RO 266

MARK BORSUK
Attorney at Law
(415) 922-4740 / FAX 922-1485 / CELL 264-8364
mark@borsuk.com / www.borsuk.com
1626 Vallejo Street
San Francisco, CA 94123-5116

November 7, 2003

Mr. Don Hwang
Hazardous Materials Specialist
ACHCSA
1131 Harbor Bay Parkway
Alameda, CA 94501
(510) 567-6700 / FAX 337-9335
tpeacock@co.alameda.ca.us

SUBJECT: IIIQ03 Monitoring/SVE System Progress Report
1432 Harrison Street, Oakland, CA 94612
SITE ID 498

Dear Mr. Hwang:

Attached is the IIIQ03 Groundwater Monitoring/SVE Systems Progress Report for the above site. If you have a question, please contact me.

Sincerely yours,

Mark Borsuk

RO 266

CAMBRIA

November 4, 2003

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

Re: **Groundwater Monitoring and System Progress Report**
Third Quarter 2003
Allright Parking
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 – Third Quarter 2003*. Presented in the report are the third quarter 2003 activities and results and the anticipated fourth quarter 2003 activities. Attached are two additional copies for submittal to the Alameda County Health Care Service Agency (ACHCSA) and for your file.

If you have any questions or comments regarding this report, please call me at (510) 420-3327.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, R.G.
Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report - Third Quarter 2003

Cambria Environmental Technology, Inc.

5900 Hollis Street
Suite A
Emeryville, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

THIRD QUARTER 2003

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

November 4, 2003

Prepared for:

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

Prepared by:

Cambria Environmental Technology, Inc.
5900 Hollis Street, Suite A
Emeryville, California 94608

Gretchen M. Hellmann
Project Engineer

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

Ron Scheele, R.G.
Senior Geologist

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

THIRD QUARTER 2003

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

November 4, 2003

INTRODUCTION

On behalf of Mr. Mark Borsuk, Cambria Environmental Technology, Inc. (Cambria) has prepared this *Groundwater Monitoring and System Progress Report – Third Quarter 2003* for the above-referenced site (see Figure 1). Presented in this report are the third quarter 2003 groundwater monitoring and remediation activities and the anticipated fourth quarter 2003 activities.

THIRD QUARTER 2003 ACTIVITIES AND RESULTS

Monitoring Activities

Field Activities: On July 23, 2003, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) in all monitoring wells. Groundwater samples were collected from wells MW-2, MW-4, and MW-5. Wells MW-3 and MW-6 are sampled on an annual basis, typically during the first quarter sampling event. Well MW-1 contained SPH and therefore, was not sampled. Groundwater monitoring field data sheets are presented as Appendix A. The groundwater monitoring data has been submitted to the Geotracker database. See Appendix D for the Geotracker electronic delivery confirmation.

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. The laboratory analytical report is included as Appendix B. Hydrocarbon concentrations are shown on Figure 1 and Table 1. The analytical data was submitted to the Geotracker database. See Appendix D for the Geotracker electronic delivery confirmation.

Monitoring Results

Groundwater Flow Direction: Based on depth-to-water measurements collected during Cambria's July 23, 2003 site visit, groundwater generally flows beneath the site toward the northeast at a gradient of 0.017 feet/foot. Groundwater also flows toward the southwest in the vicinity of well MW-6 (Figure 1). The groundwater gradient is consistent with previous quarters. Depth to water and groundwater elevation data is presented in Table 1.

Hydrocarbon Distribution in Groundwater: During the third quarter event, SPH were measured at a thickness of 0.07 feet in well MW-1. The SPH in well MW-1 suggests that hydrocarbon-impacted soil still remains near the bottom of the smear zone and/or beneath the former USTs.

Hydrocarbon concentrations were detected in all three wells sampled this quarter. The maximum TPHg concentration was detected in well MW-2 at 28,000 micrograms per liter (µg/L). The maximum benzene concentration was detected in well MW-4 at 7,600 µg/L. MTBE was not detected in any of the wells. Hydrocarbon concentrations increased in wells MW-2 and MW-4 relative to the previous quarter. The rise in hydrocarbon concentrations in well MW-2 appears to correlate with a seasonal drop in the groundwater table.

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 status. 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.

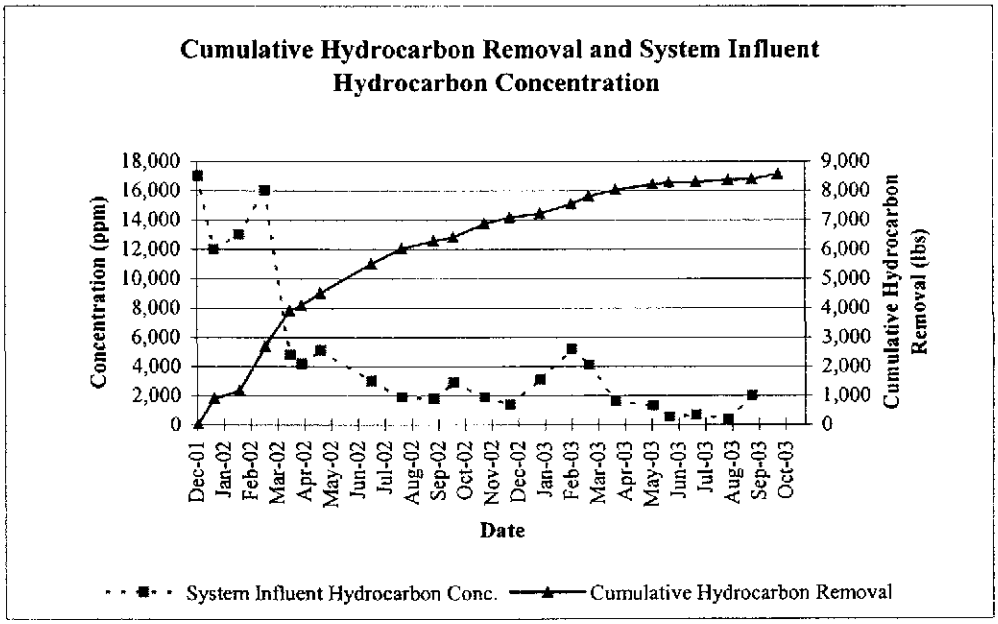
SVE/AS System Operation and Maintenance Activities: During the third quarter, Cambria performed system operation and maintenance (O&M) on the SVE/AS system approximately three times per month. Individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all SVE wells and from the catalytic oxidizer/blower (see Tables 2 and 3). The individual well air sparge flow and pressure measurements were also collected. Air sparge flow gauges were cleaned and the system blower oil was changed. 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.

System influent and effluent vapor samples were collected and submitted for laboratory analysis on July 2, August 7, and September 3, 2003. Vapor sample results indicated that the catalytic oxidizer was achieving proper destruction efficiency and was operating within BAAQMD air permit requirements. Table 2 summarizes SVE 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 third quarter. System optimization events were performed during August and September to maximize hydrocarbon removal. Wells VES-1/AS-1, VES-3/AS-3, and VES-4/AS-4 were opened and closed due to varying hydrocarbon concentrations. Each optimization event resulted in an increased influent hydrocarbon concentration.

During the quarter influent vapor concentrations ranged from 370 to 2,000 parts per million volume (ppmv) and influent vapor flow rates ranged from 7.6 to 9.7 standard cubic feet per minute (see Table 2). Hydrocarbon removal rates also ranged from approximately 0.9 to 6.16 pounds per day. The variability in hydrocarbon removal is possibly due to changing air sparge flow rates and system optimization activities. As of October 7, 2003, approximately 8,570 pounds of hydrocarbons had extracted and destroyed by soil vapor extraction activities (see graph below and Table 2).



