

C A M B R I A

ST10
ENVIRONMENTAL
PROTECTION

3597
DH
January 26, 2000

Ms. Juliet Shin
Alameda County Department of
Environmental Health
UST Local Oversight Program
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

00 JAN 28 PM 2:44

Re: **Fourth Quarter 1999 Monitoring Report**

Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, California 94602



Dear Ms. Shin:

On behalf of Ms. Naomi English, Cambria Environmental Technology, Inc. (Cambria) has prepared this report presenting the fourth quarter 1999 groundwater monitoring results for the above-referenced site. Presented below are the fourth quarter 1999 activities, the current groundwater flow direction, the current hydrocarbon distribution in groundwater, and the anticipated first quarter 2000 activities.

FOURTH QUARTER 1999 ACTIVITIES

Quarterly Groundwater Sampling: On November 23, 1999 Cambria gauged and sampled all onsite groundwater monitoring wells. The thickness of separate-phase hydrocarbons (SPH), when detected, was measured. The samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE).

Remediation System: During the fourth quarter 1999, Cambria completed the installation of a 100 CFM electric Catalytic Oxidizer.

Wellhead Survey: Since the wellheads were modified to accommodate the SVE system, Virgil Chavez Land Surveying re-surveyed the wellheads on December 7, 1999. A copy of the survey report is included as Attachment C.

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

**Cambria
Environmental
Technology, Inc.**

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

GROUNDWATER FLOW DIRECTION

Based on the November 23, 1999 depth-to-water measurements, groundwater mounded near the vicinity of the former underground storage tanks, similar to mounding that occurred during the third quarter of 1999 (Figure 1). The groundwater elevation data is summarized in Table 1.

HYDROCARBON DISTRIBUTION IN GROUNDWATER



Up to 0.36 feet of SPHs were measured in wells MW-2 and MW-5. A maximum TPHg concentration of 1,300 micrograms per liter ($\mu\text{g/L}$) was detected in well MW-1. A benzene concentration of 24 $\mu\text{g/L}$ was detected in well MW-1. However, no Benzene was detected in wells MW-3 or MW-4. Table 1 summarizes the groundwater analytical results. The analytical laboratory reports are included as Attachment A. The water sampling field notes are included as Attachment B.

ANTICIPATED FIRST QUARTER 2000 ACTIVITIES

Quarterly Groundwater Sampling: As requested by the Alameda County Department of Environmental Health, Cambria will gauge and collect groundwater samples from each monitoring well, and measure the thickness of any detected SPH. Samples will be analyzed for TPHg, BTEX, and MTBE. Cambria will tabulate the data, contour groundwater elevations, and prepare a quarterly monitoring report.

Remediation System: Cambria will start and maintain the remediation system during the first quarter of 2000. A system start up report and periodic remedial update reports will be presented under separate cover.

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Ms. Juliet Shin
January 26, 2000

CLOSING

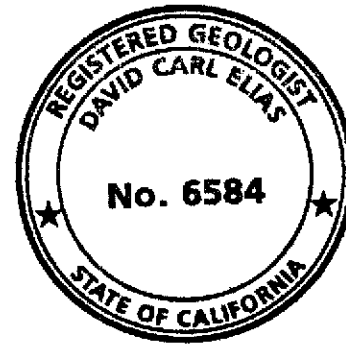
Cambria appreciates the opportunity to provide environmental services to Ms. Naomi English. Please call me at (510) 420-3328 or David Elias at (510) 420-3307 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



