CAMBRIA

RO271

August 1, 2002

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

AUG 1 2 2002

Re: **Groundwater Monitoring and System Progress Report**
Second Quarter 2002
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 second quarter 2002 activities and the anticipated third quarter 2002 activities.

If you have any questions or comments regarding this report, please call me at (510) 450-1983.

Sincerely,
Cambria Environmental Technology, Inc.

Ron Scheele, RG
Senior Geologist

Attachments: Groundwater Monitoring and System Progress Report, Second Quarter 2002

cc: Mr. Lynn Worthington, Golden Empire Properties, Inc. 5942 MacArthur Boulevard, Suite B, Oakland, CA 94605
Mr. Robert Cave, BAAQMD, Permit Services Division, 939 Ellis Street, San Francisco, CA 94109
Ms. Marie Kulka, Source Control Division, EBMUD, 375 11th Street, Oakland, CA 94607

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2002

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

AUG 1 2 2002

August 1, 2002

Prepared for:

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

Prepared by:

Cambria Environmental Technology, Inc.
6262 Hollis Street
Emeryville, California 94608

REGISTERED GEOLOGIST • RONALD A. SCHEELE • No. 6842 • STATE OF CALIFORNIA

Matthew A. Meyers
Staff Geologist

Ron Scheele, RG
Senior Geologist

CAMBRIA

GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2002

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

August 1, 2002

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 second quarter 2002 groundwater monitoring and corrective action activities and the anticipated third quarter 2002 activities.

SECOND QUARTER 2002 ACTIVITIES

Monitoring Activities

Field Activities: On June 10, 2002, 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 not containing SPH. 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) 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 June 10, 2002 site visit (Figure 1). The groundwater gradient is affected by a two phase extraction (TPE) remediation system in which down-well stingers are used to extract groundwater from wells MW-1, MW-3, MW-4, RW-5, RW-9, and RW-10. Since 1994, the primary groundwater flow direction has been towards the northwest with a change towards the southwest usually occurring during the fourth and/or second quarters. Groundwater monitoring data is presented in Table 1.

Hydrocarbon Distribution in Groundwater: Hydrocarbon concentrations have decreased in wells MW-1, MW-3, and MW-4 and increased in well MW-2 as compared with the previous sampling event. No SPH were detected in any of the wells. The increase of concentrations in well MW-2 is likely due to varying TPE system operations and temporary closing of MW-2 to optimize extraction from other areas. Since the start of TPE remediation (June 2000), all monitoring wells exhibit a decreasing hydrocarbon concentration trend (See Appendix D for individual well concentration trend graphs). The maximum TPHg and benzene concentrations were detected in well MW-2 at 14,000 and 2,600 micrograms per liter (μg/L), respectively. The maximum TPHd concentration was detected in well MW-4 at 3,400 μg/L. MTBE concentrations were below laboratory detection limits in all sampled wells. Analytical results are summarized in Table 1. See Appendix E for confirmation of groundwater data submittal to the State Geotracker Database.

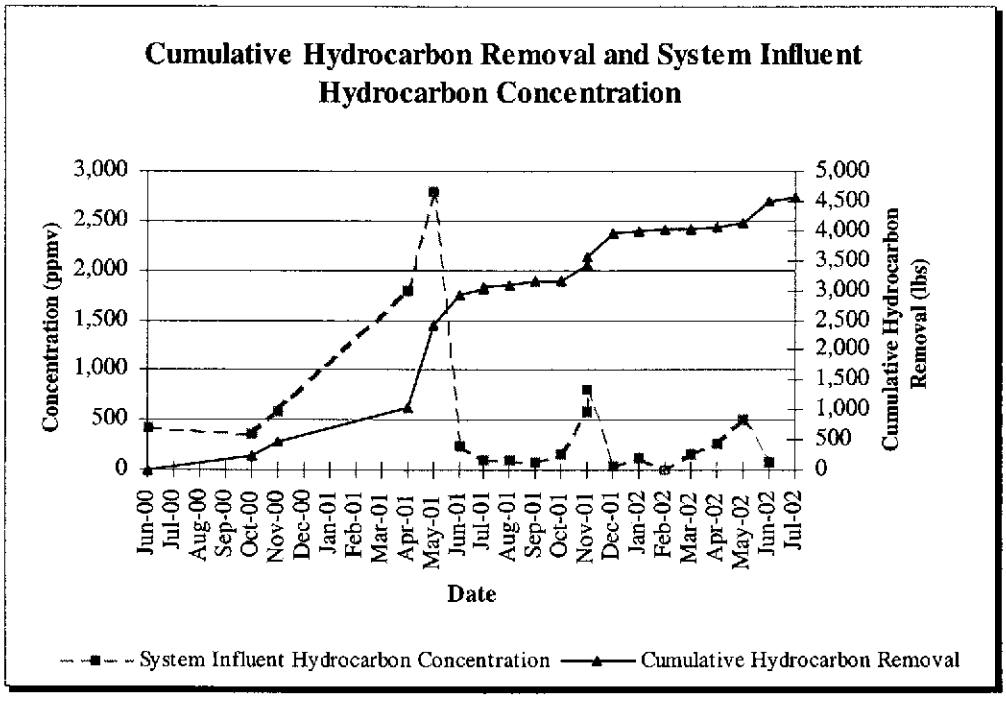
Corrective Action Activities

System Design: The TPE remediation system consists of a trailer mounted all-electric catalytic oxidizer, a 300-cfm positive-displacement blower, a 150-gallon moisture knockout with automatic float controls, a 1-hp centrifugal transfer pump, and two 1,000-lb carbon vessels connected in series. Fourteen wells are connected to the remediation system (RW-5 through RW-14, and MW-1 through MW-4) via a 4-inch diameter PVC trunk line. One-inch diameter stingers are inserted into each well to allow the simultaneous extraction of soil vapor and groundwater from the well.

Remediation System Operations and Maintenance Activities: During the second quarter, Cambria performed TPE system operation and maintenance activities approximately 3 times per month. During operation and maintenance activities, individual well flow, vacuum, and hydrocarbon concentration measurements were collected from all remediation system wells and from the catalytic oxidizer/blower (See Tables 2, 3, and 4). During site visits, system operation parameters were also recorded in specialized field forms for future system optimization and agency inspection. As per the Bay Area Air Quality Management (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 a monthly basis. Groundwater treatment system influent and effluent samples were collected on a monthly basis. Table 2 summarizes soil vapor extraction system operations and analytical results. Table 3 summarizes groundwater extraction system parameters and analytical results. Table 4 summarizes the individual extraction well parameters. The system analytical laboratory reports are included as Attachment C.

Remediation System Performance: From April 2 through July 2, the TPE system operated continuously without shutdowns, for a total of 2,185 hours. 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). System influent and effluent vapor samples were collected and submitted for laboratory analysis on April 4, May 6, and June 5, 2002. Influent vapor concentrations increased relative to the first quarter and ranged from 73 to 500 parts per million by volume (ppmv). This increase is likely due to seasonally lower water table conditions exposing hydrocarbons trapped below groundwater. Hydrocarbon removal rate ranged from 1.7 to 12.2 lbs/day. 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. To date, a total of 4,556 pounds of hydrocarbons have been destroyed by vapor extraction (see graph below and Table 2).



From April 2 to July 2, 2002, approximately 98,154 gallons of groundwater was extracted and treated onsite using granular activated carbon. The average flowrate was 0.95 gallons per minute. Groundwater treatment system influent and effluent samples were collected on April 2, March 6, and June 5, 2002. 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. To date, a total of 1.534 pounds of hydrocarbons have been removed by groundwater extraction and treatment.

ANTICIPATED THIRD QUARTER 2002 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 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:

To reduce system noise and complaints from neighbors the existing TPE equipment (10-hp blower) will be replaced with a quieter 20-hp liquid ring pump. These equipment changes will take place in the third quarter.

