MARK BORSUK
Attorney at Law
(415) 922-4740 / FAX 922-1485
mark@borsuk.com / www.borsuk.com
1626 Vallejo Street
San Francisco, CA 94123-5116

February 23, 2003

Mr. Thomas Peacock
Supervising HMS, LOP
ACHCSA
1131 Harbor Bay Parkway
Alameda, CA 94501
(510) 567-6700 / FAX 337-9335
tpeacock@co.alameda.ca.us

SUBJECT: IVQ02 Monitoring & SVE System Progress Report
1432 Harrison Street, Oakland, CA 94612
SITE ID 498

Dear Mr. Peacock:

Attached is the IVQ02 Groundwater Monitoring and SVE Systems Progress Report for the above site. If you have a question, please contact me.

Sincerely yours,

Mark Borsuk

CAMBRIA

February 19, 2003

Mr. Mark Borsuk
1626 Vallejo St.
San Francisco, CA 94123-5116

Re: **Groundwater Monitoring and System Progress Report**
Fourth Quarter 2002
1432 Harrison Street
Oakland, California
Cambria Project #540-0188

Dear Mr. Borsuk:

As you requested, Cambria Environmental Technology, Inc. (Cambria) is submitting this groundwater monitoring and system progress report for the above-referenced site. Presented in the report are the fourth quarter 2002 activities and results and the anticipated first quarter 2003 activities. Attached are two additional copies for submittal to the Alameda County Health Care Service Agency (ACHCSA) and the Bay Area Air Quality Management District (BAAQMD) regulatory agencies.

If you have any questions or comments regarding this report, please call me at (510) 450-1983.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report, Fourth Quarter 2002

Cambria Environmental Technology, Inc.

Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

FOURTH QUARTER 2002

1432 Harrison Street
Oakland, California
Cambria Project #540-0188

February 19, 2003

Prepared for:

Mr. Mark Borsuk
1626 Vallejo St.
San Francisco, CA 94123-5116

Prepared by:

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

for Matthew A. Meyers
Staff Geologist

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

Ron Scheele, RG
Senior Geologist

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

FOURTH QUARTER 2002

1432 Harrison Street
Oakland, California
Cambria Project #540-0188-038

February 19, 2003

INTRODUCTION

On behalf of Mr. Mark Borsuk, Cambria Environmental Technology, Inc. (Cambria) has prepared this groundwater monitoring and system progress report for the above-referenced site (see Figure 1). Presented in this report are the fourth quarter 2002 groundwater monitoring and remediation activities and the anticipated first quarter 2003 activities.

FOURTH QUARTER 2002 ACTIVITIES AND RESULTS

Monitoring Activities

Field Activities: On December 22, 2002, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) in wells MW-1 through MW-6 (see Figure 1). Groundwater samples were collected from wells MW-1, MW-2, MW-4, MW-5, and MW-6. Both wells MW-3 and MW-6 are sampled on an annual basis during the first quarter, however, well MW-6 was sampled during this quarter due to an elevated methyl tertiary butyl ether (MTBE) concentration in an adjacent well (MW-1) during the previous quarterly sampling event. Field Data Sheets are presented as Appendix A. Groundwater elevations are shown on Figure 1 and Table 1. The groundwater monitoring results have been submitted to the State's "Geotracker Database." The electronic delivery confirmations are presented in Appendix D.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015, and benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE by EPA Method 8021B by McCampbell Analytical, Inc. of Pacheco, California. Analytical results for the fourth quarter 2002 are included as Appendix B. Hydrocarbon concentrations are shown on Figure 1 and Table 1. Analytical results have been submitted to the State's "Geotracker Database." The electronic delivery confirmations are presented in Appendix D.

Monitoring Results

Groundwater Flow Direction: Based on depth-to-water measurements collected during Cambria's December 22, 2002 site visit, groundwater generally flows beneath the site toward the northeast at a gradient of 0.004 feet/foot (Figure 1). A slight mounding of the groundwater table near well MW-1 may be related air sparging activities in the immediate vicinity. See Appendix D for the electronic delivery confirmations of groundwater monitoring data.

Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations have remained at similar levels or have decreased relative to the third quarter groundwater sampling results. The maximum TPHg concentration was detected in well MW-1 at 89,000 micrograms per liter (µg/L). The maximum benzene concentration was detected in well MW-4 at 13,000 µg/L. MTBE was not detected in any wells, however, the laboratory detection limits in wells MW-1 and MW-4 were 1,700 µg/L and 1,500 µg/L, respectively. Due to the high MTBE concentration in well MW-1 during the third quarter 2002, a sample was taken from an adjacent well (MW-6) during the fourth quarter. MTBE was not detected in well MW-6, and therefore, it is suspected that the third quarter 2002 MTBE analytical result in MW-1 was erroneous.

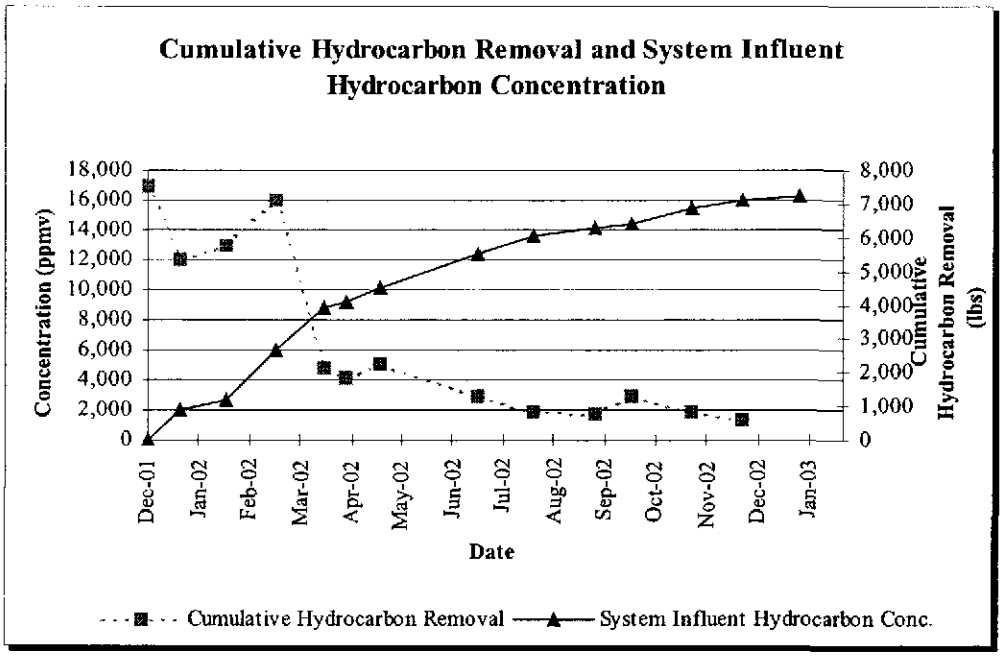
Corrective Action Activities

System Design: The soil vapor extraction (SVE) and air sparging (AS) remediation system consists of a trailer mounted all-electric catalytic oxidizer with heat exchanger, a 10-horsepower positive-displacement blower, an oil-less air sparge blower, and an auto dialer connected to a phone line to provide remote notification of system operations. Four coaxial remediation wells (VES-1/AS-1, VES-2/AS-2, VES-3/AS-3, VES-4/AS-4) are individually connected to a central manifold in the remediation system enclosure. See Figure 2 for the location of remediation enclosure and wells.

SVE System Operations and Maintenance Activities: During the fourth quarter, Cambria performed system operation and maintenance of the SVE system two times per month. Individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all SVE wells and from the catalytic oxidizer/blower (see Tables 2 and 3). During site visits, system operation parameters were also recorded in specialized field forms for future system optimization and agency inspection. As per the Bay Area Air Quality Management District (BAAQMD) permit, a catalytic oxidizer operating temperature greater than 600 degrees Fahrenheit was maintained, and system operation parameters were continuously measured using a chart recorder. On October 2, 2002, Cambria's technician had an onsite annual inspection meeting with an inspector from the BAAQMD. The

operation of the remediation system was found to be in full compliance with all air permit conditions. System influent and effluent vapor samples were collected and submitted for laboratory analysis on October 2, November 6, and December 5, 2002. Table 2 summarizes soil vapor extraction system operations and analytical results. The analytical laboratory reports from system vapor sampling are included as Attachment C.

