CAMBRIA

ENVIRONMENTAL PROTECTION
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January 21, 2000

Mr. Larry Seto
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: **Fourth Quarter 1999 Monitoring Report**
Former Arco Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116-112

STID 3749

Dear Mr. Seto:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this fourth quarter 1999 groundwater monitoring report for the above-referenced site. Presented below are the fourth quarter 1999 activities, the current hydrocarbon distribution in groundwater, recommendations, and the anticipated first quarter 2000 activities.

FOURTH QUARTER 1999 ACTIVITIES

Quarterly Groundwater Sampling: On November 18, 1999, Cambria gauged and inspected for separate phase hydrocarbons (SPH) all site groundwater monitoring wells. Cambria also collected groundwater samples from monitoring wells MW-1, MW-2 and MW-4 . Wells MW-3, MW-5, MW-6 and MW-7 are sampled biannually. The groundwater samples were sent to McCampbell Analytical of Pacheco, California. Table 1 summarizes groundwater elevation data and analytical results for the subject site. Figure 1 presents the groundwater elevation contours and benzene and methyl tert-butyl ether (MTBE) concentrations for the site. The groundwater sampling laboratory analytical results are included as Attachment A, and water sampling field sheets are included as Attachment B.

Remediation System: The SVE system has operated continuously since the beginning of May. Cambria is conducting monthly site visits for monitoring, and operations and maintenance (O&M).

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

Cambria Environmental Technology, Inc.

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

HYDROCARBON DISTRIBUTION IN GROUNDWATER

No measurable liquid-phase hydrocarbons (LPH) were detected in any of the site wells. Hydrocarbon concentrations remained consistent with historic data with a maximum benzene concentration of 7,000 parts per billion (ppb) in source area well MW-2 and a maximum MTBE concentration of 5,400 ppb in upgradient well MW-4. The current benzene and MTBE distribution in groundwater for the site are shown on Figure 1.

Last quarter, the maximum MTBE concentration in groundwater beneath the upgradient neighboring site was 16,000 ppb in monitoring well MW-1, located approximtely 5 feet downgradient of the extent of excavation of the former underground storage tank pit. This is one order of magnitude greater than historic concentrations for the subject site. MTBE from the neighboring site appears to be impacting groundwater beneath the subject site.

ANTICIPATED FOURTH QUARTER 1999 ACTIVITIES

Quarterly Groundwater Sampling: As requested by the ACDEH, Cambria will gauge each monitoring well, measure the thickness of any detected LPH, and collect groundwater samples from selected wells. Cambria will tabulate the data and prepare a quarterly monitoring report.

Remediation System: Cambria will continue to operate the SVE system and conduct monthly visits for monitoring and O&M.

CLOSING

We appreciate the opportunity to provide environmental services on behalf of Mr. Bo K. Gin. Please call David Elias at (510) 420-0700 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Mark Erickson
Staff Engineer

