

C A M B R I A

August 21, 2001

Mr. Don Hwang
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

AUG 27 2001

Re: **Groundwater Monitoring and System Progress Report
Second Quarter 2001**

Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, California 94602
Cambria Project No. 129-0741



Dear Mr. Hwang:

On behalf of Ms. Naomi Gatzke, Cambria Environmental Technology, Inc. (Cambria) has prepared this groundwater monitoring and remediation system progress report for the above-referenced site. Presented in the report are the second quarter 2001 activities and the anticipated third quarter 2001 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 2001

Oakland, CA
San Ramon, CA
Sonoma, CA

cc: Mr. Robert Cave, BAAQMD, Permit Services Division, 939 Ellis Street, San Francisco, California 94109
Ms. Naomi Gatzke, 1545 Scenic View Dr., San Leandro, CA 94577.

**Cambria
Environmental
Technology, Inc.**

1144 65th Street
Suite B
Oakland, CA 94608
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GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2001

Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, California 94602
Cambria Project No. 129-0741

AUG 27 2001



August 21, 2001

Prepared for:

Ms. Naomi Gatzke
1545 Scenic View Drive
San Leandro, California 94577

Prepared by:

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



Sara Dwight
Sara Dwight
Staff Environmental Scientist

R. Scheele
Ron Scheele, RG
Senior Geologist

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GROUNDWATER MONITORING AND SYSTEM PROGRESS REPORT

SECOND QUARTER 2001

Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, California 94602
Cambria Project No. 129-0741

August 21, 2001



INTRODUCTION

On behalf of Ms. Naomi Gatzke, 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 2001 groundwater monitoring and corrective action activities and the anticipated third quarter 2001 activities.

SECOND QUARTER 2001 ACTIVITIES

Monitoring Activities

Field Activities: On April 9, 2001, Cambria gauged water levels and inspected for separate phase hydrocarbons (SPH) in groundwater monitoring wells MW-1 through MW-6. On April 9, groundwater samples were obtained from monitoring wells that did not contain SPH. Due to a sampling error related to the air sparging system, remediation wells MW-1, MW-2, and MW-5 were re-sampled on April 24, 2001. Field data sheets are presented as Appendix A.

Sample Analyses: Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8020. When MTBE was detected by EPA Method 8020, the result was confirmed by EPA Method 8260. The groundwater analytical results are summarized in Table 1. The laboratory analytical report is included as Appendix B.

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Monitoring Results

Groundwater Flow Direction: Based on field measurements collect on April 9, 2001, groundwater beneath the site flows towards the southwest at a gradient of 0.195 ft/ft (Figure 1). This is consistent with the historic groundwater flow direction and gradient. Depth to water and groundwater elevation data are presented in Table 1.

Hydrocarbon Distribution in Groundwater: No SPH were detected this quarter. TPHg concentrations ranged from 77 to 56,000 micrograms per liter ($\mu\text{g/L}$), with the maximum TPHg concentration detected in well MW-2. Benzene was detected only in well MW-2, at 360 $\mu\text{g/L}$. MTBE was detected only in well MW-1, at 3.7 $\mu\text{g/L}$ (as confirmed by EPA 8260). Table 1 summarizes the groundwater analytical results.

Corrective Action Activities

System Design: The soil vapor extraction (SVE) remediation system consists of a trailer mounted all electric Falco-100 catalytic oxidizer with heat exchanger, 50-gallon moisture knockout tank, and a regenerative blower capable of generating airflow of 100 cfm. Monitoring wells MW-1, MW-2, and MW-5 are connected to the system. SVE system startup was completed on September 19, 2000. On October 23, 2000, in-well air sparging was initiated in wells MW-2 and MW-5 using the vacuum created by the catalytic oxidizer.

SVE System Operations and Maintenance Activities: The SVE system operated for a short time in April and was subsequently removed from the site pending modification of the remediation system to an air sparge system.

SVE System Performance: Cambria submitted a *Request for Remediation System Modification* dated March 14, 2001, requesting agency approval to discontinue SVE operations and install an air compressor to perform air sparging activities.

