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**CAMBRIA**



**To:** Mr. Tom Peacock

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**Organization:** ACDEH

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**Address:** 1131 Harbor Bay Pkwy., 2<sup>nd</sup> Floor

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Alameda, CA 94502

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**Phone:** 510-567-6782

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**From:** Bob Schultz

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**Phone:** (510) 420-3341

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**Date:** July 16, 1999

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**Re:** 2Q99 Monitoring Report

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# Transmittal

Dear Mr. Peacock:

Please find our second quarter 1999 Monitoring Report enclosed. If you have any questions or comments, please do not hesitate to call me at (510) 420-3341.

Thank you,

Bob Schultz

99 JUL 20 PM 2:58

July 15, 1999

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

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

Dear Mr. Douglas:

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

## SECOND QUARTER 1999 ACTIVITIES

**Groundwater Sampling:** On May 4, 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.

**Hydrogen Peroxide Injection:** On March 17, 1999, Cambria completed the hydrogen peroxide injection program described in our November 11, 1999, *Remedial Work Plan*. One hundred and twenty gallons of 7.5% hydrogen peroxide solution were injected into wells MW-2 and MW-3 via six injection events. After the March 17, 1999, injection the wells were left undisturbed for over 6 weeks to allow dispersion of the hydrogen peroxide into the formation, and to allow groundwater conditions to equilibrate near the injection wells.

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

## HYDROCARBON DISTRIBUTION IN GROUNDWATER

Groundwater elevation data indicate that groundwater flows towards the north-northeast with a gradient of 0.006 ft/ft (Figure 1). Consistent with historical site data, hydrocarbons were detected

**Cambria  
Environmental  
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1144 65th Street  
Suite B  
Oakland, CA 94608  
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in wells MW-2, MW-3 and MW-4. Benzene was only detected in wells MW-2 and MW-4, 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.

Unexpectedly, hydrocarbon concentrations increased dramatically this quarter in wells MW-2 and MW-3. This concentration increase may be a result of hydrogen peroxide injection at the site. Additional groundwater monitoring will help assess if this is a temporary increase.



### 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 Report:** In accordance with our meeting today at the site, Cambria plans to 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. The report will include descriptions of hydrogen peroxide injection field activities, tabulated DO concentrations measured during the hydrogen peroxide injection period, and an analysis of the effectiveness of the completed remedial action. Because of the recent hydrocarbon concentration increase in wells MW-2 and MW-3, Cambria will propose a different approach for remediating the site. The proposed approach will include a revised feasibility study and incorporate cost considerations and physical limitations at the site.


C A M B R I A

Mr. Lee Douglas  
July 15, 1999

**CLOSING**

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

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

  
*Robert W. Schultz*  
Robert W. Schultz  
Senior Staff Geologist

*Bob Clark-Riddell*  
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

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**EXPLANATION**

- Groundwater Monitoring Well
- SB-A (3) Soil Boring Location
- MW-2** Well ID
- 8.85** Groundwater Elevation
- 46** Benzene Conc. in Groundwater in parts per billion (ppb)
- NS Not Sampled
- ND Not Detected
- 8.0 Groundwater Elevation Contour (ft)
- ☐→ Groundwater Flow Direction and Gradient (ft/ft)

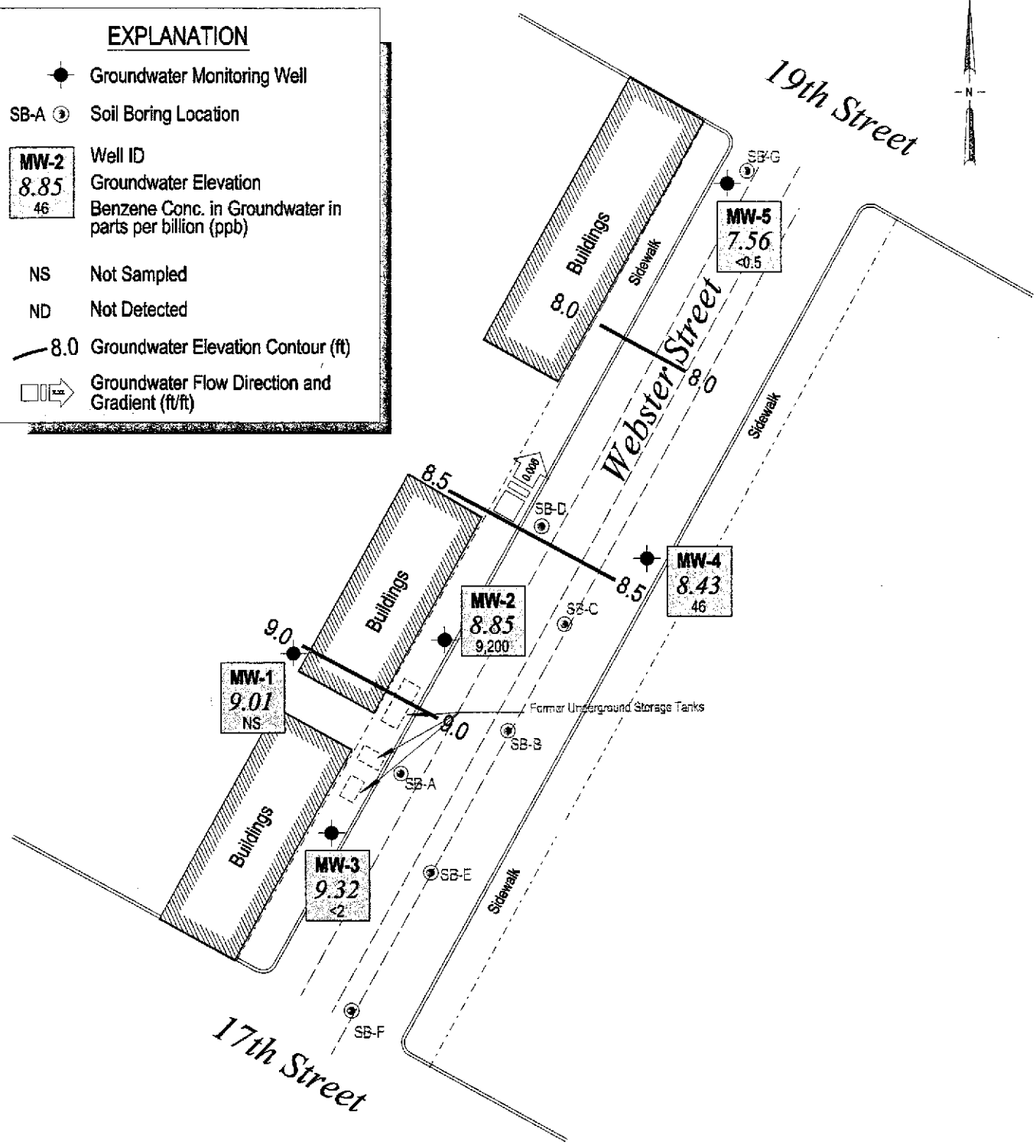


FIGURE  
**1**

Base map from Piers Environmental Services

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



**Groundwater Elevation Contour Map**  
May 4, 1999

H:\SB-2004\DOUGLAS\FIGURES\COMB-MP.DWG

# 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
	<b>05/04/99</b>	<b>29.81</b>	<b>20.80</b>	<b>9.01</b>	-	-	-	-	-	-	<b>3.5</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
<b>05/04/99</b>	<b>27.40</b>	<b>18.55</b>	<b>8.85</b>	<b>90,000</b>	<b>9,200</b>	<b>21,000</b>	<b>1,600</b>	<b>10,000</b>	<b>560</b>	<b>3.2</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)	←------(Concentrations in µg/l)----->						DO (mg/L)	Notes
					TPHg	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
	<b>05/04/99</b>	<b>29.56</b>	<b>20.24</b>	<b>9.32</b>	<b>11,000</b>	<b>&lt;2</b>	<b>&lt;2</b>	<b>9.8</b>	<b>140</b>	<b>&lt;10</b>	<b>3.1</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	
	<b>05/04/99</b>	<b>25.29</b>	<b>16.86</b>	<b>8.43</b>	<b>11,000</b>	<b>46</b>	<b>600</b>	<b>620</b>	<b>1,900</b>	<b>&lt;100</b>	<b>4.1</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)	(Concentrations in µg/l)						DO (mg/L)	Notes
					TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE		
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	-	
	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
<b>05/04/99</b>	<b>21.97</b>	<b>14.41</b>	<b>7.56</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>3.2</b>		

**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.



**ATTACHMENT A**

Laboratory Analytical Report



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

Cambria Environmental Technology 1144 65 <sup>th</sup> Street, Suite C Oakland, CA 94608	Client Project ID: #580-0197; Douglas Parking	Date Sampled: 05/04/99
		Date Received: 05/05/99
	Client Contact: Jacquelyn Jones	Date Extracted: 05/05/99
	Client P.O:	Date Analyzed: 05/05/99

05/12/99

Dear Jacquelyn:

Enclosed are:

- 1). the results of 4 samples from your #580-0197; Douglas Parking 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



## QC REPORT FOR HYDROCARBON ANALYSES

Date: 05/05/99

Matrix: WATER

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample (#09710)	MS	MSD		MS	MSD	
TPH (gas)	0.0	105.9	98.7	100.0	105.9	98.7	7.0
Benzene	0.0	9.7	9.5	10.0	97.0	95.0	2.1
Toluene	0.0	9.9	9.7	10.0	99.0	97.0	2.0
Ethyl Benzene	0.0	10.1	9.8	10.0	101.0	98.0	3.0
Xylenes	0.0	30.3	29.3	30.0	101.0	97.7	3.4
TPH(diesel)	0.0	8955	8655	7500	119	115	3.4
TRPH (oil & grease)	0	22700	22400	23700	96	95	1.3

\* Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100




**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>5/4/99</b>	Well Yield: _____
Site Address: <b>1721 Webster Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>2</b> " pvc
	<b>Disposable bailer</b>	Technician(s): 
Initial Depth to Water: <b>18.55</b>	Total Well Depth: <b>27.08</b>	Water Column Height: <b>8.53</b>
Volume/ft: _____	1 Casing Volume: _____	3 Casing Volumes: _____
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: _____	Total Gallons Purged: _____
Start Purge Time: _____	Stop Purge Time: _____	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

**DO: 3.2 mg/l**

Time	Casing Volume	Temp.	pH	Cond.	Comments

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MW2</b>	<b>5/4/99</b>	<b>145</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>5/4/99</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>JS</b>
Initial Depth to Water: <b>20.24</b>	Total Well Depth: <b>28.05'</b>	Water Column Height: <b>7.81'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>1.75 gal</b>	3 Casing Volumes: <b>3.75 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>103</b>	Stop Purge Time: <b>110</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: 3.1 mg/l**

Time	Casing Volume	Temp.	pH	Cond.	Comments
103	1	20.6	6.4	573	
107	2	21	6.6	598	
110	3	20.4	6.6	559	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MW3</b>	<b>5/4/99</b>	<b>1:20</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>

*JS*

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>5/4/99</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>J</b>
Initial Depth to Water: <b>16.86</b>	Total Well Depth: <b>29.88</b>	Water Column Height: <b>13.02</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>2.08 gal</b>	3 Casing Volumes: <b>6.25 gal</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>NO</b>	Total Gallons Purged: <b>6.5 gal</b>
Start Purge Time: <b>1139</b>	Stop Purge Time: <b>1153</b>	Total Time: <b>14 min</b>

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

**DO: 4.1 mg/l**

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

Time	Casing Volume	Temp.	pH	Cond.	Comments
1139	1	22.1	7.88	6.6	
1146	2	20.2	7.30	6.8	
1152	3	19.3	7.71	6.6	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MW4</b>	<b>5/4/99</b>	<b>1205</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>MWS</b>
Project Number: <b>580-0197</b>	Date: <b>5/4/99</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>14.41</b>	Total Well Depth: <b>24.43</b>	Water Column Height: <b>10.22</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>1.64</b>	3 Casing Volumes: <b>4.91</b>
Purging Device: <b>disposable bailer</b>	Did Well Dewater?: <b>no</b>	Total Gallons Purged: <b>5</b>
Start Purge Time: <b>1100</b>	Stop Purge Time: <b>1108</b>	Total Time: <b>8min</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: 3.2 mg/l**

Time	Casing Volume	Temp.	pH	Cond.	Comments
1100	1	19.5	6.8	619	
1104	2	19.2	6.8	616	
1107	3	18.9	6.8	645	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<b>MWS</b>	<b>5/4/99</b>	<b>1120</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>