



May 15, 1997

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

Re: **First Quarter 1997 Quarterly Monitoring Report**  
Shell Service Station  
6039 College Avenue  
Oakland, California  
WIC #204-5508-3301  
Cambria Project No. 240-314-106

Dear Mr. Seery:

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 1997 ACTIVITIES

Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected water samples from the site wells on February 20, 1997. The Blaine report, describing these sampling activities and presenting the analytic results is included as Attachment A. Cambria compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a map showing ground water elevations and analytic data (Figure 1). Separate-phase hydrocarbon (SPH) removal data is included in Table 3.

As requested during your December 17, 1996 meeting with Scott MacLeod (Cambria), wells MW-1, MW-2, and MW-4 were sampled by Blaine on January 8, 1997. The samples were analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, total xylenes, and methyl tert-butyl ether (MTBE). Hydrocarbons were not detected in the samples from wells MW-1 and MW-2. 24,000 parts per billion MTBE were detected in the well MW-4 sample. These results were also reported in our fourth quarter 1996 report.

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ENVIRONMENTAL  
TECHNOLOGY, INC.

Scott Seery  
May 15, 1997

CAMBRIA

**ANTICIPATED SECOND QUARTER 1997 ACTIVITIES**

Blaine will gauge water levels and sample selected site monitoring wells. Cambria will submit a report presenting a summary of activities for the upcoming quarter.

**CLOSING**

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

Sincerely,  
Cambria Environmental Technology, Inc.



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 4023, Concord, California 94524  
Tom Callaghan, San Francisco Bay Regional Water Quality Control Board, 2101 Webster  
Street, Suite 500, Oakland, CA 94612

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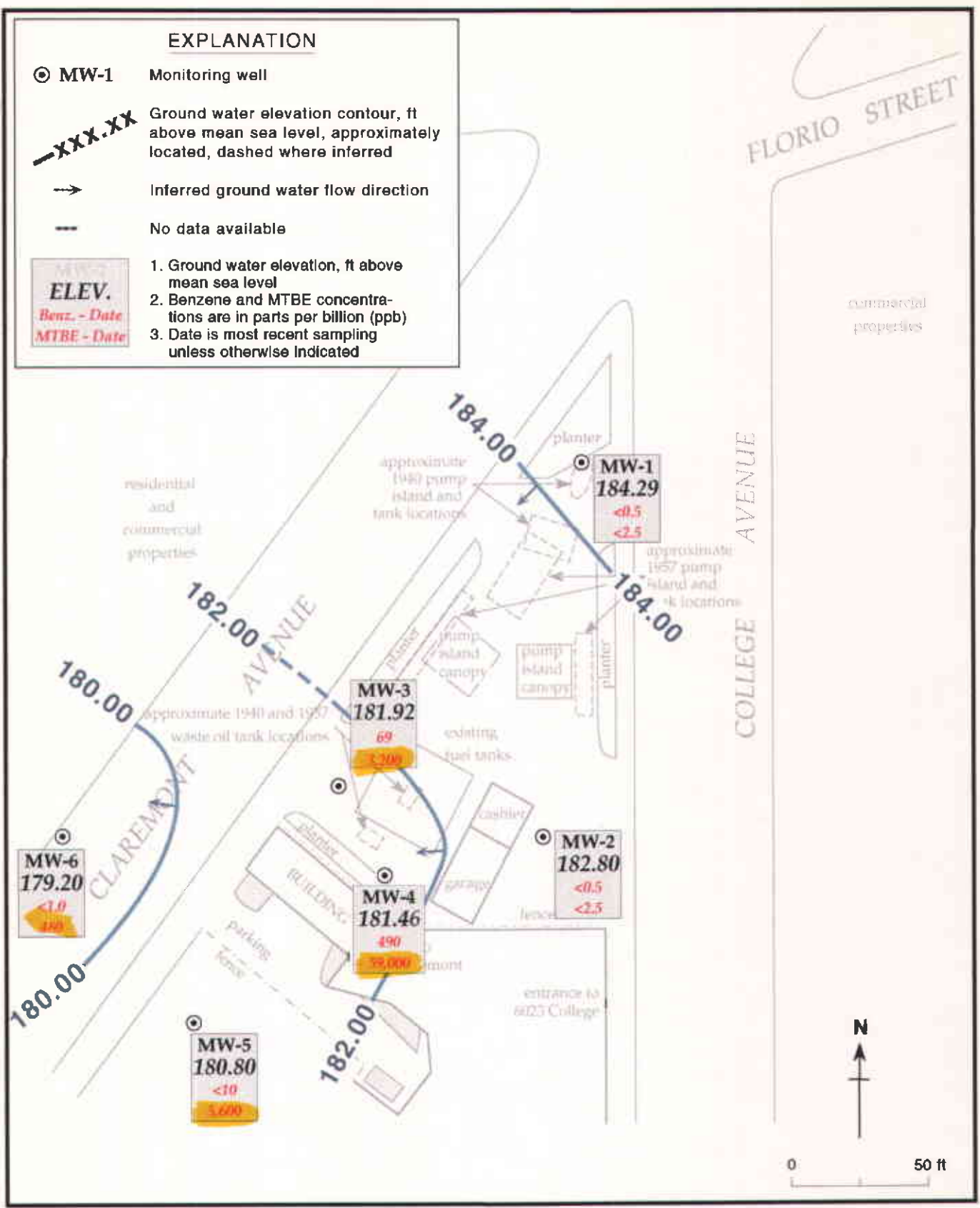