SVE System Performance: The SVE system operated continuously throughout the fourth quarter. Monthly well vapor hydrocarbon concentrations ranged from 1,400 to 2,900 parts per million volume (ppmv) and were similar to the previous quarter (See Table 2). Air flow rates decreased during the quarter, likely due to seasonal rains and wetter soil conditions. Hydrocarbon removal rates ranged from approximately 4 to 13 pounds per day. Total well hydrocarbon concentrations and hydrocarbon removal rates continued to exhibit decreasing trends. Vapor sample lab results indicated that the catalytic oxidizer was achieving proper destruction efficiency and was operating within permit requirements. To date, a total of 7,217 pounds of hydrocarbons have been destroyed by soil vapor extraction activities (see graph below and Table 2).



AS System Performance: Air sparging (AS) operations were performed continuously throughout the fourth quarter. The AS system is setup to cycle on and off every 30 minutes and to operate only between the hours of 7 am to 6 pm to reduce system noise from the air sparge blower during the evening and early morning hours. No measurable thickness of SPH was observed in well MW-1 during the fourth quarter.

ANTICIPATED FIRST QUARTER 2003 ACTIVITIES

Groundwater Sampling: Cambria will gauge all wells, check the wells for SPH, and collect groundwater samples from wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6. In view of the recent high MTBE concentrations detected in MW-1, well MW-6 was sampled during the fourth quarter 2002. As per the annual sampling schedule, well MW-6 will be sampled again during the first quarter 2003. Groundwater samples will be analyzed for TPHg by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. Samples from wells MW-2, MW-3, MW-5, and MW-6 detected to contain MTBE will be confirmed by EPA Method 8260. Due to recent elevated laboratory detection limits, samples from wells MW-1 and MW-4 will also be analyzed for MTBE by EPA method 8260. Cambria will prepare a quarterly Groundwater Monitoring and System Progress Report and submit groundwater monitoring and sampling results to the State's "Geotracker Database." Included in the report will be a summary of the groundwater monitoring activities and sampling results.

Remediation System: Cambria will continue to perform operation and maintenance of the SVE/AS system twice per month during the first quarter of 2003. Optimization activities may include vacuum and flow adjustments to soil vapor extraction wells and pressure and flow adjustments to air sparging wells as hydrocarbon concentrations change in the individual wells. System influent and effluent samples will be collected on a monthly basis along with Horiba gas analyzer readings from the individual wells. System operation records will be kept for a period of two years for possible future BAAQMD inspection.

Cambria will evaluate the performance of the remediation system and combine the results in a quarterly Groundwater Monitoring and System Progress Report. Included in the report will be tables summarizing the concentration, flow, and vacuum of system and individual wells, along with the analytical results.

APPENDIXES

Figure 1 - Groundwater Elevation and Analytical Summary
Figure 2 - Soil Vapor Extraction/Air Sparging System

Table 1 - Groundwater Elevations and Analytical Data
Table 2 - SVE System Performance and Soil Vapor Analytical Results
Table 3 - SVE System Parameters

Appendix A - Groundwater Monitoring Field Data Sheets
Appendix B - Analytical Results for Quarterly Groundwater Sampling
Appendix C - Analytical Results for SVE System Operation
Appendix D - Electronic Delivery Confirmation

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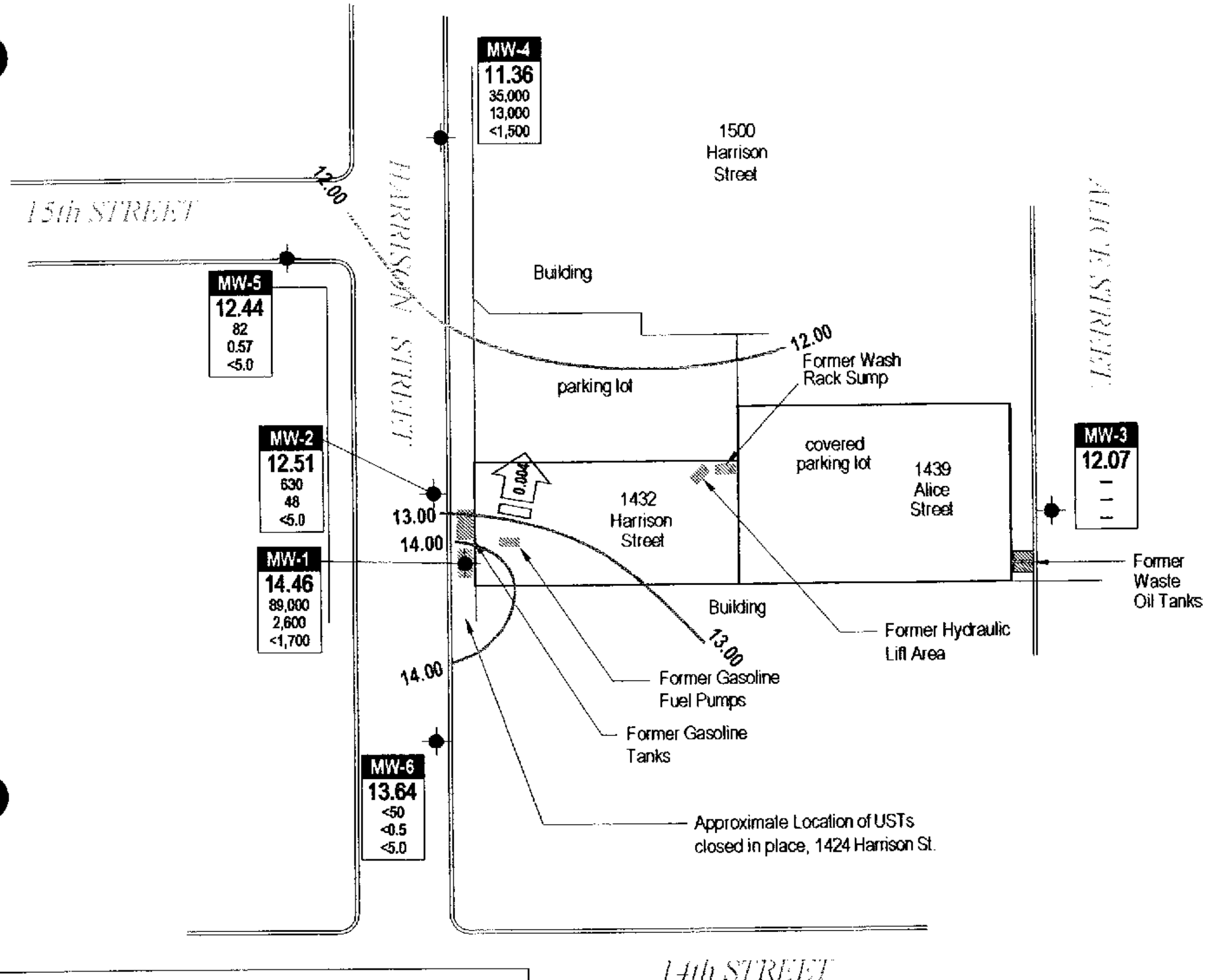

EXPLANATION

- Groundwater monitoring well
- 14.00 — Groundwater elevation contour, in feet above mean sea level (msl)
- 0.004 — Groundwater flow direction and gradient
- Well ID — Well designation
- ELEV — Groundwater elevation, in feet above mean sea level (msl)
- TPHg / Benzene / MTBE — Hydrocarbons in groundwater, in micrograms per liter (μg/L)

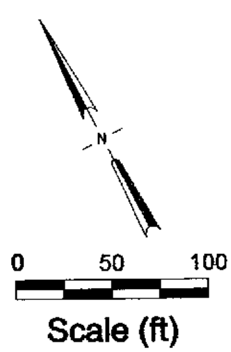

FIGURE 1

H:\SB-2004\OAK-198\FIGURES\4Q02.DWG

1432 Harrison Street

Oakland, California

CAMBRIA

Groundwater Elevation and Analytical Summary

December 22, 2002

Borsuk Properties

1432 Harrison Street

Oakland, California

MW-2

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MW-1

V

Soil Vapor Extraction/ Air Sparge System (As-Built)