Cambria will continue to perform TPE operation and maintenance activities twice per month during the third quarter of 2002. The groundwater extraction stingers may from time to time be switched between select wells in an effort to help maximize hydrocarbon removal and 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 Elevation 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

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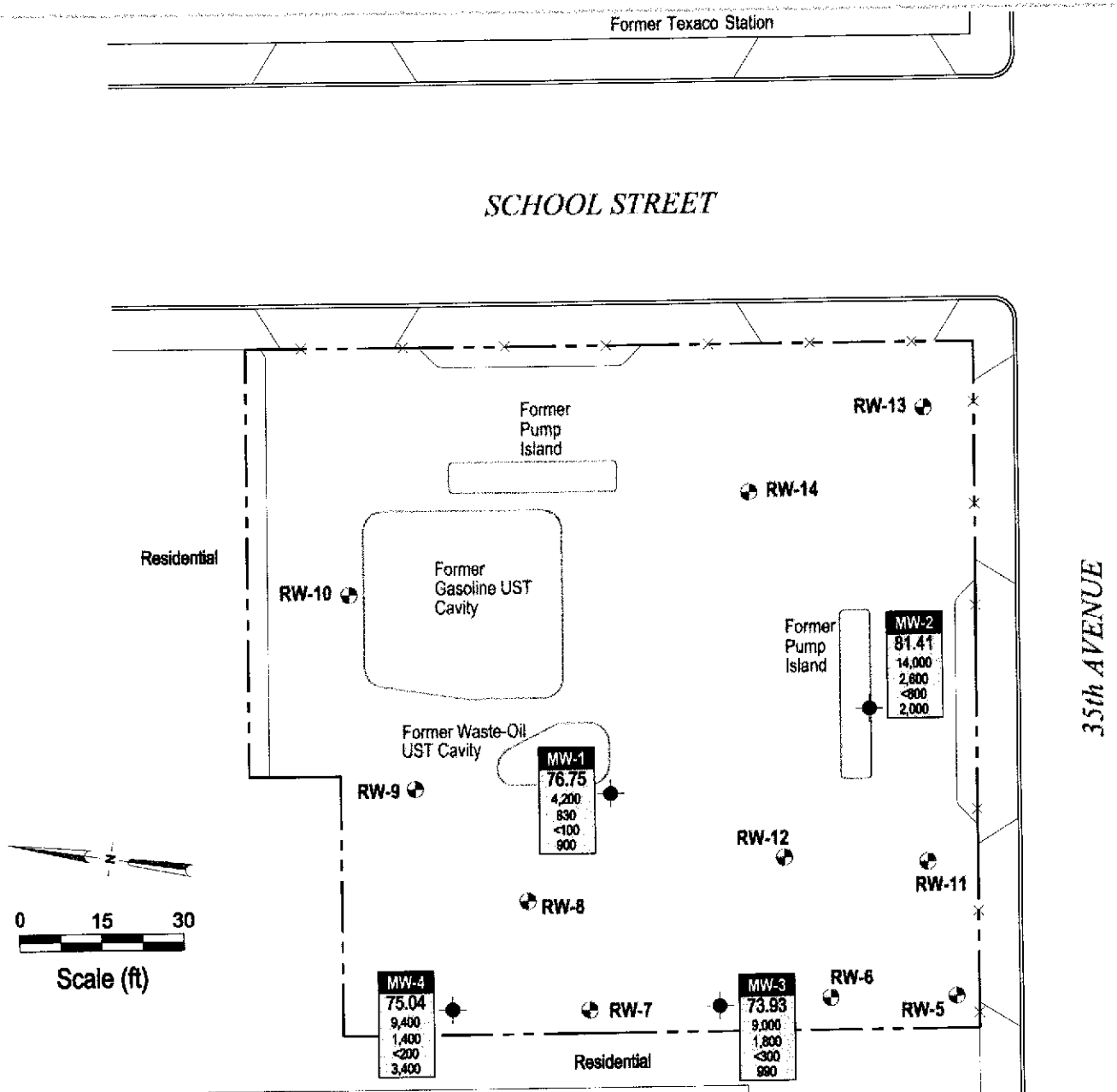

EXPLANATION

MW-1 — Monitoring well location

RW-6 — Remediation well location

Well ID
ELEV
TPHg
Benzene
MTBE
TPHd

- Well designation
- Groundwater elevation (msl)
- Hydrocarbon concentrations in groundwater, in micrograms per liter (µg/L)

Stinger Depth in TPE wells:

MW-1 @ 23.50'
MW-3 @ 22.00'
MW-4 @ 21.00'
RW-5 @ 19.00'
RW-9 @ 20.00'
RW-10 @ 20.00'

Note: Groundwater elevations are affected by TPE remediation system.

FIGURE
1

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Former Exxon Station
3055 35th Avenue
Oakland, California

CAMBRIA

Groundwater Elevation and Analytical Summary Map
June 10, 2002

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 parts per billion (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[a]	---	7,400	440	890	1,800	<400	3.7
	09/17/97	20.12	---	80.73	32,000[d]	3,500[e]	---	9,100	550	1,000	2,000	<1,000	2.1
	12/22/97	12.95	---	87.90	26,000[d]	5,800[e]	---	7,900	370	920	1,500	<790	0.7
	03/18/98	12.34	Sheen	88.51	30,000[d]	4,200[e,f]	---	7,800	820	840	2,000	<1,100	1.3
	07/14/98	17.34	---	83.51	41,000[d]	8,900[e,f]	---	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[d]	6,800[e]	---	12,000	750	1,300	2,400	950	0.50
	06/29/99	20.77	---	80.08	28,000[d]	3,500[e]	---	7,300	420	810	1,700	<1,300	0.10
	09/28/99	19.68	---	81.17	13,000[d]	3,600 [e,f]	---	3,200	130	320	1,100	<210	0.55
	12/10/99	17.02	---	83.83	25,000[d]	2,900 [e,f]	---	5,400	130	620	1,400	<1,000	1.03
	03/23/00	12.76	---	88.09	21,000[d]	3,300[f]	---	4,700	140	470	1,100	<350	---
	09/07/00	19.45	---	81.40	40,000[d,g]	12,000[e,g]	---	3,700	1,400	910	4,900	<50	0.17
	12/05/00	18.60	---	82.25	26,000[a]	3,400[e]	---	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[a]	1,400[d]	---	2,100	45	91	240	<130	0.27

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 parts per billion (µg/L) ---------->								
	12/07/01	26.55	---	74.30	8,700[d]	1,900[e,f]	---	1,300	160	38	730	<20	0.59
	03/11/02	17.13	---	83.72	9,400[d]	1,400[e]	---	2,100	200	74	470	<20	0.39
	06/10/02	**24.10**	**---**	**76.75**	**4,200[d]**	**900[e,k]**	**---**	**830**	**170**	**110**	**460**	**<100**	--
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[b]	---	7,400	3,800	1,200	5,700	<200	0.9
	09/17/97	19.05	Sheen	80.95	41,000[d]	8,900[e]	---	5,200	3,400	1,300	5,900	<700	1.2
	12/22/97	14.09	---	85.91	47,000[d]	6,100[e]	---	8,500	4,600	1,800	8,400	<1,200	1.2
	03/18/98	10.83	Sheen	89.17	58,000[d]	7,000[e,f]	---	9,300	6,100	1,800	8,200	<1,100	1.1
	07/14/98	16.07	---	83.93	42,000[d]	5,300[e,f]	---	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[d]	7,500[e,f]	---	4,400	1,600	950	4,100	410	1.86
	06/29/99	19.54	---	80.46	28,000[d]	3,300[e]	---	3,500	1,100	690	3,100	<1,000	0.41
	09/28/99	18.61	---	81.39	15,000[d]	3,400[e,f]	---	1,200	540	230	2,300	<36	1.18
	12/10/99	16.53	---	83.47	17,000[d]	2,500[e,f]	---	1,300	780	420	2,700	<40	0.17
	03/23/00	13.56	---	86.44	25,000[d]	3,100[i]	---	1,900	1,100	660	3,700	<500	---
	09/07/00	18.25	---	81.75	62,000[d,g]	32,000[e,g]	---	5,300	2,300	1,500	8,400	<100	0.39
	12/05/00	17.45	---	82.55	60,000[d,g]	87,000[e,f,g]	---	5,100	2,200	1,600	9,000	<200	0.31

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 parts per billion (µg/L) ---------->								
	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[a,h]	15,000[d,h]	---	3,100	720	980	5,500	<200	---
	12/07/01	24.45	---	75.55	4,100[d]	750[e,f]	---	510	88	8.2	580	<20	0.47
	03/11/02	16.95	---	83.05	4,700[d]	590[e]	---	1,200	150	30	310	<50	0.24
	06/10/02	**18.59**	**---**	**81.41**	**14,000[d]**	**2,000[e]**	**--**	**2,600**	**710**	**150**	**2,000**	**<800**	**--**
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[b]	---	9,700	7,100	1,300	7,000	220	5.8
	09/17/97	16.34	Sheen	80.53	78,000[d]	15,000[e]	---	11,000	9,900	1,800	10,000	<1,200	0.7
	12/22/97	10.71	Sheen	86.16	49,000[d]	14,000[e]	---	7,300	5,300	1,400	7,500	<1,100	3.1
	03/18/98	8.41	Sheen	88.46	120,000[d]	20,000[e,f]	---	21,000	19,000	2,600	15,000	<1,600	1.6
	07/14/98	13.51	---	83.36	94,000[d,g]	65,000[e,f,g]	---	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[d]	4,600[e]	---	8,900	4,400	940	4,500	810	0.56
	06/29/99	16.98	---	79.89	71,000[d]	6,900[e]	---	12,000	7,300	1,400	8,400	<1,700	0.19
	09/28/99	15.99	---	80.88	60,000[d]	7,800[e]	---	9,400	9,200	1,000	9,900	200	0.53
	12/10/99	13.31	---	83.56	53,000[d]	5,300[e,f]	---	8,000	6,400	1,100	8,100	<200	0.48

