CAMBRIA

January 27, 1998

Barney Chan
Alameda Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

3769

Re: **Fourth Quarter 1997 Monitoring Report**
Shell Service Station
4255 MacArthur Boulevard
Oakland, California
WIC #204-5510-0600
Cambria Project #24-314-497

Dear Mr. Chan:

On behalf of Shell Oil Products Company, Cambria Environmental Technology, Inc. (Cambria) is submitting this monitoring report to satisfy the quarterly reporting requirements prescribed by California Administrative Code Title 23, Waters Division 3, Chapter 16, Article 5, Section 2652.d.

FOURTH QUARTER 1997 ACTIVITIES

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California, measured ground water depths, checked for separate-phase hydrocarbons (SPH) and collected ground water samples from the site wells (Figure 1). The Blaine report describing these activities and the analytic report for the ground water samples are included as Attachment A. **Blaine removed SPH from passive skimmer devices in well MW-2 (Table 1).** The quantities removed are presented in the table below.

Separate-Phase Hydrocarbon Removal Summary	
This Quarter (lbs)	Cumulative Removal (lbs)
0.81	19.06

Cambria calculated ground water elevations (Table 2), compiled the analytic data (Table 3), and prepared a ground water elevation contour map (Figure 1).

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

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ANTICIPATED FIRST QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine will gauge water levels, check for SPH and collect ground water samples from selected site wells. Cambria will submit a report presenting a summary of activities for the upcoming quarter.

Additional Investigation: In response to an Alameda County Department of Environmental Health request, Cambria prepared an *Additional Offsite Subsurface Investigation Work Plan* dated July 22, 1997, which proposed sampling two soil borings at the trailer park property adjacent to the site. We will implement the offsite investigation work plan during the first quarter 1998.

CLOSING

We appreciate the opportunity to work with you on this project. Please call if you have any questions.

Sincerely,
Cambria Environmental Technology, Inc.

Khaled B. Rahman, R.G., C.H.G.
Senior Geologist

REGISTERED GEOLOGIST
KHALED B. RAHMAN
No. 6261
CERTIFIED
HYDROGEOLOGIST
Exp. 7/31/99
STATE OF CALIFORNIA

Attachments: A - Blaine Quarterly Ground Water Monitoring Report

cc: A. E. (Alex) Perez, Shell Oil Products Company, P.O. Box 8080, Martinez, California 94553

F:\PROJECT\SHELL\OAK4255\QM\4Q97QM.WPD

- Check method for MTBE - mod. 8020 need 8260!
- GW cont. is migrating
- Results of SV pilot test
- CAP
- Tier 1 worked fine, are they going to do a T. 2?