Air Sparging Activities: With the removal of the SVE equipment, no in-well air sparging activities could be performed during the second quarter.

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ANTICIPATED THIRD QUARTER 2001 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 by Modified EPA Method 8015 and BTEX and MTBE by EPA Method 8020. Any samples containing MTBE will be confirmed by EPA Method 8260. Cambria will prepare a groundwater monitoring report summarizing the monitoring activities and results.



Corrective Action Activities:

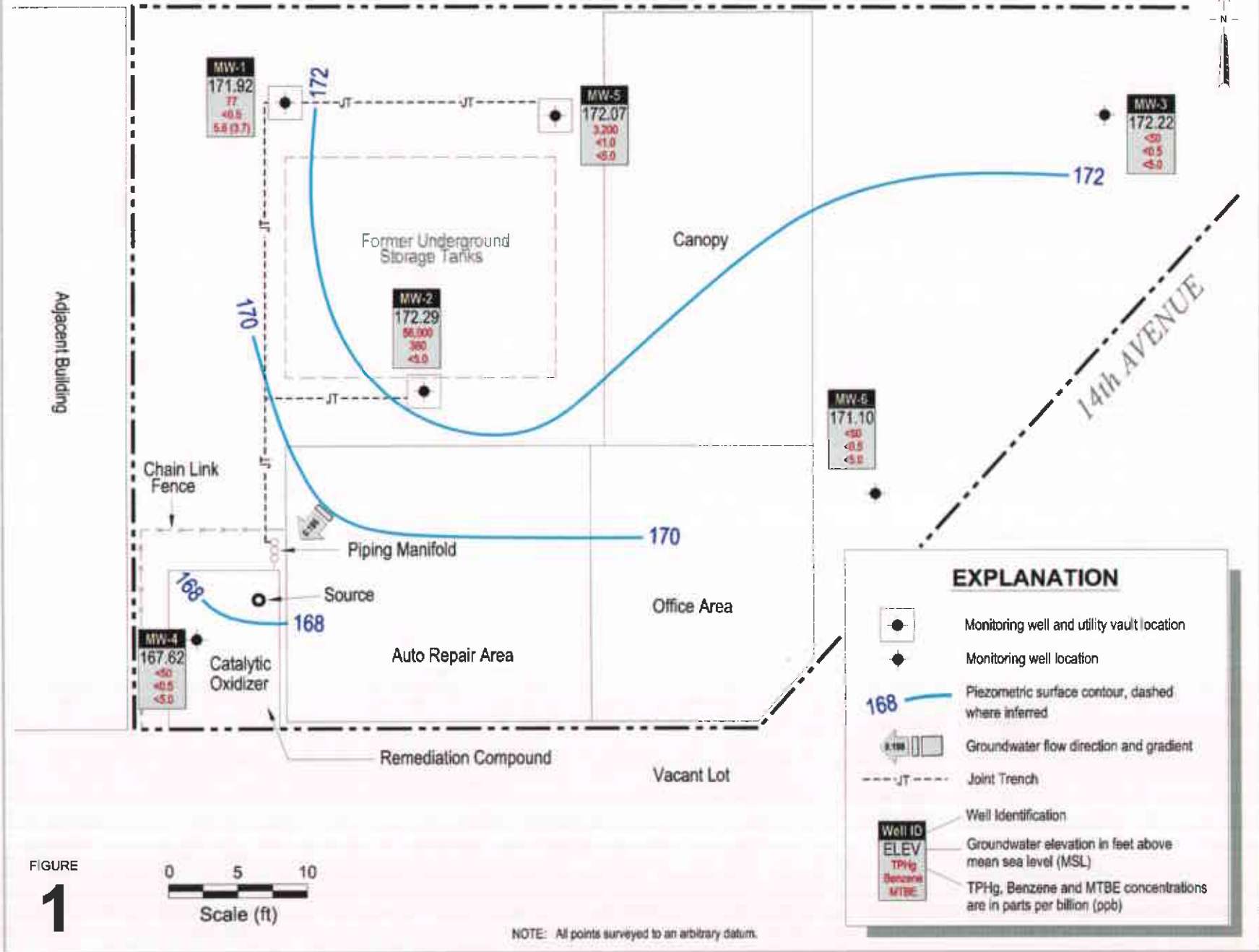
Cambria plans to revise the remediation system after preparation and agency approval of an Interim Remedial Action Plan.