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 parts per billion (µg/L) ---------->								
	03/23/00	8.98	---	87.89	77,000[d,g]	11,000[g,j]	---	10,000	9,400	1,600	11,000	<430	---
	09/07/00	15.61	---	81.26	100,000[d,g]	19,000[e,f,g]	---	17,000	12,000	1,600	11,000	<500	---
	12/05/00	14.80	---	82.07	110,000[d,g]	17,000[e,g]	---	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[a,h]	190,000[d,h]	---	6,900	10,000	2,700	15,000	<250	0.24
	12/07/01	24.65	---	72.22	25,000[d]	3,900[e,f]	---	2,500	1,700	64	2,200	<200	0.19
	03/11/02	14.69	---	82.18	30,000[d]	2,800[f,e,k]	---	5,000	2,400	190	1,800	<1,300	0.30
	06/10/02	**22.94**	---	**73.93**	**9,000[d]**	**990[e,k]**	**---**	**1,800**	**1,300**	**96**	**1,000**	**<300**	**--**
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[b]	---	16,000	6,100	1,500	5,900	780[c]	1.4
	09/17/97	17.10	---	80.24	60,000[d]	4,400[e]	---	17,000	4,900	1,500	5,700	<1,500	1.5
	12/22/97	9.21	---	88.13	43,000[d]	3,100[e]	---	13,000	3,900	1,100	4,200	<960	3.7
	03/18/98	9.54	---	87.80	58,000[d]	5,500[e,f]	---	14,000	4,700	1,400	5,700	<1,200	0.8
	07/14/98	14.15	---	83.19	73,000[d]	2,900[e,f]	---	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[d]	2,400[e,f,h]	---	15,000	3,000	1,300	5,000	1,300	1.32
	06/29/99*	---	---	---	---	---	---	---	---	---	---	---	---
	09/28/99	16.58	---	80.76	24,000[d]	3,200[e,f]	---	7,500	1,200	190	2,200	210	14.29[#]
	12/10/99	13.99	---	83.35	47,000[d]	3,100[e,f]	---	12,000	1,800	1,000	4,400	<100	0.62
	03/23/00	10.22	---	87.12	40,000[d]	3,100[e,f]	---	11,000	1,600	910	3,100	690	---
	09/07/00	16.40	---	80.94	43,000[d]	5,900[e]	---	10,000	1,100	1,100	3,400	<450	1.04
	12/05/00	15.55	---	81.79	69,000[d,g]	2,600[e,g]	---	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[a]	3,200[d]	---	6,400	630	510	2,600	<200	0.32
	12/07/01	23.45	---	73.89	32,000[d,g]	11,000[e,f,g]	---	4,500	740	310	2,300	<200	0.21
	03/11/02	14.95	---	82.39	15,000[d]	1,600[e,f,k]	---	3,700	500	92	790	<500	0.30
	06/10/02	**22.30**	**---**	**75.04**	**9,400[d]**	**3,400[e]**	**--**	**1,400**	**50**	**<5.0**	**690**	**<200**	**--**

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 parts per billion (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 aribitrary 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. (degree F)	System Flow Rate (after dilution) (cfm)	System Influent HC Conc. [1] (ppmv)	System Effluent HC Conc. [1] (ppmv)		HC Removal Rate [2] (lbs/day)	Emission Rate [2] (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal [3] (lbs)
					TPHg	TPHg	Benz	TPHg	TPHg	Benz		
6/24/2000	0	--	--	--	--	--	--	--	--	--	--	0
9/28/2000	454	20%	789	175	420	22	0.24	23.6	1.24	0.012	95	446
10/12/2000	696	72%	950	88	360	<10	<0.15	10.1	<0.28	<0.004	*	684
11/9/2000	1251	83%	820	55	590	<10	<0.15	10.5	<0.18	<0.002	*	918
1/23/2001	1313	3%	--	--	--	--	--	--	--	--	*	945
3/28/2001	0	--	--	--	--	--	--	--	--	--	--	945
4/5/2001	194	101%	908	85	1,800	34	0.52	49.1	0.93	0.013	98	1341
5/3/2001	863	100%	1000	54	2,800	<10	<0.15	48.5	<0.17	<0.002	*	2709
6/4/2001	1114	33%	820	101	240	<10	<0.15	7.8	<0.32	<0.004	*	3217
7/2/2001	1429	47%	804	109.0	92	26	0.34	3.2	<0.91	<0.011	72	3319
7/10/2001	1621	100%	900	150	92	<10	<0.15	4.4	<0.48	<0.007	*	3345
8/2/2001	1759	25%	940	79	110	<10	<0.15	2.8	<0.25	<0.003	*	3370
9/7/2001	2301	63%	854	141	81	34	0.52	3.7	<1.54	<0.021	58	3433
10/3/2001	2470	27%	854	230	160	<10	0.31	11.8	<0.74	<0.021	*	3458
11/6/2001	3015	67%	955	97	590	31	0.43	18.3	<0.96	<0.012	95	3727

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. (degree F)	System Flow Rate (after dilution) (cfm)	System Influent HC Conc. [1] (ppmv)	System Effluent HC Conc. [1] (ppmv)		HC Removal Rate [2] (lbs/day)	Emission Rate [2] (lbs/day)		TPHg Destruction Efficiency (%)	Gasoline Cumulative Removal [3] (lbs)
					TPHg	TPHg	Benz	TPHg	TPHg	Benz		
11/14/2001	3184	88%	860	69	810	<10	<0.15	17.9	<0.22	<0.003	*	3855
12/6/2001	3710	96%	806	53	50	<10	<0.15	0.9	<0.17	<0.002	*	4248
1/7/2002	4472	99%	841	42	120	<10	<0.15	1.6	<0.13	<0.002	*	4275
2/4/2002	4938	69%	817	78	<5	<10	<0.15	0.1	<0.25	<0.003	*	4306
3/5/2002	5396	66%	665	26	170	<10	<0.15	1.4	<0.08	<0.001	*	4309
4/2/2002	6068	100%	670	32	260	<10	<0.15	2.6	<0.10	<0.001	*	4348
5/6/2002	6886	100%	667	76	500	<10	<0.15	12.2	<0.24	<0.003	*	4438
6/5/2002	7608	100%	751	72	73	<10	<0.15	1.7	<0.23	<0.003	*	4805
7/2/2002	8253	100%	736	80	--	--	--	--	--	--	--	4850

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.

[1] TPHg and benzene concentrations based on lab results by Modified EPA Methods 8015 and 8020.

[2] 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^{6}ft^3 x molecular weight (86 lb/lb-mole for TPHg, 78 lb/lb-mole for benzene) x 1440 min/day.

[3] 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.

[4] As per BAAQMD permit conditions, system destruction efficiency need not be calculated for effluent TPHg concentrations less than 10 ppmv

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	366,560	361,717	0.7	--	--	--	--	--	--	0.009	1.534
					Sewer Effluent Discharge Limits: (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)

ND = non detect

<n = below noted practical laboratory quantitation limits

Inf = Influent Sample

Eff = Effluent Sample

NC = Not calculated, insufficient data

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	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
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

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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
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	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
RW-6	5/24/00	--	80	--	*	--	11.78
	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	--	--	*	--	--
	5/21/02	closed	--	--	*	--	--
	6/19/02	closed	--	--	*	--	--
	6/28/02	closed	--	--	*	--	--
	7/10/02	open	97	54	*	--	20

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	--	*	--	--
	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	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	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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
	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	--	--	*	--	--
	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	--	--	*	--	--
	6/28/02	closed	--	--	*	--	--
	7/10/02	closed	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	*	--	--
	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	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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
	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	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	*	--	--
	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	--	--	*	--	--
	6/28/02	closed	--	--	*	--	--
	7/10/02	closed	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	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	--
	3/29/01	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

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	--	*	--	--
	5/21/02	closed	--	--	*	--	--
	6/19/02	closed	--	--	*	--	--
	6/28/02	closed	--	--	*	--	--
	7/10/02	closed	--	--	*	--	--

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 H_2O)	Well Annulus Vacuum (inches of H_2O)	Flow Rate (cfm)	Hydrocarbon Vapor Concentration (ppmv)	Stinger Depth (ft below TOC)
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	--	--	*	--	--
	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	closed	--	--	*	--	--
	5/21/02	closed	--	--	*	--	--
	6/19/02	closed	--	--	*	--	--
	6/28/02	closed	--	--	*	--	--
	7/10/02	closed	--	--	*	--	--

Notes:

* = Parameter could not be accurately measured due to the presence of water or water vapor.

