

March 28, 2002

Barney Chan
Alameda Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

APR 02 2002

Re: **Site Status and Remediation System Performance Report
First Quarter 2002**

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #439-1807



Dear Mr. Chan:

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) is submitting the attached report which presents the site status for the first quarter 2002 at ARCO Service Station No. 2035, located at 1001 San Pablo Avenue, Albany, California. Operation and performance data for the soil vapor extraction (SVE) remediation system is also presented. The monitoring program complies with the Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

Please call if you have questions.

Sincerely,

Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Project Manager

Attachment: Site Status Report, First Quarter 2002
SVE Quarterly Operation and Performance, First Quarter 2002

Oakland, CA
San Ramon, CA
Sonoma, CA

Cc: Mr. Paul Supple, ARCO, PO Box 6549 Moraga, CA 94570
Barbara and James A. Lestrangle, Property Owner, 20 San Juan Court, St. Helena, CA 94574
Muriel & Emile Turpin, Trustees, 957 Arlington Ave, Berkeley, CA, 94707
Mr. Robert Cave, BAAQMD-Permit Division, 939 Ellis Street, San Francisco, California 94109

**Cambria
Environmental
Technology, Inc.**

1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
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C A M B R I A

**Site Status and Remediation System Performance
Report**

First Quarter 2002

**ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #439-1807**

APR 02 2002



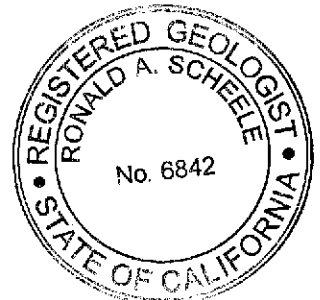
Prepared For:

Mr. Paul Supple
ARCO

March 28, 2002

Prepared By:

Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, California 94608



Written by:

Sara Dwight
Sara Dwight
Staff Environmental Scientist

Ron Scheele
Ron Scheele, RG
Senior Project Manager

ARCO QUARTERLY SITE STATUS REPORT

Station No.: 2035 Address: 1001 San Pablo Avenue, Albany, California
 ARCO Environmental Engineer Paul Supple
 Consulting Co./Contact Person: Cambria Environmental Technology, Inc./ Ron Scheele, RG
 Consultant Project No.: 439-1807
 Primary Agency/Regulatory ID No.: ACHCSA

WORK PERFORMED THIS QUARTER (FIRST - 2002):

1. Submitted semi-annual groundwater monitoring and remediation system performance report for fourth quarter 2001.
2. Operated soil vapor extraction (SVE) and air sparge (AS) remediation systems.
3. Connected well S-5 to SVE system via underground piping.

WORK PROPOSED FOR NEXT QUARTER (SECOND - 2002):

1. Prepare and submit first quarter 2002 site status and remediation system performance report.
2. Perform semi-annual quarter groundwater monitoring and sampling.
3. Repair blower and operate SVE and air sparge systems.

MONITORING:

Current Phase of Project:	<u>Remediation</u>
Frequency of Sampling:	<u>Annual (2nd quarter): MW-5 Semi-annual (2nd/4th quarter): MW-1 through MW-4, MW-6, RW-1, and S-5</u>
Frequency of Monitoring:	<u>Semi-Annual (groundwater), Monthly (SVE)</u>
Is Free Product (FP) Present On-Site:	<u>No</u>
Cumulative FP Recovered to Date	<u>27.9 gallons, Wells AS-1, AS-2, RW-1, VW-1, VW-2, and VW-7</u>
FP Recovered This Quarter :	<u>None</u>
Bulk Soil Removed to Date :	<u>605 cubic yards of TPH impacted soil</u>
Water Wells or Surface Waters, Within 2000 ft., impacted by site:	<u>None</u>
Current Remediation Techniques:	<u>SVE and Air Sparging (RW-1)</u>
Average Depth to Groundwater:	<u>10.53 feet (4th Quarter 2001)</u>
Groundwater Flow Direction and Gradient:	<u>0.013 ft/ft toward Southwest (4th Quarter 2001)</u>



SVE QUARTERLY OPERATION AND PERFORMANCE

Equipment Inventory:	Therm Tech Model VAC-10 Thermal/Catalytic Oxidizer
Operating Mode:	Catalytic Oxidation
BAAQMD Permit #:	8694
TPH Conc. End of Period (lab):	23 ppmv (2/5/02)
Benzene Conc. End of Period (lab):	0.16ppmv (2/5/02)
SVE Flowrate End of Period:	169 scfm
Total HC Destroyed This Period:	94.7 pounds
Total HC Destroyed to Date:	3,967 pounds
Utility Usage	
Electric (kWh):	96,709
Gas (Therms):	6,716
Operating Hours This Period (SVE):	549 Hours
Operating Hours to Date (SVE):	23,063 Hours
Percent Operational (SVE):	57%
Unit Maintenance:	Routine twice-monthly maintenance
Number of Auto Shut Downs:	2
Destruction Efficiency Permit Requirement:	98.5% (POC >2,000 ppmv); 97% (POC >200 ppmv); 90% (POC <200 ppmv)
Percent TPH Conversion:	Not calculated
Average Stack Temperature:	728 °F
Average SVE Source Flow:	170 scfm
Average SVE Process Flow:	170 scfm
Average Source Vacuum:	64.5 inches of Water

DISCUSSION:

