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January 17, 2005

DH

Mr. ~~Barney M.~~ Chan  
Alameda County Environmental Health Services  
UST Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **Fourth Quarter 2004 Monitoring Report**  
Former ARCO Service Station  
706 Harrison Street  
Oakland, California  
STID 3749  
Cambria Project #230-0116



Dear Mr. Chan:

On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. is submitting this *Fourth Quarter 2004 Monitoring Report* for the subject site. The report describes the fourth quarter 2004 activities and results as well as the anticipated first quarter 2005 activities.

If you have any questions or comments regarding this report, please call me at (510) 420-3314.

Sincerely,  
**Cambria Environmental Technology, Inc.**

Matthew A. Meyers  
Project Geologist

Attachments: Fourth Quarter 2004 Monitoring Report

cc: Mr. Bo K. Gin, 342 Lester Avenue, Oakland, California 94606

**Cambria  
Environmental  
Technology, Inc.**

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

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**FOURTH QUARTER 2004 MONITORING REPORT**

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

**January 17, 2005**



*Prepared for:*

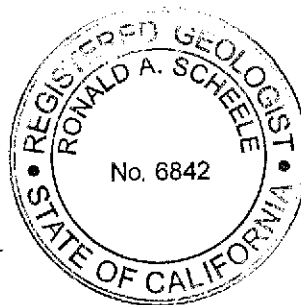
Mr. Bo K. Gin  
342 Lester Avenue  
Oakland, California 94606

*Prepared by:*

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

*Written by:*

Matthew A. Meyers  
Project Geologist



Ron Scheele, R.G.  
Senior Geologist

# C A M B R I A

## FOURTH QUARTER 2004 MONITORING REPORT

Former ARCO Service Station (Bo Gin)  
706 Harrison Street  
Oakland, California  
STID 3749  
Cambria Project #230-0116

January 17, 2005

### INTRODUCTION



On behalf of Mr. Bo K. Gin, Cambria Environmental Technology, Inc. (Cambria) is submitting this *Fourth Quarter 2004 Monitoring Report* for the subject site. Presented below are the fourth quarter 2004 groundwater monitoring activities and results and the anticipated first quarter 2005 activities.

Figure 1 displays the groundwater elevation and hydrochemical data. Table 1 presents current and historical groundwater level measurements, calculated groundwater elevation data, and hydrochemical data. Appendix A contains the field data sheets for this monitoring event. Appendix B contains the analytical laboratory reports. Appendix C contains benzene and MTBE concentration versus groundwater elevation graphs. Appendix D contains the GeoTracker electronic delivery confirmation documentation. The groundwater monitoring and analytical results for the former Shell station are contained in Appendix E.

### FOURTH QUARTER 2004 ACTIVITIES

#### Monitoring Activities

*Field Activities:* On October 12, 2004, Cambria conducted quarterly monitoring and sampling activities. Cambria gauged water levels and collected groundwater samples from monitoring wells MW-1 through MW-7 (see Figure 1) pursuant to the well sampling schedule. Field activities were performed jointly with Aqua Science Engineers, Inc. (Aqua Science) of Danville, California. Aqua Science has been retained by owners of the adjacent lot (a former Shell service station) to perform monitoring and sampling. The groundwater depth measurements have been submitted to the GeoTracker database (Appendix D).

Prior to sampling, groundwater levels were gauged in the wells to evaluate groundwater elevation and flow patterns at the site. To facilitate groundwater sampling, Cambria purged approximately three well-casing volumes of groundwater prior to sampling. Cambria recorded groundwater pH, conductivity, temperature, turbidity, and evaluated reading stabilization. Groundwater samples were collected using clean, disposable bailers and were decanted into the appropriate containers supplied by the analytical laboratory. Samples were labeled, placed in protective foam sleeves, stored on crushed ice at or below 4

degrees Celsius and transported under chain-of-custody to the laboratory. Field data sheets are presented as Appendix A.

*Sample Analyses:* Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified United States Environmental Protection Agency (EPA) Method 8015C; and benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The analytical laboratory report is included as Appendix B. Groundwater analytical results are shown on Table 1 and summarized on Figure 1. The groundwater analytical results have been submitted to the GeoTracker database (Appendix D).



## Monitoring Results

*Groundwater Gradient:* Based on depth-to-water measurements collected during Cambria and Aqua Science's joint monitoring event on October 12, 2004, groundwater generally flows towards the south-southwest with a gradient of 0.018 feet per foot (Figure 1). The gradient and flow direction is generally consistent with historical data. Depth-to-water and groundwater elevation data for the site are presented in Table 1. Groundwater elevation and analytical data for the adjacent former service station are presented in Appendix E.

*Hydrocarbon Distribution in Groundwater:* Hydrocarbons were detected in wells MW-1, MW-2, and MW-4 during this sampling event (Table 1). The highest TPHg and BTEX concentrations were detected in well MW-2 at 75,000 micrograms per liter ( $\mu\text{g/L}$ ), 2,600  $\mu\text{g/L}$ , 13,000  $\mu\text{g/L}$ , 2,300  $\mu\text{g/L}$ , and 11,000  $\mu\text{g/L}$ , respectively. MTBE was not detected in the monitoring wells sampled this quarter.

Hydrocarbon concentrations in the wells remained at similar levels as compared to the previous quarter and groundwater sampling results continue to display overall decreasing concentration trends (see Table 1 and Appendix C).

## ANTICIPATED FIRST QUARTER 2005 ACTIVITIES

### Monitoring Activities

Cambria will gauge water levels and collect groundwater samples from wells MW-1 through MW-7. Groundwater samples will be analyzed for TPHg by EPA Method 8015C, and BTEX and MTBE by EPA Method 8021B. Should MTBE be detected in a sample, the detection will be confirmed using EPA Method 8260B. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results.

## Assessment Activities

Cambria plans to submit a work plan that will propose the collection of post-remediation soil and groundwater samples from the former 6,000-gallon UST cavity and from the vicinity of MW-2.

## ATTACHMENTS



Figure 1 – Groundwater Elevation Contour and Hydrocarbon Concentration Map

Table 1 – Groundwater Elevations and Analytical Data

Appendix A – Groundwater Monitoring Field Data Sheets











Appendix B – Laboratory Analytical Report

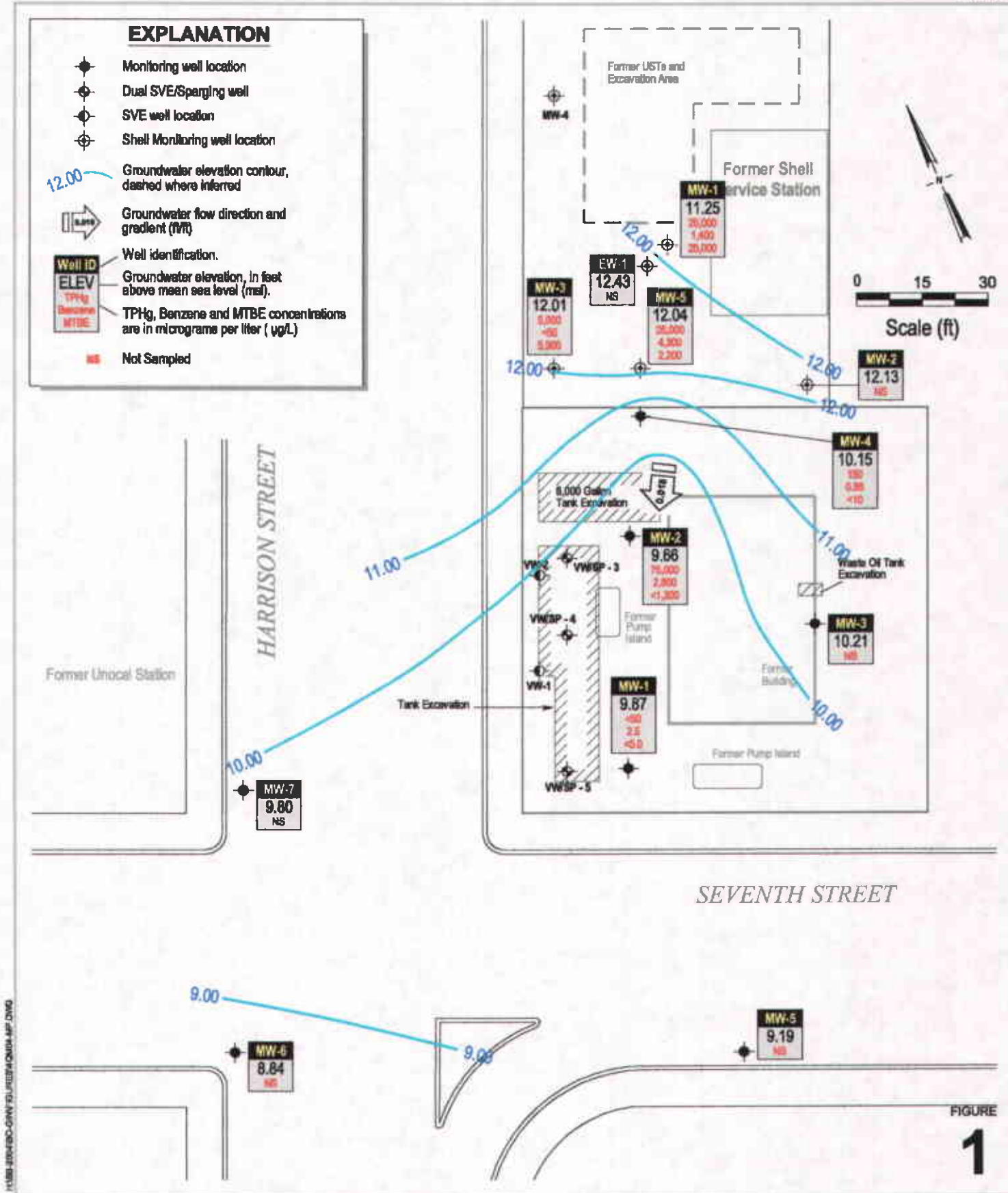
Appendix C – Benzene and MTBE Concentration Graphs

