5710 3714

CAMBRIA

March 31, 1998

Pamela Evans
Alameda County
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502-6577

Re: **First Quarter 1998 Quarterly Monitoring Report**
Shell Service Station
350 Grand Avenue
Oakland, California
WIC #204-5510-0204
Cambria Project #24-314-198

Dear Ms. Evans:

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.

FIRST QUARTER 1998 ACTIVITIES

Ground Water Monitoring: 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 analytical results is included as Attachment A. Cambria calculated ground water elevations (Table 1), compiled the analytical data (Table 2), and prepared a ground water elevation contour map (Figure 1).

Off Site Investigation: [redacted] In addition, we obtained a drilling permit from the Alameda County Department of Public Works for the installation of Geoprobe® pre-packed wells.

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

CAMBRIA

ANTICIPATED FUTURE ACTIVITIES

Ground Water Monitoring: The next ground water monitoring event is scheduled for the third quarter of 1998. At that time, Blaine will measure ground water depths and collect ground water samples from the site wells and Cambria will submit a report summarizing activities at the site.

Off Site Investigation: Cambria is currently awaiting an encroachment permit from the City of Oakland. We will schedule field activities as described in our *MTBE Investigation Work Plan* upon receiving this permit.

CLOSING

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

Sincerely,
Cambria Environmental Technology, Inc.

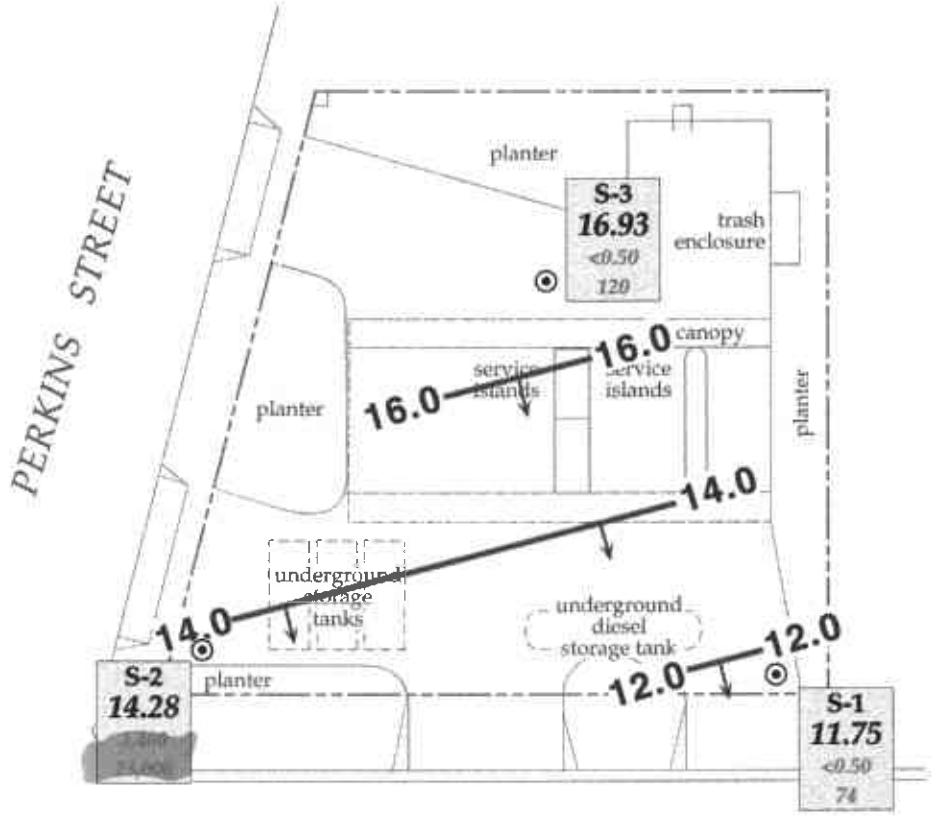
Maureen D. Feineman
Staff Geologist

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

Attachments: A - Blaine Quarterly Ground Water Monitoring Report

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

G:\OAK350\QM\1Q98QM.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 - January 8, 1998 - 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
	09/19/97		8.54	12.30
	01/08/98		9.09	11.75
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