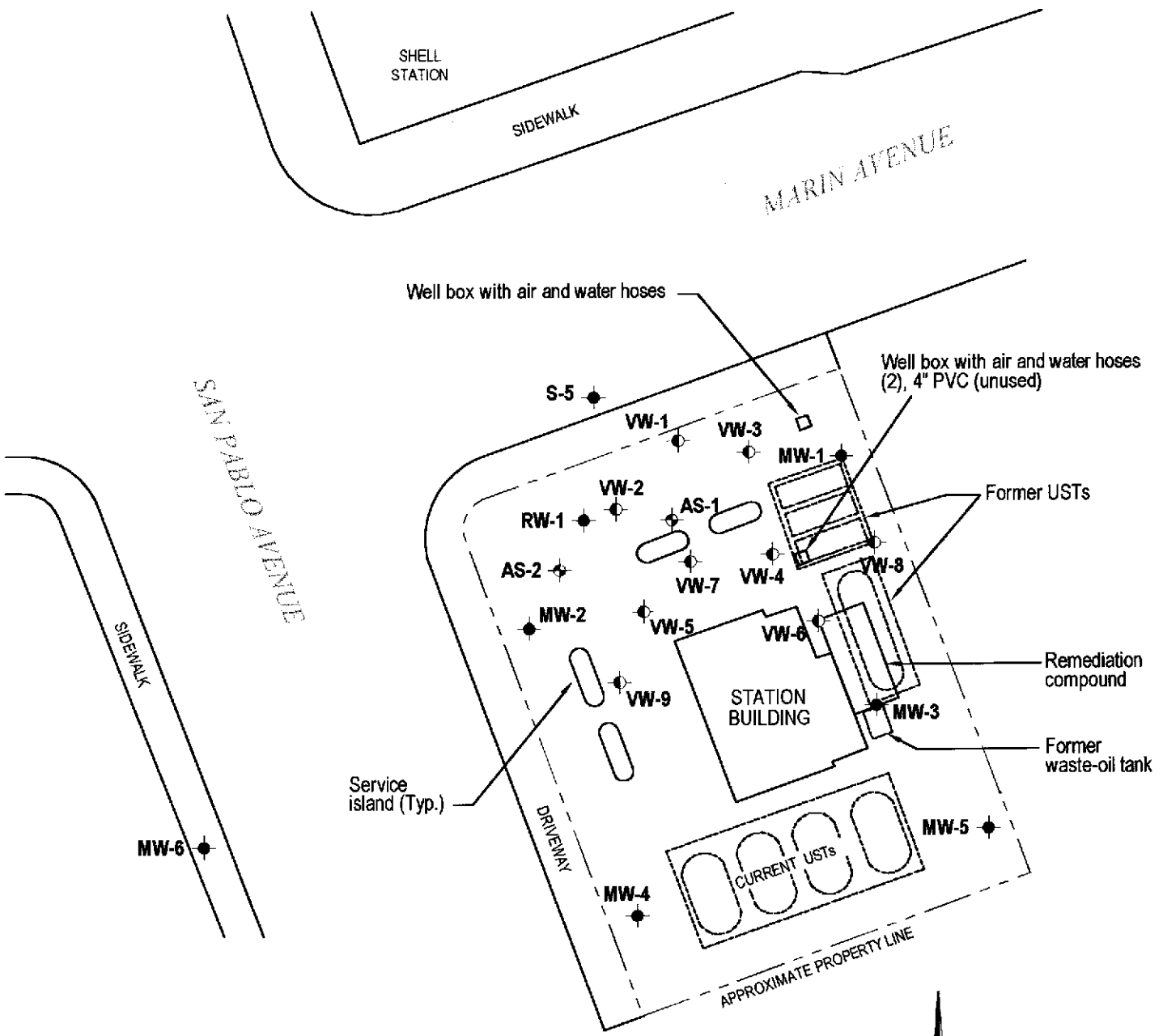
No groundwater sampling was scheduled during the first quarter 2002. The next scheduled sampling event will be performed during the second quarter 2002.

The SVE and AS system operated intermittently during the first quarter 2002 due to electrical and noise problems relating to the blower. On March 4, 2002, the blower was removed and brought in for repair. As per Bay Area Air Quality Management (BAAQMD) permit requirements, the catalytic oxidizer was operated at a temperature greater than 600 degrees Fahrenheit and the temperature was continuously measured using a chart recorder. All system operations parameters were recorded in specialized field forms for future system optimization and agency inspection. System influent and effluent vapor samples were collected on January 9 and February 5, 2002 and submitted for analysis.

In January 2002, monitoring well S-5 was connected to the SVE system via two-inch PVC underground piping from S-5 to VW-2.

ATTACHMENTS:

- Figure 1 - Site Plan
- Table 1 - SVE System Operational Uptime Information
- Table 2 - SVE System Flow Rates and Analytical Results of Air Samples
- Table 3 - SVE System Extraction Rates, Emission Rates, Destruction Efficiency, and Mass Removed
- Appendix A - Certified Analytical Reports and Chain-of Custody Documentation



EXPLANATION	
MW-1	Monitoring well location
VW-1	Vapor extraction well location
AS-1	Air sparge well location

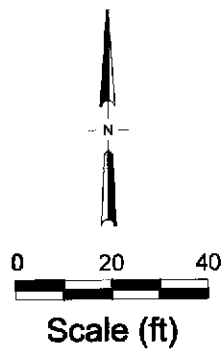


FIGURE 1

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ARCO Service Station 2035
 1001 San Pablo Avenue
 Albany, California



