CAMBRIA

ENVIRONMENTAL PROTECTION
97 FEB 14 PM 2:05

February 11, 1997

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

Re: **Fourth Quarter 1996 Quarterly Monitoring Report**
Shell Service Station
350 Grand Avenue
Oakland, California
WIC #204-5510-0204

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

Discussion

[redacted] the fourth quarter of each year. We will also review the previous hydrocarbon concentrations for evidence of MTBE in ground water and report the findings in the fourth quarter 1997 report.

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.

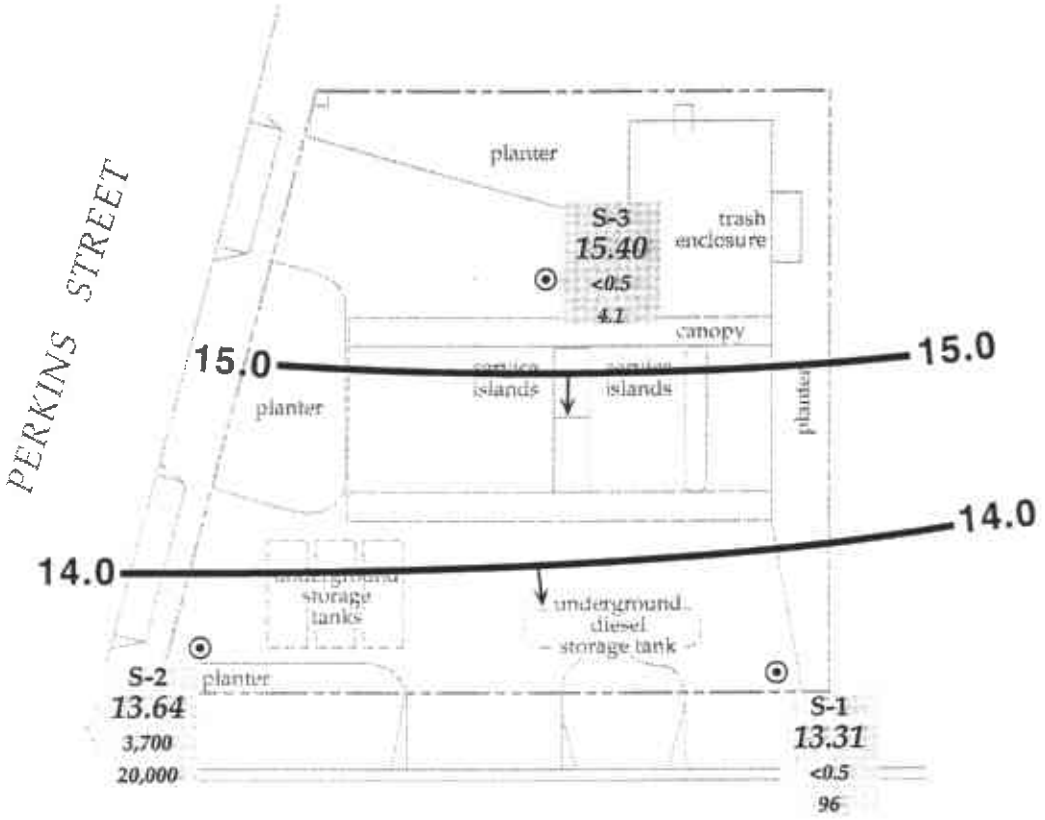
Sincerely,
Cambria Environmental Technology, Inc.

N. Scott MacLeod, R.G.
Principal Geologist

Attachments: A - Blaine Quarterly Ground Water Monitoring Report

cc: R. Jeff Granberry, Shell Oil Products Company, P.O. Box 4023 Concord, California 94524

F:\PROJECT\SHELL\OAK350\QM\4Q96QM.WPD



EXPLANATION

- ⊙ S-3 — Monitoring well
- —XX.X— Ground water elevation contour, ft above msl, approximately located, dashed where inferred
- → Inferred ground water flow direction
- S-1 / ELEV. / Benz. - Date / MTBE - Date
  1. Ground water elevation, ft above mean sea level
  2. Benzene and MTBE concentrations are in parts per billion (ppb)
  3. Date is most recent sampling unless otherwise indicated

N

0 40 ft

Base map from GeoStrategies Inc.