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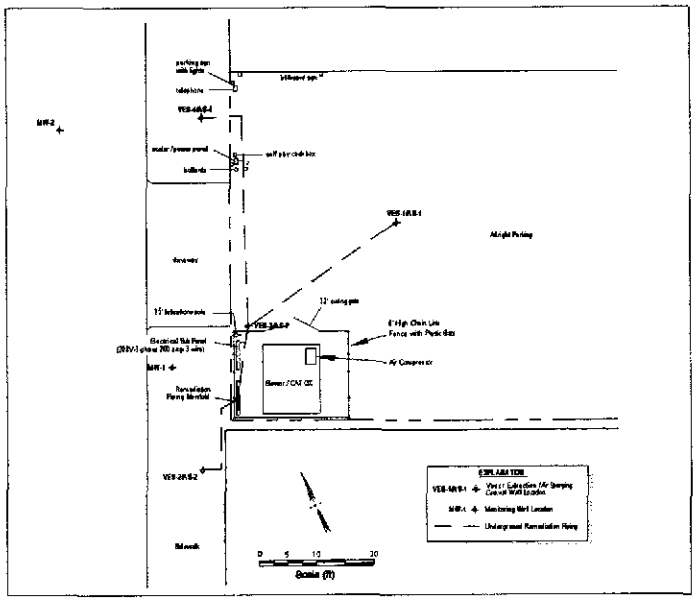

FIGURE 2

02/14/03

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Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID *TOC (ft)*	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-1	8/1/1994	--	--	--	170,000	35,000	51,000	2,400	13,000	--	--
	12/21/1994	34.95	19.53	15.42	180,000	41,000	64,000	3,100	100,000	--	--
	3/13/1995	34.95	18.66	16.29	150,000	31,000	45,000	2,500	17,000	--	--
	6/27/1995	34.95	18.20	16.75	71,000	17,000	18,000	1,600	7,700	--	--
	7/7/1995	34.95	18.35	16.60	71,000	17,000	18,000	1,600	7,700	--	--
	9/28/1995	34.95	18.20	16.75	110,000	27,000	34,000	1,700	14,000	--	--
	12/20/1995	34.95	19.96	14.99	120,000	33,000	43,000	2,300	15,000	--	--
	3/26/1996	34.95	19.27	15.68	140,000	29,000	36,000	1,900	13,000	<200*	d
	6/20/1996	34.95	18.64	16.31	110,000	30,000	38,000	2,200	13,000	<200*	--
	9/26/1996	34.95	19.35	15.60	170,000	28,000	40,000	2,200	15,000	ND**	--
	10/28/1996	34.95	19.58	15.37	--	--	--	--	--	--	--
	12/12/1996	34.95	19.68	15.27	110,000	36,000	47,000	2,500	16,000	ND*	--
	3/31/1997	34.95	18.80	16.15	160,000	24,000	39,000	1,900	13,000	ND*	--
	6/27/1997	34.95	19.26	15.69	130,000	25,000	36,000	2,000	14,000	ND*	--
	9/9/1997	34.95	19.70	15.25	99,000	22,000	27,000	1,600	13,000	270*	--
	12/18/1997	34.95	19.25	15.70	160,000	30,000	44,000	2,200	15,000	ND***	--
	3/12/1998	34.95	17.52	17.43	190,000	20,000	49,000	2,500	18,000	ND***	--
	6/22/1998	34.95	18.63	16.32	90,000	19,000	40,000	2,100	16,000	--	--
	9/18/1998	34.95	18.60	16.35	190,000	29,000	48,000	2,400	17,000	--	--
	12/23/1998	34.95	19.18	15.77	140,000	24,000	44,000	2,000	8,200	--	--
	3/29/1999	34.95	18.52	16.43	181,000	22,200	40,100	1,844	12,200	--	--
	6/23/1999	34.95	18.60	16.35	80,000	20,000	33,000	1,600	11,000	--	--
	9/24/1999	34.95	19.05	15.90	117,000	15,100	20,700	1,550	11,800	--	--
	12/23/1999	34.95	19.95	15.00	186,000	25,900	39,000	1,990	12,400	--	--
	3/21/2000	34.95	18.48	16.47	210,000	35,000	42,000	2,200	13,000	<3,000	a
	7/3/2000	34.95	18.95	16.00	200,000	33,000	46,000	2,200	15,000	<200*	a
	9/7/2000	34.95	19.45	15.50	Free Product present (Sheen). No sample taken.						
	12/5/2000	34.95	19.90	15.05	220,000	42,000	57,000	2,700	17,000	<200	a
	3/6/2001	34.95	18.20	16.75	180,000	27,000	39,000	2,000	13,000	<1200 (<20)	a,l
	6/8/2001	34.95	20.14	14.81	170,000	28,000	40,000	1,900	13,000	<200	a
	8/27/2001	34.95	21.19	13.76	130,000	24,000	33,000	1,600	11,000	<350	a
	10/25/2001	34.95	21.74	13.21	160,000	22,000	28,000	1,500	10,000	<350	a
	3/1/2002	34.95	21.39	13.85x	Free Product present (thickness of 0.41ft). No sample taken.						
	6/10/2002	34.95	22.30	12.66x	210,000	30,000	51,000	3,100	22,000	<1,000*	a
	9/3/2002	34.96	21.40	13.56	2,500,000	31,000	170,000	29,000	170,000	2,500,000	a
	12/22/2002	**34.96**	**20.50**	**14.46**	**89,000**	**2,600**	**9,300**	**530**	**28,000**	**<1,700**	**a,m**

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Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (ft)		(ft)	(ft)	(ft)	←		(µg/L)			→	
MW-2	8/1/1994	--	--	--	130,000	28,000	35,000	3,000	12,000	--	--
	12/21/1994	35.18	19.91	15.27	200	140,000	200,000	3,500	22,000	--	--
	3/13/1995	35.18	19.15	16.03	500	9,200	23,000	7,000	36,000	--	--
	6/27/1995	35.18	18.74	16.44	120,000	23,000	30,000	2,700	13,000	--	--
	7/7/1995	35.18	18.80	16.38	120,000	23,000	30,000	2,700	13,000	--	--
	9/28/1995	35.18	19.30	15.88	110,000	23,000	29,000	2,500	11,000	--	--
	12/20/1995	35.18	20.24	14.94	83,000	980	1,800	2,200	10,000	--	--
	3/26/1996	35.18	19.69	15.49	150,000	23,000	32,000	2,800	12,000	<200*	d
	6/20/1996	35.18	19.20	15.98	94,000	15,000	23,000	2,400	12,000	<200*	--
	9/26/1996	35.18	19.80	15.38	150,000	20,000	29,000	2,800	12,000	ND**	--
	10/28/1996	35.18	20.18	15.00	--	--	--	--	--	--	--
	12/12/1996	35.18	20.17	15.01	58,000	3,100	11,000	1,700	8,100	220*	--
	3/31/1997	35.18	19.67	15.51	38,000	6,000	7,900	690	3,300	ND*	--
	6/27/1997	35.18	19.68	15.50	62,000	13,000	16,000	1,300	6,000	ND*	--
	9/9/1997	35.18	20.20	14.98	81,000	16,000	18,000	1,800	8,600	ND***	--
	12/18/1997	35.18	19.80	15.38	110,000	18,000	26,000	2,200	9,500	ND***	--
	3/12/1998	35.18	18.07	17.11	120,000	16,000	26,000	2,200	9,400	ND***	--
	6/22/1998	35.18	18.29	16.89	38,000	9,800	9,500	1,500	6,000	--	--
	9/18/1998	35.18	19.09	16.09	68,000	12,000	16,000	1,400	5,900	--	--
	12/23/1998	35.18	19.67	15.51	180,000	16,000	22,000	2,200	8,300	--	--
	3/29/1999	35.18	18.97	16.21	16,600	1,380	1,920	373	1,840	--	--
	6/23/1999	35.18	18.25	16.93	41,000	10,000	9,400	1,100	5,000	--	--
	9/24/1999	35.18	19.60	15.58	40,600	4,880	3,490	1,090	4,560	--	--
	12/23/1999	35.18	20.21	14.97	61,900	6,710	9,320	1,150	5,360	--	--
	3/21/2000	35.18	18.93	16.25	98,000	14,000	21,000	1,600	6,900	<1600	a
	7/3/2000	35.18	19.38	15.80	140,000	18,000	33,000	2,600	11,000	<200*	a
	9/7/2000	35.18	19.83	15.35	110,000	17,000	21,000	2,200	9,700	<100***	a,l
	12/5/2000	35.18	20.30	14.88	130,000	19,000	28,000	2,500	11,000	<200	a
	3/6/2001	35.18	19.57	15.61	32,000	3,400	3,400	580	2,500	<200	a
	6/8/2001	35.18	20.59	14.59	72,000	9,400	9,200	1,300	5,800	<200	a
	8/27/2001	35.18	21.79	13.39	110,000	17,000	28,000	2,600	11,000	<950	a
	10/25/2001	35.18	22.05	13.13	110,000	15,000	18,000	2,000	8,700	<350	a
	3/1/2002	35.18	21.80	13.38	3,100	370	180	62	330	<5.0*	a
	6/10/2002	35.18	22.83	12.35	7,800	2,000	1,100	76	570	<100*	a
	9/3/2002	35.21	22.03	13.18	21,000	2,400	2,900	320	1,400	<500	a
	12/22/2002	**35.21**	**22.70**	**12.51**	**630**	**48**	**56**	**19**	**82**	**<5.0**	a