Mark Erickson
Staff Engineer

David C. Elias, R.G.
Senior Geologist

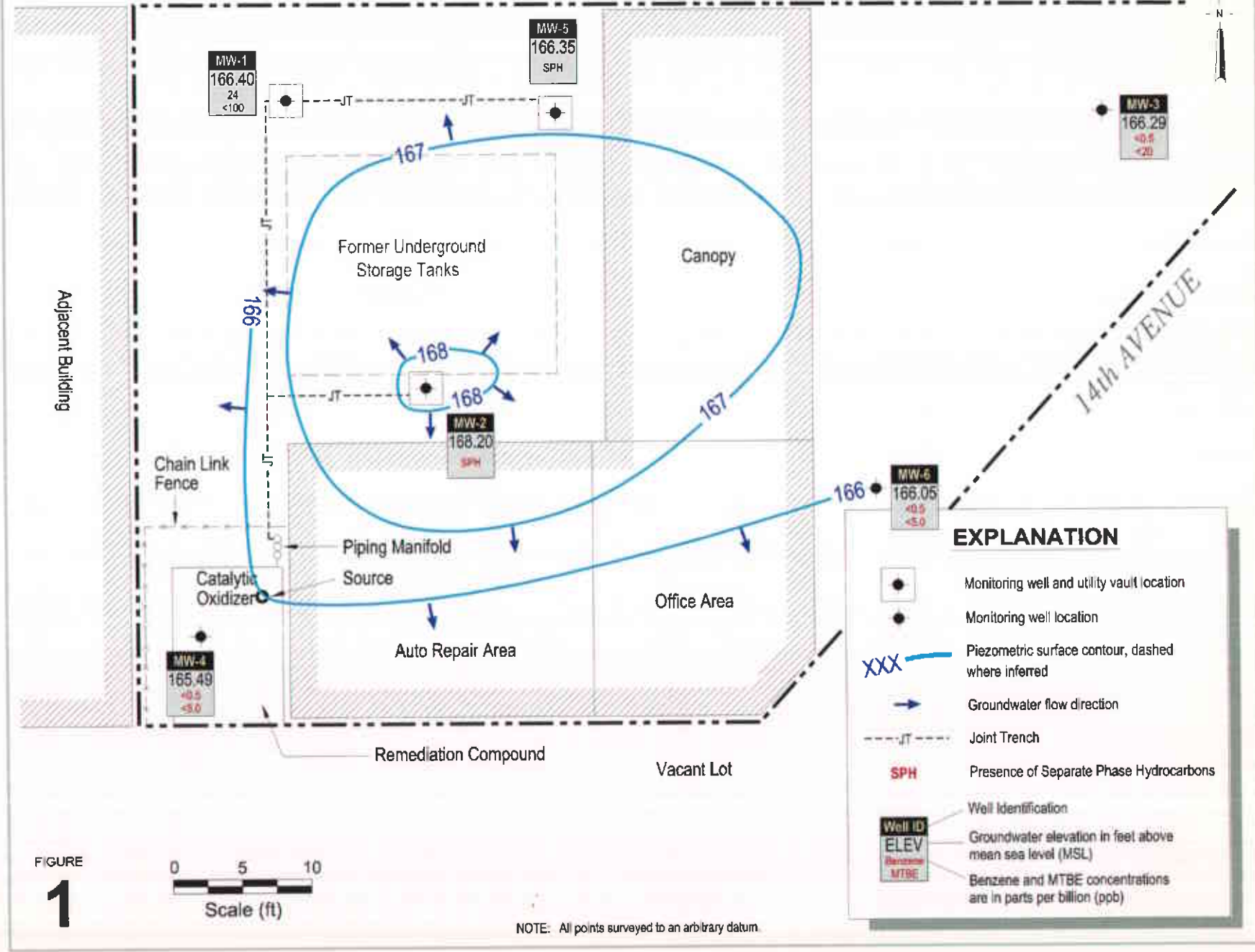


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Attachments: A - Analytical Results for Groundwater Sampling
B - Water Sampling Field Notes
C - Survey Report

cc: Ms. Naomi English, 1545 Scenic View Dr., San Leandro, CA 94577

MAC ARTHUR BLVD.



NOTE: All points surveyed to an arbitrary datum.

Hooshi's Auto Service
 1499 MacArthur Boulevard
 Oakland, California



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Groundwater Elevation Contour Map

November 23, 1999

CAMBRIA

Table 1. Groundwater Elevations 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
TOC (ft*)					← (µg/L) →						
MW-1	1/4/93	--	--	--	539	130	12	22	13	--	
181.00	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
180.83	11/23/99	14.43	166.40	--	1,300	24	0.64	1.8	3.3	<100	a
MW-2	1/4/93	--	--	--	149,000	21,700	25,000	ND	7,760	--	
180.45	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	--	--	--	--	--	--	
180.24	11/23/99	12.14	168.20	0.12	--	--	--	--	--	--	
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	

