

April 30, 2003

DH

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Re: **Groundwater Monitoring and System Progress Report  
First Quarter 2003**

Former Exxon Service Station  
3055 35th Avenue  
Oakland, California  
Cambria Project #130-0105



Dear Mr. Chan:

On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc. (Cambria) has prepared this groundwater monitoring and system progress report for the above-referenced site. Presented in the report are the fourth quarter 2002 activities and the anticipated first quarter 2003 activities.

If you have any questions or comments regarding this report, please call me at (510) 420-3327.

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

Ron Scheele, R.G.  
Associate

Attachments: Groundwater Monitoring and System Progress Report, First Quarter 2003

cc: Mr. Lynn Worthington, Golden Empire Properties, Inc. 5942 MacArthur Boulevard, Suite B, Oakland, California 94605

**Cambria  
Environmental  
Technology, Inc.**

5900 Hollis Street  
Suite A  
Emeryville, CA 94608  
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C A M B R I A

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

FIRST QUARTER 2003

Former Exxon Service Station  
3055 35th Avenue  
Oakland, California  
Cambria Project #130-0105

April 30, 2003

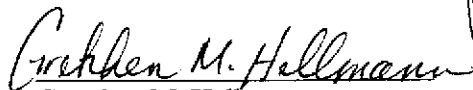


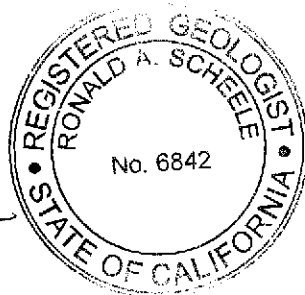
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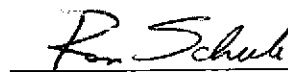
Mr. Lynn Worthington  
Golden Empire Properties, Inc.  
5942 MacArthur Boulevard, Suite B  
Oakland, California 94605

*Prepared by:*

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6262 Hollis Street  
Emeryville, California 94608

  
Gretchen M. Hellmann  
Project Engineer



  
Ron Scheele, R.G.  
Associate

**GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT**

**FIRST QUARTER 2003**

**Former Exxon Service Station  
3055 35th Avenue  
Oakland, California  
Cambria Project #130-0105**



**April 30, 2003**

**INTRODUCTION**

On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc. (Cambria) has prepared this groundwater monitoring and system progress report for the above-referenced site (see Figure 1). Presented in the report are the first quarter 2003 groundwater monitoring and corrective action activities and the anticipated second quarter 2003 activities.

**FIRST QUARTER 2003 ACTIVITIES**

**Monitoring Activities**

*Field Activities:* On January 13, 2003, Cambria conducted quarterly monitoring activities. Cambria gauged and inspected for separate-phase hydrocarbons (SPH) in monitoring wells MW-1, MW-2, MW-3 and MW-4 (Figure 1). Groundwater samples were collected from all scheduled wells. Field data sheets are presented in Appendix A.

*Sample Analyses:* Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) with silica gel clean-up by modified EPA Method 8015, and benzene, toluene, ethylbenzene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The groundwater analytical results are summarized in Table 1. The laboratory analytical report is presented as Appendix B.

## Monitoring Results

**Groundwater Flow Direction:** Depth-to-water measurements were collected during Cambria's January 13, 2003 site visit (Figure 1). During this visit, the two-phase extraction (TPE) remediation system was temporarily off and the groundwater table was under static conditions. Based on the depth to water measurements, groundwater flows toward the northwest with a gradient of 0.015 feet/foot, which is consistent with historical groundwater gradients. Groundwater monitoring data is presented in Table 1. See Appendix E for the electronic delivery confirmations of groundwater monitoring data.



**Hydrocarbon Distribution in Groundwater:** Hydrocarbon concentrations have decreased in wells MW-1, MW-2, and MW-3 and increased in well MW-4 as compared with the previous sampling event. SPH were not detected in any of the wells. The maximum TPHg, TPHd, and benzene concentrations were detected in well MW-4 at 35,000, 15,000, and 5,100 micrograms per liter ( $\mu\text{g/L}$ ), respectively. MTBE concentrations were below laboratory detection limits in all sampled wells. Since the start of TPE remediation (June 2000), monitoring wells MW-1, MW-3, and MW-4 have exhibited a decreasing hydrocarbon concentration trend (See Appendix D for individual well concentration trend graphs). Analytical results are summarized in Table 1. See Appendix E for electronic delivery confirmations of analytical data to the State's Geotracker Database.

## Corrective Action Activities

**System Design and Modifications:** The TPE remediation system consists of a trailer mounted all-electric catalytic oxidizer, a 20-horsepower liquid-ring pump, a 150-gallon moisture knockout with automatic float controls, a 1 horsepower centrifugal transfer pump, a particulate filter, and two 1000-pound carbon vessels connected in series. Nine wells are connected to the remediation system (RW-5 through RW-13) via an underground, 4-inch diameter, PVC trunk line and 1-inch diameter PVC branch lines. See Figure 2 for the location of remediation enclosure and wells. Wells RW-5 through RW-14, and MW-1 through MW-4 have 1-inch diameter, flexible, suction hose stingers which are sealed at the wellhead to allow simultaneous extraction of soil vapor and groundwater from the well.

**Remediation System Operations and Maintenance Activities:** During the first quarter, Cambria performed TPE system operation and maintenance (O&M) activities two to three times per month. During O&M activities, individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all TPE wells and from the system (see Tables 2, 3, and 4). During O&M site visits, system parameters were recorded in specialized field forms for future system optimization and agency inspection. System influent and effluent vapor samples were collected and submitted for laboratory analysis on a monthly basis. As per the Bay Area Air Quality Management District

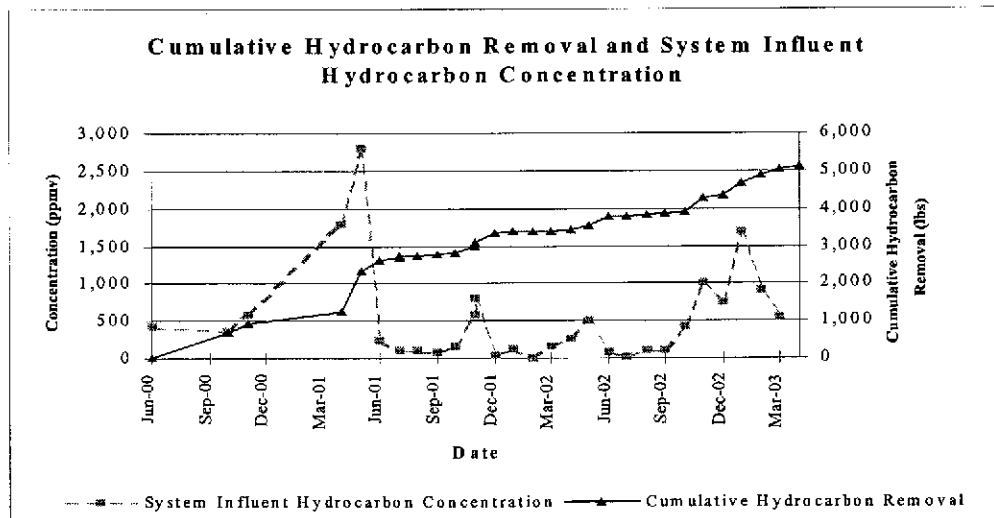
(BAAQMD) permit, a catalytic oxidizer operating temperature greater than 600 degrees Fahrenheit was maintained and system operation parameters were continuously measured using a chart recorder.

System influent and effluent vapor samples were collected and submitted for laboratory analysis on January 8, February 4, and March 4, 2003. System effluent vapor concentrations were below laboratory detection limits indicating that the catalytic oxidizer was achieving proper destruction efficiency and was operating within permit requirements. Table 2 summarizes soil vapor extraction system operations and analytical results.



Groundwater treatment system influent and effluent samples were collected on January 8, February 4, and March 4, 2003. System effluent groundwater concentrations for TPHg and BTEX were below laboratory detection limits indicating that no hydrocarbons were discharged to the sanitary sewer system and that the groundwater extraction portion of the TPE system was operating within permit requirements. A site inspection by Rodney Temples of East Bay Municipal Utility District (EBMUD) on March 25, 2003 confirmed compliance with the sewer discharge permit requirements. Table 3 summarizes groundwater extraction system parameters and analytical results. The system analytical laboratory reports are included as Attachment C.

**Remediation System Performance:** From January 8, 2003 through April 2, 2003, the TPE system operated for a total of 1,711 hours. The system shutdown automatically a couple of times during the quarter due to high water in the knockout tank. System influent TPHg vapor concentrations were variable during the quarter and ranged from 540 to 1,700 parts per million by volume (ppmv). Influent hydrocarbon concentrations spiked in January after system optimization efforts involving the collection of individual well flow and vapor concentration measurements. To maximize site cleanup, select remediation wells were opened and closed and well stinger depths were adjusted to account for



seasonal changes in the groundwater table (see Table 4). Hydrocarbon removal rates for soil vapor decreased during the quarter due to lower vapor flow rates. The hydrocarbon removal rates ranged from 3.5 to 7.6 pounds per day. To date, approximately 5,102 pounds of petroleum hydrocarbons have been destroyed by vapor extraction (see inserted graph above and Table 2).

From January 8, 2003 to April 2, 2003, approximately 192,780 gallons of groundwater were extracted and treated onsite using granular activated carbon. Influent groundwater concentrations ranged from 860 to 3,500 µg/L during the quarter and exhibited a decreasing trend. Seasonal rains and the rising groundwater table likely caused the influent groundwater concentrations to drop during the quarter. The groundwater extraction rate ranged from 1.4 to 2.2 gallons per minute and increased relative to the previous quarter due to higher vacuum and more aggressive groundwater extraction. To date, approximately 9.0 pounds of hydrocarbons have been treated by aqueous-phase carbon.

## ANTICIPATED SECOND QUARTER 2003 ACTIVITIES

### Monitoring Activities

Cambria will gauge the site wells, check the wells for SPH, and collect groundwater samples from all wells not containing SPH. Groundwater samples will be analyzed for TPHg and TPHd with silica gel clean-up by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8021B. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results. Cambria will submit groundwater monitoring and analytical data to the State's Geotracker database.

### Corrective Action Activities:

Cambria will continue to perform TPE operation and maintenance activities approximately two to three times per month during the second quarter of 2003. The depth of extraction stingers will be adjusted in an effort to maximize hydrocarbon removal and TPE operations may vary between select wells to optimize site cleanup. System influent and effluent vapor and groundwater samples will be collected on a monthly basis, and system operation and performance will be evaluated and optimized. Records will be kept for a period of two years for possible future BAAQMD inspection.

**ATTACHMENTS**

Figure 1 – Groundwater Elevation and Analytical Summary Map

Table 1 – Groundwater Elevations and Analytical Data

Table 2 – TPE System Performance and Analytical Results - Soil Vapor Extraction

Table 3 – TPE System Performance and Analytical Results - Groundwater Extraction

Table 4 – TPE Well Parameters

Appendix A – Groundwater Monitoring Field Data Sheets

Appendix B – Analytical Results for Quarterly Groundwater Sampling

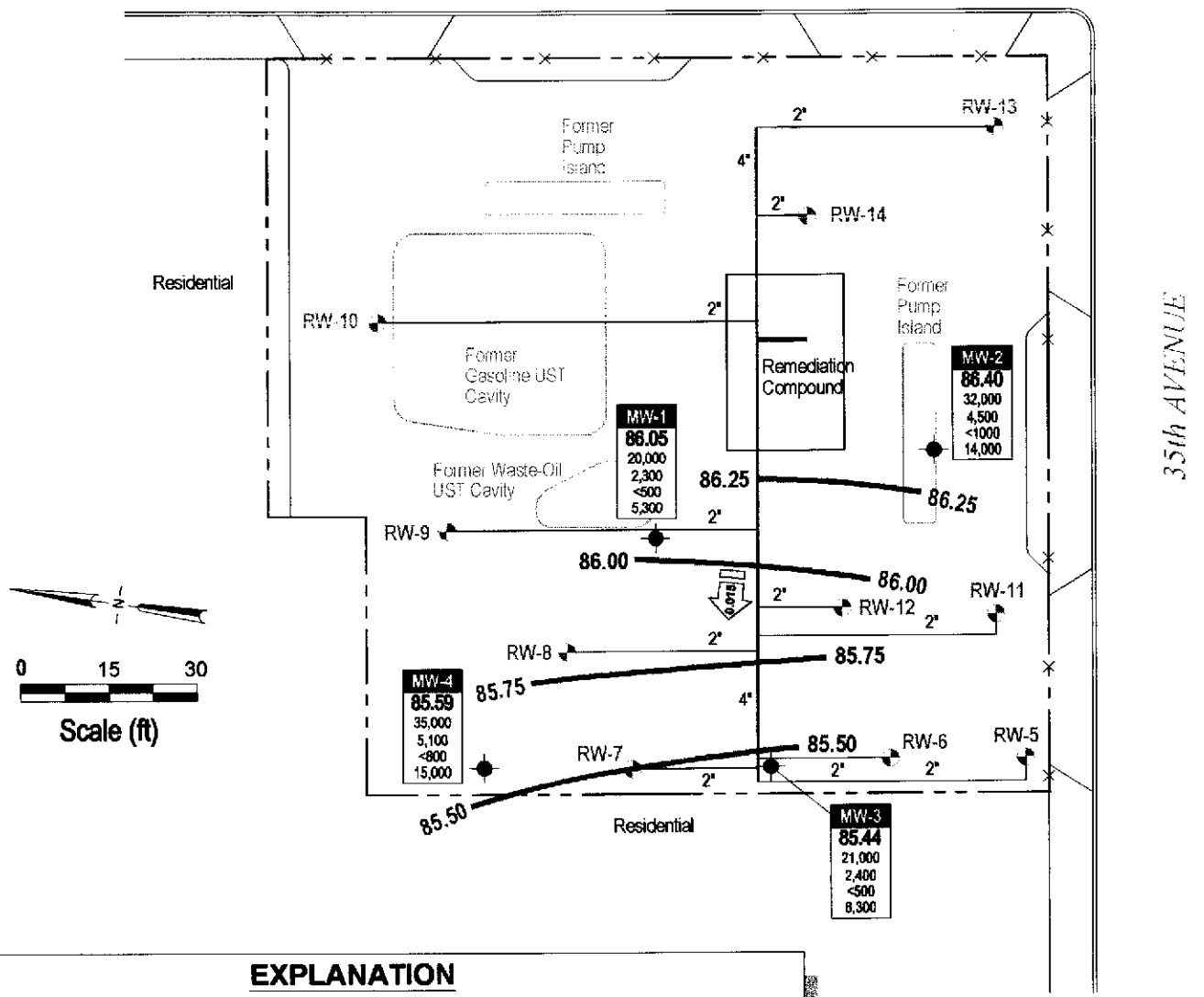
Appendix C – Analytical Results for TPE System Operation

Appendix D – TPHg and Benzene Concentration Trend Graphs

Appendix E – Electronic Delivery Confirmations



# SCHOOL STREET



## EXPLANATION

- MW-1** Monitoring well location
- RW-6** Remediation well location
- Well ID** Well designation
- ELEV** Groundwater elevation (msl)
- TPHg** Hydrocarbon concentrations in groundwater, in micrograms per liter (µg/L)
- Benzene**
- MTBE**
- TPHd**
- 85.50 Groundwater elevation contour line
- Extraction Piping
- Groundwater flow direction and gradient

Note: TPE remediation system not operating at time of groundwater monitoring event.