Appendix D – GeoTracker Electronic Delivery Confirmations

Appendix E – Former Shell Station Groundwater Monitoring and Analytical Results

### EXPLANATION

-  Monitoring well location
-  Dual SVE/Sparging well
-  SVE well location
-  Shell Monitoring well location
-  Groundwater elevation contour, dashed where inferred
-  Groundwater flow direction and gradient (ft/ft)
-  Well identification.
-  Groundwater elevation, in feet above mean sea level (msl).
-  TPHg, Benzene and MTBE concentrations are in micrograms per liter (µg/L)
-  Not Sampled



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**Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California**

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
Sampling Frequency	Date Sampled										
MW-1	8/13/1993	17.40	11.75	20,000	8,500	640	280	440	-	-	
29.15	12/14/1993	17.27	11.88	17,000	9,200	1,200	4,400	540	-	-	
Quarterly	4/15/1994	17.00	12.15	9,500	3,600	530	160	280	-	-	
	12/29/1994	16.40	12.75	-	-	-	-	-	-	-	
	7/19/1996	15.83	13.32	17,000	5,200	1,100	330	530	-	-	sheen/odor
	1/27/1997	13.58	15.57	30,000	9,800	1,300	790	880	400	-	b, sheen/odor
	6/18/1997	16.11	13.04	19,000	5,600	1,400	510	770	1,200	800	a, b
	9/18/1997	16.62	12.53	48,000	18,000	4,400	1,000	1,700	<640	-	b
	12/10/1997	15.93	13.22	22,000	4,900	1,300	580	650	460	260	a, b, odor
	2/18/1998	11.56	17.59	16,000	5,000	750	400	780	1,800	-	b
	5/12/1998	13.53	15.62	19,000	4,600	810	450	770	5,500	-	b, c
	8/18/1998	15.19	13.96	12,000	3,600	1,300	300	570	5,100	3,700	a, b
	11/24/1998	15.67	13.48	13,000	3,600	890	330	380	6,100	-	b
	2/4/1999	15.31	13.84	20,000	5,900	830	450	500	4,900	-	b
	5/18/1999	14.95	14.20	23,000	7,000	1,600	520	830	6,100	-	b
	8/27/1999	15.84	13.31	19,000	5,800	1,700	410	710	1,800	2,100	a, b
	11/18/1999	16.39	12.76	20,000	4,900	630	410	580	4,900	3,600	b
	2/29/2000	13.43	15.72	12,000	2,800	24	290	170	3,100	3,400	a
	5/25/2000	15.08	14.07	12,000	2,200	120	330	260	9,100	12,000	a, b
	8/9/2000	16.09	13.06	13,000	2,500	44	310	140	16,000	-	b
	11/9/2000	15.90	13.25	11,000	2,500	140	380	150	11,000	12,000	b
	1/29/2001	16.05	13.10	9,600	3,100	100	77	200	2,600	2,400	b
	4/16/2001	16.90	12.25	3,300	1,200	4.4	2.7	28	900	940	b
	8/14/2001	17.13	12.02	2,000	500	3.4	24	7.8	68	53	a
	10/22/2001	16.11	13.04	220	83	0.63	2.8	<0.5	<10	5.7	a
	2/1/2002	16.93	12.22	640	220	1.7	4.7	0.57	<10	-	a
	5/10/2002	15.09	14.06	230	26	0.97	<0.5	<0.5	<5.0	-	a
	7/8/2002	15.20	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	
	10/2/2002	15.70	13.45	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/23/2003	15.09	14.06	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/29/2003	13.02	16.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
26.17	7/18/2003	14.50	11.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	13.81	12.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/28/2004	13.09	13.08	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/7/2004	14.97	11.20	180	60	0.56	1.9	<0.5	<5.0	-	a
	7/23/2004	14.15	12.02	130	36	<0.5	0.65	<0.5	<5.0	-	a
	<b>10/12/2004</b>	<b>16.30</b>	<b>9.87</b>	<b>&lt;50</b>	<b>2.5</b>	<b>1.5</b>	<b>&lt;0.5</b>	<b>0.86</b>	<b>&lt;5.0</b>	<b>-</b>	

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California**

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
Sampling Frequency	Date Sampled										
MW-2	8/13/1993	17.05	13.46	34,000	6,800	10,000	740	3,900	-	-	
30.51	12/14/1993	18.28	12.23	16,000	3,200	4,200	500	1,700	-	-	
Quarterly	4/15/1994	18.10	12.41	23,000	2,500	4,200	470	1,800	-	-	
	12/29/1994	17.40	13.11	-	-	-	-	-	-	-	
	7/19/1996	16.72	13.79	90,000	7,300	14,000	1,600	7,300	-	-	odor
	1/27/1997	14.89	15.62	63,000	7,100	13,000	1,600	7,100	500	-	b, odor
	6/18/1997	17.12	13.39	52,000	5,100	10,000	1,400	6,000	<200	-	b
	9/18/1997	17.63	12.88	110,000	9,400	23,000	2,600	13,000	<890	-	b, sheen/odor
	12/10/1997	16.98	13.53	39,000	2,600	5,300	940	3,900	780	320	b, odor
	2/18/1998	12.61	17.90	85,000	9,000	19,000	2,300	11,000	2,400	-	b
	5/12/1998	14.45	16.06	110,000	9,500	21,000	2,500	12,000	<1,200	-	b
	8/18/1998	16.14	14.37	64,000	6,000	13,000	1,700	7,800	2,000	1,300	a, b
	11/24/1998	16.70	13.81	78,000	5,300	14,000	2,300	11,000	<2,000	-	b, g
	2/4/1999	18.39	12.12	66,000	5,800	16,000	2,600	12,000	3,000	-	b, g
	5/18/1999	15.90	14.61	78,000	6,700	17,000	2,400	10,000	4,300	-	b
	8/27/1999	16.79	13.72	91,000	7,400	17,000	2,300	11,000	1,200	1,000	a, b
	11/18/1999	17.32	13.19	180,000	7,000	20,000	3,300	16,000	<6,000	1,700	b, g
	2/29/2000	14.37	16.14	86,000	5,500	13,000	2,000	9,500	3,500	4,700	a
	5/25/2000	16.01	14.50	110,000	6,300	14,000	2,400	10,000	7,500	6,500	a, b, g
	8/9/2000	17.02	13.49	77,000	5,000	13,000	2,000	8,600	5,900	-	b
	11/9/2000	17.00	13.51	70,000	4,800	12,000	1,900	8,000	9,400	8,300	b
	1/29/2001	18.31	12.20	110,000	8,200	21,000	2,800	13,000	2,500	1,900	b, g
	4/16/2001	18.59	11.92	97,000	7,400	15,000	2,500	12,000	<3,000	<50	b, g
	8/14/2001	18.74	11.77	97,000	6,200	14,000	2,400	13,000	<250	<50	a, j
	10/22/2001	18.27	12.24	71,000	5,900	15,000	2,400	12,000	<1,400	150	a
	2/1/2002	18.05	12.46	1,400	11	88	44	210	<5.0	-	a
	5/10/2002	17.15	13.36	97,000	4,500	15,000	2,500	12,000	<3,000	-	a, g
	7/8/2002	15.30	15.21	42,000	2,100	6,500	2,200	8,800	<1,000	65	a
	10/2/2002	15.89	14.62	70,000	1,700	5,700	1,900	8,300	<1,700	-	a
	1/23/2003	17.51	13.00	40,000	1,900	7,800	1,200	5,600	<1,000	-	a
	4/29/2003	15.31	15.20	82,000	2,500	11,000	2,200	9,400	<2,000	-	a
27.53	7/18/2003	16.84	10.69	57,000	2,100	8,700	2,200	10,000	-	<50	a
	10/9/2003	16.05	11.48	49,000	1,800	7,000	1,700	7,600	<1,500	26	a
	1/28/2004	15.39	12.14	550	21	33	3.0	61	<100	-	a
	4/7/2004	16.01	11.52	41,000	2,500	11,000	1,900	8,000	<2,000	-	a
	7/23/2004	15.30	12.23	81,000	2,000	12,000	2,500	12,000	<2,000	-	a, h
	10/12/2004	17.87	9.66	75,000	2,600	13,000	2,300	11,000	<1,300	-	a



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**Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California**

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
Sampling Frequency	Date Sampled										
MW-3	8/13/1993	17.05	12.72	<50	<0.50	<0.50	<0.50	<1.5	-	-	
29.77	12/14/1993	17.70	12.07	<50	<0.50	<0.50	<0.50	<1.5	-	-	
Semi-annually	4/15/1994	17.40	12.37	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	12/29/1994	16.80	12.97	-	-	-	-	-	-	-	
	7/19/1996	16.28	13.49	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	13.83	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.53	13.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/1997	17.07	12.70	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	11.80	17.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	13.85	15.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.57	14.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.04	13.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	17.80	11.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.29	14.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	16.15	13.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	16.77	13.00	-	-	-	-	-	-	-	
	2/29/2000	13.71	16.06	<50	2	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	15.46	14.31	-	-	-	-	-	-	-	
	8/9/2000	16.46	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.25	13.52	-	-	-	-	-	-	-	
	1/29/2001	16.52	13.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	16.95	12.82	-	-	-	-	-	-	-	
	8/14/2001	17.11	12.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/2001	16.50	13.27	-	-	-	-	-	-	-	
	2/1/2002	16.90	12.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/2002	15.03	14.74	-	-	-	-	-	-	-	
	7/8/2002	14.45	15.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
10/2/2002	15.03	14.74	-	-	-	-	-	-	-		
1/23/2003	15.48	14.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
4/29/2003	12.49	17.28	-	-	-	-	-	-	-		
26.79	7/18/2003	14.80	11.99	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.13	12.66	-	-	-	-	-	-	-	
	1/28/2004	13.47	13.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/7/2004	15.41	11.38	-	-	-	-	-	-	-	
	7/23/2004	14.54	12.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/12/2004	16.58	10.21	-	-	-	-	-	-	-	