CAMBRIA

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

Well ID TOC (ft*)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	TPHg ←	→ (µg/L)					Notes
						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
179.55	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
	11/23/99	13.26	166.29	--	900	<0.5	1.8	0.56	1.4	<20	e,d
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	
MW-5	6/27/96	13.62	166.74	0.16	--	--	--	--	--	--	
180.23	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	--	--	--	--	--	--	
	8/19/99	13.45	166.86	0.10	--	--	--	--	--	--	
	180.09	11/23/99	14.03	166.35	0.36	--	--	--	--	--	--

CAMBRIA

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

Well ID TOC (ft*)	Date	Depth to Groundwater (ft)	Groundwater Elevation (ft**)	Separate Phase Hydrocarbons (ft)	TPHg ←	→ (µg/L)					Notes
						Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	
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	
	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	
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	
MCLs	--	--	--	NE	1	150	700	1,750	NE		

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 tert-butyl ether by EPA Method 8020

µg/L = Micrograms per liter

TOC = Top of casing elevation

SPH = Separate Phase Hydrocarbons

* = elevations surveyed to an arbitrary datum

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

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

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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ATTACHMENT A

Analytical Results for Groundwater Sampling



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

Date: 11/24/99

Matrix: Water

Extraction: N/A

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

SampleID: 25698

Instrument: GC-12

Xylenes	0.0	326.0	322.0	300.00	109	107	1.2
Ethyl Benzene	0.0	108.0	107.0	100.00	108	107	0.9
Toluene	0.0	106.0	103.0	100.00	106	103	2.9
Benzene	0.0	109.0	107.0	100.00	109	107	1.9
MTBE	0.0	108.0	97.0	100.00	108	97	10.7
GAS	0.0	988.6	1,000.9	1000.00	99	100	1.2

SampleID: 25698

Instrument: GC-2 B

TPH (diesel)	0.0	300.0	299.0	300.00	100	100	0.3
--------------	-----	-------	-------	--------	-----	-----	-----

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

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

RPD means Relative Percent Deviation

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ATTACHMENT B

Water Sampling Field Notes

WELL DEPTH MEASUREMENTS

Well ID	Time	Product Depth	Water Depth	Product Thickness	Well Depth	Comments
MW-1	11:05		14.43		20.05	
MW-2	10:54	12.02	12.14	.12'	—	
MW-3	10:37		13.26		21.0	
MW-4	11:07		14.63		19.98	
MW-5	10:48	13.67	14.03	.36'	—	
MW-6	10:42		13.58		22.20	

Project Name: NAOMI ENGLISH
 Measured By: M. EDICKSON

Project Number: 129-0741
 Date: 11/23/83

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW-4
Project Number: 129-0741	Date: 11/23/99	Well Yield: _____
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): ME
Initial Depth to Water: 14.63	Total Well Depth: 19.98	Water Column Height: 5.35'
Volume/ft: 0.16	1 Casing Volume: 0.856 GAL	3 Casing Volumes: 2.6 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 2.75 gal
Start Purge Time: 12:37	Stop Purge Time: 12:45	Total Time: 8 min

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. <i>MS</i>	Comments
12:38	1	18.1	6.8	797	Brownish
12:40	2	18.0	7.0	786	
12:43	3	17.9	7.0	777	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-4	11/23/99	12:50	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW-3
Project Number: 129-0741	Date: 11/23/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): ME
Initial Depth to Water: 13.26'	Total Well Depth: 21.0'	Water Column Height: 7.74'
Volume/ft: 0.16	1 Casing Volume: 1.23 gal	3 Casing Volumes: 3.71 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 4 gal
Start Purge Time: 12:14	Stop Purge Time: 12:22	Total Time: 8 min

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. <i>MS</i>	Comments
12:15	1	19.8	6.6	694	GREY
12:17	2	20.0	6.5	686	
12:20	3	20.3	6.4	686	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-3	11/23/99	12:25	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW-1
Project Number: 129-0741	Date: 11/23/99	Well Yield: ←
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method: Disposable bailer	Well Diameter: 2 " pvc
		Technician(s): ME
Initial Depth to Water: 14.43	Total Well Depth: 20.05	Water Column Height: 5.62
Volume/ft: 0.16	1 Casing Volume: 0.90 gal	3 Casing Volumes: 2.7 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 3.0 gal
Start Purge Time: 11:54	Stop Purge Time: 12:00	Total Time: 6 min.

