

# C A M B R I A

ENVIRONMENTAL  
PROTECTION April 20, 2000  
00 MAY -4 AM 10: 03

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

*st*  
*ST*

Re: **First Quarter 2000 Monitoring Report**  
Former Exxon Service Station  
3055 35th Avenue  
Oakland, California  
Cambria Project #130-0105-111

Dear Mr. Chan:



On behalf of Mr. Lynn Worthington of Golden Empire Properties, Cambria Environmental Technology, Inc., (Cambria) has prepared this first quarter 2000 groundwater monitoring report for the above-referenced site. Presented below are the first quarter 2000 activities and results, and anticipated second quarter activities.

## FIRST QUARTER 2000 ACTIVITIES

### Groundwater Monitoring

On March 23, 2000, Cambria gauged, inspected for separate-phase hydrocarbons (SPH), and collected groundwater samples from monitoring wells MW-1, MW-2, MW-3 and MW-4 (Figure 1). The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), total petroleum hydrocarbons as diesel (TPHd), benzene, toluene, ethylbenzene and xylenes (BTEX), and methyl tert-butyl ether (MTBE). The groundwater analytical data are summarized in Table 1. The analytical report is included in Attachment A.

### Groundwater Analytic Results

No SPH were detected in any of the wells. TPHg concentrations in the sampled monitoring wells ranged from 21,000 parts per billion (ppb) in MW-1 to 77,000 ppb in MW-3. TPHd concentrations ranged from 3,100 ppb in MW-2 and MW-4 to 11,000 ppb in MW-3. Benzene concentrations ranged from 1,900 ppb in MW-2 to 11,000 ppb in MW-4. MTBE concentrations were below detection limits in all sampled wells except MW-4 which had a concentration of 690 ppb. These analytical results are consistent with historical results.

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


**Cambria  
Environmental  
Technology, Inc.**

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

### Groundwater Flow Direction

Depth-to-water measurements collected on March 23, 2000, indicated a groundwater gradient of 0.024 ft/ft toward the southwest (Figure 1). Since 1994, the primary groundwater flow direction has been toward the northwest with a change toward the southwest usually occurring during the fourth quarter. Groundwater elevation data are presented in Table 1.

### Remedial System Installation



During the first quarter 2000, Cambria supervised the installation and hookup of a temporary power pole for the remediation system. Electrical inspection approval was granted by the City of Oakland. Cambria installed aboveground piping between the remediation equipment and connected the wellhead piping within the ten extraction well vaults. Remediation system startup and operation were delayed due to air permitting issues related to the nearby school.

### ANTICIPATED SECOND QUARTER ACTIVITIES

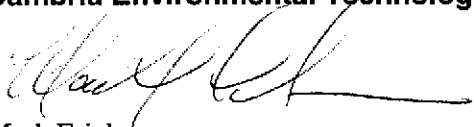
**Groundwater Monitoring:** Cambria will gauge the site wells, check the wells for SPH, and collect groundwater samples from all wells on a quarterly basis. Cambria will also analyze, tabulate, and report the data in a groundwater monitoring report.

**Remediation System Operation:** An air permit was received on April 5, 2000 from the Bay Area Air Quality District (BAAQMD) granting permission to begin startup of the remediation equipment. Cambria has scheduled system startup and plans to perform source testing, according to BAAQMD air permit conditions, followed by full time system operation. During regular system operation and maintenance activities, system parameters such as well vacuum, air flow rate, and influent hydrocarbon concentrations will be measured and optimized to maximize the removal and destruction of hydrocarbons from the subsurface. As part of air permit conditions, a source testing report will be submitted to the BAAQMD. Remediation System Status Reports will be prepared and submitted to all pertinent regulatory agencies on a quarterly basis.


**CLOSING**

If you have any questions or comments regarding this report or anticipated site activities, please call me at (510) 420-3328 or call Ron Scheele at (510) 420-3318.


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



Mark Erickson  
Staff Engineer



Bob Clark-Riddell, P.E.  
Principal Engineer



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**Attachments:**

- Figure 1- Groundwater Elevation Contours
- Table 1 - Groundwater Elevation and Analytical Data
- Attachment A - Analytical Report and Field Data Sheets

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

Former Texaco Station

B-1 ●

SCHOOL STREET

B-2 ●

Residential

Former Pump Island

RW-13 ●

RW-14 ●

RW-10 ●

Former Gasoline UST Cavity

Former Pump Island

MW-2  
86.44

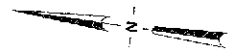
Former Waste-Oil UST Cavity

MW-1  
88.09

RW-9 ●

RW-12 ●  
87.00

RW-11 ●



MW-8  
87.50

RW-7 ●

MW-3  
87.89

RW-6 ●

MW-4  
87.12

RW-5 ●

35th AVENUE

Residential

**EXPLANATION**

- MW-1 ● Monitoring well location
- B-1 ● Soil boring location
- RW-6 ● Remediation well location
- XX.XX — Groundwater elevation contour, in feet above mean sea level (msl), dashed where inferred
- ▢ → Groundwater flow direction and gradient
- MW-1  
81.17 Well designation  
Groundwater elevation (msl)



