

C A M B R I A

ENVIRONMENTAL
PROTECTION
January 11, 1999
99 JAN 15 PM 3:45

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 1998 Monitoring Report**

Former Arco Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116-107



Dear Mr. Seto:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this fourth quarter 1998 ground water monitoring report for the site referenced above. Presented below are the fourth quarter 1998 activities, the anticipated first quarter 1999 activities, and the current hydrocarbon distribution in ground water.

FOURTH QUARTER 1998 ACTIVITIES

Quarterly Ground Water Sampling: On November 24, 1998 Cambria gauged and sampled all onsite and offsite ground water monitoring wells. No measurable liquid-phase hydrocarbons (LPH) were detected in any of the wells. Table 1 summarizes ground water elevation data and analytical results. Figure 1 presents the ground water elevation contours and benzene and methyl tert-butyl ether (MTBE) concentrations. The ground water sampling laboratory analytical results are included as Attachment A and water sampling field sheets are included as Attachment B.

Remediation System: Cambria operated a soil-vapor extraction (SVE) and air sparging system during the fourth quarter. During this time Cambria changed the vapor abatement system from a catalytic oxidizer to carbon filtration and re-started the system.

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

ANTICIPATED FIRST QUARTER 1999 ACTIVITIES

Quarterly Ground Water Sampling: As requested by the Alameda County Department of Environmental Health (ACDEH), Cambria will gauge and collect water samples from each ground


Cambria
Environmental
Technology, Inc.

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

water monitoring well, and measure the thickness of any detected LPH. Cambria will tabulate the data and prepare a quarterly monitoring report.

Remediation System: Cambria will continue to operate the system.

HYDROCARBON DISTRIBUTION IN GROUND WATER



Hydrocarbon concentrations remained stable since the third quarter sampling event with a maximum benzene concentration of 5,300 parts per billion (ppb) in source area well MW-2. Downgradient wells MW-5, MW-6, and MW-7 remained below detection limits for benzene and MTBE, consistent with historical data. The hydrocarbon plume is well defined by upgradient well MW-4, cross gradient wells MW-3 and MW-7 and down gradient well MW-6. The current hydrocarbon distribution in ground water is consistent with historic site data and the current benzene and MTBE distribution in ground water is shown on Figure 1.

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Mr. Larry Seto
January 11, 1999

CLOSING

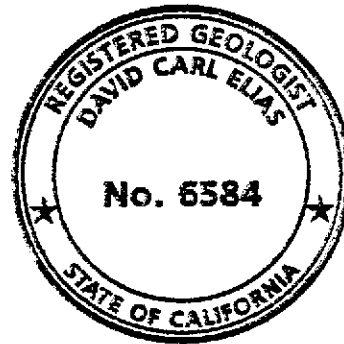
We appreciate the opportunity to provide environmental services on behalf of Mr. Bo K. Gin. Please call myself or David Elias at (510) 420-0700 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



Jacquelyn Jones
Jacquelyn Jones
Staff Geologist

David Elias
David Elias, RG
Senior Geologist

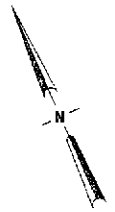


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Attachments: A - Analytical Results for Ground Water Sampling
B - Water Sampling Field Sheets

