

C A M B R I A

October 24, 2001

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

NOV 02 2001

3858

Re: **Site Status and Remediation System Performance Report
Third Quarter 2001**

ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #438-1608

SVE system still monitoring
monitored units & T&Es
+ B.



Dear Mr. Chan:

On behalf of ARCO, Cambria Environmental Technology, Inc. (Cambria) is submitting the attached report which presents the site status for the third quarter 2001 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, Third Quarter 2001
SVE Quarterly Operation and Performance, Third Quarter 2001

Oakland, CA
San Ramon, CA
Sonoma, CA

Cc: Mr. Paul Supple, ARCO, PO Box 6549 Moraga, CA 94570
Barbara and James A. LeStrange, 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**

Third Quarter 2001

**ARCO Service Station No. 2035
1001 San Pablo Avenue
Albany, California
Cambria Project #438-1608**



Prepared For:

Mr. Paul Supple
ARCO

October 24, 2001

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.: 438-1608
 Primary Agency/Regulatory ID No.: ACHCSA

WORK PERFORMED THIS QUARTER (THIRD - 2001):

1. Submitted semi-annual groundwater monitoring and remediation system performance report for second quarter 2001.
2. ~~Operated soil vapor extraction (SVE) and air sparge (AS) remediation systems.~~

WORK PROPOSED FOR NEXT QUARTER (FOURTH - 2001):

1. Prepare and submit third quarter 2001 site status and remediation system performance report.
2. Operate SVE and air sparge systems.
3. Perform semi-annual groundwater monitoring and sampling for fourth quarter 2001.

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>9.73 feet (2nd Quarter 2001)</u>
Groundwater Flow Direction and Gradient:	<u>0.015 ft/ft toward West-Southwest (2nd 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):	5.2 ppmv (9/5/01)
Benzene Conc. End of Period (lab):	0.038 ppmv (9/5/01)
SVE Flowrate End of Period:	99 scfm
Total HC Destroyed This Period:	41,29 pounds
Total HC Destroyed to Date:	3,553 pounds
Utility Usage	
Electric (kWh):	85,458
Gas (Therms):	3,928
Operating Hours This Period (SVE):	2,115 Hours
Operating Hours to Date (SVE):	20,420 Hours
Percent Operational (SVE):	96.4%
Unit Maintenance:	Routine twice-monthly maintenance
Number of Auto Shut Downs:	1
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:	660 °F
Average SVE Source Flow:	94 scfm
Average SVE Process Flow:	94 scfm
Average Source Vacuum:	45 inches of Water



DISCUSSION:

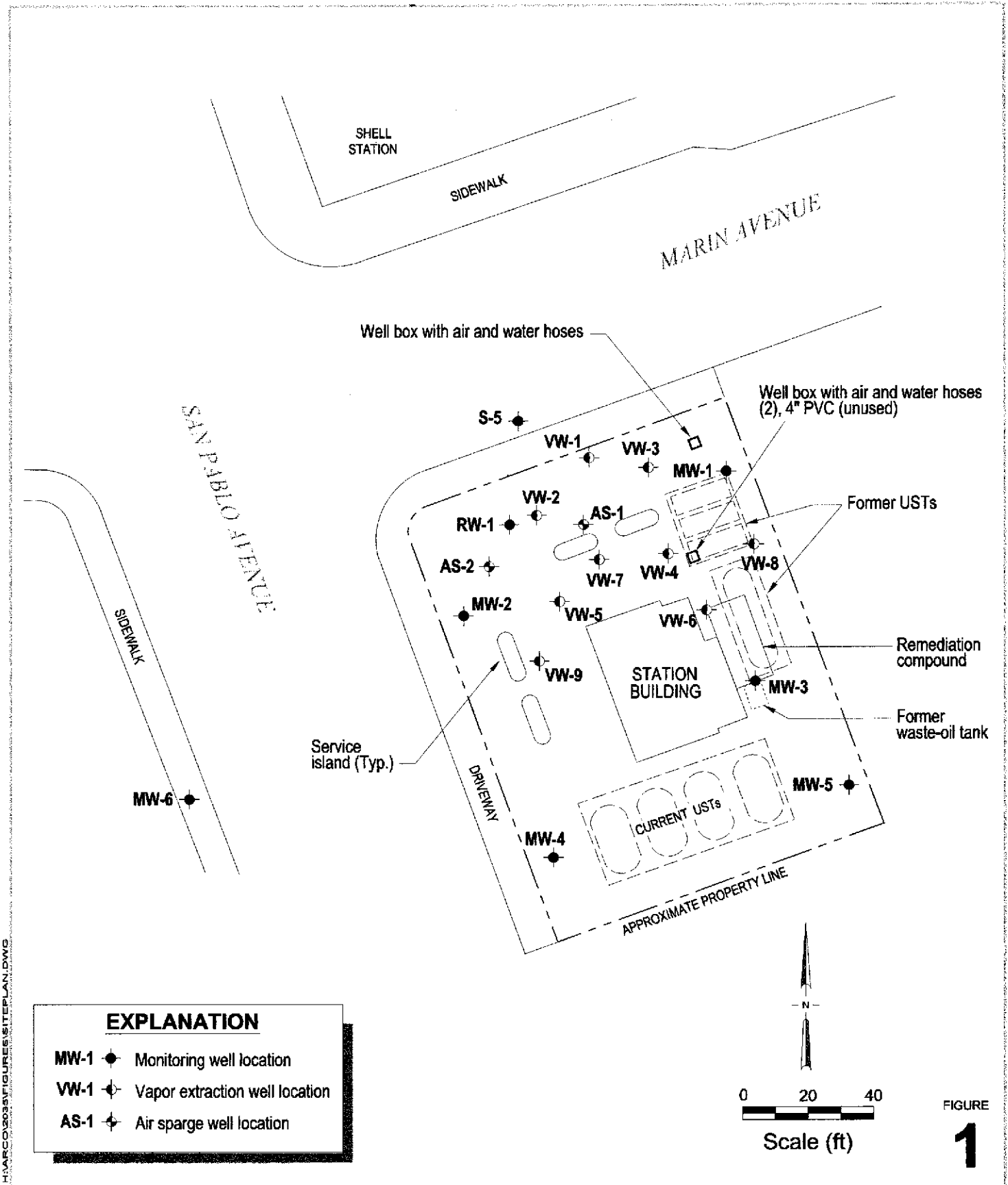
No groundwater sampling was scheduled during the third quarter 2001. The next scheduled sampling event will be performed during the fourth quarter 2001.

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 August 9 and September 5, 2001 and submitted for analysis.

Please note that formula errors were corrected in Tables 1, 2, and 3 which caused the total hydrocarbons destroyed to be slightly less than previously reported.

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



H:\ARCO\2035\FIGURES\SITEPLAN.DWG

04/24/01

ARCO Service Station 2035
 1001 San Pablo Avenue
 Albany, California



C A M B R I A

Site Plan

FIGURE 1

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

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

Date	Meter (hours)	Period Operation				Cumulative Operation			
		Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)
11/01/97						1425	335	1090	24%
12/01/97	11484	30	14	16	47%	1455	349	1106	24%
01/27/98	11484	57	0	57	0%	1512	349	1163	23%
08/12/98	11484	197	0	197	0%	1709	349	1360	20%
09/02/98	11485	21	0	21	0%	1730	349	1381	20%
10/19/98	12280	47	33	14	70%	1777	382	1395	22%
11/10/98	12809	22	22	0	100%	1799	404	1395	22%
01/22/99	12809	73	0	73	0%	1872	404	1468	22%
02/11/99	12810	20	0	20	0%	1892	404	1488	21%
04/01/99	12810	49	0	49	0%	1941	404	1537	21%
06/10/99	12810	70	0	70	0%	2011	404	1607	20%
06/24/99	13146	14	14	0	100%	2025	418	1607	21%
08/17/99	13146	54	0	54	0%	2079	418	1661	20%
09/09/99	13147	23	0	23	0%	2102	418	1684	20%
09/21/99	13435	12	12	0	100%	2114	430	1684	20%
10/06/99	13450	15	1	14	4%	2129	431	1698	20%
10/20/99	13475	14	1	13	7%	2143	432	1711	20%
11/03/99	13812	14	14	0	100%	2157	446	1711	21%
11/17/99	14148	14	14	0	100%	2171	460	1711	21%
12/01/99	14391	14	10	4	72%	2185	470	1715	22%
12/16/99	14751	15	15	0	100%	2200	485	1715	22%
01/05/00	14751	20	0	20	0%	2220	485	1735	22%
01/19/00	15087	14	14	0	100%	2234	499	1735	22%
02/21/00	15087	33	0	33	0%	2267	499	1768	22%
03/01/00	15303	9	9	0	100%	2276	508	1768	22%
03/23/00	15831	22	22	0	100%	2298	530	1768	23%