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID *TOC (ft)*	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-3	8/1/1994	--	--	--	<50	<0.5	<0.5	<0.5	<2.0	--	--
	12/21/1994	33.97	18.82	15.15	<50	<0.5	<0.5	<0.5	<0.5	--	e
	3/13/1995	33.97	17.86	16.11	<50	<0.5	<0.5	<0.5	<0.5	--	f,g
	7/7/1995	33.97	18.25	15.72	--	--	--	--	--	--	h
	9/28/1995	33.97	18.00	15.97	--	--	--	--	--	--	--
	12/20/1995	33.97	18.74	15.23	--	--	--	--	--	--	--
	3/26/1996	33.97	18.25	15.72	--	--	--	--	--	--	--
	6/20/1996	33.97	18.35	15.62	--	--	--	--	--	--	--
	9/26/1996	33.97	19.12	14.85	--	--	--	--	--	--	--
	10/28/1996	33.97	19.11	14.86	--	--	--	--	--	--	--
	12/12/1996	33.97	18.61	15.36	--	--	--	--	--	--	--
	3/31/1997	33.97	18.35	15.62	--	--	--	--	--	--	--
	6/27/1997	33.97	18.81	15.16	--	--	--	--	--	--	--
	9/9/1997	33.97	19.18	14.79	--	--	--	--	--	--	--
	12/18/1997	33.97	18.64	15.33	--	--	--	--	--	--	--
	3/12/1998	33.97	17.56	16.41	--	--	--	--	--	--	--
	6/22/1998	33.97	18.64	15.33	--	--	--	--	--	--	--
	9/18/1998	33.97	18.33	15.64	--	--	--	--	--	--	--
	12/23/1998	33.97	18.60	15.37	--	--	--	--	--	--	--
	3/29/1999	33.97	17.85	16.12	--	--	--	--	--	--	--
	6/23/1999	33.97	18.67	15.30	--	--	--	--	--	--	--
	9/24/1999	33.97	18.64	15.33	--	--	--	--	--	--	--
	12/23/1999	33.97	19.32	14.65	--	--	--	--	--	--	--
	3/21/2000	33.97	17.89	16.08	--	--	--	--	--	--	--
	7/3/2000	33.97	18.40	15.57	--	--	--	--	--	--	--
	9/7/2000	33.97	18.75	15.22	--	--	--	--	--	--	--
	12/5/2000	33.97	19.03	14.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	33.97	18.12	15.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	33.97	20.02	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	8/27/2001	33.97	21.09	12.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	33.97	21.29	12.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	33.97	21.14	12.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	33.97	21.99	11.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	34.01	21.17	12.84	--	--	--	--	--	--	--
	12/22/2002	**34.01**	**21.94**	**12.07**	--	--	--	--	--	--	--

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID *TOC (ft)*	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←		(µg/L)			→	
MW-4	10/28/1996	33.75	19.32	14.43	10,000	3,900	420	400	360	<200*	n
	12/12/1996	33.75	19.42	14.33	11,000	4,200	410	420	260	32*	--
	3/31/1997	33.75	18.67	15.08	ND	ND	ND	ND	ND	ND*	--
	6/27/1997	33.75	19.08	14.67	160	49	1.2	ND	5.9	ND*	--
	9/9/1997	33.75	19.33	14.42	7,400	5,000	410	230	470	33*	--
	12/18/1997	33.75	19.17	14.58	710	170	8.0	ND	39	ND***	--
	3/12/1998	33.75	17.68	16.07	1,300	410	21	ND	57	ND***	--
	6/22/1998	33.75	17.63	16.12	ND	ND	ND	ND	ND	--	--
	9/18/1998	33.75	18.58	15.17	ND	42	1.6	ND	4.8	--	--
	12/23/1998	33.75	19.01	14.74	1,900	1,000	76	50	120	--	--
	3/29/1999	33.75	18.35	15.40	ND	ND	ND	ND	ND	--	--
	6/23/1999	33.75	17.58	16.17	ND	ND	ND	ND	ND	--	--
	9/24/1999	33.75	19.05	14.70	9,150	3,270	131	34	537	--	--
	12/23/1999	33.75	19.41	14.34	12,200	5,360	275	424	592	--	--
	3/21/2000	33.75	18.42	15.33	45,000	16,000	1,100	1,400	1,900	1400* (<35)***	a,l
	7/3/2000	33.75	18.82	14.93	33,000	10,000	720	840	1,800	<200*	a
	9/7/2000	33.75	19.21	14.54	26,000	8,800	800	740	1,500	<50***	a,c,l
	12/5/2000	33.75	19.60	14.15	41,000	11,000	840	930	1,900	<200	a
	3/6/2001	33.75	18.24	15.51	1,100	400	5.7	<0.5	20	<5.0	a
	6/8/2001	33.75	20.91	12.84	92	19	<0.5	<0.5	1	<5.0	a
	8/27/2001	33.75	21.63	12.12	49,000	17,000	1700	1,700	3,200	<260	a
	10/25/2001	33.75	21.70	12.05	57,000	16,000	1,500	1,600	2,600	<300	a
	3/1/2002	33.75	21.53	12.22	400	140	2.3	<0.5	12	<5.0*	a
	6/10/2002	33.75	22.23	11.52	<50	2.5	<0.5	<0.5	<0.5	<5.0*	
	9/3/2002	33.75	21.85	11.90	31,000	9,700	300	650	1,100	<1,000	a
	12/22/2002	**33.75**	**22.39**	**11.36**	**35,000**	**13,000**	**310**	**1,100**	**1,800**	**<1,500**	**a**

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (ft)		(ft)	(ft)	(ft)	←		(µg/L)			→	
MW-5	10/28/1996	34.63	19.88	11.73	90	4.0	0.6	<0,50	<0.50	16*	n
	12/12/1996	34.63	20.09	14.54	230	5.6	0.9	ND	0.9	3.6*	--
	3/31/1997	34.63	19.24	15.39	90	3.1	ND	ND	ND	ND*	--
	6/27/1997	34.63	19.16	15.47	ND	ND	ND	ND	ND	ND*	--
	9/9/1997	34.63	19.93	14.70	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	34.63	19.77	14.86	ND	ND	ND	ND	ND	ND***	--
	3/12/1998	34.63	19.77	14.86	79	2.3	ND	0.8	ND	ND*	--
	6/22/1998	34.63	18.08	16.55	ND	ND	ND	ND	ND	--	--
	9/18/1998	34.63	19.12	15.51	ND	ND	ND	ND	ND	--	--
	12/23/1998	34.63	19.60	15.03	ND	0.8	0.9	ND	ND	--	--
	3/29/1999	34.63	18.88	15.75	ND	ND	ND	ND	ND	--	--
	6/23/1999	34.63	18.05	16.58	ND	ND	ND	ND	ND	--	--
	9/24/1999	34.63	19.61	15.02	ND	ND	ND	ND	ND	--	--
	12/23/1999	34.63	20.01	14.62	ND	ND	ND	ND	ND	--	--
	3/21/2000	34.63	19.05	15.58	140	<0.5	<0.5	<0.5	<0.5	<5.0	k
	7/3/2000	34.63	19.40	15.23	85	8.1	3.1	1.6	7.8	<5.0*	a
	9/7/2000	34.63	19.62	15.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	12/5/2000	34.63	20.25	14.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	34.63	19.07	15.56	91	5.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	34.63	20.77	13.86	290	22.0	0.8	<0.5	<0.5	<5.0	a
	8/27/2001	34.63	21.33	13.30	660	24.0	2.2	1.3	4.0	<25	a
	10/25/2001	34.63	21.62	13.01	55	3.5	<0.5	<0.5	<0.5	<5.0	a
	3/1/2002	34.63	21.49	13.14	200	1.9	0.69	<0.5	<0.5	<5.0*	a
	6/10/2002	34.63	22.15	12.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	9/3/2002	34.63	21.50	13.13	60	1.9	<0.5	<0.5	0.77	<5.0	a
	12/22/2002	**34.63**	**22.19**	**12.44**	**82**	**0.57**	**<0.5**	**0.68**	**<0.5**	**<5.0**	**a**

