

CS STA 6070

# CAMBRIA

ENVIRONMENTAL  
PROTECTION

August 13, 1999

Mr. Lee Douglas  
Douglas Parking  
1721 Webster Street  
Oakland, California 94612

90 SEP -1 PM 3:14

Re: **Third Quarter 1999 Monitoring Report**  
Douglas Parking  
1721 Webster Street  
Oakland, California  
Cambria Project# 580-0197

Dear Mr. Douglas:



This report summarizes the third quarter 1999 groundwater monitoring results for the above-referenced site. Described below are the third quarter 1999 activities, the hydrocarbon distribution in groundwater, and the anticipated future activities.

## THIRD QUARTER 1999 ACTIVITIES

**Groundwater Sampling:** On July 20, 1999, Cambria collected and analyzed groundwater samples from wells MW-2, MW-3, MW-4 and MW-5 for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE), and dissolved oxygen (DO) concentrations. Cambria also gauged all site wells and checked for separate-phase hydrocarbons (SPH). No SPH were detected. The groundwater elevation and analytical data are summarized in Table 1. The laboratory analytical report for groundwater is included as Attachment A. Well sampling forms are included as Attachment B.

## HYDROCARBON DISTRIBUTION IN GROUNDWATER

Groundwater elevation data indicate that groundwater flows towards the north-northeast with a gradient of 0.004 ft/ft (Figure 1). Consistent with historical site data, hydrocarbons were detected in wells MW-2, MW-3 and MW-4. Benzene was only detected in well MW-2, located immediately downgradient of the former underground storage tank (UST) area (Figure 1). The extent of hydrocarbons in groundwater is defined to below method reporting limits in the northern, crossgradient direction by well MW-1 and in the downgradient direction by well MW-5.


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

**Cambria  
Environmental  
Technology, Inc.**

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

While hydrocarbon concentrations were unusually elevated last quarter in well MW-2, concentrations this quarter are more consistent with historical levels. The temporary increase in hydrocarbon concentrations in well MW-2 appears to be a result of hydrogen peroxide injection at the site.

#### ANTICIPATED FUTURE ACTIVITIES



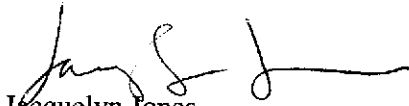
**Groundwater Sampling:** As requested by the Alameda County Department of Environmental Health, Cambria will perform groundwater monitoring on a quarterly basis to evaluate the remedial effectiveness of the hydrogen peroxide injection. During each monitoring event, Cambria will gauge all site wells, check for SPH, and collect and analyze groundwater samples from wells MW-2, MW-3, MW-4 and MW-5 for TPHg, BTEX, MTBE, and DO. If MTBE is detected in wells MW-2 or MW-4, concentrations will be confirmed by re-analysis using EPA Method 8260. Cambria will summarize the quarterly monitoring activities in a written report.


**Remedial Evaluation and Revised Remedial Workplan:** Cambria will prepare a remedial evaluation report that evaluates the results of the hydrogen peroxide injection activities and proposes an alternative low-cost technique for remediating site soil and groundwater.

**CLOSING**

Cambria appreciates the opportunity to provide environmental services to Douglas Parking. Please call if you have any questions or comments.

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

  
Jacquelyn Jones  
Staff Geologist

  
Bob Clark-Riddell, PE  
Principal Engineer



Attachments: A - Laboratory Analytical Report  
B - Well Sampling Forms

cc: Tom Peacock, ACDEH, UST Local Oversight Program, 1131 Harbor Bay Parkway,  
2nd Floor, Alameda, CA 94502

H:\SB-2004\DOUGLAS\1721 Webster\QMS\QM-3-99.WPD

**EXPLANATION**

- Groundwater Monitoring Well
- SB-A ● Soil Boring Location
- MW-2** Well ID
- 8.85 Groundwater Elevation
- 46 Benzene Conc. in Groundwater in parts per billion (ppb)
- NS Not Sampled
- 8.25 Groundwater Elevation Contour (ft)
- ☞ Groundwater Flow Direction and Gradient (ft/ft)

