annually, during the first quarter									
MW-10	03-16-99	449.22	23.05	426.17	ND	03-16-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	P
MW-10	05-05-99	449.22	24.00	425.22	ND	05-05-99	Not sampled: well sampled annually, during the first quarter									
MW-10	08-26-99	449.22	26.50	422.72	ND	08-26-99	Not sampled: well sampled annually, during the first quarter								5.15	
MW-10	12-03-99	449.22	30.80	418.42	ND	12-03-99	Not sampled: well sampled annually, during the first quarter									
MW-10	03-13-00	449.22	26.21	423.01	ND	03-13-00	Not sampled: vehicle was parked on well									
MW-10	**06-20-00**	**449.22**	**23.52**	**425.70**	**ND**	**06-20-00**	**Not sampled: well sampled annually, during the first quarter**								**5.5**	
MW-11	03-20-95	448.02	25.02	423.00	ND	03-20-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
MW-11	06-02-95	448.02	23.82	424.20	ND	06-02-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	08-23-95	448.02	30.15	417.87	ND	08-23-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-11	12-04-95	448.02	31.63	416.39	ND	12-04-95	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	02-20-96	448.02	20.94	427.08	ND	02-20-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-11	05-15-96	448.02	23.03	424.99	ND	05-15-96	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	08-13-96	448.02	29.19	418.83	ND	08-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-11	11-13-96	448.02	31.96	416.06	ND	11-13-96	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	03-26-97	448.02	26.61	421.41	ND	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
MW-11	05-15-97	448.02	29.39	418.63	ND	05-15-97	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	08-26-97	448.02	33.47	414.55	ND	08-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
MW-11	11-05-97	448.02	35.12	412.90	ND	11-05-97	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	02-18-98	448.02	18.03	429.99	ND	02-18-98	<50	<0.5	<0.5	<0.5	1	<3	--	--		
MW-11	05-20-98	448.02	23.00	425.02	ND	05-20-98	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	07-30-98	448.02	29.30	418.72	ND	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	5.6	P
MW-11	10-29-98	448.02	34.47	413.55	ND	10-29-98	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	03-16-99	448.02	27.88	420.14	ND	03-16-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	1.0	P
MW-11	05-05-99	448.02	26.85	421.17	ND	05-05-99	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	08-26-99	448.02	32.74	415.28	ND	08-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--	4.59	P
MW-11	12-03-99	448.02	34.70	413.32	ND	12-03-99	Not sampled: well sampled semi-annually, during the first and third quarters									
MW-11	03-13-00	448.02	25.94	422.08	ND	03-13-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	3.21	P
MW-11	**06-20-00**	**448.02**	**30.40**	**417.62**	**ND**	**06-20-00**	**Not sampled: well sampled semi-annually, during the first and third quarter**								**3.30**	
RW-1	03-20-95	451.67	23.76	427.91	ND	03-20-95	15,000	1,000	140	310	950	--	--	--		
RW-1	06-02-95	451.67	25.12	426.55	ND	06-02-95	12,000	1,300	280	420	1,100	--	--	--		
RW-1	08-23-95	451.67	28.80	422.87	ND	08-23-95	8,200	520	190	240	610	<50	--	--		
RW-1	12-04-95	451.67	31.15	420.52	ND	12-04-95	2,600	140	59	83	210	--	--	--		
RW-1	02-20-96	451.67	21.45	430.22	ND	02-20-96	6,300	410	160	180	650	<40	--	--		
RW-1	05-15-96	451.67	22.97	428.70	ND	05-15-96	Not sampled: well sampled annually, during the first quarter									
RW-1	08-13-96	451.67	24.74	426.93	ND	08-13-96	Not sampled: well sampled annually, during the first quarter									
RW-1	11-13-96	451.67	30.69	420.98	ND	11-13-96	Not sampled: well sampled annually, during the first quarter									
RW-1	03-26-97	451.67	25.69	425.98	ND	03-26-97	500	57	3	6	18	54	--	--		
RW-1	05-15-97	451.67	28.19	423.48	ND	05-15-97	Not sampled: well sampled annually, during the first quarter									