FIGURE 1

**Former Exxon Station**  
 3055 35th Avenue  
 Oakland, California



C A M B R I A

## Groundwater Elevation and Analytical Summary Map

January 13, 2003



# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California**

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
----- Concentrations in micrograms per liter (µg/L) ----->													
MW-1	05/25/94	16.79	Sheen	84.06	120,000	25,000	<50,000	22,000	17,000	2,800	16,000	---	---
100.85	07/19/94	20.77	---	80.08	---	---	---	---	---	---	---	---	---
	08/18/94	21.04	Sheen	79.81	925,000	---	---	16,500	6,200	1,000	9,400	---	---
	11/11/94	15.80	---	85.05	57,000	---	---	14,000	4,400	1,400	6,400	---	---
	02/27/95	15.53	---	85.32	45,000	---	---	2,900	2,500	760	4,100	---	---
	05/23/95	15.29	---	85.56	22,000	---	---	9,900	990	790	2,000	---	---
	08/22/95	20.90	---	79.95	23,000	---	---	6,900	340	1,200	1,900	---	---
	11/29/95	22.19	---	78.66	37,000	---	---	9,900	530	1,600	2,900	---	---
	02/21/96	11.69	---	89.16	33,000	4,300	---	10,000	480	1,000	1,800	3,300	---
	05/21/96	14.62	---	86.23	36,000	8,500	---	8,500	1,400	1,300	2,800	1,900	---
	08/22/96	22.30	---	78.55	41,000	6,200	---	8,600	1,300	1,500	2,900	<200	8.0
	11/27/96	17.24	Sheen	83.61	38,000	6,100	---	9,600	950	1,600	3,100	<400	5.6
	03/20/97	16.65	---	84.20	33,000	10,000	---	6,100	560	970	2,200	<400	8.5
	06/25/97	19.77	---	81.08	31,000	7,400 <sup>a</sup>	---	7,400	440	890	1,800	<400	3.7
	09/17/97	20.12	---	80.73	32,000 <sup>d</sup>	3,500 <sup>e</sup>	---	9,100	550	1,000	2,000	<1,000	2.1
	12/22/97	12.95	---	87.90	26,000 <sup>d</sup>	5,800 <sup>e</sup>	---	7,900	370	920	1,500	<790	0.7
	03/18/98	12.34	Sheen	88.51	30,000 <sup>d</sup>	4,200 <sup>e,f</sup>	---	7,800	820	840	2,000	<1,100	1.3
	07/14/98	17.34	---	83.51	41,000 <sup>d</sup>	8,900 <sup>e,f</sup>	---	8,200	1,100	1,200	3,000	<200	1.8
	09/30/98	19.90	---	80.95	37,000	3,300	---	11,000	950	1,200	2,800	<20	2.0
	12/08/98	15.62	---	85.23	22,000	3,700	---	3,000	1,200	730	3,100	<900	---
	03/29/99	11.98	---	88.87	36,000 <sup>d</sup>	6,800 <sup>e</sup>	---	12,000	750	1,300	2,400	950	0.50
	06/29/99	20.77	---	80.08	28,000 <sup>d</sup>	3,500 <sup>e</sup>	---	7,300	420	810	1,700	<1,300	0.10
	09/28/99	19.68	---	81.17	13,000 <sup>d</sup>	3,600 <sup>e,f</sup>	---	3,200	130	320	1,100	<210	0.55
	12/10/99	17.02	---	83.83	25,000 <sup>d</sup>	2,900 <sup>e,f</sup>	---	5,400	130	620	1,400	<1,000	1.03
	03/23/00	12.76	---	88.09	21,000 <sup>d</sup>	3,300 <sup>e</sup>	---	4,700	140	470	1,100	<350	---
	09/07/00	19.45	---	81.40	40,000 <sup>d,g</sup>	12,000 <sup>e,g</sup>	---	3,700	1,400	910	4,900	<50	0.17
	12/05/00	18.60	---	82.25	26,000 <sup>a</sup>	3,400 <sup>e</sup>	---	7,900	150	580	810	<300	0.35
	03/07/01	16.19	---	84.66	13,000	2,400	---	2,700	43	69	300	<100	0.49
	06/06/01	18.47	---	82.38	19,000	4,000	---	4,500	130	270	430	<400	0.39
	08/30/01	21.70	---	79.15	8,800 <sup>a</sup>	1,400 <sup>d</sup>	---	2,100	45	91	240	<130	0.27
	12/07/01	26.55	---	74.30	8,700 <sup>d</sup>	1,900 <sup>e,f</sup>	---	1,300	160	38	730	<20	0.59
	03/11/02	17.13	---	83.72	9,400 <sup>d</sup>	1,400 <sup>e</sup>	---	2,100	200	74	470	<20	0.39
	06/10/02	24.10	---	76.75	4,200 <sup>d</sup>	900 <sup>e,k</sup>	---	830	170	110	460	<100	---
	09/26/02	20.30	---	80.55	7,000 <sup>d</sup>	1,300 <sup>e,l,k</sup>	---	1,300	190	200	760	<100	0.70
	11/21/02	21.55	---	79.30	83,000 <sup>d,g</sup>	200,000 <sup>e,g</sup>	---	7,100	1,700	3,000	13,000	<1,000	0.49
	01/13/03	14.80	---	86.05	20,000 <sup>d</sup>	5,300 <sup>e,f</sup>	---	2,300	480	300	2,100	<500	0.33

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California**

Well ID	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
(TOC)					Concentrations in micrograms per liter (µg/L)								
MW-2	05/25/94	15.65	---	84.35	61,000	6,900	<5,000	9,900	7,400	960	4,600	---	---
100.00	07/19/94	19.81	---	80.19	---	---	---	---	---	---	---	---	---
	08/18/94	20.37	---	79.63	88,000	---	---	10,750	10,500	1,850	9,600	---	---
	11/11/94	15.52	---	84.48	54,000	---	---	5,900	6,700	1,300	7,500	---	---
	02/27/95	14.46	Sheen	85.54	44,000	---	---	5,100	5,300	930	6,400	---	---
	05/23/95	14.17	---	85.83	33,000	---	---	8,200	5,600	900	6,600	---	---
	08/22/95	19.80	---	80.20	38,000	---	---	6,400	5,000	1,100	5,600	---	---
	11/29/95	21.05	---	78.95	46,000	---	---	7,100	5,300	1,300	6,000	---	---
	02/21/96	10.53	---	89.47	59,000	---	---	8,000	6,000	1,800	8,900	4,500	---
	05/21/96	13.47	---	86.53	51,000	3,400	---	8,200	5,200	1,300	6,600	2,400	---
	08/22/96	19.12	---	80.88	37,000	5,700	---	5,100	3,500	960	4,500	<200	3.0
	11/27/96	16.61	Sheen	83.39	54,000	10,000	---	9,800	7,000	1,800	7,900	<2,000	3.1
	03/20/97	15.39	---	84.61	27,000	6,100	---	3,700	2,300	580	2,800	<400	8.1
	06/25/97	18.62	---	81.38	42,000	7,800 <sup>b</sup>	---	7,400	3,800	1,200	5,700	<200	0.9
	09/17/97	19.05	Sheen	80.95	41,000 <sup>d</sup>	8,900 <sup>e</sup>	---	5,200	3,400	1,300	5,900	<700	1.2
	12/22/97	14.09	---	85.91	47,000 <sup>d</sup>	6,100 <sup>e</sup>	---	8,500	4,600	1,800	8,400	<1,200	1.2
	03/18/98	10.83	Sheen	89.17	58,000 <sup>d</sup>	7,000 <sup>e,f</sup>	---	9,300	6,100	1,800	8,200	<1,100	1.1
	07/14/98	16.07	---	83.93	42,000 <sup>d</sup>	5,300 <sup>e,f</sup>	---	6,000	3,000	1,000	4,800	<200	1.5
	09/30/98	18.71	---	81.29	22,000	2,400	---	3,600	1,300	720	3,200	<30	1.8
	12/08/98	14.80	---	85.20	32,000	3,100	---	9,200	680	1,100	2,300	<2,000	---
	03/29/99	11.81	---	88.19	28,000 <sup>d</sup>	7,500 <sup>e,f</sup>	---	4,400	1,600	950	4,100	410	1.86
	06/29/99	19.54	---	80.46	28,000 <sup>d</sup>	3,300 <sup>e</sup>	---	3,500	1,100	690	3,100	<1,000	0.41
	09/28/99	18.61	---	81.39	15,000 <sup>d</sup>	3,400 <sup>e,f</sup>	---	1,200	540	230	2,300	<36	1.18
	12/10/99	16.53	---	83.47	17,000 <sup>d</sup>	2,500 <sup>e,f</sup>	---	1,300	780	420	2,700	<40	0.17
	03/23/00	13.56	---	86.44	25,000 <sup>d</sup>	3,100 <sup>g</sup>	---	1,900	1,100	660	3,700	<500	---
	09/07/00	18.25	---	81.75	62,000 <sup>d,g</sup>	32,000 <sup>h,g</sup>	---	5,300	2,300	1,500	8,400	<100	0.39
	12/05/00	17.45	---	82.55	60,000 <sup>d,g</sup>	87,000 <sup>e,i,g</sup>	---	5,100	2,200	1,600	9,000	<200	0.31
	03/07/01	15.68	---	84.32	34,000	3,900	---	1,200	770	620	4,300	<200	0.44
	06/06/01	17.51	---	82.49	110,000	48,000	---	14,000	9,000	1,900	12,000	<950	0.24
	08/30/01	21.00	---	79.00	43,000 <sup>h</sup>	15,000 <sup>h</sup>	---	3,100	720	980	5,500	<200	---
	12/07/01	24.45	---	75.55	4,100 <sup>d</sup>	750 <sup>e,f</sup>	---	510	88	8.2	580	<20	0.47
	03/11/02	16.95	---	83.05	4,700 <sup>d</sup>	590 <sup>e</sup>	---	1,200	150	30	310	<50	0.24
	06/10/02	18.59	---	81.41	14,000 <sup>d</sup>	2,000 <sup>e</sup>	---	2,600	710	150	2,000	<800	---
	09/26/02	20.39	---	79.61	4,800 <sup>d</sup>	660 <sup>e</sup>	---	770	200	140	740	<50	0.29
	11/21/02	18.75	---	81.25	210,000 <sup>d,g</sup>	350,000 <sup>e,g</sup>	---	14,000	23,000	4,400	28,000	<1,700	0.43
	01/13/03	13.60	---	86.40	32,000 <sup>d,x</sup>	14,000 <sup>e,d,y,k</sup>	---	4,500	1,600	920	3,600	<1000	0.39

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California**

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
----- Concentrations in micrograms per liter (µg/L) ----->													
MW-3	05/25/94	13.93	Sheen	82.94	56,000	14,000	<50,000	14,000	14,000	1,300	11,000	---	---
96.87	07/19/94	17.04	---	79.83	---	---	---	---	---	---	---	---	---
	08/18/94	17.75	---	79.12	116,000	---	---	28,300	26,000	2,400	15,000	---	---
	11/11/94	17.80	---	79.07	89,000	---	---	1,600	1,900	1,900	14,000	---	---
	02/27/95	11.86	Sheen	85.01	250,000	---	---	22,000	26,000	7,800	21,000	---	---
	05/23/95	11.60	Sheen	85.27	310,000	---	---	18,000	17,000	4,500	2,800	---	---
	08/22/95	17.10	---	79.77	74,000	---	---	14,000	13,000	1,900	11,000	---	---
	11/29/95	16.34	---	80.53	220,000	---	---	25,000	25,000	3,500	19,000	---	---
	02/21/96	7.92	---	88.95	60,000	---	---	10,000	7,800	1,500	8,800	3,400	---
	05/21/96	10.86	Sheen	86.01	69,000	13,000	---	17,000	9,400	1,700	9,400	2,600	---
	08/22/96	16.50	---	80.37	94,000	16,000	---	17,000	15,000	2,100	12,000	330	2.0
	11/27/96	13.47	Sheen	83.40	82,000	24,000	---	14,000	13,000	2,400	13,000	<1,000	2.4
	03/20/97	12.86	---	84.01	56,000	11,000	---	9,900	6,900	1,300	8,000	3,500	9.0
	06/25/97	15.98	---	80.89	49,000	7,700 <sup>b</sup>	---	9,700	7,100	1,300	7,000	220	5.8
	09/17/97	16.34	Sheen	80.53	78,000 <sup>d</sup>	15,000 <sup>c</sup>	---	11,000	9,900	1,800	10,000	<1,200	0.7
	12/22/97	10.71	Sheen	86.16	49,000 <sup>d</sup>	14,000 <sup>e</sup>	---	7,300	5,300	1,400	7,500	<1,100	3.1
	03/18/98	8.41	Sheen	88.46	120,000 <sup>d</sup>	20,000 <sup>e,f</sup>	---	21,000	19,000	2,600	15,000	<1,600	1.6
	07/14/98	13.51	---	83.36	94,000 <sup>d,g</sup>	65,000 <sup>e,f,g</sup>	---	18,000	14,000	1,900	11,000	<1,400	1.8
	09/30/98	16.14	---	80.73	91,000	9,800	---	17,000	13,000	2,100	12,000	<1300	2.0
	12/08/98	11.20	---	85.67	51,000	4,200	---	8,000	6,800	1,400	7,500	<1,100	---
	03/29/99	7.95	---	88.92	39,000 <sup>d</sup>	4,600 <sup>c</sup>	---	8,900	4,400	940	4,500	810	0.56
	06/29/99	16.98	---	79.89	71,000 <sup>d</sup>	6,900 <sup>c</sup>	---	12,000	7,300	1,400	8,400	<1,700	0.19
	09/28/99	15.99	---	80.88	60,000 <sup>d</sup>	7,800 <sup>c</sup>	---	9,400	9,200	1,000	9,900	200	0.53
	12/10/99	13.31	---	83.56	53,000 <sup>d</sup>	5,300 <sup>e,f</sup>	---	8,000	6,400	1,100	8,100	<200	0.48
	03/23/00	8.98	---	87.89	77,000 <sup>d,g</sup>	11,000 <sup>h,i</sup>	---	10,000	9,400	1,600	11,000	<430	---
	09/07/00	15.61	---	81.26	100,000 <sup>d,g</sup>	19,000 <sup>e,f,g</sup>	---	17,000	12,000	1,600	11,000	<500	---
	12/05/00	14.80	---	82.07	110,000 <sup>d,g</sup>	17,000 <sup>e,g</sup>	---	17,000	11,000	1,900	12,000	<750	0.37
	03/07/01	14.27	---	82.60	60,000	13,000	---	7,000	4,600	900	7,100	<350	0.49
	06/06/01	14.88	---	81.99	43,000	12,000	---	3,000	1,000	770	5,200	<400	1.71
	08/30/01	12.43	---	84.44	95,000 <sup>a,h</sup>	190,000 <sup>d,i</sup>	---	6,900	10,000	2,700	15,000	<250	0.24
	12/07/01	24.65	---	72.22	25,000 <sup>d</sup>	3,900 <sup>e,f</sup>	---	2,500	1,700	64	2,200	<200	0.19
	03/11/02	14.69	---	82.18	30,000 <sup>d</sup>	2,800 <sup>f,g,k</sup>	---	5,000	2,400	190	1,800	<1,300	0.30
	06/10/02	22.94	---	73.93	9,000 <sup>d</sup>	990 <sup>e,k</sup>	---	1,800	1,300	96	1,000	<300	---
	09/26/02	18.85	---	78.02	50,000 <sup>d,g</sup>	130,000 <sup>h,g</sup>	---	3,900	5,400	820	6,600	<500	0.19
	11/21/02	17.85	0.05	79.06	37,000 <sup>d,g</sup>	120,000 <sup>h,g</sup>	---	4,000	660	1,200	5,100	<1,700	0.28
	01/13/03	11.43	---	85.44	21,000 <sup>d,x</sup>	6,300 <sup>e,f,g,k</sup>	---	2,400	2,300	390	3,000	<500	0.31