C A M B R I A

Site Plan

**Table 1
Soil Vapor Extraction System (1997-Present)
Operational Uptime Information**

**ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California**

Date	Period Operation					Cumulative Operation				
	Meter (hours)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total Operating Time (hours)
11/01/97						1425	335	1090	24%	6873.20
12/01/97	11484	30	14	16	47%	1455	349	1106	24%	7211.10
01/27/98	11484	57	0	57	0%	1512	349	1163	23%	7211.10
08/12/98	11484	197	0	197	0%	1709	349	1360	20%	7211.10
09/02/98	11485	21	0	21	0%	1730	349	1381	20%	7211.33
10/19/98	12280	47	33	14	70%	1777	382	1395	22%	8006.35
11/10/98	12809	22	22	0	100%	1799	404	1395	22%	8536.00
01/22/99	12809	73	0	73	0%	1872	404	1468	22%	8536.00
02/11/99	12810	20	0	20	0%	1892	404	1488	21%	8536.17
04/01/99	12810	49	0	49	0%	1941	404	1537	21%	8536.28
06/10/99	12810	70	0	70	0%	2011	404	1607	20%	8536.67
06/24/99	13146	14	14	0	100%	2025	418	1607	21%	8872.83
08/17/99	13146	54	0	54	0%	2079	418	1661	20%	8872.83
09/09/99	13147	23	0	23	0%	2102	418	1684	20%	8873.40
09/21/99	13435	12	12	0	100%	2114	430	1684	20%	9162.06
10/06/99	13450	15	1	14	4%	2129	431	1698	20%	9176.92
10/20/99	13475	14	1	13	7%	2143	432	1711	20%	9201.52
11/03/99	13812	14	14	0	100%	2157	446	1711	21%	9538.34
11/17/99	14148	14	14	0	100%	2171	460	1711	21%	9874.70
12/01/99	14391	14	10	4	72%	2185	470	1715	22%	10117.75
12/16/99	14751	15	15	0	100%	2200	485	1715	22%	10478.02
01/05/00	14751	20	0	20	0%	2220	485	1735	22%	10478.05
01/19/00	15087	14	14	0	100%	2234	499	1735	22%	10813.74
02/21/00	15087	33	0	33	0%	2267	499	1768	22%	10813.79
03/01/00	15303	9	9	0	100%	2276	508	1768	22%	11030.07

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03/23/00	15831	22	22	0	100%	2298	530	1768	23%	11557.23
10/17/00	15832	208	0	208	0%	2506	530	1976	21%	11558.53
10/24/00	15998	7	7	0	99%	2513	537	1976	21%	11724.74
11/13/00	16319	20	13	7	67%	2533	551	1982	22%	12045.33
11/28/00	16319	15	0	15	0%	2548	551	1997	22%	12045.52
12/20/00	16319	22	0	22	0%	2570	551	2019	21%	12045.52
01/17/01	16324	28	0	28	1%	2598	551	2047	21%	12050.49
02/14/01	16346	28	1	27	3%	2626	552	2074	21%	12072.45
02/26/01	16458	12	5	7	39%	2638	556	2082	21%	12184.69
03/13/01	16466	15	0	15	2%	2653	557	2096	21%	12192.59
03/30/01	16872	17	17	0	99%	2670	574	2096	21%	12598.53
04/19/01	17029	20	7	13	33%	2690	580	2110	22%	12755.92
04/30/01	17292	11	11	0	99%	2701	591	2110	22%	13018.45
05/14/01	17601	14	13	1	92%	2715	604	2111	22%	13327.26
05/22/01	17793	8	8	0	100%	2723	612	2111	22%	13519.64
06/05/01	18126	14	14	0	99%	2737	626	2111	23%	13852.16
06/25/01	18305	20	7	13	37%	2757	633	2124	23%	14031.64
07/06/01	18569	11	11	0	100%	2768	644	2124	23%	14295.84
07/18/01	18856	12	12	0	100%	2780	656	2124	24%	14582.70
07/31/01	19166	13	13	0	99%	2793	669	2124	24%	14892.60
08/09/01	19388	9	9	0	103%	2802	643	2159	23%	15114.69
08/23/01	19720	14	14	0	99%	2816	656	2160	23%	15446.56
09/05/01	20029	13	13	0	99%	2829	655	2174	23%	15755.98
09/17/01	20321	12	12	0	101%	2841	668	2173	23%	16047.51
09/24/01	20420	7	4	3	59%	2848	672	2176	24%	16146.19

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	Meter (hours)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total Operating Time (hours)
10/01/01	20425	7	0	7	3%	2855	672	2183	24%	16151.50
10/09/01	20621	8	8	0	100%	2863	680	2183	24%	16347.39
10/15/01	20762	6	6	0	100%	2869	686	2183	24%	16488.76
11/07/01	21320	23	23	0	100%	2892	709	2183	25%	17046.89
11/21/01	21650	14	14	0	100%	2906	723	2183	25%	17376.59
12/05/01	21986	14	14	0	100%	2920	737	2183	25%	17712.60
12/27/01	22514	22	22	0	100%	2942	759	2183	26%	18240.53
01/09/02	22516	13	0	13	1%	2955	759	2196	26%	18242.14
01/21/02	22803	12	12	0	100%	2967	771	2196	26%	18529.64
02/05/02	23063	15	11	4	72%	2982	782	2200	26%	18789.39

Table 2
Soil Vapor Extraction System
Flow Rates and Analytical Results of Air Samples (1997 - present)