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**Table 1. Groundwater Elevations and Analytical Data:** Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to	Groundwater	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes	
Sampling	Frequency	Water	Elevation	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		
Date Sampled		(ft)	(ft-msl)									
MW-4		12/16/1994	18.10	13.08	2,500	32	6.5	4.5	17	-	-	
31.18		12/29/1994	17.95	13.23	-	-	-	-	-	-	-	
Quarterly		7/19/1996	17.38	13.80	3,300	520	39	67	60	-	-	
		1/27/1997	15.25	15.93	4,500	860	55	100	91	1,100	-	b
		6/18/1997	17.61	13.57	2,700	700	52	81	76	2,200	2,300	a, b
		9/18/1997	18.01	13.17	3,900	760	38	56	64	<170	-	b
		12/10/1997	17.45	13.73	12,000	1,800	120	210	210	2,900	2,600	a, b
		2/18/1998	13.09	18.09	1,700	210	8	6.7	16	200	-	b
		5/12/1998	14.78	16.40	2,100	300	15	36	34	920	-	b, c
		8/18/1998	16.59	14.59	4,700	1,000	130	110	150	5,200	4,900	a, b
		11/24/1998	17.18	14.00	3,000	810	44	76	94	4,800	-	b
		2/4/1999	18.90	12.28	2,800	770	50	69	69	3,100	-	b
		5/18/1999	16.30	14.88	4,000	780	57	7.7	79	4,800	-	b
		8/27/1999	17.21	13.97	4,100	870	51	74	99	3,300	4,100	a, b
		11/18/1999	17.77	13.41	3,000	760	43	67	65	5,100	5,400	b
		2/29/2000	14.85	16.33	4,600	1,000	64	94	170	4,100	4,600	a
		5/25/2000	16.45	14.73	2,600	540	39	59	41	3,500	5,300	b
		8/9/2000	17.47	13.71	4,400	930	66	98	79	9,400	-	b
		11/9/2000	17.45	13.73	4,200	630	34	54	44	7,800	9,400	b
		1/29/2001	18.90	12.28	3,100	710	34	66	51	9,400	8,000	b
		4/16/2001	19.17	12.01	160	1.2	1.3	<0.5	12	22	20	b
		8/14/2001	19.20	11.98	1,700	190	11	35	13	300	250	b
		10/22/2001	18.95	12.23	1,100	120	3.7	29	7.9	<25	16	a
		2/1/2002	19.05	12.13	2,600	25	43	21	280	<5.0	-	a
		5/10/2002	17.69	13.49	490	3.5	2.0	2.1	2.2	<5.0	-	a
		7/8/2002	15.75	15.43	170	0.51	0.62	1.6	1.2	<5.0	2.0	m
		10/2/2002	16.30	14.88	240	1.7	2.0	2.2	0.88	<5.0	-	a
		1/23/2003	17.74	13.44	<50	0.52	4.1	<0.5	1.9	<5.0	-	
		4/29/2003	15.47	15.71	1,300	75	4.8	21	7.3	130	120	a
28.20		7/18/2003	17.08	11.12	<50	<0.5	<0.5	<0.5	<0.5	-	0.74	a
		10/9/2003	16.25	11.95	210	4.7	0.57	1.6	1.1	<10	10	a
		1/28/2004	15.65	12.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	a
		4/7/2004	16.49	11.71	-	-	-	-	-	-	-	
		4/12/2004	-	-	770	56	3.2	7.0	6.5	120	160	a
		7/23/2004	15.86	12.34	1,100	130	11	17	17	790	800	a
		<b>10/12/2004</b>	<b>18.05</b>	<b>10.15</b>	<b>150</b>	<b>0.86</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>0.97</b>	<b>&lt;10</b>	<b>-</b>	<b>a</b>

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data:** Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to Water	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Frequency	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
MW-5	12/16/1994	16.07	11.97	<50	1.1	<0.5	<0.5	2.4	-	-	
28.04	12/29/1994	16.10	11.94	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	15.49	12.55	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	13.60	14.44	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	15.55	12.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	9/18/1997	16.16	11.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	15.41	12.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	10.93	17.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	13.25	14.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	14.75	13.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	15.15	12.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	14.61	13.43	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	14.15	13.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	15.43	12.61	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	15.97	12.07	-	-	-	-	-	-	-	-
	2/29/2000	13.16	14.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	14.72	13.32	-	-	-	-	-	-	-	-
	8/9/2000	15.68	12.36	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	15.39	12.65	-	-	-	-	-	-	-	-
	1/29/2001	15.97	12.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	16.24	11.80	-	-	-	-	-	-	-	-
	8/14/2001	17.39	10.65	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/22/2001	15.90	12.14	-	-	-	-	-	-	-	-
	2/1/2002	16.55	11.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/10/2002	15.12	12.92	-	-	-	-	-	-	-	-
7/8/2002	15.92	12.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
10/2/2002	16.42	11.62	-	-	-	-	-	-	-	-	
1/23/2003	14.90	13.14	<50	20	<0.5	<0.5	<0.5	<5.0	-		
4/29/2003	12.05	15.99	-	-	-	-	-	-	-	-	
25.07	7/18/2003	14.28	10.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	13.36	11.71	-	-	-	-	-	-	-	
	1/28/2004	12.68	12.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/7/2004	14.71	10.36	-	-	-	-	-	-	-	
	7/23/2004	13.49	11.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
	10/12/2004	15.88	9.19	-	-	-	-	-	-	-	

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data:** Former ARCO Station - 706 Harrison Street, Oakland, California

Well ID	TOC	Depth to Water (ft)	Groundwater Elevation (ft-msl)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (8020) (µg/L)	MTBE (8260) (µg/L)	Notes
Sampling Frequency	Date Sampled										
MW-6	12/16/1994	17.74	11.36	-	-	-	-	-	-	-	
29.10	12/29/1994	17.40	11.70	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	16.60	12.50	<50	<0.5	<0.5	<0.5	<0.5	-	-	
	1/27/1997	14.88	14.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.73	12.37	51	22	<0.5	<0.5	<0.5	<5.0	-	c
	9/18/1997	17.24	11.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	12/10/1997	16.56	12.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	12.93	16.17	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	14.35	14.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.94	13.16	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.46	12.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/4/1999	18.25	10.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.73	13.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/27/1999	15.64	13.46	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	17.04	12.06	-	-	-	-	-	-	-	
	2/29/2000	14.55	14.55	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/25/2000	15.86	13.24	-	-	-	-	-	-	-	
	8/9/2000	16.80	12.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.60	12.50	-	-	-	-	-	-	-	
	1/29/2001	17.00	12.10	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	17.15	11.95	-	-	-	-	-	-	-	
	8/14/2001	17.30	11.80	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
10/22/2001	17.13	11.97	-	-	-	-	-	-	-		
2/1/2002	16.57	12.53	70	37	<0.5	<0.5	<0.5	<5.0	-	a	
5/10/2002	15.25	13.85	-	-	-	-	-	-	-		
7/8/2002	15.79	13.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
10/2/2002	16.38	12.72	-	-	-	-	-	-	-		
1/23/2003	16.03	13.07	<50	21	<0.5	<0.5	<0.5	<5.0	-		
4/29/2003	14.19	14.91	-	-	-	-	-	-	-		
26.13	7/18/2003	15.47	10.66	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.73	11.40	-	-	-	-	-	-	-	
	1/28/2004	14.05	12.08	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/7/2004	14.41	11.72	-	-	-	-	-	-	-	
	7/23/2004	15.15	10.98	3,300	1,300	<5.0	52	9.7	<50	-	a
	10/12/2004	17.29	8.84	-	-	-	-	-	-	-	

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California**

Well ID	TOC	Depth to Water	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Frequency	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
MW-7	12/16/1994	17.07	12.60	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
29.67	12/29/1994	17.65	12.02	-	-	-	-	-	-	-	
Semi-annually	7/19/1996	16.44	13.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	1/27/1997	15.09	14.58	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	6/18/1997	16.59	13.08	73	<0.5	0.55	<0.5	<0.5	<5.0	-	d
	9/18/1997	17.06	12.61	94	<0.5	<0.5	<0.5	<0.5	<5.0	-	b, f
	12/10/1997	16.58	13.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	2/18/1998	12.60	17.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/12/1998	14.81	14.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	8/18/1998	15.67	14.00	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/24/1998	16.30	13.37	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	2/4/1999	15.99	13.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	5/18/1999	15.42	14.25	200	<0.5	<0.5	<0.5	<0.5	<5.0	-	d
	8/27/1999	16.35	13.32	140	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/18/1999	16.81	12.86	--	--	--	--	--	--	-	
	2/29/2000	14.16	15.51	100	<0.5	<0.5	<0.5	<0.5	<5.0	-	f
	5/25/2000	15.54	14.13	--	--	--	--	--	--	-	
	8/9/2000	16.56	13.11	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	11/9/2000	16.45	13.22	-	-	-	-	-	-	-	
	1/29/2001	16.92	12.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/16/2001	17.03	12.64	-	-	-	-	-	-	-	
	8/14/2001	17.27	12.40	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
10/22/2001	16.95	12.72	-	-	-	-	-	-	-		
2/1/2002	16.14	13.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
5/10/2002	15.30	14.37	-	-	-	-	-	-	-		
7/8/2002	15.73	13.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-		
10/2/2002	16.24	13.43	-	-	-	-	-	-	-		
1/23/2003	15.70	13.97	<50	23	<0.5	<0.5	<0.5	<5.0	-		
4/29/2003	12.68	16.99	-	-	-	-	-	-	-		
26.70	7/18/2003	15.19	11.51	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	10/9/2003	14.45	12.25	-	-	-	-	-	-	-	
	1/28/2004	13.88	12.82	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	4/7/2004	15.71	10.99	-	-	-	-	-	-	-	
	7/23/2004	14.85	11.85	<50	<0.5	<0.5	<0.5	<0.5	130	120	
	10/12/2004	16.90	9.80	-	-	-	-	-	-	-	

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data: Former ARCO Station - 706 Harrison Street, Oakland, California**

Well ID	TOC	Depth to Water	Groundwater Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE (8020)	MTBE (8260)	Notes
Sampling Frequency	Date Sampled	(ft)	(ft-msl)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
VW-3	3/6/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
-	3/25/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	i
VW-4	3/6/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
-	3/25/2003	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	
Trip Blank	11/9/2000	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	

**Abbreviations and Analyses:**

TOC = Top of casing elevation with respect to mean sea level  
 ft = measured in feet  
 ft-msl = measured in feet relative to mean sea level  
 TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015  
 Benzene, ethylbenzene, toluene and xylenes by EPA Method 8020.  
 MTBE = Methyl tertiary butyl ether by EPA Method 8020 and/or 8260.  
 µg/L = Micrograms per liter  
 - = not sampled, not analyzed, or not applicable  
 Data prior to 12/16/94 provided by previous consultant.  
 Wells were re-surveyed on October 27, 2003 to City of Oakland benchmark 25A.