AS System Performance: The AS system operated throughout the third quarter. The AS system is set to cycle each AS well between 15 and 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. AS injection flow rates and intervals were adjusted during system optimization events. Air pressures ranged from 5 to 12 pounds per square inch (psi) and injection flow rates ranged from 0.5 to 3 cubic feet per minute (cfm).

ANTICIPATED FOURTH QUARTER 2003 ACTIVITIES

Groundwater Sampling: Cambria will gauge all wells, check wells for SPH, and collect groundwater samples from all wells not containing SPH. As per the annual sampling schedule, wells MW-3 and MW-6 will not be sampled again until during the first quarter 2004. Groundwater samples will be analyzed for TPHg by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. MTBE detected in samples from wells MW-1, MW-2, MW-4, and MW-5 will be analyzed by EPA Method 8260. Groundwater monitoring and sampling results will be submitted to the State's Geotracker Database. Cambria will summarize groundwater monitoring activities and results in the *Groundwater Monitoring and System Progress Report - Fourth Quarter 2003.*

Remediation System: Cambria will continue to perform operation and maintenance of the SVE/AS system approximately two to three times per month during the fourth 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 hydrocarbon meter measurements from the individual wells. Cambria will evaluate the performance of the remediation system and include the results with the *Groundwater Monitoring and System Progress Report - Fourth Quarter 2003.*

System Modification: To address the SPH in well MW-1, Cambria plans to connect well MW-1 to the remediation system for SVE in the fourth quarter. New underground remediation piping will be installed from the remediation system to well MW-1. If well MW-1 does not allow for sufficient vapor flow (screened from 16 to 20 feet below grade surface), a new SVE well may be installed in the same oversized well box.

APPENDICES

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 Groundwater Sampling
Appendix C - Analytical Results for SVE System Operation
Appendix D – Geotracker Electronic Delivery Confirmations

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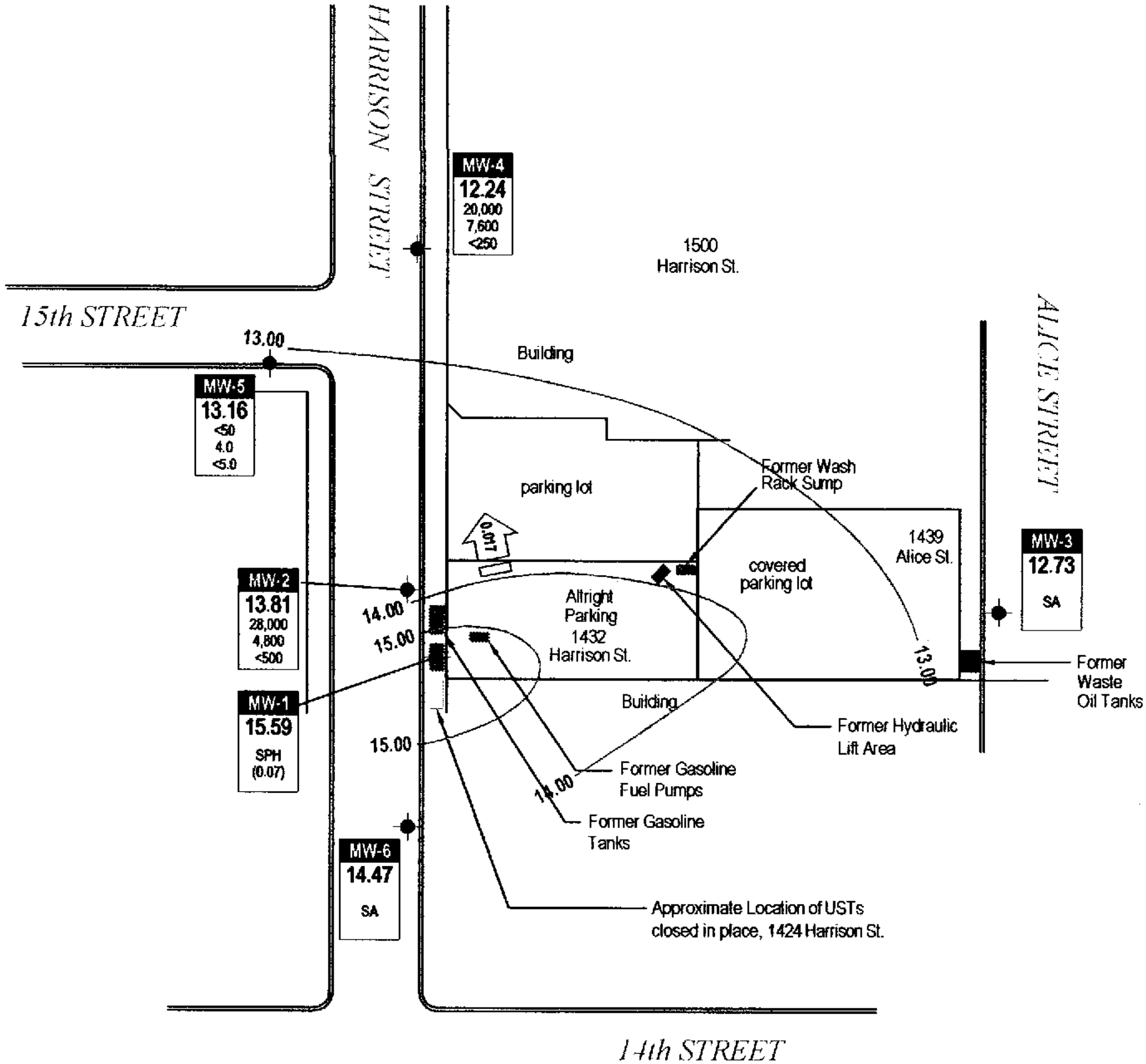
11/4/03



EXPLANATION

Symbol	Meaning
◆	Groundwater monitoring well
14.00 ──	Groundwater elevation contour, in feet above mean sea level (msl)
⇨ 0.017	Groundwater flow direction and gradient
SPH	Separate-phase hydrocarbons (thickness in feet)
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)
SA	Sampled Annually

N

0 50 100

Scale (ft)