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Sample Location	Vacuum (in. H2O)	Velocity		Flowrate ^{1,2} (scfm)	TPHg	Hydrocarbon Concentrations (ppmv)				
			/Actual Flow (fpm/acfm)				Benzene	Toluene	Ethylbenzene	Xylene	MTBE
12/01/97	Influent				221	160	0.6	<0.1	1.6	2.5	
	Effluent					8	<0.1	0.1	<0.1	0.3	
01/27/98	Influent	NA	NA		NA	NA	NA	NA	NA	NA	
	Effluent										
08/12/98	Influent	NA	NA		NA	NA	NA	NA	NA	NA	
	Effluent										
09/02/98	Influent	30.0	600		27	610	<1	<1	2	3	
	Effluent		1050		92	9	<0.1	<0.1	0.1	<0.2	
10/19/98	Influent	20.0	500		23	64	<0.1	0.7	<0.1	<0.2	
	Effluent		1200		106	<5	<0.1	<0.1	<0.1	<0.2	
11/10/98	Influent	20.0	500		23	8	<0.1	0.1	<0.1	<0.2	
	Effluent		1200		106	<5	<0.1	<0.1	<0.1	<0.2	
06/10/99	Influent	35.0	1500		67	100	0.5	3	<0.1	0.9	<1
	Effluent		975		75	<5	<0.1	<0.1	<0.1	<0.2	<1
09/09/99	Influent	15.4	1900		90	<49	0.7	1.1	<0.1	<0.2	33
	Effluent		1200		92	<5	<0.1	<0.1	<0.1	<0.2	<0.8
10/06/99	Influent	16.0	1825		86	240	1	2.9	<0.1	0.7	67
	Effluent		900		69	9	<0.1	0.1	0.1	<0.2	<0.8
12/01/99	Influent	11.0	1900		91	210	0.7	0.8	<0.2	0.2	61
	Effluent		1500		115	<5	<0.1	<0.1	<0.1	<0.2	1.4
01/05/00	Influent	9.8	800		38	90	0.4	0.7	0.1	<0.2	33
	Effluent		1450		111	<5	<0.1	<0.1	<0.1	<0.2	<0.8
03/01/00	Influent	9.8	2000		96	54	1.3	4.8	1.1	7.2	19
	Effluent		1500		115	<5	<0.1	<0.1	<0.1	<0.2	<0.8
10/17/00	Influent	10.0	--		27	77	1.4	1.8	0.33	1.4	20
	Effluent		--		103	6.0	0.044	0.16	0.055	0.38	0.59

Table 2
Soil Vapor Extraction System
Flow Rates and Analytical Results of Air Samples (1997 - present)

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Sample Location	Vacuum (in. H2O)	Velocity		Flowrate ^{1,2} (scfm)	TPHg	Hydrocarbon Concentrations (ppmv)				
			/Actual Flow (fpm/acfm)				Benzene	Toluene	Ethylbenzene	Xylene	MTBE
02/26/01	Influent	60.0	180	153	153	50.4	0.850	3.84	0.390	2.02	11.6
	Effluent		180	153	153	<2.84	<0.0314	0.0769	<0.0230	0.754	0.132
04/19/01	Influent	45.0	124	110	110	180	2.0	2.6	0.25	2.0	<1.5
	Effluent		124	110	110	<10.0	<0.15	0.24	<0.15	0.79	<1.5
05/14/01	Influent	40.0	76	69	69	41.0	0.511	0.299	0.0357	0.293	0.492
	Effluent		76	69	69	<2.84	<0.0314	<0.0266	<0.0230	<0.0230	<0.111
06/05/01	Influent	45.0	108	96	96	6.6	<0.31	0.41	0.072	0.32	2.2
	Effluent		108	96	96	<2.40	<0.31	<0.027	<0.023	0.068	<0.14
08/09/01	Influent	40.0	98.5	89	89	4.3	0.034	0.19	<0.024	0.15	0.20
	Effluent		98.5	89	89	<2.8	<0.032	0.026	<0.024	0.13	<0.11
09/05/01	Influent	50.0	113	99	99	5.2	0.038	0.39	0.025	0.14	0.83
	Effluent		113	99	99	<2.8	<0.032	<0.026	<0.024	0.027	<0.11
10/01/01	Influent	40.0	218	197	197	31	0.23	0.56	0.077	0.30	2.1
	Effluent		218	197	197	<2.8	<0.032	0.071	<0.024	0.036	<0.11
11/07/01	Influent	48.0	221	195	195	6.4	<0.032	0.33	0.029	0.14	1.4
	Effluent		221	195	195	<2.8	<0.032	<0.026	<0.024	<0.024	<0.11
12/05/01	Influent	61.0	200	170	170	7.5	0.16	0.52	<0.024	0.11	
	Effluent		200	170	170	<2.8	<0.032	<0.026	<0.024	<0.024	
01/09/02	Influent	65.0	203	171	171	45	0.52	2.4	0.22	1.3	5.6
	Effluent		203	171	171	<2.8	<0.032	0.049	<0.024	0.052	<0.11
02/05/02	Influent	64.0	200	169	169	23	0.16	1.4	0.15	0.84	4.8
	Effluent		200	169	169	<2.8	<0.032	0.076	<0.024	0.059	<0.11

¹ Influent Flow Rate previous to 10/17/00, cfm = (Velocity, fpm)(Influent Pipe Area, sq. ft.)/(406.8 in.H2O - Vacuum, in.H2O) / (406.8 in.H2O)
where Influent Pipe Diameter = 3"