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)
RW-1	08-26-97	451.67	31.21	420.46	ND	08-26-97	Not sampled: well sampled annually, during the first quarter									
RW-1	11-05-97	451.67	33.67	418.00	ND	11-05-97	Not sampled: well sampled annually, during the first quarter									
RW-1	02-18-98	451.67	20.14	431.53	ND	02-18-98	9,400	200	70	190	710	<60	--	--		
RW-1	05-20-98	451.67	23.43	428.24	ND	05-20-98	Not sampled: well sampled annually, during the first quarter									
RW-1	07-30-98	451.67	27.42	424.25	ND	07-30-98	Not sampled: well sampled annually, during the first quarter									
RW-1	10-29-98	451.67	32.47	419.20	ND	10-29-98	Not sampled: well sampled annually, during the first quarter									
RW-1	03-16-99	451.67	25.45	426.22	ND	03-16-99	1,100	140	19	45	83	530	--	--	1.0	NP
RW-1	05-05-99	451.67	27.23	424.44	ND	05-05-99	Not sampled: well sampled annually, during the first quarter									
RW-1	08-26-99	451.67	29.98	421.69	ND	08-26-99	Not sampled: well sampled annually, during the first quarter								1.39	
RW-1	12-03-99	451.67	32.38	419.29	ND	12-03-99	Not sampled: well sampled annually, during the first quarter									
RW-1	03-13-00	451.67	25.53	426.14	ND	03-13-00	1,100	130	3.5	0.7	95	230	--	--	4.43	NP
RW-1	**06-20-00**	**451.67**	**28.31**	**423.36**	**ND**	**06-20-00**	**Not sampled: well sampled annually, during the first quarter**							--	**1.90**	

ft-MSL: elevation in feet, relative to mean sea level
TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
MTBE: Methyl tert-butyl ether
EPA: United States Environmental Protection Agency
*: EPA method 8020 prior to 12/03/99
TPHD: total petroleum hydrocarbons as diesel, California DHS LUFT Method
TRPH: total recoverable petroleum hydrocarbons
µg/L: micrograms per liter
mg/L: milligrams per liter
ND: none detected
NM: not measured

Table 1
Groundwater Monitoring Data

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Water Sample Field Date	**TPHg** EPA 8015 Method	**Benzene** EPA 8021B*	**Toluene** EPA 8021B*	**Ethylbenzene** EPA 8021B*	**Total Xylenes** EPA 8021B*	**MTBE** EPA 8021B*	**MTBE** EPA 8240	**TRPH** EPA 418.1	**Dissolved Oxygen**	**Purged/ Not Purged**
		ft-MSL	feet	ft-MSL	feet		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	(P/NP)

- -: not analyzed or not applicable

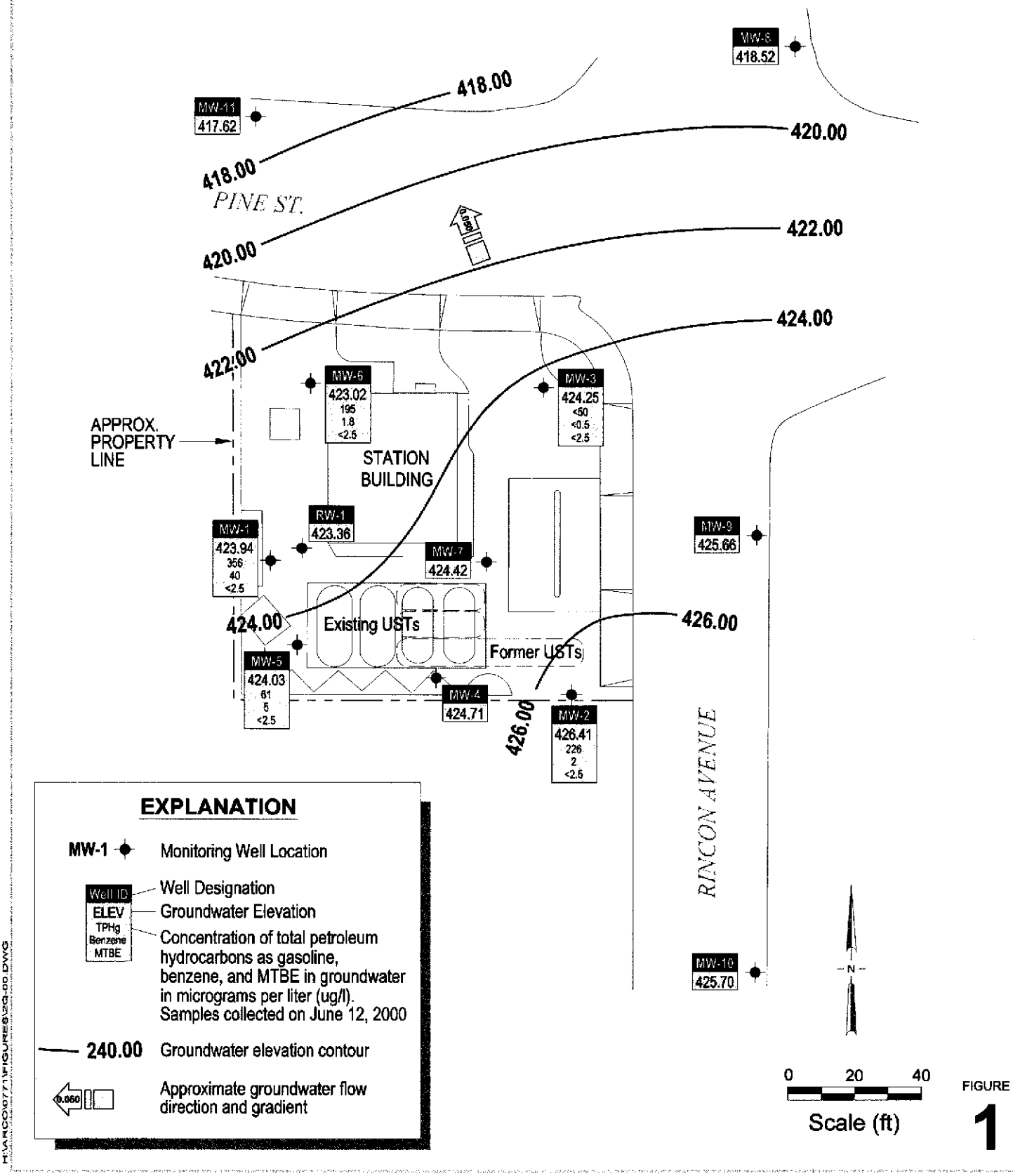
<: less than laboratory detection limit stated to the right