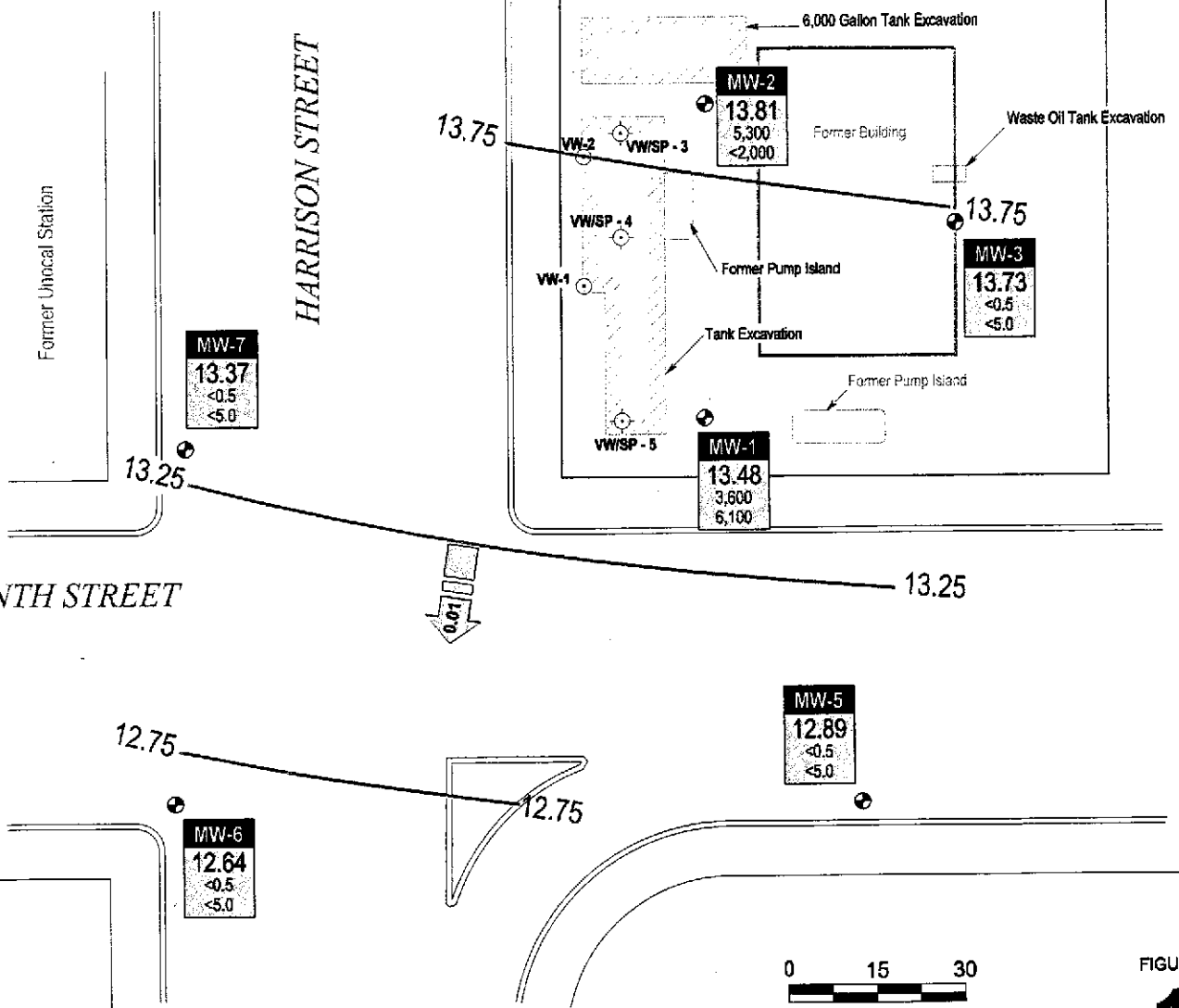
cc: Mr. Bo K. Gin, 288 11th Street, Oakland, CA 94706

726 Harrison



EXPLANATION

- Monitoring Well Location
- Potentiometric Surface Elevation
- Dual Well, SVE/Sparging Well
- SVE Well
- Ground Water Elevation Contour, Dashed Where Inferred
- Ground Water Flow Direction and Gradient (ft/ft)
- Well Identification.
- Ground water elevation, in feet above mean sea level (msl).
- Benzene and MTBE concentrations are in parts per billion (ppb). Date is most recent sampling unless otherwise indicated.



H:\SB-2004\OAK-116\FIGURES\MQMSB-MP.DWG

Former Arco Station
 706 Harrison Street
 Oakland, California



C A M B R I A

Ground Water Elevation Contours
 November 24, 1998

FIGURE 1

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

Well ID TOC	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	
MW-1 29.15	8/13/93	17.40	11.75	20,000	8,500	640	280	440	-	
	12/14/93	17.27	11.88	17,000	9,200	1,200	4,400	540	-	
	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
	MW-2 30.51	8/13/93	17.05	13.46	34,000	6,800	10,000	740	3,900	-
12/14/93		18.28	12.23	16,000	3,200	4,200	500	1,700	-	
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
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	

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

Well ID TOC	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						MTBE ^a	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes			
	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	
MW-3 29.77	8/13/93	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-		
	12/14/93	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-		
	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		
MW-4 31.18	12/16/94	18.10	13.08	2,500	32	6.5	4.5	17	-		
	12.29/94	17.95	13.23	-	-	-	-	-	-		
	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	

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

Well ID TOC	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	
MW-5 28.04	12/16/94	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	
	12/29/94	16.10	11.94	-	-	-	-	-	-	
	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	
	11/24/98	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
MW-6 29.10	12/16/94	17.74	11.36	<50	<0.5	<0.5	<0.5	<0.5	-	
	12/29/94	17.40	11.70	-	-	-	-	-	-	
	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	
MW-7 29.67	12/16/94	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	-	
	12/29/94	17.65	12.02	-	-	-	-	-	-	
	7/19/96	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	-	

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

Well ID TOC	Date Sampled	Depth to Water (ft)	Ground Water Elevation (ft)	Concentrations in parts per billion (µg/L)						Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE ^a	
	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
	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

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 higher than water immiscible sheen is present.
 Data prior to 12/16/94 provided by previous consultant.