Effluent Flow Rate, cfm = (Velocity, fpm)(Effluent Pipe Area, sq.ft.)/[(460° R + 77° F) / (460° R + Vapor Temp F)]
where Effluent (after blower) Pipe Diameter = 4"

² Influent Flow Rate 10/17/00 to present, cfm = (Actual flow, acfm)(406.8 in.H2O - Vacuum, in.H2O) / (406.8 in.H2O)

Effluent Flow Rate 10/17/00 to present, scfm = (Actual flow, acfm)/[(460° R + 77° F) / (460° R + Vapor Temp F)]
when dilution valve is open. If dilution valve is closed, influent flow = effluent flow

Table 3
Soil Vapor Extraction System
Extraction Rates, Emission Rates, Destruction Efficiency, and Mass Removed
(1997 - present)

ARCO Service Station No. 2035
1001 San Pablo Avenue, Albany, California

Date	Extraction Rate from Wellfield ¹		Emission Rate to Atmosphere ²		Destruction Efficiency ³		Period Removal ⁴		Cumulative Removal	
	TPHg (lbs/day)	Benzene (lbs/day)	TPHg (lbs/day)	Benzene (lbs/day)	TPHg (%)	Benzene (%)	TPHg (lbs)	Benzene (lbs)	TPHg (lbs)	Benzene (lbs)
12/01/97	13.0	0.0381	0.651	<0.0064	95%	NC	183	0.54	3023	250.5
09/02/98	6.11	0.0000	0.306	<0.0027	95%	NC	0.06	0.00	3023	250.5
10/19/98	0.55	0.0000	<0.196	<0.0031	NC	NC	18.2	0.00	3041	250.5
11/10/98	0.07	0.0000	<0.196	<0.0031	NC	NC	1.51	0.00	3042	250.5
06/10/99	2.47	0.0097	<0.138	<0.0021	NC	NC	0.07	0.00	3042	250.5
09/09/99	1.61	0.0180	<0.169	<0.0026	NC	NC	22.7	0.25	3065	250.8
10/06/99	7.59	0.0247	0.229	<0.0020	97%	NC	95.9	0.31	3161	251.1
12/01/99	7.00	0.0182	<0.212	<0.0033	NC	NC	274	0.71	3435	251.8
01/05/00	1.27	0.0044	<0.205	<0.0032	NC	NC	19.0	0.07	3454	251.9
03/01/00	1.90	0.0357	<0.212	<0.0033	NC	NC	43.7	0.82	3498	252.7
10/17/00	0.77	0.0110	<0.226	<0.0013	71%	88%	17.0	0.24	3515	252.9
02/26/01	2.84	0.0374	<0.160	<0.0014	NC	NC	74.1	0.98	3589	253.9
04/19/01	7.29	0.0633	<0.405	<0.0047	NC	NC	174	1.51	3763	255.4
05/14/01	1.03	0.0100	<0.0715	<0.0006	NC	NC	24.6	0.24	3787	255.7
06/25/01	0.23	<0.0085	<0.0847	<0.0085	NC	NC	6.84	0.25	3794	255.9
08/09/01	0.14	0.0009	<0.0914	<0.0008	NC	NC	6.33	0.04	3801	256.0
09/05/01	0.19	0.0011	<0.1020	<0.0009	NC	NC	5.06	0.03	3806	256.0
10/01/01	2.24	0.0130	<0.2022	<0.0018	NC	NC	36.9	0.21	3843	256.2
11/07/01	0.46	0.0018	<0.2005	<0.0018	NC	NC	17.1	0.07	3860	256.3
12/05/01	0.47	0.0078	<0.1749	<0.0016	NC	NC	13.0	0.22	3873	256.5
01/09/02	2.82	0.0255	<0.1755	<0.0016	NC	NC	62.2	0.56	3935	257.0
02/05/02	1.42	0.0077	<0.1734	<0.0015	NC	NC	32.5	0.18	3967	257.2

¹ Extraction Rate, lbs/day = (Influent Flow, cfm)(Influent conc., ppmv)(g/mole)(60 min/hr)(24 hr/day)(28.3 L/cf) / (10⁶)(24.45 moles/L)(453.6 g/lb)
where TPHg = 100 g/mole and Benzene = 78.1 g/mole; Influent conc. = 0, if reported as non-detect

² Emission Rate, lbs/day = (Effluent Flow, cfm)(Effluent conc., ppmv)(g/mole)(60 min/hr)(24 hr/day)(28.3 L/cf) / (10⁶)(24.45 moles/L)(453.6 g/lb)
where TPHg = 100 g/mole and Benzene = 78.1 g/mole; Effluent conc. = Method Reporting Limit, if reported as non-detect

³ Destruction Efficiency, % = (Extraction Rate - Emission Rate)(100) / (Extraction Rate); NC = Not Calculated due to non-detection.