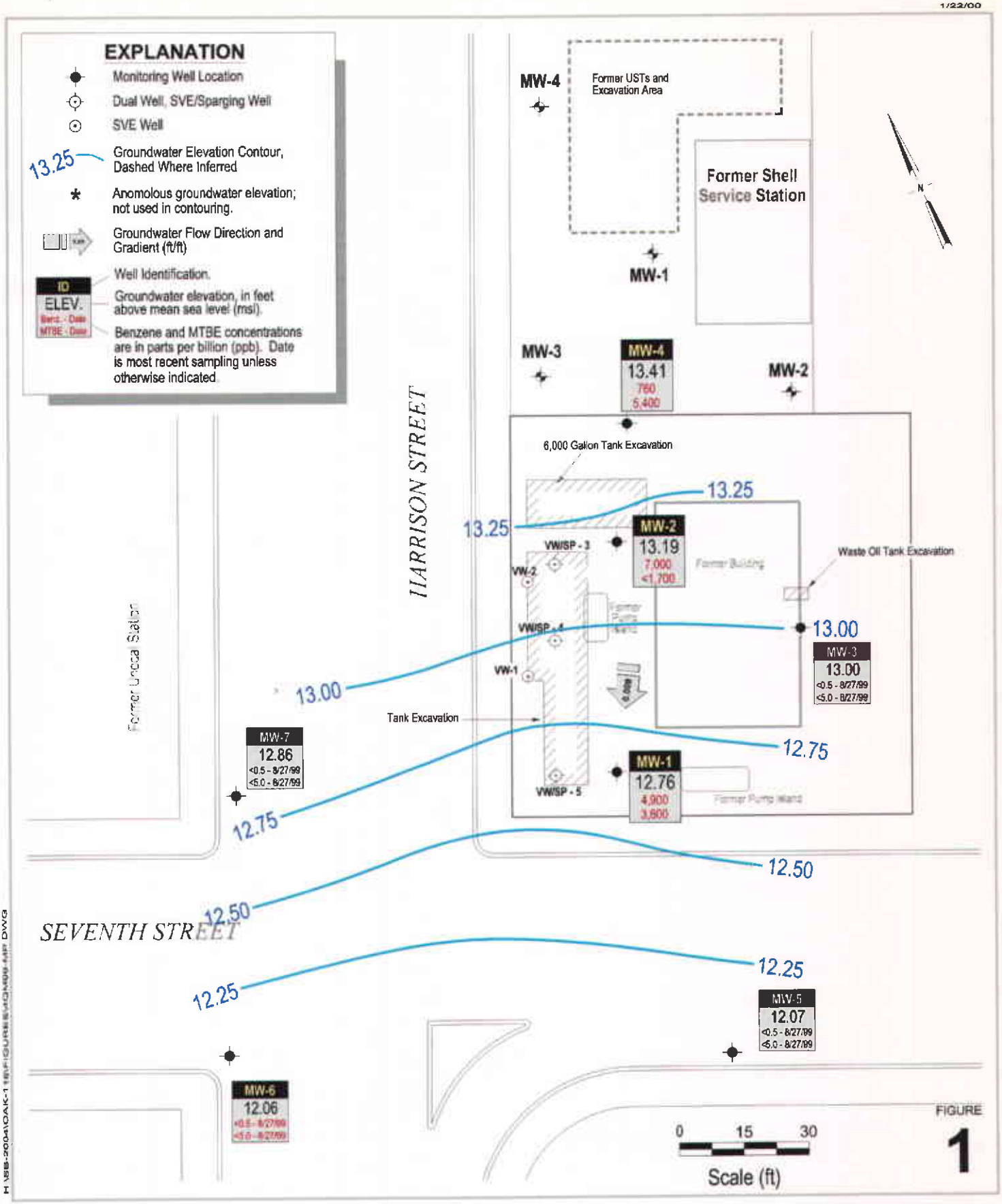
David Elias, RG
Senior Geologist

REGISTERED GEOLOGIST
DAVID CARL ELIAS
No. 6584
STATE OF CALIFORNIA

H:\SB-2004\Oakl-116 - Bo Gin\QM\QM-4-99.WPD

Attachments: A - Analytical Results for Groundwater Sampling
B - Water Sampling Field Sheets