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California**

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
----- Concentrations in micrograms per liter (µg/L) ----->													
MW-4	03/20/97	13.75	---	83.59	47,000	3,100	---	11,000	4,500	1,100	5,200	3,400	8.4
97.34	06/25/97	16.15	---	81.19	61,000	5,800 <sup>b</sup>	---	16,000	6,100	1,500	5,900	780 <sup>c</sup>	1.4
	09/17/97	17.10	---	80.24	60,000 <sup>d</sup>	4,400 <sup>e</sup>	---	17,000	4,900	1,500	5,700	<1,500	1.5
	12/22/97	9.21	---	88.13	43,000 <sup>d</sup>	3,100 <sup>e</sup>	---	13,000	3,900	1,100	4,200	<960	3.7
	03/18/98	9.54	---	87.80	58,000 <sup>d</sup>	5,500 <sup>e,f</sup>	---	14,000	4,700	1,400	5,700	<1,200	0.8
	07/14/98	14.15	---	83.19	73,000 <sup>d</sup>	2,900 <sup>e,f</sup>	---	22,000	7,000	1,800	7,300	<200	1.0
	09/30/98	16.84	---	80.50	39,000	2,100	---	12,000	2,700	1,000	3,400	510	1.1
	12/08/98	13.45	---	83.89	27,000	1,600	---	8,900	1,600	730	2,300	<1,500	---
	03/29/99	9.10	---	88.24	48,000 <sup>d</sup>	2,400 <sup>e,h</sup>	---	15,000	3,000	1,300	5,000	1,300	1.32
	06/29/99*	---	---	---	---	---	---	---	---	---	---	---	---
	09/28/99	16.58	---	80.76	24,000 <sup>d</sup>	3,200 <sup>e,f</sup>	---	7,500	1,200	190	2,200	210	14.29 <sup>g</sup>
	12/10/99	13.99	---	83.35	47,000 <sup>d</sup>	3,100 <sup>e,f</sup>	---	12,000	1,800	1,000	4,400	<100	0.62
	03/23/00	10.22	---	87.12	40,000 <sup>d</sup>	3,100 <sup>e,f</sup>	---	11,000	1,600	910	3,100	690	---
	09/07/00	16.40	---	80.94	43,000 <sup>d</sup>	5,900 <sup>e</sup>	---	10,000	1,100	1,100	3,400	<450	1.04
	12/05/00	15.55	---	81.79	69,000 <sup>d,g</sup>	2,600 <sup>e,g</sup>	---	16,000	1,300	1,300	3,400	<200	0.35
	03/20/01	14.03	---	83.31	46,000	---	---	13,000	1,000	900	2,800	<350	0.39
	06/06/01	15.49	---	81.85	75,000	5,400	---	22,000	1,800	1,900	6,400	<1,200	2.22
	08/30/01	18.00	---	79.34	43,000 <sup>d</sup>	3,200 <sup>d</sup>	---	6,400	630	510	2,600	<200	0.32
	12/07/01	23.45	---	73.89	32,000 <sup>d,g</sup>	11,000 <sup>e,i,j</sup>	---	4,500	740	310	2,300	<200	0.21
	03/11/02	14.95	---	82.39	15,000 <sup>d</sup>	1,600 <sup>e,f,k</sup>	---	3,700	500	92	790	<500	0.30
	06/10/02	22.30	---	75.04	9,400 <sup>d</sup>	3,400 <sup>e</sup>	---	1,400	50	<5.0	690	<200	---
	09/26/02	17.93	---	79.41	21,000 <sup>d</sup>	800 <sup>e</sup>	---	3,300	1,300	450	2,900	<500	0.24
	11/21/02	17.55	---	79.79	5,700 <sup>d</sup>	2,400 <sup>e,k</sup>	---	1,400	290	63	640	550	---
	01/13/03	11.75	---	85.59	35,000 <sup>d,g</sup>	15,000 <sup>e,f,u,k</sup>	---	5,100	1,500	510	4,500	<800	0.28

# CAMBRIA

**Table 1. Groundwater Elevations and Analytical Data - Former Exxon Service Station, 3055 35th Avenue, Oakland, California**

Well ID (TOC)	Date	GW Depth (ft)	SPH (ft)	GW Elev. (ft)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	DO (mg/L)
----- Concentrations in micrograms per liter (µg/L) ----->													
Trip Blank	07/14/98	---	---	---	<50	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	09/30/98	---	---	---	<50	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	12/08/98	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	03/29/99	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	06/29/99	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	03/23/00	---	---	---	<50	---	---	<0.5	<0.5	<0.5	<0.5	<5.0	---
	09/07/00	---	---	---	<50	---	---	<0.5	1.1	<0.5	1.1	<5.0	---

**Abbreviations:**

TOC = Top of casing elevation relative to an arbitrary datum  
 GW = Groundwater  
 SPH = Separate-phase hydrocarbons  
 --- = not observed/not analyzed  
 TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015  
 TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015  
 TPHmo = Total petroleum hydrocarbons as motor oil by modified EPA Method 8015  
 Benzene, Ethylbenzene, Toluene, and Xylenes by EPA Method 8020  
 MTBE = Methyl Tertiary Butyl Ether by EPA Method 8020  
 DO = Dissolved oxygen  
 µg/L = Micrograms per liter, equivalent to parts per billion in water  
 mg/L = Milligrams per liter, equivalent to parts per million in water  
 \* = Well inaccessible during site visit

**Notes:**

a = Result has an atypical pattern for diesel analysis  
 b = Result appears to be a lighter hydrocarbon than diesel  
 c = There is a >40% difference between primary and confirmation analysis  
 d = Unmodified or weakly modified gasoline is significant  
 e = Gasoline range compounds are significant  
 f = Diesel range compounds are significant; no recognizable pattern  
 g = lighter than water immiscible sheen is present  
 h = one to a few isolated peaks present  
 i = medium boiling point pattern does not match diesel (stoddard solvent)  
 j = aged diesel is significant  
 k = oil range compounds are significant  
 TOC Elevation of Well MW-4 surveyed relative to an arbitrary site datum by David Hop,  
 Licensed Surveyor on April 19, 1997  
 # = abnormally high reading due to added hydrogen peroxide

Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	System Inlet Temp. (degrees F)	System Flow Rate (acfm)	System Vacuum ("Hg)	System Flow Rate (scfm)	System Influent HC Conc. <sup>1</sup> (ppmv)		System Effluent HC Conc. <sup>1</sup> (ppmv)		HC Removal Rate <sup>2</sup> (lbs/day)	Emission Rate <sup>2</sup> (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal <sup>3</sup> (lbs)
							TPHg	TPHg	Benz	TPHg		Benz			
6/24/00	0	--	--	--	--	--	--	--	--	--	--	--	--	--	0
9/28/00	454	20%	789	--	--	175	420	22	0.24	23.6	1.24	0.012	95	446	
10/12/00	696	72%	950	--	--	88	360	<10	<0.15	10.1	<0.28	<0.004	*	684	
11/9/00	1251	83%	820	--	--	55	590	<10	<0.15	10.5	<0.18	<0.002	*	918	
1/23/01	1313	3%	--	--	--	--	--	--	--	--	--	--	--	945	
3/28/01	0	--	--	--	--	--	--	--	--	--	--	--	--	945	
4/5/01	194	101%	908	85	6.0	68	1,800	34	0.52	39.2	0.74	0.010	98	1261	
5/3/01	863	100%	1000	54	14	29	2,800	<10	<0.15	25.8	<0.09	<0.001	*	2355	
6/4/01	1114	33%	820	101	6.5	79	240	<10	<0.15	6.1	<0.25	<0.003	*	2625	
7/2/01	1429	47%	804	109	10.0	73	92	26	0.34	2.1	<0.61	<0.007	72	2705	
7/10/01	1621	100%	900	150	8.0	110	92	<10	<0.15	3.2	<0.35	<0.005	*	2722	
8/2/01	1759	25%	940	79	5.0	65	110	<10	<0.15	2.3	<0.21	<0.003	*	2740	
9/7/01	2301	63%	854	141	12.0	84	81	34	0.52	2.2	<0.92	<0.013	58	2793	
10/3/01	2470	27%	854	230	9.0	161	160	<10	0.31	8.3	<0.52	<0.015	*	2808	
11/6/01	3015	67%	955	97	8.5	69	590	31	0.43	13.1	<0.69	<0.009	95	2995	
11/14/01	3184	88%	860	69	10.0	46	610	<10	<0.15	11.9	<0.15	<0.002	*	3087	

**Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California**

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	System Inlet Temp. (degrees F)	System Flow Rate (acfm)	System Vacuum ("Hg)	System Flow Rate (scfm)	System Influent IIC Conc. <sup>1</sup>		System Effluent IIC Conc. <sup>1</sup>		HC Removal Rate <sup>2</sup> (lbs/day)	Emission Rate <sup>2</sup> (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal <sup>3</sup> (lbs)
							TPHg	TPHg	Benz	Benz		TPHg	Benz		
12/6/01	3710	100%	806	53	11.0	33	50	<10	<0.15	0.5	<0.11	<0.001	*	3349	
1/7/02	4472	99%	841	42	10.5	27	120	<10	<0.15	1.0	<0.09	<0.001	*	3366	
2/4/02	4938	69%	817	78	10.5	51	<5	<10	<0.15	0.1	<0.16	<0.002	*	3386	
3/5/02	5396	66%	665	26	10.5	17	170	<10	<0.15	0.9	<0.05	<0.001	*	3388	
4/2/02	6068	100%	670	67	12.5	39	260	<10	<0.15	3.3	<0.13	<0.002	*	3413	
5/6/02	6886	100%	667	76	10.0	50	500	<10	<0.15	8.1	<0.16	<0.002	*	3524	
6/5/02	7608	100%	751	72	8.5	51	73	<10	<0.15	1.2	<0.16	<0.002	*	3767	
7/2/02	8253	100%	736	80	9.0	56	26	<15	<0.15	0.5	<0.27	<0.002	*	3799	
8/6/02	7	100%	739	140	13.0	79	97	<10	<0.15	2.5	<0.25	<0.003	*	3815	
9/10/02	528	76%	723	150	11.5	92	103	<10	<0.15	3.0	<0.30	<0.004	*	3869	
10/2/02	938	100%	723	125	8.5	89	430	<10	<0.15	12.3	<0.29	<0.004	*	3921	
11/6/02	1614	100%	658	105	13.5	58	1,000	<10	<0.15	18.5	<0.18	<0.003	*	4269	
12/5/02	1720	65%	675	115	14.0	61	740	<10	<0.15	14.5	<0.20	<0.003	*	4350	
1/8/03	2279	69%	675	30	16.0	14	1700	<10	<0.15	7.6	<0.04	<0.001	*	4688	
2/4/03	2896	95%	671	48	18.0	19	910	<10	<0.15	5.6	<0.06	<0.001	*	4884	
3/4/03	3571	100%	657	47	17.0	20	540	<10	<0.15	3.5	<0.07	<0.001	*	5041	
4/2/03	3990	60%	705	38	18.0	15	--	--	--	--	--	--	--	5102	

**Table 2. TPE System Performance and Analytical Results - Soil Vapor Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, California**

Date	Hour Meter Readings (hrs)	System Uptime (per interval) (%)	System Inlet Temp. (degrees F)	System Flow Rate (acfm)	System Vacuum ("Hg)	System Flow Rate (scfm)	System Inlet HC Conc. <sup>1</sup> (ppmv)		System Effluent HC Conc. <sup>1</sup> (ppmv)		HC Removal Rate <sup>2</sup> (lbs/day)	Emission Rate <sup>2</sup> (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal <sup>3</sup> (lbs)
							TPHg	Benz	TPHg	Benz		TPHg	Benz		

**Notes and Abbreviations:**

TPHg = Total petroleum hydrocarbons as gasoline

Benz = Benzene

HC Conc. = Hydrocarbon Concentrations

ppmv = Parts per million by volume. Analytical lab results converted from micrograms per liter (µg/l) to ppmv assumes the molecular weight of gasoline to be equal to that of hexane, at 1 atmosphere of pressure and 20 degrees Celsius.

<sup>1</sup> TPHg and benzene concentrations based on lab results by Modified EPA Methods 8015 and 8020.

<sup>2</sup> The hydrocarbon removal/emission rate is based on the Bay Area Air Quality Management's District's (BAAQMD) Procedures for Soil Vapor Extraction where Rate = concentration (ppmv) x flow rate (scfm) x 1 lb-mole/386x10<sup>6</sup>ft<sup>3</sup> x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

<sup>3</sup> Gasoline Cumulative Removal = The previous removal rates multiplied by the interval days of operation plus the previous total removal amount. The total TPHg removal is based on lab analytical results.

<sup>4</sup> As per BAAQMD permit conditions, system destruction efficiency need not be calculated for effluent TPHg concentrations less than 10 ppmv

<sup>5</sup> The TPE system was modified on August 6, 2002, and the PD blower was replaced with a liquid-ring blower. The previous system hour meter was also replaced at a total reading of 9089 hours. In addition, all previous flow rate measurements were converted from acfm to scfm adjusting the Hydrocarbon Removal Rates and Gasoline Cumulative Removal.

<sup>6</sup> The hour meter was not operating properly. System uptime is calculated based on the operational status upon arrival.



**Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, CA**

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
10/20/00	878	0	0	NC	Inf Eff	-- --	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	--	--
10/30/00	1004	--	50	NC	Inf Eff	-- --	170 <0.5	140 <0.5	16 <0.5	200 <0.5	--	--
11/9/00	1,251	--	50	NC	Inf Eff	760 <50	120 <0.5	86 <0.5	4.2 <0.5	84 <0.5	NC	NC
12/15/00	1,267	760a	50	NC	--	--	--	--	--	--	--	--
1/23/01	1,313	3,790	3,080	1.1	In Mid Eff	3,000 <50 <50	440 <0.5 <0.5	360 <0.5 <0.5	57 <0.5 <0.5	350 <0.5 <0.5	0.019	0.019
3/28/01	0	3,970	3,210	NC	Replacement Catox System Startup			--	--	--	0.005	0.024
4/13/01	378	17,366	16,606	0.6	IN EF-1	360 <50	45 <0.5	39 <0.5	5.1 <0.5	43 <0.5	0.335	0.359
6/4/01	1,114	36,058	35,298	0.4	IN Mid EF	54 <50 <50	<0.5 <0.5 <0.5	0.69 <0.5 <0.5	<0.5 <0.5 <0.5	3.1 <0.5 <0.5	0.056	0.415

**Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, CA**

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
7/2/01	1,429	39,433	38,673	0.2	IN Mid EF	<50 <50 <50	2.5 <0.5 <0.5	1 <0.5 <0.5	<0.5 <0.5 <0.5	5 <0.5 <0.5	0.002	0.417
9/7/01	2,301	48,566	47,806	0.2	INF EFF-1 EFF-2	4,600 <50 --	24 <0.5 --	57 <0.5 --	15 <0.5 --	140 <0.5 --	0.004	0.421
11/16/01	3,184	61,892	61,132	0.3	INF EFF-1 EFF-2	1100 <50 --	57 <0.5 --	42 <0.5 --	6.5 <0.5 --	110 <0.5 --	0.512	0.932
12/6/01	3,710	80,094	79,334	0.6	INF EFF-1 EFF-2	410 <50 --	31 <0.5 --	14 <0.5 --	3.2 <0.5 --	48 <0.5 --	0.167	1.099
1/7/02	4,472	132,337	131,577	1.1	INF EFF-1 EFF-2	120 <50 --	17 <0.5 --	7.7 <0.5 --	1.5 <0.5 --	13 <0.5 --	0.179	1.278
2/4/02	4,938	164,774	164,014	1.2	INF EFF-1 EFF-2	140 <50 --	18 <0.5 --	5.1 <0.5 --	0.86 <0.5 --	12 <0.5 --	0.032	1.310

**Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, CA**

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
3/5/02	5,396	208,997	208,237	1.6	INF EFF-1 EFF-2	170 <50 --	22 <0.5 --	12 <0.5 --	1.8 <0.5 --	24 <0.5 --	0.052	1.362
4/2/02	6,068	263,563	262,803	1.4	INF EFF-1 EFF-2	160 <50 --	15 <0.5 --	17 <0.5 --	3.3 <0.5 --	20 <0.5 --	0.077	1.439
5/6/02	6,886	306,765	306,005	0.9	INF EFF-1 EFF-2	100 <50 --	3.5 <0.5 --	1.7 <0.5 --	1.0 <0.5 --	4.0 <0.5 --	0.058	1.497
6/5/02	7,608	340,020	339,260	0.8	INF EFF-1 EFF-2	<50 <50 --	2.8 <0.5 --	1.4 <0.5 --	<0.5 <0.5 --	2.5 <0.5 --	0.028	1.525
7/2/02	8,253	361,717	360,957	0.6	INF EFF-1 EFF-2	<50 <50 --	1.5 <0.5 --	<0.5 <0.5 --	<0.5 <0.5 --	0.94 <0.5 --	0.009	1.534
8/6/2002*	7	383,750	382,990	0.4	INF EFF-1 EFF-2	<50 <50 --	1.8 <0.5 --	0.92 <0.5 --	<0.5 <0.5 --	2.0 <0.5 --	0.009	1.543

**Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, CA**

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (µg/L)	Benzene (µg/l.)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
9/10/02	528	392,405	391,645	0.3	INF EFF-1 EFF-2	570 <50 --	15 <0.5 --	17 <0.5 --	2.9 <0.5 --	30 <0.5 --	0.004	1.547
10/2/02	938	400,145	399,385	0.3	INF EFF-1 EFF-2	2,300 <50 --	230 <0.5 --	190 <0.5 --	38 <0.5 --	280 <0.5 --	0.025	1.550
11/6/02	1,614	419,850	419,090	0.5	INF EFF-1 EFF-2	4,400 <50 --	120 <0.5 --	150 <0.5 --	27 <0.5 --	380 <0.5 --	0.378	1.928
12/5/02	1,720	424,899	424,139	0.8	INF EFF-1 EFF-2	8,900 <50 --	140 <0.5 --	200 <0.5 --	33 <0.5 --	470 <0.5 --	0.185	2.113

**Table 3. TPE System Performance and Analytical Results - Groundwater Extraction - Golden Empire Properties (Worthington), 3055 35th Street, Oakland, CA**

Date	Hour Meter Readings (hrs)	Water Meter Readings (gallons)	Total Groundwater Extracted (gallons)	System Flow Rate Per Period (gpm)	Sample ID	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	HCs Removed Per Period (lbs)	Total HCs Removed (lbs)
1/8/03	2,279	473,395	472,635	1.4	INF EFF-1 EFF-2	3,500 <50 --	120 <0.5 --	300 <0.5 --	48 <0.5 --	700 <0.5 --	3.602	5.715
2/4/03	2,896	554,336	553,576	2.2	INF EFF-1 EFF-2	1,100 <50 <50	51 <0.5 <0.5	74 <0.5 <0.5	14 <0.5 <0.5	190 <0.5 <0.5	2.364	8.079
3/4/03	3,571	614,530	613,770	1.5	INF EFF-1 EFF-2	860 <50 --	30 <0.5 --	59 <0.5 --	11 <0.5 --	180 <0.5 --	0.553	8.631
4/2/03	3,990	666,175	665,415	2.1	INF	--	--	--	--	--	0.371	9.002
<b>Sewer Effluent Discharge Limits:</b> (µg/L)							5.0	5.0	5.0	5.0		

**Notes:**

TPHg = Total Petroleum Hydrocarbons as Gasoline

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

MTBE = Methyl tertiary butyl ether

µg/L = micrograms per liter

a = Malfunctioning totalizer replaced 12/15/00 (initial reading at 760 gallons)

\* = TPE system upgrade. Previous system hour meter = 9089

ND = non detect

<n = below noted practical laboratory quantitation limits

Inf = Influent Sample

Eff = Effluent Sample

NC = Not calculated, insufficient data

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
MW-1	11/6/01	open	80	--	--	--	28
	11/12/01	open	125	--	--	--	28
	11/14/01	open	85	--	--	--	28
	11/21/01	open	95	--	--	--	28
	12/6/01	open	115	--	--	--	28
	12/19/01	open	110	--	--	--	25
	1/17/02	open	130	--	--	--	25
	2/4/02	open	105	--	--	--	28
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	open	130	--	--	--	21
	4/2/02	open	130	--	--	--	21
	4/5/02	open	135	50	--	--	21
	4/19/02	open	130	49	--	--	22
	5/6/02	open	100	42	--	--	22
	5/21/02	open	105	49	--	--	23.5
	6/19/02	open	90	42	--	--	24
	6/28/02	open	95	47	--	--	25
	7/10/02	open	97	41	--	--	25
	7/26/02	closed	--	--	--	--	--
	8/6/02	open	--	--	--	--	21.5
	8/26/02	open	95	47	--	--	21.5
	9/16/02	open	105	--	--	--	21.5
	9/20/02	open	85	40	--	--	21.5
	10/2/02	open	75	22	--	--	21.5
	10/11/02	open	110	32	--	--	21.5
	10/16/02	open	125	103	5.0	1475	21.5
	10/31/02	open	150	70	--	--	21.5
	11/6/02	open	155	101	--	--	21.5
	11/22/02	open	145-160	115	--	--	21.5
	12/5/02	open	140	91	--	--	21.5
	12/20/02	open	>150	--	--	--	19.5
	1/8/03	open	>150	135	--	--	19.5
	1/13/03	closed	>150	140	6.0	80	20
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	open	>150	150	--	--	21
	2/4/03	open	>150	140	--	--	21
	2/12/03	open	140	--	--	--	21
	3/4/03	open	150	110	--	--	21
	3/13/03	open	>150	150	--	--	21
	3/17/03	open	>150	--	--	--	21
	3/25/03	open	>150	130	--	--	21
	4/2/03	open	>150	>150	--	--	21

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
MW-2	11/6/01	open	80	--	--	--	27
	11/12/01	open	125	--	--	--	27
	11/14/01	open	85	--	--	--	27
	11/21/01	open	95	--	--	--	27
	12/6/01	open	115	--	--	--	28
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	open	105	--	--	--	28
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	open	130	--	--	--	21
	4/2/02	open	130	--	--	--	21
	4/5/02	open	135	70	--	--	21
	4/19/02	open	130	55	--	--	22
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	open	95	52	--	--	22
	7/10/02	open	97	51	--	--	22
	7/26/02	open	92	19	--	--	25.5
	8/6/02	open	--	--	--	--	21.5
	8/26/02	open	95	35	--	--	21.5
	9/16/02	open	105	--	--	--	21.5
	9/20/02	open	85	30	--	--	21.5
	10/2/02	open	75	72	--	--	21.5
	10/11/02	open	110	60	--	--	21.5
	10/16/02	open	125	108	8.5	2030	21.5
	10/31/02	open	150	65	--	--	21.5
	11/6/02	open	155	95	--	--	21.5
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	open	>150	130	5.0	385	19
	1/22/03	open	>150	--	--	--	19
	1/24/03	open	>150	140	--	--	20
	1/30/03	open	>150	120	--	--	20
	2/4/03	open	>150	75	--	--	21
	2/12/03	open	140	--	--	--	21
	3/4/03	open	150	93	--	--	21
	3/13/03	open	>150	140	--	--	20
	3/17/03	open	>150	--	--	--	20
	3/25/03	open	>150	97	--	--	19
	4/2/03	open	>150	130	--	--	19

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
MW-3	11/6/01	open	80	--	--	--	25
	11/12/01	open	125	--	--	--	25
	11/14/01	open	85	--	--	--	25
	11/21/01	open	95	--	--	--	25
	12/6/01	open	115	--	--	--	25
	12/19/01	open	110	--	--	--	25
	1/17/02	open	130	--	--	--	25
	2/4/02	open	105	--	--	--	25
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	open	100	28	--	--	20
	5/21/02	open	105	7	--	--	22
	6/19/02	open	90	10	--	--	24
	6/28/02	open	95	11	--	--	24
	7/10/02	open	97	6	--	--	23
	7/26/02	open	92	7	--	--	23
	8/6/02	open	--	--	--	--	19
	8/26/02	open	95	44	--	--	19
	9/16/02	open	105	--	--	--	19
	9/20/02	open	85	50	--	--	19
	10/2/02	open	75	29	--	--	19
	10/31/02	open	110	25	--	--	19
	10/16/02	open	125	115	17	1286	19
	10/31/02	open	150	70	--	--	19
	11/6/02	open	155	89	--	--	19
	11/22/02	open	145-160	92	--	--	19
	12/5/02	open	140	86	--	--	19.5
	12/20/02	open	>150	--	--	--	18
	1/8/03	open	>150	145	--	--	18
	1/13/03	open	>150	150	5.6	700	17
	1/22/03	open	>150	--	--	--	17
	1/24/03	open	>150	>150	--	--	17
	1/30/03	open	>150	>150	--	--	17
	2/4/03	open	>150	140	--	--	18
	2/12/03	open	140	--	--	--	18
	3/4/03	open	150	120	--	--	18
	3/13/03	open	>150	>150	--	--	18
	3/17/03	open	>150	--	--	--	18
	3/25/03	open	>150	145	--	--	18
	4/2/03	open	>150	>150	--	--	18



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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
MW-4	11/6/01	open	80	--	--	--	25
	11/12/01	open	125	--	--	--	25
	11/14/01	open	85	--	--	--	25
	11/21/01	open	95	--	--	--	25
	12/6/01	open	115	--	--	--	25
	12/19/01	open	110	--	--	--	25
	1/17/02	open	130	--	--	--	25
	2/4/02	open	105	--	--	--	25
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	open	100	26	--	--	20
	5/21/02	open	105	31	--	--	21
	6/19/02	open	90	26	--	--	21
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	open	92	14	--	--	24.5
	8/6/02	open	--	--	--	--	19
	8/26/02	open	95	39	--	--	19
	9/16/02	open	105	--	--	--	19
	9/20/02	open	85	35	--	--	19
	10/2/02	open	75	34	--	--	19
	10/11/02	open	110	31	--	--	19
	10/16/02	open	125	100	4.7	1780	19
	10/31/02	open	150	60	--	--	19
	11/6/02	open	155	82	--	--	19
	11/22/02	open	145-160	82	--	--	19
	12/5/02	open	140	77	--	--	19.5
	12/20/02	open	>150	--	--	--	18
	1/8/03	open	>150	130	--	--	18
	1/13/03	closed	>150	130	6.5	150	17
	1/22/03	closed	>150	--	--	--	--
	1/24/03	open	>150	130	--	--	19
	1/30/03	open	>150	135	--	--	19
	2/4/03	open	>150	120	--	--	19
	2/12/03	open	140	--	--	--	19
	3/4/03	open	150	104	--	--	19
	3/13/03	open	>150	150	--	--	19
	3/17/03	open	>150	--	--	--	19
	3/25/03	open	>150	110	--	--	19
	4/2/03	open	>150	150	--	--	19

# CAMBRIA

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
RW-5	5/24/00	--	80	--	--	--	11.64
	10/6/00	--	100	--	--	--	--
	11/29/00	open	>100	--	--	4320	--
	3/29/01	open	54	--	--	650	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	15
	5/3/01	open	80	--	--	--	15
	5/23/01	open	10	--	--	--	15
	6/4/01	open	50	--	--	--	15
	6/21/01	open	65	--	--	--	15
	7/2/01	open	55	--	--	--	15
	7/16/01	open	45	--	--	--	16
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	open	110	--	--	--	20
	1/17/02	open	130	--	--	--	20
	2/4/02	closed	--	--	--	--	--
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	open	130	--	--	--	16
	4/2/02	open	130	--	--	--	16
	4/5/02	open	135	90	--	--	16
	4/19/02	open	130	72	--	--	18
	5/6/02	open	100	43	--	--	18
	5/21/02	open	105	55	--	--	19
	6/19/02	open	90	33	--	--	19.5
6/28/02	open	95	48	--	--	20	
7/10/02	closed	--	--	--	--	--	
7/26/02	closed	--	--	--	--	--	
8/6/02	open	--	--	--	--	19	
8/26/02	open	95	27	--	--	19	
9/16/02	open	105	--	--	--	19	
9/20/02	open	85	22	--	--	19	
10/2/02	open	75	32	--	--	19	
10/11/02	open	110	28	--	--	19	
10/16/02	open	125	38	62	240	19	
10/31/02	open	150	44	--	--	19	
11/6/02	open	155	50	--	--	19	
11/22/02	open	145-160	26	--	--	20	

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
-->RW-5	12/5/02	open	140	26	--	--	20
	12/20/02	open	>150	--	--	--	18
	1/8/03	open	>150	130	--	--	18
	1/13/03	open	>150	115	5.5	1750	17
	1/22/03	open	>150	--	--	--	17
	1/24/03	open	>150	140	--	--	17
	1/30/03	open	>150	140	--	--	17
	2/4/03	open	>150	128	--	--	18
	2/12/03	open	140	--	--	--	18
	3/4/03	open	150	105	--	--	18
	3/13/03	open	>150	145	--	--	18
	3/17/03	open	>150	--	--	--	18
	3/25/03	open	>150	90	--	--	18
	4/2/03	open	>150	125	--	--	18
	RW-6	5/24/00	--	80	--	--	--
10/6/00		--	--	--	--	--	--
11/29/00		open	>100	--	--	260	--
3/29/01		open	54	--	--	2050	--
4/14/01		open	100	--	--	--	20
4/26/01		closed	--	--	--	--	--
5/3/01		closed	--	--	--	--	--
5/23/01		closed	--	--	--	--	--
6/4/01		open	50	--	--	--	15
6/21/01		open	65	--	--	--	15
7/2/01		open	55	--	--	--	15
7/16/01		open	45	--	--	--	16
8/2/01		open	35	--	--	--	--
8/10/01		open	20	--	--	--	--
8/15/01		open	20	--	--	--	--
8/27/01		open	65	--	--	--	--
9/7/01		closed	--	--	--	--	--
9/14/01		closed	--	--	--	--	--
10/3/01		closed	--	--	--	--	--
10/8/01		closed	--	--	--	--	--
10/22/01		closed	--	--	--	--	--
10/29/01		closed	--	--	--	--	--
11/6/01		closed	--	--	--	--	--
11/12/01		closed	--	--	--	--	--
11/14/01		closed	--	--	--	--	--
11/21/01		closed	--	--	--	--	--
12/6/01		closed	--	--	--	--	--
12/19/01		closed	--	--	--	--	--
1/17/02		closed	--	--	--	--	--
2/4/02		closed	--	--	--	--	--
2/14/02	closed	--	--	--	--	--	
3/5/02	closed	--	--	--	--	--	
3/11/02	open	130	--	--	--	16	
3/25/02	open	130	--	--	--	16	
4/2/02	open	12	--	--	--	16	
4/5/02	open	135	85	--	--	16	
4/19/02	open	130	75	--	--	18	
5/6/02	closed	--	--	--	--	--	