Figure 1. Ground Water Elevation Contours - October 2, 1996 - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Table 1. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Well ID	Date	Top-of-Vault Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
S-1	01/23/91	20.84	9.73	11.11
	04/25/91		7.37	13.47
	07/19/91		8.92	11.92
	10/09/91		9.62	11.22
	01/23/92		8.94	11.90
	04/27/92		7.06	13.78
	07/10/92		8.31	12.53
	10/06/92		9.55	11.29
	01/06/93		9.86	10.98
	04/26/93		6.30	14.54
	07/20/93		8.78	12.06
	10/18/93		9.20	11.64
	01/07/94		9.53	11.31
	04/11/94		8.50	12.34
	07/14/94		8.45	12.39
	07/19/94		9.07	11.77
	10/06/94		11.68	9.16
	01/04/95		8.51	12.33
	04/12/95		6.66	14.18
	07/07/95		6.95	13.89
	10/05/95		8.50	12.34
	01/12/96		8.02	12.82
	04/02/96		4.98	15.86
	07/30/96		6.40	14.44
	10/02/96		**7.53**	**13.31**
S-2	01/23/91	21.24	10.55	10.69
	04/25/91		8.24	13.00
	07/19/91		9.55	11.69
	10/09/91		10.26	10.98
	01/23/92		9.51	11.73
	04/27/92		7.83	13.41
	07/10/92		8.57	12.67
	10/06/92		9.49	11.75
	01/06/93		8.56	12.68
	04/26/93		6.84	14.40
	07/20/93		8.52	12.72
	10/18/93		9.36	11.88
	01/07/94		8.37	12.87
	04/11/94		6.96	14.28
	07/14/94		7.49	13.75
	07/19/94		8.02	13.22
	10/06/94		11.00	10.24
	01/04/94		8.07	13.17

Table 1. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0204, 350 Grand Avenue, Oakland, California (continued)

Well ID	Date	Top-of-Vault Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	04/12/95		6.12	15.12
	07/07/95		6.35	14.89
	10/05/95		7.36	13.88
	01/12/96		7.64	13.60
	04/02/96		6.18	15.06
	07/30/96		7.22	14.02
	10/02/96		**7.60**	**13.64**
S-3	01/23/91	22.70	14.67	8.03
	04/25/91		12.96	9.74
	07/19/91		12.45	10.25
	10/09/91		12.98	9.72
	01/23/92		13.06	9.64
	04/27/92		7.25	15.45
	07/10/92		8.46	14.24
	10/06/92		11.77	10.93
	01/06/93		12.53	10.17
	04/26/93		4.28	18.42
	07/20/93		5.70	17.00
	10/18/93		10.30	12.40
	01/07/94		12.40	10.30
	04/11/94		10.94	11.76
	07/14/94		7.90	14.80
	07/19/94		8.12	14.58
	10/06/94		12.15	10.55
	01/04/95		11.18	11.52
	04/12/95		3.76	18.94
	07/07/95		4.72	17.98
	10/05/95		5.80	16.90
	01/12/96		7.00	15.70
	04/02/96		3.42	19.28
	07/30/96		5.89	16.81
	10/02/96		**7.20**	**15.50**