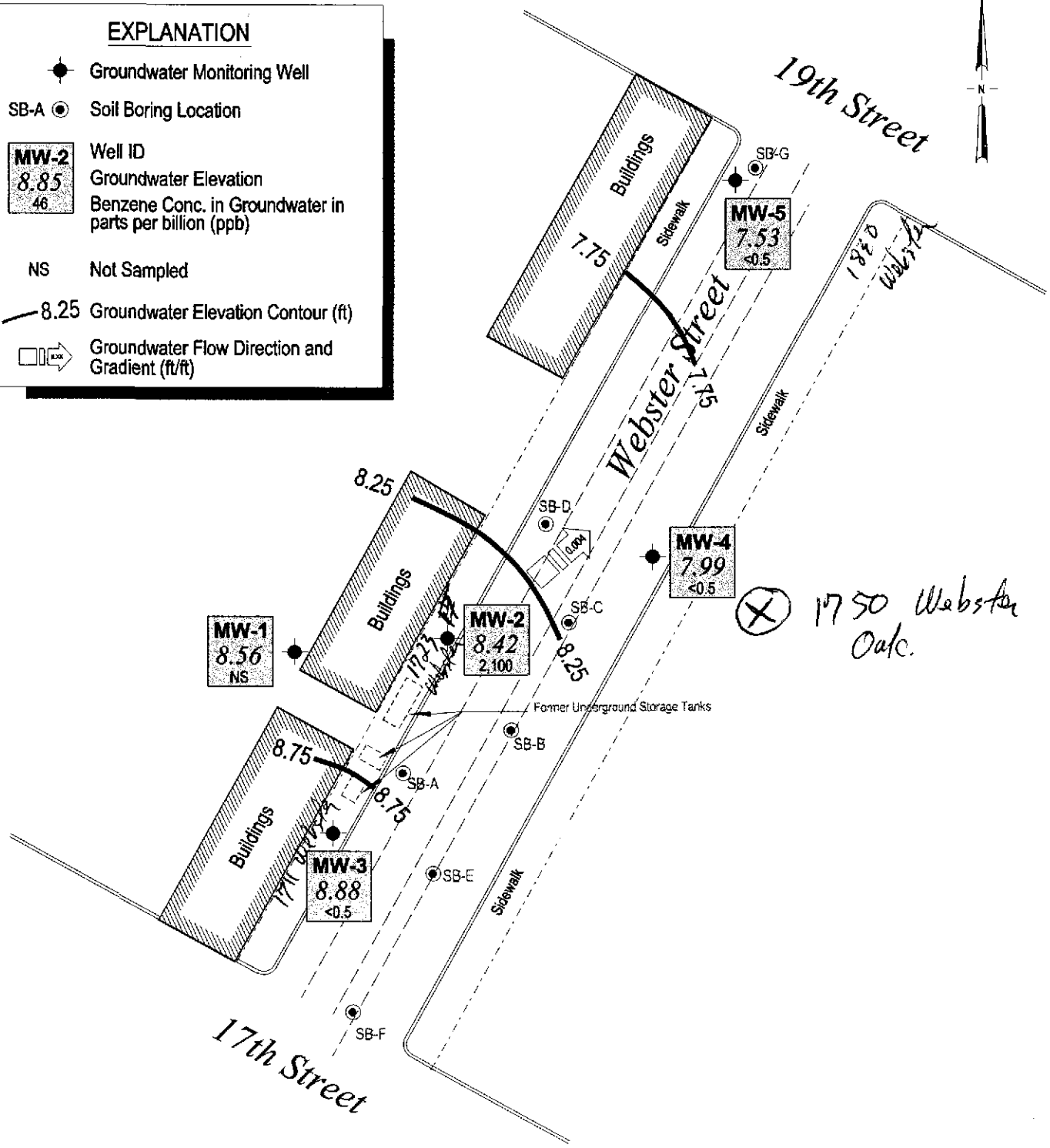


FIGURE  
**1**

H:\SB-2004\DOUGLAS\1721 Webster\FIGURES\3Q\MS9-MP.DWG

Base map from Piers Environmental Services

**Douglas Parking Facility**  
1721 Webster Street  
Oakland, California



**Groundwater Elevation Contour Map**  
July 20, 1999

# CAMBRIA

**Table 1. Groundwater Elevation and Analytical Data - Douglas Parking Company, 1721 Webster Street, Oakland, CA**

Well ID	Date	TOC Elevation (ft-msl)	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	(Concentrations in µg/l)					DO (mg/L)	Notes
						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE		
MW-1	12/02/94	29.25	19.42	9.83	nd	nd	nd	nd	nd	-	-	1
	03/06/95	29.73	20.69	9.04	nd	nd	nd	nd	nd	-	-	1
	07/11/95	29.81	20.65	9.16	nd	nd	nd	nd	nd	-	-	
	05/10/96	29.81	20.80	9.01	nd	nd	nd	nd	nd	-	-	
	10/02/96	29.81	21.35	8.46	-	-	-	-	-	-	-	2
	02/28/97	29.81	20.57	9.24	-	-	-	-	-	-	-	2
	09/16/97	29.81	21.50	8.31	-	-	-	-	-	-	-	2
	02/05/98	29.81	20.91	8.90	-	-	-	-	-	-	1.9	2
	08/11/98	29.81	20.50	9.31	-	-	-	-	-	-	0.06	2
	02/08/99	29.81	21.42	8.39	-	-	-	-	-	-	6.0	2, 3
	02/24/99	29.81	22.99	6.82	-	-	-	-	-	-	2.0	2, 3
	03/03/99	29.81	20.84	8.97	-	-	-	-	-	-	3.8	2, 3
	03/10/99	29.81	20.89	8.92	-	-	-	-	-	-	3.4	2, 3