**: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 771, Livermore, California*, (EMCON, March 1, 1996).

Table 2
Groundwater Flow Direction and Gradient
1995 - Present

ARCO Service Station 771
899 Rincon Avenue, Livermore, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03-20-95	Northwest	0.03
06-02-95	North-Northwest	0.014
08-23-95	North-Northwest	0.03
12-04-95	North-Northwest	0.03
02-20-96	Northwest	0.016
05-15-96	Northwest	0.024
08-13-96	North-Northwest	0.03
11-13-96	North-Northwest	0.031
03-26-97	North-Northwest	0.044
05-15-97	North-Northwest	0.031
08-26-97	North-Northwest	0.042
11-05-97	North-Northwest	0.03
02-18-98	Northwest	0.01
05-20-98	Northwest	0.03
07-30-98	North	0.04
10-29-98	North	0.005
03-16-99	North-Northwest	0.03
05-05-99	North	0.04
08-26-99	North-Northwest	0.05
12-03-99	North-Northeast	0.06
03-13-00	North-Northwest	0.066
06/20/00	**North-Northwest**	**0.050**



EXPLANATION

MW-1 — Monitoring Well Location

Well ID
ELEV
TPHg
Benzene
MTBE

- Well Designation
- Groundwater Elevation
- Concentration of total petroleum hydrocarbons as gasoline, benzene, and MTBE in groundwater in micrograms per liter (ug/l). Samples collected on June 12, 2000

240.00 — Groundwater elevation contour

0.060 — Approximate groundwater flow direction and gradient

FIGURE 1

H:\ARCO\0771\FIGURES\2Q-00.DWG

ARCO Service Station 0771

899 Rincon Avenue

Livermore, California

CAMBRIA

Groundwater Elevation Contours

June 12, 2000

APPENDIX A

SAMPLING AND ANALYSIS PROCEDURES

APPENDIX A

SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures for water quality monitoring programs are contained in this appendix. The procedures provided for consistent and reproducible sampling methods, proper application of analytical methods, and accurate and precise analytical results. Finally, these procedures provided guidelines so that the overall objectives of the monitoring program were achieved.