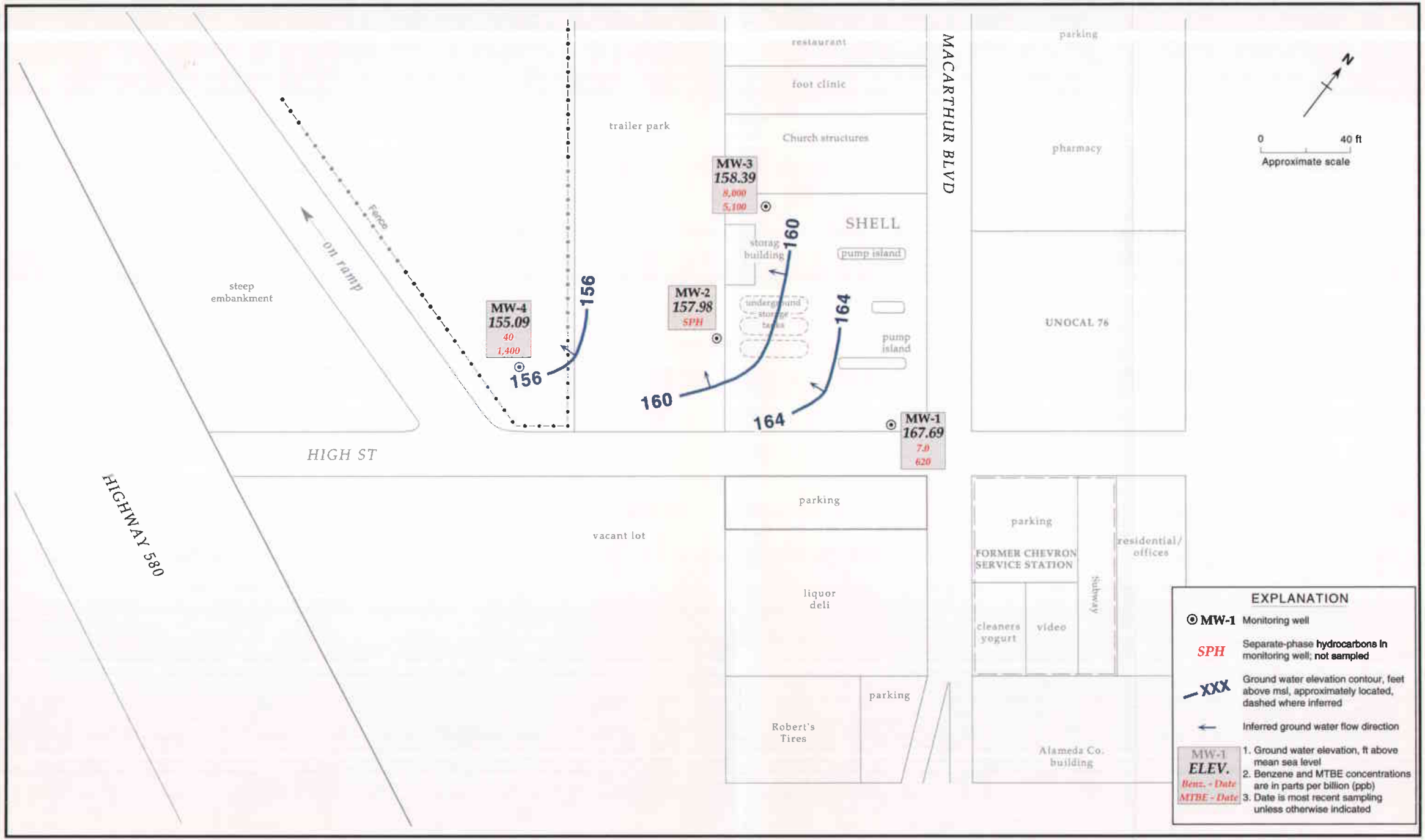

Figure 1. Ground Water Elevation Contours - October 8, 1997 - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

F:\PROJECT\SHELL\OAK425\FIGURES\HGM97-MP.AI

12/15/97

Table 1. **Separate-Phase Hydrocarbon Removal** - Shell Service Station
WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Hydrocarbons Removed (lbs)
MW-2	11/17/93	0.0	0.0	0.0
	01/20/94	0.0	0.0	0.0
	04/25/94	0.0	0.0	0.0
	07/07/94	0.0	0.0	0.0
	01/13/95	0.0	0.0	0.0
	04/12/95	0.0	0.0	0.0
	08/10/95	0.52	5.98[a]	5.98
	10/18/95	0.13	0.0	5.98
	01/17/96	0.17	1.74	7.72
	04/25/96	0.03	0.65	8.37
	07/17/96	0.48	2.11	10.48
	10/01/96	0.28	0.81	11.29
	01/22/97	0.11	0.48	11.77
	04/08/97	0.20	0.97	12.74
	07/08/97	0.19	0.97	13.71
	10/08/97	**0.05**	**0.81**	**14.52**
MW-3	11/17/93	0.0	0.0	0.0
	01/20/94	0.0	0.0	0.0
	04/25/94	0.0	0.0	0.0
	07/07/94	0.0	0.0	0.0
	01/13/95	---	0.02	0.02
	04/12/95	---	0.02	0.04
	08/10/95	0.06	0.69[a]	0.73
	10/18/95	0.05	0.0	0.73
	01/17/96	0.24	2.62	3.35
	04/25/96	0.02	0.33	3.68
	07/17/96	0.03	0.70	4.38
	04/08/97	0.03	0.16	4.54
	07/08/97	0.0	0.0	4.54
	10/08/97	**0.0**	**0.0**	**4.54**
TOTAL HYDROCARBONS REMOVED				**19.06**