FIGURE

1

Allright Parking

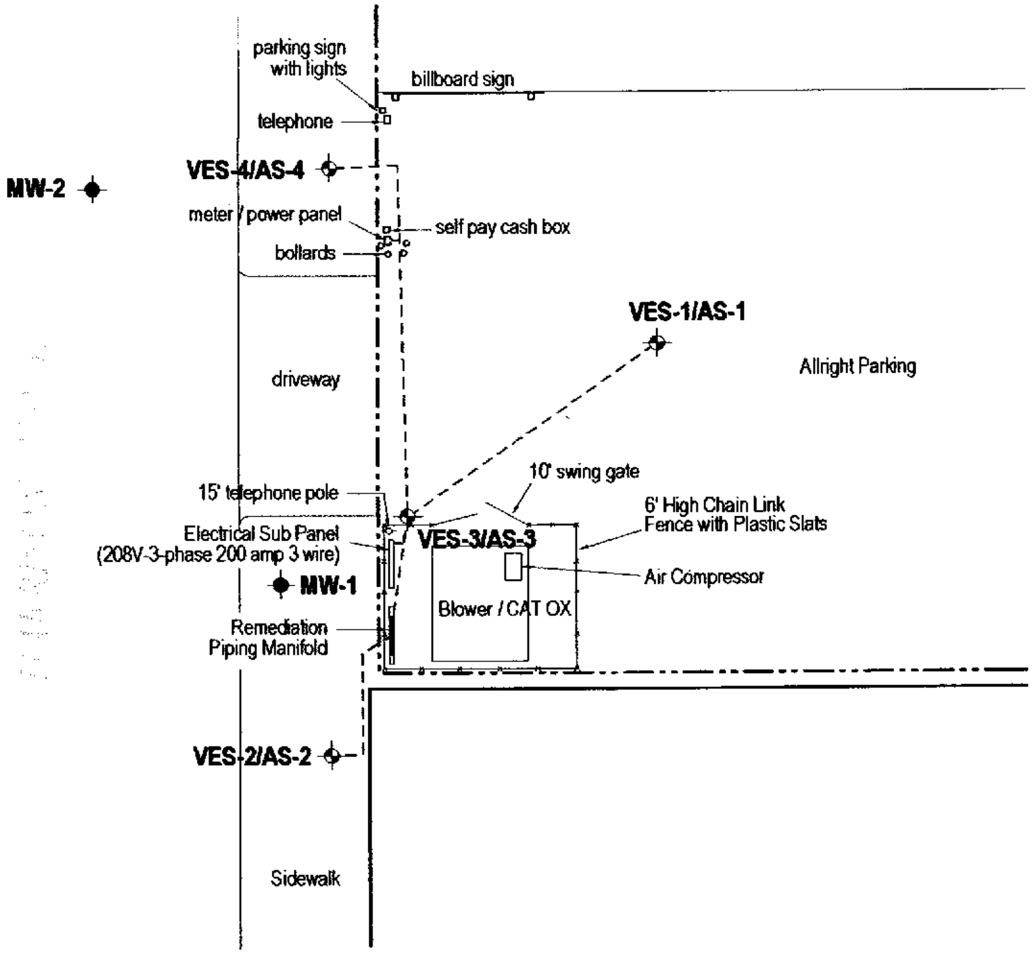
1432 Harrison Street

Oakland, California

CAMBRIA

Groundwater Elevation and Analytical Summary

July 23, 2003



EXPLANATION

VES-1/AS-1 — Vapor Extraction / Air Sparging Coaxial Well Location

MW-1 — Monitoring Well Location

- - - - - - - - Underground Remediation Piping

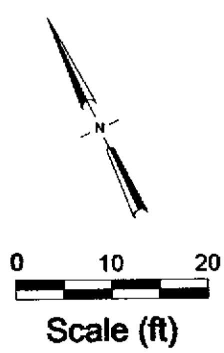


FIGURE **2**

Borsuk Properties
1432 Harrison Street
Oakland, California

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Soil Vapor Extraction/ Air Sparge System (As Built)

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Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID *TOC (feet)*	Date	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-1	8/1/1994	--	--	--	170,000	35,000	51,000	2,400	13,000	--	--
34.95	12/21/1994	19.53	--	15.42	180,000	41,000	64,000	3,100	100,000	--	--
	3/13/1995	18.66	--	16.29	150,000	31,000	45,000	2,500	17,000	--	--
	6/27/1995	18.20	--	16.75	71,000	17,000	18,000	1,600	7,700	--	--
	7/7/1995	18.35	--	16.60	71,000	17,000	18,000	1,600	7,700	--	--
	9/28/1995	18.20	--	16.75	110,000	27,000	34,000	1,700	14,000	--	--
	12/20/1995	19.96	--	14.99	120,000	33,000	43,000	2,300	15,000	--	--
	3/26/1996	19.27	--	15.68	140,000	29,000	36,000	1,900	13,000	<200*	d
	6/20/1996	18.64	--	16.31	110,000	30,000	38,000	2,200	13,000	<200*	--
	9/26/1996	19.35	--	15.60	170,000	28,000	40,000	2,200	15,000	ND**	--
	10/28/1996	19.58	--	15.37	--	--	--	--	--	--	--
	12/12/1996	19.68	--	15.27	110,000	36,000	47,000	2,500	16,000	ND*	--
	3/31/1997	18.80	--	16.15	160,000	24,000	39,000	1,900	13,000	ND*	--
	6/27/1997	19.26	--	15.69	130,000	25,000	36,000	2,000	14,000	ND*	--
	9/9/1997	19.70	--	15.25	99,000	22,000	27,000	1,600	13,000	270*	--
	12/18/1997	19.25	--	15.70	160,000	30,000	44,000	2,200	15,000	ND***	--
	3/12/1998	17.52	--	17.43	190,000	20,000	49,000	2,500	18,000	ND***	--
	6/22/1998	18.63	--	16.32	90,000	19,000	40,000	2,100	16,000	--	--
	9/18/1998	18.60	--	16.35	190,000	29,000	48,000	2,400	17,000	--	--
	12/23/1998	19.18	--	15.77	140,000	24,000	44,000	2,000	8,200	--	--
	3/29/1999	18.52	--	16.43	181,000	22,200	40,100	1,844	12,200	--	--
	6/23/1999	18.60	--	16.35	80,000	20,000	33,000	1,600	11,000	--	--
	9/24/1999	19.05	--	15.90	117,000	15,100	20,700	1,550	11,800	--	--
	12/23/1999	19.95	--	15.00	186,000	25,900	39,000	1,990	12,400	--	--
	3/21/2000	18.48	--	16.47	210,000	35,000	42,000	2,200	13,000	<3,000	a
	7/3/2000	18.95	--	16.00	200,000	33,000	46,000	2,200	15,000	<200*	a
	9/7/2000	19.45	Sheen	15.50	--	--	--	--	--	--	--
	12/5/2000	19.90	--	15.05	220,000	42,000	57,000	2,700	17,000	<200	a
	3/6/2001	18.20	--	16.75	180,000	27,000	39,000	2,000	13,000	<1200 (<20)	a,l
	6/8/2001	20.14	--	14.81	170,000	28,000	40,000	1,900	13,000	<200	a
	8/27/2001	21.19	--	13.76	130,000	24,000	33,000	1,600	11,000	<350	a
	10/25/2001	21.74	--	13.21	160,000	22,000	28,000	1,500	10,000	<350	a
	3/1/2002	21.39	0.41	13.85	--	--	--	--	--	--	--
	6/10/2002	22.30	--	12.65	210,000	30,000	51,000	3,100	22,000	<1,000*	a
34.96	9/3/2002	21.40	--	13.56	2,500,000	31,000	170,000	29,000	170,000	2,500,000	a
	12/22/2002	20.50	--	14.46	89,000	2,600	9,300	530	28,000	<1,700	a,n
	1/23/2003	18.57	--	16.39	130,000	600	1,600	<100	41,000	<50***	a,b,l
	6/12/2003	19.10	0.07	15.91	--	--	--	--	--	--	--
	7/23/2003	**19.42**	**0.07**	**15.59**	--	--	--	--	--	--	--

Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID *TOC (feet)*	Date	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-2	8/1/1994	--	--	--	130,000	28,000	35,000	3,000	12,000	--	--
35.18	12/21/1994	19.91	--	15.27	200	140,000	200,000	3,500	22,000	--	--
	3/13/1995	19.15	--	16.03	500	9,200	23,000	7,000	36,000	--	--
	6/27/1995	18.74	--	16.44	120,000	23,000	30,000	2,700	13,000	--	--
	7/7/1995	18.80	--	16.38	120,000	23,000	30,000	2,700	13,000	--	--
	9/28/1995	19.30	--	15.88	110,000	23,000	29,000	2,500	11,000	--	--
	12/20/1995	20.24	--	14.94	83,000	980	1,800	2,200	10,000	--	--
	3/26/1996	19.69	--	15.49	150,000	23,000	32,000	2,800	12,000	<200*	d
	6/20/1996	19.20	--	15.98	94,000	15,000	23,000	2,400	12,000	<200*	--
	9/26/1996	19.80	--	15.38	150,000	20,000	29,000	2,800	12,000	ND**	--
	10/28/1996	20.18	--	15.00	--	--	--	--	--	--	--
	12/12/1996	20.17	--	15.01	58,000	3,100	11,000	1,700	8,100	220*	--
	3/31/1997	19.67	--	15.51	38,000	6,000	7,900	690	3,300	ND*	--
	6/27/1997	19.68	--	15.50	62,000	13,000	16,000	1,300	6,000	ND*	--
	9/9/1997	20.20	--	14.98	81,000	16,000	18,000	1,800	8,600	ND***	--
	12/18/1997	19.80	--	15.38	110,000	18,000	26,000	2,200	9,500	ND***	--
	3/12/1998	18.07	--	17.11	120,000	16,000	26,000	2,200	9,400	ND***	--
	6/22/1998	18.29	--	16.89	38,000	9,800	9,500	1,500	6,000	--	--
	9/18/1998	19.09	--	16.09	68,000	12,000	16,000	1,400	5,900	--	--
	12/23/1998	19.67	--	15.51	180,000	16,000	22,000	2,200	8,300	--	--
	3/29/1999	18.97	--	16.21	16,600	1,380	1,920	373	1,840	--	--
	6/23/1999	18.25	--	16.93	41,000	10,000	9,400	1,100	5,000	--	--
	9/24/1999	19.60	--	15.58	40,600	4,880	3,490	1,090	4,560	--	--
	12/23/1999	20.21	--	14.97	61,900	6,710	9,320	1,150	5,360	--	--
	3/21/2000	18.93	--	16.25	98,000	14,000	21,000	1,600	6,900	<1600	a
	7/3/2000	19.38	--	15.80	140,000	18,000	33,000	2,600	11,000	<200*	a
	9/7/2000	19.83	--	15.35	110,000	17,000	21,000	2,200	9,700	<100***	a,l
	12/5/2000	20.30	--	14.88	130,000	19,000	28,000	2,500	11,000	<200	a
	3/6/2001	19.57	--	15.61	32,000	3,400	3,400	580	2,500	<200	a
	6/8/2001	20.59	--	14.59	72,000	9,400	9,200	1,300	5,800	<200	a
	8/27/2001	21.79	--	13.39	110,000	17,000	28,000	2,600	11,000	<950	a
	10/25/2001	22.05	--	13.13	110,000	15,000	18,000	2,000	8,700	<350	a
	3/1/2002	21.80	--	13.38	3,100	370	180	62	330	<5.0*	a
	6/10/2002	22.83	--	12.35	7,800	2,000	1,100	76	570	<100*	a
35.21	9/3/2002	22.03	--	13.18	21,000	2,400	2,900	320	1,400	<500	a
	12/22/2002	22.70	--	12.51	630	48	56	19	82	<5.0	a
	1/23/2003	20.49	--	14.72	1,100	27	32	19	150	<25	a
	6/12/2003	21.03	--	14.18	10,000	2,100	1,600	150	660	<250	a
	7/23/2003	**21.40**	--	**13.81**	**28,000**	**4,800**	**4,800**	**380**	**1,700**	**<500**	a

Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID *TOC (feet)*	Date	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-3	8/1/1994	--	--	--	<50	<0.5	<0.5	<0.5	<2.0	--	--
33.97	12/21/1994	18.82	--	15.15	<50	<0.5	<0.5	<0.5	<0.5	--	e
(annual sampling)	3/13/1995	17.86	--	16.11	<50	<0.5	<0.5	<0.5	<0.5	--	f,g
	7/7/1995	18.25	--	15.72	--	--	--	--	--	--	h
	9/28/1995	18.00	--	15.97	--	--	--	--	--	--	--
	12/20/1995	18.74	--	15.23	--	--	--	--	--	--	--
	3/26/1996	18.25	--	15.72	--	--	--	--	--	--	--
	6/20/1996	18.35	--	15.62	--	--	--	--	--	--	--
	9/26/1996	19.12	--	14.85	--	--	--	--	--	--	--
	10/28/1996	19.11	--	14.86	--	--	--	--	--	--	--
	12/12/1996	18.61	--	15.36	--	--	--	--	--	--	--
	3/31/1997	18.35	--	15.62	--	--	--	--	--	--	--
	6/27/1997	18.81	--	15.16	--	--	--	--	--	--	--
	9/9/1997	19.18	--	14.79	--	--	--	--	--	--	--
	12/18/1997	18.64	--	15.33	--	--	--	--	--	--	--
	3/12/1998	17.56	--	16.41	--	--	--	--	--	--	--
	6/22/1998	18.64	--	15.33	--	--	--	--	--	--	--
	9/18/1998	18.33	--	15.64	--	--	--	--	--	--	--
	12/23/1998	18.60	--	15.37	--	--	--	--	--	--	--
	3/29/1999	17.85	--	16.12	--	--	--	--	--	--	--
	6/23/1999	18.67	--	15.30	--	--	--	--	--	--	--
	9/24/1999	18.64	--	15.33	--	--	--	--	--	--	--
	12/23/1999	19.32	--	14.65	--	--	--	--	--	--	--
	3/21/2000	17.89	--	16.08	--	--	--	--	--	--	--
	7/3/2000	18.40	--	15.57	--	--	--	--	--	--	--
	9/7/2000	18.75	--	15.22	--	--	--	--	--	--	--
	12/5/2000	19.03	--	14.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	18.12	--	15.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.02	--	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	8/27/2001	21.09	--	12.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	21.29	--	12.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	21.14	--	12.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	21.99	--	11.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
34.01	9/3/2002	21.17	--	12.84	--	--	--	--	--	--	--
	12/22/2002	21.94	--	12.07	--	--	--	--	--	--	--
	1/23/2003	20.08	--	13.93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/12/2003	20.95	--	13.06	--	--	--	--	--	--	--
	7/23/2003	**21.28**	--	**12.73**	--	--	--	--	--	--	--

Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID *TOC (feet)*	Date	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-4	10/28/1996	19.32	--	14.43	10,000	3,900	420	400	360	<200*	n
33.75	12/12/1996	19.42	--	14.33	11,000	4,200	410	420	260	32*	--
	3/31/1997	18.67	--	15.08	ND	ND	ND	ND	ND	ND*	--
	6/27/1997	19.08	--	14.67	160	49	1.2	ND	5.9	ND*	--
	9/9/1997	19.33	--	14.42	7,400	5,000	410	230	470	33*	--
	12/18/1997	19.17	--	14.58	710	170	8.0	ND	39	ND***	--
	3/12/1998	17.68	--	16.07	1,300	410	21	ND	57	ND***	--
	6/22/1998	17.63	--	16.12	ND	ND	ND	ND	ND	--	--
	9/18/1998	18.58	--	15.17	ND	42	1.6	ND	4.8	--	--
	12/23/1998	19.01	--	14.74	1,900	1,000	76	50	120	--	--
	3/29/1999	18.35	--	15.40	ND	ND	ND	ND	ND	--	--
	6/23/1999	17.58	--	16.17	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.05	--	14.70	9,150	3,270	131	34	537	--	--
	12/23/1999	19.41	--	14.34	12,200	5,360	275	424	592	--	--
	3/21/2000	18.42	--	15.33	45,000	16,000	1,100	1,400	1,900	1400* (<35)***	a,l
	7/3/2000	18.82	--	14.93	33,000	10,000	720	840	1,800	<200*	a
	9/7/2000	19.21	--	14.54	26,000	8,800	800	740	1,500	<50***	a,c,l
	12/5/2000	19.60	--	14.15	41,000	11,000	840	930	1,900	<200	a
	3/6/2001	18.24	--	15.51	1,100	400	5.7	<0.5	20	<5.0	a
	6/8/2001	20.91	--	12.84	92	19	<0.5	<0.5	1	<5.0	a
	8/27/2001	21.63	--	12.12	49,000	17,000	1700	1,700	3,200	<260	a
	10/25/2001	21.70	--	12.05	57,000	16,000	1,500	1,600	2,600	<300	a
	3/1/2002	21.53	--	12.22	400	140	2.3	<0.5	12	<5.0*	a
	6/10/2002	22.23	--	11.52	<50	2.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.85	--	11.90	31,000	9,700	300	650	1,100	<1,000	a
	12/22/2002	22.39	--	11.36	35,000	13,000	310	1,100	1,800	<1,500	a
	1/23/2003	20.61	--	13.14	51,000	18,000	430	1,500	2,200	<5.0***	a,l
	6/12/2003	21.20	--	12.55	80	12	<0.5	<0.5	1.0	<10	a
	7/23/2003	**21.51**	**--**	**12.24**	**20,000**	**7,600**	**100**	**65**	**660**	**<250**	**a**

Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID *TOC (feet)*	Date	Depth to Groundwater (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-5	10/28/1996	19.88	--	14.75	90	4.0	0.6	<0.50	<0.50	16*	n
34.63	12/12/1996	20.09	--	14.54	230	5.6	0.9	ND	0.9	3.6*	--
	3/31/1997	19.24	--	15.39	90	3.1	ND	ND	ND	ND*	--
	6/27/1997	19.16	--	15.47	ND	ND	ND	ND	ND	ND*	--
	9/9/1997	19.93	--	14.70	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	19.77	--	14.86	ND	ND	ND	ND	ND	ND***	--
	3/12/1998	19.77	--	14.86	79	2.3	ND	0.8	ND	ND*	--
	6/22/1998	18.08	--	16.55	ND	ND	ND	ND	ND	--	--
	9/18/1998	19.12	--	15.51	ND	ND	ND	ND	ND	--	--
	12/23/1998	19.60	--	15.03	ND	0.8	0.9	ND	ND	--	--
	3/29/1999	18.88	--	15.75	ND	ND	ND	ND	ND	--	--
	6/23/1999	18.05	--	16.58	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.61	--	15.02	ND	ND	ND	ND	ND	--	--
	12/23/1999	20.01	--	14.62	ND	ND	ND	ND	ND	--	--
	3/21/2000	19.05	--	15.58	140	<0.5	<0.5	<0.5	<0.5	<5.0	k
	7/3/2000	19.40	--	15.23	85	8.1	3.1	1.6	7.8	<5.0*	a
	9/7/2000	19.62	--	15.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	12/5/2000	20.25	--	14.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	19.07	--	15.56	91	5.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.77	--	13.86	290	22.0	0.8	<0.5	<0.5	<5.0	a
	8/27/2001	21.33	--	13.30	660	24.0	2.2	1.3	4.0	<25	a
	10/25/2001	21.62	--	13.01	55	3.5	<0.5	<0.5	<0.5	<5.0	a
	3/1/2002	21.49	--	13.14	200	1.9	0.69	<0.5	<0.5	<5.0*	a
	6/10/2002	22.15	--	12.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.50	--	13.13	60	1.9	<0.5	<0.5	0.77	<5.0	a
	12/22/2002	22.19	--	12.44	82	0.57	<0.5	0.68	<0.5	<5.0	a
	1/23/2003	20.27	--	14.36	<50	2.1	<0.5	<0.5	<0.5	<5.0	--
	6/12/2003	21.10	--	13.53	<50	0.88	<0.5	<0.5	<0.5	<5.0	--
	7/23/2003	**21.47**	--	**13.16**	**<50**	**4.0**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	--

Table 1. Groundwater Elevations and Analytical Data - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID	Date	Depth to Groundwater	SPH Thickness	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (feet)		(feet)	(feet)	(feet)	←		(µg/L)			→	
MW-6	10/28/1996	20.02	--	15.87	<50	<0.50	<0.50	<0.50	<0.50	<2.0*	n
35.89	12/12/1996	20.18	--	15.71	ND	ND	ND	ND	ND	ND*	--
(annual sampling)	3/31/1997	19.81	--	16.08	--	--	--	--	--	--	--
	6/27/1997	19.76	--	16.13	--	--	--	--	--	--	--
	9/9/1997	20.06	--	15.83	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	19.90	--	15.99	ND	ND	ND	ND	ND	--	--
	3/12/1998	18.00	--	17.89	ND	ND	ND	ND	ND	ND*	--
	6/22/1998	18.43	--	17.46	ND	ND	ND	ND	ND	--	--
	9/18/1998	19.10	--	16.79	ND	ND	ND	ND	ND	--	--
	12/23/1998	19.61	--	16.28	ND	ND	ND	ND	ND	--	--
	3/29/1999	18.92	--	16.97	ND	ND	ND	ND	ND	--	--
	6/23/1999	18.41	--	17.48	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.61	--	16.28	ND	ND	ND	ND	ND	--	--
	12/23/1999	20.30	--	15.59	ND	ND	ND	ND	ND	--	--
	3/21/2000	18.97	--	16.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/3/2000	19.46	--	16.43	59	5.1	2.3	1.1	5.3	<5.0*	a
	9/7/2000	19.95	--	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	12/5/2000	20.50	--	15.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	19.54	--	16.35	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.92	--	14.97	<50	<0.5	<0.5	<0.5	<0.5	<5.1	--
	8/27/2001	21.37	--	14.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	21.59	--	14.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	21.33	--	14.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	21.97	--	13.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.55	--	14.34	--	--	--	--	--	--	--
	12/22/2002	22.25	--	13.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	1/23/2003	20.47	--	15.42	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/12/2003	21.09	--	14.80	--	--	--	--	--	--	--
	7/23/2003	**21.42**	--	**14.47**	--	--	--	--	--	--	--
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 - Borsuk Site, 1432 Harrison Street, Oakland, California