cc: Mr. Bo K. Gin, 288 11th Street, Oakland, CA 94706



Former Arco Station

706 Harrison Street

Oakland, California

CAMBRIA

Groundwater Elevation Contour Map

November 18, 1999

Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
MW-1	8/13/93	17.40	11.75	20,000	8,500	640	280	440	-	
29.15	12/14/93	17.27	11.88	17,000	9,200	1,200	4,400	540	-	
Quarterly	4/15/94	17.00	12.15	9,500	3,600	530	160	280	-	
	12/29/94	16.40	12.75	-	-	-	-	-	-	
	7/19/96	15.83	13.32	17,000	5,200	1,100	330	530	-	sheen/odor
	1/27/97	13.58	15.57	30,000	9,800	1,300	790	880	400	b, sheen/odor
	6/18/97	16.11	13.04	19,000	5,600	1,400	510	770	1,200 (800)	a, b
	9/18/97	16.62	12.53	48,000	18,000	4,400	1,000	1,700	<640	b
	12/10/97	15.93	13.22	22,000	4,900	1,300	580	650	460 (260)	a, b, odor
	2/18/98	11.56	17.59	16,000	5,000	750	400	780	1,800	b
	5/12/98	13.53	15.62	19,000	4,600	810	450	770	5,500	b, c
	8/18/98	15.19	13.96	12,000	3,600	1,300	300	570	5,100(3,700)	a, b
	11/24/98	15.67	13.48	13,000	3,600	890	330	380	6,100	b
	2/4/99	15.31	13.84	20,000	5,900	830	450	500	4,900	b
	5/18/99	14.95	14.20	23,000	7,000	1,600	520	830	6,100	b
	8/27/99	15.84	13.31	19,000	5,800	1,700	410	710	1,800 (2,100)	a, b
	11/18/99	**16.39**	**12.76**	**20,000**	**4,900**	**630**	**410**	**580**	**4,900 (3,600)**	**b**
MW-2	8/13/93	17.05	13.46	34,000	6,800	10,000	740	3,900	-	
30.51	12/14/93	18.28	12.23	16,000	3,200	4,200	500	1,700	-	
Quarterly	4/15/94	18.10	12.41	23,000	2,500	4,200	470	1,800	-	
	12/29/94	17.40	13.11	-	-	-	-	-	-	
	7/19/96	16.72	13.79	90,000	7,300	14,000	1,600	7,300	-	odor
	1/27/97	14.89	15.62	63,000	7,100	13,000	1,600	7,100	500	b, odor
	6/18/97	17.12	13.39	52,000	5,100	10,000	1,400	6,000	<200	b
	9/18/97	17.63	12.88	110,000	9,400	23,000	2,600	13,000	<890	b, sheen/odor

Table continued on next page

Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	12/10/97	16.98	13.53	39,000	2,600	5,300	940	3,900	780 (320)	b, odor
	2/18/98	12.61	17.90	85,000	9,000	19,000	2,300	11,000	2,400	b
	5/12/98	14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	b
	8/18/98	16.14	14.37	64,000	6,000	13,000	1,700	7,800	2,000(1,300)	a, b
	11/24/98	16.70	13.81	78,000	5,300	14,000	2,300	11,000	<2,000	b, g
	2/4/99	18.39	12.12	66,000	5,800	16,000	2,600	12,000	3,000	b, g
	5/18/99	15.90	14.61	78,000	6,700	17,000	2,400	10,000	4,300	b
	8/27/99	16.79	13.72	91,000	7,400	17,000	2,300	11,000	1,200 (1,000)	a, b
	11/18/99	**17.32**	**13.19**	**180,000**	**7,000**	**20,000**	**3,300**	**16,000**	**<6,000 (1,700)**	**b,g**
MW-3	8/13/93	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-	
29.77	12/14/93	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-	
Biannually	4/15/94	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5	-	
	12/29/94	16.80	12.97	-	-	-	-	-	-	
	7/19/96	16.28	13.49	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	9/18/97	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	13.85	15.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	16.04	13.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.29	14.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	**16.77**	**13.00**	**--**	**--**	**--**	**--**	**--**	**--**	