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)
	01/04/94		8.07	13.17
	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
	09/19/97		7.45	13.79
	01/08/98		6.96	14.28
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
	09/19/97		6.92	15.78
	01/08/98		5.77	16.93

Notes and Abbreviations

ft = Feet
msl = Mean sea level

g:\work350\q01\0701qtr1.doc

Table 2. **Analytical Results for Ground Water** - 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	DO (mg/L)
			← parts per billion (µg/L) →							
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	2,000	95	0.91	<0.5	<0.5	<0.5	140	---
	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	---
	10/02/96	7.53	250	<50	<0.5	<0.5	<0.5	<0.5	96	---

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE	DO (mg/L)
			← parts per billion (µg/L) →							
	09/19/97	8.54	120	<50	<0.50	<0.50	<0.50	<0.50	37	0.8
	01/08/98	**9.09**	**210**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**74**	**2.6**
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	---	---

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE	DO (mg/L)
			← parts per billion (µg/L) →							
	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	---	---
	04/02/96	6.18	7,300	12,000	1,300	460	120	150	4,000	---
	04/02/96[dup]	6.18	5,800	17,000	1,800	590	29	140	7,600	---
	07/30/96	7.22	13,000	18,000	3,000	1,200	100	420	17,000(19,000)	---
	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	---
	09/19/97	7.45	11,000	21,000	2,300	500	120	110	11,000	2.1
	01/08/98	**6.96**	**8,100**	**35,000**	**3,200**	**850**	**260**	**320**	**23,000**	**2.3**
	01/08/98[dup]	**6.96**	**5,400**	**27,000**	**3,400**	**860**	**190**	**200**	**23,000**	**2.3**

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	---	---

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE	DO (mg/L)
			← parts per billion (µg/L) →							
	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	170	<50	<0.5	<0.5	<0.5	<0.5	3.4	---
	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	---
	09/19/97	6.92	260	<50	<0.50	<0.50	<0.50	<0.50	4.3	1.4
	09/19/97[dup]	6.92	290	<50	<0.50	<0.50	<0.50	<0.50	5.2	1.4
	01/08/98	**5.77**	**170**	**<50**	**<0.50**	**<0.50**	**<0.50**	**0.92**	**120**	**2.7**
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	---	---

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

Sample ID	Date	Depth to Water (ft)	TPH-D	TPH-G	B	E	T	X	MTBE	DO (mg/L)
			← parts per billion (µg/L) →							
	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	---	---
MCLs			NE	NE	1	700	150	1,750	NE	

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 tert-butyl ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260.
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
DO = Dissolved oxygen
--- = Not analyzed
MCLs = California Primary maximum contaminant levels for drinking water (22 CCR 64444)
NE = MCLs not established
<n = Not detected at detection limits of n µg/L
dup = Duplicate sample
HP = Hydropunch ground water sample
µg/L = Micrograms per liter
mg/L = Milligrams per liter
ft = Feet

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:\oak350\qm0701qm2.doc

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

January 30, 1998

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

Attn: Alex Perez

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

1st Quarter 1998

Groundwater Monitoring Report 980108-C-1

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	01/08/98	TOB	--	NONE	--	--	9.09	17.75
S-2*	01/08/98	TOB	ODOR	NONE	--	--	6.96	15.02
S-3	01/08/98	TOB	--	NONE	--	--	5.77	15.05

* Sample DUP was a duplicate sample taken from well S-2.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 980108-C1

Date:
Page 1 of 1

Site Address: 350 Grand Ave., Oakland, CA

WIC#: 204-5510-0204

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: [signature]

Printed Name: Cassidy McIntire

980148 Analysis Required

LAB: Sequoia

Sample ID	Date	Sludge	Soil	Water	Air	No. of cont.	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	TPH - Diesel		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
980108-S-1	1/8	1		W		5						X	X							
S-2	"	2		"		5						X	X							
S-3	"	3		"		5						X	X							
EB	"	4		"		5						X	X							
DUP	"	5		"		5						X	X							