	03/17/99	29.81	20.84	8.97	-	-	-	-	-	-	2.8	2, 3
	05/04/99	29.81	20.80	9.01	-	-	-	-	-	-	3.5	2
<b>07/20/99</b>	<b>29.81</b>	<b>21.25</b>	<b>8.56</b>	-	-	-	-	-	-	<b>3.1</b>	<b>2</b>	
MW-2	12/02/94	27.10	19.50	7.60	61,300	3,000	3,900	160	4,500	-	-	1
	03/06/95	27.10	18.49	8.61	98,000	8,400	16,000	2,000	2,600	-	-	1
	07/11/95	27.40	18.45	8.95	38,000	3,100	7,500	940	3,700	-	-	
	05/10/96	27.40	18.56	8.84	63,000	7,400	16,000	1,500	6,000	-	-	
	10/02/96	27.40	19.15	8.25	21,000	2,200	3,400	430	1,600	-	-	
	02/28/97	27.40	18.43	8.97	39,000	4,700	9,600	950	4,200	nd	-	
	09/16/97	27.40	19.26	8.14	29,000	3,300	5,800	690	2,900	<620	-	
	02/05/98	27.40	18.66	8.74	10,000	1,000	2,000	170	860	<330	7.9	
	08/11/98	27.40	18.41	8.99	12,000	1,200	2,300	260	1,400	300	5.4	
	02/08/99	27.40	19.84	7.56	5,500	740	1,200	150	780	60	3.7	3
	02/17/99	27.40	18.94	8.46	-	-	-	-	-	-	>20	3
	02/24/99	27.40	20.76	6.64	-	-	-	-	-	-	>20	3
	03/03/99	27.40	18.55	8.85	-	-	-	-	-	-	>20	3
	03/10/99	27.40	20.74	6.66	-	-	-	-	-	-	>20	3
	03/17/99	27.40	18.57	8.83	-	-	-	-	-	-	>20	3
05/04/99	27.40	18.55	8.85	90,000	9,200	21,000	1,600	10,000	560	3.2		
<b>07/20/99</b>	<b>27.40</b>	<b>18.98</b>	<b>8.42</b>	<b>28,000</b>	<b>2,100</b>	<b>3,700</b>	<b>900</b>	<b>4,200</b>	<b>&lt;860</b>	<b>0.6</b>		