Table 2. **Analytic Results for Ground Water** - Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE
			← parts per billion (µg/L) →						
WELLS									
S-1	01/23/91	9.73	<50	<50	<0.5	<0.5	<0.5	<0.5	---
	04/25/91	7.37	<50	<50	<0.5	<0.5	<0.5	<0.5	---
	07/19/91	8.92	<50	<50	6.8	<0.5	<0.5	<0.5	---
	10/09/91	9.62	260[a]	120	10	<0.5	<0.5	<0.5	---
	01/23/92	8.94	<50	<50	<0.5	<0.5	<0.5	<0.5	---
	04/27/92	7.06	70[b]	<50	1.2	<0.5	<0.5	<0.5	---
	07/10/92	8.31	930	<50	13	<0.5	<0.5	<0.5	---
	10/06/92	9.55	110	62	<0.5	<0.5	<0.5	<0.5	---
	01/06/93	9.86	81	85	1.1	<0.5	<0.5	<0.5	---
	04/26/93	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5	---
	04/26/93[dup]	6.30	53[c]	<50	<0.5	<0.5	<0.5	<0.5	---
	07/20/93	8.78	140	<50	<0.5	<0.5	<0.5	<0.5	---
	10/18/93	9.20	210	<50	<0.5	<0.5	<0.5	<0.5	---
	01/07/94	9.53	<50	<50	1.4	0.55	1.5	2.8	---
	01/07/94[dup]	9.53	53	<50	1.2	<0.5	1.5	2.7	---
	04/11/94	8.50	320	<50	2.8	<0.5	<0.5	<0.5	---
	04/11/94[dup]	8.50	220	<50	2.6	<0.5	<0.5	<0.5	---
	07/19/94	9.07	110	<50	<0.5	<0.5	<0.5	<0.5	---
	10/06/94	11.68	370	110	1.4	<0.5	<0.5	<0.5	---
	01/04/95	8.51	1,000	120	2.5	1.5	<0.5	1.7	---
	04/12/95	6.66	290	<50	2.1	<0.5	<0.5	<0.5	---
	04/12/95[dup]	6.66	480	<50	<0.5	<0.5	<0.5	<0.5	---
	07/07/95	6.95	370	<50	5.5	<0.5	<0.5	<0.5	---
	07/07/95[dup]	6.95	450	<50	6.5	<0.5	<0.5	<0.5	---
	10/05/95	8.50	200	<50	3.9	<0.5	1.2	2.4	---
	01/12/96	8.02	1,500	230	2.5	0.9	<0.5	0.6	---
	04/02/96	4.98	---	95	0.91	<0.5	<0.5	<0.5	---
	07/30/96	6.40	510	<50	<0.5	<0.5	<0.5	<0.5	67
	07/30/96[dup]	6.40	380	<50	<0.5	<0.5	<0.5	<0.5	68

Table 2. **Analytic Results for Ground Water** - Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE
			← parts per billion (µg/L) →						
	10/02/96	**7.53**	**250**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**96**
S-2	01/23/91	10.55	1,200	2,500	550	33	15	42	---
	04/25/91	8.24	20,000[b]	32,000	2,900	1,400	480	2,300	---
	07/19/91	9.55	30,000[b]	21,000	4,700	1,200	430	2,400	---
	10/09/91	10.26	32,000[b]	29,000	6,300	1,700	510	2,400	---
	01/23/92	9.51	36,000[b]	31,000	5,800	2,000	480	2,700	---
	04/27/92	7.83	12,000[b]	21,000[d]	4,800	1,600	320	1,400	---
	07/10/92	8.57	3,700[e]	31,000	7,500	3,400	940	3,500	---
	10/06/92	9.49	4,500[e]	57,000	9,300	4,000	1,200	4,900	---
	01/06/93	8.56	5,600	55,000	5,600	3,000	360	3,000	---
	04/26/93	6.84	9,400[e]	32,000	10,000	4,400	500	3,600	---
	07/20/93	8.52	8,400[e]	25,000	5,800	2,700	300	1,400	---
	07/20/93[dup]	8.52	8,900[e]	25,000	5,900	2,800	310	1,400	---
	10/18/93	9.36	18,000[e]	23,000	3,700	2,100	200	1,600	---
	10/18/93[dup]	9.36	14,000[e]	28,000	3,700	2,100	210	1,600	---
	01/07/94	8.37	22,000[e]	120,000	6,900	3,100	400	2,600	---
	04/11/94	6.96	17,000[e]	34,000	4,800	1,900	170	880	---
	07/19/94	8.02	---	23,000	4,300	1,100	210	1,000	---
	07/19/94[dup]	8.02	---	29,000	4,700	1,200	270	1,200	---
	10/06/94	11.00	---	61,000	4,600	1,900	290	1,900	---
	10/06/94[dup]	11.00	---	52,000	5,200	2,100	270	1,900	---
	01/04/95	8.07	---	23,000	4,500	1,300	49	500	---
	01/04/95[dup]	8.07	---	18,000	3,800	1,100	33	390	---
	04/12/95	6.12	---	29,000	4,300	990	210	700	---
	07/07/95	6.35	---	26,000	4,200	1,100	180	730	---
	10/05/95	7.36	10,000	26,000	3,500	1,100	150	640	---
	10/05/95[dup]	7.36	9,400	33,000	4,200	1,500	210	850	---
	01/12/96	7.64	13,000	36,000	4,100	1,400	240	790	---
	01/12/96[dup]	7.64	11,000	40,000	4,100	1,400	260	860	---