CHECK ONE (1) BOX ONLY

	CT/DT	TURN AROUND TIME
G.W. Monitoring	X 4461	24 hours ☐
Site Investigation	☐ 4441	48 hours ☐
Soil Classify/Disposal	☐ 4442	15 days X (Normal)
Water Classify/Disposal	☐ 4443	Other ☐
Soil/Air Rem. or Sys. O & M	☐ 4452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M	☐ 4453	
Other	☐	

UST AGENCY:

	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature): [signature]	Cassidy McIntire	1/9	10:45	[signature]	Fulcher	1/9/98	10:45
Relinquished By (signature): [signature]	Cassidy McIntire	1/9/98					
Relinquished By (signature):							
				[signature]	Chris Carter	1/9/98	1257

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

Shell Oil Chain of Custody

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1

Enclosed are the results from samples received at Sequoia Analytical on January 9, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9801445 -01	LIQUID, S-1	01/08/98	TPHD_W Extractable TPH
9801445 -01	LIQUID, S-1	01/08/98	TPGM2W Purgeable TPH/BTEX
9801445 -02	LIQUID, S-2	01/08/98	TPHD_W Extractable TPH
9801445 -02	LIQUID, S-2	01/08/98	TPGM2W Purgeable TPH/BTEX
9801445 -03	LIQUID, S-3	01/08/98	TPHD_W Extractable TPH
9801445 -03	LIQUID, S-3	01/08/98	TPGM2W Purgeable TPH/BTEX
9801445 -04	LIQUID, EB	01/08/98	TPHD_W Extractable TPH
9801445 -04	LIQUID, EB	01/08/98	TPGM2W Purgeable TPH/BTEX
9801445 -05	LIQUID, Dup	01/08/98	TPHD_W Extractable TPH
9801445 -05	LIQUID, Dup	01/08/98	TPGM2W Purgeable TPH/BTEX

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

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: S-1	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	Extracted: 01/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 01/17/98
Attention: Fran Thie	Lab Number: 9801445-01	Reported: 01/23/98

QC Batch Number: GC0114980HBPEXA
Instrument ID: GCHP19B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**210**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

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, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: S-1	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/21/98
Attention: Fran Thie	Lab Number: 9801445-01	Reported: 01/23/98

QC Batch Number: GC012198BTEX01A
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**	**74**
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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: S-2	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	Extracted: 01/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 01/19/98
Attention: Fran Thie	Lab Number: 9801445-02	Reported: 01/23/98

QC Batch Number: GC011498OHBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**200**	**8100**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	107

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, (650) 364-9600, FAX (650) 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/980108-C-1
Sample Descript: S-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9801445-02

Sampled: 01/08/98
Received: 01/09/98

Analyzed: 01/21/98
Reported: 01/23/98

QC Batch Number: GC012198BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**35000**
Methyl t-Butyl Ether	**500**	**23000**
Benzene	**100**	**3200**
Toluene	**100**	**260**
Ethyl Benzene	**100**	**850**
Xylenes (Total)	**100**	**320**
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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: S-3	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	Extracted: 01/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 01/16/98
Attention: Fran Thie	Lab Number: 9801445-03	Reported: 01/23/98

QC Batch Number: GC011498OHBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**170**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	90

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, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: S-3	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/20/98
Attention: Fran Thie	Lab Number: 9801445-03	Reported: 01/23/98

QC Batch Number: GC012198BTEX06A
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**	**120**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	**0.50**	**0.92**
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, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: EB	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	Extracted: 01/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 01/17/98
Attention: Fran Thie	Lab Number: 9801445-04	Reported: 01/23/98

QC Batch Number: GC011498OHBPEXA
Instrument ID: GCHP5A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: EB	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/20/98
Attention: Fran Thie	Lab Number: 9801445-04	Reported: 01/23/98

QC Batch Number: GC012098BTEX06A
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	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	83