The following documents have been used as guidelines for developing these procedures:

- Procedures Manual for Groundwater Monitoring at Solid Waste Disposal Facilities, Environmental Protection Agency (EPA)-530/SW-611, August 1977
- Resource Conservation and Recovery Act (RCRA) Groundwater Monitoring Technical Enforcement Guidance Document, Office of Solid Waste and Emergency Response (OSWER) 9950.1, September 1986
- Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA SW-846, 3rd edition, November 1986
- Methods for Organic Chemical Analysis of Municipal and Industrial Waste Water, EPA-600/4-82-057, July 1982
- Methods for Organic Chemical Analysis of Water and Wastes, EPA-600/4-79-020, revised March 1983
- Leaking Underground Fuel Tank (LUFT) Field Manual, California State Water Resources Control Board, revised October 1989

Sample Collection

Sample collection procedures include equipment cleaning, water level and total well depth measurements, and well purging and sampling.

Equipment Cleaning

Before the sampling event was started, equipment that was used to sample groundwater was disassembled and cleaned with detergent water and then rinsed with tap water. During field sampling, equipment surfaces that were placed in the well or came into contact with groundwater during field sampling were washed with detergent and double rinsed with tap water before the next well was purged or sampled.

Water Level, Floating Hydrocarbon, and Total Well Depth Measurements

Before purging and sampling occurred, the depth to water, floating hydrocarbon thickness and total well depth were measured using an oil/water interface measuring system. The oil/water interface measuring system consists of a probe that emits a continuous audible tone when immersed in a nonconductive fluid, such as oil or gasoline and an intermittent tone when immersed in a conductive fluid, such as water. The floating hydrocarbon thickness and water level were measured by lowering the probe into the well. Liquid levels were recorded relative to the tone emitted at the groundwater surface. The sonic probe was decontaminated after each use. A bottom-filling, clear disposable bailer was used to verify floating hydrocarbon thickness measurements of less than 0.02 foot. Alternatively, an electric sounder and a bottom-filling Teflon bailer may have been used to record floating hydrocarbon thickness and depth to water.

The electric sounder is a transistorized instrument that uses a reel-mounted, two-conductor, coaxial cable that connects the control panel to the sensor. Cable markings are stamped at 1-foot intervals. The water level was measured by lowering the sensor into the monitoring well. A low-current circuit was completed when the sensor contacted the water, which served as an electrolyte. The current was amplified and fed into an indicator light and audible buzzer, signaling when water had been contacted. A sensitivity control compensated for highly saline or conductive water. The electric sounder was decontaminated after each use. The bailer was lowered to a point just below the liquid level, retrieved, and observed for floating hydrocarbon.

Liquid measurements were recorded to the nearest 0.01 foot on the depth to water/floating product survey form. The groundwater elevation at each monitoring well was calculated by subtracting the measured depth to water from the surveyed elevation of the top of the well casing. (Every attempt was made to measure depth to water for all wells on the same day.) Total well depth was then measured by lowering the sensor to the bottom of the well. Total well depth, used to calculate purge volumes and to determine whether the well screen was partially obstructed by silt, was recorded to the nearest 0.1 foot on the depth to water/floating product survey form.

Well Purging

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged, otherwise non-purge groundwater samples were collected. Before sampling occurred, a polyvinyl chloride (PVC) bailer, centrifugal pump, low-flow submersible pump, or disposable bailer was used to purge standing water in the casing and gravel pack from the monitoring well. In most monitoring wells, the amount of water purged before sampling was greater than or equal to three casing volumes. Some monitoring wells were expected to be evacuated to dryness after removing fewer than three casing volumes. These low-yield monitoring wells were allowed to recharge for up to 24 hours. Samples were obtained as soon as the monitoring wells recharged to a level sufficient for sample collection. If insufficient water recharged after 24 hours, the monitoring well was recorded as dry for the sampling event.

Groundwater purged from the monitoring wells was transported in a 240-gallon truck-mounted tank to ARCO's Harbor water treatment location in Sacramento for disposal.

Field measurements of pH, specific conductance, and temperature were recorded in a waterproof field logbook. Field data sheets were reviewed for completeness by the sampling coordinator after the sampling event was completed.

The pH, specific conductance, and temperature meter were calibrated each day before field activities were begun. The calibration was checked once each day to verify meter performance. Field meter calibrations were recorded on the water sample field data sheet.

Well Sampling

A disposable bailer was the only equipment acceptable for well sampling. When samples for volatile organic analysis were being collected, the flow of groundwater from the bailer was regulated to minimize turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa were used in sampling for volatile organics. These bottles were filled completely to prevent air from remaining in the bottle. A positive meniscus formed when the bottle was completely full. A convex Teflon septum was placed over the positive meniscus to eliminate air. After the bottle was capped, it was inverted and tapped to verify that it contained no air bubbles. The sample containers for other parameters were filled, filtered as required, and capped.