ATTACHMENTS

- Figure 1 – Groundwater Elevation Contour and Hydrocarbon Concentration Map
- Table 1 – Groundwater Elevation and Analytical Data
- Appendix A – Groundwater Monitoring Field Data Sheets
- Appendix B – Analytical Results for Groundwater Sampling

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MAC ARTHUR BLVD.



Hooshi's Auto Service
 1499 MacArthur Boulevard
 Oakland, California

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**Groundwater Elevation Contour
 and Hydrocarbon Concentration Map**

April 9 + 24, 2001

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Table 1. Groundwater Elevation and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID <i>TOC (ft*)</i>	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	← (µg/L) →						Notes
					TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
MW-1	1/4/93	--	--	--	539	130	12	22	13	--	
<i>181.00</i>	4/22/93	--	--	--	1,130	75	8.0	38	11	--	
	12/27/94	--	--	--	770	22	6.6	14	21	--	
	6/27/96	14.11	166.89	--	3,300	260	34	59	170	80	
	12/10/96	13.71	167.29	--	1,500	84	11	22	32	34	
	5/8/98	13.85	167.15	--	3,200	300	12	62	36	<120	a
	8/17/98	14.11	166.89	--	1,700	160	18	32	27	39	a
	11/4/98	14.28	166.72	--	1,100	11	4.3	3.6	6.5	<50	a
	2/17/99	13.41	167.59	--	320	200	47	72	75	57	a
	5/27/99	14.16	166.84	--	2,500	81	12	29	41	<80	a
	8/19/99	14.18	166.82	--	780	19	<0.5	5.7	4.5	28	a
<i>180.83</i>	11/23/99	14.43	166.40	--	1,300	24	0.64	1.8	3.3	<100	a
	2/17/00	13.85	166.98	--	1,300	60	9.1	22	19	22 (16)	a,b
	5/9/00	14.01	166.82	--	2,700	55	13	19	25	34 (29)	a
	8/15/00	14.24	166.59	--	--	--	--	--	--	--	
	12/1/00	8.75	172.08	--	480	6.4	5.9	1.1	3.9	18 (21)	a
<i>180.63</i>	2/8/01	8.49	172.14	--	64	<0.5	<0.5	<0.5	<0.5	6.1 (5.6)	a,c
	4/9/01	8.71	171.92	--	--	--	--	--	--	--	
	4/24/01	7.90	172.73	--	77	<0.5	<0.5	<0.5	<0.5	5.6 (3.7)	c
MW-2	1/4/93	--	--	--	149,000	21,700	25,000	ND	7,760	--	
<i>180.45</i>	4/22/93	--	--	--	136,300	9,900	15,870	15,300	2,190	--	
	12/27/94	--	--	--	94,000	11,000	18,000	2,700	16,000	--	
	6/27/96	12.61	168.64	1.00	--	--	--	--	--	--	
	12/10/99	11.10	169.55	0.25	--	--	--	--	--	--	
	5/8/98	10.81	169.66	0.03	--	--	--	--	--	--	
	8/17/98	12.16	168.31	0.02	--	--	--	--	--	--	
	11/4/98	12.61	167.86	0.02	--	--	--	--	--	--	
	2/17/99	9.82	170.66	0.04	--	--	--	--	--	--	
	5/27/99	11.07	169.48	0.13	--	--	--	--	--	--	
	8/19/99	12.79	167.68	0.02	--	--	--	--	--	--	
<i>180.24</i>	11/23/99	12.14	168.20	0.12	--	--	--	--	--	--	
	2/17/00	10.01	170.37	0.18	--	--	--	--	--	--	