⁴ Period Removal, lbs = (Extraction Rate)(Uptime)

NC = Not Calculated

APPENDIX A

**CERTIFIED ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY DOCUMENTATION**



**Sequoia
Analytical**

1455 McDowell Blvd, North Ste D
Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

16 January, 2002

Ron Scheele
Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville, CA 94608

RE: ARCO
Sequoia Work Order: P201160

Enclosed are the results of analyses for samples received by the laboratory on 01/10/02 14:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angelee Cari
Client Services Representative

CA ELAP Certificate #2374



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

Project: ARCO
Project Number: ARCO 2035/Albany, CA.
Project Manager: Ron Scheele

Reported:
01/16/02 12:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
INF	P201160-01	Air	01/09/02 16:00	01/10/02 14:50
EFF	P201160-02	Air	01/09/02 16:00	01/10/02 14:50

Sequoia Analytical - Petaluma

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Angelee Cari, Client Services Representative

Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

 Project: ARCO
 Project Number: ARCO 2035/Albany, CA.
 Project Manager: Ron Scheele

Reported:
 01/16/02 12:46

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
INF (P201160-01) Air Sampled: 01/09/02 16:00 Received: 01/10/02 14:50									
Gasoline (C6-C12)	45	2.8	ppmv	0.2	2010130	01/11/02	01/11/02	EPA 8015M/8020M	
Benzene	0.52	0.032	"	"	"	"	"	"	
Toluene	2.4	0.026	"	"	"	"	"	"	
Ethylbenzene	0.22	0.024	"	"	"	"	"	"	
Xylenes (total)	1.3	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	5.6	0.11	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		97 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	65-135		"	"	"	"	
EFF (P201160-02) Air Sampled: 01/09/02 16:00 Received: 01/10/02 14:50 A-01									
Gasoline (C6-C12)	ND	2.8	ppmv	0.2	2010130	01/11/02	01/11/02	EPA 8015M/8020M	
Benzene	ND	0.032	"	"	"	"	"	"	
Toluene	0.049	0.026	"	"	"	"	"	"	
Ethylbenzene	ND	0.024	"	"	"	"	"	"	
Xylenes (total)	0.052	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.11	"	"	"	"	"	"	
Surrogate: <i>a,a,a</i> -Trifluorotoluene		100 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	65-135		"	"	"	"	

Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

 Project: ARCO
 Project Number: ARCO 2035/Albany, CA.
 Project Manager: Ron Scheele

Reported:
 01/16/02 12:46

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2010130 - EPA 5030, waters
Blank (2010130-BLK1)

Prepared & Analyzed: 01/08/02

Gasoline (C6-C12)	ND	14	ppmv							
Benzene	ND	0.16	"							
Toluene	ND	0.13	"							
Ethylbenzene	ND	0.12	"							
Xylenes (total)	ND	0.12	"							
Methyl tert-butyl ether	ND	0.56	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	51.4		"	50.3		102	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	45.2		"	41.9		108	65-135			

Blank (2010130-BLK3)

Prepared & Analyzed: 01/11/02

Gasoline (C6-C12)	ND	14	ppmv							
Benzene	ND	0.16	"							
Toluene	ND	0.13	"							
Ethylbenzene	ND	0.12	"							
Xylenes (total)	ND	0.12	"							
Methyl tert-butyl ether	ND	0.56	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	50.2		"	50.3		100	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	43.8		"	41.9		105	65-135			

LCS (2010130-BS1)

Prepared & Analyzed: 01/08/02

Gasoline (C6-C12)	783	14	ppmv	780		100	65-135			
Benzene	10.8	0.16	"	10.3		105	65-135			
Toluene	54.3	0.13	"	52.8		103	65-135			
Ethylbenzene	11.9	0.12	"	10.6		112	65-135			
Xylenes (total)	54.7	0.12	"	53.2		103	65-135			
Methyl tert-butyl ether	17.3	0.56	"	14.6		118	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	57.2		"	50.3		114	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	48.1		"	41.9		115	65-135			

Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

Project: ARCO
Project Number: ARCO 2035/Albany, CA.
Project Manager: Ron Scheele

Reported:
01/16/02 12:46

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control
Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2010130 - EPA 5030, waters
LCS (2010130-BS3)

Prepared & Analyzed: 01/11/02

Gasoline (C6-C12)	770	14	ppmv	780		99	65-135			
Benzene	11.2	0.16	"	10.7		105	65-135			
Toluene	52.8	0.13	"	54.9		96	65-135			
Ethylbenzene	11.7	0.12	"	11.2		104	65-135			
Xylenes (total)	54.7	0.12	"	56.4		97	65-135			
Methyl tert-butyl ether	18.2	0.56	"	15.1		121	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	55.8		"	50.3		111	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	46.9		"	41.9		112	65-135			

Matrix Spike (2010130-MS1)

Source: P201053-01

Prepared & Analyzed: 01/08/02

Gasoline (C6-C12)	764	14	ppmv	780	ND	98	65-135			
Benzene	10.9	0.16	"	10.3	ND	106	65-135			
Toluene	49.5	0.13	"	52.8	ND	94	65-135			
Ethylbenzene	11.6	0.12	"	10.6	ND	109	65-135			
Xylenes (total)	51.5	0.12	"	53.2	ND	97	65-135			
Methyl tert-butyl ether	52.0	0.56	"	14.6	35	116	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	52.9		"	50.3		105	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	47.7		"	41.9		114	65-135			

Matrix Spike Dup (2010130-MSD1)

Source: P201053-01

Prepared & Analyzed: 01/08/02

Gasoline (C6-C12)	774	14	ppmv	780	ND	99	65-135	1	20	
Benzene	11.3	0.16	"	10.3	ND	110	65-135	4	20	
Toluene	51.3	0.13	"	52.8	ND	97	65-135	4	20	
Ethylbenzene	11.5	0.12	"	10.6	ND	108	65-135	0.9	20	
Xylenes (total)	53.6	0.12	"	53.2	ND	101	65-135	4	20	
Methyl tert-butyl ether	50.9	0.56	"	14.6	35	109	65-135	2	20	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	52.6		"	50.3		105	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	47.4		"	41.9		113	65-135			