**Notes**

a = Analytical laboratory notes that unmodified or weakly modified gasoline is significant.  
 b = Analytical laboratory notes that heavier gasoline range compounds are significant.  
 c = Analytical laboratory notes that lighter gasoline range compounds are significant.  
 d = Analytical laboratory notes that isolated peaks are present.  
 f = Analytical laboratory notes hydrocarbons with no recognizable patterns are present.  
 g = Analytical laboratory notes lighter than water immiscible sheen is present.  
 h = lighter than water immiscible sheen/product is present  
 j = Sample diluted due to high organic content.  
 i = Sample contains greater than ~2 vol. % sediment.

# **APPENDIX A**

Groundwater Monitoring Field Data Sheets





WELL SAMPLING FORM

Project Name: <u>Bo Gin</u>	Cambria Mgr: <u>MM</u>	Well ID: <u>MW-1</u>
Project Number: <u>230-0116</u>	Date: <u>10/12/04</u>	Well Yield:
Site Address: <u>706 Harrison St Oakland</u>	Sampling Method: <u>Disposable Bailer</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>SG</u>
Initial Depth to Water: <u>16.30</u>	Total Well Depth: <u>24.50</u>	Water Column Height: <u>8.2</u>
Volume/ft: <u>0.16</u>	1 Casing Volume: <u>1.31</u>	3 Casing Volumes: <u>3.93</u>
Purging Device: <u>Disposable bailer</u>	Did Well Dewater?: <u>no</u>	Total Gallons Purged: <u>4</u>
Start Purge Time: <u>8:30</u>	Stop Purge Time: <u>8:59</u>	Total Time: <u>29 mins</u>

Single Volume = Water column height x Volume/ft.

Well Diam.	Volume/ft (gallons)
2"	0.16
4"	0.65
6"	1.47

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
8:40	1.5	19.6	7.02	895	
8:50	3	20.3	6.95	970	
9:00	4	20.5	6.96	938	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-1</u>	<u>10/12/04</u>	<u>9:05</u>	<u>3 Joks</u>	<u>HCl</u>		

WELL SAMPLING FORM

Project Name: <u>Bogin</u>	Cambria Mgr: <u>MM</u>	Well ID: <u>MW-2</u>
Project Number: <u>230-0116</u>	Date: <u>10/12/04</u>	Well Yield:
Site Address: <u>706 Harrison St Oakland</u>	Sampling Method: <u>Disposable Bailer</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>SG</u>
Initial Depth to Water: <u>17.87</u> <del>17.87</del>	Total Well Depth: <u>25.50</u>	Water Column Height: <u>7.63</u>
Volume/ft: <u>0.16</u>	1 Casing Volume: <u>1.22</u>	3 Casing Volumes: <u>3.66</u>
Purging Device: <u>disposable bailer</u>	Did Well Dewater?: <u>no</u>	Total Gallons Purged: <u>3</u>
Start Purge Time: <u>9:30</u>	Stop Purge Time: <u>9:59</u>	Total Time: <u>29 mins</u>

Single 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
9:40	1	20.2	6.89	824	
9:50	2	20.2	6.92	870	
10:00	3	20.4	6.95	855	

Conc = mg/L      ORP = mV      DO = mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-2</u>	<u>10/12/04</u>	<u>10:05</u>	<u>3 Jars</u>	<u>HCl</u>		

WELL SAMPLING FORM

Project Name: <u>Bo Gin</u>	Cambria Mgr: <u>MM</u>	Well ID: <u>MW-4</u>
Project Number: <u>230-0116</u>	Date: <u>10/12/04</u>	Well Yield:
Site Address: <u>706 Harrison St Oakland</u>	Sampling Method: <u>Disposable Bailer</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>JB</u>
Initial Depth to Water: <u>18.05</u>	Total Well Depth: <u>25.40</u>	Water Column Height: <u>7.35</u>
Volume/ft: <u>0.16</u>	1 Casing Volume: <u>1.17</u>	3 Casing Volumes: <u>3.41</u>
Purging Device: <u>disposable bailer</u>	Did Well Dewater?: <u>no</u>	Total Gallons Purged: <u>3</u>
Start Purge Time: <u>11:30</u>	Stop Purge Time: <u>11:59</u>	Total Time: <u>29 mins</u>

Single 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
<u>11:40</u>	<u>1</u>	<u>19.9</u>	<u>6.99</u>	<u>640</u>	
<u>11:50</u>	<u>2</u>	<u>20.1</u>	<u>7.03</u>	<u>839</u>	
<u>12:00</u>	<u>3</u>	<u>20.4</u>	<u>7.05</u>	<u>910</u>	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-4</u>	<u>10/12/04</u>	<u>12:05</u>	<u>3 Jars</u>	<u>HCl</u>		

## **APPENDIX B**

Laboratory Analytical Report



**McC Campbell Analytical, Inc.**

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

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #230-0116/143; Bo Gin	Date Sampled: 10/12/04
		Date Received: 10/13/04
	Client Contact: Matt Meyers	Date Reported: 10/19/04
	Client P.O.:	Date Completed: 10/19/04

**WorkOrder: 0410178**

October 19, 2004

Dear Matt:

Enclosed are:

- 1). the results of 3 analyzed samples from your #230-0116/143; 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. McC Campbell 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





QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0410178

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 13568			Spiked Sample ID: 0410177-011A			
Analyte	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) <sup>£</sup>	ND	60	97	92.3	5.00	97.9	96.9	1.05	70	130
MTBE	ND	10	96.5	97.4	0.878	97.9	91.2	7.06	70	130
Benzene	ND	10	99.1	97.7	1.41	102	98	4.13	70	130
Toluene	ND	10	93.8	90.9	3.21	97	91.2	6.13	70	130
Ethylbenzene	ND	10	98.4	93	5.64	99.9	93.4	6.75	70	130
Xylenes	ND	30	85.7	84.7	1.17	86	85.3	0.778	70	130
%SS:	100	10	104	102	1.82	104	102	2.79	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 / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or 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.

**McC Campbell Analytical, Inc.**

**CHAIN-OF-CUSTODY RECORD**



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

WorkOrder: 0410178

ClientID: CETE

**Report to:**

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

TEL: (510) 420-0700  
 FAX: (510) 420-9170  
 ProjectNo: #230-0116/143; Bo Gin  
 PO:

**Bill to:**

Accounts Payable  
 Cambria Env. Technology  
 5900 Hollis St, Ste. A  
 Emeryville, CA 94608

Requested TAT: **5 days**

*Date Received:* 10/13/04

*Date Printed:* 10/13/04

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
0410178-001	MW-1	Water	10/12/04 9:05:00	<input type="checkbox"/>	A	A														
0410178-002	MW-2	Water	10/12/04 10:05:00	<input type="checkbox"/>	A															
0410178-003	MW-4	Water	10/12/04 12:05:00	<input type="checkbox"/>	A															