When required, dissolved concentrations of metals were determined using appropriate field filtration techniques. The sample was filtered by emptying the contents of the disposable bailer into a pressure transfer vessel. A disposable 0.45-micron acrylic copolymer filter was threaded onto the transfer vessel at the discharge point, and the vessel was sealed. Pressure was applied to the vessel with a hand pump and the filtrate directed into the appropriate containers. Each filter was used once and discarded.

Sample Preservation and Handling

The following section specifies sample containers, preservation methods, and sample handling procedures.

Sample Containers and Preservation

Sample containers vary with each type of analytical parameter. Container types and materials were selected to be nonreactive with the particular analytical parameter tested.

Sample Handling

Sample containers were labeled immediately prior to sample collection. Samples were kept cool with cold packs or ice until received by the laboratory. At the time of sampling, each sample was logged on an ARCO chain-of-custody record that accompanied the sample to the laboratory. Samples that required overnight storage prior to shipping to the laboratory were kept cool (4° C) in a refrigerator.

Samples were transferred from Cambria to an ARCO-approved laboratory by courier or taken directly to the laboratory by the environmental sampler. Sample shipments from Cambria to laboratories performing the selected analyses routinely occurred within 24 hours of sample collection.

Sample Documentation

The following procedures were used during sampling and analysis to provide chain-of-custody control during sample handling from collection through storage. Sample documentation included the use of the following:

- Water sample field data sheets to document sampling activities in the field
- Labels to identify individual samples
- Chain-of-custody record sheets for documenting possession and transfer of samples
- Laboratory analysis request sheets for documenting analyses to be performed

Field Logbook

In the field, the sampler recorded the following information on the water sample field data sheet (see Figure A-2) for each sample collected:

- Project number
- Client's name
- Location
- Name of sampler
- Date and time
- Well accessibility and integrity
- Pertinent well data (e.g., casing diameter, depth to water, well depth)
- Calculated and actual purge volumes
- Purging equipment used
- Sampling equipment used
- Appearance of each sample (e.g., color, turbidity, sediment)
- Results of field analyses (temperature, pH, specific conductance)
- General comments

The water sample field data sheet was signed by the sampler and reviewed by the sampling coordinator.

Labels

Sample labels contained the following information:

- Project number
- Sample number (i.e., well designation)
- Sample depth
- Sampler's initials
- Date and time of collection
- Type of preservation used (if any)

Sampling and Analysis Chain-of-Custody Record

The ARCO chain-of-custody record initiated at the time of sampling contained, at a minimum, the sample designation (including the depth at which the sample was collected), sample type, analytical request, date of sampling, and the name of the sampler. The record sheet was signed, timed, and dated by the sampler when transferring the samples. The number of custodians in the chain of possession was minimized. A copy of the ARCO chain-of-custody record was returned to Cambria with the analytical results.

Groundwater Sampling and Analysis Request Form

A groundwater sampling and analysis request form (see Figure A-3) was used to communicate to the environmental sampler the requirements of the monitoring event. At a minimum, the groundwater sampling and analysis request form included the following information:

- Date scheduled
- Site-specific instructions
- Specific analytical parameters
- Well number
- Well specifications (expected total depth, depth of water, and product thickness)

APPENDIX B

CERTIFIED ANALYTICAL REPORTS, AND CHAIN-OF-CUSTODY DOCUMENTATION

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

July 10, 2000

Darryk Ataide
Cambria Environmental - Oakland
1144 65th Street, Ste. B
Oakland, CA 94608

RE: ARCO 771, Livermore, CA/S006349

Dear Darryk Ataide

Enclosed are the results of analyses for sample(s) received by the laboratory on June 22, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kim Marchand

Kim Marchand
Client Services Representative

For

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Cambria Environmental - Oakland	Project:	ARCO 771, Livermore, CA	Sampled:	6/20/00
1144 65th Street, Ste. B	Project Number:	436-1607	Received:	6/22/00
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	7/10/00

ANALYTICAL REPORT FOR S006349

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW1	S006349-01	Water	6/20/00
MW2	S006349-02	Water	6/20/00
MW3	S006349-03	Water	6/20/00
MW5	S006349-04	Water	6/20/00
MW6	S006349-05	Water	6/20/00
Dup01	S006349-06	Water	6/20/00