Well ID	Date	Depth to Groundwater	SPH Thickness	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (feet)		(feet)	(feet)	(feet)	←		(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 hydrocarbons 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 greater 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 Street, Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (%)	System Vacuum ('H2O)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (ppmv) TPHg	System Inlet Temp. (degrees F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc. [1] (ppmv) TPHg	Effluent HC Conc. [1] (ppmv) TPHg	Effluent HC Conc. [1] (ppmv) Benz	HC Removal Rate [2] (lbs/day) TPHg	Emission Rate [2] (lbs/day) TPHg	Emission Rate [2] (lbs/day) Benz	TPHg Destruction Efficiency [3] (%)	Gasoline Cumulative Removal [4] (lbs)
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	<0.078	<0.001	99.5	5495
8/5/2002	4838.8	100%	80	11.6	1,900	667	*	*	<10	<0.15	7.10	<0.037	<0.001	--[3]	6027
9/10/2002	5700.9	100%	80	10.5	1,800	609	*	*	<10	<0.15	6.08	<0.034	<0.000	--[3]	6282
10/2/2002	6229.7	100%	81	14.0	2,900	801	*	*	<10	<0.15	13.04	<0.045	<0.001	--[3]	6416
11/6/2002	7073.8	100%	82	12.1	1,900	848	*	*	<10	<0.15	7.40	<0.039	<0.001	--[3]	6875
12/5/2002	7771.5	100%	90	8.4	1,400	840	*	*	<10	<0.15	3.78	<0.027	<0.000	--[3]	7090

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

Date	Hour Meter Readings (hrs)	System Uptime (%)	System Vacuum ('H2O)	Total Well Flow Rate (prior to dilution) (scfm)	Total Well HC Conc. (ppmv) TPHg	System Inlet Temp. (degrees F)	System Flow Rate (after dilution) (scfm)	System Influent HC Conc.[1] (ppmv) TPHg	Effluent HC Conc.[1] (ppmv) TPHg	Effluent HC Conc.[1] (ppmv) Benz	HC Removal Rate[2] (lbs/day) TPHg	Emission Rate[2] (lbs/day) TPHg	Emission Rate[2] (lbs/day) Benz	TPHg Destruction Efficiency[3] (%)	Gasoline Cumulative Removal[4] (lbs)
1/8/2003	8580.5	99%	91	9.5	3,100	813	*	*	<10	<0.15	9.42	<0.030	<0.000	--[3]	7217
2/12/2003	9424.0	100%	93	7.6	5,200	801	*	*	<10	<0.15	12.61	<0.024	<0.000	--[3]	7548
3/4/2003	9902.8	100%	90	5.5	4,100	798	*	*	<10	<0.15	7.27	<0.018	<0.000	--[3]	7800
4/3/2003	10623.3	100%	115	9.5	1,600	802	*	*	<10	<0.15	4.86	<0.030	<0.000	--[3]	8018
5/15/2003	11629.8	100%	119	6.7	1,300	840	*	*	<10	<0.15	2.80	<0.022	<0.000	--[3]	8222
6/2/2003	12061.5	100%	116	4.4	526	805	*	*	<10	<0.15	0.75	<0.014	<0.000	--[3]	8272
7/2/2003	12779.5	100%	120	9.0	680	836	*	*	<10	<0.15	1.95	<0.029	<0.000	--[3]	8295
8/7/2003	13643.9	100%	117	7.6	370	749	*	*	<10	<0.15	0.90	<0.024	<0.000	--[3]	8365
9/3/2003	14288.9	100%	116	9.7	2,000	737	*	*	<10	<0.15	6.19	<0.031	<0.000	--[3]	8389
10/2/2003	14988.1	100%	116	6.8	--	--	*	*	--	--	--	--	--	--	8570

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

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

Notes and Abbreviations:

TPHg = Total petroleum hydrocarbons as gasoline

Benz = Benzene

HC = Hydrocarbon vapor concentrations measured as TPHg and/or benzene

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

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	*	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
	1/8/2003	92	5.1	2340	open
	1/24/2003	95	4.0	2350	open
	3/4/2003	90	3.6	1750	open
	3/17/2003	93	7.5	1360	open
	4/3/2003	115	4.0	720	open
	4/14/2003	116	--	1180	open
	5/7/2003	117	3.5	660	open
	5/15/2003	119	6.0	1950	open
	5/27/2003	117	4.1	1600	open
	6/13/2003	118	3.9	1525	open
	6/23/2003	118	--	--	open
	7/2/2003	119	25*	1270	open
	7/11/2003	118	3.5*	--	open
	8/7/2003	117	*	50	open
	8/15/2003	117	1.4*	105	closed
	8/26/2003	120	4.0	200	open
	9/3/2003	116	2.9*	190	open
	10/2/2003	116	7.0	70	closed

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-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
	1/8/2003	92	--	6210	open
	1/24/2003	95	4	9630	open
	3/4/2003	90	2.5	5790	open
	3/17/2003	93	--	2020	open
	4/3/2003	115	--	3230	open
	4/14/2003	116	--	2980	open
	5/7/2003	117	9.0	700	open
	5/15/2003	119	8.0	475	open
	5/27/2003	117	5.3	515	open
	6/13/2003	118	4.1	525	open
	6/23/2003	118	--	--	open
	7/2/2003	119	9*	365	open
	7/11/2003	118	5.0*	--	open
	8/7/2003	117	15.2*	250	open
	8/15/2003	117	8.5*	365	open
	8/26/2003	121	4.2	245	open
	9/3/2003	116	*	1295	open
	10/2/2003	120	4.0	410	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
	1/8/2003	92	5.5	3840.	open
	1/24/2003	95	3.0	6040	open
	3/4/2003	90	3.5	3430	open
	3/17/2003	93	1.3	1980	open
	4/3/2003	115	3.5	1900	open
	4/14/2003	116	--	1950	open
	5/7/2003	117	1.5	1320	open
	5/15/2003	119	2.6	1530	open
	5/27/2003	117	1.6	1250	open
	6/13/2003	118	1.5	1000	open
	6/23/2003	118	--	--	open
	7/2/2003	119	14*	850	open
	7/11/2003	118	1.9	--	open
	8/7/2003	117	2.5	375	open
	8/15/2003	117	2.7	380	open
	8/26/2003	123	2.4	5	closed
	9/3/2003	116	3.9*	3430	open
	10/2/2003	121	30*	25	closed

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-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
	1/8/2003	92	4.0	1805	open
	1/24/2003	95	5.0	2720	open
	3/4/2003	90	4.0	1390	open
	3/17/2003	93	1.0	1300	open
	4/3/2003	115	2.3	1090	open
	4/14/2003	116	--	1050	open
	5/7/2003	117	1.8	610	open
	5/15/2003	119	2.7	2100	open
	5/27/2003	117	2.0	1850	open
	6/13/2003	118	2.0	1800	open
	6/23/2003	118	--	--	open
	7/2/2003	119	17*	1550	open
	7/11/2003	118	2.2	--	open
	8/7/2003	117	2.6	1550	open
	8/15/2003	117	2.8	630	open
	8/26/2003	122	3.7	465	open
	9/3/2003	--	--	25	closed
	10/2/2003	117	7.5	2550	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

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

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APPENDIX A

Groundwater Monitoring Field Data Sheets

CAMBRIA

Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Product Thickness	Amount of Product Removed	Casing Diam.	Comment
MW-1	4:45	19.35	19.42	0.07	100ml		
MW-2	4:30		21.40				
MW-3	4:20		21.28				
MW-4	4:35		21.51				
MW-5	4:25		21.47				
MW-6	4:15		21.42				

Project Name: Borsuk

Project Number/Task: 540-0188/053

Measured By: J. Hill

Date: 7-23-03

CAMBRIA

WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: GH	Well ID: MW-2
Project Number: 540-0188	Date: 7-23-03	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 21.40	Total Well Depth: 25.40	Water Column Height: 4.00
Volume/ft: 0.16	1 Casing Volume: 0.64	3 Casing Volumes: 1.92
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 2
Start Purge Time: 6:25	Stop Purge Time: 6:39	Total Time: 14 mins