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID *TOC (ft)*	Date	Top of Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-6	10/28/1996	35.89	20.02	12.87	<50	<0.50	<0.50	<0.50	<0.50	<2.0*	n
	12/12/1996	35.89	20.18	15.71	ND	ND	ND	ND	ND	ND*	--
	3/31/1997	35.89	19.81	16.08	--	--	--	--	--	--	--
	6/27/1997	35.89	19.76	16.13	--	--	--	--	--	--	--
	9/9/1997	35.89	20.06	15.83	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	35.89	19.90	15.99	ND	ND	ND	ND	ND	--	--
	3/12/1998	35.89	18.00	17.89	ND	ND	ND	ND	ND	ND*	--
	6/22/1998	35.89	18.43	17.46	ND	ND	ND	ND	ND	--	--
	9/18/1998	35.89	19.10	16.79	ND	ND	ND	ND	ND	--	--
	12/23/1998	35.89	19.61	16.28	ND	ND	ND	ND	ND	--	--
	3/29/1999	35.89	18.92	16.97	ND	ND	ND	ND	ND	--	--
	6/23/1999	35.89	18.41	17.48	ND	ND	ND	ND	ND	--	--
	9/24/1999	35.89	19.61	16.28	ND	ND	ND	ND	ND	--	--
	12/23/1999	35.89	20.30	15.59	ND	ND	ND	ND	ND	--	--
	3/21/2000	35.89	18.97	16.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/3/2000	35.89	19.46	16.43	59	5.1	2.3	1.1	5.3	<5.0*	a
	9/7/2000	35.89	19.95	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	12/5/2000	35.89	20.50	15.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	35.89	19.54	16.35	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	35.89	20.92	14.97	<50	<0.5	<0.5	<0.5	<0.5	<5.1	--
	8/27/2001	35.89	21.37	14.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	35.89	21.59	14.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	35.89	21.33	14.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	35.89	21.97	13.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	35.89	21.55	14.34	--	--	--	--	--	--	--
	12/22/2002	**35.89**	**22.25**	**13.64**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	--
Trip Blank	3/21/2000	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	9/7/2000	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--

Table 1. Groundwater Elevations and Analytical Data - 1432 Harrison St., Oakland, CA.

Well ID	Date	Top of Casing Elevation	Depth to Groundwater	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (ft)		(ft)	(ft)	(ft)	←		(µg/L)			→	

Abbreviations

TPHg = Total petroleum hydrocarbons as gasoline by EPA method Modified 8015.

Benzene, toluene, ethylbenzene, xylenes by EPA method 8020.

-- = Not Sampled/Not Analyzed

<n = Not detected in sample above n µg/L.

ND = Not detected at minimum quantitation limit. See laboratory reports.

µg/L = micrograms per liter

MTBE = Methyl tert-butyl ether

* = MTBE by EPA Method 8020

** = MTBE by EPA Method 8240

*** = MTBE by EPA Method 8260

VOCs = volatile organic compounds

x = Groundwater elevation adjusted for free product by the relation:

Groundwater Elevation = Well Elevation - Depth to Water + (0.7 x free product thickness)

Notes

a = Unmodified or weakly modified gasoline is significant.

b = Lighter than water immiscible sheen is present.

c = Liquid sample that contains greater than ~5 vol. % sediment.

d = MTBE result confirmed by secondary column or GC/MS analysis.

e = Sample analyzed for purgeable hydrocarbons by EPA method 8010, no purgeable halocarbons were detected.

f = Sample analyzed for VOCs by EPA method 8240, no non-BTEX compounds were detected.

g = Sample analyzed for Total Petroleum Hydrocarbons as motor oil (TPHmo) by EPA method Modified 8015, no TPHmo was detected.

h = Analytic sampling discontinued. Approved by Alameda County Department of Environmental Health.

i = Lighter than gasoline range compounds are significant.

j = Gasoline range compounds having broad chromatographic peaks are significant.

k = No recognizable pattern.

l = Sample diluted due to high organic content.

m= Liquid sample that contains greather than ~2 vol. % sediment.

n = TOC well elevation was increased by 3 ft based on a benchmark discrepancy discovered during a well survey performed on September 11, 2002

Table 2. SVE System - Performance and Soil Vapor Analytical Results - Borsuk Site - 1432 Harrison St - Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (%)	System Vacuum ('H2O)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (prior to dilution) (ppmv)	System Inlet Temp. (degrees F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc. [1] (ppmv)	Effluent HC Conc. [1] (ppmv)		HC Removal Rate [2] (lbs/day)	Emission Rate [2] (lbs/day)		TPHg Destruction Efficiency [2] (%)	Gasoline Cumulative Removal [4] (lbs)
								TPHg	TPHg	Benz	TPHg	TPHg	Benz		
12/20/2001	13.0	--		--	17,000	825	170	920	<10	<0.15	50.18	<0.545	<0.007	-- [3]	0
1/7/2002	443.8	100%		--	12,000	1017	105	1,400	<10	<0.15	47.16	<0.337	<0.005	-- [3]	901
2/4/2002	576.2	20%		--	13,000	916	150	1,100	<10	<0.15	52.94	<0.481	<0.007	-- [3]	1161
3/5/2002	1268.2	99%		--	16,000	1020	135	1,000	<10	<0.15	43.31	<0.433	<0.006	-- [3]	2687
4/2/2002	1939.9	100%		--	4,800	715	114	390	<10	<0.15	14.26	<0.366	<0.005	-- [3]	3899
4/15/2002	2253.2	100%	136	18.3	4,200	709	*	*	28	<0.15	24.67	0.16	<0.001	99.3	4086
5/6/2002	2655.2	80%	77	10.1	5,100	735	*	*	14	<0.15	16.58	0.05	<0.000	99.7	4499
6/5/2002	3373.2	100%	80	15.1	3,800	652	*	*	14	<0.15	18.41	0.07	<0.001	99.6	4995
7/2/2002	4024.9	101%	80	16.3	3,000	672	*	*	<15	0.16	15.70	0.08	<0.001	99.5	5495
8/5/2002	4838.8	100%	80	11.6	1,900	667	*	*	<10	<0.15	7.10	0.04	<0.001	-- [3]	6027
9/10/2002	5700.9	100%	80	10.5	1,800	609	*	*	<10	<0.15	6.08	0.03	<0.000	-- [3]	6282
10/2/2002	6229.7	100%	81	14.0	2,900	801	*	*	<10	<0.15	13.04	0.04	<0.001	-- [3]	6416
11/6/2002	7073.8	100%	82	12.1	1,900	848	*	*	<10	<0.15	7.40	0.04	<0.001	-- [3]	6875
12/5/2002	7771.5	100%	90	8.4	1,400	840	*	*	<10	<0.15	3.78	0.03	<0.000	-- [3]	7090
1/8/2003	8580.5	100%	--	--	--	--	*	*	--	--	--	--	--	--	7217

Table 2. SVE System - Performance and Soil Vapor Analytical Results - Borsuk Site - 1432 Harrison St - Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (%)	System Vacuum ('H2O)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (prior to dilution) (ppmv)	System Inlet Temp. (degrees F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc. [1] (ppmv)	Effluent HC Conc. [1] (ppmv)		HC Removal Rate [2] (lbs/day)	Emission Rate [2] (lbs/day)		TPHg Destruction Efficiency[3] (%)	Gasoline Cumulative Removal[4] (lbs)
								TPHg	TPHg	Benz	TPHg	TPHg	Benz		

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline

Benz = Benzene

HC Conc. = Hydrocarbon Concentrations

ppmv = Parts per million by volume. Analytical lab results converted from micrograms per liter (ug/l) to ppmv assumes the molecular weight of gasoline to be equal to that of hexane.
at 1 atmosphere of pressure and 20 degrees Celsius.

scfm = standard cubic feet per minute

[1] TPHg and benzene concentrations based on Horiba gas analyzer measurements and/or lab results by Modified EPA Methods 8015 and 8020.
Laboratory analytic results for TPHg and benzene are converted from ug/l to ppmv using conversion rates of 0.28 for TPHg and 0.308 for benzene.