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

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

Date	Meter (hours)	Period Operation				Cumulative Operation			
		Total (days)	Uptime (days)	Downtime (days)	Uptime (%)	Total (days)	Uptime (days)	Downtime (days)	Uptime (%)
10/17/00	15832	208	0	208	0%	2506	530	1976	21%
10/24/00	15998	7	7	0	99%	2513	537	1976	21%
11/13/00	16319	20	13	7	67%	2533	551	1982	22%
11/28/00	16319	15	0	15	0%	2548	551	1997	22%
12/20/00	16319	22	0	22	0%	2570	551	2019	21%
01/17/01	16324	28	0	28	1%	2598	551	2047	21%
02/14/01	16346	28	1	27	3%	2626	552	2074	21%
02/26/01	16458	12	5	7	39%	2638	556	2082	21%
03/13/01	16466	15	0	15	2%	2653	557	2096	21%
03/30/01	16872	17	17	0	99%	2670	574	2096	21%
04/19/01	17029	20	7	13	33%	2690	580	2110	22%
04/30/01	17292	11	11	0	99%	2701	591	2110	22%
05/14/01	17601	14	13	1	92%	2715	604	2111	22%
05/22/01	17793	8	8	0	100%	2723	612	2111	22%
06/05/01	18126	14	14	0	99%	2737	626	2111	23%
06/25/01	18305	20	7	13	37%	2757	633	2124	23%
07/06/01	18569	11	11	0	100%	2768	644	2124	23%
07/18/01	18856	12	12	0	100%	2780	656	2124	24%
07/31/01	19166	13	13	0	99%	2793	669	2124	24%
08/09/01	19388	9	9	0	103%	2802	643	2159	23%
08/23/01	19720	14	14	0	99%	2816	656	2160	23%
09/05/01	20029	13	13	0	99%	2829	655	2174	23%
09/17/01	20321	12	12	0	101%	2841	668	2173	23%
09/24/01	20420	7	4	3	59%	2848	672	2176	24%

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. H ₂ O)	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	50.4	0.850	3.84	0.390	2.02	11.6	
	Effluent		180	153	<2.84	<0.0314	0.0769	<0.0230	0.754	0.132	
04/19/01	Influent	45.0	124	110	180	2.0	2.6	0.25	2.0	<1.5	
	Effluent		124	110	<10.0	<0.15	0.24	<0.15	0.79	<1.5	
05/14/01	Influent	40.0	76	69	41.0	0.511	0.299	0.0357	0.293	0.492	
	Effluent		76	69	<2.84	<0.0314	<0.0266	<0.0230	<0.0230	<0.111	
06/05/01	Influent	45.0	108	96	6.6	<0.31	0.41	0.072	0.32	2.2	
	Effluent		108	96	<2.40	<0.31	<0.027	<0.023	0.068	<0.14	
08/09/01	Influent	40.0	98.5	89	4.3	0.034	0.19	<0.024	0.15	0.20	
	Effluent		98.5	89	<2.8	<0.032	0.026	<0.024	0.13	<0.11	
09/05/01	Influent	50.0	113	99	5.2	0.038	0.39	0.025	0.14	0.83	
	Effluent		113	99	<2.8	<0.032	<0.026	<0.024	0.027	<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

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)

APPENDIX A

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



**Sequoia
Analytical**

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Petaluma, CA 94954
(707) 792-1865
FAX (707) 792-0342
www.sequoialabs.com

13 August, 2001

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

RE: ARCO
Sequoia Report: P108191

Enclosed are the results of analyses for samples received by the laboratory on 08/10/01 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



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

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

Reported:
08/13/01 15:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IN	P108191-01	Air	08/09/01 15:00	08/10/01 16:00
EF	P108191-02	Air	08/09/01 15:00	08/10/01 16:00

Sequoia Analytical - Petaluma

Angelee Cari

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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 FAX (707) 792-0342
 www.sequoialabs.com

