

C A M B R I A

ENVIRONMENTAL
PROTECTION

April 2, 1999

99 APR -9 PM 4:03

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

Re: **First Quarter 1999 Monitoring Report**

Former Arco Service Station
706 Harrison Street
Oakland, California
STID 3749
Cambria Project #230-0116-108



Dear Mr. Seto:

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

FIRST QUARTER 1999 ACTIVITIES

Quarterly Ground Water Sampling: On February 4, 1999 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. However, the system was operated intermittently due to BAAQMD concerns regarding effluent sampling and carbon filtration effectiveness.

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

HYDROCARBON DISTRIBUTION IN GROUND WATER

**Cambria
Environmental
Technology, Inc.**

Hydrocarbon concentrations remained consistent with historic data with a maximum benzene concentration of 5,900 parts per billion (ppb) in source area well MW-1. Downgradient wells MW-

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

5, MW-6, and MW-7 remained below detection limits for benzene and MTBE, consistent with historical data, as did crossgradient well MW-3. The hydrocarbon plume is well defined by upgradient well MW-4, crossgradient wells MW-3 and MW-7 and down gradient well MW-6. Hydrocarbons from the upgradient former service station continue to impact the ground water beneath the subject site. The current benzene and MTBE distribution in ground water is shown on Figure 1.

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

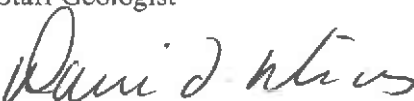
Remediation System: Cambria will continue to operate the SVE system and will consider remedial alternatives to improve the system's performance.

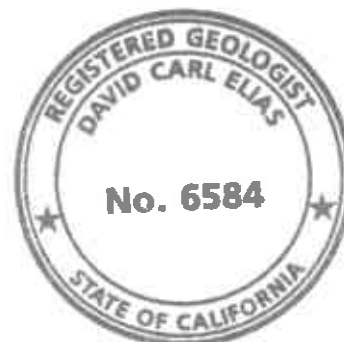
CLOSING

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
Staff Geologist


David Elias, RG
Senior Geologist



H:\SB-2004\Oakl-116 - Bo Gin\QM\QM-1-99.WPD

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

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

EXPLANATION

- Monitoring Well Location
- Dual Well, SVE/Sparging Well
- SVE Well
- ★ Anomalous Ground Water Elevation, not used in contouring

17.00
Ground Water Elevation Contour, Dashed Where Inferred

Ground Water Flow Direction and Gradient (ft/ft)

Well Identification.

ID
ELEV
Benz. - Date
MTBE - Date

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.



Former Shell Service Station

Approximate Location of Shell Fuel Tanks

MW-4
18.90
770
3,100

MW-2
18.39
5,800
3,000

MW-3
17.80
<0.5
<5.0

MW-7
15.99
<0.5
<5.0

MW-1
15.31
5,900
4,900

MW-6*
18.25
<0.5
<5.0

MW-5
14.61
<0.5
<5.0

HARRISON STREET

SEVENTH STREET

Former Unocal Station

6,000 Gallon Tank Excavation

Former Building

Waste Oil Tank Excavation

Former Pump Island

Former Pump Island

Tank Excavation

VWSP - 3

VW-2

VWSP - 4

VW-1

VWSP - 5

0.05



Scale (ft)

FIGURE

1

H:\SIB-3504\CAK-116\FIGURES\1CM409.MP.DWG

Former Arco Station

706 Harrison Street
Oakland, California



C A M B R I A

Ground Water Elevation Contour Map

February 4, 1999

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
	2/4/99	15.31	13.84	20,000	5,900	830	450	500	4,900	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 <i>TOC</i>	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	
	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
MW-3 <i>29.77</i>	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	
	2/4/99	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
MW-4 <i>31.18</i>	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

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*	
	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
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	
	2/4/99	14.61	13.43	<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	

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	
	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	
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	-	-	-	-	-	-	
	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
	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	

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.