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	closed	--	--	--	--	--
	7/10/02	open	97	54	--	--	20
	7/26/02	open	92	39	--	--	20
	8/6/02	open	--	--	--	--	19
-->RW-6	8/26/02	open	95	34	--	--	19
	9/16/02	open	105	--	--	--	19
	9/20/02	open	85	45	--	--	19
	10/2/02	open	75	30	--	--	19
	10/11/02	open	110	--	--	--	19
	10/16/02	open	125	54	34	644	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	open	145-160	70	--	--	19.5
	12/5/02	open	140	69	--	--	19.5
	12/20/02	open	>150	--	--	--	18
	1/8/03	open	>150	135	--	--	18
	1/13/03	open	>150	110	4.5	1550	17
	1/22/03	open	>150	--	--	--	17
	1/24/03	open	>150	150	--	--	17
	1/30/03	open	>150	140	--	--	17
	2/4/03	open	>150	125	--	--	18
	2/12/03	open	140	--	--	--	18
	3/4/03	open	150	108	--	--	18
	3/13/03	open	>150	150	--	--	18
	3/17/03	open	>150	--	--	--	18
	3/25/03	open	>150	110	--	--	18
	4/2/03	open	>150	145	--	--	18
RW-7	5/24/00	--	80	--	--	--	12.5
	10/6/00	--	--	--	--	--	--
	11/29/00	open	>100	--	--	0	--
	3/29/01	open	54	--	--	52	--
	4/14/01	open	100	--	--	--	20
	4/26/01	open	85	--	--	--	15
	5/3/01	open	80	--	--	--	15
	5/23/01	open	10	--	--	--	15
	6/4/01	open	50	--	--	--	15
	6/21/01	open	65	--	--	--	15
	7/2/01	open	55	--	--	--	15
	7/16/01	open	45	--	--	--	16
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
-->RW-7	3/11/02	closed	--	--	--	--	--
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	closed	--	--	--	--	--
	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	closed	125	19	35	36	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	closed	>150	135	4.5	25	17
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	closed	--	--	--	--	--
	2/4/03	closed	--	--	--	--	--
	2/12/03	closed	--	--	--	--	--
	3/4/03	closed	--	--	--	--	--
	3/13/03	closed	--	--	--	--	--
	3/17/03	closed	--	--	--	--	--
	3/25/03	closed	--	--	--	--	--
	4/2/03	closed	--	--	--	--	--
RW-8	5/24/00	--	--	--	--	--	--
	10/6/00	--	--	--	--	--	--
	11/29/00	open	>100	--	--	44	--
	3/29/01	open	54	--	--	60	--
	4/14/01	open	100	--	--	--	20
	4/26/01	open	85	--	--	--	15
	5/3/01	open	80	--	--	--	15
	5/23/01	open	10	--	--	--	15

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	6/4/01	open	50	--	--	--	15
	6/21/01	open	65	--	--	--	--
	7/2/01	open	55	--	--	--	--
	7/16/01	open	45	--	--	--	--
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
-->RW-8	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	18
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	closed	--	--	--	--	--
	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	open	125	33	29	15	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	closed	>150	140	4.0	5	18
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	closed	--	--	--	--	--
	2/4/03	closed	--	--	--	--	--

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
	2/12/03	closed	--	--	--	--	--
	3/4/03	closed	--	--	--	--	--
	3/13/03	closed	--	--	--	--	--
	3/17/03	closed	--	--	--	--	--
	3/25/03	closed	--	--	--	--	--
	4/2/03	closed	--	--	--	--	--
RW-9	5/24/00	--	--	--	--	--	12.5
	10/6/00	--	--	--	--	--	--
	11/29/00	--	>100	--	--	43	--
	3/29/01	open	54	--	--	90	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	--
	5/3/01	open	80	--	--	--	--
	5/23/01	open	10	--	--	--	--
-->RW-9	6/4/01	open	50	--	--	--	--
	6/21/01	open	65	--	--	--	--
	7/2/01	open	55	--	--	--	--
	7/16/01	open	45	--	--	--	--
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	open	125	--	--	--	20
	3/5/02	open	115	--	--	--	20
	3/11/02	closed	--	--	--	--	--
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	open	100	38	--	--	20
	5/21/02	open	105	56	--	--	20
	6/19/02	open	90	47	--	--	20
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	open	--	--	--	--	19
	8/26/02	open	95	15	--	--	19
	9/16/02	closed	--	--	--	--	--

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	closed	125	12	56	12	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	open	>150	120	--	--	16
	1/13/03	open	>150	150	4.0	225	17
-->RW-9	1/22/03	open	>150	--	--	--	17
	1/24/03	open	>150	>150	--	--	17
	1/30/03	open	>150	140	--	--	17
	2/4/03	open	>150	135	--	--	17
	2/12/03	open	140	--	--	--	17
	3/4/03	open	150	105	--	--	17
	3/13/03	open	>150	>150	--	--	18
	3/17/03	open	>150	--	--	--	18
	3/25/03	open	>150	120	--	--	18
	4/2/03	open	>150	>150	--	--	18
RW-10	5/24/00	--	--	--	--	--	--
	10/6/00	--	--	--	--	--	--
	11/29/00	--	>100	--	--	>10,000	--
	3/29/01	open	54	--	--	850	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	--
	5/3/01	open	80	--	--	--	--
	5/23/01	open	10	--	--	--	--
	6/4/01	open	50	--	--	--	--
	6/21/01	open	65	--	--	--	--
	7/2/01	open	55	--	--	--	--
	7/16/01	open	45	--	--	--	--
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	open	125	--	--	--	20



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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	3/5/02	open	115	--	--	--	20
	3/11/02	open	--	--	--	--	20
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	open	100	31	--	--	20
	5/21/02	open	105	70	--	--	20
	6/19/02	open	90	56	--	--	20
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	open	--	--	--	--	19
	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	closed	125	38	48	18	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
-->RW-10	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	closed	>150	135	3.2	90	17
	1/22/03	closed	--	--	--	--	--
	1/24/03	open	>150	>150	--	--	16
	1/30/03	open	>150	>150	--	--	16
	2/4/03	open	>150	>150	--	--	16
	2/12/03	open	140	--	--	--	16
	3/4/03	open	150	139	--	--	16
	3/13/03	open	>150	>150	--	--	16
	3/17/03	open	>150	--	--	--	16
	3/25/03	open	>150	>150	--	--	16
	4/2/03	open	>150	>150	--	--	16
RW-11	5/24/00	--	80	--	--	--	11.65
	10/6/00	--	--	--	--	--	--
	11/29/00	--	>100	--	--	2280	--
	3/29/01	open	54	--	--	784	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	15
	5/3/01	open	80	--	--	--	15
	5/23/01	open	10	--	--	--	15
	6/4/01	open	50	--	--	--	20
	6/21/01	open	65	--	--	--	15
	7/2/01	open	55	--	--	--	15
	7/16/01	open	45	--	--	--	16
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--

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Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	open	--	--	--	--	18
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
-->RW-11	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	closed	--	--	--	--	--
	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	closed	125	86	24	255	19
	10/31/02	open	150	62	--	--	19
	11/6/02	open	155	45	--	--	19
	11/22/02	open	145-160	77	--	--	19.5
	12/5/02	open	140	65	--	--	19.5
	12/20/02	open	>150	--	--	--	18
	1/8/03	open	>150	110	--	--	18
	1/13/03	open	>150	125	7.0	180	16
	1/22/03	open	>150	--	--	--	17
	1/24/03	open	>150	155	--	--	17
	1/30/03	open	>150	150	--	--	17
	2/4/03	open	>150	142	--	--	17
	2/12/03	open	140	--	--	--	17
	3/4/03	open	150	106	--	--	17
	3/13/03	open	>150	155	--	--	17
	3/17/03	open	>150	--	--	--	17
	3/25/03	open	>150	115	--	--	17
	4/2/03	open	>150	148	--	--	17

# CAMBRIA

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
RW-12	5/24/00	--	--	--	--	--	--
	10/6/00	--	--	--	--	--	--
	11/29/00	open	>100	--	--	24	--
	3/29/00	open	54	--	--	72	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	15
	5/3/01	open	80	--	--	--	15
	5/23/01	open	10	--	--	--	15
	6/4/01	open	50	--	--	--	15
	6/21/01	open	65	--	--	--	15
	7/2/01	open	55	--	--	--	15
	7/16/01	open	45	--	--	--	16
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	closed	--	--	--	--	--
	3/5/02	closed	--	--	--	--	--
	3/11/02	closed	--	--	--	--	--
	3/25/02	open	130	--	--	--	16
	4/2/02	open	130	--	--	--	16
	4/5/02	open	135	97	--	--	16
	4/19/02	open	130	75	--	--	18
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	open	95	16	--	--	20
	7/10/02	open	97	5	--	--	20
	7/26/02	open	92	5	--	--	20
	8/6/02	open	--	--	--	--	19
	8/26/02	open	95	6	--	--	19
	9/16/02	open	105	--	--	--	19
	9/20/02	open	85	6	--	--	19
	10/2/02	open	75	4	--	--	19
	10/11/02	open	110	4	--	--	19
	10/16/02	closed	125	1	20	75	19
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--

# CAMBRIA

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger	Well Annulus	Flow Rate (cfm)	Hydrocarbon	Stinger Depth (ft below TOC)
			Vacuum (inches of H2O)	Vacuum (inches of H2O)		Vapor Concentration (ppmv)	
-->RW-12	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	closed	>150	115	4.5	20	17
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	open	>150	145	--	--	17
	2/4/03	open	>150	135	--	--	17
	2/12/03	open	140	--	--	--	17
	3/4/03	open	150	115	--	--	17
	3/13/03	open	>150	>150	--	--	17
	3/17/03	open	>150	--	--	--	17
	3/25/03	open	>150	150	--	--	17
	4/2/03	open	>150	>150	--	--	17
RW-13	5/24/00	--	80	--	--	--	12.59
	10/6/00	--	--	--	--	--	--
	11/29/00	--	>100	--	--	77	--
	3/29/01	open	54	--	--	124	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	--
	5/3/01	open	80	--	--	--	--
	5/23/01	open	10	--	--	--	--
	6/4/01	open	50	--	--	--	--
	6/21/01	open	65	--	--	--	--
	7/2/01	open	55	--	--	--	--
	7/16/01	open	45	--	--	--	--
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
2/14/02	open	125	--	--	--	20	
3/5/02	open	115	--	--	--	20	
3/11/02	open	--	--	--	--	16	
3/25/02	closed	--	--	--	--	--	
4/2/02	closed	--	--	--	--	--	
4/5/02	closed	--	--	--	--	--	
4/19/02	closed	--	--	--	--	--	
5/6/02	closed	--	--	--	--	--	

# CAMBRIA

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	closed	--	--	--	--	--
-->RW-13	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	closed	125	29	41	7	21.5
	10/31/02	closed	--	--	--	--	--
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	closed	--	--	--	--	--
	1/13/03	closed	>150	110	8.0	2	16
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	closed	--	--	--	--	--
	2/4/03	closed	--	--	--	--	--
	2/12/03	closed	--	--	--	--	--
	3/4/03	closed	--	--	--	--	--
	3/13/03	closed	--	--	--	--	--
	3/17/03	closed	--	--	--	--	--
	3/25/03	closed	--	--	--	--	--
	4/2/03	closed	--	--	--	--	--
RW-14	5/24/00	--	80	--	--	--	12.33
	10/6/00	--	100	--	--	--	--
	11/29/00	--	>100	--	--	5830	--
	3/29/01	open	54	--	--	120	--
	4/14/01	open	100	--	--	--	--
	4/26/01	open	85	--	--	--	--
	5/3/01	open	80	--	--	--	--
	5/23/01	open	10	--	--	--	--
	6/4/01	open	50	--	--	--	--
	6/21/01	open	65	--	--	--	--
	7/2/01	open	55	--	--	--	--
	7/16/01	open	45	--	--	--	--
	8/2/01	open	35	--	--	--	--
	8/10/01	open	20	--	--	--	--
	8/15/01	open	20	--	--	--	--
	8/27/01	open	65	--	--	--	--
	9/7/01	closed	--	--	--	--	--
	9/14/01	closed	--	--	--	--	--
	10/3/01	closed	--	--	--	--	--
	10/8/01	closed	--	--	--	--	--
	10/22/01	closed	--	--	--	--	--
	10/29/01	closed	--	--	--	--	--
	11/6/01	closed	--	--	--	--	--

# CAMBRIA

Table 4. TPE Well Parameters - Former Exxon Service Station, 3055 35th Avenue, Oakland, California

Well ID	Date	Well Status (open/closed)	System/Stinger Vacuum (inches of H2O)	Well Annulus Vacuum (inches of H2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
	11/12/01	closed	--	--	--	--	--
	11/14/01	closed	--	--	--	--	--
	11/21/01	closed	--	--	--	--	--
	12/6/01	closed	--	--	--	--	--
	12/19/01	closed	--	--	--	--	--
	1/17/02	closed	--	--	--	--	--
	2/4/02	closed	--	--	--	--	--
	2/14/02	open	125	--	--	--	20
	3/5/02	open	115	--	--	--	20
-->RW-14	3/11/02	closed	--	--	--	--	--
	3/25/02	closed	--	--	--	--	--
	4/2/02	closed	--	--	--	--	--
	4/5/02	closed	--	--	--	--	--
	4/19/02	closed	--	--	--	--	--
	5/6/02	closed	--	--	--	--	--
	5/21/02	closed	--	--	--	--	--
	6/19/02	closed	--	--	--	--	--
	6/28/02	closed	--	--	--	--	--
	7/10/02	closed	--	--	--	--	--
	7/26/02	closed	--	--	--	--	--
	8/6/02	closed	--	--	--	--	--
	8/26/02	closed	--	--	--	--	--
	9/16/02	closed	--	--	--	--	--
	9/20/02	closed	--	--	--	--	--
	10/2/02	closed	--	--	--	--	--
	10/11/02	closed	--	--	--	--	--
	10/16/02	open	125	80	14	535	19
	10/31/02	open	150	18	--	--	19
	11/6/02	closed	--	--	--	--	--
	11/22/02	closed	--	--	--	--	--
	12/5/02	closed	--	--	--	--	--
	12/20/02	closed	--	--	--	--	--
	1/8/03	open	>150	140	--	--	14
	1/13/03	closed	>150	90	7.0	35	16
	1/22/03	closed	--	--	--	--	--
	1/24/03	closed	--	--	--	--	--
	1/30/03	closed	--	--	--	--	--
	2/4/03	closed	--	--	--	--	--
	2/12/03	closed	--	--	--	--	--
	3/4/03	closed	--	--	--	--	--
	3/13/03	closed	--	--	--	--	--
	3/17/03	closed	--	--	--	--	--
	3/25/03	closed	--	--	--	--	--
	4/2/03	closed	--	--	--	--	--

Notes:

-- = Data not available or not collected

C A M B R I A



**APPENDIX A**

Groundwater Monitoring Field Data Sheets

### Groundwater Monitoring Field Sheet

Well ID	Time	DTP	DTW	Product Thickness	Amount of Product Removed	Casing Diam.	Comment
MW-1	9:05		14.80				
MW-2	9:10		13.60				
MW-3	9:20		11.43				
MW-4	9:15		11.75				

Project Name: Worthington

Project Number/Task: 130-0105 /

Measured By: A. Hill

Date: 1-13-03



WELL SAMPLING FORM

Project Name: <u>Northington</u>	Cambria Mgr: <u>RAS</u>	Well ID: <u>MW-1</u>
Project Number: <u>130-0105</u>	Date: <u>1-13-03</u>	Well Yield:
Site Address: <u>3055 35<sup>th</sup> St.</u> <u>Oakland, Ca</u>	Sampling Method: <u>Disposable Bailers</u>	Well Diameter: <u>4" pvc</u>
		Technician(s): <u>SA</u>
Initial Depth to Water: <u>14.80</u>	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: <u>Remediation System</u>	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

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
					<u>15 min purge with system</u>

Fe =                      mg/L                      ORP =                      mV                      DO = 0.33 mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-1</u>	<u>1-13-03</u>	<u>9:50</u>	<u>3VOA</u> <u>1Amb</u>	<u>HCl</u>	<u>TPMg BTEx MTBB</u> <u>TPMg</u>	<u>8015/8020</u> <u>8260</u>