Table 2. **Analytic Results for Ground Water** - Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE
			← parts per billion (µg/L) →						
	04/02/96	6.18	---	12,000	1,300	460	120	150	---
	04/02/96[dup]	6.18	---	17,000	1,800	590	29	140	---
	07/30/96	7.22	13,000	18,000	3,000	1,200	100	420	17,000*
	10/02/96	**7.60**	**18,000**	**28,000**	**3,700**	**1,100**	**110**	**260**	**20,000**
	10/02/96[dup]	**7.60**	**31,000**	**25,000**	**3,500**	**1,100**	**100**	**260**	**19,000**
S-3	01/23/91	14.67	---	<50	<0.5	<0.5	<0.5	<0.5	---
	04/25/91	12.96	---	<50	<0.5	<0.5	<0.5	<0.5	---
	07/19/91	12.45	---	<50	<0.5	<0.5	<0.5	<0.5	---
	10/09/91	12.98	---	<50	<0.5	<0.5	<0.5	<0.5	---
	01/23/92	13.06	---	<50	<0.5	<0.5	<0.5	<0.5	---
	04/27/92	7.25	100	<50	<0.5	<0.5	<0.5	<0.5	---
	07/10/92	8.46	68	<50	<0.5	<0.5	<0.5	<0.5	---
	10/06/92	11.77	<10	<50	<0.5	<0.5	<0.5	<0.5	---
	01/06/93	12.53	<10	<50	<0.5	<0.5	<0.5	<0.5	---
	04/26/93	4.28	69	<50	<0.5	<0.5	<0.5	<0.5	---
	07/20/93	5.70	120	<50	<0.5	<0.5	0.6	<0.5	---
	10/18/93	10.30	160	<50	<0.5	<0.5	<0.5	<0.5	---
	01/07/94[f]	12.40	58	160	59	4.9	26	22	---
	04/11/94	10.94	<50	<50	<0.52	<0.5	<0.5	<0.5	---
	07/19/94	8.12	110[a]	<50	<0.5	<0.5	<0.5	<0.5	---
	10/06/94	12.15	<50	<50	<0.5	<0.5	<0.5	<0.5	---
	01/04/95	11.18	<50	<50	<0.5	<0.5	<0.5	<0.5	---
	04/12/95	3.76	110	<50	<0.5	<0.5	<0.5	<0.5	---
	07/07/95	4.72	410	<50	<0.5	<0.5	<0.5	<0.5	---
	10/05/95	5.80	160	<50	<0.5	<0.5	<0.5	<0.5	---
	01/12/96	7.00	<50	100	<0.5	<0.5	<0.5	<0.5	---
	04/02/96	3.42	---	<50	<0.5	<0.5	<0.5	<0.5	---
	07/30/96	5.89	92	<50	<0.5	<0.5	<0.5	<0.5	4.3
	10/02/96	**7.20**	**160**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**4.1**

Table 2. **Analytic Results for Ground Water** - Former Shell Service Station, WIC #204-5510-0204, 350 Grand Avenue, Oakland, California (continued)

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE
			← parts per billion (µg/L) →						
HP-1	01/27/93		14,000	22,000	2,500	1,400	130	140	---
HP-2	01/27/93		---	<50	<0.5	<0.5	4.4	<0.5	---
HP-3	01/27/93		---	<50	<0.5	<0.5	<0.5	<0.5	---
Trip Blank	01/23/91		---	<50	<0.5	<0.5	<0.5	<0.5	---
	04/25/91		---	---	---	---	---	---	---
	07/19/91		---	<50	<0.5	<0.5	<0.5	<0.5	---
	10/09/91		---	---	---	---	---	---	---
	01/23/92		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	04/26/93		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	07/20/93		---	<50	<0.5	<0.5	<0.5	<0.5	---
	10/18/93		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	01/07/94		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	04/11/94		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	07/19/94		<50	<50	<0.5	<0.5	<0.5	<0.5	---
	10/06/94		---	<50	<0.5	<0.5	<0.5	<0.5	---
	01/04/95		---	<50	<0.5	<0.5	<0.5	<0.5	---
	04/12/95		---	<50	<0.5	<0.5	<0.5	<0.5	---
	07/07/95		---	<50	<0.5	<0.5	<0.5	<0.5	---
	10/05/95		---	<50	<0.5	<0.5	<0.5	<0.5	---
	01/12/96		---	<50	<0.5	<0.5	<0.5	<0.5	---
DTSC MCLs				NE	1	680	100[g]	1,750	NE

Table 2. **Analytic Results for Ground Water** - Former Shell Service Station, WIC #204-5510-0204, 350 Grand, Oakland, California (continued)