Notes and Abbreviations:

SPH = Separate-phase hydrocarbons
ft = Feet
lbs = Pounds
--- = Not measured
a = SPH in 10" boring and 4" well estimated by following factor: 1 ft of SPH = 11.5 lbs of SPH
Weight of SPH converted from volume using the relation: 1 liter gasoline = 1.61 pounds

Table 2. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-phase Hydrocarbons (ft)	Ground Water Elevation[a] (ft above msl)
MW-1	11/17/93	175.79	8.59	---	167.20
	01/20/94		8.22	---	167.57
	04/25/94		7.63	---	168.16
	07/07/94		8.31	---	167.48
	10/27/94		8.84	---	166.95
	11/17/94		7.60	---	168.19
	11/28/94		7.56	---	168.23
	01/13/95		7.11	---	168.68
	04/12/95		7.08	---	168.71
	07/25/95		7.73	---	168.06
	10/18/95		8.42	---	167.37
	01/17/96		7.83	---	167.96
	04/25/96		7.35	---	168.44
	07/17/96		7.70	---	168.09
	10/01/96		8.07	---	167.72
	01/22/97		7.21	---	168.58
	04/08/97		7.75	---	168.04
	07/08/97		8.01	---	167.78
	10/08/97		**8.10**	**---**	**167.69**
MW-2	11/17/93	170.91	12.31	---	158.60
	01/20/94		11.48	---	159.43
	04/25/94		10.84	---	160.07
	07/07/94		11.89	---	159.02
	10/27/94		12.89	---	158.02
	11/17/94		9.11	---	161.80
	11/28/94		9.22	---	161.69
	01/13/95		8.10	---	162.81
	04/12/95		10.12	---	160.79
	07/25/95		11.53	0.52	159.80
	10/18/95		14.02	0.13	156.99
	01/17/96		10.27	0.17	160.78
	04/25/96		11.68	0.03	159.25
	07/17/96		12.78	0.48	158.81
	10/01/96		14.21	0.28	156.70
	01/22/97		10.92	0.11	160.08
	04/08/97		14.12	0.20	156.95
	07/08/97		14.98	0.19	156.08
	10/08/97		**12.97**	**0.05**	**157.98**
MW-3	11/17/93	174.61	15.40	---	159.21
	01/20/94		14.61	---	160.00
	04/25/94		13.12	---	161.49

Table 2. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-phase Hydrocarbons (ft)	Ground Water Elevation[a] (ft above msl)
	07/07/94		14.54	0.02	160.07
	10/27/94		15.62	0.05	159.03
	11/17/94		13.83	---	160.78
	11/28/94		14.02	---	160.59
	01/13/95		12.13	---	162.48
	04/12/95		12.96	---	161.65
	07/25/95		14.28	0.06	160.38
	10/18/95		15.88	0.05	158.77
	01/17/96		13.86	0.24	160.94
	04/25/96		13.82	0.02	160.81
	07/17/96		16.11	0.03	158.52
	10/01/96		16.56	---	158.05
	01/22/97		13.07	---	161.54
	04/08/97		17.09	0.03	157.54
	07/08/97		15.85	---	158.76
	10/08/97		**16.22**	**---**	**158.39**
MW-4	11/17/94	164.06	6.62	---	157.44
	11/28/94		6.11	---	157.95
	01/13/95		6.05	---	158.01
	04/12/95		6.31	---	157.75
	07/25/95		7.36	---	156.70
	10/18/95		8.54	---	155.52
	01/17/96		8.48	---	155.58
	04/25/96		7.40	---	156.66
	07/17/96		7.75	---	156.31
	10/01/96		8.82	---	155.24
	01/22/97		7.51	---	156.55
	04/08/97		7.18	---	156.88
	07/08/97		9.00	---	155.06
	10/08/97		**8.97**	**---**	**155.09**