-- = Data not available or not collected

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APPENDIX A

Groundwater Monitoring Field Data Sheets

CAMBR

WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments Stingers at
MW-1	5:15		24.10			23.50
MW-2	5:20		18.59			[redacted] stinger in well but not connecte
MW-3	5:25		22.94			22.00
MW-4	5:30 [redacted]		22.30 [redacted]			21.00

Project Name: Worthington

Project Number: **130-0105**

Measured By: [signature]

Date: 06/10/02

F:\TEMPLATE\FORMS\FIELD\GW-DEPTH.WPD

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW-3
Project Number: 130-0105	Date: 6-10-02	Well Yield:
Site Address: 3055 5th St Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2" pvc
		Technician(s): SG
Initial Depth to Water: 22.94	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: system	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
		purged	for 35 mins		

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	6-10-02	7:30	4 VOA 1 Amber	HCl	TPHg BTEX MTBE TPHd	

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW-2
Project Number: 130-0105	Date: 6-10-02	Well Yield:
Site Address: 3055 5th St Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 4 ☐ pvc
		Technician(s): SG
Initial Depth to Water: 18.59	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: system	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
	connected hose to system for purging				
	purged for 30 mins				

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	6/10-02	6:30	4 VOA 1 Amber	HCl	TPHg BTEX MTBE	

D:\TEMPLATE\FORMS\FIELD\WELLSAMP2.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW-1
Project Number: 130-0105	Date: 6-10-02	Well Yield:
Site Address: 3055 5th St. Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 4 0 pvc
		Technician(s): SG
Initial Depth to Water: 24.10	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: system	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
	purged	for	20 mins		

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	6-10-02	6:00	4 voa 1 Amber	HCl	TPHG BTEX MTBE TPHd	

D:\TEMPLATE\FORMS\FIELD\WELLSAMP2.WPD
NSM 5/31/94

CAMBRIA

WELL SAMPLING FORM

Project Name: Worthington	Cambria Mgr: RAS	Well ID: MW-4
Project Number: 130-0105	Date: 6-10-02	Well Yield:
Site Address: 3055 54th St Oakland, Ca	Sampling Method: disposable bailer	Well Diameter: 2" pvc
		Technician(s): SG
Initial Depth to Water: 22.30	Total Well Depth:	Water Column Height:
Volume/ft:	1 Casing Volume:	3 Casing Volumes:
Purging Device: system	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
		purged	for	35 mins	

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

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	6-10-02	8:00	4 VOA 1 Amber	HCl	TPHg BTEX MTBE TPHd	-

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
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 Scheels Bill To: Cambria Env

Company: Cambria Environmental Technology

6262 Hollis Street

Emeryville, CA 94608

Tele: (510) 450-1933 Fax: (510) 450-8295

Project #: 130-0105-340 Project Name: Worthington

Project Location: 3055 54th St. Oakland, Ca

Sampler Signature: S. Hill

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & 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	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	Other	Comments
MW-1		6-10-02	6:00	3	VOA Amb	X					X	X			X	X															
MW-2		6-10-02	6:30	3	VOA Amb	X					X	X			X	X															
MW-3		6-10-02	7:30	3	VOA Amb	X					X	X			X	X															
MW-4		6-10-02	8:00	3	VOA Amb	X					X	X			X	X															

Relinquished By:	Date:	Time:	Received By:
S. Hill	6/7/02	1:30	secure location
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

report results in EDF format

CAMBRIA

APPENDIX B

Analytical Results for Quarterly Groundwater Sampling

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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: 130-0105-340; Worthington	Date Sampled: 06/10/02
		Date Received: 06/12/02
	Client Contact: Ron Scheele	Date Reported: 06/18/02
	Client P.O.:	Date Completed: 06/18/02

June 18, 2002

Dear Ron:

Enclosed are:

1). the results of 4 samples from your **130-0105-340; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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

Cambria Env. Technology	Client Project ID: 130-0105-340; Worthington	Date Sampled: 06/10/02
6262 Hollis St.		Date Received: 06/12/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/16/02-06/18/02
	Client P.O.:	Date Analyzed: 06/16/02-06/18/02

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0206198

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW1	W	4200,a	ND<100	830	170	110	460	10	101
002A	MW-2	W	14,000,a	ND<800	2600	710	150	2000	50	101
003A	MW-3	W	9000,a	ND<300	1800	1300	96	1000	20	103
004A	MW-4	W	9400,a	ND<200	1400	50	ND<5.0	690	10	113
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	ug/L	
		S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg	

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

DF = dilution factor.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 (stoddard solvent); 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) no recognizable pattern; k) TPH pattern that does not appear to be derived from gasoline (aviation gas).

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

Cambria Env. Technology	Client Project ID: 130-0105-340; Worthington	Date Sampled: 06/10/02
6262 Hollis St.		Date Received: 06/12/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/12/02
	Client P.O.:	Date Analyzed: 06/13/02-06/15/02

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

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0206198

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
001B	MW1	W	900,d,g	1	114
002B	MW-2	W	2000,d	1	112
003B	MW-3	W	990,d,g	1	71.0
004B	MW-4	W	3400,d	20	107

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 ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/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 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) 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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2428 Matrix: W WorkOrder: 0206198

EPA Method: SW8021B/8015Cm Extraction: SW5030B Ext. Date: 6/12/02 Spiked Sample ID: 0206209-011A

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	99	100	1.49	97.1	100	15	80	120
MTBE	ND	10	99.7	105	4.80	106	100	11	80	120
Benzene	0.5332	10	107	94.6	1.34	111	106	4.6	80	120
Toluene	0.5529	10	110	94.6	0.354	117	112	3.8	80	120
Ethylbenzene	ND	10	108	104	4.93	114	110	5.0	80	120
Xylenes	ND	30	103	108	6.25	113	110	3.1	80	120
%SS	105	10	105	106	0.509	104	105	2.0	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, or analyte concentration in sample exceeds spike amount.

% 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

QC SUMMARY REPORT FOR SW8015C

BatchID: 2417 Matrix: W WorkOrder: 0206198

EPA Method: SW8015C Extraction: SW3510C Ext. Date: 6/12/02 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	89.1	90	1.0	70	130
%SS1	N/A	2500	N/A	N/A	N/A	111	113	1.4	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, or analyte concentration in sample exceeds spike amount.

% 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.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

CETE

Q206198

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553
Telephone: (925) 798-1620 Fax: (925) 798-1622

Report To: Ron Scheels Bill To: Cambria Env

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

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

Project #: 130-0105-340 Project Name: Worthington

Project Location: 3055 54th St. Oakland, Ca

Sampler Signature: S. Hill

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other	Analysis Request: BTEX & 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	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	Other	Comments
MW-1		6-10-02	6:00	6	VOA Amb	X					X	X			X	X															
MW-2		6-10-02	6:30	6	VOA Amb	X					X	X			X	X															
MW-3		6-10-02	7:30	6	VOA Amb	X					X	X			X	X															
MW-4		6-10-02	8:00	6	VOA Amb	X					X	X			X	X															

HEADSPACE ABSENT ✓ PRESERVATION APPROPRIATE ✓ CONTAINERS ✓ VOAS CHLORINE FREE ✓

Relinquished By:	Date:	Time:	Received By:
S. Hill	6/12/02	1:30	secure location
	6/12/	10:35	
	6/12	2pm	

Remarks:
report results in EDF format

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0206198

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: 130-0105-340; W
PO:

12-Jun-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests <>	SW8015C	8021B/8015
0206198-001	MW1	Water	6/10/02 6:00:00 PM		B	B	A
0206198-002	MW-2	Water	6/10/02 6:30:00 PM			B	A
0206198-003	MW-3	Water	6/10/02 7:30:00 PM			B	A
0206198-004	MW-4	Water	6/10/02 8:00:00 PM			B	A

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

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APPENDIX C

Analytical Results for TPE System Operation

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

Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #130-0105-343; Worthington	Date Sampled: 04/02/02
		Date Received: 04/03/02
	Client Contact: Ron Scheele	Date Extracted: 04/03/02
	Client P.O:	Date Analyzed: 04/03/02

04/10/02

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Edward Hamilton, Lab Director

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

Cambria Environmental Technology	Client Project ID: #130-0105-343; Worthington	Date Sampled: 04/02/02
6262 Hollis Street		Date Received: 04/03/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 04/04/02
	Client P.O:	Date Analyzed: 04/04/02

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)[+]	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
0204060-001	INF	Air	260,a	ND<3	6.2	5.0	0.77	3.0	---[#]
0204060-002	EFF	Air	ND	ND	ND	ND	ND	ND	108

[%] 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 unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

[#] cluttered chromatogram; sample peak coelutes with surrogate peak

[+]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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC REPORT

EPA 8015m + 8020

Date: 04/04/02 **Extraction:** EPA 5030 **Matrix:** Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 40402					Instrument	GC-12	
Surrogate1	ND	97.0	93.0	100.00	97	93	4.2
Xylenes	ND	32.5	32.6	30.00	108	109	0.3
Ethylbenzene	ND	10.6	10.5	10.00	106	105	0.9
Toluene	ND	10.4	10.3	10.00	104	103	1.0
Benzene	ND	10.5	10.3	10.00	105	103	1.9
MTBE	ND	10.2	10.2	10.00	102	102	0.0
TPH (gas)	ND	93.2	93.7	100.00	93	94	0.6

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

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

0204060zc615.doc

McCAMPBELL ANALYTICAL INC.