[2] The hydrocarbon removal/emission rate is based on the Bay Area Air Quality Management's District's (BAAQMD) Procedures for Soil Vapor Extraction where
Rate = concentration (ppmv) x flow rate (cfm) x 1 lb-mole/386x10^{6}ft^3 x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

[3] As per BAAQMD Permit, destruction efficiency requirements are waived if system TPHg effluent concentration is <10.

[4] Gasoline Cumulative Removal = The previous removal rates multiplied by the interval days of operation plus the previous total removal amount.
The total TPHg removal is based on analytic results and/or field measurements.

* = Flow Rate and Hydrocarbon Concentrations are now measured from the well manifold because there is no longer any dilution air affecting the calculation of the hydrocarbon removal rate.

IR:\SB-2004\Oakl-188-Borsuk\O&M\SVE System Table

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Table 3. SVE System Parameters - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID	Date	Well Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Status (open/closed)
VES-1	12/13/2001	--	--	36,000	open
	12/20/2001	25	6.5	43,000	open
	12/27/2001	48	12.4	41,000	open
	1/7/2002	100	20.5	>10,000	open
	2/8/2002	140	27.0	>10,000	open
	3/5/2002	34	6.3	>10,000	open
	4/2/2002	83	13.5	10070	open
	4/15/2002	101	28.2	10070	open
	5/22/2002	80	22.5	9980	open
	5/27/2002	81	4.5	27000	open
	6/5/2002	77	22.1	11110	open
	6/21/2002	81	H2O	7810	open
	7/2/2002	82	25	10400	open
	7/26/2002	81	22.5	5210	open
	8/5/2002	80	5.5	6020	open
	9/10/2002	80	5.2	9180	open
	10/2/2002	80	10.5	11070	open
	11/6/2002	82	9.0	4850	open
	12/5/2002	90	8.5	4000	open
VES-2	12/13/2001	--	--	40,000	open
	12/20/2001	25	6.0	42,500	open
	12/27/2001	48	12.1	35,000	open
	1/7/2002	100	21.5	>10,000	open
	2/8/2002	140	25.1	>10,000	open
	3/5/2002	34	7.6	>10,000	open
	4/2/2002	83	13.2	--	open
	4/15/2002	102	24.1	1347	open
	5/22/2002	81	26.1	1888	open
	5/27/2002	81	9.5	4710	open
	6/5/2002	79	20.7	2090	open
	6/21/2002	82	47	1820	open
	7/2/2002	81	28.9	5210	open
	7/26/2002	81	13.1	1515	open
	8/5/2002	80	10.5	1925	open
	9/10/2002	80	8.9	1850	open
	10/2/2002	80	8.5	3370	open
	11/6/2002	82	9.0	2180	open
	12/5/2002	90	--	1870	open

Table 3. SVE System Parameters - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID	Date	Well Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Status (open/closed)
VES-3	12/13/2001	--	--	38,000	open
	12/20/2001	25	7.0	41,500	open
	12/27/2001	48	12.0	61,000	open
	1/7/2002	100	22.5	>10,000	open
	2/8/2002	140	26.5	>10,000	open
	3/5/2002	47	7.5	>10,000	open
	4/2/2002	84	11.1	–	open
	4/15/2002	102	24.8	4260	open
	5/22/2002	85	16.5	7090	open
	5/27/2002	81	6.7	7010	open
	6/5/2002	85	14.7	5290	open
	6/21/2002	80	25.5	3450	open
	7/2/2002	82	32.2	4820	open
	7/26/2002	81	9.3	3400	open
	8/5/2002	80	4.5	3380	open
	9/10/2002	80	7.1	3150	open
	10/2/2002	80	4.0	2140	open
	11/6/2002	82	5.5	1215	open
	12/5/2002	90	4.5	1015	open
VES-4	12/13/2001	--	–	35,000	open
	12/20/2001	25	4.9	46,500	open
	12/27/2001	48	12.2	53,000	open
	1/7/2002	100	23.0	>10,000	open
	2/8/2002	140	28.1	>10,000	open
	3/5/2002	47	9.3	>10,000	open
	4/2/2002	84	11.5	–	open
	4/15/2002	102	22.5	5350	open
	5/22/2002	80	21.7	570	open
	5/27/2002	81	6.3	10460	open
	6/5/2002	80	18	4490	open
	6/21/2002	81	41.5	2580	open
	7/2/2002	81	38	9690	open
	7/26/2002	81	2.3	2230	open
	8/5/2002	80	4.4	6160	open
	9/10/2002	80	5.5	2410	open
	10/2/2002	80	3.5	1777	open
	11/6/2002	82	4.5	920	open
	12/5/2002	90	7.0	420	open

Notes:

Hydrocarbon concentrations are measured using a Horiba MEXA-554 gas analyzer. Concentration readings above 10,000 ppmv are above the instrument calibration and are not reliable.

-- = Data not available or not collected

H2O = unable to get reading due to the presence of water

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APPENDIX A

Groundwater Monitoring Field Data Sheets

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Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Product Thickness	Amount of Product Removed	Casing Diam.	Comment TWD
MW-1	8:00	—	20.50				25.05
MW-2	7:55		22.70				25.40
MW-3	7:35		21.94				23.90
MW-4	7:50		22.39				24.50
MW-5	7:45		22.19				28.34
MW-6	7:40		22.25				28.00

Project Name: Bossuk

Project Number/Task: 540-0188-039

Measured By: J Hall

Date: 12-22-02

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WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: RAS	Well ID: MW-1
Project Number: 540-0188	Date: 12-22-02	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 4" pvc
		Technician(s): SG
Initial Depth to Water: 20.50	Total Well Depth: 25.05	Water Column Height: 4.55
Volume/ft: 0.65	1 Casing Volume: 2.95	3 Casing Volumes: 8.87
Purging Device: 4" pvc disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 9
Start Purge Time: 11:10	Stop Purge Time: 11:24	Total Time: 14mins

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
11:15	3	18.4	7.21	1720	
11:20	6	19.2	7.08	1908	
11:25	9	19.4	7.13	1347	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	12-22-02	11:30	3 VOA	HCl	BTEX TPHg MTBE	8020/8015 confirm 8260

CAMBRIA

WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: RAS	Well ID: MW-2
Project Number: 540-0188	Date: 12-22-02	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2 ▯ pvc
		Technician(s): SG
Initial Depth to Water: 29.70	Total Well Depth: 25.40	Water Column Height: 2.70
Volume/ft: 0.16	1 Casing Volume: 0.43	3 Casing Volumes: 1.29
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 2
Start Purge Time: 11:25	Stop Purge Time: 10:39	Total Time: 14 mins

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
10:30	1	19.6	7.22	714	
10:35	1.5	19.1	7.05	628	
10:40	2	19.2	7.09	694	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	12-22-02	10:45	3 Voa	HCl	TPH$_g$ BTEX MTBE	8015/8020/ confirm by 8260

CAMBRIA

WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: RAS	Well ID: MW-4
Project Number: 540-0188	Date: 12-22-02	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 22.39	Total Well Depth: 24.50	Water Column Height: 2.11
Volume/ft: 0.16	1 Casing Volume: 0.33	3 Casing Volumes: 0.99
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 1
Start Purge Time: 8:10	Stop Purge Time: 8:24	Total Time: 14mins