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Cambria Environmental - Oakland	Project:	ARCO 771, Livermore, CA	Sampled: 6/20/00
1144 65th Street, Ste. B	Project Number:	436-1607	Received: 6/22/00
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 7/10/00

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW1			**S006349-01**				**Water**	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	**356**	ug/l	1
Benzene	"	"	"		0.500	**40.1**	"	
Toluene	"	"	"		0.500	**7.17**	"	
Ethylbenzene	"	"	"		0.500	**11.9**	"	
Xylenes (total)	"	"	"		0.500	**22.7**	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*111*	%	
MW2			**S006349-02**				**Water**	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	**226**	ug/l	1
Benzene	"	"	"		0.500	**2.20**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	**4.83**	"	
Xylenes (total)	"	"	"		0.500	**7.88**	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*106*	%	
MW3			**S006349-03**				**Water**	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*107*	%	
MW5			**S006349-04**				**Water**	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	**60.8**	ug/l	1
Benzene	"	"	"		0.500	**4.84**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	**1.90**	"	
Xylenes (total)	"	"	"		0.500	**1.59**	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*105*	%	
MW6			**S006349-05**				**Water**	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	**195**	ug/l	1
Benzene	"	"	"		0.500	**1.83**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	**0.528**	"	
Xylenes (total)	"	"	"		0.500	ND	"	

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Cambria Environmental - Oakland	Project:	ARCO 771, Livermore, CA	Sampled:	6/20/00	
1144 65th Street, Ste. B	Project Number:	436-1607	Received:	6/22/00	
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	7/10/00	

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
MW6 (continued)			S006349-05				Water	
Methyl tert-butyl ether	0070059	7/3/00	7/3/00		2.50	ND	ug/l	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*73.3*	%	
Dup01			S006349-06				Water	
Purgeable Hydrocarbons	0070059	7/3/00	7/3/00		50.0	**67.4**	ug/l	1
Benzene	"	"	"		0.500	**3.88**	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	**1.78**	"	
Xylenes (total)	"	"	"		0.500	**1.48**	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	*60.0-140*		*102*	%	

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Cambria Environmental - Oakland	Project:	ARCO 771, Livermore, CA	Sampled: 6/20/00
1144 65th Street, Ste. B	Project Number:	436-1607	Received: 6/22/00
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported: 7/10/00

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - Sacramento

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit / Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0070059	**Date Prepared: 7/3/00**					**Extraction Method: EPA 5030B (MeOH)**				
Blank	**0070059-BLK1**									
Purgeable Hydrocarbons	7/3/00			**ND**	ug/l	**50.0**				
Benzene	"			**ND**	"	**0.500**				
Toluene	"			**ND**	"	**0.500**				
Ethylbenzene	"			**ND**	"	**0.500**				
Xylenes (total)	"			**ND**	"	**0.500**				
Methyl tert-butyl ether	"			**ND**	"	**2.50**				
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.3*	"	*60.0-140*	*113*			
LCS	**0070059-BS1**									
Benzene	7/3/00	10.0		10.6	ug/l	70.0-130	106			
Toluene	"	10.0		10.5	"	70.0-130	105			
Ethylbenzene	"	10.0		11.0	"	70.0-130	110			
Xylenes (total)	"	30.0		32.5	"	70.0-130	108			
Methyl tert-butyl ether	"	10.0		12.6	"	70.0-130	126			
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*11.1*	"	*60.0-140*	*111*			
Matrix Spike	**0070059-MS1**		**S006349-01**							
Benzene	7/3/00	10.0	40.1	46.0	ug/l	60.0-140	**59.0**			2
Toluene	"	10.0	7.17	16.7	"	60.0-140	**95.3**			
Ethylbenzene	"	10.0	11.9	20.9	"	60.0-140	**90.0**			
Xylenes (total)	"	30.0	22.7	50.7	"	60.0-140	**93.3**			
Methyl tert-butyl ether	"	10.0	ND	25.0	"	60.0-140	**250**			2
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.0*	"	*60.0-140*	*100*			
Matrix Spike Dup	**0070059-MSD1**		**S006349-01**							
Benzene	7/3/00	10.0	40.1	49.0	ug/l	60.0-140	**89.0**	25.0	**40.5**	2
Toluene	"	10.0	7.17	17.6	"	60.0-140	**104**	25.0	**8.73**	
Ethylbenzene	"	10.0	11.9	22.2	"	60.0-140	**103**	25.0	**13.5**	
Xylenes (total)	"	30.0	22.7	53.6	"	60.0-140	**103**	25.0	**9.88**	
Methyl tert-butyl ether	"	10.0	ND	31.5	"	60.0-140	**315**	25.0	**23.0**	2
Surrogate: a,a,a-Trifluorotoluene	"	*10.0*		*10.4*	"	*60.0-140*	*104*			