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

Project: ARCO
Project Number: ARCO 2035/Albany, CA.
Project Manager: Ron Scheele

Reported:
01/16/02 12:46

Notes and Definitions

A-01 Sample was reanalyzed with similar results.
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
RPD Relative Percent Difference

ARCO Products Company
Division of Atlantic-Richfield Company

Task Order No. **WA # 27116.00**

Chain of Custody

ARCO Facility no. **2035** City (Facility) **ALBANY** Project manager (Consultant) **RON SCHEELE**
 ARCO engineer **PAUL SUPPLE** Telephone no. (ARCO) **925 299 8891** Telephone no. (Consultant) **510 450-1983** Fax no. (Consultant) **510 450-8295**
 Consultant name **CAMBRIA** Address (Consultant) **6262 Hollis St EMERYVILLE CA 94608**

Laboratory name **SEQUOIA**
Contract number

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA 1631/8020/8015	TPH Methanol 8015 Gas	Oil and Grease 4131 4132	TPH EPA 418.1/SM/MS20E	EPA 601.6/10	EPA 624/8240	EPA 825/8270	TC/TP Metals: VOA/VOA/VOA/VOA	CAMEL/MS EPA 800/700 TLCC 5710	Lead Org/DHS Lead EPA 7420/7421	
			Soil	Water	Other	Ice	Acid														
INF		1			AIR		1/9/02	4pm		X	X										
EFF		1			AIR		1/9/02	4pm		X	X										

Method of shipment **COURIER**

Special detection Limit/reporting **REPORT in ppmv 10ppmv limit**

Special QA/QC

Remarks

Lab number **22**

Turnaround time
Priority Rush 1 Business Day

Condition of sample: Relinquished by **Paul Supple** Date **1/9/02** Time **5P** Temperature received: **Sealed Location**
 Relinquished by **[Signature]** Date **1/10/02** Time **12:15** Received by **[Signature]**
 Relinquished by **[Signature]** Date **1/15/02** Time **12:15** Received by **[Signature]**

Rush 2 Business Days
Expedited 5 Business Days
Standard 10 Business Days



**Sequoia
Analytical**

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11 February, 2002

Ron Scheele
Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville, CA 94608

RE: ARCO
Sequoia Work Order: P202091

Enclosed are the results of analyses for samples received by the laboratory on 02/06/02 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angelee Cari
Client Services Representative

CA ELAP Certificate #2374



**Sequoia
Analytical**

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Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

Project: ARCO
Project Number: ARCO 2035/Albany
Project Manager: Ron Scheele

Reported:
02/11/02 14:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
INF	P202091-01	Air	02/05/02 17:00	02/06/02 16:00
EFF	P202091-02	Air	02/05/02 17:00	02/06/02 16:00

Sequoia Analytical - Petaluma

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Angelee Cari, Client Services Representative



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 www.sequoialabs.com

Cambria Environmental - Emeryville 6262 Hollis Street Emeryville CA, 94608	Project: ARCO Project Number: ARCO 2035/Albany Project Manager: Ron Scheele	Reported: 02/11/02 14:19
--	---	-----------------------------

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M
Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
INF (P202091-01) Air Sampled: 02/05/02 17:00 Received: 02/06/02 16:00									
Gasoline (C6-C12)	23	2.8	ppmv	0.2	2020078	02/07/02	02/07/02	EPA 8015M/8020M	
Benzene	0.16	0.032	"	"	"	"	"	"	
Toluene	1.4	0.026	"	"	"	"	"	"	QR-04
Ethylbenzene	0.15	0.024	"	"	"	"	"	"	
Xylenes (total)	0.84	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	4.8	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		96 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	65-135		"	"	"	"	
EFF (P202091-02) Air Sampled: 02/05/02 17:00 Received: 02/06/02 16:00 A-01									
Gasoline (C6-C12)	ND	2.8	ppmv	0.2	2020078	02/07/02	02/07/02	EPA 8015M/8020M	
Benzene	ND	0.032	"	"	"	"	"	"	
Toluene	0.076	0.026	"	"	"	"	"	"	
Ethylbenzene	ND	0.024	"	"	"	"	"	"	
Xylenes (total)	0.059	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		100 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	65-135		"	"	"	"	

Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

 Project: ARCO
 Project Number: ARCO 2035/Albany
 Project Manager: Ron Scheele

Reported:
 02/11/02 14:19

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2020078 - EPA 5030, waters
Blank (2020078-BLK1)

Prepared & Analyzed: 02/05/02

Gasoline (C6-C12)	ND	14	ppmv							
Benzene	ND	0.16	"							
Toluene	ND	0.13	"							
Ethylbenzene	ND	0.12	"							
Xylenes (total)	ND	0.12	"							
Methyl tert-butyl ether	ND	0.56	"							
<hr/>										
<i>Surrogate: a,a,a-Trifluorotoluene</i>	50.2		"	50.3		100	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	42.5		"	41.9		101	65-135			

Blank (2020078-BLK2)

Prepared & Analyzed: 02/07/02

Gasoline (C6-C12)	ND	14	ppmv							
Benzene	ND	0.16	"							
Toluene	ND	0.13	"							
Ethylbenzene	ND	0.12	"							
Xylenes (total)	ND	0.12	"							
Methyl tert-butyl ether	ND	0.56	"							
<hr/>										
<i>Surrogate: a,a,a-Trifluorotoluene</i>	50.7		"	50.3		101	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	42.1		"	41.9		100	65-135			

LCS (2020078-BS1)