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
TPH-D = Total petroleum hydrocarbons as diesel 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
--- = Not analyzed
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
NE = Not established
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
HP = Hydropunch ground water sample

Notes:

a = compounds detected and calculated as diesel are not characteristic of the standard diesel chromatographic pattern
b = Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
c = Concentration reported as diesel primarily due to the presence of a heavier petroleum product, possibly motor oil
d = Compounds detected and calculated as gasoline are not characteristic of the standard gasoline chromatographic pattern
e = Concentration reported as diesel is primarily due to the presence of lighter petroleum product, possibly gasoline
f = TPH-G/BETX concentrations anomalous with historical data. Lab verified concentrations.
g = DTSC recommended action level for drinking water; MCL not established

* = MTBE confirmed by EPA Method 8260

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

October 23, 1996

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

Attn: R. Jeff Granberry

Shell WIC #204-5510-0204
350 Grand Avenue
Oakland, California

4th Quarter 1996

Quarterly Groundwater Monitoring Report 961002-T-3

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) 995-5535 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: Scott MacLeod

(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 *	10/2/96	TOB	ODOR	NONE	--	--	7.53	17.75
S-2.	10/2/96	TOB	ODOR	NONE	--	--	7.60	15.08
S-3	10/2/96	TOB	ODOR	NONE	--	--	7.20	15.10

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 961002-T3

Date: 10/2/96
Page 1 of 1

Site Address: 350 Grand Avenue, Oakland

WIC#: 204-5510-0204

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

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

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

Comments:

Sampled by: [signature]

Printed Name: Mike Toll

Analysis Required: 9610326

LAB: ~~[illegible]~~ Seq

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring [X]	5441	24 hours [ ]
Site Investigation [ ]	5441	48 hours [ ]
Soil Classify/Disposal [ ]	5442	16 days [X] (Normal)
Water Classify/Disposal [ ]	5443	Other [ ]
Soil/Air Rem. or Sys. O & M [ ]	5452	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M [ ]	5453	
Other [ ]		

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
~~S1~~ S-1	10/2			X		5		X				X	X						PLEASE	NOTE
~~S2~~ S-2	10/2			X		5		X				X	X						AMENDED	COC
S3 3	10/2			X		5		X				X	X							FT (BTS)
EB 4	10/2			X		5		X				X	X							10/03/96
DUP 5	10/2			X		5		X				X	X							
												*								

Relinquished By (signature):	Printed Name:	Date/Time	Received (signature):	Printed Name:	Date/Time
[signature]	Mike Toll	Date: 10/2/96 Time: 1533	[signature]	[illegible] WRIGHT	Date: 10/2/96 Time: 1533
[signature]		Date: 10/3/96 Time: 1145	[signature]		Date: Time:
		Date: Time:	[signature]	W. Hale	Date: 10/3/96 Time: 1209

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

12:09

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
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Project: Shell Oakland/961002-T3

Enclosed are the results from samples received at Sequoia Analytical on October 3, 1996. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9610326 -01	LIQUID, S1	10/02/96	TPHD_W Extractable TPH
9610326 -01	LIQUID, S1	10/02/96	TPGBMW Purgeable TPH/BTEX
9610326 -02	LIQUID, S2	10/02/96	TPHD_W Extractable TPH
9610326 -02	LIQUID, S2	10/02/96	TPGBMW Purgeable TPH/BTEX
9610326 -03	LIQUID, S3	10/02/96	TPHD_W Extractable TPH
9610326 -03	LIQUID, S3	10/02/96	TPGBMW Purgeable TPH/BTEX
9610326 -04	LIQUID, EB	10/02/96	TPHD_W Extractable TPH
9610326 -04	LIQUID, EB	10/02/96	TPGBMW Purgeable TPH/BTEX
9610326 -05	LIQUID, Dup	10/02/96	TPHD_W Extractable TPH
9610326 -05	LIQUID, Dup	10/02/96	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

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Blaine Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S-2	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	Extracted: 10/08/96
	Analysis Method: EPA 8015 Mod	Analyzed: 10/11/96
Attention: Jim Keller	Lab Number: 9610326-01	Reported: 10/15/96

QC Batch Number: GC1008960HBPEXB
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**500**	**18000**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	120

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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S-2	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/08/96
Attention: Jim Keller	Lab Number: 9610326-01	Reported: 10/15/96