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. µS	Comments
11:55	1	19.1	6.8	532	GREY, ODOR
11:57	2	19.2	6.7	760	
11:59	3	19.4	6.6	575	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-1	11/23/99	12:05	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

WELL SAMPLING FORM

Project Name: Hooshi's	Cambria Mgr: DCE	Well ID: MW-6
Project Number: 129-0741	Date: 11/23/99	Well Yield: —
Site Address: 1499 MacArthur Boulevard Oakland, California	Sampling Method:	Well Diameter: 2 " pvc
	Disposable bailer	Technician(s): ME
Initial Depth to Water: 13.58'	Total Well Depth: 22.10'	Water Column Height: 8.62'
Volume/ft: 0.16	1 Casing Volume: 1.38 gal	3 Casing Volumes: 4.15 gal
Purging Device: disposable bailer	Did Well Dewater?: NO	Total Gallons Purged: 4.28 gal
Start Purge Time: 11:26	Stop Purge Time: 11:35	Total Time: 9 min

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. µS	Comments
11:25	1	20.3	7.2	562	
11:27	2	20.2	7.2	1018	
11:30	3	19.6	7.1	1036	
11:32	3	20.1	6.9	1088	
11:33	3	20.0	6.9	1049	

Sample ID	Date	Time	Container Type	Preservative	Analytes	Analytic Method
MW-6	11/23/99	11:40	4 voa's	HCL	TPHg, BTEX, MTBE	8020 8015

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: MARK ERICKSON Bill To: CAMBRIA ECO

Company: Cambria Environmental Technology

1144 65th Street, Suite C

Oakland, CA 94608

Tele: (510) 420-0700

Fax: (510) 420-9170

Project #: 129-0741

Project Name: HOOPSIES/BLVD

Project Location: 1499 MACARTHUR BLVD, OAKLAND

Sampler Signature: [Signature]

Analysis Request

Other

Comments

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				BTEX & TPH as Gas (602/6020 + 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							
		Date	Time			Water	Soil	Air	Sludge	Other	Ice	HCl	HNO ₃	Other																						
NW-1		11/23/99	12:25	4	Vials	X					X	X																								
NW-3			12:25	4	Vials																															
NW-4			12:50	4	Vials																															
NW-6			11:40	4	Vials																															
TB				1	Vial																															

Relinquished By: <u>[Signature]</u>	Date: <u>11/24</u>	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Remarks:

C A M B R I A



ATTACHMENT C

Survey Report

Virgil Chavez Land Surveying

312 Georgia Street, Suite 200
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

December 8, 1999
Project No. 1703-45

Jacquelyn Jones
Cambria Environmental
1144 65th Street, Suite C
Oakland, Ca. 94608

Subject: Monitoring Well Survey
Hooshi's Auto Service
1499 MacArthur Blvd.
Oakland, Ca.

Dear Jacquelyn:

This is to confirm that we have proceeded at your request to survey the monitoring wells located at the above referenced location. The survey was performed on December 7, 1999. The benchmark for the survey was a City of Oakland benchmark No. "9 Ca", being a cut square in the northerly curb of MacArthur, 15' westerly of the northwest corner of Brighton and MacArthur. Measurements were taken at approximate north side of top of box and top of casings. The stationing data is based on the back side of the building, beginning at the northwest corner.
Benchmark Elev. = 187.596 feet, City Datum.

<u>Well No.</u>	<u>Rim Elevation</u>	<u>TOC Elevation</u>	<u>Station</u>	<u>Offset</u>
MW - 1	181.02'	180.83'	0+00.62	-23.39(Lt.)
MW - 2	180.40'	180.24'	0+08.49	- 3.99(Lt.)
MW - 3	179.91'	179.55'	0+46.05	-22.69(Lt.)
MW - 4	180.48'	180.12'	0-06.04	16.36(Rt.)
MW - 5	180.25'	180.09'	0+19.50	-24.02(Lt.)
MW - 6	180.04'	179.63'	0+43.60	- 4.28(Lt.)
NW Bldg Cor.			0+00	0.00
No. Bldg face			---	0.00



Sincerely,

Virgil D. Chavez
 Virgil D. Chavez, PLS 6323