WELL SAMPLING FORM

Project Name: <u>Northington</u>	Cambria Mgr: <u>RAS</u>	Well ID: <u>MW-2</u>
Project Number: <u>130-0105</u>	Date: <u>1-13-03</u>	Well Yield:
Site Address: <u>3055 35<sup>th</sup> St. Oakland, Ca</u>	Sampling Method: <u>Disposable Bailers</u>	Well Diameter: <u>4" pvc</u>
		Technician(s): <u>SA</u>
Initial Depth to Water: <u>13.60</u>	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: <u>Remediation System</u>	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

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
					<u>15 min purge with system</u>

Fe =                      mg/L                      ORP =                      mV                      DO = 0.39 mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-2</u>	<u>1-13-03</u>	<u>10:05</u>	<u>3VOA 1Amb</u>	<u>HCl</u>	<u>TPMg BTEX MTBE TPMh</u>	<u>8015/8020 8260</u>

WELL SAMPLING FORM

Project Name: <u>Westhington</u>	Cambria Mgr: <u>RAS</u>	Well ID: <u>MW-3</u>
Project Number: <u>130-0105</u>	Date: <u>1-13-03</u>	Well Yield:
Site Address: <u>3055 35<sup>th</sup> St. Oakland, Ca</u>	Sampling Method: <u>Disposable Bailers</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>Sh</u>
Initial Depth to Water: <u>11.43</u>	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: <u>Radiation System</u>	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

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
					<u>15 min purge with system</u>

Fe =                      mg/L                      ORP =                      mV                      DO = 0.31 mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-3</u>	<u>1-13-03</u>	<u>10:20</u>	<u>3VOA 1Amb</u>	<u>HCl</u>	<u>TPMg BTEX MTGB TPMg</u>	<u>8015/8026 8260</u>

WELL SAMPLING FORM

Project Name: <u>Westington</u>	Cambria Mgr: <u>RAS</u>	Well ID: <u>MW-4</u>
Project Number: <u>130-0105</u>	Date: <u>1-13-03</u>	Well Yield:
Site Address: <u>3055 35<sup>th</sup> St.</u> <u>Oakland, Ca</u>	Sampling Method: <u>Disposable Bailers</u>	Well Diameter: <u>2" pvc</u>
		Technician(s): <u>SA</u>
Initial Depth to Water: <u>11.75</u>	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: <u>Radiation System</u>	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

Time	Casing Volume	Temp. (°C)	pH	Cond. (uS)	Comments
					<u>15 min purge with system</u>

Fe =                      mg/L                      ORP =                      mV                      DO = 0.28 mg/L

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
<u>MW-4</u>	<u>1-13-03</u>	<u>10:35</u>	<u>3000</u> <u>1 Amb</u>	<u>HCl</u>	<u>TPH, BTEX, MTBE</u> <u>TPHd</u>	<u>8015/8020</u> <u>8260</u>

McCAMPBELL ANALYTICAL INC.

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

**FILE COPY**

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME:

RUSH 24 HOUR 48 HOUR 5 DAY

EDF Required?  Yes  No

Report To: Ron Scheels Bill To: Cambria Env. Tech

Company: Cambria Environmental Technology Inc.

6262 Hollis Street

Emeryville, CA 94608

E-mail:

Tele: 510-450-1983

Fax: 510-450-8295

Project #: 130-0105

Project Name: Northington

Project Location: 3055 35<sup>th</sup> St. Oakland, Ca

Sampler Signature: S. Hall

Analysis Request

Other

Comments

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other					
MW-1		1-13-03	9:50	4	250ml	X					X	X							
MW-2		1-13-03	10:05	4	250ml	X					X	X							
MW-3		1-13-03	10:20	4	250ml	X					X	X							
MW-4		1-13-03	10:35	4	250ml	X					X	X							

BTEX & TPH as Gas (602/8020 + 8015) / MTBE	
TPH as Diesel (8015) with Silicagel cleanup	
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	

Relinquished By: <u>S. Hall</u>	Date: <u>1-14-03</u>	Time: <u>5:30</u>	Received By: <u>secure location</u>
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

C A M B R I A



**APPENDIX B**

Analytical Results for Quarterly Groundwater Sampling



McC Campbell 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 Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/13/03
		Date Received: 01/14/03
	Client Contact: Ron Scheele	Date Reported: 01/17/03
	Client P.O.:	Date Completed: 01/17/03

**WorkOrder: 0301156**

January 17, 2003

Dear Ron:

Enclosed are:

- 1). the results of 4 analyzed samples from your #130-0105; **Worthington 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



Cambria Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #I30-0105; Worthington	Date Sampled: 01/13/03
		Date Received: 01/14/03
	Client Contact: Ron Scheele	Date Extracted: 01/15/03
	Client P.O.:	Date Analyzed: 01/15/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0301156

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	20,000,a	ND<500	2300	480	300	2100	100	103
002A	MW-2	W	32,000,a,h	ND<1000	4500	1600	920	3600	100	109
003A	MW-3	W	21,000,a,h	ND<500	2400	2300	390	3000	100	92.8
004A	MW-4	W	35,000,a,h	ND<800	5100	1500	510	4500	100	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.





McC Campbell Analytical Inc.

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

Cambria Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/13/03
		Date Received: 01/14/03
	Client Contact: Ron Scheele	Date Extracted: 01/14/03
	Client P.O.:	Date Analyzed: 01/15/03-01/16/03

**Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up\***

Extraction method: SW3510C

Analytical methods: SW8015C

Work Order: 0301156


Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0301156-001B	MW-1	W	5300,d,b	1	97.4
0301156-002B	MW-2	W	14,000,d,b,g,h	1	98.8
0301156-003B	MW-3	W	6300,d,b,g,h	1	112
0301156-004B	MW-4	W	15,000,d,b,g,h	1	102

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

\* water and vapor samples are reported in µg/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all TCLP / STLC / SPLP extracts in µg/L

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent / mineral spirit.

 Edward Hamilton, Lab Director



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0301156

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5623			Spiked Sample ID: N/A			
Compound	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(gas)	N/A	60	N/A	N/A	N/A	93.1	99.6	6.83	80	120
MTBE	N/A	10	N/A	N/A	N/A	88.8	92.2	3.76	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.3	98.3	3.11	80	120
Toluene	N/A	10	N/A	N/A	N/A	97.2	103	6.01	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	95.2	99.3	4.26	80	120
Xylenes	N/A	30	N/A	N/A	N/A	99.7	103	3.61	80	120
%SS:	N/A	100	N/A	N/A	N/A	94.6	93.3	1.40	80	120

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.

N/A = 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.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



McC Campbell 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)

### QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0301156

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 5624		Spiked Sample ID: N/A			
Compound	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(d)	N/A	7500	N/A	N/A	N/A	101	102	0.184	70	130
%SS:	N/A	100	N/A	N/A	N/A	94.3	94	0.382	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.

N/A = 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.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

date

0301156

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7  
PACHECO, CA 94553-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME:

RUSH 24 HOUR 48 HOUR 5 DAY

EDF Required?  Yes  No

Report To: **Ron Scheels** Bill To: **Cambria Env. Tech**  
Company: Cambria Environmental Technology Inc.  
6262 Hollis Street  
Emeryville, CA 94608 E-mail:  
Tele: 510-450-1983 Fax: 510-450-8295  
Project #: **130-0105** Project Name: **Worthington**  
Project Location: **3055 35th St. Oakland, Ca**  
Sampler Signature: **S. Mall**

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other			
MW-1		1-13-03	9:50	4	40ml Amber	X						X	X				
MW-2		1-13-03	10:05	4	40ml Amber	X						X	X				
MW-3		1-13-03	10:20	4	40ml Amber	X						X	X				
MW-4		1-13-03	10:39	4	40ml Amber	X						X	X				

BTEX & TPH as Gas (602/8020 + 8015) / MTBE  
TPH as Diesel (8015) **with Silicagel cleanup**  
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

+  
+  
+  
+

Relinquished By: <b>S. Mall</b>	Date: <b>1-14-03</b>	Time: <b>5:30</b>	Received By: <b>secure location</b>
Relinquished By: <b>[Signature]</b>	Date: <b>01/14</b>	Time: <b>6:05</b>	Received By: <b>[Signature]</b>
Relinquished By: <b>[Signature]</b>	Date: <b>01/14</b>	Time: <b>14:30</b>	Received By: <b>[Signature]</b>

Remarks:

ICMPC	✓	TECHNICAL	✓	QA/QC	✓	DATA	✓
ANALYST SIGN	✓	LABORATORY	✓	CLIENT SIGN	✓	DATE	✓
PREPARED IN LAB	✓	RECEIVED IN LAB	✓	DATE	✓	TIME	✓

**McC Campbell Analytical Inc.**

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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0301156

Client:

Cambria Env. Technology  
 6262 Hollis St.  
 Emeryville, CA 94608

TEL: (510) 450-1983  
 FAX: (510) 450-8295  
 ProjectNo: #130-0105; Worthington  
 PO:

Date Received: 1/14/03  
 Date Printed: 1/14/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	<>	Requested Tests				
						SW8015C	8021B/8015			
0301156-001	MW-1	Water	1/13/03 9:50:00 AM		A	B	A			
0301156-002	MW-2	Water	1/13/03 10:05:00 AM			B	A			
0301156-003	MW-3	Water	1/13/03 10:20:00 AM			B	A			
0301156-004	MW-4	Water	1/13/03 10:35:00 AM			B	A			

Prepared by: Sonia 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.

C A M B R I A



**APPENDIX C**

Analytical Results for TPE System Operation



McC Campbell Analytical Inc.

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

Cambria Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/08/03
		Date Received: 01/10/03
	Client Contact: Ron Scheele	Date Reported: 01/17/03
	Client P.O.:	Date Completed: 01/17/03

**WorkOrder: 0301110**

January 17, 2003

Dear Ron:

Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105; **Worthington 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



McC Campbell 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

Cambria Env. Technology  6262 Hollis St.  Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/08/03
		Date Received: 01/10/03
	Client Contact: Ron Scheele	Date Extracted: 01/10/03-01/11/03
	Client P.O.:	Date Analyzed: 01/10/03-01/11/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0301110


Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	3500,a	140	120	300	48	700	2	102
002A	EFF-1	W	ND	ND	ND	ND	ND	ND	1	101

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 Edward Hamilton, Lab Director





**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0301110

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5600			Spiked Sample ID: 0301107-001A			
Compound	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(gas)	ND	60	104	107	3.73	100	96.7	3.33	80	120
MTBE	ND	10	103	92.7	10.6	90.5	94.3	4.09	80	120
Benzene	0.5772	10	100	98	2.02	97.1	103	5.99	80	120
Toluene	ND	10	101	101	0.0441	99.7	106	5.92	80	120
Ethylbenzene	0.93	10	91.7	93.3	1.57	95.4	98.4	3.17	80	120
Xylenes	ND	30	96.7	96.7	0	99.3	103	3.95	80	120
%SS:	115	100	102	103	1.16	91.6	97.9	6.61	80	120

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.

N/A = 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.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

CETE

0301110

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>ND</sup> AVENUE SOUTH, #102  
PACHICO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

Report To: Ron Scheele

Bill To: SAME

Company: Cambria Environmental Technology

6262 Hollis Street

Emeryville, CA 94608

Tele: (510) 450-1983

Fax: (510) 450-8295

Project #: 130-0105

Project Name: WORTHINGTON

Project Location: 3055 35<sup>TH</sup> AVE, OAKLAND, CA

Sampler Signature: *[Signature]*

**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME

RUSH  24 HOUR  48 HOUR  5 DAY

Analysis Request

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED		EPA 601/8010 TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/R&F)	Total Petroleum Hydrocarbons (418-1) EPA 801/8010	RTEX ONLY (EPA 602/8020)	EPA 508/8080	EPA 508/8080 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 (7240/7421/239/26010)	RCI											
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl																HNO <sub>3</sub>	Other							
INF	Oakland	1/8/03	3:30P	3	Ven	X					X	X																								
EFF-1	↓	↓	↓	3	Ven	X					X	X																								
EFF-2 (A)	↓	↓	↓	3	Ven	X					X	X																								

Relinquished By: <i>[Signature]</i>	Date: 1/8/03	Time: 3PM	Received By: <i>[Signature]</i>	Remarks:
Relinquished By: <i>[Signature]</i>	Date: 01/08/03	Time: 2:35	Received By: <i>[Signature]</i>	ONLY ANALYZE EFF-2 IF HCl's DETECTED EFF-1.
Relinquished By: <i>[Signature]</i>	Date: 01/08/03	Time: 3:45	Received By: <i>[Signature]</i>	FAX RESULTS PLEASE.

196



# McC Campbell Analytical Inc.



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0301110

**Client:**

Cambria Env. Technology  
6262 Hollis St.  
Emeryville, CA 94608

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #130-0105; Worthington  
PO:

Date Received: 1/10/03  
Date Printed: 1/10/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0301110-001	INF	Water	1/8/03 3:30:00 PM			A
0301110-002	EFF-1	Water	1/8/03 3:30:00 PM			A
0301110-003	EFF-2	Water	1/8/03 3:30:00 PM	<input checked="" type="checkbox"/>		A

Prepared by: Elisa Venegas

**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.



McC Campbell Analytical Inc.

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Telephone : 925-798-1620 Fax : 925-798-1622  
<http://www.mccampbell.com> E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/08/03
		Date Received: 01/10/03
	Client Contact: Ron Scheele	Date Reported: 01/14/03
	Client P.O.:	Date Completed: 01/15/03

**WorkOrder: 0301116**

January 15, 2003

Dear Ron:

Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105; Worthington 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



McC Campbell 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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 01/08/03
		Date Received: 01/10/03
	Client Contact: Ron Scheele	Date Extracted: 01/10/03-01/11/03
	Client P.O.:	Date Analyzed: 01/10/03-01/11/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm


Work Order: 0301116

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	1700,a	ND<15	23	30	4.4	37	10	112
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	93.4

ppm (mg/L) to ppmv (uL/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.  
# cluttered chromatogram; sample peak coelutes with surrogate peak.  
+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 Edward Hamilton, Lab Director



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0301116

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5604			Spiked Sample ID: 0301114-001A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	60	117	112	3.85	109	110	1.29	80	120
MTBE	ND	10	106	92.1	14.0	86.5	88.1	1.90	80	120
Benzene	ND	10	116	112	3.21	109	111	1.95	80	120
Toluene	ND	10	117	107	8.42	104	106	1.13	80	120
Ethylbenzene	ND	10	116	113	2.46	109	111	1.19	80	120
Xylenes	ND	30	113	110	2.99	103	107	3.17	80	120
%SS:	112	100	116	103	12.3	101	103	1.31	80	120

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.

N/A = 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.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

CETE

030116



### MCCAMPBELL ANALYTICAL INC.

110 2<sup>ND</sup> AVENUE SOUTH, #127  
PACHECO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

Report To: Ron Scheele

Bill To: SAME

Company: Cambria Environmental Technology

6262 Hollis Street

Emeryville, CA 94608

Tele: (510) 450-1983

Fax: (510) 450-8295

Project #: 130-0105-~~XXXX~~

Project Name: WORTHINGTON

Project Location: 3055 35<sup>TH</sup> AVE OAKLAND

Sampler Signature: *[Signature]*

### CHAIN OF CUSTODY RECORD

TURN AROUND TIME  RUSH  24 HOUR  48 HOUR  5 DAY

Analysis Request  Other  Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED		DTEX & TPH as Gas (602/8020) / 8015/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/R&F)	Total Petroleum Hydrocarbons (418.1)	EPA 801/8010	BTEX ONLY (EPA 602 / 80920)	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 <sub>3</sub>	Other	
INF	Oakland	1/4/03	6pm	1	Bag			X																								
EFF	Oakland	1/4/03	6pm	1	Bag			X																								

Relinquished By: *[Signature]* Date: 1/4/03 Time: 7pm Received By: *[Signature]* Remarks: *Sampled location Report in PPMV; 10 ppmv limit*

Relinquished By: *[Signature]* Date: 1/25/03 Time: 12:35 Received By: *[Signature]* *20ml injection volume*

Relinquished By: *[Signature]* Date: 5/10 Time: 2:40 Received By: *[Signature]* *PLEASE FAX RESULTS*

Sent By: McCampbell Analytical, Inc.; 1 925 798 4612; Sep-5-01 8:42AM; Page 2/2

**McC Campbell Analytical Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0301116

Client:

Cambria Env. Technology  
6262 Hollis St.  
Emeryville, CA 94608

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #130-0105; Worthington  
PO:

Date Received: 1/10/03

Date Printed: 1/10/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0301116-001	INF	Air	1/8/03 6:00:00 PM		A	
0301116-002	EFF	Air	1/8/03 6:00:00 PM		A	

Prepared by: Elisa Venegas

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.