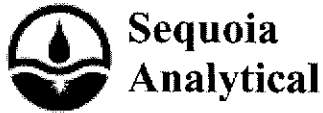
Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

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

Reported:
 08/13/01 15:00

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
IN (P108191-01) Air Sampled: 08/09/01 15:00 Received: 08/10/01 16:00									
Gasoline (C6-C12)	4.3	2.8	ppmv	0.2	1080240	08/10/01	08/10/01	EPA 8015M/8020M	
Benzene	0.034	0.032	"	"	"	"	"	"	
Toluene	0.19	0.026	"	"	"	"	"	"	
Ethylbenzene	ND	0.024	"	"	"	"	"	"	
Xylenes (total)	0.15	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	0.20	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		111 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.1 %	65-135		"	"	"	"	
EF (P108191-02) Air Sampled: 08/09/01 15:00 Received: 08/10/01 16:00									
Gasoline (C6-C12)	ND	2.8	ppmv	0.2	1080240	08/10/01	08/10/01	EPA 8015M/8020M	
Benzene	ND	0.032	"	"	"	"	"	"	
Toluene	0.026	0.026	"	"	"	"	"	"	
Ethylbenzene	ND	0.024	"	"	"	"	"	"	
Xylenes (total)	0.13	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		110 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	65-135		"	"	"	"	



Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

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

Reported:
 08/13/01 15:00

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
Batch 1080240 - EPA 5030, waters										
Blank (1080240-BLK1)										
Prepared & Analyzed: 08/10/01										
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>	54.6		"	50.3		109	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	41.2		"	41.9		98.3	65-135			
LCS (1080240-BS1)										
Prepared & Analyzed: 08/10/01										
Gasoline (C6-C12)	710	14	ppmv	780		91.0	65-135			
Benzene	11.1	0.16	"	10.3		108	65-135			
Toluene	53.3	0.13	"	52.8		101	65-135			
Ethylbenzene	11.8	0.12	"	10.6		111	65-135			
Xylenes (total)	54.5	0.12	"	53.2		102	65-135			
Methyl tert-butyl ether	15.0	0.56	"	14.6		103	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	60.0		"	50.3		119	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	43.0		"	41.9		103	65-135			
Matrix Spike (1080240-MS1)										
Source: P108076-01 Prepared & Analyzed: 08/10/01										
Gasoline (C6-C12)	732	14	ppmv	780	ND	93.8	65-135			
Benzene	12.0	0.16	"	10.3	ND	117	65-135			
Toluene	52.6	0.13	"	52.8	ND	99.6	65-135			
Ethylbenzene	12.0	0.12	"	10.6	ND	113	65-135			
Xylenes (total)	55.1	0.12	"	53.2	ND	104	65-135			
Methyl tert-butyl ether	16.4	0.56	"	14.6	ND	112	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	58.9		"	50.3		117	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	43.3		"	41.9		103	65-135			

Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

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

Reported:
08/13/01 15:00

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
Batch 1080240 - EPA 5030, waters										
Matrix Spike Dup (1080240-MSD1)		Source: P108076-01			Prepared & Analyzed: 08/10/01					
Gasoline (C6-C12)	703	14	ppmv	780	ND	90.1	65-135	4.04	20	
Benzene	13.1	0.16	"	10.3	ND	127	65-135	8.76	20	
Toluene	47.6	0.13	"	52.8	ND	90.2	65-135	9.98	20	
Ethylbenzene	11.1	0.12	"	10.6	ND	105	65-135	7.79	20	
Xylenes (total)	49.9	0.12	"	53.2	ND	93.8	65-135	9.90	20	
Methyl tert-butyl ether	16.4	0.56	"	14.6	ND	112	65-135	0.00	20	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	55.5		"	50.3		110	65-135			
<i>Surrogate: 4-Bromofluorobenzene</i>	41.8		"	41.9		99.8	65-135			



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

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

Reported:
08/13/01 15:00

Notes and Definitions

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. **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 8811** Telephone no. (Consultant) **510 450 1983** Fax no. (Consultant) **570 450 8295**
 Consultant name **Cambridge** Address (Consultant) **6262 Hollis St., Emeryville, CA 94608**