Notes and Abbreviations:

a = When separate-phase hydrocarbons are present, ground water elevation is corrected using the relation: Corrected ground water elevation equals top of casing elevation minus depth to water plus (0.8 x separate phase hydrocarbon thickness)
--- = Separate-phase hydrocarbons not present
msl = Mean sea level
TOC = Top of casing
ft = Feet

Table 3. **Ground Water Analytic Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← parts per billion (µg/L) →					
MW-1	11/17/93	8.59	410	---	21	11	7.9	47
	01/20/94	8.22	1,200	---	180	19	48	47
	04/25/94	7.63	3,100	---	610	<10	130	27
	07/07/94	8.31	2,400	---	1,000	10	250	20
	10/27/94	8.84	2,200	---	500	3.1	72	1.8
	01/13/95	7.11	570	---	75	2.5	6.7	11
	04/12/95	7.08	1,800	---	480	<5.0	79	<5.0
	07/25/95	7.73	120	---	15	1.1	2.1	2.9
	07/25/95[dup]	7.73	300	---	88	2.4	11	6.5
	10/18/95	8.42	130	---	9.5	0.8	1.3	1.7
	10/18/95[dup]	8.42	120	---	11	0.8	1.4	1.8
	01/17/96	7.83	250	---	22	0.9	1.6	2.3
	04/25/96	7.35	<50	500[b]	4.6	<0.5	<0.5	0.60
	07/17/96	7.70	<250	540	15	<2.5	<2.5	<2.5
	10/01/96	8.07	1,200	1,900	500	12	57	82
	01/22/97	7.21	640	1,200	170	4.3	33	33
	04/08/97	7.75	<200	950	34	<2.0	3.3	4.3
	04/08/97[dup]	7.75	<200	740	66	<2.0	6.4	8.0
	07/08/97	8.01	190	560	49	1.2	5.8	8.6
	10/08/97	**8.10**	**<100**	**620**	**7.0**	**<1.0**	**<1.0**	**<1.0**
MW-2	11/17/93	12.31	31,000	---	9,400	4,600	1,000	3,900
	01/20/94	11.48	40,000	---	6,900	5,600	780	4,100
	01/20/94[dup]	11.48	41,000	---	7,200	6,200	900	4,800
	04/25/94	10.84	60,000	---	9,300	6,100	1,400	6,200
	07/07/94	11.89	280,000[a]	---	40,000	26,000	8,100	32,000
	07/07/94[dup]	11.89	53,000	---	13,000	6,600	2,000	8,400
	10/27/94	12.89	130,000	---	14,000	12,000	2,400	13,000
	10/27/94[dup]	12.89	390,000	---	8,800	7,000	1,700	11,000
	01/13/95	8.10	75,000	---	5,900	12,000	3,100	17,000
	04/12/95	10.12	100,000	---	8,500	11,000	2,400	12,000
	04/12/95[dup]	10.12	80,000	---	4,200	9,300	2,500	12,000
	08/10/95[SPH]	11.53	---	---	---	---	---	---
	10/18/95[SPH]	14.02	---	---	---	---	---	---