**Test Legend:**

1	G-MBTX_W	2	PREFD REPORT	3		4		5	
6		7		8		9		10	
11		12		13		14		15	

**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.

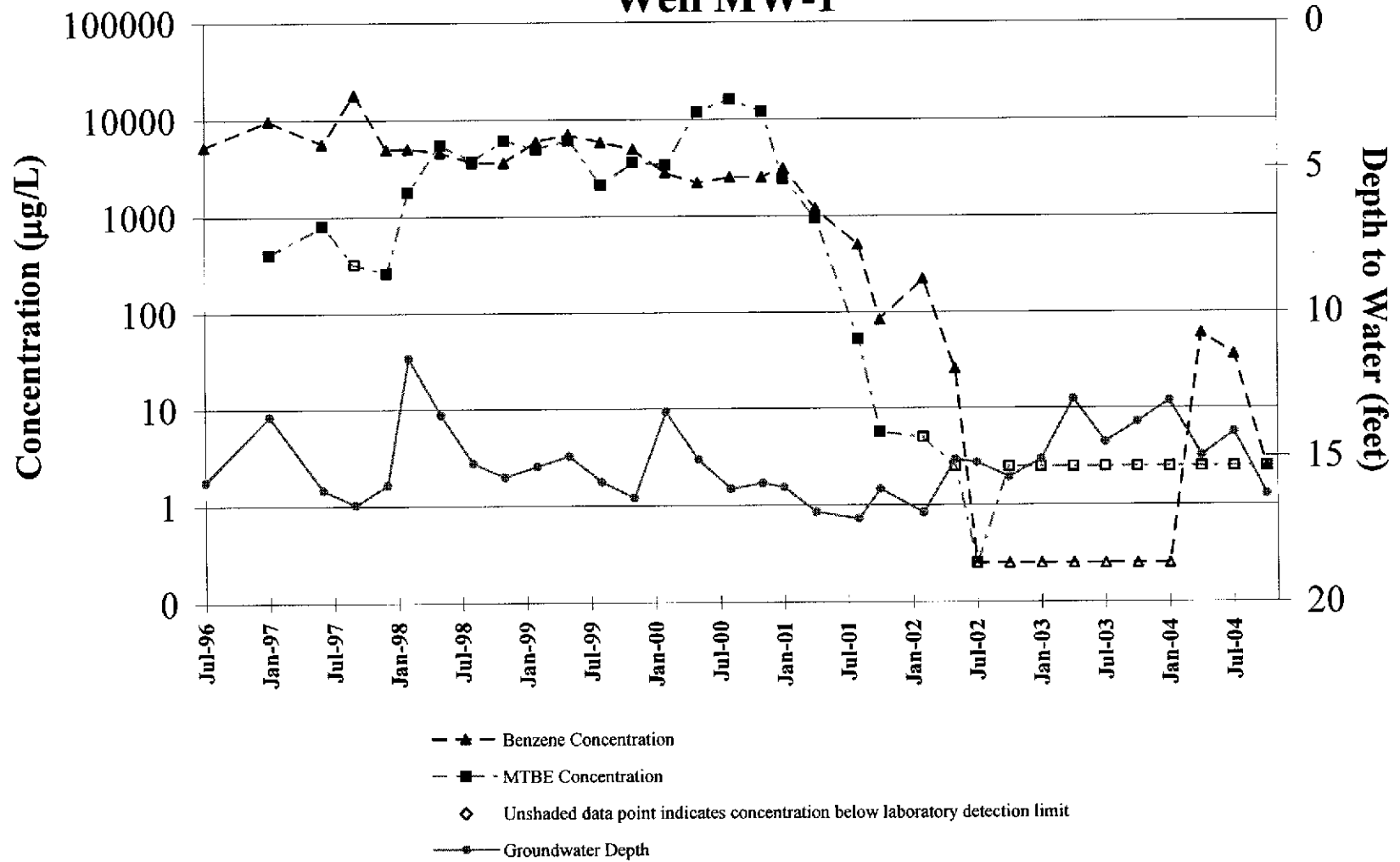




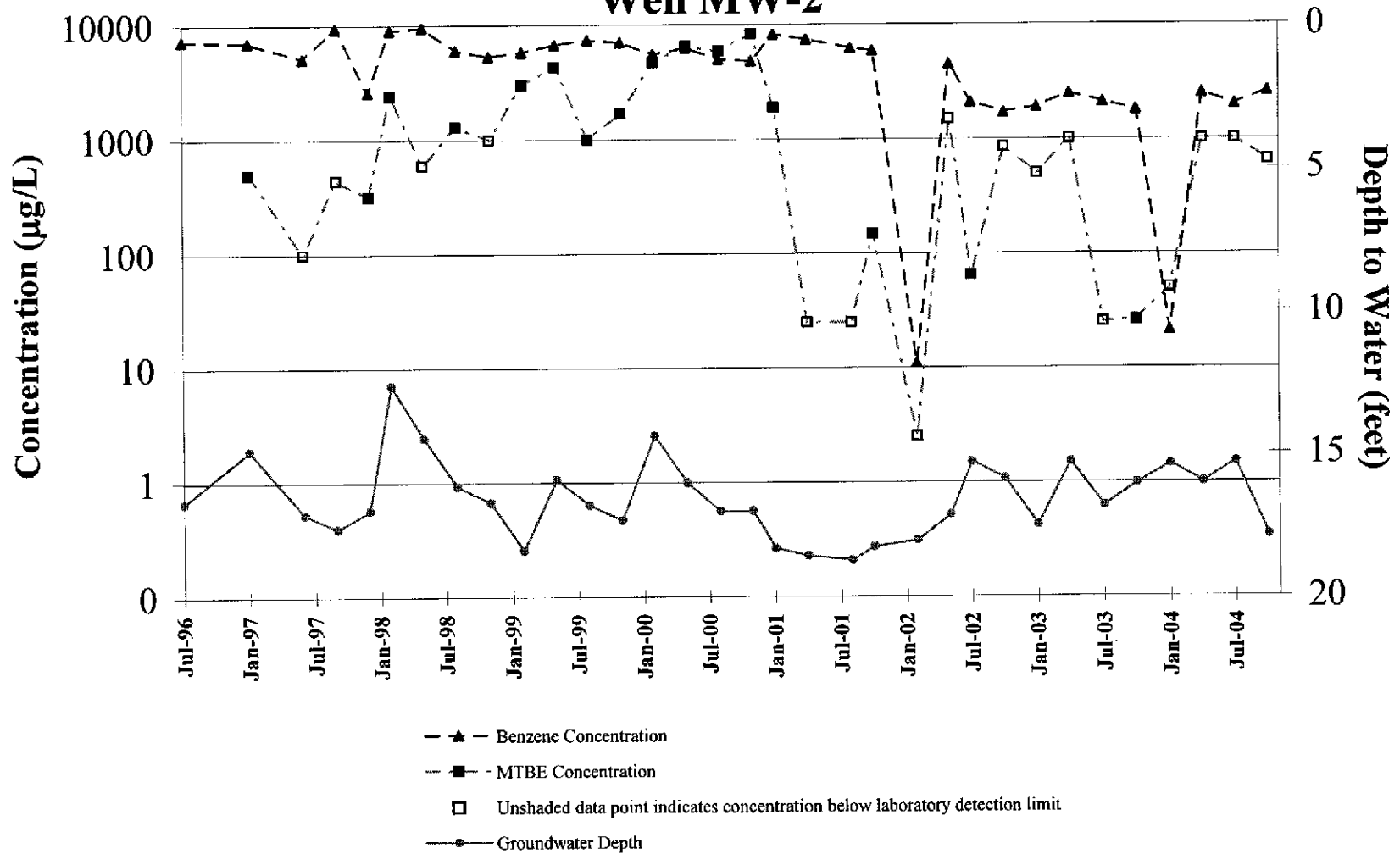
## **APPENDIX C**

**Benzene and MTBE Concentration Graphs**

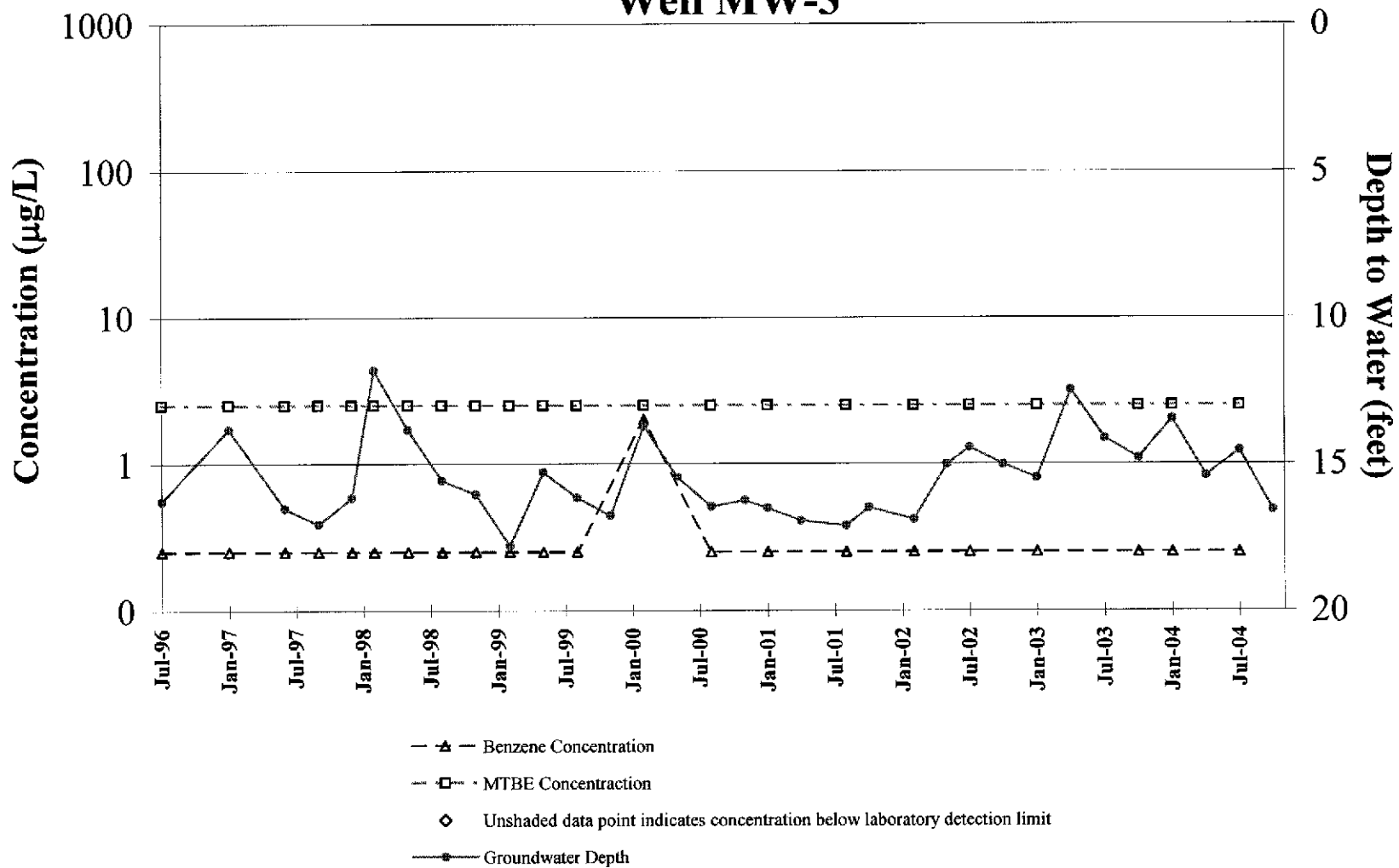
## Benzene and MTBE Concentration Trends Well MW-1