Laboratory name
Seqoia
 Contract number

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 801/802	BTEX/TPH EPA 801/802/8015	TPH Modified 8015 (Gas Diesel)	Oil and Grease 413.1 413.2	TPH EPA 418.1/SM603E	EPA 801/8010	EPA 824/8240	EPA 825/8270	TCLP Metals UPA VOAC	CANNERS EPA 800/700 STL 81 STL 82	Lead Org. (PHS II) Lead EPA 7430/7421	Method of shipment	
			Soil	Water	Other	Ice	Acid															
IN		1			Air			8-9-01	3:00^P	X												
EF		1			Air			9-9-01	3:00^P	X												

P108191-01
v-02

Method of shipment

Special detection
 Limit/reporting
**Report Results
 in PPAV, lowest
 possible detection
 limits**

Special QA/QC

Remarks
**BTEX/TPH
 MTBE on
 all samples**

COOLER CUSTODY SEALS INTACT
 NOT INTACT
 COOLER TEMPERATURE **22** °C

Lot number

Turnaround time
 Priority Rush
 1 Business Day

Condition of sample: _____ Temperature received: _____
 Relinquished by sampler **[Signature]** Date **8-9-01** Time **3:45** Received by **Secured Location**
 Relinquished by **[Signature]** Date **8-10-01** Time **14:20** Received by **[Signature]**
 Relinquished by _____ Date _____ Time _____ Received by _____ Date _____ Time _____

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



**Sequoia
Analytical**

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

10 September, 2001

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

RE: ARCO
Sequoia Report: P109069

Enclosed are the results of analyses for samples received by the laboratory on 09/06/01 15:15. 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: 2035/Albany
Project Manager: Ron Scheele

Reported:
09/10/01 16:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
INF	P109069-01	Air	09/05/01 10:00	09/06/01 15:15
EFF	P109069-02	Air	09/05/01 10:00	09/06/01 15:15

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: 2035/Albany
 Project Manager: Ron Scheele

Reported:
 09/10/01 16:03

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 (P109069-01) Air Sampled: 09/05/01 10:00 Received: 09/06/01 15:15									
Gasoline (C6-C12)	5.2	2.8	ppmv	0.2	1090010	09/07/01	09/07/01	EPA 8015M/8020M	
Benzene	0.038	0.032	"	"	"	"	"	"	
Toluene	0.39	0.026	"	"	"	"	"	"	
Ethylbenzene	0.025	0.024	"	"	"	"	"	"	
Xylenes (total)	0.14	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	0.83	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		105 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	65-135		"	"	"	"	
EFF (P109069-02) Air Sampled: 09/05/01 10:00 Received: 09/06/01 15:15									
Gasoline (C6-C12)	ND	2.8	ppmv	0.2	1090010	09/07/01	09/07/01	EPA 8015M/8020M	
Benzene	ND	0.032	"	"	"	"	"	"	
Toluene	ND	0.026	"	"	"	"	"	"	
Ethylbenzene	ND	0.024	"	"	"	"	"	"	
Xylenes (total)	0.027	0.024	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.11	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		105 %	65-135		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	65-135		"	"	"	"	

Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

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

Reported:
09/10/01 16:03

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	RPD	RPD Limit	Notes
Batch 1090010 - EPA 5030, waters									
Blank (1090010-BLK1)					Prepared & Analyzed: 09/04/01				
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>	47.5		"	50.3		94.4	65-135		
<i>Surrogate: 4-Bromofluorobenzene</i>	39.7		"	41.9		94.7	65-135		
Blank (1090010-BLK2)					Prepared & Analyzed: 09/07/01				
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>	51.5		"	50.3		102	65-135		
<i>Surrogate: 4-Bromofluorobenzene</i>	41.4		"	41.9		98.8	65-135		
LCS (1090010-BS1)					Prepared & Analyzed: 09/04/01				
Gasoline (C6-C12)	688	14	ppmv	780		88.2	65-135		
Benzene	11.1	0.16	"	10.3		108	65-135		
Toluene	48.0	0.13	"	52.8		90.9	65-135		
Ethylbenzene	11.5	0.12	"	10.6		108	65-135		
Xylenes (total)	49.3	0.12	"	53.2		92.7	65-135		
Methyl tert-butyl ether	19.7	0.56	"	14.6		135	65-135		
<i>Surrogate: a,a,a-Trifluorotoluene</i>	50.7		"	50.3		101	65-135		
<i>Surrogate: 4-Bromofluorobenzene</i>	42.8		"	41.9		102	65-135		