Table 3. **Ground Water Analytic Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← parts per billion (µg/L) →					
	01/17/96[SPH]	10.27	---	---	---	---	---	---
	04/25/96[SPH]	11.68	---	---	---	---	---	---
	07/17/96[SPH]	12.78	---	---	---	---	---	---
	10/01/96[SPH]	14.21	---	---	---	---	---	---
	01/22/97[SPH]	10.92	---	---	---	---	---	---
	04/08/97[SPH]	14.12	---	---	---	---	---	---
	07/08/97[SPH]	14.98	---	---	---	---	---	---
	10/08/97[SPH]	**12.97**	**---**	**---**	**---**	**---**	**---**	**---**
MW-3	11/17/93	15.40	18,000	---	5,400	660	720	2,200
	01/20/94	14.61	55,000	---	13,000	2,600	2,200	6,500
	04/25/94	13.12	96,000	---	11,000	1,600	3,100	9,900
	04/25/94[dup]	13.12	78,000	---	12,000	1,900	2,600	7,300
	07/07/94[SPH]	14.54	---	---	---	---	---	---
	10/27/94[SPH]	15.62	---	---	---	---	---	---
	01/13/95	12.13	180,000	---	3,200	2,700	1,700	5,200
	01/13/95[dup]	12.13	23,000	---	4,000	690	960	3,000
	04/12/95	12.96	56,000	---	8,700	1,500	2,100	6,300
	08/10/95[SPH]	14.28	---	---	---	---	---	---
	10/18/95[SPH]	15.88	---	---	---	---	---	---
	01/17/96[SPH]	13.86	---	---	---	---	---	---
	04/25/96[SPH]	13.82	---	---	---	---	---	---
	07/17/96[SPH]	16.11	---	---	---	---	---	---
	10/01/96	16.56	46,000	3,200	7,300	530	1,700	3,900
	10/01/96[dup]	16.56	47,000	2,900	7,100	530	1,700	4,000
	01/22/97	13.07	82,000	1,100	5,200	1,300	2,800	8,900
	01/22/97[dup]	13.07	61,000	2,700	8,400	1,100	2,300	7,000
	04/08/97[SPH]	17.09	---	---	---	---	---	---
	07/08/97	15.85	56,000	2,800	8,800	580	2,000	4,900
	10/08/97	**16.22**	**48,000**	**5,100**	**8,000**	**590**	**1,700**	**3,400**
MW-4	11/28/94	6.11	2,900	---	200	17	76	260
	01/13/95	6.05	1,900	---	130	5.6	13	40
	04/14/95	6.31	680	---	150	<2.0	10	13

Table 3. **Ground Water Analytic Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← parts per billion (µg/L) →					
	07/25/95	7.36	340	---	100	0.8	8.8	3.0
	10/18/95	8.54	150	---	31	<0.5	3.5	0.8
	01/17/96	8.48	290	---	14	<0.5	1.8	0.8
	04/25/96	7.40	<500	1,700	65	<5	<5	<5
	04/25/96[dup]	7.40	<500	1,500	66	<5	8.7	<5
	07/17/96	7.75	<500	1,500	84	<5.0	6.5	<5.0
	07/17/96[dup]	7.75	<500	1,700 (2,100)	54	<5.0	<5.0	<5.0
	10/01/96	8.82	<500	3,000	1.9	<5.0	<5.0	<5.0
	01/22/97	7.51	580	1,200	130	<2.5	18	5.2
	04/08/97	7.18	770	1,500	200	7.0	26	55
	07/08/97	9.00	570	1,200	78	<5.0	14	11
	07/08/97[dup]	9.00	640	1,600	81	<5.0	16	19
	10/08/97	**8.97**	**<500**	**1,400**	**40**	**<5.0**	**7.4**	**5.4**
	10/08/97[dup]	**8.97**	**<500**	**1,400**	**36**	**<5.0**	**5.9**	**<5.0**
Trip Blank	01/20/94		<50	---	<0.5	<0.5	<0.5	<0.5
	04/25/94		<50	---	<0.5	<0.5	<0.5	<0.5
	07/07/94		<50	---	<0.5	<0.5	<0.5	<0.5
	10/27/94		<50	---	<0.5	<0.5	<0.5	<0.5
	01/13/95		<50	---	<0.5	<0.5	<0.5	<0.5
	04/12/95		<50	---	<0.5	<0.5	<0.5	0.89
	07/25/95		<50	---	<0.5	<0.5	<0.5	<0.5
	10/18/95		<50	---	<0.5	<0.5	<0.5	<0.5
MCLs			NE	NE	1	150	700	1,750

Table 3. **Ground Water Analytic Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
MTBE = Methyl-tert-butyl-ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260
B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Xylenes by EPA Method 8020
SPH = Separate-phase hydrocarbons present, well not sampled
--- = Not analyzed
<n = Not detected at detection limits of n µg/L
dup = Duplicate sample
ft = Feet
µg/L = Micrograms per liter
MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444
NE = Not established