# CAMBRIA

**Table 1. Groundwater Elevation and Analytical Data - Douglas Parking Company, 1721 Webster Street, Oakland, CA**

Well ID	Date	TOC Elevation (ft-msl)	Depth to Water (ft)	Groundwater Elevation (ft)	TPHg	(Concentrations in µg/l)					DO (mg/L)	Notes
						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE		
MW-1	12/02/94	29.25	19.42	9.83	nd	nd	nd	nd	nd	-	-	1
	03/06/95	29.73	20.69	9.04	nd	nd	nd	nd	nd	-	-	1
	07/11/95	29.81	20.65	9.16	nd	nd	nd	nd	nd	-	-	
	05/10/96	29.81	20.80	9.01	nd	nd	nd	nd	nd	-	-	
	10/02/96	29.81	21.35	8.46	-	-	-	-	-	-	-	2
	02/28/97	29.81	20.57	9.24	-	-	-	-	-	-	-	2
	09/16/97	29.81	21.50	8.31	-	-	-	-	-	-	-	2
	02/05/98	29.81	20.91	8.90	-	-	-	-	-	-	1.9	2
	08/11/98	29.81	20.50	9.31	-	-	-	-	-	-	0.06	2
	02/08/99	29.81	21.42	8.39	-	-	-	-	-	-	6.0	2, 3
	02/24/99	29.81	22.99	6.82	-	-	-	-	-	-	2.0	2, 3
	03/03/99	29.81	20.84	8.97	-	-	-	-	-	-	3.8	2, 3
	03/10/99	29.81	20.89	8.92	-	-	-	-	-	-	3.4	2, 3
	03/17/99	29.81	20.84	8.97	-	-	-	-	-	-	2.8	2, 3
	05/04/99	29.81	20.80	9.01	-	-	-	-	-	-	3.5	2
<b>07/20/99</b>	<b>29.81</b>	<b>21.25</b>	<b>8.56</b>	-	-	-	-	-	-	<b>3.1</b>	<b>2</b>	
MW-2	12/02/94	27.10	19.50	7.60	61,300	3,000	3,900	160	4,500	-	-	1
	03/06/95	27.10	18.49	8.61	98,000	8,400	16,000	2,000	2,600	-	-	1
	07/11/95	27.40	18.45	8.95	38,000	3,100	7,500	940	3,700	-	-	
	05/10/96	27.40	18.56	8.84	63,000	7,400	16,000	1,500	6,000	-	-	
	10/02/96	27.40	19.15	8.25	21,000	2,200	3,400	430	1,600	-	-	
	02/28/97	27.40	18.43	8.97	39,000	4,700	9,600	950	4,200	nd	-	
	09/16/97	27.40	19.26	8.14	29,000	3,300	5,800	690	2,900	<620	-	
	02/05/98	27.40	18.66	8.74	10,000	1,000	2,000	170	860	<330	7.9	
	08/11/98	27.40	18.41	8.99	12,000	1,200	2,300	260	1,400	300	5.4	
	02/08/99	27.40	19.84	7.56	5,500	740	1,200	150	780	60	3.7	3
	02/17/99	27.40	18.94	8.46	-	-	-	-	-	-	>20	3
	02/24/99	27.40	20.76	6.64	-	-	-	-	-	-	>20	3
	03/03/99	27.40	18.55	8.85	-	-	-	-	-	-	>20	3
	03/10/99	27.40	20.74	6.66	-	-	-	-	-	-	>20	3
	03/17/99	27.40	18.57	8.83	-	-	-	-	-	-	>20	3
05/04/99	27.40	18.55	8.85	90,000	9,200	21,000	1,600	10,000	560	3.2		
<b>07/20/99</b>	<b>27.40</b>	<b>18.98</b>	<b>8.42</b>	<b>28,000</b>	<b>2,100</b>	<b>3,700</b>	<b>900</b>	<b>4,200</b>	<b>&lt;860</b>	<b>0.6</b>		