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: 02/04/99
		Date Received: 02/04/99
	Client Contact: Jacquelyn Jones	Date Extracted: 02/04/99
	Client P.O:	Date Analyzed: 02/04/99

02/11/99

Dear Jacquelyn:

Enclosed are:

- 1). the results of 8 samples from your #230-0116; Bo Gin 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,

Edward Hamilton, Lab Director



Cambria Environmental Technology 1144 65 th Street, Suite C Oakland, CA 94608	Client Project ID: #230-0116; Bo Gin	Date Sampled: 02/04/99
		Date Received: 02/04/99
	Client Contact: Jacquelyn Jones	Date Extracted: 02/04-02/10/99
	Client P.O:	Date Analyzed: 02/04-02/10/99

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
02809	MW1	W	20,000,a	4900	5900	830	450	500	109
02810	MW2	W	66,000,a,h	3000	5800	16,000	2600	12,000	109
02811	MW3	W	ND	ND	ND	ND	ND	ND	109
02812	MW4	W	2800,a	3100	770	50	69	69	103
02813	MW5	W	ND	ND	ND	ND	ND	ND	97
02814	MW6	W	ND	ND	ND	ND	ND	ND	109
02815	MW7	W	ND	ND	ND	ND	ND	ND	81
02816	TB-2	W	ND	ND	ND	ND	ND	ND	107
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: 02/03/99-02/04/99

Matrix: WATER

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		RPD
	Sample (#02276)	MS	MSD		MS	MSD	
TPH (gas)	0.0	115.4	111.6	100.0	115.4	111.6	3.3
Benzene	0.0	11.8	10.9	10.0	118.0	109.0	7.9
Toluene	0.0	11.2	11.1	10.0	112.0	111.0	0.9
Ethyl Benzene	0.0	11.0	11.1	10.0	110.0	111.0	0.9
Xylenes	0.0	31.6	32.0	30.0	105.3	106.7	1.3
TPH(diesel)	0.0	126	143	150	84	95	12.7
TRPH (oil & grease)	0	23700	24600	23700	100	104	3.7

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

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

13891 x 0403

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH

24 HOUR

48 HOUR

5 DAY

Report To: Jacquelyn Jones

Bill To: Cambria

Company: Cambria Environmental Technology

1144 65th Street, Suite C

Oakland, CA 94608

Tele: (510) 420-0700

Fax: (510) 420-9170

Project #: 230-016

Project Name: Bo Gim

Project Location: 706 Harrison Street, Oakland

Sampler Signature: [Signature]

Analysis Request

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				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								
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other																							
+ MW1		2/1/99	1232	4	VDA	X					X	X																									02809
+ MW2			1220																																		02810
+ MW3			1250																																		02811
+ MW4			1258																																		02812
+ MW5			1142																																		02813
+ MW6			1120																																		02814
+ MW7			1100																																		02815
+ TB-2				1	VDA	X					X	X																								02816	

Relinquished By: [Signature]	Date: 2/1/99	Time: 3:18	Received By: David More
Relinquished By: David More	Date: 2/1/99	Time: 4:00	Received By: Nicole Picca
Relinquished By:	Date:	Time:	Received By:

Remarks: VOAS O&G METALS OTHER

ICE
 GOOD CONDITION
 HEAD SPACE ABSENT

PRESERVATION
 APPROPRIATE CONTAINERS

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
MW3	11:13	-	17.80	-	27.77	
MW6	11:00	-	18.25	-	26.10	
MW7	10:40	-	15.99	-	28.80	
MW1	11:17	-	15.37	-	25.82	
MW5	11:29	-	14.61	-	28.13	
MW2	11:35	-	18.39	-	25.55	
MW4	11:37	-	18.90	-	29.12	

Measured By: JJ/JR

Date: 2/4/99

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-1
Project Number: 230-0116	Date: 2/4/99	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): JJ/JR
Initial Depth to Water: 15.31	Total Well Depth: 25.82	Water Column Height: 10.51
Volume/ft: 0.16	1 Casing Volume: 1.68 gal	3 Casing Volumes: 5.04 gal
Purging Device: disposable bailer	Did Well Dewater?: No	Total Gallons Purged: 5.04 gal
Start Purge Time: 1205	Stop Purge Time: 1215	Total Time: 10 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
1205	1	17.5	5.9	807	odor
1207	2	17.4	5.3	872	dark tint to
1211	3	19.4	5.5	842	H ₂ O