Sequoia Analytical

819 Striker Avenue, Suite 8
Sacramento, CA 95834
(916) 921-9600
FAX (916) 921-0100
www.sequoialabs.com

Cambria Environmental - Oakland	Project:	ARCO 771, Livermore, CA	Sampled:	6/20/00
1144 65th Street, Ste. B	Project Number:	436-1607	Received:	6/22/00
Oakland, CA 94608	Project Manager:	Darryk Ataide	Reported:	7/10/00

Notes and Definitions

#	Note
1	Chromatogram Pattern: Weathered Gasoline C6-C12
2	The RPD and/or spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. 260400

Chain of Custody

ARCO Facility no. 771	City (Facility) LIVERMORE	Project manager (Consultant) DARRYL ATAIDE	Laboratory name SEQUOIA
ARCO engineer Paul Supple RAI 8	Telephone no. (ARCO) 925 299 8891	Telephone no. (Consultant) 510 420 3339	Fax no. (Consultant) 510 420 9170
Consultant name CAMBRIA ENV. TECH	Address (Consultant) 1144 65TH ST. Suite B, OAKLAND		Contract number 436-1607

Method of shipment: COURIER

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH/MTBE EPA M602/8020/8015/8260	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 ☐		
MW1		3		X			X	6-20	1310		X					5006			3499		-01	
MW2									1515												-02	
MW3									1610												-03	
MW5									1735												-04	
MW6									1643												-05	
Dup01									—												-06	

Special detection Limit/reporting:

Special QA/QC:

Remarks: *Run g BTEX/MTBE by 8015M/8020 as per Darryl 6/26/00 @ 1605

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:	
Relinquished by sampler: [signature]	Date 6/22/00 Time 1325	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory: Monica Gregersen	Date 6/22/00 Time 1320

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

APPC-3292 (2-91)

APPENDIX C

FIELD DATA SHEETS

CAMBRIA

WELL DEPTH MEASUREMENTS

Well ID	Order	Time	Top of Screen	DTB	DTP	DTW	DO	Casing Dia	Comment
MW-1	11	1520	32'	40.6'		27.79	5.1	4"	
MW-2	9	1510	30'	37.9'		23.08	4.9	4"	
MW-3	8	1505	X	39.6'		26.03	2.3	4"	
MW-4	5	1450	26'	41.1'		26.38	0.4	4"	measured to notch 1.5" new casing added Need to adjust toc
MW-5	12	1525	31.5'	40.2'		27.37	5.3	4"	
MW-6	10	1515	X	43.3'		28.35	3.5	4"	
MW-7	6	1455	30'	39.7'		25.91	5.4	4"	
MW-8	4	1445	27.5'	42.5'		30.91	5.8	2"	Need new lock
MW-9	2	1435	29.5'	39.5'		23.55	6.2	2"	Need new lock
MW-10	1	1430	29'	37'		23.52	5.5	2"	Need new cap + lock
MW-11	3	1440	29'	39'		30.40	3.3	2"	Need new cap + lock 2"
RW-1	7	1500	25.5'	40.5'		28.31	1.9	6"	

Project Name: **ARCO_0771**

Project Number: **436-1607**

Measured By: MK

Date: 6-20-00

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 771**	Cambria Mgr: **Darryk Ataide**	Well ID: **MW-~~3~~ 1**
Project Number: **436 - 1607**	Date: 6-20-00	Well Yield:
Site Address: **899 Rincon Ave, Livermore**	Sampling Method: **Disposable bailer**	Well Diameter: **" pvc**
		Technician(s):
Initial Depth to Water: 27.79	Total Well Depth: 40.~~8~~	Water Column Height: 12.83
Volume/ft: .65	1 Casing Volume: 8.33	3 Casing Volumes: 25.01
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 1648	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
16:53	10	23.1	7.3	457	
	DRY AFTER		11.5 gal		
	WAITED FOR RECHARGE.				