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						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE		
MW-3	12/02/94	29.50	22.15	7.35	394,000	1,200	nd	1,800	4,000	-	-	1
	03/06/95	29.25	20.09	9.16	21,000	400	150	24	62	-	-	1
	07/11/95	29.56	19.99	9.57	12,000	nd	10	16	99	-	-	
	05/10/96	29.56	20.24	9.32	8,600	nd	7.6	16	84	-	-	
	10/02/96	29.56	20.90	8.66	11,000	nd	7.4	19	92	-	-	
	02/28/97	29.56	20.12	9.44	6,000	nd	4.4	17	88	50	-	
	09/16/97	29.56	20.97	8.59	6,500	<0.5	1	1	7	<5.0	-	
	02/05/98	29.56	20.39	9.17	5,400	<0.5	6.3	15	86	<63	1.9	
	08/11/98	29.56	19.95	9.61	2,700	<0.5	3.5	3.2	12	<10	0.05	
	02/08/99	29.56	20.58	8.98	6,100	<0.5	8.1	18	80	<140	2.2	3
	02/17/99	29.56	20.53	9.03	-	-	-	-	-	-	>20	3
	02/24/99	29.56	22.53	7.03	-	-	-	-	-	-	>20	3
	03/03/99	29.56	20.28	9.28	-	-	-	-	-	-	>20	3
	03/10/99	29.56	22.45	7.11	-	-	-	-	-	-	>20	3
	03/17/99	29.56	20.26	9.30	-	-	-	-	-	-	>20	3
05/04/99	29.56	20.24	9.32	11,000	<2	<2	9.8	140	<10	3.1		
<b>07/20/99</b>	<b>29.56</b>	<b>20.68</b>	<b>8.88</b>	<b>11,000</b>	<b>&lt;0.5</b>	<b>3.1</b>	<b>13</b>	<b>88</b>	<b>&lt;80</b>	<b>0.8</b>		
MW-4	05/10/96	25.29	16.98	8.31	14,000	nd	1,200	720	3,100	-	-	
	10/02/96	25.29	17.65	7.64	12,000	nd	650	580	2,200	-	-	
	02/28/97	25.29	16.80	8.49	13,000	nd	1,100	750	2,700	110	-	
	09/17/97	25.29	17.93	7.36	13,000	<2.5	820	750	2,900	<190	-	
	02/05/98	25.29	16.78	8.51	13,000	<1.0	690	690	2,900	<170	2.1	
	08/11/98	25.29	16.59	8.70	15,000	<5	360	520	1,900	280	2.8	
	02/08/99	25.29	17.10	8.19	9,800	<5	680	770	2,200	300	1.8	3
	02/24/99	25.29	18.95	6.34	-	-	-	-	-	-	2.2	3
	03/03/99	25.29	16.80	8.49	-	-	-	-	-	-	4.6	3
	03/10/99	25.29	16.86	8.43	-	-	-	-	-	-	3.7	3
	03/17/99	25.29	16.82	8.47	-	-	-	-	-	-	4.3	3
	05/04/99	25.29	16.86	8.43	11,000	46	600	620	1,900	<100	4.1	
<b>07/20/99</b>	<b>25.29</b>	<b>17.30</b>	<b>7.99</b>	<b>13,000</b>	<b>&lt;0.5</b>	<b>470</b>	<b>70</b>	<b>2,000</b>	<b>&lt;150</b>	<b>0.4</b>		
MW-5	05/10/96	21.97	14.60	7.37	nd	nd	nd	nd	nd	-	-	
	10/02/96	21.97	15.25	6.72	nd	nd	nd	nd	nd	-	-	
	02/28/97	21.97	14.31	7.66	nd	nd	nd	nd	nd	nd	-	

