CAMBRIA

May 16, 1997

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

Re: **First Quarter 1997 Monitoring Report**
Shell Service Station
4255 MacArthur Boulevard
Oakland, California
WIC #204-5510-0600
Cambria Project #24-314-106

Dear Ms. Shin:

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.

FIRST QUARTER 1997 ACTIVITIES

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)
0.48	16.15

Cambria calculated ground water elevations (Table 2), compiled the analytic data (Table 3 and Table 4), 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

CAMBRIA

ANTICIPATED SECOND QUARTER 1997 ACTIVITIES

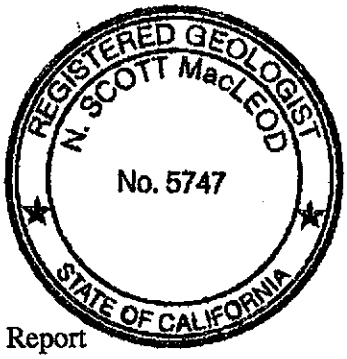
Blaine will gauge water levels, check for SPH and collect ground water samples from selected site wells. Cambria will submit a report presenting a summary of activities for the upcoming quarter.

In addition, we are preparing a response to the October 31, 1996 Alameda County Department of Environmental Health request for an addendum to the *SVE Test Workplan* dated June 21, 1996 that was submitted by Weiss Associates for this site. The addendum will be submitted shortly.

CLOSING

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

Sincerely,
Cambria Environmental Technology, Inc.



N. Scott MacLeod, R.G.
Principal Geologist

Attachments: A - Blaine Quarterly Ground Water Monitoring Report

cc: A. E. (Alex) Perez, Shell Oil Products Company, P.O. Box 4023, Concord, California 94524

F:\PROJECT\SHELL\OAK4255\QM\1Q97QM.WPD

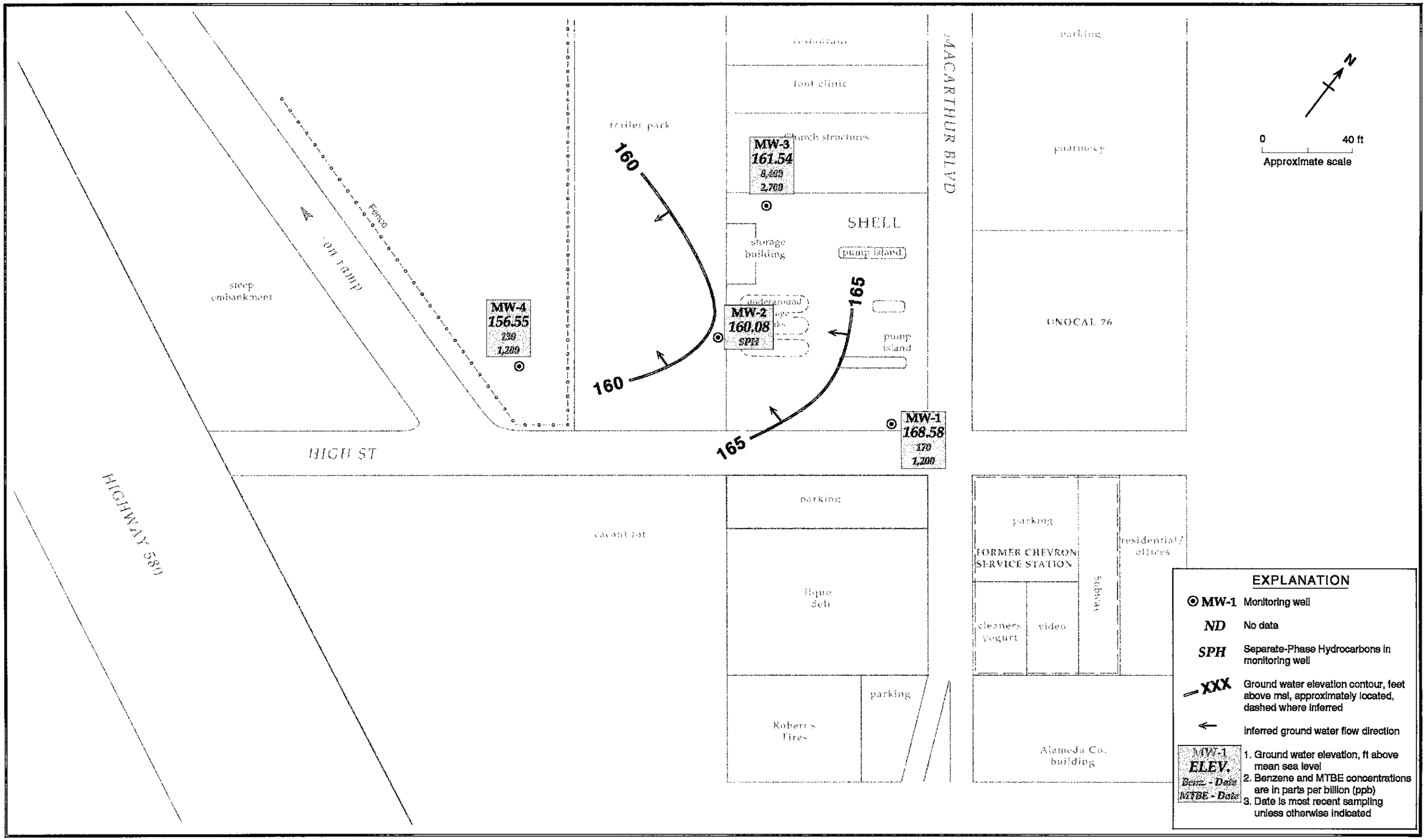


Figure 1. Montoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - January 22, 1997 - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

F:\PROJECT\SHELL\OAK4255\1QM97-MP.AI

04/08/97

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)[a]	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	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**
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	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
TOTAL HYDROCARBONS REMOVED				**16.15**

Notes and Abbreviations:

--- = not measured

a = SPH in 10" boring and 4" well estimated by following factor: 1 ft of SPH = 11.5 lbs of SPH.

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)	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**
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**
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
	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

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)	Separate-phase Hydrocarbons (ft)	Ground Water Elevation[a] (ft above msl)
	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**
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**

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).

--- = Data not available

msl = Mean sea level

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	E	T	X
			← parts per billion (µg/L) →					
MW-1	11/17/93	8.59	410	---	21	7.9	11	47
	01/20/94	8.22	1,200	---	180	48	19	47
	04/25/94	7.63	3,100	---	610	130	<10	27
	07/07/94	8.31	2,400	---	1,000	250	10	20
	10/27/94	8.84	2,200	---	500	72	3.1	1.8
	01/13/95	7.11	570	---	75	6.7	2.5	11
	04/12/95	7.08	1,800	---	480	79	<5.0	<5.0
	07/25/95	7.73	120	---	15	2.1	1.1	2.9
	07/25/95[dup]	7.73	300	---	88	11	2.4	6.5
	10/18/95	8.42	130	---	9.5	1.3	0.8	1.7
	10/18/95[dup]	8.42	120	---	11	1.4	0.8	1.8
	01/17/96	7.83	250	---	22	1.6	0.9	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	57	12	82
	01/22/97	**7.21**	**640**	**1,200**	**170**	**33**	**4.3**	**33**
MW-2	11/17/93	12.31	31,000	---	9,400	1,000	4,600	3,900
	01/20/94	11.48	40,000	---	6,900	780	5,600	4,100
	01/20/94[dup]	11.48	41,000	---	7,200	900	6,200	4,800
	04/25/94	10.84	60,000	---	9,300	1,400	6,100	6,200
	07/07/94	11.89	280,000[a]	---	40,000	8,100	26,000	32,000
	07/07/94[dup]	11.89	53,000	---	13,000	2,000	6,600	8,400
	10/27/94	12.89	130,000	---	14,000	2,400	12,000	13,000
	10/27/94[dup]	12.89	390,000	---	8,800	1,700	7,000	11,000
	01/13/95	8.10	75,000	---	5,900	3,100	12,000	17,000
	04/12/95	10.12	100,000	---	8,500	2,400	11,000	12,000
	04/12/95[dup]	10.12	80,000	---	4,200	2,500	9,300	12,000
	08/10/95[SPH]	11.53	---	---	---	---	---	---
	10/18/95[SPH]	14.02	---	---	---	---	---	---
	01/17/96[SPH]	10.27	---	---	---	---	---	---
	04/25/96[SPH]	11.68	---	---	---	---	---	---
	07/17/96[SPH]	12.78	---	---	---	---	---	---

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	E	T	X
			← parts per billion (µg/L) →					
	10/01/96[SPH]	14.21	---	---	---	---	---	---
	01/22/97[SPH]	**10.92**	**---**	**---**	**---**	**---**	**---**	**---**
MW-3	11/17/93	15.40	18,000	---	5,400	720	660	2,200
	01/20/94	14.61	55,000	---	13,000	2,200	2,600	6,500
	04/25/94	13.12	96,000	---	11,000	3,100	1,600	9,900
	04/25/94[dup]	13.12	78,000	---	12,000	2,600	1,900	7,300
	07/07/94[SPH]	14.54	---	---	---	---	---	---
	10/27/94[SPH]	15.62	---	---	---	---	---	---
	01/13/95	12.13	180,000	---	3,200	1,700	2,700	5,200
	01/13/95[dup]	12.13	23,000	---	4,000	960	690	3,000
	04/12/95	12.96	56,000	---	8,700	2,100	1,500	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	1,700	530	3,900
	10/01/96[dup]	16.56	47,000	2,900	7,100	1,700	530	4,000
	01/22/97	**13.07**	**82,000**	**1,100**	**5,200**	**2,800**	**1,300**	**8,900**
	01/22/97[dup]	**13.07**	**61,000**	**2,700**	**8,400**	**2,300**	**1,100**	**7,000**
MW-4	11/28/94	6.11	2,900	---	200	76	17	260
	01/13/95	6.05	1,900	---	130	13	5.6	40
	04/14/95	6.31	680	---	150	10	<2.0	13
	07/25/95	7.36	340	---	100	8.8	0.8	3.0
	10/18/95	8.54	150	---	31	3.5	<0.5	0.8
	01/17/96	8.48	290	---	14	1.8	<0.5	0.8
	04/25/96	7.40	<500	1,700	65	<5	<5	<5
	04/25/96[dup]	7.40	<500	1,500	66	8.7	<5	<5
	07/17/96	7.75	<500	1,500	84	6.5	<5.0	<5.0
	07/17/96[dup]	7.75	<500	1,700	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**	**18**	**<2.5**	**5.2**

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	E	T	X
			← parts per billion (µg/L) →					
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		1	700	150	1,750

Abbreviations:

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

Notes:

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

Table 4. **Ground Water Analytic Results for Metals** - Shell Station WIC #204-5510-0600 - 4255 MacArthur Boulevard, Oakland, California

Well ID	Date	Cadmium	Chromium	Copper	Lead
		(mg/l)			
MW-1	01/22/97	<0.010	<0.010	<0.010	<0.10
MW-2	01/22/97[SPH]	---	---	---	---
MW-3	01/22/97	<0.010	0.025	0.034	<0.10
MW-4	01/22/97	<0.010	0.19	0.14	<0.10

Notes:

SPH = Well not sampled due to presence of separate-phase hydrocarbons.
mg/L = Milligrams per liter

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

February 6, 1997

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: R. Jeff Granberry

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

1st Quarter 1997

Quarterly Groundwater Monitoring Report 970122-F-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: Paul Waite

(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	1/22/97	TOC	ODOR	NONE	--	--	7.21	23.39
MW-2	1/22/97	TOC	FREE PRODUCT	10.81	0.11	300	10.92	--
MW-3 *	1/22/97	TOC	SHEEN/ODOR	--	--	--	13.07	21.94
MW-4	1/22/97	TOC	--	NONE	--	--	7.51	30.31

* Sample DUP was a duplicate sample taken from well MW-3.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: ~~SF~~ 970122-F2

Date: 1/22/97
Page 1 of 1

Site Address: 4255 MacArthur Blvd., Oakland

WIC#: 204-5510-0600

Shell Engineer: R. Jeff Granberry
Phone No.: (510) 675-6168
Fax #: 675-6172

Consultant Name & Address: Blaine Tech Services, 985 Timothy Dr., San Jose, CA 95133

Consultant Contact: Fran Thie
Phone No.: (408) 995-5535
Fax #: 293-8773

Comments:

Sampled by: TG

Printed Name: Tim GRAF

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY — CT/DT
- Quarterly Monitoring [X] 5461
- Site Investigation [ ] 5441
- Soil Classify/Disposal [ ] 5442
- Water Classify/Disposal [ ] 5443
- Soil/Air Rem. or Sys. O & M [ ] 5452
- Water Rem. or Sys. O & M [ ] 5453
- Other [ ]

TURN AROUND TIME
- 24 hours [ ]
- 48 hours [ ]
- 16 days [X] (Normal)
- Other [ ]

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

9701B93

Analysis Required

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	~~METALS~~ Cooper, Chromium	~~Asbestos~~ Lead, Cadmium	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1 mw-1	1/22			w		4						X	X	X	X				Not Field	Filtered -
2 mw-3	|			|		4						X	X	X	X					Metals
3 mw-4	|			|		4						X	X	X	X					
4 EB	|			|		4						X	X	X	X					
5 Dup	1/22			w		4						X	X	X	X					

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
[signature]	Tim GRAF	Date: 1/23 Time: 0915	[signature]	John Howe	Date: 1/23/97 Time: 0915
[signature]	John Howe	Date: 1/23/97 Time: 1040	[signature]		Date: Time:
		Date: Time:	[signature]	L Kim	Date: 1/23/97 Time: 1040

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
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/970122-F2

Enclosed are the results from samples received at Sequoia Analytical on January 23, 1997.
The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9701B93 -01	LIQUID, MW-1	01/22/97	Cadmium
9701B93 -01	LIQUID, MW-1	01/22/97	Chromium
9701B93 -01	LIQUID, MW-1	01/22/97	Copper
9701B93 -01	LIQUID, MW-1	01/22/97	Lead
9701B93 -01	LIQUID, MW-1	01/22/97	TPGBMW Purgeable TPH/BTEX
9701B93 -02	LIQUID, MW-3	01/22/97	Cadmium
9701B93 -02	LIQUID, MW-3	01/22/97	Chromium
9701B93 -02	LIQUID, MW-3	01/22/97	Copper
9701B93 -02	LIQUID, MW-3	01/22/97	Lead
9701B93 -02	LIQUID, MW-3	01/22/97	TPGBMW Purgeable TPH/BTEX
9701B93 -03	LIQUID, MW-4	01/22/97	Cadmium
9701B93 -03	LIQUID, MW-4	01/22/97	Chromium
9701B93 -03	LIQUID, MW-4	01/22/97	Copper
9701B93 -03	LIQUID, MW-4	01/22/97	Lead
9701B93 -03	LIQUID, MW-4	01/22/97	TPGBMW Purgeable TPH/BTEX
9701B93 -04	LIQUID, EB	01/22/97	Cadmium
9701B93 -04	LIQUID, EB	01/22/97	Chromium
9701B93 -04	LIQUID, EB	01/22/97	Copper
9701B93 -04	LIQUID, EB	01/22/97	Lead
9701B93 -04	LIQUID, EB	01/22/97	TPGBMW Purgeable TPH/BTEX
9701B93 -05	LIQUID, DUP	01/22/97	Cadmium

SEQUOIA ANALYTICAL

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9701B93 -05	LIQUID, DUP	01/22/97	Chromium
9701B93 -05	LIQUID, DUP	01/22/97	Copper
9701B93 -05	LIQUID, DUP	01/22/97	Lead
9701B93 -05	LIQUID, DUP	01/22/97	TPGBMW 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

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
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

Client Proj. ID: Shell Oakland/970122-F2

Lab Proj. ID: 9701B93

Sampled: 01/22/97
Received: 01/23/97
Analyzed: see below

Reported: 01/29/97

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9701B93-01				
Sample Desc : **LIQUID,MW-1**				
Cadmium	mg/L	01/27/97	0.010	N.D.
Chromium	mg/L	01/27/97	0.010	N.D.
Copper	mg/L	01/27/97	0.010	N.D.
Lead	mg/L	01/27/97	0.10	N.D.
Lab No: 9701B93-02				
Sample Desc : **LIQUID,MW-3**				
Cadmium	mg/L	01/27/97	0.010	N.D.
Chromium	**mg/L**	**01/27/97**	**0.010**	**0.025**
Copper	**mg/L**	**01/27/97**	**0.010**	**0.034**
Lead	mg/L	01/27/97	0.10	N.D.
Lab No: 9701B93-03				
Sample Desc : **LIQUID,MW-4**				
Cadmium	mg/L	01/27/97	0.010	N.D.
Chromium	**mg/L**	**01/27/97**	**0.010**	**0.19**
Copper	**mg/L**	**01/27/97**	**0.010**	**0.14**
Lead	mg/L	01/27/97	0.10	N.D.
Lab No: 9701B93-04				
Sample Desc : **LIQUID,EB**				
Cadmium	mg/L	01/27/97	0.010	N.D.
Chromium	mg/L	01/27/97	0.010	N.D.
Copper	mg/L	01/27/97	0.010	N.D.
Lead	mg/L	01/27/97	0.10	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
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

Client Proj. ID: Shell Oakland/970122-F2

Lab Proj. ID: 9701B93

Sampled: 01/22/97
Received: 01/23/97
Analyzed: see below

Reported: 01/29/97

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9701B93-05				
Sample Desc : **LIQUID,DUP**				
Cadmium	mg/L	01/27/97	0.010	N.D.
Chromium	**mg/L**	**01/27/97**	**0.010**	**0.024**
Copper	**mg/L**	**01/27/97**	**0.010**	**0.038**
Lead	mg/L	01/27/97	0.10	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Sampled: 01/22/97
1680 Rogers Avenue	Sample Descript: MW-1	Received: 01/23/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/27/97
Attention: Fran Thie	Lab Number: 9701B93-01	Reported: 01/29/97

QC Batch Number: GC012797BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**250**	**640**
Methyl t-Butyl Ether	**12**	**1200**
Benzene	**2.5**	**170**
Toluene	**2.5**	**4.3**
Ethyl Benzene	**2.5**	**33**
Xylenes (Total)	**2.5**	**33**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Sampled: 01/22/97
1680 Rogers Avenue	Sample Descript: MW-3	Received: 01/23/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/24/97
Attention: Fran Thie	Lab Number: 9701B93-02	Reported: 01/29/97

QC Batch Number: GC012497BTEX18A
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**82000**
Methyl t-Butyl Ether	**500**	**1100**
Benzene	**100**	**5200**
Toluene	**100**	**1300**
Ethyl Benzene	**100**	**2800**
Xylenes (Total)	**100**	**8900**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	106

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Sampled: 01/22/97
1680 Rogers Avenue	Sample Descript: MW-4	Received: 01/23/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/27/97
Attention: Fran Thie	Lab Number: 9701B93-03	Reported: 01/29/97

QC Batch Number: GC012797BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**250**	**580**
Methyl t-Butyl Ether	**12**	**1200**
Benzene	**2.5**	**130**
Toluene	2.5	N.D.
Ethyl Benzene	**2.5**	**18**
Xylenes (Total)	**2.5**	**5.2**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	109

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Sampled: 01/22/97
1680 Rogers Avenue	Sample Descript: EB	Received: 01/23/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/27/97
Attention: Fran Thie	Lab Number: 9701B93-04	Reported: 01/29/97

QC Batch Number: GC012797BTEX01A
Instrument ID: GCHP01

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	106

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Sampled: 01/22/97
1680 Rogers Avenue	Sample Descript: DUP	Received: 01/23/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/24/97
Attention: Fran Thie	Lab Number: 9701B93-05	Reported: 01/29/97

QC Batch Number: GC012497BTEX18A
Instrument ID: GCHP18

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**61000**
Methyl t-Butyl Ether	**500**	**2700**
Benzene	**100**	**8400**
Toluene	**100**	**1100**
Ethyl Benzene	**100**	**2300**
Xylenes (Total)	**100**	**7000**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	88

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970122-F2	Received: 01/23/97
1680 Rogers Avenue		
San Jose, CA 95112	Lab Proj. ID: 9701B93	Reported: 01/29/97
Attention: Fran Thie		

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 13 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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Shell Oakland / 970122-F2
Matrix: Liquid
Work Order #: 9701B93 -01-05
Reported: Jan 31, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0127976010MDA	ME0127976010MDA	ME0127976010MDA	ME0127976010MDA
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010
Analyst:	R. Butler	R. Butler	R. Butler	R. Butler
MS/MSD #:	9701B9301	9701B9301	9701B9301	9701B9301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/27/97	1/27/97	1/27/97	1/27/97
Analyzed Date:	1/27/97	1/27/97	1/27/97	1/27/97
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Result:	0.92	0.91	0.93	0.92
MS % Recovery:	92	91	93	92
Dup. Result:	0.92	0.91	0.93	0.91
MSD % Recov.:	92	91	93	91
RPD:	0.0	0.0	0.0	1.1
RPD Limit:	0-20	0-20	0-20	0-20
LCS #:	BLK012797	BLK012797	BLK012797	BLK012797
Prepared Date:	1/27/97	1/27/97	1/27/97	1/27/97
Analyzed Date:	1/27/97	1/27/97	1/27/97	1/27/97
Instrument I.D.#:	MTJA2	MTJA2	MTJA2	MTJA2
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
LCS Result:	0.90	0.91	0.92	0.92
LCS % Recov.:	90	91	92	92
MS/MSD LCS Control Limits	80-120	80-120	80-120	80-120

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services, Inc.	Client Project ID:	Shell Oakland / 970122-F2
1680 Rogers Avenue	Matrix:	Liquid
San Jose, CA 95112		
Attention: Fran Thie	Work Order #:	9701B93-01, 03-04

Reported: Jan 31, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC012797BTEX01A	GC012797BTEX01A	GC012797BTEX01A	GC012797BTEX01A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9701B4102	9701B4102	9701B4102	9701B4102
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/27/97	1/27/97	1/27/97	1/27/97
Analyzed Date:	1/27/97	1/27/97	1/27/97	1/27/97
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	11	33
MS % Recovery:	100	100	110	110
Dup. Result:	10	10	11	33
MSD % Recov.:	100	100	110	110
RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK012797	BLK012797	BLK012797	BLK012797
Prepared Date:	1/27/97	1/27/97	1/27/97	1/27/97
Analyzed Date:	1/27/97	1/27/97	1/27/97	1/27/97
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	11	11	34
LCS % Recov.:	100	110	110	113
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Shell Oakland / 970122-F2
Matrix: Liquid
Work Order #: 9701B93-02, 05

Reported: Jan 31, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC012497BTEX18A	GC012497BTEX18A	GC012497BTEX18A	GC012497BTEX18A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Geckler	R. Geckler	R. Geckler	R. Geckler
MS/MSD #:	970175003	970175003	970175003	970175003
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/24/97	1/24/97	1/24/97	1/24/97
Analyzed Date:	1/24/97	1/24/97	1/24/97	1/24/97
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.6	9.6	9.4	28
MS % Recovery:	96	96	94	93
Dup. Result:	9.8	9.8	9.6	29
MSD % Recov.:	98	98	96	97
RPD:	2.1	2.1	2.1	3.5
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK012497	BLK012497	BLK012497	BLK012497
Prepared Date:	1/24/97	1/24/97	1/24/97	1/24/97
Analyzed Date:	1/24/97	1/24/97	1/24/97	1/24/97
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	9.6	9.7	9.5	28
LCS % Recov.:	96	97	95	93
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	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