1140 2nd AVENUE SOUTH, #D9
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 #: 130-0105-343 Project Name: WORTHINGTON
Project Location: 3055 35TH AVE OAKLAND
Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other	Analysis Request: BTEX & 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 501 / 8010	HTEX ONLY (EPA 602 / 8020)	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
INF	Oakland	4/2/02	10AM	1	Bag			X							X															
EFF	Oakland	4/2/02	10AM	1	Bag			X							X															

ITEM NO CONDITION HEADSPACE ABSENT
PRESERVATION APPROPRIATE CONTAINERS
VOAS O&G METALS OTHER

Relinquished By:	Date:	Time:	Received By:
	4/2/02	3PM	Stored Location
Relinquished By:	Date:	Time:	Received By:
	4/3	1106	24 hr
Relinquished By:	Date:	Time:	Received By:
	4/3	1550	

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

Sent By: McCampbell Analytical, Inc.; 1 925 798 4812; Sep-5-01 8:42AM; Page 2/2

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0204060

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

TEL:
FAX:
ProjectNo: #130-0105-343;
PO:

03-Apr-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					8021B/8015						
0204060-001	INF	Air	4/2/02		A						
0204060-002	EFF	Air	4/2/02		A						

Comments: Report in ppmv; 10 ppmv limit 20 ml injection volume

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

McCampbell Analytical Inc.

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

Cambria Env. Technology	Client Project ID: #130-0105-343; Worthington	Date Sampled: 04/02/02
6262 Hollis St.		Date Received: 04/04/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 04/10/02
	Client P.O.:	Date Completed: 04/10/02

April 10, 2002

Dear Ron:

Enclosed are:

1). the results of 3 samples from your **#130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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

Cambria Env. Technology	Client Project ID: #130-0105-343; Worthington	Date Sampled: 04/02/02
6262 Hollis St.		Date Received: 04/04/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 04/06/02-04/08/02
	Client P.O.:	Date Analyzed: 04/06/02-04/08/02

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0204084

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	160,a	9.9	15	17	3.3	20	1	102
002A	EFF-1	W	ND	ND	ND	ND	ND	ND	1	104

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5	0.5	0.5	0.5	0.5	ug/L
	S	1	0.05	0.005	0.005	0.005	0.005	mg/Kg

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

DF = dilution factor.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 (stoddard solvent); 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) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Direct

McCAMPBELL ANALYTICAL INC.
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QC REPORT

EPA 8015m + 8020

Date: 04/06/02 **Extraction:** EPA 5030 **Matrix:** Water

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 40602					Instrument	GC-12	
Surrogate1	ND	92.0	94.0	100.00	92	94	2.2
Xylenes	ND	32.7	33.5	30.00	109	112	2.4
Ethylbenzene	ND	10.7	11.2	10.00	107	112	4.6
Toluene	ND	10.6	10.9	10.00	106	109	2.8
Benzene	ND	10.6	11.0	10.00	106	110	3.7
MTBE	ND	10.6	11.3	10.00	106	113	6.4
TPH (gas)	ND	96.5	94.1	100.00	96	94	2.5

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

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

0204084 ZC616

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
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 #: 130-0105-243 Project Name: WORTHINGTON
Project Location: 3055 35th AVE OAKLAND CA
Sampler Signature: [signature]

SAMPLE ID	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Matrix: Soil	Matrix: Air	Matrix: Sludge	Matrix: Other	Preserved: Ice	Preserved: HCl	Preserved: HNO_3	Preserved: Other	BTEX & 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	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	Other	Comments
(+) INF	Oakland	4/2/02	11AM	3	Voa	X					X	X			X																
EFF-1	↓			3	Voa	X					X	X			X																
EFF-2	↓	↓	↓	3	Voa	X					X	X			X																

ICE/t° ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓
PRESERVATION APPROPRIATE CONTAINERS
VOAS ✓ | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
[signature]	4/2/02	3pm	Secured location
[signature]	4/3	1106	[signature] 240
Susan [signature]	4/4	955	[signature] 285

Remarks: ONLY ANALYZE EFF-2 IF HC's DETECTED IN EFF-1.

FAX RESULTS PLEASE. TBVM

[signature] 285 4/4 1605 Lindell 4/4/02 6:00

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0204084

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #130-0105-343;
PO:

04-Apr-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					8021B/8015						
0204084-001	INF	Water	4/2/02 11:00:00 AM		A						
0204084-002	EFF-1	Water	4/2/02 11:00:00 AM		A						
0204084-003	EFF-2	Water	4/2/02 11:00:00 AM		A						

Comments: Only analyze EFF-2 if HC's detected in EFF-1

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

NOTICE: Solid samples are discarded after 60 days and Non-Solid samples are discarded after 30 days unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

McCampbell Analytical Inc.

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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #130-0105-343; Worthington	Date Sampled: 05/06/02
		Date Received: 05/07/02
	Client Contact: Ron Scheele	Date Reported: 05/13/02
	Client P.O.:	Date Completed: 05/13/02

May 13, 2002

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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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 Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #130-0105-343; Worthington	Date Sampled: 05/06/02
		Date Received: 05/07/02
	Client Contact: Ron Scheele	Date Extracted: 05/07/02
	Client P.O:	Date Analyzed: 05/07/02

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)[+]	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
0205085-001	INF	Air	500,a	ND<5.0	10	7.3	0.96	4.2	---[#]
0205085-002	EFF	Air	ND	ND	ND	ND	ND	ND	110

[%] 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 unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

[#] cluttered chromatogram; sample peak coelutes with surrogate peak

[+]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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

EPA 8015m + 8020

Date: 05/07/02 **Extraction:** EPA 5030 **Matrix:** Water/Air

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 50702					Instrument	GC-12	
Surrogate1	ND	102.0	101.0	100.00	102	101	1.0
Xylenes	ND	29.9	30.0	30.00	100	100	0.3
Ethylbenzene	ND	11.0	10.0	10.00	110	100	9.5
Toluene	ND	10.0	10.0	10.00	100	100	0.0
Benzene	ND	10.0	10.0	10.00	100	100	0.0
MTBE	ND	9.0	9.1	10.00	90	91	1.1
TPH (gas)	ND	95.3	97.2	100.00	95	97	2.0

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

$$\text{RPD} = \frac{(MS - MSD)}{(MS + MSD)} \cdot 2 \cdot 100$$

RPD means Relative Percent Deviation

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0205085

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #130-0105-343;
PO:

07-May-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					8021B/8015						
0205085-001	INF	Air	5/6/02 12:00:00 PM		A						
0205085-002	EFF	Air	5/6/02 12:00:00 PM		A						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

0205055

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
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 #: 130-0105-343 Project Name: WORTHINGTON

Project Location: 3055 35TH AVE OAKLAND

Sampler Signature:

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other	Analysis Request: BTEX & 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	BTEX ONLY (EPA 602 / 8020)	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
INF	Oakland	5/6/2	12pm	1	Bag			X							X															
EFF	Oakland	5/6/2	12pm	1	Bag			X							X															

	Date	Time	
Relinquished By:	5/6/2	7:30pm	Received By: Sampled Location
Relinquished By:	5/7/2	12pm	Received By:
Relinquished By:	5/7/2	7:00	Received By:

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

PLEASE FAX RESULTS

McCampbell Analytical Inc.

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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #130-0105-343; Worthington	Date Sampled: 05/06/02
		Date Received: 05/07/02
	Client Contact: Ron Scheele	Date Reported: 05/14/02
	Client P.O.:	Date Completed: 05/14/02

May 14, 2002

Dear Ron:

Enclosed are:

1). the results of 3 samples from your **#130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
http://www.mccampbell.com E-mail: main@mccampbell.com

Cambria Env. Technology	Client Project ID: #130-0105-343; Worthington	Date Sampled: 05/06/02
6262 Hollis St.		Date Received: 05/07/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 05/08/02-05/11/02
	Client P.O.:	Date Analyzed: 05/08/02-05/11/02

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0205087

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	100,a	5.5	3.5	1.7	1.0	4.0	1	105
002A	EFF-1	W	ND	ND	ND	ND	ND	ND	1	104
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	ug/L		
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg		

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

DF = dilution factor.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 (stoddard solvent); 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) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCampbell Analytical Inc.

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 1713 Matrix: W WorkOrder: 0205087

EPA Method: SW8021B/8015Cm Extraction: SW5030B Ext. Date: 5/07/02 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	107	111	4.1	80	120
MTBE	N/A	10	N/A	N/A	N/A	85.1	88.7	4.1	80	120
Benzene	N/A	10	N/A	N/A	N/A	91.1	97.6	6.9	80	120
Toluene	N/A	10	N/A	N/A	N/A	94.3	101	6.5	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	94.5	102	7.2	80	120
Xylenes	N/A	30	N/A	N/A	N/A	94.3	103	9.1	80	120
%SS	N/A	10	N/A	N/A	N/A	102	103	1.0	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, or analyte concentration in sample exceeds spike amount.

% 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0205087

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #130-0105-343;
PO:

07-May-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					8021B/8015						
0205087-001	INF	Water	5/6/02 11:30:00 AM		A						
0205087-002	EFF-1	Water	5/6/02 11:30:00 AM		A						
0205087-003	EFF-2	Water	5/6/02 11:30:00 AM		A						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

0205087

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
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 #: 130-0105-343 Project Name: WORTHINGTON

Project Location: 3055 35th AVE. OAKLAND, CA

Sampler Signature: Ronna Scheele

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX: Water	Soil	Air	Sludge	Other	METHOD PRESERVED: Ice	HCl	HNO_3	Other
INF	Oakland	5/6/2	11:30	4	Voa	X					X	X		
EFF-1	↓	5/6/2	11:30	4	Voa	X					X	X		
EFF-2		5/6/2	11:30	4	Voa	X					X	X		

Analysis Request

BTEX & 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	BTEX ONLY (EPA 602 / 8020)	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
X	X												
X	X												
X	X												

Other: VOAS | O&G | METALS | OTHER
Comments:
PRESERVATION
APPROPRIATE
CONTAINERS
HEAD SPACE ABSENT

Relinquished By:	Date:	Time:	Received By:
Ronna Scheele	5/6/2	7:30pm	Secured Location
	5/7/2	12pm	SINGH
SINGH	5/7/02	245	

Remarks:
ONLY ANALYZE EFF-2 IF HC's DETECTED IN EFF-1.