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
8:15	.5	19.7	7.18	720	
8:20	.75	19.7	7.20	940	
8:25	1.00	19.7	7.24	927	

Fe = **mg/L** **ORP =** **mV** **DO =** **mg/L**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	12-22-02	8:30	3 VOA	HCl	TPHg BTEX MTBE	8015/8020 confirm by 8260

FILE COPY

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☒ Yes ☐ No

Report To: Ron Scheele Bill To: Cambria Env. Tech

Company: Cambria Environmental Technology Inc.
6262 Hollis Street
Emeryville, CA 94608 E-mail:

Tele: 510-450-4983 Fax: 510-450-8295

Project #: 540-0188-039 Project Name: Borsuk

Project Location: 1432 Harrison St. Oakland, Ca

Sampler Signature: S. Hill

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	Other: confirm all MTBE by 8260
MW-1		12-22-02	11:30	3	VOA	X					X	X			X	X
MW-2		12-22-02	10:45	3	VOA	X					X	X			X	X
MW-4		12-22-02	8:30	3	VOA	X					X	X			X	X
MW-5		12-22-02	9:15	3	VOA	X					X	X			X	X
MW-6		12-22-02	10:05	3	VOA	X					X	X			X	X

Analysis Request: TPH as Diesel (8015); Total Petroleum Oil & Grease (5520 E&F/B&F); Total Petroleum Hydrocarbons (418.1); EPA 601 / 8010; BTEX ONLY (EPA 602 / 8020); EPA 608 / 8080; EPA 608 / 8080 PCB's ONLY; EPA 624 / 8240 / 8260; EPA 625 / 8270; PAH's / PNA's by EPA 625 / 8270 / 8310; CAM-17 Metals; LUFT 5 Metals; Lead (7240/7421/239.2/6010); RCI

Comments:

	Date:	Time:	Received By:
Relinquished By: S. Hill	12/23	8:55	Linda VOAs
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

CAMBRIA

APPENDIX B

Analytical Results for Quarterly Groundwater Sampling

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-039; Borsuk	Date Sampled: 12/22/02
6262 Hollis St.		Date Received: 12/23/02
Emeryville, CA 94608	Client Contact: Ron Scheels	Date Reported: 12/31/02
	Client P.O.:	Date Completed: 12/31/02

WorkOrder: 0212388

December 31, 2002

Dear Ron:

Enclosed are:

1). the results of **5** analyzed samples from your **#540-0188-039; Borsuk project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-039; Borsuk	Date Sampled: 12/22/02
6262 Hollis St.		Date Received: 12/23/02
Emeryville, CA 94608	Client Contact: Ron Scheels	Date Extracted: 12/26/02-12/28/02
	Client P.O.:	Date Analyzed: 12/26/02-12/28/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0212388

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	89,000,a,i	ND<1700	2600	9300	530	28,000	330	95.9
002A	MW-2	W	630,a	ND	48	56	19	82	1	112
003A	MW-4	W	35,000,a	ND<1500	13,000	310	1100	1800	200	102
004A	MW-5	W	82,a	ND	0.57	ND	0.68	ND	1	92.8
005A	MW-6	W	ND	ND	ND	ND	ND	ND	1	96.4
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0212388

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 5438 Spiked Sample ID: 0212388-004A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	60	102	92	10.8	108	99	8.72	80	120
MTBE	ND	10	93.1	93.4	0.252	107	104	2.86	80	120
Benzene	0.572	10	87.7	79.5 ,F1	9.20	109	105	3.57	80	120
Toluene	ND	10	90.8	87.8	3.41	105	101	4.31	80	120
Ethylbenzene	0.6829	10	82.8	77.3 ,F1	6.22	103	101	2.09	80	120
Xylenes	ND	30	91.3	86	6.02	96.7	93.3	3.51	80	120
%SS:	92.8	100	88.7	88.6	0.124	114	106	7.11	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

F1 = MS / MSD exceed acceptance criteria. LCS - LCSD validate prep batch.

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

~~COC~~ 021288

LOG BY EV

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

EDF Required? ☒ Yes ☐ No

Report To: Ron Scheele Bill To: Cambria Env. Tech

Company: Cambria Environmental Technology Inc.

6262 Hollis Street

Emeryville, CA 94608 E-mail:

Tele: 510-450-1983 Fax: 510-450-8295

Project #: 540-0188-039 Project Name: Borsuk

Project Location: 1432 Harrison St. Oakland, Ca

Sampler Signature: S. Mill

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: BTEX & TPH as Gas (602/8020 + 8015)/ MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other: Confirm all MTBE by 8260	Comments
MW-1		12-22-02	11:30	3	VOA	X					X	X			X															X	
MW-2		12-22-02	10:45	3	VOA	X					X	X			X															X	
MW-4		12-22-02	8:30	3	VOA	X					X	X			X															X	
MW-5		12-22-02	9:15	3	VOA	X					X	X			X															X	
MW-6		12-22-02	10:05	3	VOA	X					X	X			X															X	

Relinquished By:	Date:	Time:	Received By:
S. Mill	12/23	8:55	VONAS
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE/T°
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
PRESERVED IN LAB

McCampbell Analytical Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0212388

Client:
Cambria Env. Technology
6262 Hollis St.
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #540-0188-039; Borsuk
PO:

Date Received: **12/23/02**
Date Printed: **12/23/02**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests 8021B/8015
0212388-001	MW-1	Water	12/22/02 11:30:00 AM		A
0212388-002	MW-2	Water	12/22/02 10:45:00 AM		A
0212388-003	MW-4	Water	12/22/02 8:30:00 AM		A
0212388-004	MW-5	Water	12/22/02 9:15:00 AM		A
0212388-005	MW-6	Water	12/22/02 10:05:00 AM		A

Prepared by: Shino Hamilton

Comments: CONFIRM ALL MTBE BY 8260

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

CAMBRIA

APPENDIX C

Analytical Results for SVE System Operation

McCampbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 10/02/02
6262 Hollis St.		Date Received: 10/03/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 10/09/02
	Client P.O.:	Date Completed: 10/09/02

October 09, 2002

Dear Ron:

Enclosed are:

1). the results of **2** analyzed samples from your **#540-0188-44; Borsuk project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 10/02/02
6262 Hollis St.		Date Received: 10/03/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 10/03/02-10/04/02
	Client P.O.:	Date Analyzed: 10/03/02-10/04/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0210082

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	2900,a	ND<50	39	37	2.8	48	10	---#
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	111

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*vapor samples are reported in uL/L, water samples in ug/L, soil and sludge samples in mg/kg, wipe samples in ug/wipe, and TCLP extracts in ug/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0210082

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 4259 Spiked Sample ID: 0210068-001A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	60	102	105	2.78	101	103	1.68	80	120
MTBE	ND	10	97.9	84.9	14.2	87	94.2	7.86	80	120
Benzene	ND	10	98.5	109	10.2	102	94.2	7.70	80	120
Toluene	ND	10	101	108	7.14	105	97.4	7.85	80	120
Ethylbenzene	ND	10	99.8	108	8.14	105	101	4.13	80	120
Xylenes	ND	30	103	107	3.17	103	99.7	3.61	80	120
%SS:	91.3	100	92.7	97.2	4.80	95.2	88.9	6.81	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

McCampbell Analytical Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0210082

Client:
Cambria Env. Technology
6262 Hollis St.
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #540-0188-44; B
PO:

03-Oct-02

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests: 8021B/8015						
0210082-001	INF	Air	10/2/02 1:00:00 AM	☐	A						
0210082-002	EFF	Air	10/2/02 1:00:00 AM	☐	A						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

0210082

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Ron Scheele Bill To: SAME
Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608
Tele: (510) 450-1983 Fax: (510) 450-8295
Project #: 540-0188-44 Project Name: BORSUK
Project Location: 1432 HARRISON ST OAKLAND CA
Sampler Signature: [signature]

SAMPLE ID	LOCATION	Date	Time	# Containers	Type Containers	Water	Soil	Air	Sludge	Other	Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE
INF	Oakland	10/2/02	1pm	1	Bag			X							X
[redacted]															
EFF	↓	10/2/02	1pm	1	Bag			X							X

Analysis Request (additional columns): TPH as Diesel (8015); Total Petroleum Oil & Grease (5520 E&F/B&F); Total Petroleum Hydrocarbons (418.1); EPA 601 / 8010; BTEX ONLY (EPA 602 / 8020); EPA 608 / 8080; EPA 608 / 8080 PCB's ONLY; EPA 624 / 8240 / 8260; EPA 625 / 8270; PAH's / PNA's by EPA 625 / 8270 / 8310; CAM-17 Metals; LUFT 5 Metals; Lead (7240/7421/239.2/6010); RCI; Other; Comments

	VOAS	O&G	METALS	OTHER
PRESERVATION				

ICE/t° ____
GOOD CONDITION ✓
HEAD SPACE ABSENT ____
DECHLORINATED IN LAB ____
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB ____

Relinquished By:	Date:	Time:	Received By:
[signature]	10/2/02	4pM	Secured Location
[signature]	10/3/02	11:35	[signature]
[signature]	10/3/02	1245	[signature] 10/3/02

Remarks:
REPORT IN ppMV; 10 ppMV limit
20 ml injection volume
PLEASE FAX RESULTS

McCampbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 11/06/02
6262 Hollis St.		Date Received: 11/07/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 11/12/02
	Client P.O.:	Date Completed: 11/12/02

WorkOrder: 0211128

November 12, 2002

Dear Ron:

Enclosed are:

1). the results of 2 analyzed samples from your **#540-0188-44; Borsuk project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical Inc.
110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 11/06/02
6262 Hollis St.		Date Received: 11/07/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 11/08/02
	Client P.O.:	Date Analyzed: 11/08/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0211128

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	1900,a	ND<20	16	17	1.2	23	10	---#
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	107

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0211128

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 4814 Spiked Sample ID: N/A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	102	104	1.15	80	120
MTBE	N/A	10	N/A	N/A	N/A	85.1	82.4	3.28	80	120
Benzene	N/A	10	N/A	N/A	N/A	92.8	91.5	1.42	80	120
Toluene	N/A	10	N/A	N/A	N/A	96.4	95.4	1.09	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	98.6	96.4	2.25	80	120
Xylenes	N/A	30	N/A	N/A	N/A	99.3	99.3	0	80	120
%SS:	N/A	100	N/A	N/A	N/A	92.5	90.8	1.90	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 0211128

Client:
Cambria Env. Technology
6262 Hollis St.
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #540-0188-44; B
PO:

07-Nov-02

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					V8021B/8015C						
0211128-001	INF	Air	11/6/02 4:00:00 PM	☐	A						
0211128-002	EFF	Air	11/6/02 4:00:00 PM	☐	A						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

CETC

0211128

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Ron Scheele Bill To: SAME

Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608

Tele: (510) 450-1983 Fax: (510) 450-8295

Project #540-0188-44 Project Name: BORSUK

Project Location: 1432 HARRISON ST OAKLAND CA

Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	Other	Comments
INF	Oakland	11/6/02	4PM	1	Bag			X							X																
[redacted]																															
EFF	↓	11/6/02	4PM	1	Bag			X							X																

ICE/t° _____
GOOD CONDITION ✓
HEAD SPACE ABSENT ___
DECHLORINATED IN LAB ___

PRESERVATION ___ VOA | O&G | METALS | OTHER
APPROPRIATE ✓
CONTAINERS
PRESERVED IN LAB ___

Relinquished By:	Date:	Time:	Received By:
	11/6/02	6pm	Secured Location
Relinquished By:	Date:	Time:	Received By:
280	11/7	11:30	
Relinquished By:	Date:	Time:	Received By:
#280	11-7	4:10	11/07/02

Remarks:
REPORT IN ppmv; 10 ppmv limit
20 ml injection volume
PLEASE FAX RESULTS

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Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 12/05/02
6262 Hollis St.		Date Received: 12/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 12/12/02
	Client P.O.:	Date Completed: 12/12/02

WorkOrder: 0212114

December 12, 2002

Dear Ron:

Enclosed are:

1). the results of 2 analyzed samples from your **#540-0188-44; Borsuk project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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Cambria Env. Technology	Client Project ID: #540-0188-44; Borsuk	Date Sampled: 12/05/02
6262 Hollis St.		Date Received: 12/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 12/07/02
	Client P.O.:	Date Analyzed: 12/07/02

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0212114

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	1400,a	ND<15	9.6	12	1.1	33	10	---#
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	---#

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0212114

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 5199 Spiked Sample ID: N/A

Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	103	98.7	4.10	80	120
MTBE	N/A	10	N/A	N/A	N/A	84.4	85.3	1.05	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.7	94.5	1.21	80	120
Toluene	N/A	10	N/A	N/A	N/A	97.5	95.7	1.88	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	94.7	93.6	1.13	80	120
Xylenes	N/A	30	N/A	N/A	N/A	99.3	99	0.336	80	120
%SS:	N/A	100	N/A	N/A	N/A	91.4	89.3	2.29	80	120

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS – MSD) / (MS + MSD) * 2.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 0212114

Client:
Cambria Env. Technology
6262 Hollis St.
Emeryville, CA 94608

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #540-0188-44; Borsuk
PO:

Date Received: **12/6/02**
Date Printed: **12/6/02**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					8021B/8015						
0212114-001	INF	Air	12/5/02 5:30:00 PM	☐	A						
0212114-002	EFF	Air	12/5/02 5:30:00 PM	☐	A						

Prepared by: Maria

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

cetc

0212114

McCAMPBELL ANALYTICAL INC.
110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

Report To: Ron Scheele Bill To: SAME

Company: Cambria Environmental Technology
6262 Hollis Street
Emeryville, CA 94608

Tele: (510) 450-1983 Fax: (510) 450-8295

Project #: 540-0188-44 Project Name: BORSUK

Project Location: 1432 HARRISON ST OAKLAND CA

Sampler Signature: [signature]

Analysis Request: BTEX & TPH as Gas (602/8020 + 8015)/ MTBE; TPH as Diesel (8015); Total Petroleum Oil & Grease (5520 E&F/B&F); Total Petroleum Hydrocarbons (418.1); EPA 601 / 8010; BTEX ONLY (EPA 602 / 8020); EPA 608 / 8080; EPA 608 / 8080 PCB's ONLY; EPA 624 / 8240 / 8260; EPA 625 / 8270; PAH's / PNA's by EPA 625 / 8270 / 8310; CAM-17 Metals; LUFT 5 Metals; Lead (7240/7421/239.2/6010); RCI; Other; Comments

SAMPLE ID	LOCATION	Date	Time	# Containers	Type Containers	Water	Soil	Air	Sludge	Other	Ice	HCl	HNO$_3$	Other	BTEX & TPH as Gas (602/8020 + 8015)/ MTBE
INF	Oakland	12/5/02	5:30p	1	Bag			X							X
[redacted]															
EFF	↓	↓	↓	1	Bag			X							X

ICE/t° ____ GOOD CONDITION ____ HEAD SPACE ABSENT ____ DECHLORINATED IN LAB ____ PRESERVATION ____ APPROPRIATE CONTAINERS ____ PRESERVED IN LAB ____ VOAS | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
[signature]	12/5/02	730p	Secured Location
[signature]	12/6/02	11:55	Steve Dong 234
[signature] 234	12/6/02	1605	Melissa Valles

Remarks: REPORT IN ppMV; 10 ppmv limit
20 ml injection volume
PLEASE FAX RESULTS

CAMBRIA

APPENDIX D

Electronic Delivery Confirmation

AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_WELL FILE

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Title:	**4QM02 Borsuk geo_well**
Submittal Date/Time:	**2/20/2003 8:53:31 AM**
Confirmation Number:	**3888508439**

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Logged in as CAMBRIA-EM
(AUTH_RP)

CONTACT SITE ADMINISTRATOR.

AB2886 Electronic Delivery

Your EDF file has been succcessfully uploaded!

Confirmation Number: 1181487381
Date/Time of Submittal: 2/20/2003 1:22:45 PM
Facility Global ID: T0600100682
Facility Name: A BACHARACH TR & B BORSUK
Submittal Title: 4QM02
Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH_RP) CONTACT SITE ADMINISTRATOR