C A M B R I A



ATTACHMENT A
Analytical Results for Ground Water Sampling



McCAMPBELL ANALYTICAL INC.

110 Second 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 65 th Street, Suite C Oakland, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 11/24/98
	Client Contact: John Riggi	Date Received: 11/25/98
	Client P.O:	Date Extracted: 11/27/98
		Date Analyzed: 11/27/98

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
99273	MW1	W	13,000,a	6100	3600	890	330	380	102
99274	MW2	W	78,000,a,h	ND<2000	5300	14,000	2300	11,000	108
99275	MW3	W	ND	ND	ND	ND	ND	ND	98
99276	MW4	W	3000,a	4800	810	44	76	94	98
99277	MW5	W	ND	ND	ND	ND	ND	ND	102
99278	MW6	W	ND	ND	ND	ND	ND	ND	98
99279	MW7	W	200,f	ND	ND	ND	ND	ND	111
99280	TB1	W	ND	ND	ND	ND	ND	ND	98
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.

QC REPORT FOR HYDROCARBON ANALYSES

Date: 11/26/98-11/27/98

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample (#98653)	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	111.5	124.9	100.0	111.5	124.9	11.3
Benzene	0.0	10.2	10.0	10.0	102.0	100.0	2.0
Toluene	0.0	10.4	10.6	10.0	104.0	106.0	1.9
Ethyl Benzene	0.0	10.1	10.6	10.0	101.0	106.0	4.8
Xylenes	0.0	30.5	30.7	30.0	101.7	102.3	0.7
TPH(diesel)	0.0	165	151	150	110	100	8.9
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

13133 X 375.doc

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

Report To: **John Riggi** Bill To: **Cambria**
 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: **Bo Erin**
 Project Location: **706 Harrison Street, Oakland California**
 Sampler Signature: *[Signature]*

CHAIN OF CUSTODY RECORD
 TURN AROUND TIME RUSH 24 HOUR 48 HOUR 5 DAY

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request										Other	Comments												
		Date	Time			Water	Soil	Air	Sludge	Other	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							
+ MW 1	↓	11/24/98	3:25	4	VGA	X					X																										99273	
+ MW 2		11/24/98	3:35	4	VGA	X					X																											99274
+ MW 3		11/24	3:10	4	VGA	X					X																											99275
+ MW 4		11/24	3:20	4	VGA	X					X																											99276
+ MW 5		11/24	1:49	4	VGA	X					X																											99277
+ MW 6		11/24	12:25	4	VGA	X					X																											99278
+ MW 7		11/24	1:15	4	VGA	X					X																										99279	
✓ FBI		11/24	-	4	VGA	X				X																										99280		

Relinquished By: *[Signature]* Date: 11/24 Time: 10:50 Received By: *[Signature]*
 Relinquished By: *[Signature]* Date: 11/25 Time: 12:00 Received By: *[Signature]*
 Relinquished By: _____ Date: _____ Time: _____ Received By: _____

Remarks: ICE/10 GOOD CONDITION HEAD SPACE ABSENT
 PRESERVATION APPROPRIATE CONTAINERS
 VOAS O&G METALS OTHER

C A M B R I A



ATTACHMENT B
Water Sampling Field Sheets

WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-6	1200	—	16.46	—	26.10	well head needs new bolts
MW-7	1250	—	16.30	—	28.80	Same ↑
MW-5	132	—	15.15	—	28.13	Same ↑
MW-3	207	—	16.04	—	27.77	
MW-1	210	—	15.67	—	25.82	
MW-2	213	—	16.70	—	25.55	
MW-4	2:17	—	17.18	—	29.12	

Measured By: JA/JS

Date: 11/24/98

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-1
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2" pvc
		Technician(s): JR, JJ
Initial Depth to Water: 15.67	Total Well Depth: 25.82	Water Column Height: 10.15
Volume/ft: 0.14	1 Casing Volume: 1.62	Casing Volumes: 4.87
Purging Device: disposable bailer	Did Well Dewater?: No	Total Gallons Purged: 5.00
Start Purge Time: 3:08	Stop Purge Time: 3:20	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.	pH	Cond.	Comments
3:10	1	10.9	7.1	978	BLACK H ₂ O
3:15	2	16.7	6.9	671	TURBID
3:20	3	16.2	7.2	971	ODOR

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	11/24/98	3:25	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-2
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JR, JJ
Initial Depth to Water: 16.70	Total Well Depth: 25.55	Water Column Height: 8.85
Volume/ft: 0.16	1 Casing Volume: 1.42	4 Casing Volumes: 4.25
Purging Device: disposable bailer	Did Well Dewater?:	Total Gallons Purged: 5.00
Start Purge Time: 300	Stop Purge Time: 320	Total Time: 20 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.	pH	Cond.	Comments
305	1	18.1	7.1	656	
310	2	17.9	6.2	1026	
315	3	17.7	6.9	1123	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	11/24/98	3:35	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-3
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JR, JJ
Initial Depth to Water: 16.04	Total Well Depth: 27.77	Water Column Height: 11.73
Volume/ft: 0.16	1 Casing Volume: 1.88	4 Casing Volumes: 5.63
Purging Device: disposable bailer	Did Well Dewater?:	Total Gallons Purged: 6.00
Start Purge Time: 2:30	Stop Purge Time: 2:50	Total Time: 20 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.	Comments
231	1.88	17.0	6.7	580	Brown water,
242		17.9	6.6	571	odor
250		17.1	6.6	426	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	11/24/98	3:10 2:50	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: <u>B0 G1M</u>	Cambria Mgr: <u>DCC</u>	Well ID: <u>MW-4</u>
Project Number: <u>2300116</u>	Date: <u>11/21/98</u>	Well Yield:
Site Address: <u>706 Harrison Street Oakland, CA</u>	Sampling Method: <u>Disp. Dailer</u>	Well Diameter: <u>2" PVC</u>
		Technician(s): <u>JR JJ</u>
Initial Depth to Water: <u>17.18</u>	Total Well Depth: <u>29.12</u>	Water Column Height: <u>11.94</u>
Volume/ft: <u>0.16</u>	1 Casing Volume: <u>1.91</u>	3 Casing Volumes: <u>5.73</u>
Purging Device: <u>Dailer</u>	Did Well Dewater?: <u>No</u>	Total Gallons Purged: <u>6.00</u>
Start Purge Time: <u>3:00</u>	Stop Purge Time: <u>3:15</u>	Total Time: <u>15 min</u>

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.	pH	Cond.	Comments
<u>3:00</u>	<u>1</u>	<u>17.2</u>	<u>7.2</u>	<u>634</u>	<u>odor</u>
<u>3:05</u>	<u>2</u>	<u>16.8</u>	<u>6.4</u>	<u>635</u>	
<u>3:10</u>	<u>3</u>	<u>16.9</u>	<u>6.4</u>	<u>716</u>	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW4</u>	<u>11/24/98</u>	<u>3:20</u>	<u>4 voc's</u>	<u>HCL</u>	<u>TPH, BTEX, MTBE</u>	<u>sta 8020 8015</u>

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-5
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JR, JJ
Initial Depth to Water: 15.15	Total Well Depth: 28.13	Water Column Height: 12.98
Volume/ft: 0.16	1 Casing Volume: 2.08	4 Casing Volumes: 6.23
Purging Device: disposable bailer	Did Well Dewater?:	Total Gallons Purged: 6.23
Start Purge Time: 1:35	Stop Purge Time: 1:47	Total Time:

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.	pH	Cond.	Comments
1:35	1	17.9	6.9	585	
1:41	2	18.4	6.8	774	
1:45	3	18.7	6.7	769	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
	11/24/98		4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015
MW-5	11/24/98	1:49				

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-7
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JR, JJ
Initial Depth to Water: 16.46	Total Well Depth: 26.10	Water Column Height: 9.64
Volume/ft: 0.16	1 Casing Volume: 1.54	4 Casing Volumes: 4.62
Purging Device: disposable bailer	Did Well Dewater?: No	Total Gallons Purged: 4.8
Start Purge Time: 1210	Stop Purge Time: 1221	Total Time: 11 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.	Comments
1210	1	20.1	8.4	522	
1213	2	19.4	7.8	500	
1218	3	19.3	7.3	560	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-7	11/24/98	1225	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015
MW-7						

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-7
Project Number: 2300116	Date: 11/24/98	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JR, JJ
Initial Depth to Water: 16.30	Total Well Depth: 28.80	Water Column Height: 12.50
Volume/ft: 0.16	1 Casing Volume: 2.00	3 Casing Volumes: 6.00
Purging Device: disposable bailer	Did Well Dewater?:	Total Gallons Purged:
Start Purge Time: 12:55	Stop Purge Time: 1:09	Total Time:

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.	pH	Cond.	Comments
12:55	1	20.5	7.2	748	
1:00	2	20.0	6.7	896	
1:08	3	19.8	6.1	926	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
	11/24/98		4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015
MW-7	11/24	1:15				