FAX RESULTS PLEASE.

McCampbell Analytical Inc.

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

Cambria Env. Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #130-0105-343; Worthington	Date Sampled: 06/05/02
		Date Received: 06/06/02
	Client Contact: Ron Scheele	Date Reported: 06/13/02
	Client P.O.:	Date Completed: 06/13/02

June 13, 2002

Dear Ron:

Enclosed are:

1). the results of **2** samples from your **#130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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

Cambria Environmental Technology	Client Project ID: #130-0105-343; Worthington	Date Sampled: 06/05/02
6262 Hollis Street		Date Received: 06/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/06-06/07/02
	Client P.O:	Date Analyzed: 06/06-06/07/02

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)+	MTBE	Benzene	Toluene	Ethylben-zene	Xylenes	% Recovery Surrogate
0206082 -001	INF	Air	73,a	ND	2.3	1.0	ND	0.98	---#
0206082 -002	EFF	Air	ND	ND	ND	ND	ND	ND	108

% 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 unless otherwise stated; ND means not detected above the reporting limit		Air	10 uL/L	1.5	0.15	0.15	0.15	0.25	
		S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and air samples are reported in uL/L(ppmv), wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+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.

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2314 Matrix: A WorkOrder: 0206082

EPA Method: SW8021B/8015Cm Extraction: SW5030B Ext. Date: 6/06/02 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	115	109	5.0	80	120
MTBE	N/A	10	N/A	N/A	N/A	110	91.3	18	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.4	96.8	1.5	80	120
Toluene	N/A	10	N/A	N/A	N/A	98.2	101	2.3	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	99.2	101	1.5	80	120
Xylenes	N/A	30	N/A	N/A	N/A	100	103	3.3	80	120
%SS	N/A	10	N/A	N/A	N/A	100	100	0.15	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, or analyte concentration in sample exceeds spike amount.

% 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0206082

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: #130-0105-343;
PO:

06-Jun-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests						
					8021B/8015						
0206082-001	INF	Air	6/5/02 4:00:00 PM		A						
0206082-002	EFF	Air	6/5/02 4:00:00 PM		A						

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

ETE

0206082 - ZC640.doc

McCAMPBELL ANALYTICAL INC.
110 2[nd] AVENUE SOUTH, #D7
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 #: 130-0105-343 Project Name: WORTHINGTON
Project Location: 3055 35[th] AVE OAKLAND
Sampler Signature: [signature]

SAMPLE ID	LOCATION	Sampling Date	Sampling Time	# Containers	Type Containers	Matrix: Water	Soil	Air	Sludge	Other	Method Preserved: Ice	HCl	HNO_3	Other	BTEX & 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	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	Other	Comments
INF	Oakland	6/5/02	4pm	1	Bag			X							X																
EFF	Oakland	6/5/02	4pm	1	Bag			X							X																

ICE/T° ____ GOOD CONDITION ____ HEAD SPACE ABSENT ____
PRESERVATION ____ APPROPRIATE ____ CONTAINERS ____
VOAS | O&G | METALS | OTHER

Relinquished By:	Date:	Time:	Received By:
[signature]	6/6/02	7am	Secured Location
[signature]	6/6	2:30	B. [signature]
B. [signature]	6/6	3:00pm	[signature]

Remarks:
Report in ppmv; 10 ppmv limit
20 ml injection volume
PLEASE FAX RESULTS
TB.W

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

Cambria Env. Technology	Client Project ID: 130-0105-343; Worthington	Date Sampled: 06/05/02
6262 Hollis St.		Date Received: 06/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Reported: 06/13/02
	Client P.O.:	Date Completed: 06/13/02

June 13, 2002

Dear Ron:

Enclosed are:

1). the results of 3 samples from your **130-0105-343; 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. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

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

Cambria Env. Technology	Client Project ID: 130-0105-343; Worthington	Date Sampled: 06/05/02
6262 Hollis St.		Date Received: 06/06/02
Emeryville, CA 94608	Client Contact: Ron Scheele	Date Extracted: 06/09/02-06/10/02
	Client P.O.:	Date Analyzed: 06/09/02-06/10/02

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

Extraction method: SW5030B | Analytical methods: SW8021B/8015Cm | Work Order: 0206086

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	INF	W	ND	8.4	2.8	1.4	ND	2.5	1	103
002A	EFF-1	W	ND	ND	ND	ND	ND	ND	1	102
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	ug/L		
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg		

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

DF = dilution factor.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 (stoddard solvent); 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) no recognizable pattern; k) TPH pattern that does not appear to be derived from gasoline (aviation gas).

DHS Certification No. 1644

Edward Hamilton, Lab Director

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

QC SUMMARY REPORT FOR SW8021B/8015Cm

BatchID: 2314 Matrix: W WorkOrder: 0206086

EPA Method: SW8021B/8015Cm Extraction: SW5030B Ext. Date: 6/06/02 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	115	109	5.0	80	120
MTBE	N/A	10	N/A	N/A	N/A	110	91.3	18	80	120
Benzene	N/A	10	N/A	N/A	N/A	95.4	96.8	1.5	80	120
Toluene	N/A	10	N/A	N/A	N/A	98.2	101	2.3	80	120
Ethylbenzene	N/A	10	N/A	N/A	N/A	99.2	101	1.5	80	120
Xylenes	N/A	30	N/A	N/A	N/A	100	103	3.3	80	120
%SS	N/A	10	N/A	N/A	N/A	100	100	0.15	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, or analyte concentration in sample exceeds spike amount.

% 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 their RPDs near 0% if: a) the sample is inhomogeneous AND contains significant concentrations of analyze relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0206086

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

TEL: (510) 450-1983
FAX: (510) 450-8295
ProjectNo: 130-0105-343; W
PO:

06-Jun-02

Sample ID	ClientSampID	Matrix	Collection Date	Bottle	Requested Tests 8021B/8015
0206086-001	INF	Water	6/5/02 3:30:00 PM		A
0206086-002	EFF-1	Water	6/5/02 3:30:00 PM		A
0206086-003	EFF-2	Water	6/5/02 3:30:00 PM		A

Comments:

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

ETE

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
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 #: 130-0105-343 Project Name: Worthington

Project Location: 3055 35th AVE OAKLAND CA

Sampler Signature:

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HOUR ☐ 48 HOUR ☒ 5 DAY

SAMPLE ID	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED Ice	METHOD PRESERVED HCl	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: BTEX & 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 8010 / 8010	BTEX ONLY (EPA 602 / 8020)	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
INF	Oakland	6/5/02	3:30	3	Voa	X					X	X			X															
EFF-1	↓	↓	↓	3	Voa	X					X	X			X															
EFF-2 ⊛	↓	↓	↓	3	Voa	X					X	X			X															

ICE/blue GOOD CONDITION HEAD SPACE ABSENT PRESERVATION APPROPRIATE CONTAINERS VOAS O&G METALS OTHER

Relinquished By:	Date:	Time:	Received By:
	6/6/02	7am	Secured Location
Relinquished By:	Date: 6/6	Time: 2:30	Received By: B. Beetle
Relinquished By: B. Beetle	Date: 6/6	Time: 3:00	Received By:

Remarks:
ONLY ANALYZE EFF-2 IF HC's DETECTED IN EFF-1.