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW~~3~~1	6-20-00	1710	3 **VOA**	**HCL**	**BTEX, TPHg, MTBE**	**8021B / 8240**

D:\TEMPLATE\FORMS\FIELD\WELLSAMP.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 771**	Cambria Mgr: **Darryk Ataide**	Well ID: **MW-2**
Project Number: **436 - 1607**	Date: 6-20-00	Well Yield:
Site Address: **899 Rincon Ave, Livermore**	Sampling Method: **Disposable bailer**	Well Diameter: 4 **" pvc**
		Technician(s): MK
Initial Depth to Water: 23.08	Total Well Depth: 37.9	Water Column Height: 14.82
Volume/ft: .65	1 Casing Volume: 9.63	3 Casing Volumes: 28.8
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?: YES	Total Gallons Purged: ± 15.5
Start Purge Time: 1529	Stop Purge Time: 1537	Total Time: 25

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
1534	10	26.4	7.9	570	
1536	14	26.3	7.9	568	
		DRY AT ± 15.5 GALLONS			
		WAITED FOR 80% RECHARGE.			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	6-20-99	1550	3 **VOA**	**HCL**	**BTEX, TPHg, MTBE**	**8021B / 8240**

D:\TEMPLATE\FORMS\FIELD\WELLSAMP.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 771**	Cambria Mgr: **Darryk Ataide**	Well ID: **MW-3**
Project Number: **436 - 1607**	Date: 6-20-00	~~Well Yield:~~
Site Address: **899 Rincon Ave, Livermore**	Sampling Method: **Disposable bailer**	Well Diameter: 4 " **pvc**
		Technician(s): MK
Initial Depth to Water: 26.03	Total Well Depth: 39.6	Water Column Height: 13.57
Volume/ft:	1 Casing Volume: 8.82	3 Casing Volumes: 26.46
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged: 27
Start Purge Time: 1556	Stop Purge Time: 1606	Total Time: 25

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
1601	10	23.8	6.8	447	
1603	14	23.6	6.8	452	
1604	16	23.4	6.8	445	
1605	18	23.3	6.8	444	
		PARAMETERS STABILIZED IN THE			
		aquafer, STOP PURGE.			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	6-20-00	1610	3 **VOA**	**HCL**	**BTEX, TPHg, MTBE**	**8021B / 8240**

D:\TEMPLATE\FORMS\FIELD\WELLSAMP.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 771**	Cambria Mgr: **Darryk Ataide**	Well ID: **MW-5**
Project Number: **436 - 1607**	Date:	Well Yield:
Site Address: **899 Rincon Ave, Livermore**	Sampling Method: **Disposable bailer**	Well Diameter: **" pvc**
		Technician(s):
Initial Depth to Water: 27.37	Total Well Depth: 40.2	Water Column Height: 12.83
Volume/ft: .65	1 Casing Volume: 8.33	3 Casing Volumes: 25.01
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 1716	Stop Purge Time:	Total Time:

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
1721	10	23.6	6.8	375	
1723	14	23.4	6.8	382	
1724	16	23.4	6.8	379	
1725	18	23.2	6.8	378	
	PARAMETERS STABILIZED, INTO AQUIFER				
	STOP PURGE				

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	6-20-00	1735	3 **VOA**	**HCL**	**BTEX, TPHg, MTBE**	**8021B / 8240**
Dup 01	6-20-00	—	"	"	"	"

D:\TEMPLATE\FORMS\FIELD\WELLSAMP.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: **ARCO 771**	Cambria Mgr: **Darryk Ataide**	Well ID: **MW-6**
Project Number: **436 - 1607**	Date: 6-20-00	Well Yield:
Site Address: **899 Rincon Ave, Livermore**	Sampling Method: **Disposable bailer**	Well Diameter: 4 "**pvc**
		Technician(s):
Initial Depth to Water: 28.35	Total Well Depth: 43.3	Water Column Height: 14.95
Volume/ft: .65	1 Casing Volume: 9.71	3 Casing Volumes: 29.15
Purge/No Purge:		
Purging Device: **Submersible Pump**	Did Well Dewater?: NO	Total Gallons Purged: ± 21
Start Purge Time: 1623	Stop Purge Time: 1634	Total Time: 25

1 Casing Volume = Water column height x Volume/ ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
1628	10	23.9	7.3	447	
1630	14	22.4	7.3	425	
1631	16	22.3	7.2	423	
1632	18	22.3	7.2	421	
1633	20	22.4	7.2	420	
		Readings Stabilized into Aquafer			
		Stop purge			

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	6-20-00	1643	3 # **VOA**	**HCL**	**BTEX, TPHg, MTBE**	**8021B / 8240**