Notes:

a = Ground water surface had a sheen when sampled
b = MTBE value is estimated by Sequoia Analytical of Redwood City, California

CAMBRIA

ATTACHMENT A

Blaine Quarterly Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

November 10, 1997

Shell Oil Company
P.O. Box 8080
Martinez, CA

Attn: Alex Perez

Shell WIC #204-5510-0600
4255 MacArthur Blvd.
Oakland, California

4th Quarter 1997

Groundwater Monitoring Report 971008-G-2

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. Copies of our Sampling Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,

Francis Thie

attachments: Table of Well Gauging Data
Chain of Custody
Field Data Sheets
Certified Analytical Report

cc: Cambria Environmental Technology, Inc.
1144 65th Street, Suite C
Oakland, CA 94608
Attn: Josh Bergstrom

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	10/08/97	TOC	–	NONE	–	–	8.10	23.27
MW-2	10/08/97	FREE PRODUCT	ODOR	12.92	0.05	500	12.97	–
MW-3	10/08/97	TOC	ODOR	NONE	–	–	16.22	21.85
MW-4 *	10/08/97	TOC	–	NONE	–	–	8.97	30.20

* Sample DUP was a duplicate sample taken from well MW-4.

9710730

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 971008-62

Date: 10/8/97
Page 1 of 1

Site Address: 4255 MacArthur Blvd., Oakland

WIC#: 204-5510-0600

Shell Engineer: Alex Perez — Phone No.: (510) 675-6168 Fax #: 675-6172

Consultant Name & Address: Blaine Tech Services, 1680 Rogers Ave., San Jose, CA 95112

Consultant Contact: Fran Thie — Phone No.: (408) 573-0555 Fax #: 573-7771

Comments:

Sampled by:

Printed Name: Morgan Gillies

LAB: Sequoia

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020/MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
01 MW-1	10/8/97			X		3						X						
02 MW-3	↓			↓		↓						X						
03 MW-4												X						
04 EB												X						
05 Dup												X						

Analysis Required

CHECK ONE (1) BOX ONLY — CT/DT — TURN AROUND TIME

- Quarterly Monitoring XX — 6441
- Site Investigation ☐ — 6441
- Soil Closure/Disposal ☐ — 6442
- Water Closure/Disposal ☐ — 6443
- Soil/Air Rem. or Sys. O & M ☐ — 6462
- Water Rem. or Sys. O & M ☐ — 6463
- Other ☐

TURN AROUND TIME
- 24 hours ☐
- 48 hours ☐
- 15 days XX (Normal) — CC 9 12 07
- Other ☐ ____

NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.

	Printed Name	Date	Time		Printed Name	Date	Time
Relinquished By (signature):	Morgan Gillies	10/9/97	11:10	Received (signature):	Ray	10/9/97	~~11:20~~ 11:10
Relinquished By (signature):	Ray	10/9		Received (signature):			
Relinquished By (signature):				Received (signature):	T. Downs	10/9/97	12:07

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Project: Shell Oakland/971008-G2

Enclosed are the results from samples received at Sequoia Analytical on October 9, 1997. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9710730 -01	LIQUID, MW-1	10/08/97	TPGM2W Purgeable TPH/BTEX
9710730 -02	LIQUID, MW-3	10/08/97	TPGM2W Purgeable TPH/BTEX
9710730 -03	LIQUID, MW-4	10/08/97	TPGM2W Purgeable TPH/BTEX
9710730 -04	LIQUID, EB	10/08/97	TPGM2W Purgeable TPH/BTEX
9710730 -05	LIQUID, DUP	10/08/97	TPGM2W Purgeable TPH/BTEX

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/971008-G2
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9710730-01

Sampled: 10/08/97
Received: 10/09/97

Analyzed: 10/21/97
Reported: 10/23/97

QC Batch Number: GC102197BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	N.D.
Methyl t-Butyl Ether	**5.0**	**620**
Benzene	**1.0**	**7.0**
Toluene	1.0	N.D.
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	94