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Table 1. Groundwater Elevation and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID <i>TOC (ft*)</i>	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	←----- (µg/L) -----→						Notes
					TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
	5/9/00	10.88	169.38	0.03	--	--	--	--	--	--	
	8/15/00	12.28	167.97	0.01	--	--	--	--	--	--	
	12/1/00	8.03	172.21	--	260,000	1,100	5,000	1,900	17,000	<100	a
	2/8/01	7.86	172.38	--	2,900	1.7	14	5.0	140	<5.0	c,d
	4/9/01	7.95	172.29	--	--	--	--	--	--	--	
	4/24/01	6.90	173.34	--	56,000	360	980	1,000	4,700	<5.0	a,b
MW-3	1/4/93	--	--	--	1,610	772	14	11	ND	--	
179.94	4/22/93	--	--	--	3,040	980	34	19	16		
	12/27/94	--	--	--	2,600	180	9.0	7.2	13		
	6/27/96	13.20	166.74	--	2,000	22	2.9	11	7.4	56	
	12/10/96	13.13	166.81	--	970	<0.5	<0.5	<0.5	<0.5	24	
	5/8/98	13.03	166.91	--	780	3.7	2.1	1.1	2.4	<32	a
	8/17/98	13.22	166.72	--	870	2.8	<0.5	<0.5	3.7	<5.0	b,c
	11/4/98	13.31	166.63	--	770	1.6	4.4	2.0	6.9	<30	c
	2/17/99	12.89	167.05	--	650	6.2	3.4	1.5	2.6	<5.0	b,c
	5/27/99	12.32	167.62	--	570	1.5	1.2	0.72	1.1	<20	a
	8/19/99	13.19	166.75	--	830	<0.5	1.9	<0.5	1.3	<20	c,d
179.55	11/23/99	13.26	166.29	--	900	<0.5	1.8	0.56	1.4	<20	c,d
	2/17/00	12.78	166.77	--	250	<0.5	1.5	<0.5	0.62	<5.0	d
	5/9/00	12.92	166.63	--	690	<0.5	2.1	0.85	1.6	<5.0	a
	8/15/00	13.19	166.36	--	610	<0.5	2.3	0.75	1.2	<5.0	c,d
	12/1/00	7.50	172.05	--	120	<0.5	0.90	0.65	0.62	<5.0	c,d
	2/8/01	7.20	172.35	--	87	<0.5	<0.5	<0.5	<0.5	<5.0	c,d
	4/9/01	7.33	172.22	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. Groundwater Elevation and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID <i>TOC (ft*)</i>	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	←----- (µg/L) -----→						Notes
					TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
MW-4	6/27/96	17.03	163.51	--	720	2	0.5	2.5	23	3.2	
180.54	12/10/96	8.50	172.04	--	80	2.4	<0.5	<0.5	6.6	<2.0	
	5/8/98	11.46	169.08	--	<50	0.60	<0.5	<0.5	<0.5	<5.0	
	8/17/98	13.98	166.56	--	<50	<0.5	<0.5	<0.5	0.5	<5.0	
	11/4/98	14.36	166.18	--	96	9.7	8.1	4.8	18	<5.0	a
	2/17/99	8.39	172.15	--	<50	<0.5	<0.5	<0.5	0.5	<5.0	
	5/27/99	12.80	167.74	--	<50	<0.5	1.0	<0.5	2.9	<5.0	
	8/19/99	14.42	166.12	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
180.12	11/23/99	14.63	165.49	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/17/00	8.15	171.97	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/9/00	12.81	167.31	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/15/00	14.29	165.83	--	<50	2.1	<0.5	<0.5	<0.5	<5.0	
	12/1/00	12.80	167.32	--	81	6.0	8.4	1.0	5.6	<5.0	a
	2/8/01	12.57	167.55	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/9/01	12.50	167.62	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
MW-5 180.23	6/27/96	13.62	166.74	0.16	--	--	--	--	--	--	
	12/10/96	13.26	167.77	1.00	--	--	--	--	--	--	
	5/8/98	13.15	167.11	0.04	--	--	--	--	--	--	
	8/17/98	13.36	166.89	0.02	--	--	--	--	--	--	
	11/4/98	13.52	166.73	0.02	--	--	--	--	--	--	
	2/17/99	13.02	167.23	0.02	--	--	--	--	--	--	
	5/27/99	13.80	166.71	0.35	--	--	--	--	--	--	
180.09	8/19/99	13.45	166.86	0.10	--	--	--	--	--	--	
	11/23/99	14.03	166.35	0.36	--	--	--	--	--	--	
	2/17/00	13.28	167.02	0.26	--	--	--	--	--	--	
	5/9/00	13.55	166.77	0.29	--	--	--	--	--	--	
	8/15/00	13.58	166.54	0.04	--	--	--	--	--	--	
	12/1/00	8.00	172.09	0.00	54,000	240	1,700	870	1,000	<300	c,d
	180.04	2/8/01	7.88	172.16	0.00	33,000	63	420	120	4,500	<50
4/9/01		7.97	172.07	0.00	--	--	--	--	--	--	
4/24/01		7.00	173.04	0.00	3,200	<1.0	11	7	260	<5.0	c,d