Cambria Environmental - Emeryville
 6262 Hollis Street
 Emeryville CA, 94608

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

Reported:
 09/10/01 16:03

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 1090010 - EPA 5030, waters

LCS (1090010-BS2)				Prepared & Analyzed: 09/07/01						
Gasoline (C6-C12)	660	14	ppmv	780		84.6	65-135			
Benzene	10.7	0.16	"	10.3		104	65-135			
Toluene	51.6	0.13	"	52.8		97.7	65-135			
Ethylbenzene	11.3	0.12	"	10.6		107	65-135			
Xylenes (total)	53.1	0.12	"	53.2		99.8	65-135			
Methyl tert-butyl ether	19.3	0.56	"	14.6		132	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>56.2</i>		"	<i>50.3</i>		<i>112</i>	<i>65-135</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>43.1</i>		"	<i>41.9</i>		<i>103</i>	<i>65-135</i>			

Matrix Spike (1090010-MS1)				Source: P108506-01 Prepared & Analyzed: 09/04/01						
Gasoline (C6-C12)	756	14	ppmv	780	ND	96.9	65-135			
Benzene	11.8	0.16	"	10.3	ND	115	65-135			
Toluene	52.6	0.13	"	52.8	ND	99.6	65-135			
Ethylbenzene	12.8	0.12	"	10.6	ND	121	65-135			
Xylenes (total)	52.5	0.12	"	53.2	ND	98.7	65-135			
Methyl tert-butyl ether	19.6	0.56	"	14.6	ND	134	65-135			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>50.9</i>		"	<i>50.3</i>		<i>101</i>	<i>65-135</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>42.9</i>		"	<i>41.9</i>		<i>102</i>	<i>65-135</i>			

Matrix Spike Dup (1090010-MSD1)				Source: P108506-01 Prepared & Analyzed: 09/04/01						
Gasoline (C6-C12)	744	14	ppmv	780	ND	95.4	65-135	1.60	20	
Benzene	11.6	0.16	"	10.3	ND	113	65-135	1.71	20	
Toluene	51.5	0.13	"	52.8	ND	97.5	65-135	2.11	20	
Ethylbenzene	12.4	0.12	"	10.6	ND	117	65-135	3.17	20	
Xylenes (total)	51.0	0.12	"	53.2	ND	95.9	65-135	2.90	20	
Methyl tert-butyl ether	18.5	0.56	"	14.6	ND	127	65-135	5.77	20	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>50.4</i>		"	<i>50.3</i>		<i>100</i>	<i>65-135</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>43.3</i>		"	<i>41.9</i>		<i>103</i>	<i>65-135</i>			



Cambria Environmental - Emeryville
6262 Hollis Street
Emeryville CA, 94608

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

Reported:
09/10/01 16:03

Notes and Definitions

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 Scheele	Laboratory name SEQUOIA
ARCO engineer Paul Surber	Telephone no. (ARCO) (925) 299-8891	Telephone no. (Consultant) 510 450 1983	Contract number
Consultant name Cambrig	Address (Consultant) 6262 Hollis ST EMERYVILLE CA 94608		Fax no. (Consultant) 450-8295

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH - GAS EPA M602/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM603E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals <input type="checkbox"/> VOAL <input type="checkbox"/> VOAL <input type="checkbox"/>	CAN METALS EPA 6010/7000 TLCC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org. DHS Lead EPA 7420/7491	MTBE											
			Soil	Water	Other	Ice	Acid																									
INF		1			X			9/5/01	10 AM		X																					
EFF		1			X			9/5/01	10 AM		X																					

Method of shipment **COOLER**

Special detection Limit/reporting **Report in ppm**

Special QA/QC

Remarks **STEX, TPH, MTBE on all samples**

COOLER CUSTODY SEALS INTACT

COOLER TEMPERATURE **22** NOT INTACT

Lot number

Turnaround time

Priority Rush 1 Business Day

Rush 2 Business Days

Expedited 5 Business Days **M**

Standard 10 Business Days **X**

Condition of sample:	Temperature received:
Relinquished by sampler Ron Scheele	Date 9/05/01 Time 2:15
Relinquished by [Signature]	Received by Secured location
Relinquished by	Date 9-6-01 Time 1400
Relinquished by	Date 9-6-01 Time 1515