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
6:30	1	19.0	7.28	3999	
6:35	1.5	18.9	7.16	3999	
6:40	2	19.1	7.20	3999	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	7-23-03	6:45	3 VOA	HCl	TPHg BTEX MTBE	8015/8020 8260

CAMBRIA

WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: GH	Well ID: MW-4
Project Number: 540-0188	Date: 7-23-03	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2" pvc
		Technician(s): SG
Initial Depth to Water: 21.51	Total Well Depth: 24.50	Water Column Height: 2.99
Volume/ft: 0.16	1 Casing Volume: 0.47	3 Casing Volumes: 1.43
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 1.5
Start Purge Time: 5:50	Stop Purge Time: 6:04	Total Time: 14 mins

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
5:55	.5	19.1	7.13	649	
6:00	1.0	19.1	7.24	820	
6:05	1.5	19.1	7.26	942	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	7-23-03	6:10	3 VOA	HCl	TPHg BTEX MTBE	8015/8020 8260

CAMBRIA

WELL SAMPLING FORM

Project Name: Borsuk	Cambria Mgr: GH	Well ID: MW-5
Project Number: 540-0138	Date: 7-23-03	Well Yield:
Site Address: 1432 Harrison St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2 ☐ pvc Technician(s): SG
Initial Depth to Water: 21.47	Total Well Depth: 28.34	Water Column Height: 6.87
Volume/ft: 0.16	1 Casing Volume: 1.09	3 Casing Volumes: 3.27
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 3
Start Purge Time: 5:15	Stop Purge Time: 5:29	Total Time: 14 mins

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
5:20	1	19.3	7.20	820	
5:25	2	19.1	7.24	870	
5:30	3	19.1	7.21	859	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	7-23-03	5:35	3 VOA	HCl	TPHg BTEX MTBE	8015/8020 8260

CAMBRIA

APPENDIX B

Analytical Results for 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; Borsuk	Date Sampled: 07/23/03
5900 Hollis St, Suite A		Date Received: 07/24/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 07/30/03
	Client P.O.:	Date Completed: 07/30/03

WorkOrder: 0307426

July 30, 2003

Dear Gretchen:

Enclosed are:

1). the results of **3** analyzed samples from your **#540-0188; 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; Borsuk	Date Sampled: 07/23/03
		Date Received: 07/24/03
5900 Hollis St, Suite A	Client Contact: Gretchen Hellmann	Date Extracted: 07/29/03-07/30/03
Emeryville, CA 94608	Client P.O.:	Date Analyzed: 07/29/03-07/30/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0307426

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-2	W	28,000,a	ND<500	4800	4800	380	1700	100	91.7
002A	MW-4	W	20,000,a	ND<250	7600	100	65	660	50	96.9
003A	MW-5	W	ND	ND	4.0	ND	ND	ND	1	95.0
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 and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/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

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W WorkOrder: 0307426

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 7947 Spiked Sample ID: 0307425-013A

	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(btex)£	ND	60	108	109	0.448	107	107	0	70	130
MTBE	ND	10	100	102	1.73	102	97.5	4.12	70	130
Benzene	ND	10	99.7	100	0.780	103	103	0	70	130
Toluene	ND	10	93.3	94.1	0.882	99.6	97.5	2.12	70	130
Ethylbenzene	ND	10	101	102	1.62	104	104	0	70	130
Xylenes	ND	30	95	95.3	0.350	96	96	0	70	130
%SS:	101	100	98.8	98.2	0.620	99.6	99.1	0.547	70	130

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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0307426

Client:

Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-3394
ProjectNo: #540-0188; Borsuk
PO:

Date Received: **7/24/03**
Date Printed: **7/24/03**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					<>	M8021B/8015C					
0307426-001	MW-2	Water	7/23/03 6:45:00 PM	☐	A	A					
0307426-002	MW-4	Water	7/23/03 6:10:00 PM	☐		A					
0307426-003	MW-5	Water	7/23/03 5:35:00 PM	☐		A					

Prepared by: Melissa Valles

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.

CERC

030726

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: Gretchen Hellmann Bill To: Cambria Env. Tech
Company: Cambria Environmental Technology Inc.
6262 Hollis Street 5900 Hollis St. Emeryville, CA
Emeryville, CA 94608 E-mail:
Tele: 510-420-3305 Fax: ~~510-450-8293~~ 510-420-9170
Project #: 540-0188 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	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	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: confirm all MTBE by 8260	Comments
1	MW-2		7-23-03	6:45	3	VOA	X					X	X			X															X	
2	MW-4		7-23-03	6:10	3	VOA	X					X	X			X															X	
3	MW-5		7-23-03	5:35	3	VOA	X					X	X			X															X	

	Date:	Time:	
Relinquished By: S. Hill	7-23-03	6:30	Received By: secure location
Relinquished By: DJones	7/24/03	1110	Received By: ER
Relinquished By: ER	7/24	1700	Received By: Melissa Valles

Remarks:

✓ ✓ ✓

APPROPRIATE CONTAINERS ✓ PRESERVED IN LAB ✓

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: #540-0188-55; BORSUK	Date Sampled: 07/02/03
5900 Hollis St, Suite A		Date Received: 07/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 07/10/03
	Client P.O.:	Date Completed: 07/10/03

WorkOrder: 0307091

July 10, 2003

Dear Gretchen:

Enclosed are:

1). the results of **2** analyzed samples from your **#540-0188-55; 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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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: #540-0188-55; BORSUK	Date Sampled: 07/02/03
5900 Hollis St, Suite A		Date Received: 07/03/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 07/04/03
	Client P.O.:	Date Analyzed: 07/04/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0307091

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	680,a	ND<10	2.8	4.5	ND	9.3	1	111
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	103

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 and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in µg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/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

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0307091

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 7702 Spiked Sample ID: N/A

	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(btex)£	N/A	60	N/A	N/A	N/A	99	99.5	0.592	70	130
MTBE	N/A	10	N/A	N/A	N/A	99.1	102	2.76	70	130
Benzene	N/A	10	N/A	N/A	N/A	98.3	100	1.80	70	130
Toluene	N/A	10	N/A	N/A	N/A	99	100	1.05	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	101	102	1.28	70	130
Xylenes	N/A	30	N/A	N/A	N/A	100	103	3.28	70	130
%SS:	N/A	100	N/A	N/A	N/A	102	102	0	70	130

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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

0307091

CHAIN OF CUSTODY RECORD

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

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

EDF Required? ☐ Yes ☒ No

Report To: Gretchen Hellmann Bill To: SAME
Company: Cambria Environmental Technology, Inc.
5900 Hollis Street Suite A
Emeryville, CA 94608 E-mail: ghellmann@cambria-env.com
Tele: 510 420-3305 Fax: 510 420-9170
Project #: 540-0188-55 Project Name: BORSUK
Project Location: 1432 Harrison Street, Oakland, CA
Sampler Signature: [signature]

SAMPLE ID (Field Point Name)	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Soil	Air	Sludge	Other	Method Preserved: Ice	HCl	HNO_3	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	System	7/2/03	1:30p	1	Tb			X							X																
EFF	System	7/2/03	1:30p	1	Tb			X							X																

ICE ✓ PRESERVATION: VOAS | O&G | METALS | OTHER ✓
GOOD CONDITION / APPROPRIATE CONTAINERS / PRESERVED IN LAB

Relinquished By:	Date:	Time:	Received By:
[signature]	7/2/03	4:30	Secured Location
[signature]	7-3-03	9:00	[signature]
[signature]	7/3/03	1800	[signature]

Remarks: Report in ppm(v); Reporting Limit is 10 ppm(v).