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, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: Dup	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	Extracted: 01/14/98
	Analysis Method: EPA 8015 Mod	Analyzed: 01/20/98
Attention: Fran Thie	Lab Number: 9801445-05	Reported: 01/23/98

QC Batch Number: GC011498OHBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**200**	**5400**
Chromatogram Pattern:		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	66

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, (650) 364-9600, FAX (650) 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/980108-C-1	Sampled: 01/08/98
1680 Rogers Avenue	Sample Descript: Dup	Received: 01/09/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 01/21/98
Attention: Fran Thie	Lab Number: 9801445-05	Reported: 01/23/98

QC Batch Number: GC012198BTEX01A
Instrument ID: GCHP01

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**27000**
Methyl t-Butyl Ether	**500**	**23000**
Benzene	**100**	**3400**
Toluene	**100**	**190**
Ethyl Benzene	**100**	**860**
Xylenes (Total)	**100**	**200**
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, (650) 364-9600, FAX (650) 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 Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 980108-C1
Matrix: Liquid
Work Order #: 9801445 -01-02, 05
Reported: Jan 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC012198BTEX01A	GC012198BTEX01A	GC012198BTEX01A	GC012198BTEX01A	GC012198BTEX01A
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:	C. Demartini	C. Demartini	C. Demartini	C. Demartini	C. Demartini
MS/MSD #:	980132904	980132904	980132904	980132904	980132904
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/21/98	1/21/98	1/21/98	1/21/98	1/21/98
Analyzed Date:	1/21/98	1/21/98	1/21/98	1/21/98	1/21/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.9	10	10	31	63
MS % Recovery:	99	100	100	103	105
Dup. Result:	9.9	9.9	10	31	63
MSD % Recov.:	99	99	100	103	105
RPD:	0.0	1.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK012198	BLK012198	BLK012198	BLK012198	BLK012198
Prepared Date:	1/21/98	1/21/98	1/21/98	1/21/98	1/21/98
Analyzed Date:	1/21/98	1/21/98	1/21/98	1/21/98	1/21/98
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	11	11	35	71
LCS % Recov.:	110	110	110	117	118
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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 Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 980108-C1
Matrix: Liquid
Work Order #: 9801445-03-04
Reported: Jan 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC012098BTEX06A	GC012098BTEX06A	GC012098BTEX06A	GC012098BTEX06A	GC012098BTEX06A
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:	R. Geckler	R. Geckler	R. Geckler	R. Geckler	R. Geckler
MS/MSD #:	980129804	980129804	980129804	980129804	980129804
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	1/20/98	1/20/98	1/20/98	1/20/98	1/20/98
Analyzed Date:	1/20/98	1/20/98	1/20/98	1/20/98	1/20/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.9	10	30	56
MS % Recovery:	100	99	100	100	93
Dup. Result:	10	10	10	31	59
MSD % Recov.:	100	100	100	103	98
RPD:	0.0	1.0	0.0	3.3	5.2
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK012098	BLK012098	BLK012098	BLK012098	BLK012098
Prepared Date:	1/20/98	1/20/98	1/20/98	1/20/98	1/20/98
Analyzed Date:	1/20/98	1/20/98	1/20/98	1/20/98	1/20/98
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	10	11	31	57
LCS % Recov.:	100	100	110	103	95
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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 / 980108-C1	
1680 Rogers Ave.	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9801445-01-05	Reported: Jan 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0114980HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	D. Lockhart
MS/MSD #:	980144208
Sample Conc.:	N.D.
Prepared Date:	1/14/98
Analyzed Date:	1/17/98
Instrument I.D.#:	GCHP19
Conc. Spiked:	1000 µg/L
Result:	840
MS % Recovery:	84
Dup. Result:	780
MSD % Recov.:	78
RPD:	7.4
RPD Limit:	0-50

LCS #:	BLK011498
Prepared Date:	1/14/98
Analyzed Date:	1/17/98
Instrument I.D.#:	GCHP19
Conc. Spiked:	1000 µg/L
LCS Result:	720
LCS % Recov.:	72

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 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/980108-C-1

Lab Proj. ID: 9801445

Received: 01/09/98

Reported: 01/23/98

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