Prepared & Analyzed: 02/05/02

Gasoline (C6-C12)	784	14	ppmv	780		101	65-135			
Benzene	13.1	0.16	"	10.7		122	65-135			
Toluene	57.5	0.13	"	54.9		105	65-135			
Ethylbenzene	10.3	0.12	"	11.2		92	65-135			
Xylenes (total)	51.9	0.12	"	56.4		92	65-135			
Methyl tert-butyl ether	16.8	0.56	"	15.1		111	65-135			
<hr/>										
<i>Surrogate: a,a,a-Trifluorotoluene</i>	54.7		"	50.3		109	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	44.6		"	41.9		106	65-135			

Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

 Project: ARCO
 Project Number: ARCO 2035/Albany
 Project Manager: Ron Scheele

 Reported:
 02/11/02 14:19

Total Petroleum Hydrocarbons as Gasoline and BTEX by EPA 8015M/8020M - Quality Control

Sequoia Analytical - Petaluma

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	%REC Limits	RPD	RPD Limit	Notes
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Batch 2020078 - EPA 5030, waters
LCS (2020078-BS2)

Prepared & Analyzed: 02/07/02

Gasoline (C6-C12)	823	14	ppmv	780		106	65-135			
Benzene	14.2	0.16	"	10.7		133	65-135			
Toluene	61.2	0.13	"	54.9		111	65-135			
Ethylbenzene	11.1	0.12	"	11.2		99	65-135			
Xylenes (total)	56.3	0.12	"	56.4		100	65-135			
Methyl tert-butyl ether	18.2	0.56	"	15.1		121	65-135			
<hr/>										
Surrogate: <i>a,a,a</i> -Trifluorotoluene	59.4		"	50.3		118	65-135			
Surrogate: 4-Bromofluorobenzene	46.0		"	41.9		110	65-135			

Matrix Spike (2020078-MS1)

Source: P202022-01

Prepared & Analyzed: 02/05/02

Gasoline (C6-C12)	891	14	ppmv	780	49	108	65-135			
Benzene	13.5	0.16	"	10.7	ND	126	65-135			
Toluene	60.3	0.13	"	54.9	ND	110	65-135			
Ethylbenzene	11.2	0.12	"	11.2	ND	100	65-135			
Xylenes (total)	55.8	0.12	"	56.4	ND	99	65-135			
Methyl tert-butyl ether	19.0	0.56	"	15.1	ND	126	65-135			
<hr/>										
Surrogate: <i>a,a,a</i> -Trifluorotoluene	55.7		"	50.3		111	65-135			
Surrogate: 4-Bromofluorobenzene	45.1		"	41.9		108	65-135			

Matrix Spike Dup (2020078-MSD1)

Source: P202022-01

Prepared & Analyzed: 02/05/02

Gasoline (C6-C12)	847	14	ppmv	780	49	102	65-135	5	20	
Benzene	13.2	0.16	"	10.7	ND	123	65-135	2	20	
Toluene	59.7	0.13	"	54.9	ND	109	65-135	1	20	
Ethylbenzene	10.5	0.12	"	11.2	ND	94	65-135	6	20	
Xylenes (total)	54.7	0.12	"	56.4	ND	97	65-135	2	20	
Methyl tert-butyl ether	18.1	0.56	"	15.1	ND	120	65-135	5	20	
<hr/>										
Surrogate: <i>a,a,a</i> -Trifluorotoluene	55.6		"	50.3		111	65-135			
Surrogate: 4-Bromofluorobenzene	45.9		"	41.9		110	65-135			



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

Project: ARCO
Project Number: ARCO 2035/Albany
Project Manager: Ron Scheele

Reported:
02/11/02 14:19

Notes and Definitions

- A-01 Sample was analyzed twice to confirm contaminants .
- QR-04 Primary and confirmation results varied by greater than 40% RPD. The results may still be useful for their intended purpose.
- 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
- RPD Relative Percent Difference

ARCO Facility no. # 2035	City (Facility) ALBANY	Project manager (Consultant) Ron Schoele	Laboratory name SEQUOIA
ARCO engineer PAUL SWALE	Telephone no. (ARCO) 925 299 4791	Telephone no. (Consultant) 510 450 1483	Contract number
Consultant name CAMERLA	Address (Consultant) 6262 HOLLIS ST EMERYVILLE CA		

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 802 EPA 803	BTEX/TPH/MTBE EPA 8030 EPA 8015	TPH Modified SOLS Gas <input checked="" type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413 TL 412	TPH EPA 415 136A03E	EPA 801801D	EPA 8248240	EPA 8258270	TCDF Metals: VOA: VDA:	CAN METALS FOR 801000 VLC: 510	LABS CONDUCTED LAB: EPA 74207521	Method of shipment COUPLER	
			Soil	Water	Other	Ice	Acid															
INF		1			AIR			2/5/2	5PM		X	X										Special detection Limit/reporting REPORT IN PPMV 10 PPMV LIMIT
EFF		1			AIR			2/5/2	5PM		X	X										

Condition of sample:	Temperature received:	Priority Rush 1 Business Day	<input type="checkbox"/>
Retrieved by sampler <i>[Signature]</i>	Date: 2/5/2 Time: 6:00 pm	Rush 2 Business Days	<input type="checkbox"/>
Relinquished by	Date: _____ Time: _____	Expedited 5 Business Days	<input type="checkbox"/>
Relinquished by	Date: _____ Time: _____	Standard 10 Business Days	<input checked="" type="checkbox"/>

Received by: **Sealed Location**
Received by: **W. Renz** Date: **2/6/02** Time: **1355**
Time at lab: **1600**