FIGURE 1

H:\B-204\OAK-002\FIGURES\1\CMC0-ME.DWG

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



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**Groundwater Elevation Contour Map**  
 March 23, 2000

# CAMBRIA

**Table 1. Groundwater Elevation 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	Concentrations in parts per billion (µg/L)					DO (mg/L)
								Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
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>c</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
	<b>03/23/00</b>	<b>12.76</b>	<b>---</b>	<b>88.09</b>	<b>21,000<sup>d</sup></b>	<b>3,300<sup>f</sup></b>	<b>---</b>	<b>4,700</b>	<b>140</b>	<b>470</b>	<b>1,100</b>	<b>&lt;350</b>	<b>---</b>
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	---	---

# CAMBRIA

**Table 1. Groundwater Elevation 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 parts per billion (µg/L) ----->													
	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
	<b>03/23/00</b>	<b>13.56</b>	---	<b>86.44</b>	<b>25,000<sup>d</sup></b>	<b>3,100<sup>j</sup></b>	---	<b>1,900</b>	<b>1,100</b>	<b>660</b>	<b>3,700</b>	<b>&lt;500</b>	---
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	---	---

# CAMBRIA

**Table 1. Groundwater Elevation 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 parts per billion (µg/L) ----->													
	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>c</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>e</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>e</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>e</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
	<b>03/23/00</b>	<b>8.98</b>	<b>---</b>	<b>87.89</b>	<b>77,000<sup>d,h</sup></b>	<b>11,000<sup>d,l</sup></b>	<b>---</b>	<b>10,000</b>	<b>9,400</b>	<b>1,600</b>	<b>11,000</b>	<b>&lt;430</b>	<b>---</b>
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>c</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>#</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

# CAMBRIA

**Table 1. Groundwater Elevation 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 parts per billion (µg/L) ----->													
	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	---
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	---

**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  
 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



C A M B R I A



**ATTACHMENT A**

Analytical Report and Field Data Sheets



McCAMPBELL 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 Environmental Technology 1144 65 <sup>th</sup> Street, Suite C Oakland, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 03/23/00
	Client Contact: Mark Erickson	Date Received: 03/24/00
	Client P.O:	Date Extracted: 03/24-03/29/00
		Date Analyzed: 03/24-03/29/00

**Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline\*, with Methyl tert-Butyl Ether\* & BTEX\***

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) <sup>+</sup>	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
33917	MW-1	W	21,000,a	ND<350	4700	140	470	1100	98
33918	MW-2	W	25,000,a	ND<500	1900	1100	660	3700	--- <sup>#</sup>
33919	MW-3	W	77,000,a,h	ND<430	10,000	9400	1600	11,000	109
33920	MW-4	W	40,000,a	690	11,000	1600	910	3100	94
33921	Trip Blank	W	ND	ND	ND	ND	ND	ND	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	0.005	

\* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak

<sup>+</sup>The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
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Cambria Environmental Technology 1144 65 <sup>th</sup> Street, Suite C Oakland, CA 94608	Client Project ID: #130-0105; Worthington	Date Sampled: 03/23/00
	Client Contact: Mark Erickson	Date Received: 03/24/00
	Client P.O:	Date Analyzed: 03/24-03/27/00
		Date Extracted: 03/24/00

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel \***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) <sup>+</sup>	% Recovery Surrogate
33917	MW-1	W	3300,b	104
33918	MW-2	W	3100,e	87
33919	MW-3	W	11,000,e,h	102
33920	MW-4	W	3100,d,b	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	
	S		1.0 mg/kg	

\* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

<sup>#</sup> 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 McCampbell 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) medium boiling point pattern that does not match diesel (stoddard solvent); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.