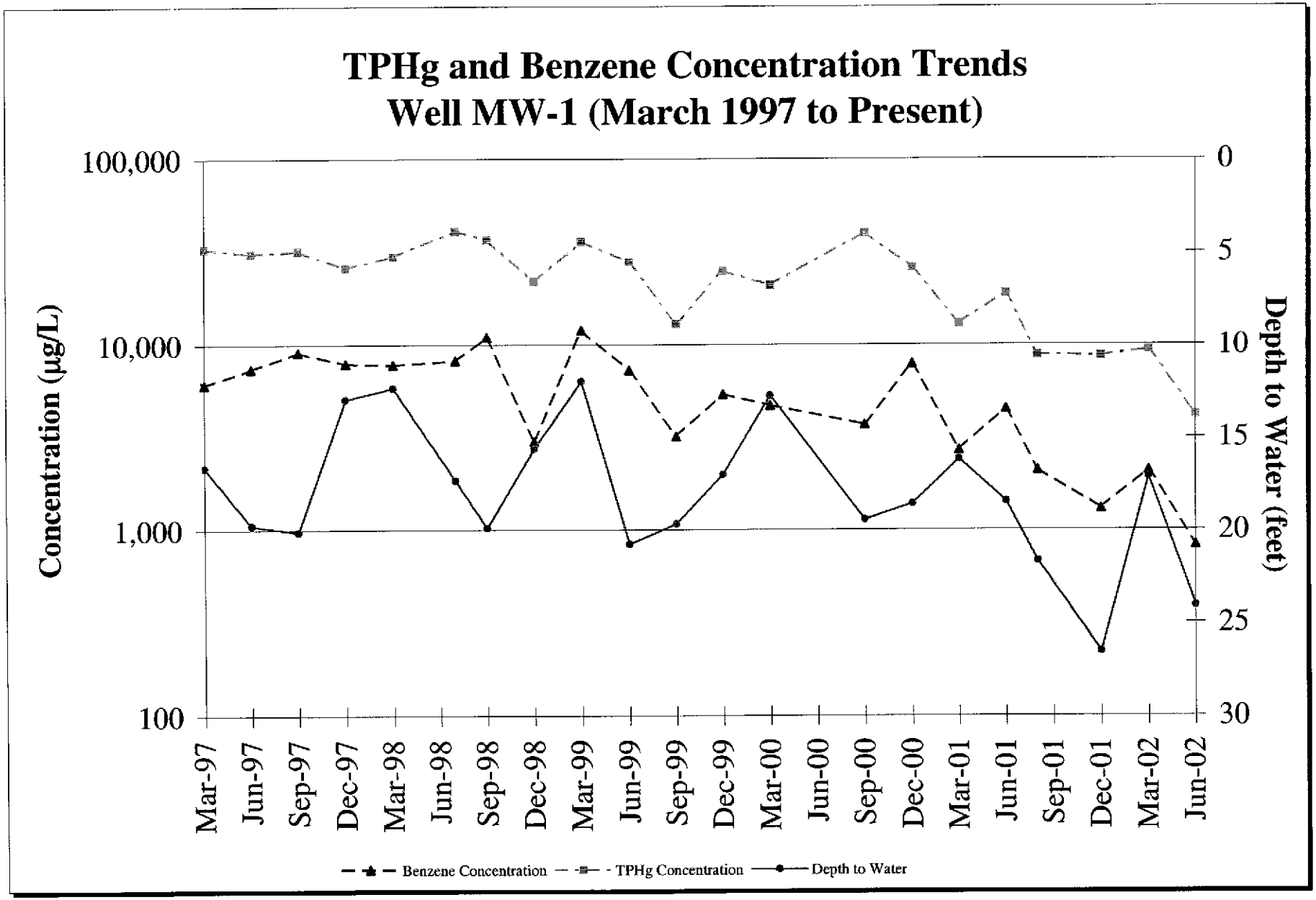
FAX RESULTS PLEASE.

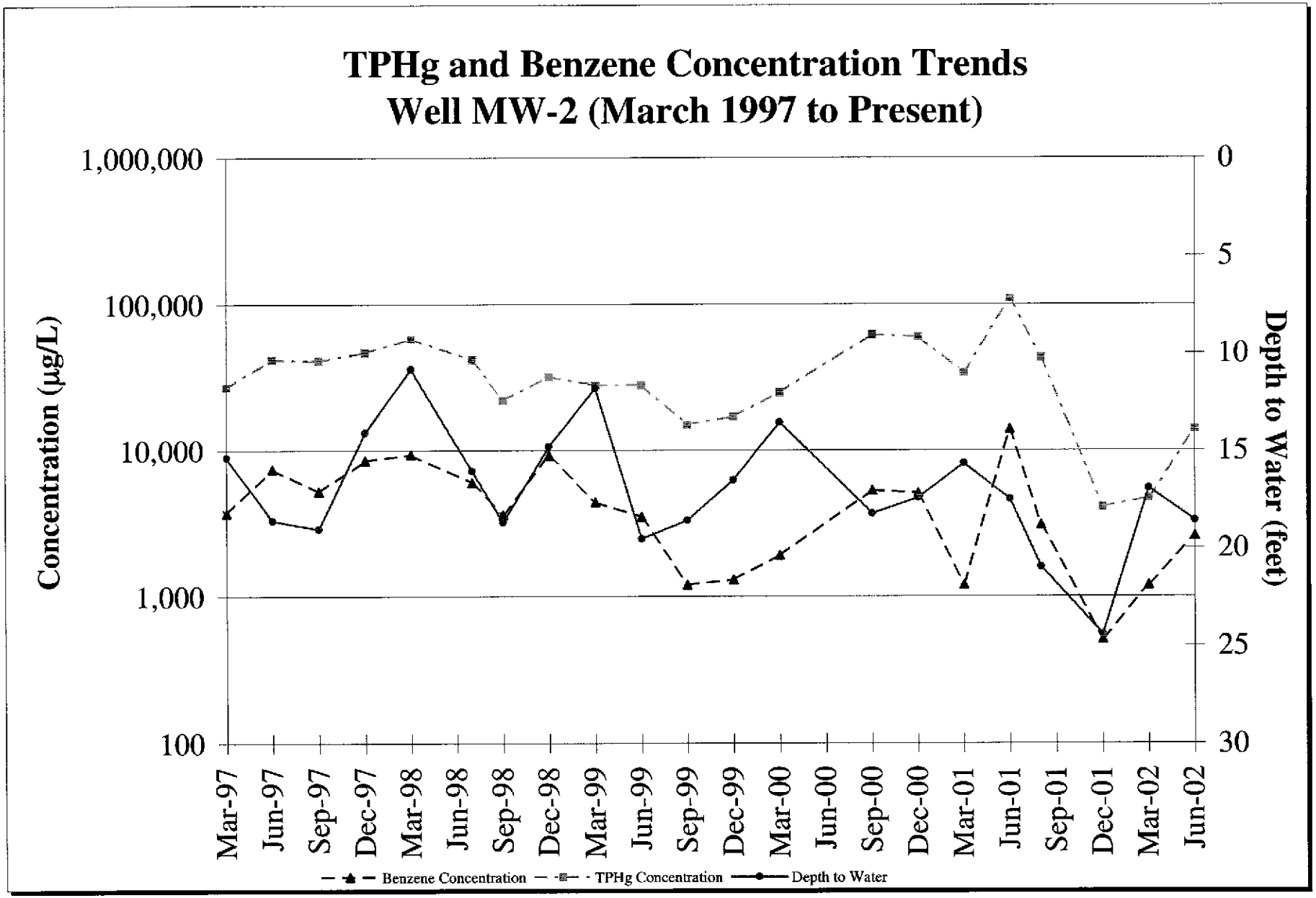
Sent By: McCampbell Analytical, Inc.; 1 925 798 4612; Sep-5-01 8:42AM; Page 2/2

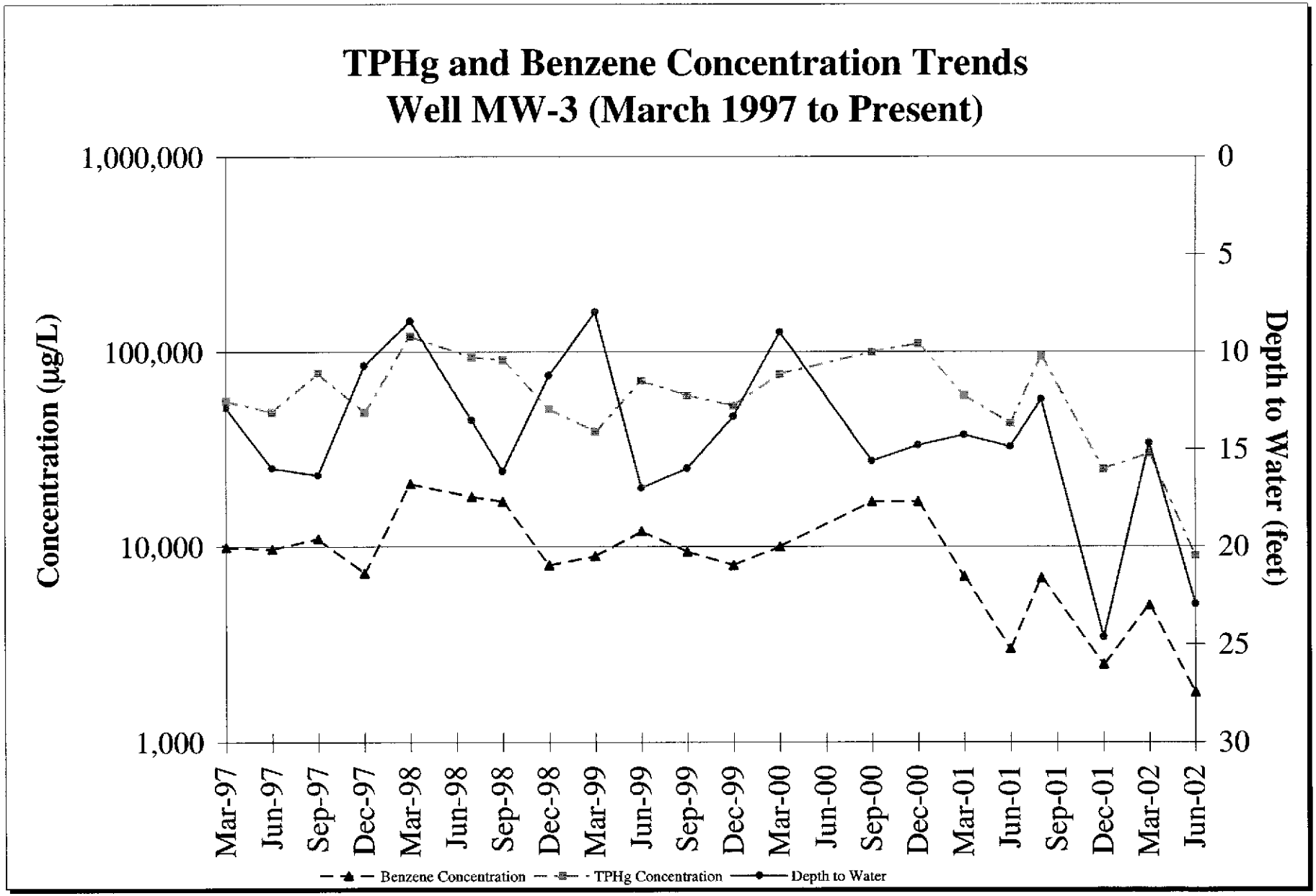
CAMBRIA

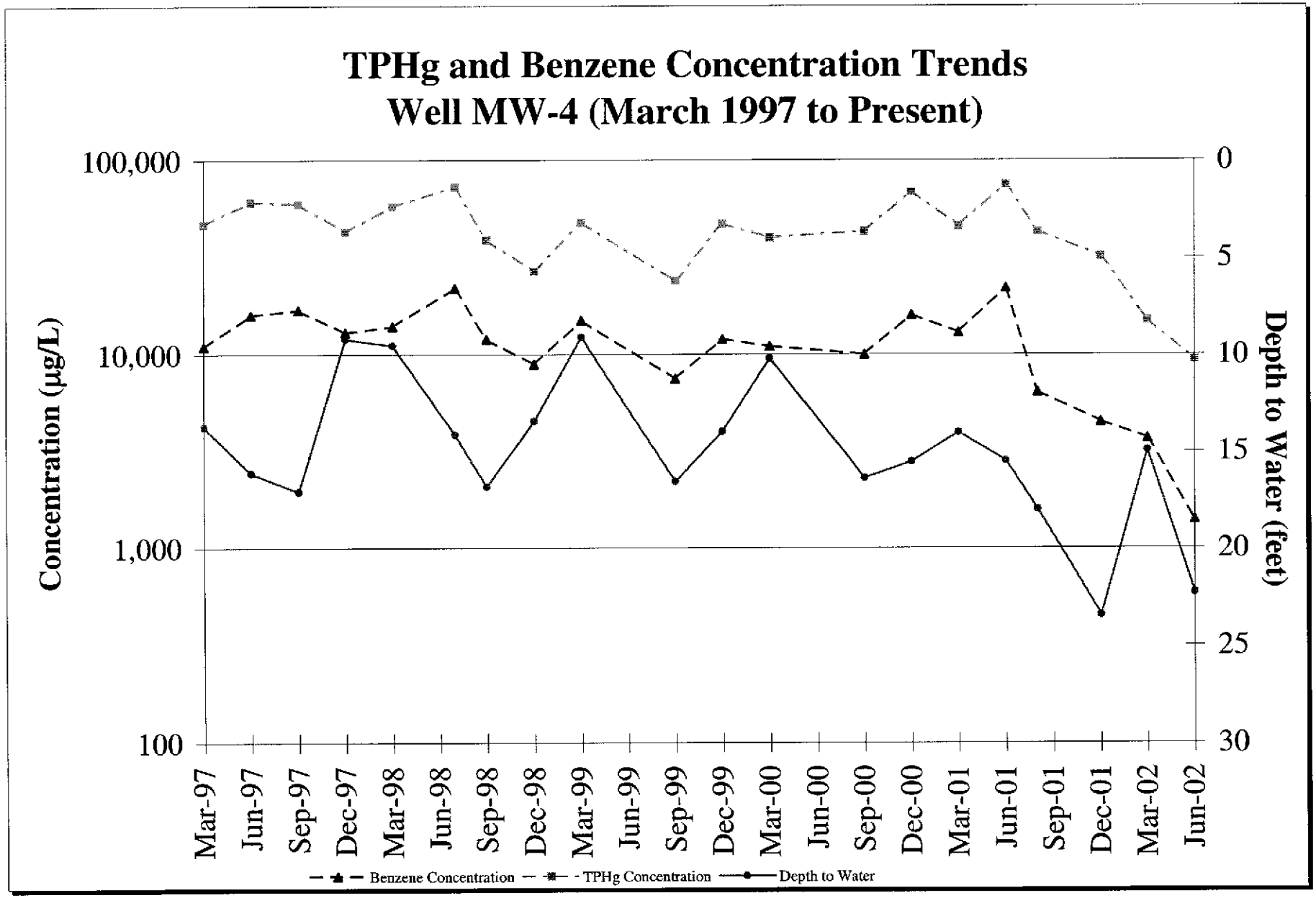
APPENDIX D

TPHg and Benzene Concentration Trend Graphs


TPHg and Benzene Concentration Trends
Well MW-1 (March 1997 to Present)
Concentration (µg/L)
100,000
10,000
1,000
100
Depth to Water (feet)
0
5
10
15
20
25
30
Mar-97
Jun-97
Sep-97
Dec-97
Mar-98
Jun-98
Sep-98
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
Sep-00
Dec-00
Mar-01
Jun-01
Sep-01
Dec-01
Mar-02
Jun-02
Benzene Concentration
TPHg Concentration
Depth to Water


TPHg and Benzene Concentration Trends
Well MW-2 (March 1997 to Present)
Concentration (µg/L)
1,000,000
100,000
10,000
1,000
100
Depth to Water (feet)
0
5
10
15
20
25
30
Mar-97
Jun-97
Sep-97
Dec-97
Mar-98
Jun-98
Sep-98
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
Sep-00
Dec-00
Mar-01
Jun-01
Sep-01
Dec-01
Mar-02
Jun-02
Benzene Concentration
TPHg Concentration
Depth to Water


TPHg and Benzene Concentration Trends
Well MW-3 (March 1997 to Present)
Concentration (µg/L)
1,000,000
100,000
10,000
1,000
Depth to Water (feet)
0
5
10
15
20
25
30
Mar-97
Jun-97
Sep-97
Dec-97
Mar-98
Jun-98
Sep-98
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
Sep-00
Dec-00
Mar-01
Jun-01
Sep-01
Dec-01
Mar-02
Jun-02
Benzene Concentration
TPHg Concentration
Depth to Water


TPHg and Benzene Concentration Trends
Well MW-4 (March 1997 to Present)
Concentration (µg/L)
100,000
10,000
1,000
100
Depth to Water (feet)
0
5
10
15
20
25
30
Mar-97
Jun-97
Sep-97
Dec-97
Mar-98
Jun-98
Sep-98
Dec-98
Mar-99
Jun-99
Sep-99
Dec-99
Mar-00
Jun-00
Sep-00
Dec-00
Mar-01
Jun-01
Sep-01
Dec-01
Mar-02
Jun-02
Benzene Concentration
TPHg Concentration
Depth to Water

CAMBRIA

APPENDIX E

Electronic Delivery Confirmations

AB2886 Electronic Delivery

Your EDF file has been succcessfully uploaded!

Confirmation Number: 9374192893
Date/Time of Submittal: 8/1/2002 1:32:40 PM
Facility Global ID: T0600100538
Facility Name: EXXON
Submittal Title: Worthington, 2nd Qtr 2002, GW Analytical Data
Submittal Type: GW Monitoring Report

Logged in as CAMBRIA-EM (AUTH_RP) CONTACT SITE ADMINISTRATOR.

AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_WELL FILE

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

Submittal Title:	**Worthington 2nd Qtr 2002, GW Depths**
Submittal Date/Time:	**8/1/2002 1:36:24 PM**
Confirmation Number:	**4957340836**

Back to Main Menu

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AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_Z FILE

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

Submittal Title:	**Worthington Well Elevation Data**
Submittal Date/Time:	**8/1/2002 1:46:16 PM**
Confirmation Number:	**1013641178**

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AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

Submittal Report For EXXON:

page 1 of 1

Title	Type	Submitted	Submittal Status	Confirmation #	
GEO_MAP	GEO_MAP	6/7/2002	**AWAITING APPROVAL**	2839451432	Delete Submittal
Worthington, 2nd Qtr 2002, GW Analytical Data	GWM_R	8/1/2002	**AWAITING APPROVAL**	9374192893	Delete Submittal
Worthington 2nd Qtr 2002, GW Depths	GEO_WELL	8/1/2002	**AWAITING APPROVAL**	4957340836	Delete Submittal
Worthington Well Elevation Data	GEO_Z	8/1/2002	**AWAITING APPROVAL**	1013641178	Delete Submittal

Logged in as CAMBRIA-EM (AUTH_RP)

CONTACT SITE ADMINISTRATOR.