QC Batch Number: GC100896BTEX07A
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**5000**	**28000**
Methyl t-Butyl Ether	**250**	**20000**
Benzene	**50**	**3700**
Toluene	**50**	**110**
Ethyl Benzene	**50**	**1100**
Xylenes (Total)	**50**	**260**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S-1	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	Extracted: 10/08/96
	Analysis Method: EPA 8015 Mod	Analyzed: 10/11/96
Attention: Jim Keller	Lab Number: 9610326-02	Reported: 10/15/96

QC Batch Number: GC1008960HBPEXB
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**250**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	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/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S-1	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/09/96
Attention: Jim Keller	Lab Number: 9610326-02	Reported: 10/15/96

QC Batch Number: GC100996BTEX06A
Instrument ID: GCHP06

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**	**96**
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	85

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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S3	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	Extracted: 10/08/96
	Analysis Method: EPA 8015 Mod	Analyzed: 10/10/96
Attention: Jim Keller	Lab Number: 9610326-03	Reported: 10/15/96

QC Batch Number: GC1008960HBPEXB
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**160**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	124

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/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: S3	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/08/96
Attention: Jim Keller	Lab Number: 9610326-03	Reported: 10/15/96

QC Batch Number: GC100896BTEX07A
Instrument ID: GCHP07

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**	**4.1**
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	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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: EB	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	Extracted: 10/08/96
	Analysis Method: EPA 8015 Mod	Analyzed: 10/10/96
Attention: Jim Keller	Lab Number: 9610326-04	Reported: 10/15/96

QC Batch Number: GC1008960HBPEXB
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	63	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	142

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Renner
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/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: EB	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/08/96
Attention: Jim Keller	Lab Number: 9610326-04	Reported: 10/15/96

QC Batch Number: GC100896BTEX07A
Instrument ID: GCHP07

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	110

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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: Dup	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	Extracted: 10/08/96
	Analysis Method: EPA 8015 Mod	Analyzed: 10/14/96
Attention: Jim Keller	Lab Number: 9610326-05	Reported: 10/15/96

QC Batch Number: GC1008960HBPEXB
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**1000**	**31000**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	133

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 Technical Services	Client Proj. ID: Shell Oakland/961002-T3	Sampled: 10/02/96
985 Timothy Drive	Sample Descript: Dup	Received: 10/03/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 10/08/96
Attention: Jim Keller	Lab Number: 9610326-05	Reported: 10/15/96

QC Batch Number: GC100896BTEX07A
Instrument ID: GCHP07

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**5000**	**25000**
Methyl t-Butyl Ether	**250**	**19000**
Benzene	**50**	**3500**
Toluene	**50**	**100**
Ethyl Benzene	**50**	**1100**
Xylenes (Total)	**50**	**260**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	92

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, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 961002-T3
Matrix: Liquid
Work Order #: 9610326 -01-05
Reported: Oct 16, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
QC Batch#:	GC100896BTEX07A	GC100896BTEX07A	GC100896BTEX07A	GC100896BTEX07A	GC1008960HBPEXB
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510
Analyst:	H. Porter	H. Porter	H. Porter	H. Porter	J. Minkel
MS/MSD #:	9610G9801	9610G9801	9610G9801	9610G9801	961022804
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	61
Prepared Date:	10/8/96	10/8/96	10/8/96	10/8/96	10/8/96
Analyzed Date:	10/8/96	10/8/96	10/8/96	10/8/96	10/10/96
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP4
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	1000 µg/L
Result:	10	9.6	9.8	29	1100
MS % Recovery:	100	96	98	97	103
Dup. Result:	10	9.3	9.3	28	1300
MSD % Recov.:	100	93	93	93	124
RPD:	0.0	3.2	5.2	3.5	17
RPD Limit:	0-25	0-25	0-25	0-25	0-50
LCS #:	BLK100896	BLK100896	BLK100896	BLK100896	BLK100896
Prepared Date:	10/8/96	10/8/96	10/8/96	10/8/96	10/8/96
Analyzed Date:	10/8/96	10/8/96	10/8/96	10/8/96	10/10/96
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP4
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	1000 µg/L
LCS Result:	12	11	11	33	1100
LCS % Recov.:	120	110	110	110	110
MS/MSD Control Limits	60-140	60-140	60-140	60-140	50-150
LCS Control Limits	70-130	70-130	70-130	70-130	60-140

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