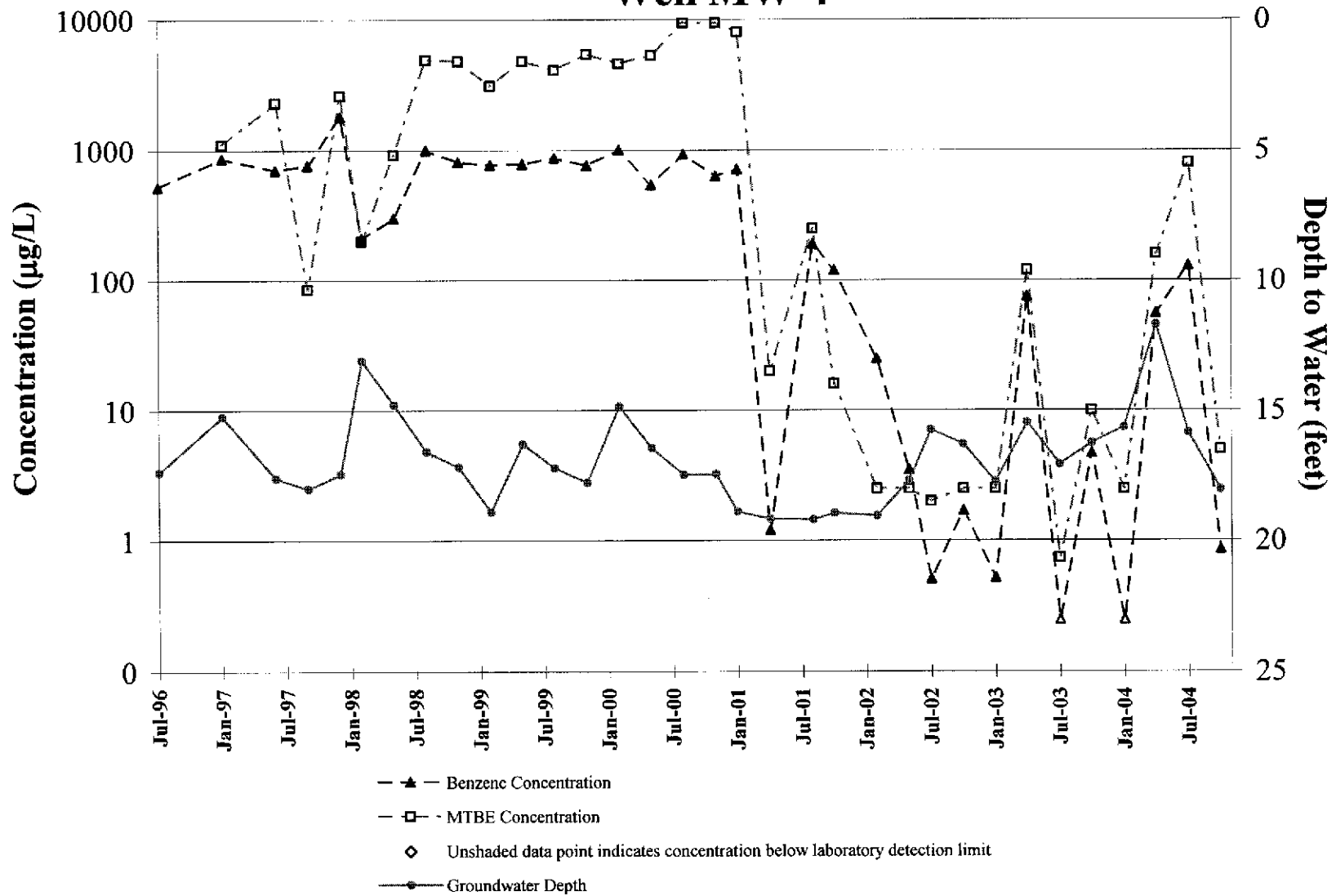
## Benzene and MTBE Concentration Trends Well MW-2



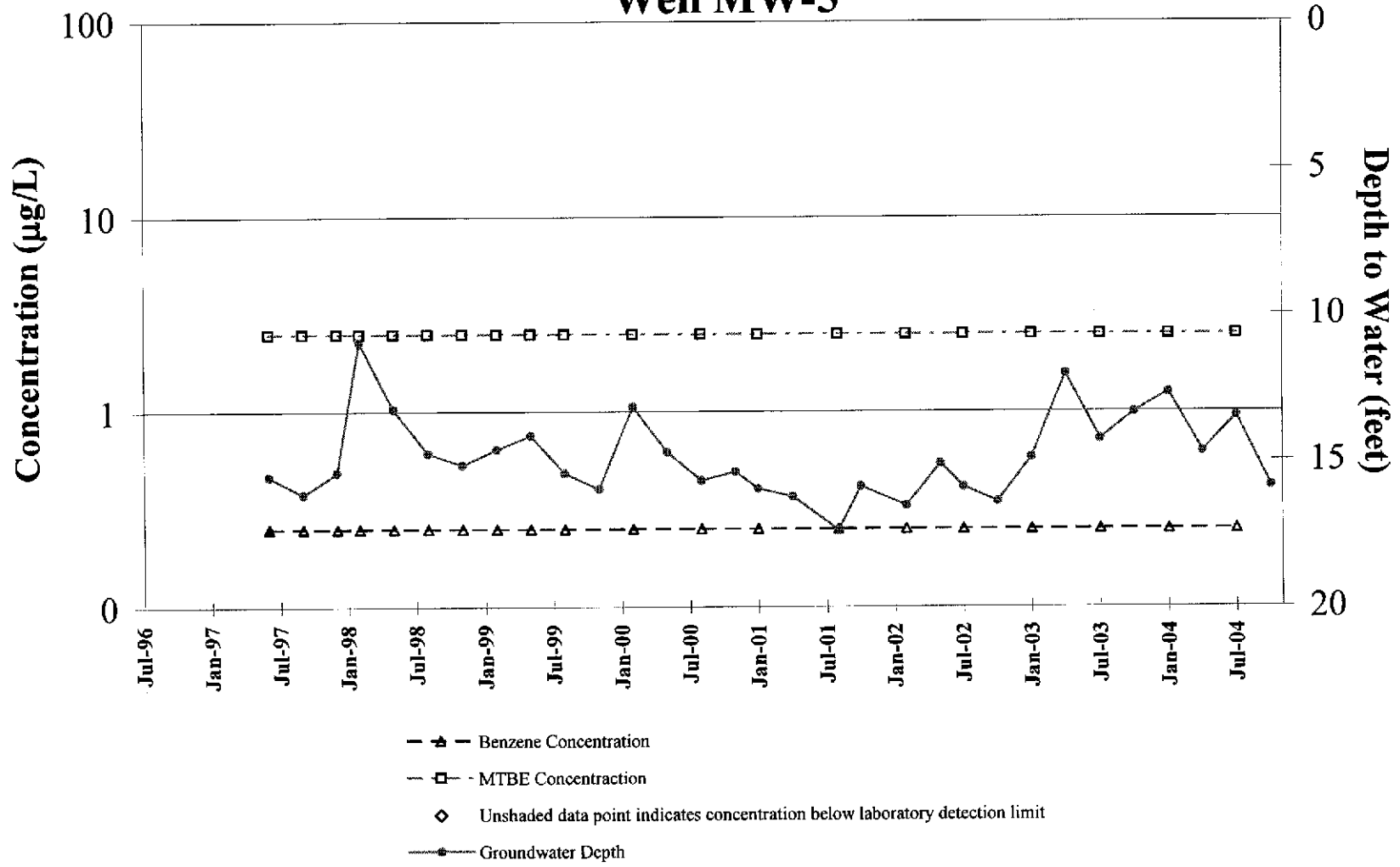
## Benzene and MTBE Concentration Trends Well MW-3



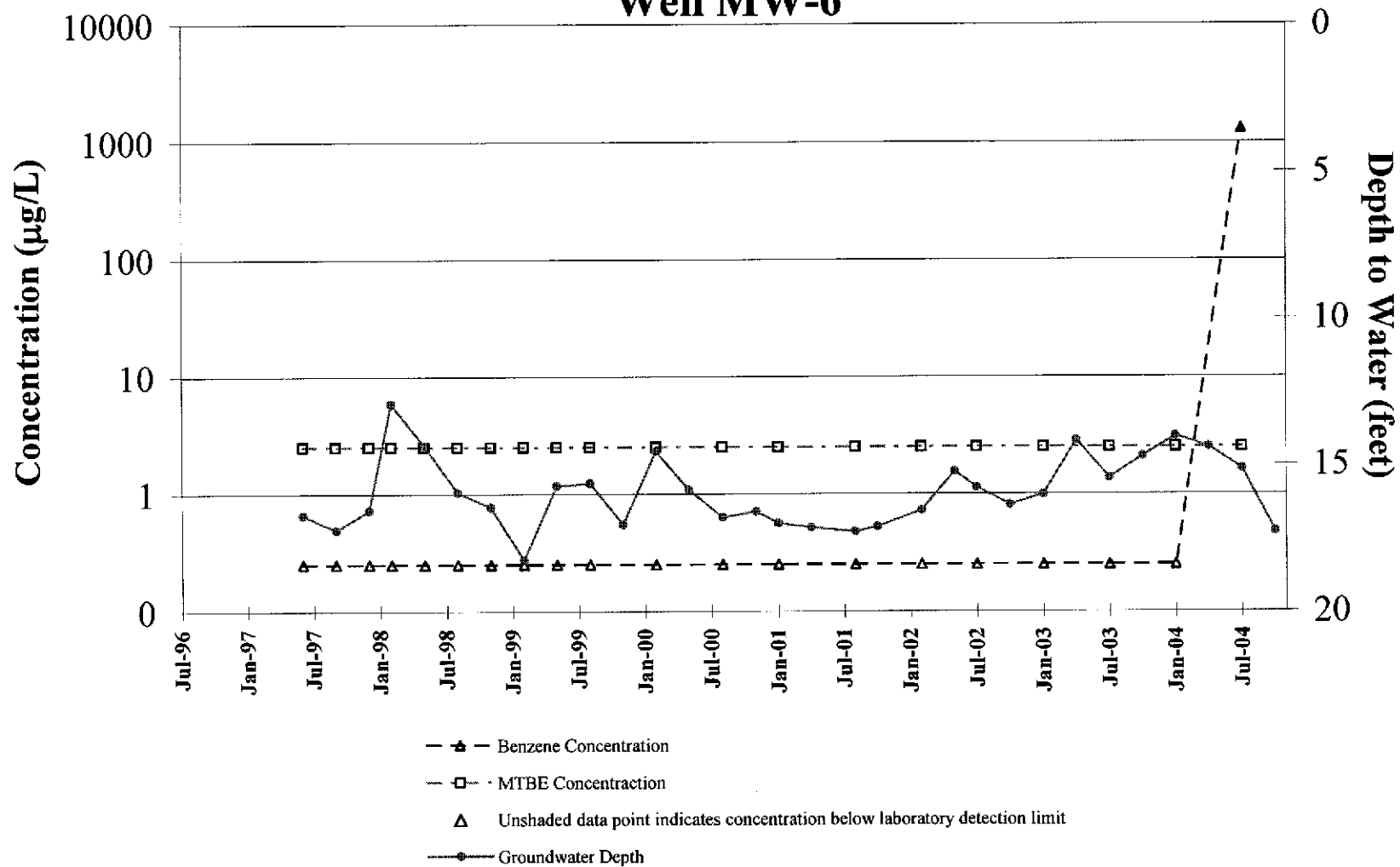
## Benzene and MTBE Concentration Trends Well MW-4