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
MW-4	12/16/94	18.10	13.08	2,500	32	6.5	4.5	17	-	
31.18	12.29/94	17.95	13.23	-	-	-	-	-	-	
Quarterly	7/19/96	17.38	13.80	3,300	520	39	67	60	-	
	1/27/97	15.25	15.93	4,500	860	55	100	91	1,100	b
	6/18/97	17.61	13.57	2,700	700	52	81	76	2,200 (2,300)	a, b
	9/18/97	18.01	13.17	3,900	760	38	56	64	<170	b
	12/10/97	17.45	13.73	12,000	1,800	120	210	210	2,900 (2,600)	a, b
	2/18/98	13.09	18.09	1,700	210	8.0	6.7	16	200	b
	5/12/98	14.78	16.40	2,100	300	15	36	34	920	b, c
	8/18/98	16.59	14.59	4,700	1,000	130	110	150	5,200(4,900)	a, b
	11/24/98	17.18	14.00	3,000	810	44	76	94	4,800	b
	2/4/99	18.90	12.28	2,800	770	50	69	69	3,100	b
	5/18/99	16.30	14.88	4,000	780	57	7.7	79	4,800	b
	8/27/99	17.21	13.97	4,100	870	51	74	99	3,300 (4,100)	a, b
	11/18/99	**17.77**	**13.41**	**3,000**	**760**	**43**	**67**	**65**	**5,100 (5,400)**	**b**
MW-5	12/16/94	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	
28.04	12/29/94	16.10	11.94	-	-	-	-	-	-	
Biannually	7/19/96	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	15.55	12.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	9/18/97	16.16	11.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	15.41	12.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	10.93	17.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	13.25	14.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	14.75	13.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. **Groundwater Analytical Data** - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	11/24/98	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	**15.97**	**12.07**	-	-	-	-	-	-	
MW-6	12/16/94	17.74	11.36	<50	<0.5	<0.5	<0.5	<0.5	-	
29.10	12/29/94	17.40	11.70	-	-	-	-	-	-	
Biannually	7/19/96	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.73	12.37	51	22	<0.5	<0.5	<0.5	<5.0	c
	9/18/97	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/10/97	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	16.46	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/4/99	18.25	10.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.73	13.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/99	15.64	13.46	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/18/99	**17.04**	**12.06**	-	-	-	-	-	-	
MW-7	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	-	
29.67	12/29/94	17.65	12.02	-	-	-	-	-	-	
Biannually	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	-	
	1/27/97	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/18/97	16.59	13.08	73	<0.5	0.55	<0.5	<0.5	<5.0	d

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Table 1. Groundwater Analytical Data - Former Arco Station - 706 Harrison Street, Oakland, California

Well ID *TOC* monitoring frequency	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE[a]	Notes
				<----------Concentrations in parts per billion (µg/L)---------->						
	9/18/97	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5	<5.0	e, f
	12/10/97	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/18/98	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/12/98	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/18/98	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/24/98	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5	<5.0	d
	2/4/99	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/18/99	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5	<5.0	d
	8/27/99	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5	<5.0 (1.5)	a, d
	11/18/99	**16.81**	**12.86**	-	-	-	-	-	-	

Abbreviations and Analyses:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes by EPA Method 8020.
MTBE = Methyl tert-butyl ether by EPA Method 8020
µg/L = Micrograms per liter
TOC = Top of casing elevation with respect to mean sea level

Notes:

a = Result in parentheses indicates MTBE by EPA Method 8260.
b = Analytical laboratory notes that unmodified or weakly modified gasoline is significant.
c = Analytical laboratory notes that lighter gasoline range compounds are significant.
d = Analytical laboratory notes that isolated peaks are present.
e = Analytical laboratory notes that heavier gasoline range compounds are significant.
f = Analytical laboratory notes hydrocarbons with no recognizable patterns are present.
g = Analytical laboratory notes lighter than water immiscible sheen is present.
Data prior to 12/16/94 provided by previous consultant.

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ATTACHMENT A

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 Environmental Technology	Client Project ID: #230-0116; BO GIN	Date Sampled: 11/18/99
1144 65th Street, Suite C		Date Received: 11/19/99
Oakland, CA 94608	Client Contact: Mark Erickson	Date Extracted: 11/20-11/23/99
	Client P.O:	Date Analyzed: 11/20-11/23/99

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
25968	MW-1	W	20,000,a	4900	4900	630	410	580	96
25969	MW-2	W	180,000,a,h	ND<6000	7000	20,000	3300	16,000	108
25970	MW-4	W	3000,a	5100	760	43	67	65	103
25971	TB	W	ND	ND	ND	ND	ND	ND	99
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP 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 (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) 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