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### QC REPORT

Date: 03/24/00-03/25/00 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L			%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	

SampleID: 32400

Instrument: GC-3

Surrogate1	0.000	102.0	104.0	100.00	102	104	1.9
Xylenes	0.000	278.0	299.0	300.00	93	100	7.3
Ethyl Benzene	0.000	93.0	101.0	100.00	93	101	8.2
Toluene	0.000	96.0	106.0	100.00	96	106	9.9
Benzene	0.000	101.0	111.0	100.00	101	111	9.4
MTBE	0.000	108.0	97.0	100.00	108	97	10.7
GAS	0.000	903.2	942.7	1000.00	90	94	4.3

SampleID: 32400

Instrument: GC-2 A

Surrogate1	0.000	108.0	109.0	100.00	108	109	0.9
TPH (diesel)	0.000	303.0	287.0	300.00	101	96	5.4

$$\% \text{ Recovery} = \frac{(MS - \text{Sample})}{\text{Amount Spiked}} \cdot 100$$

$$RPD = \frac{(MS - MSD)}{(MS + MSD)} \cdot 100$$

RPD means Relative Percent Deviation

**McCAMPBELL ANALYTICAL INC.**

110 2<sup>nd</sup> AVENUE SOUTH, #D7  
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**CHAIN OF CUSTODY RECORD**

TURN AROUND TIME  RUSH  24 HOUR  48 HOUR  5 DAY

Report To: MARK ERICKSON Bill To: CAMBRIA ENV. TECH

Company: Cambria Environmental Technology

1144 65<sup>th</sup> Street, Suite C

Oakland, CA 94608

Tele: (510) 420-0700

Fax: (510) 420-9170

Project #: 130-0105

Project Name: WORTHINGTON

Project Location: 3055 ROBERTS ST CARLISLE, CA.

Sampler Signature: [Signature]

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX							METHOD PRESERVED		BTX & TPH as Gas (602/8020 + 8015) MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTX 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	Other	Comments					
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO <sub>3</sub>	Other																						
MMW-1		3/23	12:05	5	*	X						X	X																							33917
MMW-2			1:05	5																																33918
MMW-3			1:20	5																																33919
MMW-4			1:35	5	4																															33920
TB				1	104	X																														33921

Relinquished By: <u>[Signature]</u>	Date: <u>5/29/00</u>	Time:	Received By: <u>David Weller</u>
Relinquished By:	Date:	Time:	Received By: <u>Suzanne A. Burtner</u>
Relinquished By:	Date:	Time:	Received By:

Remarks: \* 4 VOAS & 1-12 NUMBER FOR SAMPLE.

MAR-27-2000 10:19 CAMBRIA 510 420 9170 P.02/03

**WELL DEPTH MEASUREMENTS**

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-1	10:09		12.76'		27.26'	4" WELL
MW-2	10:15		13.56'		27.40'	4" WELL
MW-3	10:21		8.98'		24.96'	2" WELL
MW-4	10:55		10.22'		30.28'	2" WELL, TAKES 30min for WELL EQUILIB.

Project Name: WORTHINGTON

Project Number: 130-0105

Measured By: M. ERICKSON

Date: 3/23/00

**WELL SAMPLING FORM**

Project Name: <b>Worthington</b>	Cambria Mgr: <b>RAS / BCR</b>	Well ID: MW- /
Project Number: <b>130-0105</b>	Date: <b>3/23/00</b>	Well Yield: -----
Site Address: <b>3055 Rose Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>4</b> " pvc
	<b>Disposable bailer 808 pump.</b>	Technician(s): <b>ME</b>
Initial Depth to Water: <b>12.76'</b>	Total Well Depth: <b>27.26'</b>	Water Column Height: <b>14.5'</b>
Volume/ft: <b>0.65</b>	1 Casing Volume: <b>9.425 gal</b>	3 Casing Volumes: <b>28.3 gal</b>
Purging Device: <b>sub. pump</b>	Did Well Dewater?: <b>YES</b>	Total Gallons Purged: <b>21 gal</b>
Start Purge Time: <b>10:43</b>	Stop Purge Time: <b>11:01</b>	Total Time: <b>18 min.</b>

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

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

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
<b>10:46</b>	<b>1</b>	<b>18.8</b>	<b>7.3</b>	<b>1748</b>	
<b>10:54</b>	<b>2</b>	<b>18.0</b>	<b>7.5</b>	<b>856</b>	
<b>11:01</b>	<b>3</b>	<b>18.7</b>	<b>7.4</b>	<b>900</b>	

**D.O. = \_\_\_\_\_ ppm**

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- /	3/23/00	<b>12:55</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>
MW- /	3/23/00	<b>12:55</b>	<b>1 amber</b>	<b>none</b>	<b>TPHd</b>	

WELL SAMPLING FORM

Project Name: <b>Worthington</b>	Cambria Mgr: <b>RAS / BCR</b>	Well ID: MW- <b>2</b>
Project Number: <b>130-0105</b>	Date: <b>3/23/00</b>	Well Yield: -----
Site Address: <b>3055 Rose Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>4" pvc</b>
	<b>Disposable bailer SUB PUMP</b>	Technician(s): <b>ME</b>
Initial Depth to Water: <b>13.56'</b>	Total Well Depth: <b>27.40'</b>	Water Column Height: <b>13.84'</b>
Volume/ft: <b>0.65</b>	1 Casing Volume: <b>9 GAL</b>	3 Casing Volumes: <b>27 GAL</b>
Purging Device: <b>sub. pump</b>	Did Well Dewater?: <b>NO</b>	Total Gallons Purged: <b>27 GAL</b>
Start Purge Time: <b>11:17</b>	Stop Purge Time: <b>11:45</b>	Total Time: <b>28 min.</b>