## Benzene and MTBE Concentration Trends Well MW-5

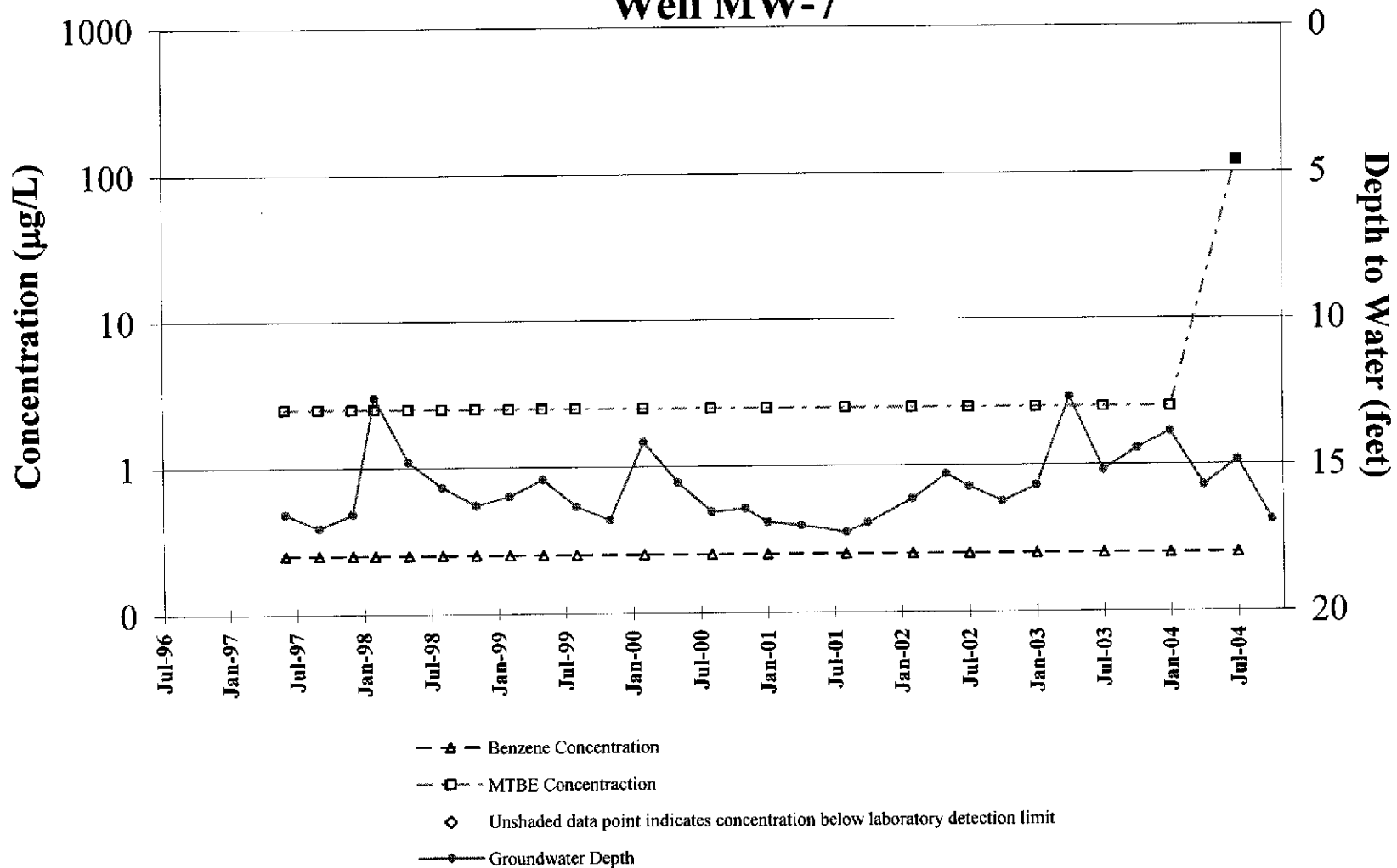


## Benzene and MTBE Concentration Trends Well MW-6





## Benzene and MTBE Concentration Trends Well MW-7



## **APPENDIX D**

GeoTracker Electronic Delivery Confirmations

## Electronic Submittal Information

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**Confirmation Number:** 2777289092  
**Date/Time of Submittal:** 12/3/2004 1:57:46 PM  
**Facility Global ID:** T0600100985  
**Facility Name:** OAKLAND AUTO PARTS  
**Submittal Title:** 4th qtr 2004. GW Analytical Data  
**Submittal Type:** GW Monitoring Report

[Click here](#) to view the detections report for this upload.

<b>OAKLAND AUTO PARTS</b> 706 HARRISON ST OAKLAND, CA 94607	<b>Regional Board - Case #: 01-1068</b> SAN FRANCISCO BAY RWQCB (REGION 2) - (BG) <b>Local Agency</b> UNKNOWN - (DH)
---	---

CONF #	TITLE	QUARTER
2777289092	4th qtr 2004. GW Analytical Data	Q4 2004
SUBMITTED BY	SUBMIT DATE	STATUS
Matt Meyers	12/3/2004	PENDING REVIEW

**SAMPLE DETECTIONS REPORT**

# FIELD POINTS SAMPLED	3
# FIELD POINTS WITH DETECTIONS	3
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	2
SAMPLE MATRIX TYPES	WATER

**METHOD QA/QC REPORT**

METHODS USED	SW8021F
TESTED FOR REQUIRED ANALYTES?	N
MISSING PARAMETERS NOT TESTED:	
- SW8021F REQUIRES ETBE TO BE TESTED	
- SW8021F REQUIRES TAME TO BE TESTED	
- SW8021F REQUIRES DIPE TO BE TESTED	
- SW8021F REQUIRES TBA TO BE TESTED	
- SW8021F REQUIRES DCA12 TO BE TESTED	
- SW8021F REQUIRES EDB TO BE TESTED	
LAB NOTE DATA QUALIFIERS	N

**QA/QC FOR 8021/8260 SERIES SAMPLES**

TECHNICAL HOLDING TIME VIOLATIONS	0
METHOD HOLDING TIME VIOLATIONS	0
LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT	0
LAB BLANK DETECTIONS	0
DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	Y
- MATRIX SPIKE	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE - NON-STANDARD SURROGATE USED	Y

<b>WATER SAMPLES FOR 8021/8260 SERIES</b>		
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%		Y
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%		Y
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%		Y
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%		Y
<b>SOIL SAMPLES FOR 8021/8260 SERIES</b>		
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%		n/a
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%		n/a
SURROGATE SPIKES % RECOVERY BETWEEN 70-125%		n/a
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%		n/a
<b>FIELD QC SAMPLES</b>		
<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPD L</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

Logged in as CAMBRIA-EM (AUTH\_RP)

CONTACT SITE ADMINISTRATOR.

## Electronic Submittal Information

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### UPLOADING A GEO\_WELL FILE

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

**Submittal Title:** 4th Qtr 2004, GW Depth Data for 706 Harrison Street,  
Oakland

**Submittal Date/Time:** 12/3/2004 2:02:21 PM

**Confirmation  
Number:** 7570144474

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Logged in as CAMBRIA-EM (AUTH\_RP)

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## **APPENDIX E**

**Former Shell Station Groundwater Monitoring and Analytical Results**

**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation project data
<b>MW-1</b>	12/15/1998	31.95*	17.32	14.63
	3/4/1999		15.52	16.43
	6/17/1999		16.9	15.05
	8/27/1999		17.39	14.56
	12/9/1999		18.03	13.92
	3/7/2000		15.11	16.84
	6/7/2000		16.66	15.29
	10/11/2000		18.08	13.87
	1/18/2001		17.96	13.99
	4/5/2001		16.35	15.60
	7/17/2001		16.94	15.01
	10/5/2001	28.98	17.35	11.63
	1/18/2002		15.40	13.58
	4/11/2002		15.76	13.22
	7/8/2002		16.17	12.81
	10/9/2002		16.72	12.26
	1/29/2003		16.26	12.72
	4/11/2003		16.56	12.42
	7/18/2003		16.42	12.56
	10/9/2003		16.88	12.10
	1/28/2004		16.10	12.88
4/7/2004		15.43	13.55	
7/23/2004		16.41	12.57	
<b>10/12/2004</b>			<b>17.73</b>	<b>11.25</b>
<b>MW-2</b>	12/15/1998	32.40*	18.03	14.37
	3/4/1999		16.11	16.29
	6/17/1999		17.72	14.68
	8/27/1999	Inaccessible		
	12/9/1999	Inaccessible		
	3/7/2000	Inaccessible		
	6/7/2000		17.67	14.73
	10/11/2000		18.91	13.49
	1/18/2001		18.66	13.74
	4/5/2001		16.97	15.43
	7/17/2001		17.54	14.86
	10/5/2001	29.44	17.98	11.46
	1/18/2002		15.87	13.57
	4/11/2002		16.36	13.08
	7/8/2002		16.72	12.72
	10/9/2002		17.33	12.11
	1/29/2003		16.82	12.62
	4/11/2003		17.15	12.29
	7/18/2003		17.05	12.39
	10/9/2003		17.52	11.92
	1/28/2004		16.70	12.74
4/7/2004		16.02	13.42	
7/23/2004	Inaccessible			
<b>10/12/2004</b>			<b>17.31</b>	<b>12.13</b>

**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation project data
<b>MW-3</b>	12/15/1998	31.61*	17.26	14.35
	3/4/1999		15.47	16.14
	6/17/1999		16.92	14.69
	8/27/1999		17.40	14.21
	12/9/1999		18.01	13.60
	3/7/2000		16.15	15.46
	6/7/2000		16.85	14.76
	10/11/2000		18.07	13.54
	1/18/2001		17.89	13.72
	4/5/2001		16.21	15.40
	7/17/2001	16.90	14.71	
	10/5/2001	28.64	17.32	11.32
	1/18/2002		15.35	13.29
	4/11/2002		15.82	12.82
	7/8/2002		16.15	12.49
	10/9/2002		16.67	11.97
	1/29/2003		16.19	12.45
	4/11/2003		16.49	12.15
	7/18/2003		16.42	12.22
	10/9/2003		16.80	11.84
	1/28/2003		15.94	12.70
4/7/2004	15.28	13.36		
7/23/2004	16.15	12.49		
<b>10/12/2004</b>	<b>16.63</b>	<b>12.01</b>		
<b>MW-4</b>	12/15/1998	32.53*	17.59	14.94
	3/4/1999		15.88	16.65
	6/17/1999		17.14	15.39
	8/27/1999		17.65	14.88
	12/9/1999		18.28	14.25
	3/7/2000		15.41	17.12
	6/7/2000		17.09	15.44
	10/11/2000		18.33	14.20
	1/18/2001		18.23	14.30
	4/5/2001		16.69	15.84
	7/17/2001	17.32	15.21	
	10/5/2001	29.58	17.71	11.87
	1/18/2002		15.85	13.73
	4/11/2002		16.14	13.44
	7/8/2002		16.56	13.02
	10/9/2002		17.09	12.49
	1/29/2003		16.65	12.93
	4/11/2003		16.93	12.65
	7/18/2003		16.78	12.80
	10/9/2003		17.26	12.32
	1/28/2004		16.38	13.20
4/7/2004	15.64	13.94		
7/23/2004	16.58	13.00		
<b>10/12/2004</b>	<b>Inaccessible</b>			