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MW-3	12/02/94	29.50	22.15	7.35	394,000	1,200	nd	1,800	4,000	-	-	1
	03/06/95	29.25	20.09	9.16	21,000	400	150	24	62	-	-	1
	07/11/95	29.56	19.99	9.57	12,000	nd	10	16	99	-	-	
	05/10/96	29.56	20.24	9.32	8,600	nd	7.6	16	84	-	-	
	10/02/96	29.56	20.90	8.66	11,000	nd	7.4	19	92	-	-	
	02/28/97	29.56	20.12	9.44	6,000	nd	4.4	17	88	50	-	
	09/16/97	29.56	20.97	8.59	6,500	<0.5	1	1	7	<5.0	-	
	02/05/98	29.56	20.39	9.17	5,400	<0.5	6.3	15	86	<63	1.9	
	08/11/98	29.56	19.95	9.61	2,700	<0.5	3.5	3.2	12	<10	0.05	
	02/08/99	29.56	20.58	8.98	6,100	<0.5	8.1	18	80	<140	2.2	3
	02/17/99	29.56	20.53	9.03	-	-	-	-	-	-	>20	3
	02/24/99	29.56	22.53	7.03	-	-	-	-	-	-	>20	3
	03/03/99	29.56	20.28	9.28	-	-	-	-	-	-	>20	3
	03/10/99	29.56	22.45	7.11	-	-	-	-	-	-	>20	3
	03/17/99	29.56	20.26	9.30	-	-	-	-	-	-	>20	3
05/04/99	29.56	20.24	9.32	11,000	<2	<2	9.8	140	<10	3.1		
<b>07/20/99</b>	<b>29.56</b>	<b>20.68</b>	<b>8.88</b>	<b>11,000</b>	<b>&lt;0.5</b>	<b>3.1</b>	<b>13</b>	<b>88</b>	<b>&lt;80</b>	<b>0.8</b>		
MW-4	05/10/96	25.29	16.98	8.31	14,000	nd	1,200	720	3,100	-	-	
	10/02/96	25.29	17.65	7.64	12,000	nd	650	580	2,200	-	-	
	02/28/97	25.29	16.80	8.49	13,000	nd	1,100	750	2,700	110	-	
	09/17/97	25.29	17.93	7.36	13,000	<2.5	820	750	2,900	<190	-	
	02/05/98	25.29	16.78	8.51	13,000	<1.0	690	690	2,900	<170	2.1	
	08/11/98	25.29	16.59	8.70	15,000	<5	360	520	1,900	280	2.8	
	02/08/99	25.29	17.10	8.19	9,800	<5	680	770	2,200	300	1.8	3
	02/24/99	25.29	18.95	6.34	-	-	-	-	-	-	2.2	3
	03/03/99	25.29	16.80	8.49	-	-	-	-	-	-	4.6	3
	03/10/99	25.29	16.86	8.43	-	-	-	-	-	-	3.7	3
	03/17/99	25.29	16.82	8.47	-	-	-	-	-	-	4.3	3
	05/04/99	25.29	16.86	8.43	11,000	46	600	620	1,900	<100	4.1	
<b>07/20/99</b>	<b>25.29</b>	<b>17.30</b>	<b>7.99</b>	<b>13,000</b>	<b>&lt;0.5</b>	<b>470</b>	<b>70</b>	<b>2,000</b>	<b>&lt;150</b>	<b>0.4</b>		
MW-5	05/10/96	21.97	14.60	7.37	nd	nd	nd	nd	nd	-	-	
	10/02/96	21.97	15.25	6.72	nd	nd	nd	nd	nd	-	-	
	02/28/97	21.97	14.31	7.66	nd	nd	nd	nd	nd	nd	-	



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						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE		
	09/17/97	21.97	15.18	6.79	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	-	
	02/05/98	21.97	13.64	8.33	<50	<0.5	<0.5	<0.5	<0.5	<5.0	2.8	
	08/11/98	21.97	13.92	8.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.05	
	02/08/99	21.97	14.19	7.78	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.0	3
	02/24/99	21.97	16.18	5.79	-	-	-	-	-	-	4.9	3
	03/03/99	21.97	14.23	7.74	-	-	-	-	-	-	3.4	3
	03/10/99	21.97	14.32	7.65	-	-	-	-	-	-	3.6	3
	03/17/99	21.97	14.25	7.72	-	-	-	-	-	-	3.9	3
	05/04/99	21.97	14.41	7.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0	3.2	
	07/20/99	21.97	14.44	7.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.0	

**Notes and Abbreviations:**

Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8020.

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015.

MTBE = methyl tertiary butyl ether by EPA Method 8020.

µg/L = micrograms per liter

mg/L = milligrams per liter

ft-msl = feet above mean sea level

TOC = top of casing

nd = not detected

DO = dissolved oxygen

1 = Data prior to 7/11/95 from Gen Tech and Piers Environmental Quarterly Groundwater Monitoring Reports dated December 2, 1994 and March 6, 1995, respectively.

2 = Sampling no longer required in well MW-1 per September 17, 1996, ACDEH letter to Douglas Parking.

3 = DO monitoring event, as described in November 11, 1998 Remedial Workplan.

C A M B R I A



**ATTACHMENT A**

Laboratory Analytical Report



## QC REPORT FOR HYDROCARBON ANALYSES

Date: 07/21/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#15450)	MS	MSD		MS	MSD	
TPH (gas)	0.0	108.2	106.2	100.0	108.2	106.2	1.8
Benzene	0.0	10.2	9.7	10.0	102.0	97.0	5.0
Toluene	0.0	10.4	9.9	10.0	104.0	99.0	4.9
Ethyl Benzene	0.0	10.7	10.1	10.0	107.0	101.0	5.8
Xylenes	0.0	32.1	30.5	30.0	107.0	101.7	5.1
TPH(diesel)	0.0	8792	8587	7500	117	114	2.4
TRPH (oil & grease)	0	23500	24400	23700	99	103	3.8

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

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



C A M B R I A



**ATTACHMENT B**

Well Sampling Forms



WELL SAMPLING FORM

Project Name: <b>Douglas Parking</b>	Cambria Mgr: <b>RWS</b>	Well ID: <b>MW2</b>
Project Number: <b>580-0197</b>	Date: <b>7/20/99</b>	Well Yield: <b>—</b>
Site Address: <b>1721 Webster Street Oakland, California</b>	Sampling Method:  <b>Disposable bailer</b>	Well Diameter: <b>2" pvc</b>
		Technician(s): <b>df</b>
Initial Depth to Water: <b>18.98</b>	Total Well Depth: <b>27.08</b>	Water Column Height: <b>8.10</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>1.30 gal</b>	3 Casing Volumes: <b>3.89 gal</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>no</b>	Total Gallons Purged: <b>4 gal</b>
Start Purge Time: <b>1259</b>	Stop Purge Time: <b>106</b>	Total Time: <b>7 min</b>

1 Casing Volume = Water column height x Volume/ ft.

**DO: 0.64 mg/l**

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

Time	Casing Volume	Temp. °C	pH	Cond. $\mu S$	Comments
1259	1	18.8	6.6	420	
103	2	19.1	6.6	574	
105	3	19.2	6.6	445	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MW2</b>	<b>7/20/99</b>	<b>1:20</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>



WELL SAMPLING FORM

Project Name: <b>Douglas Parking</b>	Cambria Mgr: <b>RWS</b>	Well ID: <b>MW3</b>
Project Number: <b>580-0197</b>	Date: <b>7/20/99</b>	Well Yield: <b>—</b>
Site Address: <b>1721 Webster Street Oakland, California</b>	Sampling Method: <b>Disposable bailer</b>	Well Diameter: <b>2" pvc</b>
		Technician(s): <b>[Signature]</b>
Initial Depth to Water: <b>20.68'</b>	Total Well Depth: <b>28.05'</b>	Water Column Height: <b>7.37'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>1.18 gal</b>	3 Casing Volumes: <b>3.53 gal</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>no</b>	Total Gallons Purged: <b>3.75 gal</b>
Start Purge Time: <b>1224</b>	Stop Purge Time: <b>1231</b>	Total Time: <b>7 min</b>

1 Casing Volume = Water column height x Volume/ft.

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

**DO: 0.75 mg/l**

Time	Casing Volume	Temp. °C	pH	Cond. <u>µS</u>	Comments
1224	1	19.3	6.8	357	
1227	2	19.4	6.7	356	
1230	3	19.5	6.7	350	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MW3</b>	<b>7/20/99</b>	<b>1240</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>

WELL SAMPLING FORM

Project Name: <b>Douglas Parking</b>	Cambria Mgr: <b>RWS</b>	Well ID: <b>MW4</b>
Project Number: <b>580-0197</b>	Date: <b>7/20/99</b>	Well Yield: <b>---</b>
Site Address: <b>1721 Webster Street Oakland, California</b>	Sampling Method:  <b>Disposable bailer</b>	Well Diameter: <b>2 " pvc</b>
		Technician(s): <b>sj</b>
Initial Depth to Water: <b>17.30'</b>	Total Well Depth: <b>29.88'</b>	Water Column Height: <b>12.58'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>2.01 gal</b>	3 Casing Volumes: <b>6.04 gal</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>no</b>	Total Gallons Purged: <b>6.25 gal</b>
Start Purge Time: <b>1135</b>	Stop Purge Time: <b>1146</b>	Total Time: <b>11 min</b>

1 Casing Volume = Water column height x Volume/ft.

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

**DO: 0.38 mg/l**

Time	Casing Volume	Temp. °C	pH	Cond. $\mu S$	Comments
1136	1	19.6	6.7	464	
1141	2	19.5	6.6	506	
1145	3	19.3	6.6	511	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW4	7/20/99	1155	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: <b>Douglas Parking</b>	Cambria Mgr: <b>RWS</b>	Well ID: <b>MW5</b>
Project Number: <b>580-0197</b>	Date: <b>7/20/99</b>	Well Yield: <b>—</b>
Site Address: <b>1721 Webster Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>2" pvc</b>
	<b>Disposable bailer</b>	Technician(s): <b>[Signature]</b>
Initial Depth to Water: <b>14.44'</b>	Total Well Depth: <b>24.63'</b>	Water Column Height: <b>10.19'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>1.63 gal</b>	3 Casing Volumes: <b>4.89 gal</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>no</b>	Total Gallons Purged: <b>5 gal</b>
Start Purge Time: <b>138</b>	Stop Purge Time: <b>147</b>	Total Time: <b>9 min</b>

1 Casing Volume = Water column height x Volume/ft.

**DO: 0.99 mg/l**

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

Time	Casing Volume	Temp. °C	pH	Cond. <i>uS</i>	Comments
138	1	19.0	6.9	378	
142	2	18.8	6.9	377	
146	3	18.8	6.9	353	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW5	7/20/99	200	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015