McC Campbell Analytical Inc.

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

Cambria Env. Technology 5900 Hollis Street, Suite A Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 02/04/03
		Date Received: 02/05/03
	Client Contact: Ron Scheele	Date Reported: 02/12/03
	Client P.O.:	Date Completed: 02/12/03

**WorkOrder: 0302036**

February 12, 2003

Dear Ron:

Enclosed are:

- 1). the results of 3 analyzed samples from your #130-0105-350; Worthington 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



McC Campbell Analytical Inc.

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

Cambria Env. Technology  5900 Hollis Street, Suite A  Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 02/04/03
	Client Contact: Ron Scheele	Date Received: 02/05/03
	Client P.O.:	Date Extracted: 02/06/03-02/11/03
		Date Analyzed: 02/06/03-02/11/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0302036

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	1100,a	---	51	74	14	190	5	88.5
002A	EFF-1	W	ND	---	ND	ND	ND	ND	1	99.1
003A	EFF-2	W	ND	---	ND	ND	ND	ND	1	95.6

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	μg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in μg/L, soil and sludge samples in mg/kg, wipe samples in μg/wipe, and TCLP extracts in μg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

*Angela Rydelius*, Lab Manager



**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0302036

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5805		Spiked Sample ID: N/A				
Compound	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(gas)	N/A	60	N/A	N/A	N/A	101	103	2.53	80	120
MTBE	N/A	10	N/A	N/A	N/A	83.2	90.3	8.12	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.2	97.8	2.69	80	120
Toluene	N/A	10	N/A	N/A	N/A	90.2	93.2	3.20	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	96.7	99.4	2.75	80	120
Xylenes	N/A	30	N/A	N/A	N/A	93	96.7	3.87	80	120
%SS:	N/A	100	N/A	N/A	N/A	95.4	95.7	0.335	80	120

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.

N/A = 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.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

9/2/03

0362036

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>ND</sup> AVENUE SOUTH, #107  
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: Ron Scheele

Bill To: SAME

Company: Cambria Environmental Technology

6262 Hollis Street

Emeryville, CA 94608

Tele: (510) 450-1983

Fax: (510) 450-8295

Project #: 130-0105 - 3530 Project Name: WORTHINGTON

Project Location: 3055 35<sup>TH</sup> AVE. OAKLAND CA

Sampler Signature:

**Analysis Request**

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other	
INF	Oakland	2/4/03	12pm	3	Voa	X						X	X		X
EFF-1	↓	2/4/03	12pm	3	Voa	X						X	X		X
EFF-2	↓	2/4/03	12pm	3	Voa	X						X	X		X

BTEX & TPH as Gas (802/809) (8013/8090)

TPH as Diesel (8015)

Total Petroleum Oil & Grease (5520 E&F/B&F)

Total Petroleum Hydrocarbons (418.1)

EPA 801/8010

HTEX 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

KEEP GOOD CONDITION  
HEAD SPACE ABSENT  
DECONTAMINATED IN LAB

PRESERVATION APPROPRIATE  
CONTAINERS PRESERVED IN LAB

VOAS | OAG | METALS | OTHER

Relinquished By:

Date: 2/5/03 Time: 11:20

Received By: Steve Dong 234

Relinquished By:

STEVE DONG

Date: 2/5/03 Time: 12:24

Received By: Melvin Vall

Relinquished By:

Date: Time:

Received By:

Remarks:

ONLY ANALYZE EFF-2 IF HCL'S DETECTED IN EFF-1.

FAX RESULTS PLEASE.

**McC Campbell Analytical Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0302036

Client:

Cambria Env. Technology  
5900 Hollis Street, Suite A  
Emeryville, CA 94608

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #130-0105-350; Worthington  
PO:

Date Received: 2/5/03  
Date Printed: 2/5/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0302036-001	INF	Water	2/4/03 12:00:00 PM			A
0302036-002	EFF-1	Water	2/4/03 12:00:00 PM			A
0302036-003	EFF-2	Water	2/4/03 12:00:00 PM	✓		A

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.



McC Campbell 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 Env. Technology 5900 Hollis Street, Suite A Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 02/04/03
	Client Contact: Ron Scheele	Date Received: 02/05/03
	Client P.O.:	Date Reported: 02/12/03
		Date Completed: 02/12/03

**WorkOrder: 0302035**

February 12, 2003

Dear Ron:

Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; Worthington 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



McC Campbell Analytical Inc.

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

Cambria Env. Technology  
5900 Hollis Street, Suite A  
Emeryville, CA 94608

Client Project ID: #130-0105-350;  
Worthington

Client Contact: Ron Scheele

Client P.O.:

Date Sampled: 02/04/03

Date Received: 02/05/03

Date Extracted: 02/05/03

Date Analyzed: 02/05/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with MTBE and BTEX in ppmv\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0302035

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	A	910,a	ND<15	20	22	3.8	28	4	114
002A	EFF	A	ND	ND	ND	ND	ND	ND	1	96


ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	10	1.5	0.15	0.15	0.15	0.25	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

 Angela Rydelius, Lab Manager



### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0302035

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 5805		Spiked Sample ID: N/A				
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD Acceptance Criteria (%)		
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	N/A	60	N/A	N/A	N/A	101	103	2.53	80	120
MTBE	N/A	10	N/A	N/A	N/A	83.2	90.3	8.12	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.2	97.8	2.69	80	120
Toluene	N/A	10	N/A	N/A	N/A	90.2	93.2	3.20	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	96.7	99.4	2.75	80	120
Xylenes	N/A	30	N/A	N/A	N/A	93	96.7	3.87	80	120
%SS:	N/A	100	N/A	N/A	N/A	95.4	95.7	0.335	80	120

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.

N/A = 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.

% Recovery =  $100 * (MS - Sample) / (Amount\ Spiked)$ ; RPD =  $100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.



040

0302035

### McCAMPBELL ANALYTICAL INC.

110 2<sup>ND</sup> AVENUE SOUTH, #122  
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: Ron Scheele Bill To: STATE

Company: Cambria Environmental Technology  
6262 Hollis Street  
Emeryville, CA 94608

Tele: (510) 450-1983 Fax: (510) 450-8295

Project #: 130-0105-350 Project Name: WORTHINGTON

Project Location: 3055 35<sup>TH</sup> AVE OAKLAND

Sampler Signature: [Signature]

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED									
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other						
INF	Oakland	2/4/03	11AM	1	Bag			X												
EFF	Oakland	2/4/03	11AM	1	Bag			X												

Analysis Request	Other	Comments
BTEX & TPH as Gas (802/8020, 8015) METDI TPH as Diesel (8015) Total Petroleum Oil & Grease (S320 E&F/R&F) Total Petroleum Hydrocarbons (418.4) EPA 501/8010 BTEX ONLY (EPA 602/8020) EPA 508/8080 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 (7240/7421/739 2/6010) RCI		

ICMA:  GOOD CONDITION  
 HEAD SPACE ABSENT  
 DECHLORINATED IN LAB

PRESERVATION:  APPROPRIATE  
 CONTAINERS  
 PRESERVED IN LAB

VOAS | OAG | METALS | OTHER

Relinquished By: [Signature] Date: 2/4/03 Time: 3pm Received By: Sealed Location

Relinquished By: [Signature] Date: 2/5/03 Time: 11:20 Received By: Steve Dong 234

Relinquished By: Steve Dong Date: 2/3/03 Time: 1224 Received By: [Signature]

Remarks:  
 REPORT IN PPMV ; 10 ppmv limit  
 20ml injection volume  
 PLEASE FAX RESULTS

**McC Campbell Analytical Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0302035

Client:

Cambria Env. Technology  
5900 Hollis Street, Suite A  
Emeryville, CA 94608

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #130-0105-350; Worthington  
PO:

Date Received: 2/5/03  
Date Printed: 2/5/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0302035-001	INF	Air	2/4/03 11:00:00 AM		A	
0302035-002	EFF	Air	2/4/03 11:00:00 AM		A	

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.

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 03/04/03
		Date Received: 03/05/03
	Client Contact: Gretchen Hellmann	Date Reported: 03/10/03
	Client P.O.:	Date Completed: 03/10/03

**WorkOrder: 0303048**

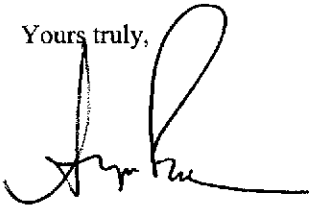
March 10, 2003

Dear Gretchen:

Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; **Worthington 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



McC Campbell 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

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 03/04/03
	Client Contact: Gretchen Hellmann	Date Received: 03/05/03
	Client P.O.:	Date Extracted: 03/07/03-03/08/03
		Date Analyzed: 03/07/03-03/08/03

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\***

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0303048

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	860,a	---	30	59	11	180	5	113
002A	EFF-1	W	ND	---	ND	ND	ND	ND	1	111

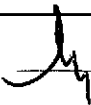
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\*water and vapor samples are reported in µg/L, soil and sludge samples in mg/kg, wipe samples in µg/wipe, and TCLP extracts in µg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

 Angela Rydelius, Lab Manager



McC Campbell Analytical Inc.

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

**QC SUMMARY REPORT FOR SW8021B/8015Cm**

Matrix: W

WorkOrder: 0303048

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6069			Spiked Sample ID: 0303041-004A			
Compound	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(gas)	ND	60	115	105	9.86	99.2	109	9.08	80	120
MTBE	ND	10	81.2	91	11.4	103	87.5	15.9	80	120
Benzene	ND	10	115	116	1.30	88.9	93	4.49	80	120
Toluene	ND	10	110	111	0.320	82.5	88.3	6.76	80	120
Ethylbenzene	ND	10	115	119	3.76	89.6	95.3	6.20	80	120
Xylenes	ND	30	120	120	0	87.3	92.7	5.93	80	120
%SS:	110	100	111	112	0.625	101	97.4	3.37	80	120

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.

N/A = 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.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / (MS + MSD) \* 2.

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

**McC Campbell Analytical Inc.**



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

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0303048

Client:

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

TEL: (510) 450-1983  
 FAX: (510) 450-8295  
 ProjectNo: #130-0105-350; Worthington  
 PO:

Date Received: 3/5/03

Date Printed: 3/5/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0303048-001	INF	Water	3/4/03 1:30:00 PM			A
0303048-002	EFF-1	Water	3/4/03 1:30:00 PM			A
0303048-003	EFF-2	Water	3/4/03 1:30:00 PM	✓		A

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.

CEP

0303048

### McCAMPBELL ANALYTICAL INC.

110 2<sup>ND</sup> AVENUE SOUTH, #D7  
PACHECO, CA 94533-5560

Telephone: (925) 798-1620

Fax: (925) 798-1622

### CHAIN OF CUSTODY RECORD

TURN AROUND TIME:

RUSH  24 HOUR  48 HOUR  5 DAY

EDF Required?  Yes  No

Report To: Gretchen Hellmann Bill To: SAME  
 Company: Cambria Environmental Technology, Inc.  
 5900 Hollis Street Suite A  
 Emeryville, CA 94608 E-mail: ghellmann@cambria-env.com  
 Tele: 510 420-3305 Fax: 510 420-9170  
 Project # 130-0105-350 Project Name: WORTHINGTON  
 Project Location: 3055 35<sup>TH</sup> Street, Oakland, CA  
 Sampler Signature: *[Signature]*

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED			
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other
+ INF	System	3/4/03	1:30p	3	V	X					X	X		
+ EFF-1	System	↓	↓	3	V	X					X	X		
+ EFF-2	System	↓	↓	3	V	X					X	X		

Analysis Request													Other	Comments	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
BTEX & TPH as Gas (602/8020 + 8015)	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	

ICEP  PRESERVATION APPROPRIATE CONTAINERS PRESERVED IN LAB  
 GOOD CONDITION   
 HEAD SPACE ABSENT   
 DECHLORINATED IN LAB

Relinquished By: *[Signature]* Date: 3/4/03 Time: 6pm Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: 3-5-03 Time: 11:25 Received By: *[Signature]*  
 Relinquished By: *[Signature]* Date: 3-5-03 Time: 2:00 Received By: *[Signature]*

Remarks: DO NOT ANALYZE OR REPORT RESULTS FOR MTBE  
 Only analyze EFF-2 if TPHg or BTEX is detected in EFF-1  
 Please FAX results.



McC Campbell Analytical Inc.

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

Cambria Env. Technology 5900 Hollis St, Suite A Emeryville, CA 94608	Client Project ID: #130-0105-350; Worthington	Date Sampled: 03/04/03
		Date Received: 03/05/03
	Client Contact: Gretchen Hellmann	Date Reported: 03/10/03
	Client P.O.:	Date Completed: 03/10/03

**WorkOrder: 0303045**

March 10, 2003

Dear Gretchen:

Enclosed are:

- 1). the results of 2 analyzed samples from your #130-0105-350; Worthington 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







McC Campbell 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

### QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: A

WorkOrder: 0303045

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 6069			Spiked Sample ID: 0303041-004A			
Compound	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	uL/L	uL/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(gas)	ND	60	115	105	9.86	99.2	109	9.08	80	120
MTBE	ND	10	81.2	91	11.4	103	87.5	15.9	80	120
Benzene	ND	10	115	116	1.30	88.9	93	4.49	80	120
Toluene	ND	10	110	111	0.320	82.5	88.3	6.76	80	120
Ethylbenzene	ND	10	115	119	3.76	89.6	95.3	6.20	80	120
Xylenes	ND	30	120	120	0	87.3	92.7	5.93	80	120
%SS:	110	100	111	112	0.625	101	97.4	3.37	80	120

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.

N/A = 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.

% Recovery =  $100 * (MS - Sample) / (Amount Spiked)$ ;  $RPD = 100 * (MS - MSD) / (MS + MSD) * 2$ .

\* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

**McC Campbell Analytical Inc.**



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Pacheco, CA 94553-5560  
(925) 798-1620

**CHAIN-OF-CUSTODY RECORD**

WorkOrder: 0303045

**Client:**

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

TEL: (510) 450-1983  
FAX: (510) 450-8295  
ProjectNo: #130-0105-350; Worthington  
PO:

Date Received: 3/5/03  
Date Printed: 3/5/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	8021B/8015	Requested Tests
0303045-001	INF	Air	3/4/03 4:35:00 PM		A	
0303045-002	EFF	Air	3/4/03 4:30:00 PM		A	

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.



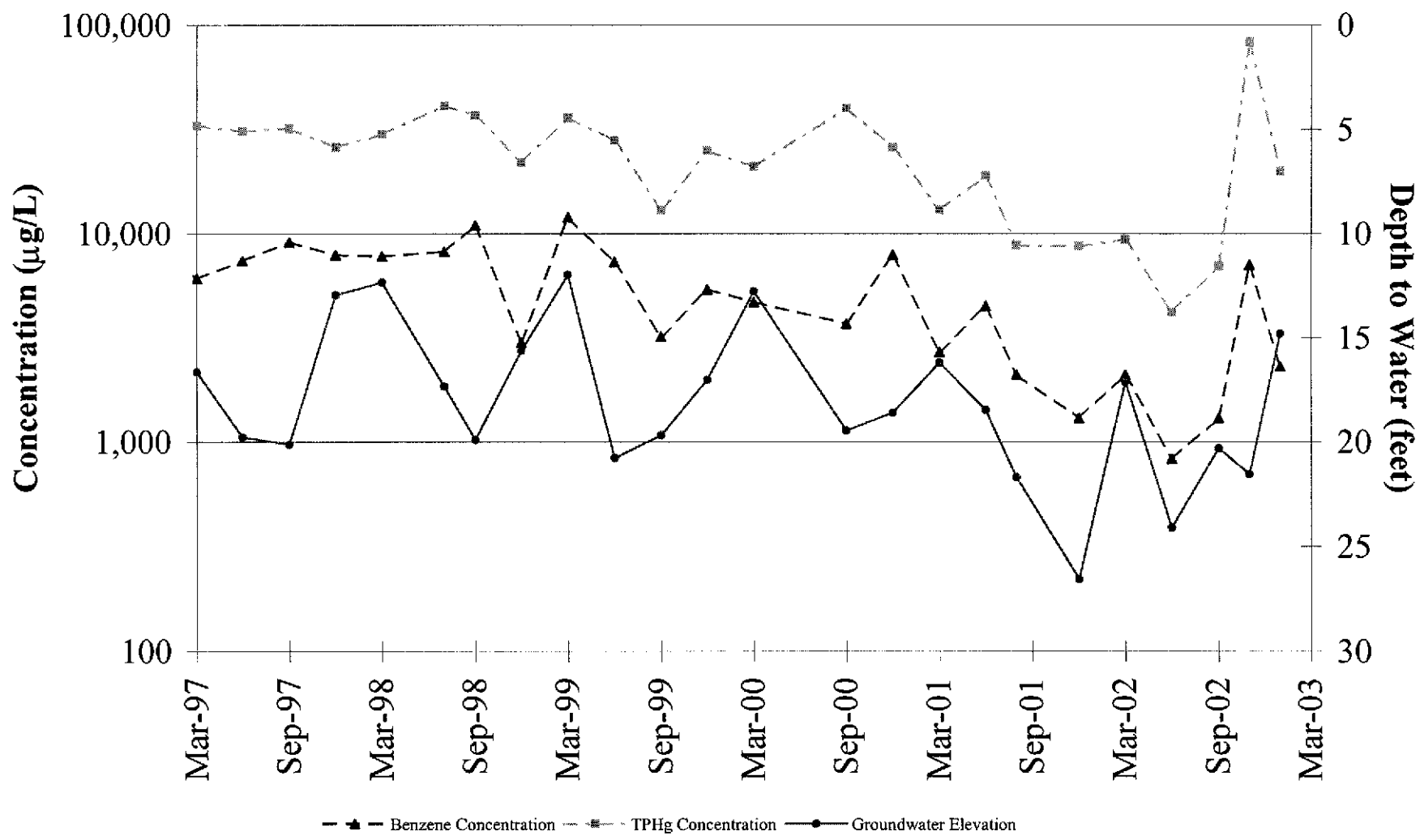
C A M B R I A



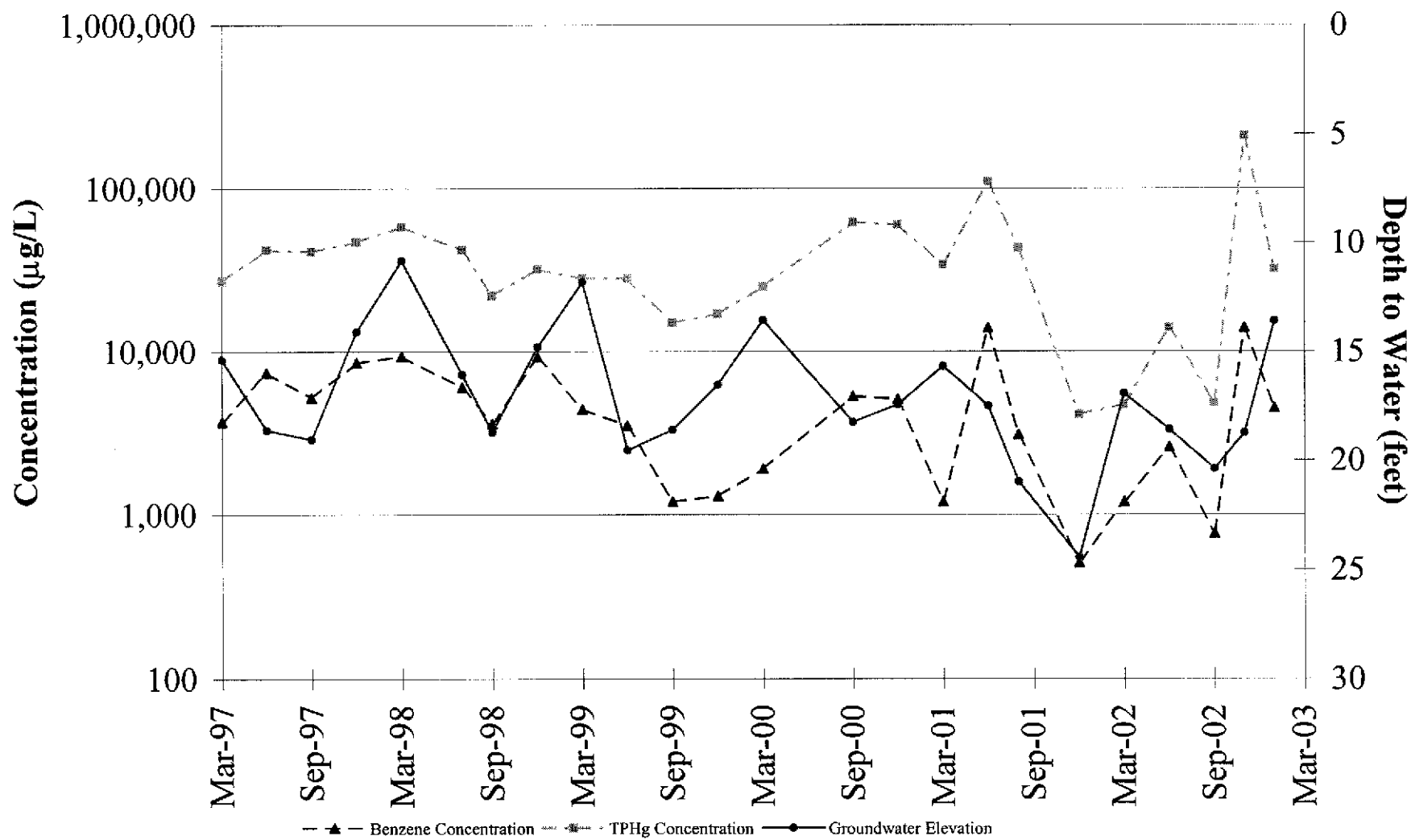
**APPENDIX D**

TPHg and Benzene Concentration Trend Graphs

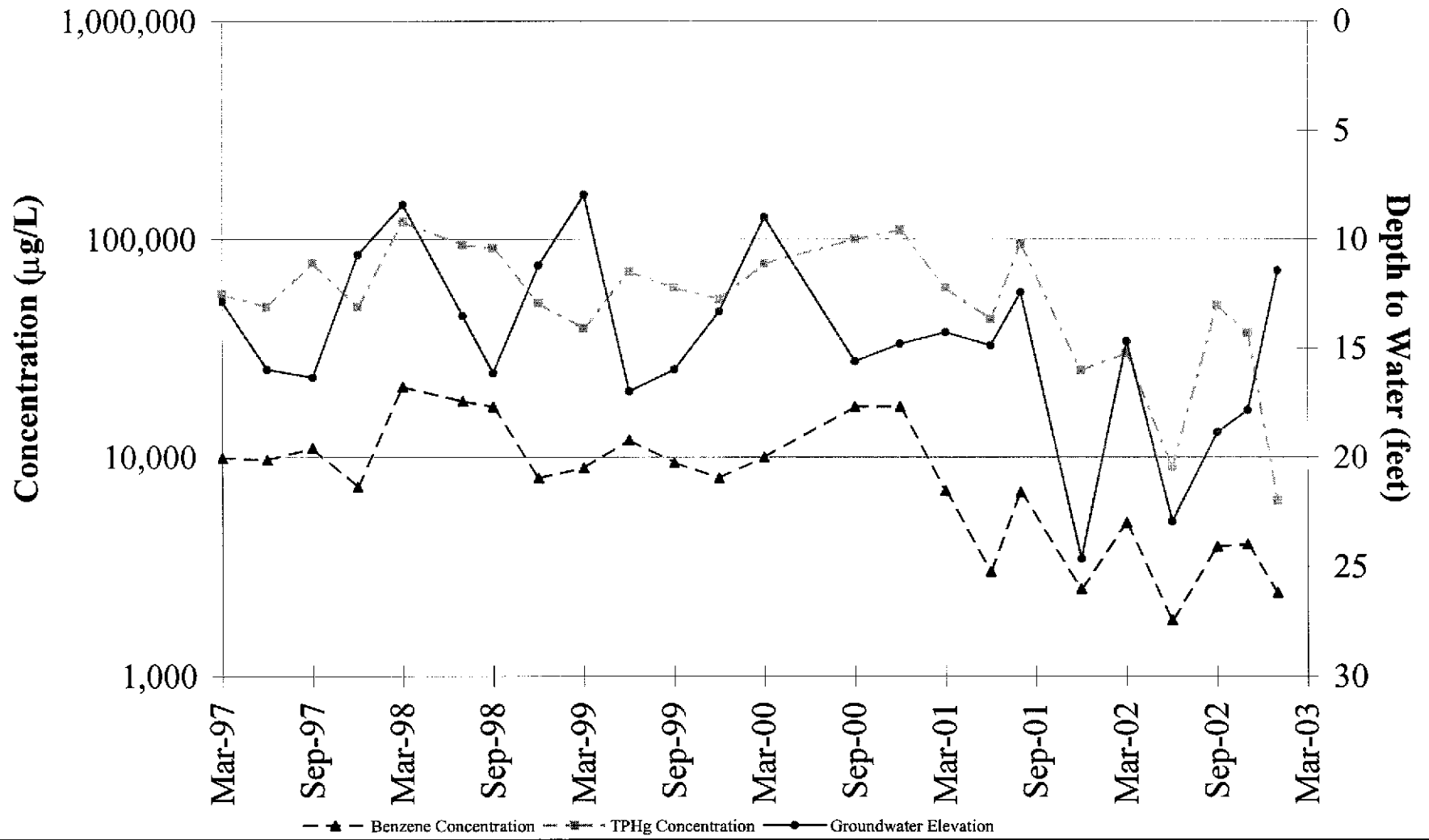
## TPHg and Benzene Concentration Trends Well MW-1 (March 1997 to Present)



## TPHg and Benzene Concentration Trends Well MW-2 (March 1997 to Present)

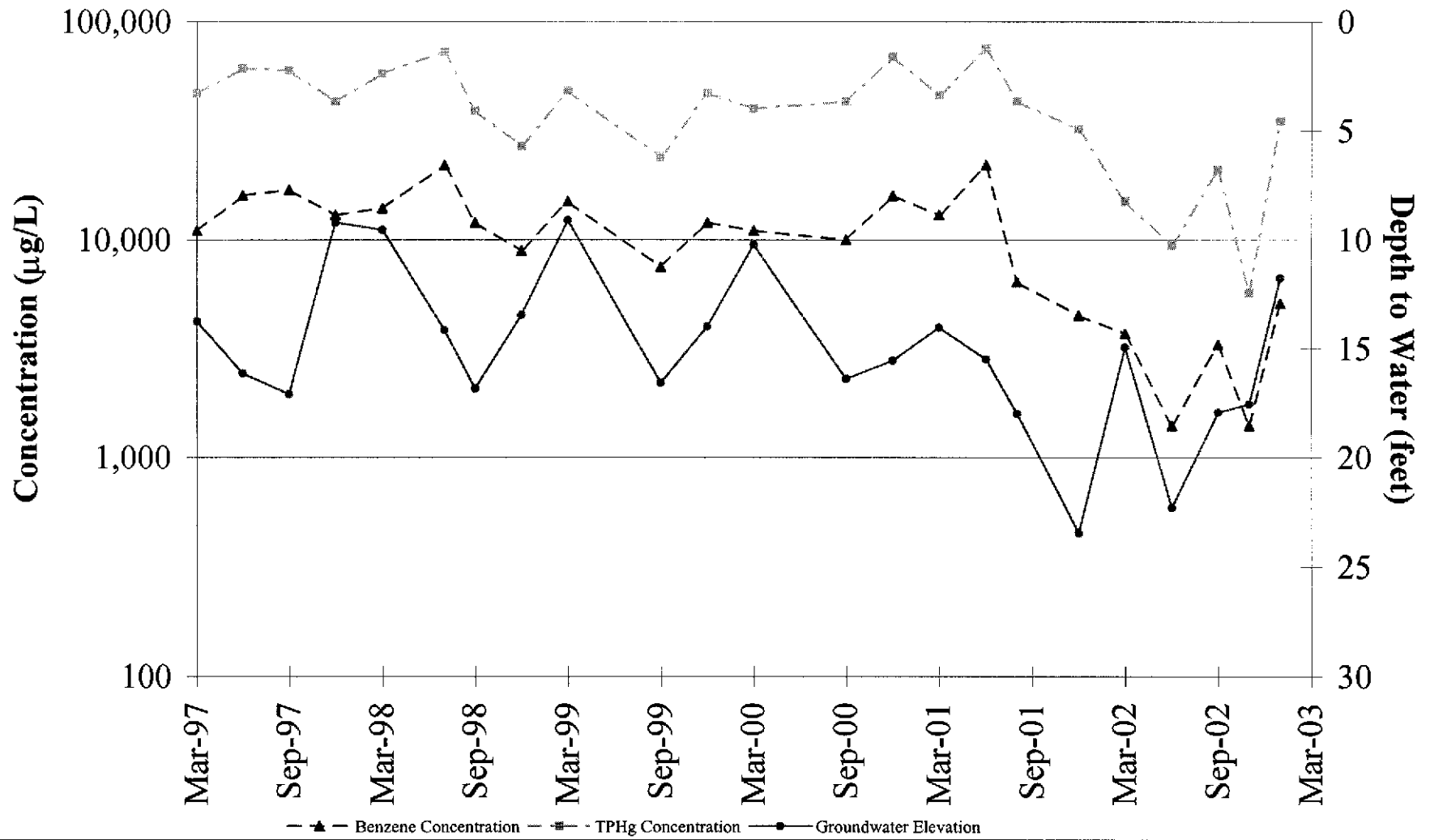


## TPHg and Benzene Concentration Trends Well MW-3 (March 1997 to Present)





## TPHg and Benzene Concentration Trends Well MW-4 (March 1997 to Present)



C A M B R I A



**APPENDIX E**

Electronic Delivery Confirmations

## AB2886 Electronic Delivery

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### UPLOADING A GEO\_WELL FILE

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

**Submittal Title:** 1QM03 geo\_well  
worthington  
**Submittal Date/Time:** 5/6/2003 8:59:12 AM  
**Confirmation Number:** 1626011490

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Your EDF file has been successfully uploaded!

**Confirmation Number:** 6651594638

**Date/Time of Submittal:** 5/6/2003 9:00:24 AM

**Facility Global ID:** T0609700695

**Facility Name:** A. F. O'CONNOR STATION

**Submittal Title:** 1QM03 Worthington

**Submittal Type:** GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH\_RP)

CONTACT SITE [ADMINISTRATOR](#).