CAMBRIA

March 24, 1997

Jennifer Eberle
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: **Fourth Quarter 1996 Monitoring Report**
Former Shell Service Station
1230 14th Street
Oakland, California
WIC # 204-4878-1300

Dear Ms. Eberle:

On behalf of Shell Oil Products Company, Cambria Environmental Technology, Inc. (Cambria) is submitting this status 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 1996 ACTIVITIES

Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected water samples from the site wells (Figure 1). The Blaine report, describing these sampling activities and presenting the analytic results is included as Attachment A.

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

ANTICIPATED FIRST QUARTER 1997 ACTIVITIES

As we agreed in our January 1997 meeting, we will install oxygen releasing compounds (ORC's) in wells MW-1, VW/MW-2, and VW/MW-4 to enhance naturally occurring hydrocarbon biodegradation. We will monitor dissolved oxygen (DO) concentrations in all wells prior to installing ORC's. Once the DO concentrations in the ORC wells decrease to pre-ORC concentrations, we will sample the wells and install additional ORC's in the wells.

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

CAMBRIA

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

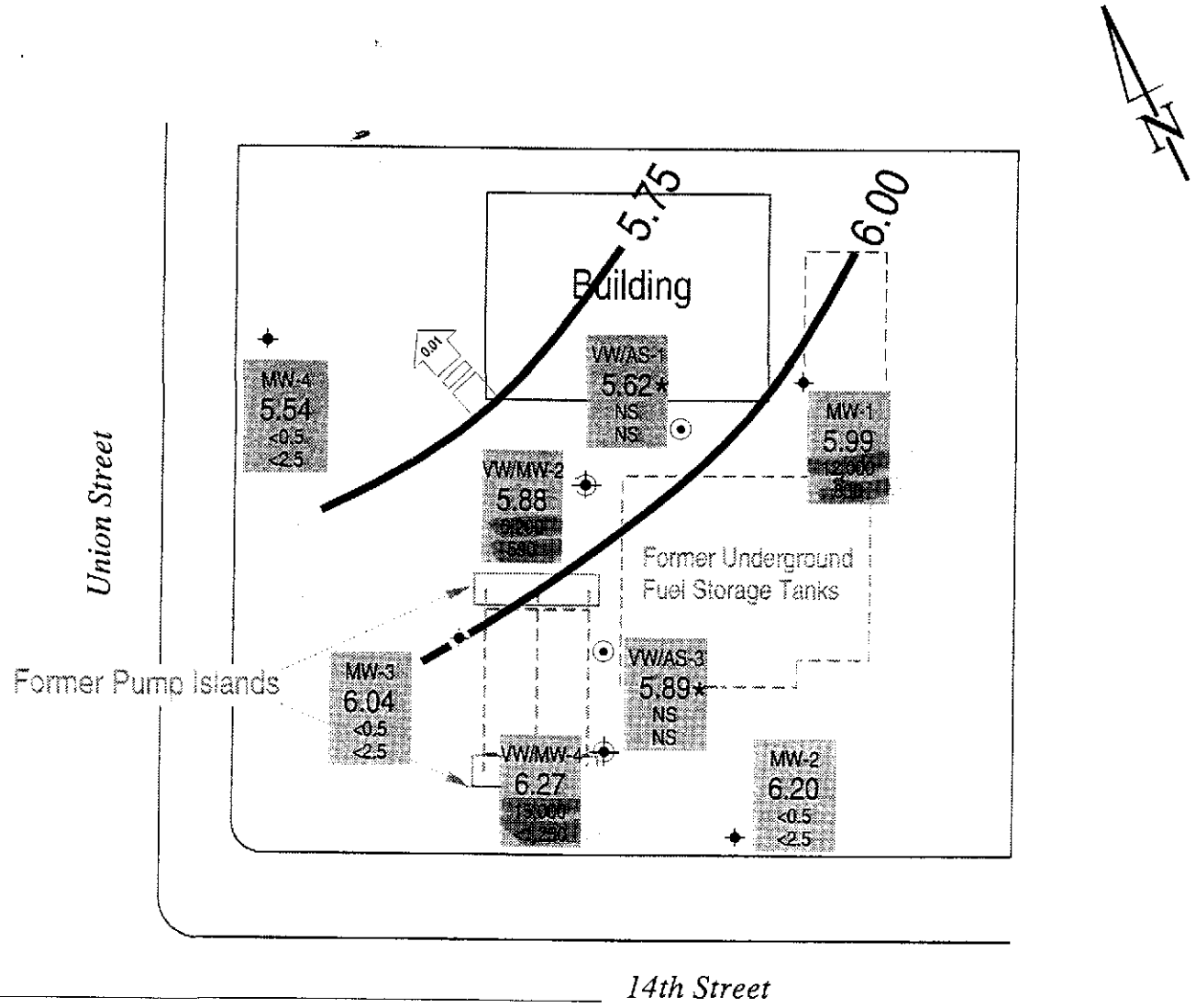
Sincerely,
Cambria Environmental Technology, Inc.

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\OAK1230\4Q96QM.WPD



EXPLANATION

MW-2	Ground Water Monitoring Well
VW/AS-3	Combination Air Sparge/Soil Vapor Extraction Wells
VW/MW-4	Combination Soil Vapor Extraction Well/Monitoring Well
*	Not Contoured, Well Screened Shallow
	Ground Water Contour
	Ground Water Flow Direction/Gradient (ft/ft)
NS	Not Sampled
MW-1 ELEV. Benz. Date MTBE Date	1. Ground water elevation, ft above mean sea level (msl) 2. Benzene and MTBE concentrations are in parts per billion (ppb) 3. Date is most recent sampling unless otherwise indicated

0 20

Scale (ft)

Base Map by Tank Protect Engineering

CAMBRIA
Environmental Technology, Inc.

Former Shell Service Station
WIC # 204-5508-3103
1230 14th Street
Oakland, California

F:/PROJECT/SHELL/OAK1230/QM-MAP.DWG

Ground Water Elevation
Contours

December 19, 1996

FIGURE
1

Table 1. Ground Water Elevation and Analytic Data - Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction/Gradient	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH	POG	Notes
					<----------(concentrations in parts per billion)---------->								
MW-1	03/25/96	9.53	9.05	---	37,000	<500	7,400	1,500	720	3,300	---	<5,000	
(All)	06/21/96	10.72	7.86	NE	35,000	890	9,900	460	340	3,500	---	<5,000	
TOC=18.58	09/26/96	12.88	5.70	W	19,000	<250	8,200	510	780	790	---	3,800	
	12/19/96	**12.59**	**5.99**	**NW/0.01**	**27,000**	**<100**	**120**	**1,200**	**1,400**	**2,800**	**9,000**	**---**	
	12/19/96	**12.59**	**5.99**	**NW/0.01**	**32,000**	**830**	**12,000**	**1,300**	**1,600**	**3,100**	**8,800**	**---**	a
MW-2	03/25/96	8.19	9.71	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
(All)	06/21/96	9.94	7.96	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
TOC=17.90	9/26/96	12.15	5.75	NW	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
	12/19/96	**11.70**	**6.20**	**NW/0.01**	**<50**	**<2.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	
MW-3	03/25/96	8.47	9.71	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
(All)	06/21/96	10.40	7.78	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
TOC= 18.18	09/26/96	12.45	5.73	N	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
	12/19/96	**12.14**	**6.04**	**NW/0.01**	**<50**	**<2.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	
MW-4	03/25/96	9.20	8.81	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
(All)	06/21/96	10.25	7.76	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
TOC= 18.01	09/26/96	12.29	5.72	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---	
	12/19/96	**12.47**	**5.54**	**NW/0.01**	**<50**	**<2.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	
VW/MW-2	03/25/96	9.04	9.26	---	13,000	<250	900	920	180	1,500	---	---	
(All)	06/21/96	10.48	7.82	NE	27,000	700	4,100	1,100	1,400	3,200	---	---	
TOC= 18.30	09/26/96	12.52	5.78	NE	27,000	<500	5,300	1,900	980	2,200	---	---	
	09/26/96	12.52	5.78	NE	29,000	<250	5,800	2,200	1,100	2,500	---	---	a
	12/19/96	**12.42**	**5.88**	**NW/0.01**	**50,000**	**590**	**6,200**	**5,100**	**1,700**	**5,600**	**---**	**---**	
VW/MW-4	03/25/96	8.45	9.69	---	83,000	<250	6,500	7,000	2,000	11,000	---	---	
(All)	03/25/96	8.45	9.69	---	84,000	<250	6,400	7,000	2,100	12,000	---	---	a
TOC= 18.14	06/21/96	10.38	7.76	NE	110,000	1,700	14,000	15,000	3,700	17,000	---	---	
	06/21/96	10.38	7.76	NE	100,000	<1,000	12,000	12,000	2,900	13,000	---	---	a
	09/26/96	12.43	5.71	NE	52,000	<500	13,000	2,700	2,100	3,200	---	---	
	12/19/96	**11.87**	**6.27**	**NW/0.01**	**75,000**	**<1,250**	**15,000**	**6,600**	**3,000**	**7,600**	**---**	**---**	

Table 1. Ground Water Elevation and Analytic Data - Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction/Gradient	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH	POG	Notes
					<----------(concentrations in parts per billion)---------->								
VW/AS-1	03/25/96	8.98	9.62	---	---	---	---	---	---	---	---	---	
(Gauge only)	06/21/96	10.95	7.65	NE	---	---	---	---	---	---	---	---	
TOC= 18.60	09/26/96	12.98	5.62	N	---	---	---	---	---	---	---	---	
	12/19/96	**12.67**	**5.93**	**NW/0.01**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	
VW/AS-3	03/25/96	8.50	9.67	---	---	---	---	---	---	---	---	---	
(Gauge only)	06/21/96	10.42	7.75	NE	---	---	---	---	---	---	---	---	
TOC= 18.17	09/26/96	12.49	5.68	NE	---	---	---	---	---	---	---	---	
	12/19/96	**12.28**	**5.89**	**NW/0.01**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	

Notes and Abbreviations

GW = Ground water
TPHg = Total petroleum hydrocarbons as gasoline modified by EPA Method 8015
TOC = Top of casing elevation
ft = Feet
MTBE = Methyl tert-Butyl Ether by modified EPA method 8020
POG = Petroleum Oil and Grease modified by standard method SM 5520 B&F
TRPH = Total recoverable petroleum hydrocarbons

a = Duplicate sample

CAMBRIA

ATTACHMENT A

Blaine Quarterly Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

January 10, 1997

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

Attn: R. Jeff Granberry

Shell WIC #204-5508-3103
1230 14th Street
Oakland, California

4th Quarter 1996

Quarterly Groundwater Monitoring Report 961219-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, CA 95476
Attn: Mari Reeves

(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 *	12/19/96	TOC	ODOR	NONE	--	--	12.59	21.17
MW-2	12/19/96	TOC	--	NONE	--	--	11.70	22.00
MW-3	12/19/96	TOC	--	NONE	--	--	12.14	21.69
MW-4	12/19/96	TOC	--	NONE	--	--	12.47	21.11
VW/MW-2	12/19/96	TOC	ODOR	NONE	--	--	12.42	22.14
VW/MW-4	12/19/96	TOC	ODOR	NONE	--	--	11.87	19.57
VW/AS-1	12/19/96	TOC	--	NONE	--	--	12.67	19.16
VW/AS-3	12/19/96	TOC	--	NONE	--	--	12.28	19.64

* Sample DUP was a duplicate sample taken from well MW-1.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 96129-E3

Date: 12/19/96
Page 1 of 1

Site Address: 1230 14th St., Oakland, CA

WIC#: 204-5508-3103

Shell Engineer: R. Jeff Granberry — Phone No.: (510) 675-6166 Fax #:

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

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

Comments:

Sampled by: TG

Printed Name: Tim Graf

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY | CT/DT
- G.W. Monitoring XX ☐ 4461
- Site Investigation ☐ 4441
- Soil Classify/Disposal ☐ 4442
- Water Classify/Disposal ☐ 4443
- Soil/Air Rem. or Sys. O & M ☐ 4452
- Water Rem. or Sys. O & M ☐ 4453
- Other ☐

TURN AROUND TIME
- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ ____

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

9612D26

UST AGENCY: ____

DEC 20 1138

	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	Total Oil + Grease	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1	MW-1	12/19			W		5						X	X	X						
2	MW-2						3						X	X							
3	MW-3						3						X	X							
4	MW-4						3						X	X							
5	VW/MW-2						3						X	X							
6	VW/MW-4						3						X	X							
7	EB						3						X	X							
8	DUP						5						X	X	X						

	Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
1	Tim Graf	Tim Graf	12/20/96	930	S Wright	S WRIGHT	12/20/96	930
2	S Wright	S. WRIGHT	12/20/96	1131				
3					Robert Sterling	R. Sterling	12/20/96	1138

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

Shell Oil Co. Chain of Custody

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

Project: Shell Oakland/961219-F2

Enclosed are the results from samples received at Sequoia Analytical on December 20, 1996. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9612D26 -01	LIQUID, MW-1	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -01	LIQUID, MW-1	12/19/96	TRPH (SM 5520 B&F)
9612D26 -02	LIQUID, MW-2	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -03	LIQUID, MW-3	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -04	LIQUID, MW-4	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -05	LIQUID, VW/MW-2	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -06	LIQUID, VW-MW-4	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -07	LIQUID, EB	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -08	LIQUID, DUP	12/19/96	TPGBMW Purgeable TPH/BTEX
9612D26 -08	LIQUID, DUP	12/19/96	TRPH (SM 5520 B&F)

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
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/961219-F2

Lab Proj. ID: 9612D26

Sampled: 12/19/96
Received: 12/20/96
Analyzed: see below

Reported: 01/03/97

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9612D26-01 Sample Desc : **LIQUID,MW-1**				
TRPH (SM 5520 B&F)	**mg/L**	**12/31/96**	**5.0**	**9.0**
Lab No: 9612D26-08 Sample Desc : **LIQUID,DUP**				
TRPH (SM 5520 B&F)	**mg/L**	**12/31/96**	**5.0**	**8.8**

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 Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: MW-1	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/27/96
Attention: Fran Thie	Lab Number: 9612D26-01	Reported: 01/03/97

QC Batch Number: GC122696BTEX02B
Instrument ID: GCHP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**2000**	**27000**
Methyl t-Butyl Ether	100	N.D.
Benzene	**20**	**120**
Toluene	**20**	**1200**
Ethyl Benzene	**20**	**1400**
Xylenes (Total)	**20**	**2800**
Chromatogram Pattern:		**C6-C12**

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

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 Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: MW-2	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/27/96
Attention: Fran Thie	Lab Number: 9612D26-02	Reported: 01/03/97

QC Batch Number: GC122696BTEX02B
Instrument ID: GCHP2

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	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 Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: MW-3	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/27/96
Attention: Fran Thie	Lab Number: 9612D26-03	Reported: 01/03/97

QC Batch Number: GC122696BTEX02B
Instrument ID: GCHP2

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	91

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 Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: MW-4	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/27/96
Attention: Fran Thie	Lab Number: 9612D26-04	Reported: 01/03/97

QC Batch Number: GC122696BTEX02B
Instrument ID: GCHP2

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	86

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
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: VW/MW-2	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/31/96
Attention: Fran Thie	Lab Number: 9612D26-05	Reported: 01/03/97

QC Batch Number: GC123196BTEX03B
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**50000**
Methyl t-Butyl Ether	**500**	**590**
Benzene	**100**	**6200**
Toluene	**100**	**5100**
Ethyl Benzene	**100**	**1700**
Xylenes (Total)	**100**	**5600**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	118

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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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: VW-MW-4	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/31/96
Attention: Fran Thie	Lab Number: 9612D26-06	Reported: 01/03/97

QC Batch Number: GC123196BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**25000**	**75000**
Methyl t-Butyl Ether	1250	N.D.
Benzene	**250**	**15000**
Toluene	**250**	**6600**
Ethyl Benzene	**250**	**3000**
Xylenes (Total)	**250**	**7600**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: EB	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/27/96
Attention: Fran Thie	Lab Number: 9612D26-07	Reported: 01/03/97

QC Batch Number: GC122696BTEX02B
Instrument ID: GCHP2

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	86

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Sampled: 12/19/96
1680 Rogers Avenue	Sample Descript: DUP	Received: 12/20/96
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 12/31/96
Attention: Fran Thie	Lab Number: 9612D26-08	Reported: 01/03/97

QC Batch Number: GC123196BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	32000
Methyl t-Butyl Ether	500	830
Benzene	100	12000
Toluene	100	1300
Ethyl Benzene	100	1600
Xylenes (Total)	100	3100
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	114

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

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Blaine Technical Services	Client Proj. ID: Shell Oakland/961219-F2	Received: 12/20/96
1680 Rogers Avenue		
San Jose, CA 95112	Lab Proj. ID: 9612D26	Reported: 01/03/97
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 15 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

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Blaine Tech Services, Inc.	Client Project ID:	Shell Oakland / 961219-F2	
1680 Rogers Avenue	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9612D26 -01, 08	Reported: Jan 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Total Recoverable Petroleum Hydrocarb.
QC Batch#:	OP1230965520EXA
Analy. Method:	SM 5520 BF
Prep. Method:	EPA 3510

Analyst:	J. Aquino/J. Villa
MS/MSD #:	BLK123096
Sample Conc.:	N.D.
Prepared Date:	12/30/96
Analyzed Date:	12/31/96
Instrument I.D.#:	MANUAL
Conc. Spiked:	10 mg/L
Result:	7.1
MS % Recovery:	71
Dup. Result:	7.5
MSD % Recov.:	75
RPD:	5.5
RPD Limit:	0-30

LCS #:	
Prepared Date:	
Analyzed Date:	
Instrument I.D.#:	
Conc. Spiked:	
LCS Result:	
LCS % Recov.:	

MS/MSD	60-140
LCS	70-130
Control Limits	

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.	Client Project ID:	Shell Oakland / 961219-F2	
1680 Rogers Avenue	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9612D26-01-04, 07	Reported: Jan 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC122696BTEX02B	GC122696BTEX02B	GC122696BTEX02B	GC122696BTEX02B
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	G. Fish	G. Fish	G. Fish	G. Fish
MS/MSD #:	9612A4302	9612A4302	9612A4302	9612A4302
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/26/96	12/26/96	12/26/96	12/26/96
Analyzed Date:	12/26/96	12/26/96	12/26/96	12/26/96
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.3	8.5	8.7	28
MS % Recovery:	83	85	87	93
Dup. Result:	8.7	8.6	9.1	30
MSD % Recov.:	87	86	91	100
RPD:	4.7	1.2	4.5	6.9
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK122696	BLK122696	BLK122696	BLK122696
Prepared Date:	12/26/96	12/26/96	12/26/96	12/26/96
Analyzed Date:	12/26/96	12/26/96	12/26/96	12/26/96
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	8.4	8.5	8.8	29
LCS % Recov.:	84	85	88	97
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

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

Client Project ID: Shell Oakland / 961219-F2
Matrix: Liquid
Work Order #: 9612D26-05-06, 08

Reported: Jan 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC123196BTEX03A	GC123196BTEX03A	GC123196BTEX03A	GC123196BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	G. Fish	G. Fish	G. Fish	G. Fish
MS/MSD #:	9612C4902	9612C4902	9612C4902	9612C4902
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/31/96	12/31/96	12/31/96	12/31/96
Analyzed Date:	12/31/96	12/31/96	12/31/96	12/31/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	32
MS % Recovery:	100	100	100	107
Dup. Result:	11	11	11	33
MSD % Recov.:	110	110	110	110
RPD:	9.5	9.5	9.5	3.1
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK123196	BLK123196	BLK123196	BLK123196
Prepared Date:	12/31/96	12/31/96	12/31/96	12/31/96
Analyzed Date:	12/31/96	12/31/96	12/31/96	12/31/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	9.8	9.6	9.8	30
LCS % Recov.:	98	96	98	100

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL

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Project Manager

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