**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation   project data
<b>MW-5</b>	8/29/2001	29.06	17.42	11.64
	1/18/2002		15.68	13.38
	4/11/2002		16.17	12.89
	7/8/2002		16.51	12.55
	10/9/2002		17.10	11.96
	1/29/2003		16.58	12.48
	4/11/2003		16.87	12.19
	7/18/2003		16.77	12.29
	10/9/2003		17.21	11.85
	1/28/2004		16.34	12.72
	4/7/2004		15.38	13.68
	7/23/2004		16.55	12.51
	<b>10/12/2004</b>		<b>17.02</b>	<b>12.04</b>
<b>EW-1</b>	1/18/2002	28.89	15.35	13.54
	4/11/2002		15.73	13.16
	7/8/2002		16.13	12.76
	10/9/2002		16.70	12.19
	1/29/2003		16.20	12.69
	4/11/2003		16.52	12.37
	7/18/2003		16.38	12.51
	10/9/2003		16.84	12.05
	1/28/2004		15.94	12.95
	4/7/2004		15.02	13.87
	7/23/2004		16.01	12.88
	<b>10/12/2004</b>		<b>16.46</b>	<b>12.43</b>

\* Top of casing elevation relative to arbitrary project datum

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-1</b>						
7/3/1997	18,000	2,700	350	450	900	7,400
12/5/1998	18,000	1,500	270	260	560	14,000
3/4/1999	44,000	2,800	400	440	960	43,000
6/17/1999	33,000	2,200	250	460	660	25,000
8/27/1999	6,000	1,000	97	190	230	14,000/ 16,000*
12/9/1999	15,000	1,500	160	220	420	17,000
3/7/2000	9,300	1,500	210	66	530	12,000
6/7/2000	26,000**	1,700	< 250	360	580	30,000
10/11/2000	13,000**	1,600	< 100	140	160	19,000
1/18/2001	14,000**	450	< 100	110	230	9,600
4/5/2001	38,000	2,200	180	290	590	35,000
7/17/2001	35,000**	1,800	< 100	300	170	35,000
10/5/2001	17,000	1,500	210	420	790	27,000
1/18/2002	18,000	1,500	120	160	220	22,000
4/11/2002	41,000	2,700	210	340	380	30,000
7/8/2002	36,000	2,800	140	360	300	31,000
10/9/2002	30,000	1,700	310	< 100	< 100	19,000
1/29/2003	26,000	2,400	< 100	310	520	20,000
4/11/2003	22,000	1,700	< 100	270	580	16,000
7/18/2003	40,000	3,200	290	480	830	39,000
10/9/2003	54,000**	3,300	< 130	350	310	49,000
1/28/2004	26,000***	3,000	310	420	800	31,000
4/7/2004	33,000***	2,800	130	310	310	39,000
7/23/2004	56,000***	4,500	< 250	390	< 500	53,000
10/12/2004	25,000***	1,400	< 250	< 250	< 500	25,000
<b>MW-2</b>						
12/5/1998	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
3/4/1999		Inaccessible due to car parked over well				
6/17/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
8/27/1999		Inaccessible due to car parked over well				
12/9/1999		Inaccessible due to car parked over well				
3/7/2000		Inaccessible due to car parked over well				
6/7/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
10/11/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/18/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/5/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/17/2001		No longer sampled				
<b>MW-3</b>						
12/5/1998	6,500***	< 50	50	60	50	3,900
3/4/1999	2,800	< 25	< 25	< 25	< 25	1,600
6/17/1999	1,000	< 10	< 10	< 10	< 10	1,400
8/27/1999	230	< 0.5	0.51	0.5	1	1,500/ 1,600*
12/9/1999	870**	< 0.5	< 0.5	< 0.5	< 0.5	2,100

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
3/7/2000	150**	4	< 0.5	< 0.5	< 0.5	830
6/7/2000	140**	< 0.5	< 0.5	< 0.5	< 0.5	1,100
10/11/2000	620**	< 5.0	< 5.0	< 5.0	< 5.0	1,500
1/18/2001	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	1,000
4/5/2001	1,700**	< 5.0	< 5.0	< 5.0	< 5.0	1,900
7/17/2001	1,400**	< 10	< 10	< 10	< 10	1,700
10/5/2001	< 1,000	< 10	< 10	< 10	< 10	1,700
1/18/2002	1,600	26	20	16	54	2,100
4/11/2002	2,600	21	16	< 10	21	2,300
7/8/2002	2,800	< 10	< 10	< 10	< 10	3,800
10/9/2002	6,000	< 50	< 50	< 50	< 50	4,900
1/29/2003	1,800	< 10	< 10	< 10	< 10	2,300
4/11/2003	2,900	< 25	< 25	< 25	< 25	3,100
7/18/2003	3,400	< 10	< 10	< 10	< 10	3,200
10/9/2003	2,300	< 10	< 10	< 10	< 10	2,700
1/28/2003	1,700**	< 10	< 10	< 10	< 10	2,900
4/7/2004	2,700**	< 10	< 10	< 10	< 20	3,600
7/23/2004	4,200**	< 25	< 25	< 25	< 50	4,900
10/12/2004	5,000**	< 50	< 50	< 50	< 100	5,900
<b>MW-4</b>						
12/5/1998	880	3	< 0.5	< 0.5	< 0.5	950
3/4/1999	3,800	< 25	< 25	< 25	< 25	3,700
6/17/1999	2,700	< 25	< 25	< 25	< 25	2,700
8/27/1999	440	4.7	1.1	0.58	1.3	1,600/ 1,700*
12/9/1999	1,100**	< 2.5	< 2.5	< 2.5	< 2.5	1,700
3/7/2000	< 250	< 2.5	< 2.5	< 2.5	< 2.5	1,700
6/7/2000	530**	8.8	< 2.5	< 2.5	< 2.5	440
10/11/2000	700**	3.9	< 2.5	< 2.5	< 2.5	680
1/18/2001	2,000**	< 2.5	< 2.5	< 2.5	< 2.5	780
4/5/2001	810**	< 2.5	< 2.5	< 2.5	< 2.5	620
7/17/2001	880**	< 2.5	< 2.5	< 2.5	< 2.5	570
10/5/2001	550**	< 2.5	< 2.5	< 2.5	< 2.5	710
1/18/2002	960**	< 5.0	< 5.0	< 5.0	< 5.0	1,300
4/11/2002	1,100**	< 5.0	< 5.0	< 5.0	< 5.0	550
7/8/2002	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	890
10/9/2002	1,300**	< 5.0	< 5.0	< 5.0	< 5.0	880
1/29/2003	530**	< 1.0	< 1.0	< 1.0	< 1.0	190
4/11/2003	690**	< 2.5	< 2.5	< 2.5	< 2.5	310
7/18/2003	1,600**	< 10	< 10	< 10	< 10	1,300
10/9/2003	1500***	< 10	< 10	< 10	< 10	1,400
1/28/2004	1,200**	< 10	< 10	< 10	< 10	1,900
4/7/2004	1,900**	< 10	< 10	< 10	< 20	2,200
7/23/2004	1,800**	< 10	< 10	< 10	< 20	1,600
10/12/2004						Inaccessible due to car parked over well

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-5</b>						
8/29/2001	14,000	1,300	470	230	800	14,000
1/18/2002	24,000	3,200	1,300	390	1,500	5,700
4/11/2002	23,000	2,700	980	38	950	4,300
7/8/2002	19,000	3,300	25	360	1,100	2,100
10/9/2002	24,000	2,800	990	360	820	2,400
1/29/2003	17,000	2,100	1,400	380	1,400	< 250
4/11/2003	26,000	2,900	2,200	590	2,200	630
7/18/2003	26,000	3,500	1,700	480	1,300	1,300
10/9/2003	27,000	3,800	1,900	510	1,700	1,200
1/28/2004	29,000	4,800	2,900	770	2,300	3,300
4/7/2004	23,000	4,400	2,700	720	2,200	1,700
7/23/2004	29,000	5,200	2,200	810	1,400	2,200
<b>10/12/2004</b>	<b>26,000</b>	<b>4,300</b>	<b>2,000</b>	<b>670</b>	<b>1,300</b>	<b>2,200</b>
<b>EW-1</b>						
1/18/2002	11,000	1,000	< 100	220	350	6,700
4/11/2002	17,000	1,000	< 100	120	140	9,700
7/8/2002	21,000	1,300	< 100	< 100	200	12,000
10/9/2002	12,000	900	< 25	< 25	200	9,200
1/29/2003	12,000	860	73	130	500	4,500
4/11/2003	8,700	890	< 25	< 25	82	5,400
7/18/2003	8,200	650	77	99	140	4,300
10/9/2003	5,700**	500	28	53	35	3,600
1/28/2004	17,000***	1,600	90	250	280	9,700
4/7/2004			No longer sampled			
ESL	400	46	130	290	13	1,800

**Notes:**

\* EPA Method 8020/EPA Method 8260 (MTBE confirmation)

\*\* Hydrocarbon reported in the gasoline range does not match the laboratory gasoline standard

\*\*\* Sample contains a discrete peak in addition to gasoline

ESL = Environmental screening levels presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (July 2003)" document prepared by the U.S. Environmental Protection Agency. Most current data is in **Bold**

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory method reporting limit.