Use 20 mL injection volume.

Please FAX results.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0307091

Client:

Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-3394
ProjectNo: #540-0188-55; BORSUK
PO:

Date Received: 7/3/03
Date Printed: 7/3/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					M8021B/8015C						
0307091-001	INF	Air	7/2/03 1:30:00 PM	☐	A						
0307091-002	EFF	Air	7/2/03 1:30:00 PM	☐	A						

Prepared by: Melissa Valles

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.

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: #540-0188-55; BORSUK	Date Sampled: 08/07/03
5900 Hollis St, Suite A		Date Received: 08/08/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Reported: 08/13/03
	Client P.O.:	Date Completed: 08/13/03

WorkOrder: 0308126

August 13, 2003

Dear Gretchen:

Enclosed are:

1). the results of **2** analyzed samples from your **#540-0188-55; 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.
1110 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: #540-0188-55; BORSUK	Date Sampled: 08/07/03
5900 Hollis St, Suite A		Date Received: 08/08/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 08/08/03-08/09/03
	Client P.O.:	Date Analyzed: 08/08/03-08/09/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0308126

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	370,a	ND<3.0	1.4	2.8	ND<0.5	4.7	2	112
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	101

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 and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/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

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0308126

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 8132 Spiked Sample ID: N/A

	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(btex)£	N/A	60	N/A	N/A	N/A	104	110	5.69	70	130
MTBE	N/A	10	N/A	N/A	N/A	114	108	5.35	70	130
Benzene	N/A	10	N/A	N/A	N/A	111	110	1.04	70	130
Toluene	N/A	10	N/A	N/A	N/A	102	102	0	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	107	108	0.904	70	130
Xylenes	N/A	30	N/A	N/A	N/A	100	100	0	70	130
%SS:	N/A	100	N/A	N/A	N/A	101	101	0	70	130

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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

date —

0308126

CHAIN OF CUSTODY RECORD

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

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

EDF Required? ☐ Yes ☒ No

Report To:	Gretchen Hellmann	Bill To:	SAME
Company:	Cambria Environmental Technology, Inc.		
	5900 Hollis Street Suite A		
	Emeryville, CA 94608	E-mail:	ghellmann@cambria-env.com
Tele:	510 420-3305	Fax:	510 420-9170
Project #:	540-0188-55	Project Name:	BORSUK
Project Location:	1432 Harrison Street, Oakland, CA		
Sampler Signature:			

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	Comments
INF	System	8/7/03	3pm	1	Tb			X							X																
EFF	System	8/7/03	3pm	1	Tb			X							X																

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

	Date:	Time:	Received By:
Relinquished By:	8/7/03	9:38p	Second Location
Relinquished By:	8/8/03	1330	Received By: 298
Relinquished By: 298	8/8/03	1630	Received By:

Remarks: Report in ppm(v); Reporting Limit is 10 ppm(v).

Use 20 mL injection volume.

Please ~~FAX~~ email results.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0308126

Client:
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-3394
ProjectNo: #540-0188-55; BORSUK
PO:

Date Received: 8/8/03
Date Printed: 8/8/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					V8021B/8015C						
0308126-001	INF	Air	8/7/03 3:00:00 PM	☐	A						
0308126-002	EFF	Air	8/7/03 3:00:00 PM	☐	A						

Prepared by: Melissa Valles

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.

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 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #540-0188-55; BORSUK	Date Sampled: 09/03/03
		Date Received: 09/04/03
	Client Contact: Gretchen Hellmann	Date Reported: 09/09/03
	Client P.O.:	Date Completed: 09/09/03

WorkOrder: 0309065

September 09, 2003

Dear Gretchen:

Enclosed are:

1). the results of **2** analyzed samples from your **#540-0188-55; 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: #540-0188-55; BORSUK	Date Sampled: 09/03/03
5900 Hollis St, Suite A		Date Received: 09/04/03
Emeryville, CA 94608	Client Contact: Gretchen Hellmann	Date Extracted: 09/05/03
	Client P.O.:	Date Analyzed: 09/05/03

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0309065

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	2000,a	ND<50	7.9	11	ND<5.0	18	20	---#
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	114

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 and all TCLP & SPLP extracts are reported in µg/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/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

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A WorkOrder: 0309065

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 8388 Spiked Sample ID: N/A

	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(btex)£	N/A	60	N/A	N/A	N/A	108	107	0.783	70	130
MTBE	N/A	10	N/A	N/A	N/A	95.7	91.8	4.18	70	130
Benzene	N/A	10	N/A	N/A	N/A	106	101	5.39	70	130
Toluene	N/A	10	N/A	N/A	N/A	101	96.5	4.37	70	130
Ethylbenzene	N/A	10	N/A	N/A	N/A	107	104	3.47	70	130
Xylenes	N/A	30	N/A	N/A	N/A	100	96	4.08	70	130
%SS:	N/A	100	N/A	N/A	N/A	101	100	0.902	70	130

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.

% 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.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

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.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0309065

Client:
Cambria Env. Technology
5900 Hollis St, Suite A
Emeryville, CA 94608

TEL: (510) 420-0700
FAX: (510) 420-3394
ProjectNo: #540-0188-55; BORSUK
PO:

Date Received: 9/4/03
Date Printed: 9/4/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests						
					V8021B/8015C						
0309065-001	INF	Air	9/3/03 12:00:00 PM	☐	A						
0309065-002	EFF	Air	9/3/03 12:00:00 PM	☐	A						

Prepared by: Sonia Valles

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.

0309065

CHAIN OF CUSTODY RECORD

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

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

EDF Required? ☐ Yes ☒ No

Report To: Gretchen Hellmann Bill To: SAME

Company: Cambria Environmental Technology, Inc.

5900 Hollis Street Suite A

Emeryville, CA 94608 E-mail: ghellmann@cambria-env.com

Tele: 510 420-3305 Fax: 510 420-9170

Project #: 540-0188-55 Project Name: BORSUK

Project Location: 1432 Harrison Street, Oakland, CA

Sampler Signature:

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	Comments
INF	System	9/3/03	12pm	1	Tb			X							X																
EFF	System	9/3/03	12pm	1	Tb			X							X																

Relinquished By:	Date:	Time:	Received By:
	9/3/03	3:30	See FedEx tracking
Relinquished By:	Date:	Time:	Received By:
FedEx	9/4	10:00	UPS FedEx #280
Relinquished By:	Date:	Time:	Received By:
UPS FedEx #280	9/4	15:45	

Remarks: Report in ppm(v); Reporting Limit is 10 ppm(v).

Use 20 mL injection volume.

Please ~~FAX~~ email results.

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

PRESERVATION	VOAS	O&G	METALS	OTHER

APPENDIX D

Geotracker Electronic Delivery Confirmations

AB2886 Electronic Delivery

Your EDF file has been succcessfully uploaded!

Confirmation Number: 8429119765
Date/Time of Submittal: 10/29/2003 5:34:00 PM
Facility Global ID: T0600100682
Facility Name: A BACHARACH TR & B BORSUK
Submittal Title: 3rd Qtr 2003 Groundwater Monitoring Analytical Data
Submittal Type: GW Monitoring Report

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

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:	**3rd Qtr 2003 Groundwater Depths, 1432 Harrison Street, Oakland**
Submittal Date/Time:	**10/29/2003 5:45:24 PM**
Confirmation Number:	**7889042496**

Back to Main Menu

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