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/971008-G2
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9710730-02

Sampled: 10/08/97
Received: 10/09/97

Analyzed: 10/21/97
Reported: 10/23/97

QC Batch Number: GC102197BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	48000
Methyl t-Butyl Ether	500	5100
Benzene	100	8000
Toluene	100	590
Ethyl Benzene	100	1700
Xylenes (Total)	100	3400
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	87

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/971008-G2
Sample Descript: MW-4
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9710730-03

Sampled: 10/08/97
Received: 10/09/97

Analyzed: 10/20/97
Reported: 10/23/97

QC Batch Number: GC102097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	N.D.
Methyl t-Butyl Ether	**25**	**1400**
Benzene	**5.0**	**40**
Toluene	5.0	N.D.
Ethyl Benzene	**5.0**	**7.4**
Xylenes (Total)	**5.0**	**5.4**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell Oakland/971008-G2	Sampled: 10/08/97
1680 Rogers Avenue	Sample Descript: EB	Received: 10/09/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/20/97
Attention: Fran Thie	Lab Number: 9710730-04	Reported: 10/23/97

QC Batch Number: GC102097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thle

Client Proj. ID: Shell Oakland/971008-G2
Sample Descript: DUP
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9710730-05

Sampled: 10/08/97
Received: 10/09/97

Analyzed: 10/20/97
Reported: 10/23/97

QC Batch Number: GC102097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	N.D.
Methyl t-Butyl Ether	**25**	**1400**
Benzene	**5.0**	**36**
Toluene	5.0	N.D.
Ethyl Benzene	**5.0**	**5.9**
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Pepper
Project Manager

Sequoia Analytical

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Blaine Tech Services, Inc.
1680 Rogers Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 971008-G2
Matrix: Liquid
Work Order #: 9710730 -01-02

Reported: Oct 24, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC102197BTEX03A	GC102197BTEX03A	GC102197BTEX03A	GC102197BTEX03A	GC102197BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	971098003	971098003	971098003	971098003	971098003
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/21/97	10/21/97	10/21/97	10/21/97	10/21/97
Analyzed Date:	10/21/97	10/21/97	10/21/97	10/21/97	10/21/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.0	8.8	8.8	25	71
MS % Recovery:	90	88	88	83	118
Dup. Result:	8.5	8.4	8.4	23	67
MSD % Recov.:	85	84	84	77	112
RPD:	5.7	4.7	4.7	8.3	5.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK102197	BLK102197	BLK102197	BLK102197	BLK102197
Prepared Date:	10/21/97	10/21/97	10/21/97	10/21/97	10/21/97
Analyzed Date:	10/21/97	10/21/97	10/21/97	10/21/97	10/21/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.8	8.6	8.6	24	68
LCS % Recov.:	88	86	86	80	113
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Blaine Tech Services, Inc.
1680 Rogers Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 971008-G2
Matrix: Liquid
Work Order #: 9710730-03-05

Reported: Oct 24, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC102097BTEX02A	GC102097BTEX02A	GC102097BTEX02A	GC102097BTEX02A	GC102097BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	971073403	971073403	971073403	971073403	971073403
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/20/97	10/20/97	10/20/97	10/20/97	10/20/97
Analyzed Date:	10/20/97	10/20/97	10/20/97	10/20/97	10/20/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.7	9.8	30	60
MS % Recovery:	100	97	98	100	100
Dup. Result:	10	9.8	9.9	30	62
MSD % Recov.:	100	98	99	100	103
RPD:	0.0	1.0	1.0	0.0	3.3
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK102097	BLK102097	BLK102097	BLK102097	BLK102097
Prepared Date:	10/20/97	10/20/97	10/20/97	10/20/97	10/20/97
Analyzed Date:	10/20/97	10/20/97	10/20/97	10/20/97	10/20/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	9.8	10	30	61
LCS % Recov.:	100	98	100	100	102
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thle

Client Proj. ID: Shell Oakland/971008-G2

Lab Proj. ID: 9710730

Received: 10/09/97

Reported: 10/23/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 9 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager