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March 24, 1998

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

Re: **Fourth Quarter 1997 Monitoring Report**
Shell Service Station
4411 Foothill Boulevard
Oakland, California
WIC #204-5508-3400
Cambria Project #24-314-497

- 1) Still high TPH₉ on & off site (trails)
the conc of benzene & NPE still likely
human health risk
- 2) Want to treat as low risk GW site
- need to verify parameters conducting
will start reporting 1/2 year intervals QWR
- plans to communicate w/ Charman
- could request a certain of ORC bring
to central migration

Dear Mr. Chan:

On behalf of Shell Oil Products Company, Cambria Environmental Technology, Inc. (Cambria) is submitting this monitoring report for the site referenced above in accordance with the requirements specified in 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 and collected ground water samples from the site wells (Figure 1). The Blaine report describing these activities and the presenting analytical report for the ground water samples is included as Attachment A. Cambria calculated ground water elevations and compiled the analytical data (Table 1) and prepared a ground water elevation contour map (Figure 1).

Receptor Surveys: Cambria submitted a well survey conducted in 1990 by Weiss Associates of Emeryville, California, and a basement survey completed in October 1995 by Pacific Environmental Group of San Jose, California.

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

Barney Chan
March 24, 1998

CAMBRIA

Anticipated First Quarter 1998 Activities

Ground Water Monitoring: Blaine will measure ground water depths and dissolved oxygen levels and collect ground water samples from the site wells. In response to a January 14, 1998 Alameda County Department of Environmental Health letter, the samples will be analyzed for oxidation-reduction potential, nitrate, sulfate, ferrous iron, and MTBE by EPA Method 8260 in addition to the existing analytes. Cambria will compile the results and submit a report summarizing activities at the site.

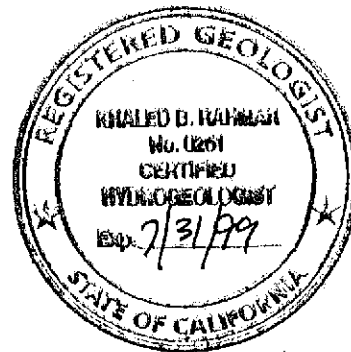
Closing

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

Sincerely,
Cambria Environmental Technology, Inc.



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



Attachments: A - Blaine Ground Water Monitoring Report

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

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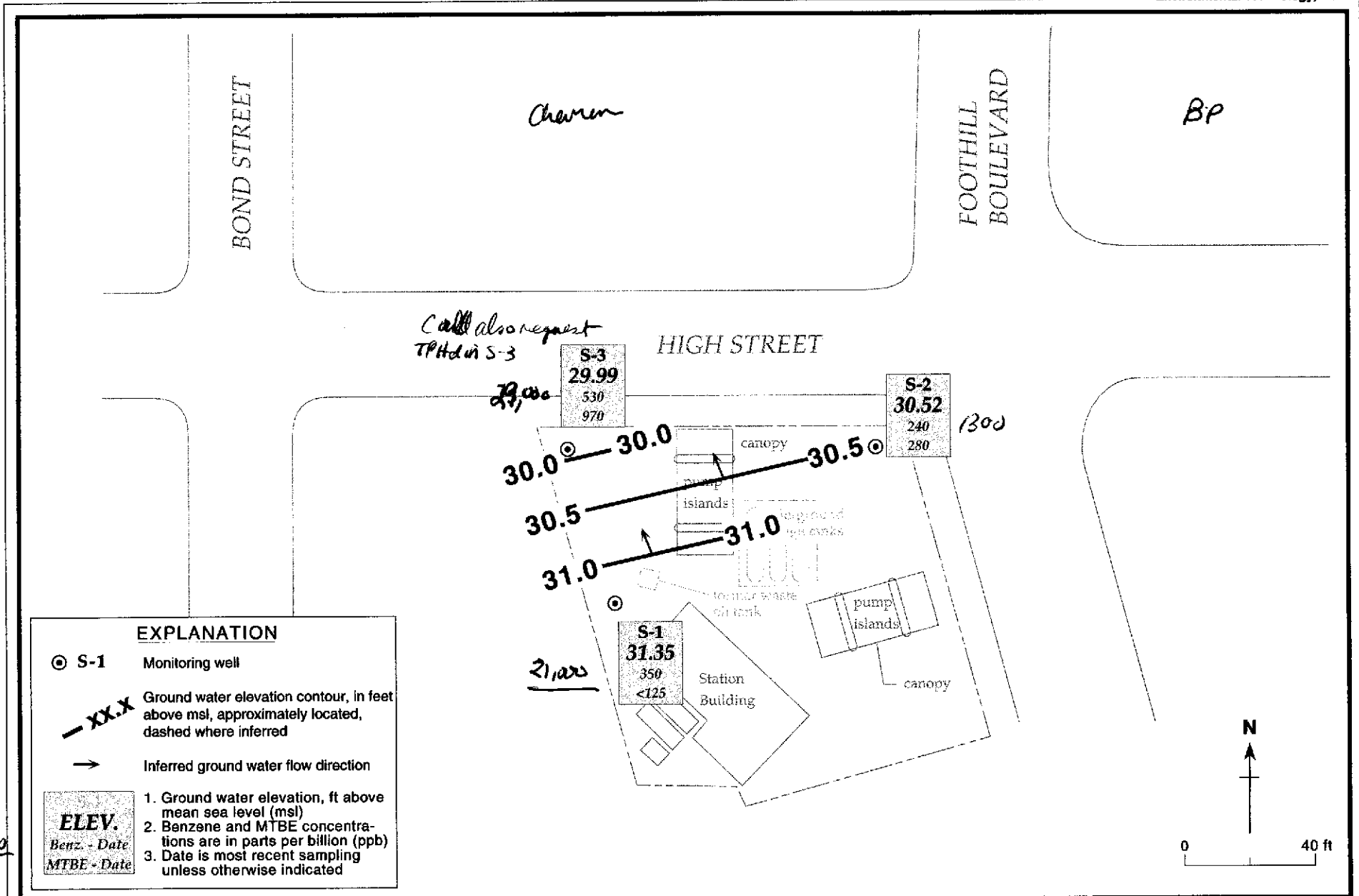


Figure 1. Ground Water Elevation Contours - December 11, 1997 - Shell Service Station - 4411 Foothill Boulevard, Oakland, California

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	(concentration in µg/L)								Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	
S-1 38.31	12/18/92	9.06	---	41,000	3,100	1,100	1,200	8,700	---	9,400	---	a
	05/26/93	---	---	39,000	1,300	4,700	1,500	7,800	6,000	370	---	
	05/28/93	12.13	26.18	---	---	---	---	---	---	---	---	
	06/03/93	8.89	29.42	---	---	---	---	---	---	---	---	
	06/08/93	8.80	29.51	---	---	---	---	---	---	---	---	
	09/21/93	10.40	27.91	34,000	480	5,000	3,800	18,000	5,900	ND	---	
	12/14/93	9.66	28.65	25,000	1,100	5,000	2,200	11,000	13,000	ND	---	
	03/17/94	8.20	30.11	57,000	1,300	5,400	2,100	11,000	1,600	2,300	---	
	06/16/94	9.41	28.90	57,000	1,600	6,000	2,000	13,000	3,000	210	---	
	09/22/94	11.13	27.18	39,000	1,300	2,100	1,500	7,100	ND	ND	---	
	12/15/94	7.15	31.16	30,000	1,100	4,700	1,600	10,000	3,100	ND	---	b
	03/30/95	6.09	32.22	30,000	1,400	4,000	1,500	11,000	3,100	ND	---	b, c
	06/20/95	7.30	31.01	28,000	1,100	2,300	1,100	8,300	2,100	NC	---	
	09/20/95	10.02	28.29	40,000	840	3,600	1,300	8,600	2,600	NC	---	
	12/06/95	11.64	26.67	38,000	920	3,200	1,500	9,400	6,400	ND	---	b
	03/21/96	6.87	31.44	48,000	700	4,200	1,100	8,600	---	---	---	
	09/06/96	10.50	27.81	41,000	830	2,600	2,100	12,000	4,100	<1,000	<250	
	12/19/96	8.24	30.07	40,000	540	3,100	1,900	9,800	2,500	<500	920	
	03/17/97	7.26	31.05	42,000	610	2,700	1,700	11,000	4,700	<1,000	3,500	
	06/11/97	10.69	27.62	28,000	540	960	1,300	5,300	4,000	<1,000	220	
06/11/97	10.69	27.62	30,000	580	1,000	1,400	5,400	3,900	<1,000	<125	duplicate	
09/17/97	10.26	28.05	27,000	310	1,200	1,900	9,000	4,400	<1,000	170		
09/17/97	10.26	28.05	27,000	270	1,200	1,900	9,000	4,400	<1,000	170	duplicate	
12/11/97	6.96	31.35	21,000	350	820	1,500	6,500	3,400	<1,000	<125		
S-2 38.79	05/28/93	9.51	29.28	---	---	---	---	---	---	---	---	
	06/03/93	9.51	29.28	---	---	---	---	---	---	---	---	
	06/08/93	9.57	29.22	---	---	---	---	---	---	---	---	
	06/29/93	---	---	1,300	290	35	38	130	---	---	---	
	09/21/93	10.54	28.25	3,300	870	24	190	120	---	---	---	

CAMBRIA

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	← (concentration in µg/L) →								Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	
	12/14/93	9.76	29.03	1,300	400	16	36	27	---	---	---	
	03/17/94	9.92	28.87	4,500	610	27	92	110	---	---	---	
	03/17/94	9.92	28.87	4,000	610	26	93	120	---	---	---	
	06/16/94	10.11	28.68	2,800	690	45	97	140	---	---	---	duplicate
	09/22/94	10.51	28.28	4,000	630	94	64	230	---	---	---	
	12/15/94	9.12	29.67	1,600	450	300	67	130	---	---	---	
	03/30/95	7.86	30.93	8,200	2,800	190	240	700	---	---	---	c
	06/20/95	9.51	29.28	9,600	2,600	160	170	500	---	---	---	
	09/20/95	10.06	28.73	4,200	920	45	98	140	---	NC	---	
	12/06/95	10.52	28.27	ND	790	67	64	130	---	---	---	
	03/21/96	8.60	30.19	3,700	850	45	96	170	---	---	---	d
	09/06/96	10.50	28.29	2,400	500	33	39	84	---	---	---	
	12/19/96	9.40	29.39	1,200	330	15	24	31	---	---	490	
	03/17/97	9.82	28.97	4,100	780	42	110	120	---	---	430	
	06/11/97	10.18	28.61	760	120	<5.0	7.0	7.6	---	---	2,200	
	09/17/97	9.90	28.89	1,500	230	8.6	40	27	---	---	900	
	12/11/97	8.27	30.52	1,300	240	15	33	57	---	---	480	
									---	---	280	
S-3	05/28/93	8.45	28.88	---	---	---	---	---	---	---	---	
37.33	06/03/93	8.36	28.97	---	---	---	---	---	---	---	---	
	06/08/93	8.41	28.92	---	---	---	---	---	---	---	---	
	06/29/93	---	---	29,000	1,500	1,800	950	6,200	---	---	---	
	09/21/93	10.08	27.25	15,000	900	2,200	2,600	11,000	---	---	---	
	12/94/93	8.80	28.53	20,000	1,100	2,400	1,800	8,500	---	---	---	
	03/17/94	8.34	28.99	14,000	580	190	750	1,700	---	---	---	
	06/16/94	9.12	28.21	20,000	700	690	1,400	4,100	---	---	---	
	06/16/94	---	---	19,000	680	560	1,300	3,700	---	---	---	
	09/22/94	10.27	27.06	24,000	630	1,100	1,400	5,700	---	---	---	duplicate
	09/22/94	---	---	25,000	720	1,100	1,500	6,100	---	---	---	
	12/15/94	7.81	29.52	18,000	520	800	1,100	4,200	---	---	---	duplicate

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	(concentration in µg/L)								Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylcnes	TPHd	TPHmo	MTBE	
	12/15/94	---	---	23,000	1,000	1,900	2,000	8,600	---	---	---	duplicate
	03/30/95	7.06	30.27	8,800	360	730	700	3,700	---	---	---	c
	03/30/95	---	---	7,600	330	570	600	2,600	---	---	---	e, duplicate
	06/20/95	8.15	29.18	9,600	510	170	960	1,700	---	---	---	
	06/20/95	---	---	9,800	500	170	950	1,700	---	---	---	duplicate
	09/20/95	9.32	28.01	21,000	400	560	1,300	4,600	---	---	---	
	12/06/95	10.53	26.80	24,000	630	1,400	1,400	6,000	---	---	---	
	12/06/95	---	---	22,000	630	1,200	1,400	5,500	---	---	---	duplicate
	03/21/96	7.32	30.01	9,100	290	110	490	1,600	---	---	---	
	03/21/96	---	---	11,000	310	250	540	2,100	---	---	---	duplicate
	09/06/96	10.10	27.23	15,000	440	300	1,100	3,000	---	---	500	e
	09/06/96	---	---	11,000	490	170	820	1,500	---	---	700	e, duplicate
	12/19/96	8.36	28.97	12,000	600	380	850	2,500	---	---	380	
	12/19/96	8.36	28.97	12,000	590	380	830	2,500	---	---	540	duplicate
	03/17/97	8.57	28.76	12,000	520	140	740	1,400	---	---	320	
	03/17/97	8.57	28.76	9,600	500	100	680	1,100	---	---	<250	duplicate
	06/11/97	9.26	28.07	9,600	510	94	740	1,100	---	---	410	
	09/17/97	9.62	27.71	21,000	140	560	1,800	7,200	---	---	130	
	12/11/97	7.34	29.99	24,000	530	970	1,600	6,900	---	---	950	
	12/11/97	7.34	29.99	29,000	520	1,000	1,600	7,300	---	---	970	duplicate

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	Notes
				← (concentration in µg/L) →								

Abbreviations:

- ft-msl = Feet above mean sea level
- µg/L = Micrograms per liter
- MTBE = Methyl tert-butyl ether by EPA Method 8020
- TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
- TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
- TPHmo = Total petroleum hydrocarbons as motor oil by modified EPA Method 8015
- = Not measured and/or analyzed
- ND = Not detected
- NC = Not calculated; TPHmo included with TPHd analysis

Notes:

- a = Phenolic and naphthalene compounds detected in Sample S-1 by EPA Method 8270
 - b = Laboratory noted that concentration appears to be a lighter hydrocarbon than diesel
 - c = National Environmental Testing, Inc. (NET), analyzed within hold time but further dilutions were required and analyzed out of hold time. NET suggests that these should be considered minimum concentrations
 - d = Sample result is ND at a laboratory reporting limit of 5,000 µg/L
 - e = MTBE not confirmed by EPA Method 8260
- Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8020

ATTACHMENT A

Blaine Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.



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

January 16, 1998

Shell Oil Company
P.O. Box 8080
Martinez, CA 94553

Attn: Alex Perez

Shell WIC #204-5508-3400
4411 Foothill Blvd.
Oakland, California

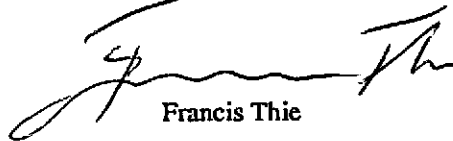
4th Quarter 1997

Groundwater Monitoring Report 971211-C-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)
S-1	12/11/97	TOB	ODOR	--	--	--	6.96	24.40
S-2	12/11/97	TOB	ODOR/SHEEN	--	--	--	8.27	22.04
S-3*	12/11/97	TOB	--	--	--	--	7.34	19.95

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



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 971211-C2

Date: _____
Page 1 of 1

Site Address: 4411 Foothill Blvd., Oakland, CA

WIC#: 204-5508-3400

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

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

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

Comments:

Sampled by: Cassidy McIntire

Printed Name: CJM

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.
1 S-1	12/11			W		7
2 S-2	1					3
3 S-3	1					3
4 EB	1					3
5 DUP	1					3

Analysis Required

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	Motor Oil	TPH - Diesel	Asbestos	Container Size	Preparation Used	Composite Y/N
					X	X	X				

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
C.W. Monitoring <input checked="" type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	4442	16 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

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

DE 12 12 08

UST AGENCY: _____

MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS

Relinquished By (signature): <u>CJM</u>	Printed Name: <u>Cassidy McIntire</u>	Date: <u>12/12</u>	Received (signature): <u>R. Scroggin</u>	Printed Name: <u>R. Scroggin</u>	Date: <u>12/12/99</u>
Relinquished By (signature): <u>R. Scroggin</u>	Printed Name: <u>R. Scroggin</u>	Date: <u>12/12</u>	Received (signature): _____	Printed Name: _____	Date: _____
Relinquished By (signature): _____	Printed Name: _____	Date: _____	Received (signature): <u>Terri Downs</u>	Printed Name: <u>TERRI DOWNS</u>	Date: <u>12-12</u>

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



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834

(650) 364-9600
(510) 988-9600
(916) 921-9600

FAX (650) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

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

Project: Shell oakland/971211-C2

Enclosed are the results from samples received at Sequoia Analytical on December 12, 1997.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
3712986 -01	LIQUID, S-1	12/11/97	TPGM2W Purgeable TPH/BTEX
3712986 -01	LIQUID, S-1	12/11/97	TPHD_W Extractable TPH
3712986 -01	LIQUID, S-1	12/11/97	TPHMOW Fuel Fingerprint/Mo
3712986 -02	LIQUID, S-2	12/11/97	TPGM2W Purgeable TPH/BTEX
3712986 -03	LIQUID, S-3	12/11/97	TPGM2W Purgeable TPH/BTEX
3712986 -04	LIQUID, EB	12/11/97	TPGM2W Purgeable TPH/BTEX
3712986 -05	LIQUID, Dup	12/11/97	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 Renner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: S-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712986-01	Sampled: 12/11/97 Received: 12/12/97 Analyzed: 12/24/97 Reported: 12/26/97
Attention: Fran Thie		

QC Batch Number: GC122497BTEX02A
Instrument ID: GCHP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	21000
Methyl t-Butyl Ether	125	N.D.
Benzene	25	350
Toluene	25	820
Ethyl Benzene	25	1500
Xylenes (Total)	25	6500
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	110

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: S-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9712986-01	Sampled: 12/11/97 Received: 12/12/97 Extracted: 12/18/97 Analyzed: 12/19/97 Reported: 12/26/97
--	---	--

QC Batch Number: GC1218970HBPEXB
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	100	3400 C9-C24
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	89

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: S-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9712986-01	Sampled: 12/11/97 Received: 12/12/97 Extracted: 12/18/97 Analyzed: 12/19/97 Reported: 12/26/97
--	---	--

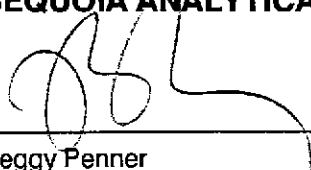
QC Batch Number: GC1218970HBPEXB
Instrument ID: GCHP5A

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	1000	N.D. C16-C36
Surrogates n-Pentacosane (C25)	Control Limits % 50 150	% Recovery 89

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

SEQUOIA ANALYTICAL - ELAP #1210



Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: S-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712986-02	Sampled: 12/11/97 Received: 12/12/97 Analyzed: 12/24/97 Reported: 12/26/97
Attention: Fran Thie		

QC Batch Number: GC122497BTEX02A
Instrument ID: GCHP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	1300
Methyl t-Butyl Ether	50	280
Benzene	10	240
Toluene	10	15
Ethyl Benzene	10	33
Xylenes (Total)	10	57
Chromatogram Pattern:		C6-C12
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 Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: S-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712986-03	Sampled: 12/11/97 Received: 12/12/97 Analyzed: 12/25/97 Reported: 12/26/97
Attention: Fran Thie		

QC Batch Number: GC122597BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	24000
Methyl t-Butyl Ether	100	950
Benzene	20	530
Toluene	20	970
Ethyl Benzene	20	1600
Xylenes (Total)	20	6900
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	108

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712986-04	Sampled: 12/11/97 Received: 12/12/97 Analyzed: 12/24/97 Reported: 12/26/97
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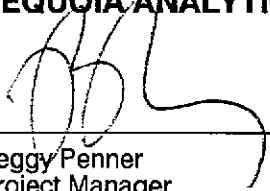
QC Batch Number: GC122497BTEX21A
Instrument ID: GCHP21

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	94

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell oakland/971211-C2 Sample Descript: Dup Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9712986-05	Sampled: 12/11/97 Received: 12/12/97 Analyzed: 12/25/97 Reported: 12/26/97
Attention: Fran Thie		

QC Batch Number: GC122597BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	29000
Methyl t-Butyl Ether	250	970
Benzene	50	520
Toluene	50	1000
Ethyl Benzene	50	1600
Xylenes (Total)	50	7300
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	107

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Fenner
Project Manager





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

Client Project ID: Shell Oakland/971211-C2
Matrix: Liquid

Work Order #: 9712986 -01-02

Reported: Dec 29, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC122497BTEX02A	GC122497BTEX02A	GC122497BTEX02A	GC122497BTEX02A	GC122497BTEX02A
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 #:	971268703	971268703	971268703	971268703	971268703
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Analyzed Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
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:	8.5	8.3	8.7	26	63
MS % Recovery:	85	83	87	87	105
Dup. Result:	8.6	8.5	8.8	27	63
MSD % Recov.:	86	85	88	90	105
RPD:	1.2	2.4	1.1	3.8	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK122497	BLK122497	BLK122497	BLK122497	BLK122497
Prepared Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Analyzed Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
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:	8.9	8.8	9.1	27	65
LCS % Recov.:	89	88	91	90	108

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

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

9712986.BLA <1>

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Peggy Penner
Project Manager





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

Client Project ID: Shell Oakland/971211-C2
Matrix: Liquid

Work Order #: 9712986-03, -05

Reported: Dec 29, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC122597BTEX03A	GC122597BTEX03A	GC122597BTEX03A	GC122597BTEX03A	GC122597BTEX03A
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 #:	9712E3301	9712E3301	9712E3301	9712E3301	9712E3301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/25/97	12/25/97	12/25/97	12/25/97	12/25/97
Analyzed Date:	12/25/97	12/25/97	12/25/97	12/25/97	12/25/97
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:	9.1	9.3	9.6	29	60
MS % Recovery:	91	93	96	97	100
Dup. Result:	9.5	9.7	9.9	30	62
MSD % Recov.:	95	97	99	100	103
RPD:	4.3	4.2	3.1	3.4	3.3
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK122597	BLK122597	BLK122597	BLK122597	BLK122597
Prepared Date:	12/25/97	12/25/97	12/25/97	12/25/97	12/25/97
Analyzed Date:	12/25/97	12/25/97	12/25/97	12/25/97	12/25/97
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:	10	10	11	33	68
LCS % Recov.:	100	100	110	110	113

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

9712986.BLA <2>





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

Client Project ID: Shell Oakland/971211-C2
Matrix: Liquid

Work Order #: 9712986-04

Reported: Dec 29, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC122497BTEX21A	GC122497BTEX21A	GC122497BTEX21A	GC122497BTEX21A	GC122497BTEX21A
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 #:	971268703	971268703	971268703	971268703	971268703
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Analyzed Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.3	9.8	10	29	50
MS % Recovery:	93	98	100	97	83
Dup. Result:	9.7	10	11	31	52
MSD % Recov.:	97	100	110	103	87
RPD:	4.2	2.0	9.5	6.7	3.9
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK122497	BLK122497	BLK122497	BLK122497	BLK122497
Prepared Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Analyzed Date:	12/24/97	12/24/97	12/24/97	12/24/97	12/24/97
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.1	9.8	10	30	49
LCS % Recov.:	91	98	100	100	82

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

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.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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

9712986.BLA <3>





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

Client Project ID: Shell Oakland/971211-C2
Matrix: Liquid

Work Order #: 9712986-01

Reported: Dec 29, 1997

QUALITY CONTROL DATA REPORT

Analyte: Diesel
QC Batch#: GC1218970HBPEXB
Analy. Method: EPA 8015M
Prep. Method: EPA 3510

Analyst: G. Fish
MS/MSD #: 971271905
Sample Conc.: N.D.
Prepared Date: 12/18/97
Analyzed Date: 12/18/97
Instrument I.D.#: GCHP5B
Conc. Spiked: 1000 µg/L

Result: 930
MS % Recovery: 93

Dup. Result: 870
MSD % Recov.: 87

RPD: 6.7
RPD Limit: 0-50

LCS #: BLK121897
Prepared Date: 12/18/97
Analyzed Date: 12/18/97
Instrument I.D.#: GCHP5B
Conc. Spiked: 1000 µg/L
LCS Result: 800
LCS % Recov.: 80

MS/MSD 50-150
LCS 60-140
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

9712986.BLA <4>





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ENVIRONMENTAL
PROTECTION

98 MAR 27 PM 3:00

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell oakland/971211-C2 Lab Proj. ID: 9712986	Received: 12/12/97 Reported: 12/26/97
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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