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	2/4/99	1232	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: 230-0116	Date: 2/4/99	Well Yield: ---
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JJ/JR
Initial Depth to Water: 18.39	Total Well Depth: 25.55	Water Column Height: 7.16
Volume/ft: 0.16	1 Casing Volume: 1.14 gal	3 Casing Volumes: 3.43 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 3.5 gal
Start Purge Time: 1207	Stop Purge Time: 1214	Total Time: 7 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
1208		19.4	6.3	-15	
1211		19.8	6.3	-28	
1213		19.5	6.3	-30	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW2	2/4/99	1220	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: 230-0116	Date: 2/4/99	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): JJ/JR
Initial Depth to Water: 17.80	Total Well Depth: 27.77	Water Column Height: 9.97
Volume/ft: 0.16 1.50	1 Casing Volume: 11.68 gal	3 Casing Volumes: 4.78 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5 gal
Start Purge Time: 1232	Stop Purge Time: 1240	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.	pH	Cond.	Comments
1233	1	18.8	6.6	79	
1237	2	19.2	6.5	85	
1240	3	19.2	6.4	97	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW3	2/4/99	1250	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW-4
Project Number: 230-0116	Date: 2/4/99	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: 2" pvc
	Disposable bailer	Technician(s): JJ/JR
Initial Depth to Water: 18.90	Total Well Depth: 29.12	Water Column Height: 10.22
Volume/ft: 0.16 1.54	1 Casing Volume: 4.64 gal	3 Casing Volumes: 4.90 gal
Purging Device: disposable bailer	Did Well Dewater?: No	Total Gallons Purged: 5.00 gal
Start Purge Time: 1240	Stop Purge Time: 1255	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
1240	1	16.1	7.7	201	
1249	2	18.2	6.3	802	
1253	3	19.6	7.0	774	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	2/4/99	1258	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MWS
Project Number: 230-0116	Date: 2/4/99	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: "pvc"
	Disposable bailer	Technician(s): JJ/JR
Initial Depth to Water: 14.61	Total Well Depth: 28.13	Water Column Height: 13.52
Volume/ft: 0.16	1 Casing Volume: 2.16 gal	3 Casing Volumes: 6.49 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 7 gal
Start Purge Time: 1130	Stop Purge Time: 1140	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
1130	1	16.2	6.7	56	
	2	14.3	6.7	001	
	3	17.0	6.3	724	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MWS	2/4/99	1142	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW 6
Project Number: 230-0116	Date: 2/4/99	Well Yield: —
Site Address: 706 Harrison Street Oakland, California	Sampling Method:	Well Diameter: " pvc
	Disposable bailer	Technician(s): JJ/JR
Initial Depth to Water: 18.25	Total Well Depth: 26.10	Water Column Height: 7.85
Volume/ft: 0.16	1 Casing Volume: 1.26 gal	3 Casing Volumes: 3.77 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 4 gal
Start Purge Time: 11:10	Stop Purge Time: 11:15	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
1111		18.2	7.3	533	
1113		18.0	7.4	—001	
1114		18.6	9.0	12	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW 6	2/4/99	11:20	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Bo Gin	Cambria Mgr: DCE	Well ID: MW7
Project Number: 230-0116	Date: 2/4/99	Well Yield:
Site Address: 706 Harrison Street Oakland, California	Sampling Method: Disposable bailer	Well Diameter: " pvc
		Technician(s): JJ/JR
Initial Depth to Water: 15.99	Total Well Depth: 28.80	Water Column Height: 12.81
Volume/ft: 0.16	1 Casing Volume: 205 gal	3 Casing Volumes: 6.15 gal
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 7 gal
Start Purge Time: 1042	Stop Purge Time: 1050	Total Time: 8 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
1043		19.4	7.5	-37	
1047		18.8	7.0	-42	
1049		18.4	6.8	820	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW7	2/4/99	1100	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015