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

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

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
<b>11:19</b>	<b>1</b>	<b>18.2</b>	<b>7.3</b>	<b>891</b>	
<b>11:28</b>	<b>2</b>	<b>18.6</b>	<b>7.5</b>	<b>930</b>	
<b>11:34</b>	<b>3</b>	<b>18.7</b>	<b>7.6</b>	<b>938</b>	

D.O. = \_\_\_\_\_ ppm

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- <b>2</b>	<b>3/23/00</b>	<b>1:05</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>
MW- <b>2</b>	<b>3/23/00</b>	<b>1:05</b>	<b>1 amber</b>	<b>none</b>	<b>TPHd</b>	



WELL SAMPLING FORM

Project Name: <b>Worthington</b>	Cambria Mgr: <b>RAS / BCR</b>	Well ID: MW- <b>3</b>
Project Number: <b>130-0105</b>	Date: <b>3/23/00</b>	Well Yield: -----
Site Address: <b>3055 Rose Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>2" pvc</b>
	<b>Disposable bailer SUB PUMP</b>	Technician(s): <b>ME.</b>
Initial Depth to Water: <b>8.98'</b>	Total Well Depth: <b>24.96'</b>	Water Column Height: <b>15.98'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>2.56 gal</b>	3 Casing Volumes: <b>7.7 gal</b>
Purging Device: <b>sub. pump</b>	Did Well Dewater?: <b>NO.</b>	Total Gallons Purged: <b>7.7 gal</b>
Start Purge Time: <b>11:58</b>	Stop Purge Time: <b>12:09</b>	Total Time: <b>11 min</b>

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

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

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
<b>11:00</b>	<b>1</b>	<b>17.5</b>	<b>8.1</b>	<b>732</b>	
<b>12:03</b>	<b>2</b>	<b>18.2</b>	<b>7.5</b>	<b>733</b>	
<b>12:06</b>	<b>3</b>	<b>18.3</b>	<b>7.5</b>	<b>796</b>	

D.O. = \_\_\_\_\_ ppm

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- <b>3</b>	<b>3/23/00</b>	<b>1:20</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>
MW- <b>3</b>	<b>3/23/00</b>	<b>1:20</b>	<b>1 amber</b>	<b>none</b>	<b>TPHd</b>	

WELL SAMPLING FORM

Project Name: <b>Worthington</b>	Cambria Mgr: <b>RAS / BCR</b>	Well ID: MW- <b>4</b>
Project Number: <b>130-0105</b>	Date: <b>3/23/00</b>	Well Yield: -----
Site Address: <b>3055 Rose Street Oakland, California</b>	Sampling Method:	Well Diameter: <b>2" pvc</b>
	<b>Disposable bailer SUB PUMP</b>	Technician(s): <b>ME</b>
Initial Depth to Water: <b>10.22'</b>	Total Well Depth: <b>30.28'</b>	Water Column Height: <b>20.06'</b>
Volume/ft: <b>0.16</b>	1 Casing Volume: <b>3.29 GAL</b>	3 Casing Volumes: <b>9.66 GAL</b>
Purging Device: <b>sub. pump</b>	Did Well Dewater?: <b>NO</b>	Total Gallons Purged: <b>9.75 GAL</b>
Start Purge Time: <b>12:23</b>	Stop Purge Time: <b>12:32</b>	Total Time: <b>9 min</b>

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

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

Time	Casing Volume	Temp. C	pH	Cond. uS	Comments
<b>12:25</b>	<b>1</b>	<b>17.4</b>	<b>7.5</b>	<b>761</b>	
<b>12:27</b>	<b>2</b>	<b>17.3</b>	<b>7.1</b>	<b>757</b>	
<b>12:31</b>	<b>3</b>	<b>17.3</b>	<b>7.2</b>	<b>767</b>	

D.O. = \_\_\_\_\_ ppm

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW- <b>4</b>	<b>3/23/00</b>	<b>1:35</b>	<b>4 voa's</b>	<b>HCL</b>	<b>TPHg, BTEX, MTBE</b>	<b>8020 8015</b>
MW- <b>4</b>	<b>3/23/00</b>	<b>1:35</b>	<b>1 amber</b>	<b>none</b>	<b>TPHd</b>	