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Table 1. Groundwater Elevation and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID <i>TOC (ft*)</i>	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	TPHg	Benzene	Toluene	Ethylbenzene (µg/L)	Xylenes	MTBE	Notes
MW-6	6/27/96	18.55	161.48	--	ND	ND	ND	ND	ND	-	
180.03	12/10/99	11.79	168.24	--	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	
	5/8/98	11.62	168.41	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/17/98	12.66	167.37	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/4/98	13.56	166.47	--	68	3.8	3.7	2.8	11	<5.0	a
	2/17/99	12.91	167.12	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/27/99	13.03	167.00	--	<50	1.0	1.7	0.82	4.9	<5.0	
179.63	8/19/99	13.10	166.93	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/23/99	13.58	166.05	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/17/00	10.72	168.91	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/9/00	11.71	167.92	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/15/00	12.49	167.14	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/1/00	8.64	170.99	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	2/8/01	8.20	171.43	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	4/9/01	8.53	171.10	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
Trip Blank	5/8/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/4/98	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	5/27/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	11/23/99	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	12/1/00	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	

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Table 1. Groundwater Elevation and Analytical Data - Hooshi's Auto Service, 1499 MacArthur Boulevard, Oakland, California

Well ID	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft)**	Separate Phase Hydrocarbons (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					←----- (µg/L) -----→						

Abbreviations and Methods:

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

Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020

MTBE = Methyl tertiary butyl ether by EPA Method 8020

(concentration in parentheses confirmed by EPA Method 8260)

µg/L = Micrograms per liter

TOC = Top of casing elevation

* = wells surveyed to an arbitrary datum

** = Calculated groundwater elevation corrected for SPH by the relation:

$$\text{Groundwater Elevation} = \text{Well Elevation} - \text{Depth to Water} + (0.8 \times \text{SPH thickness (ft)})$$

*** = Due to the air sparge system running during sampling, samples collected on 4/9/01 were anomalous. Well was resampled on 4/24/01 with the air sparge system off.

Abbreviations and Methods (Cont'd):

MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)

NE = MCLs not established

ND = Compound not detected, detection limit unknown

Notes:

a - The analytical laboratory noted that unmodified or weakly modified gasoline is significant.

b - The analytical laboratory noted that lighter than water immiscible sheen is present.

c - The analytical laboratory noted no recognizable pattern.

d - The analytical laboratory noted heavier gasoline range compounds are significant (aged gasoline?).

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APPENDIX A

Groundwater Monitoring Field Data Sheets

WELL DEPTH MEASUREMENTS

Well ID	Time	Top of Screen	DTB	DTP	DTW	DOP	Casing Dia	Comments
4 MW-1	6:25		19.90		3.71			
6 MW-2	6:30		19.80		7.95			
3 MW-3	6:20		19.78		7.33			
2 MW-4	6:17		19.72		12.50			
5 MW-5	6:27		14.50		7.97			
7 MW-6	6:14		20.20		8.53 8.53			

Project Name: Hooshi's
 Measured By: S. Mull

Project Number: 129-0741
 Date: 4-9-01

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-1
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): SG
Initial Depth to Water: 8.71	Total Well Depth: 19.90	Water Column Height: 11.19
Volume/ft: 0.16	1 Casing Volume: 1.79	3 Casing Volumes: 5.37
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 5.5
Start Purge Time: 8:00	Stop Purge Time: 8:04	Total Time: 4mins

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.	pH	Cond.	Comments
8:02	1.5	14.9	7.18	850	
8:03	3	15.4	6.80	819	
8:05	5.5	15.7	6.93	874	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	4-9-01	8:10	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-2
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): SS
Initial Depth to Water: 7.95	Total Well Depth: 19.80	Water Column Height: 11.85
Volume/ft: 0.16	1 Casing Volume: 1.89	3 Casing Volumes: 5.68
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5.50
Start Purge Time: 8:43	Stop Purge Time: 8:49	Total Time: 6 mins

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.	pH	Cond.	Comments
8:45	1.5	15.1	7.18	650	seen
8:47	3	15.1	7.41	799	
8:50	5	15.5	7.44	748	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	4-9-01	8:55	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-3
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): SG
Initial Depth to Water: 7.33	Total Well Depth: 19.78	Water Column Height: 12.45
Volume/ft: 0.16	1 Casing Volume: 1.99	3 Casing Volumes: 5.97
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 6
Start Purge Time: 7:38	Stop Purge Time: 7:42	Total Time: 6mins

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.	pH	Cond.	Comments
7:38	2	15.1	7.25	815	
7:40	4	15.5	7.20	890	
7:43	6	15.4	7.27	882	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	4-9-01	7:48	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-4
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): SG
Initial Depth to Water: 12.50	Total Well Depth: 19.72	Water Column Height: 7.22
Volume/ft: 0.16	1 Casing Volume: 6.75	3 Casing Volumes: 2.46
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 3.5
Start Purge Time: 7:11	Stop Purge Time: 7:16	Total Time: 5mins

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.	pH	Cond.	Comments
7:13	1.5	15.7	7.10	2919	
7:15	2	15.4	7.28	2127	
7:17	3.5	15.5	7.25	2173	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	4-9-01	7:22	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-5
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): SG
Initial Depth to Water: 7.97	Total Well Depth: 14.50	Water Column Height: 6.53
Volume/ft: 0.16	1 Casing Volume: 1.04	3 Casing Volumes: 3.13
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 3
Start Purge Time: 8:18	Stop Purge Time: 8:26	Total Time: 8 mins

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.	pH	Cond.	Comments
8:20	1	15.2	7.03	590	
8:24	2	15.4	7.08	598	
8:27	3	15.4	7.01	615	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	4-9-01	8:32	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-6
Project Number: 129-0741	Date: 4-9-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): SG
Initial Depth to Water: 8.53	Total Well Depth: 20.20	Water Column Height: 11.67
Volume/ft: 0.16	1 Casing Volume: 1.86	3 Casing Volumes: 5.60
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5.50
Start Purge Time: 6:45	Stop Purge Time: 6:52	Total Time: 7mins

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.	pH	Cond.	Comments
6:47	1.5	15.3	7.29	2392	
6:50	3	15.8	7.35	2517	
6:53	5.5	15.5	7.30	2594	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	4-9-01	6:58	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-1
Project Number: 129-0741	Date: 4-24-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): SG
Initial Depth to Water: 19.50	Total Well Depth: 7.90	Water Column Height: 12.00
Volume/ft: 0.16	1 Casing Volume: 1.92	3 Casing Volumes: 5.76
Purging Device: disposable bailer	Did Well Dewater?: no	Total Gallons Purged: 5
Start Purge Time: 7:45	Stop Purge Time: 7:50	Total Time: 5mins

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.	pH	Cond.	Comments
7:47	1.5	16.9	5.93	505	
7:49	3	17.2	5.83	521	
7:51	5	17.3	5.77	522	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	4-24-01	7:56	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-2
Project Number: 129-0741	Date:	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s):
Initial Depth to Water: 6.90	Total Well Depth: 19.80	Water Column Height: 12.90
Volume/ft: 0.16	1 Casing Volume: 2.06	3 Casing Volumes: 6.18
Purging Device: disposable bailer	Did Well Dewater?:	Total Gallons Purged: 6
Start Purge Time: 8:15	Stop Purge Time: 8:22	Total Time: 7mins

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.	pH	Cond.	Comments
8:17	2	16.1	6.05	603	
8:19	4	16.4	6.07	609	
8:23	6				

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-2	4-28-01	8:28	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: RS	Well ID: MW-5
Project Number: 129-0741	Date: 4-24-01	Well Yield:
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s):
Initial Depth to Water: 7:00	Total Well Depth: 14.50	Water Column Height: 7.50
Volume/ft: 0.16	1 Casing Volume: 1.20	3 Casing Volumes: 3.60
Purging Device: disposable bailer	Did Well Dewater?: 10	Total Gallons Purged: 4
Start Purge Time: 8:05	Stop Purge Time: 8:10	Total Time: 5mins

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.	pH	Cond.	Comments
8:07	1.5	16.6	6.01	406	
8:09	3	15.9	6.07	402	
8:11	4	16.7	6.02	384	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-5	4-24-01	8:16	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

C A M B R I A



APPENDIX B

Analytical Results for 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 Environmental Technology 6262 Hollis St. Emeryville, CA 94608	Client Project ID: #124-0741-027; Hooshi's	Date Sampled: 04/09/01
		Date Received: 04/10/01
	Client Contact: Ron Scheele	Date Extracted: 04/10/01
	Client P.O:	Date Analyzed: 04/10/01

04/17/2001

Dear Ron:

Enclosed are:

- 1). the results of 6 samples from your #124-0741-027; Hooshi's 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



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QC REPORT

Date: 04/11/01

Matrix: Water

Extraction: TTLC

Compound	Concentration: ug/L			%Recovery		RPD	
	Sample	MS	MSD	Amount Spiked	MS		MSD
SampleID: 40801				Instrument: GC-12			
Surrogate1	0.000	94.0	94.0	100.00	94	94	0.0
Xylenes	0.000	29.6	29.0	30.00	99	97	2.0
Ethyl Benzene	0.000	9.8	9.6	10.00	98	96	2.1
Toluene	0.000	9.6	9.4	10.00	96	94	2.1
Benzene	0.000	9.4	9.3	10.00	94	93	1.1
MTBE	0.000	9.6	9.6	10.00	96	96	0.0
GAS	0.000	94.0	92.8	100.00	94	93	1.3
SampleID: 40501				Instrument: GC-11 A			
Surrogate1	0.000	103.0	113.0	100.00	103	113	9.3
TPH (diesel)	0.000	8075.0	8000.0	7500.00	108	107	0.9

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

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

RPD means Relative Percent Deviation

McCAMPBELL ANALYTICAL INC.

110 2ND AVENUE SOUTH, #107
PACIFICCO, CA 94553

Telephone: (925) 798-1620

Fax: (925) 798-1622

Report To: Ron Scheels Bill To: Cambria Env

Company: Cambria Environmental Technology

~~1445th Street, Suite 200~~ 6262 Hollis St.
Oakland, CA 94608 Emeryville, Ca 94608

Tele: (510) 420-0700 Fax: (510) 420-9170

Project #: 129-0741-027 Project Name: Hooski's

Project Location: 1499 MacArthur Blvd, Oakland, Ca

Sampler Signature: [Signature]

CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH 24 HOUR 48 HOUR 5 DAY

Analysis Request

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED								
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other					
MW-1		4-9-01	8:10	4	VOA	X													
MW-2		4-9-01	8:55	4	VOA	X													
MW-3		4-9-01	7:48	4	VOA	X													
MW-4		4-9-01	7:22	4	VOA	X													
MW-5		4-9-01	8:32	4	VOA	X													
MW-6		4-9-01	8:58	4	VOA	X													

STEX & TPH as Gas (602/8020 - 3015V.MTBE)	
TPH as Diesel (8015)	
Total Petroleum Oil & Grease (5520 EUM/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	

Confirm all MTBE hits by 8260

65239
65240
65241
65242
65243
65244

Relinquished By: <u>[Signature]</u>	Date: <u>4-10-01</u>	Time: <u>1330</u>	Received By: <u>[Signature]</u>	<u>X233</u>
Relinquished By: <u>[Signature]</u>	Date: <u>4-10-01</u>	Time:	Received By: <u>[Signature]</u>	<u>Ultra EX 080</u>
Relinquished By: <u>[Signature]</u>	Date: <u>4/10/01</u>	Time: <u>17:15</u>	Received By: <u>[Signature]</u>	

Remarks:

ICE/✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVATION APPROPRIATE CONTAINERS ✓

VOAS O&G METALS OTHER

(S)
(S)
(S)
(S)
(S)
(S)
(S)

w



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

Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #129-0741-027; Hooshi's	Date Sampled: 04/24/01
		Date Received: 04/25/01
	Client Contact: Ron Scheele	Date Extracted: 04/25/01
	Client P.O:	Date Analyzed: 04/25/01

05/02/2001

Dear Ron:

Enclosed are:

- 1). the results of 3 samples from your #129-0741-027; Hooshi's 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



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Cambria Environmental Technology 6262 Hollis Street Emeryville, CA 94608	Client Project ID: #129-0741-027; Hooshi's	Date Sampled: 04/24/01
	Client Contact: Ron Scheele	Date Received: 04/25/01
	Client P.O:	Date Extracted: 04/25-04/27/01
		Date Analyzed: 04/25-04/27/01

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	Ethyl-benzene	Xylenes	% Recovery Surrogate
66106	MW-1	W	77,j	5.6	ND	ND	ND	ND	109
66107	MW-2	W	56,000,a,h	ND<200	360	980	1000	4700	102
66108	MW-5	W	3200,b,j	ND	ND<1.0	11	6.9	260	105
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

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

* 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.



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QC REPORT

Date: 04/25/01 Matrix: Water

Extraction: TTLC

Compound	Concentration: ug/L				%Recovery		RPD
	Sample	MS	MSD	Amount Spiked	MS	MSD	
SampleID: 41901				Instrument: GC-7			
Surrogate1	0.000	96.0	102.0	100.00	96	102	6.1
Xylenes	0.000	28.2	29.6	30.00	94	99	4.8
Ethyl Benzene	0.000	9.2	9.6	10.00	92	96	4.3
Toluene	0.000	9.2	9.7	10.00	92	97	5.3
Benzene	0.000	8.9	9.2	10.00	89	92	3.3
MTBE	0.000	9.1	9.6	10.00	91	96	5.3
GAS	0.000	98.3	93.1	100.00	98	93	5.5
SampleID: 43001				Instrument: MB-1			
Oil & Grease	0.000	20.2	20.2	23.70	85	85	0.0
SampleID: 43001				Instrument: GC-11 B			
Surrogate1	0.000	107.0	112.0	100.00	107	112	4.6
TPH (diesel)	0.000	7225.0	7850.0	7500.00	96	105	8.3

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

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

RPD means Relative Percent Deviation



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QC REPORT

VOCs (EPA 8240/8260)

Date: 04/30/0105/01/01 Matrix: Water

Extraction: N/A

Compound	Concentration: ug/L			%Recovery		RPD	
	Sample	MS	MSD	Amount Spiked	MS		MSD
SampleID: 50101				Instrument: GC-10			
Surrogate	0.000	98.0	97.0	100.00	98	97	1.0
tert-Amyl Methyl Ether	0.000	102.0	101.0	100.00	102	101	1.0
Methyl tert-Butyl Ether	0.000	103.0	100.0	100.00	103	100	3.0
Ethyl tert-Butyl Ether	0.000	104.0	104.0	100.00	104	104	0.0
Di-isopropyl Ether	0.000	112.0	113.0	100.00	112	113	0.9
Toluene	0.000	117.0	117.0	100.00	117	117	0.0
Benzene	0.000	120.0	122.0	100.00	120	122	1.7
Chlorobenzene	0.000	119.0	122.0	100.00	119	122	2.5
Trichloroethane	0.000	95.0	94.0	100.00	95	94	1.1
1,1-Dichloroethene	0.000	116.0	110.0	100.00	116	110	5.3

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

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

RPD means Relative Percent Deviation