Cambria Environmental Technology 1144 65th Street, Suite C Oakland, CA 94608	Client Project ID: #230-0116; BO GIN	Date Sampled: 11/18/99
		Date Received: 11/19/99
	Client Contact: Mark Erickson	Date Extracted: 11/19-11/23/99
	Client P.O:	Date Analyzed: 11/19-11/23/99

Methyl tert-Butyl Ether *

EPA method 8260 modified

Lab ID	Client ID	Matrix	MTBE*	% Recovery Surrogate
25968	MW-1	W	3600	94
25969	MW-2	W	1700,h	96
25970	MW-4	W	5400	102
25971	TB	W	ND	96
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	1.0 ug/L	
		S	5.0 ug/kg	

* water samples are reported in ug/L, soil and sludge samples in ug/kg, wipe samples in ug/wipe and all TCLP / STLC / SPLP extracts in ug/L

h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

Date: 11/19/99-11/20/99 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 111999				Instrument: GC-12			
Xylenes	0.0	291.0	302.0	300.00	97	101	3.7
Ethyl Benzene	0.0	94.0	97.0	100.00	94	97	3.1
Toluene	0.0	97.0	99.0	100.00	97	99	2.0
Benzene	0.0	101.0	103.0	100.00	101	103	2.0
MTBE	0.0	89.0	88.0	100.00	89	88	1.1
GAS	0.0	935.3	922.3	1000.00	94	92	1.4
SampleID: 25698				Instrument: GC-2 A			
TPH (diesel)	0.0	303.0	284.0	300.00	101	95	6.5
SampleID: 25698				Instrument: IR-1			
TRPH	0.0	25.8	26.9	23700.00	0	0	4.2

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 200$$

RPD means Relative Percent Deviation

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

QC REPORT

VOCs (EPA 8240/8260)

Date: 11/19/99-11/20/99 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 23636					Instrument: GC-10		
Tolune	0.0	96.0	100.0	100.00	96	100	4.1
Benzene	0.0	90.0	95.0	100.00	90	95	5.4
Chlorobenzene	0.0	94.0	97.0	100.00	94	97	3.1
Trichloroethane	0.0	87.0	92.0	100.00	87	92	5.6
1,1-Dichloroethene	0.0	82.0	85.0	100.00	82	85	3.6
tret-Amyl Methyl Ether	0.0	88.0	85.0	100.00	88	85	3.5
Methyl tret-Butyl Ether	0.0	86.0	89.0	100.00	86	89	3.4
Ethyl tret-Butyl Ether	0.0	89.0	89.0	100.00	89	89	0.0
Di-isopropyl Ether	0.0	83.0	86.0	100.00	83	86	3.6

$$\%\ \text{Recovery} = \frac{(MS - Sample)}{AmountSpiked} \cdot 100$$

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

17769 2487.loc

CAMPBELL 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: MARK ERICKSON Bill To: CAMBRIA ENV.
Company: Cambria Environmental Technology
1144 65th Street, Suite C
Oakland, CA 94608
Tele: (510) 420-0700 Fax: (510) 420-9170
Project #: 230 - 0116 Project Name: 80 GIN
Project Location: 1706 HARRISON ST / OAKLAND, CA
Sampler Signature: Mark Erickson

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	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 (MTBE)	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
+ MW-1		11/18	2:50	4	VOA	X					X	X			X								X								25968
+ MW-2		11/18	3:22	4	VOA	X					X	X			X								X								25969
+ MW-4		11/18	3:55	4	VOA	X					X	X			X								X								25970
TB		11/18	4:00	1	VOA	X					X	X			X								X								25971

Relinquished By:	Date:	Time:	Received By:
Mark Erickson	11/19	10:25	Bill Butts
B. Butts	11/19	13:15	Dina A Butler
Relinquished By:	Date:	Time:	Received By:

Remarks:

ICE ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
PRESERVATION APPROPRIATE ✓
CONTAINERS ✓

VOAS | O&G | METALS | OTHER

CAMBRIA

ATTACHMENT B

Water Sampling Field Sheets

CAMBRIA

WELL SAMPLING FORM

Project Name: **Bo Gin**	Cambria Mgr: **DCE**	Well ID: MW-1
Project Number: **230-0116**	Date: 11/18/99	Well Yield: ———
Site Address: **706 Harrison Street Oakland, California**	Sampling Method: **Disposable bailer**	Well Diameter: 2" pvc
		Technician(s): ME.
Initial Depth to Water: 16.39'	Total Well Depth: 25.82'	Water Column Height: 9.43'
Volume/ft: 0.16	1 Casing Volume: 1.51 gal	3 Casing Volumes: 4.53 gal
Purging Device: **disposable bailer**	Did Well Dewater?: NO	Total Gallons Purged: 4.75 gal.
Start Purge Time: 2:30	Stop Purge Time: 2:39	Total Time: 9 min.

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. µS	Comments
2:30	1	20.2	6.9	387	GREY WATER
2:33	2	19.9	6.9	698	"
2:37	3	19.9	6.7	673	"

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	11/18/99	2:50	**4 voa's**	**HCL**	**TPHg, BTEX, MTBE**	**8020 8015**

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NSM 5/31/94

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WELL SAMPLING FORM

Project Name: **Bo Gin**	Cambria Mgr: **DCE**	Well ID: MW-2
Project Number: **230-0116**	Date: 11/18/99	Well Yield: ———
Site Address: **706 Harrison Street Oakland, California**	Sampling Method: **Disposable bailer**	Well Diameter: 2" pvc
		Technician(s): ME
Initial Depth to Water: 17.32'	Total Well Depth: 25.55'	Water Column Height: 8.23'
Volume/ft: 0.16	1 Casing Volume: 1.32 gal	3 Casing Volumes: 3.95 gal
Purging Device: **disposable bailer**	Did Well Dewater?: NO	Total Gallons Purged: 4 gal
Start Purge Time: 2:59	Stop Purge Time: 3:14	Total Time: 15 min

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. MS	Comments
3:03	1	21.6	5.4	597	SHEEN PRESENT
3:05	2	21.6	5.5	610	ODOR PRESENT
3:09	3	35.0	6.0	462	
3:13	4	21.4	5.9	586	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	11/18/99	3:22	**4 voa's**	**HCL**	**TPHg, BTEX, MTBE**	**8020 8015**

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WELL SAMPLING FORM

Project Name: **Bo Gin**	Cambria Mgr: **DCE**	Well ID: MW-4
Project Number: **230-0116**	Date: 11/18/99	Well Yield:
Site Address: **706 Harrison Street Oakland, California**	Sampling Method: **Disposable bailer**	Well Diameter: 2" pvc
		Technician(s): ME
Initial Depth to Water: 17.77	Total Well Depth: 29.12	Water Column Height: 11.35
Volume/ft: 0.16	1 Casing Volume: 1.81 gal	3 Casing Volumes: 5.45 gal
Purging Device: **disposable bailer**	Did Well Dewater?: No.	Total Gallons Purged: 5.5 gal
Start Purge Time: 3:32	Stop Purge Time: 3:46	Total Time: 14 min.

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. µS	Comments
3:36	1	20.3	5.9	669	
3:38	2	20.0	5.9	396	
3:42	3	19.8	6.3	404	
3:43	4	19.8	6.2	399	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	11/18/99	3:55	**4 voa's**	**HCL**	**TPHg, BTEX, MTBE**	**8020 8015**

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WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-5	1:35		15.97			
MW-6	1:44		17.04			
MW-7	1:48		16.81			
MW-1	2:10		16.39		25.82	
MW-2	2:08		17.32		25.55	
MW-3	2:03		16.77			
MW-4	2:06		17.77		29.12	

Project Name: BP 6th

Project Number: 230-0116

Measured By: MJE / JJ.

Date: 11/18/99

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