Figure 1. Ground Water Elevation Contours - February 20, 1997 - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301,  
6039 College Avenue, Oakland, California**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
MW-1	02/15/90	195.89	17.73	---	178.16
	04/19/90		18.51	---	177.38
	05/14/90		18.92	---	176.97
	06/21/90		18.21	---	177.68
	09/12/90		19.81	---	176.08
	11/27/90		20.39	---	175.50
	03/08/91		16.85	---	179.04
	06/03/91		17.82	---	178.07
	08/30/91		19.87	---	176.02
	11/22/91		20.58	---	175.31
	03/18/92		13.55	---	182.34
	05/28/92		17.08	---	178.81
	08/19/92		19.07	---	176.82
	11/17/92		20.11	---	175.78
	02/12/93		12.10	---	183.79
	06/10/93		14.87	---	181.02
	08/18/93		16.90	---	178.99
	11/19/93		19.72	---	176.17
	02/28/94		15.08	---	180.81
	05/04/94		17.20	---	178.69
	08/10/94		18.76	---	177.13
	11/08/94		16.00	---	179.89
	02/01/95		10.18	---	185.71
	05/10/95		11.88	---	184.01
	08/24/95		15.60	---	180.29
	11/10/95		18.24	---	177.65
	02/24/96		9.88	---	186.01
	05/22/96		12.24	---	183.65
	08/19/96		15.86	---	180.03
	12/05/96		16.21	---	179.68
01/08/97	9.73	---	186.16		
<b>02/20/97</b>			<b>11.60</b>	---	<b>184.29</b>
MW-2	02/15/90	194.27	16.90	---	177.37
	04/19/90		17.69	---	176.58
	05/14/90		18.01	---	176.26
	06/21/90		17.39	---	176.88
	09/12/90		19.00	---	175.27
	11/27/90		19.44	---	174.83
	03/08/91		15.96	---	178.31
	06/03/91		17.00	---	177.27
	08/30/91		18.95	---	175.32
	11/22/91		19.55	---	174.72

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	03/18/92		12.91	---	181.36
	05/28/92		16.25	---	178.02
	08/19/92		18.21	---	176.06
	11/17/92		19.15	---	175.12
	02/12/93		11.60	---	182.67
	06/10/93		14.14	---	180.13
	08/18/93		16.10	---	178.17
	11/19/93		18.77	---	175.50
	02/28/94		14.35	---	179.92
	05/04/94		16.34	---	177.93
	08/10/94		15.79	---	178.48
	11/08/94		15.04	---	179.23
	02/01/95		10.08	---	184.19
	05/10/95		11.68	---	182.59
	08/24/95		14.94	---	179.33
	11/10/95		13.36	---	180.91
	02/24/96		9.90	---	184.37
	05/22/96		11.80	---	182.47
	08/19/96		15.08	---	179.19
	12/05/96		15.16	---	179.11
	01/08/97		9.76	---	184.51
	<b>02/20/97</b>		<b>11.47</b>	---	<b>182.80</b>
MW-3	02/15/90	192.52	15.81	---	176.71
	04/19/90		16.57	---	175.95
	05/14/90		16.97	---	175.55
	06/21/90		16.27	---	176.25
	09/12/90		18.78	---	173.74
	11/27/90		18.27	---	174.25
	03/08/91		14.86	---	177.66
	06/03/91		15.84	---	176.68
	08/30/91		17.79	---	174.73
	11/22/91		18.40	---	174.12
	03/18/92		12.03	---	180.49
	05/28/92		15.16	---	177.36
	08/19/92		17.03	---	175.49
	11/17/92		17.94	---	174.58
	02/12/93		9.16	---	183.36
	06/10/93		13.20	---	179.32
	08/18/93		14.93	---	177.59
	11/19/93		17.58	---	174.94
	02/28/94		13.30	---	179.22
	05/04/94		15.25	---	177.27

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039  
College Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	08/10/94		16.63	---	175.89
	11/08/94		13.88	---	178.64
	02/01/95		9.25	---	183.27
	05/10/95		10.76	---	181.74
	08/24/95		13.90	---	178.62
	11/10/95		16.20	---	176.32
	02/24/96		8.93	---	183.59
	05/22/96		10.86	---	181.66
	08/19/96		13.97	---	178.55
	12/05/96		14.06	---	178.46
	<b>02/20/97</b>		<b>10.60</b>	---	<b>181.92</b>
MW-4	02/15/90	193.37	16.73	---	176.65
	04/19/90		17.48	---	175.89
	05/14/90		17.88	---	175.49
	06/21/90		17.18	---	176.19
	09/12/90		17.85	---	175.52
	11/27/90		19.16	---	174.21
	03/08/91		15.77	---	177.60
	06/03/91		16.77	---	176.60
	08/30/91		18.71	---	174.66
	11/22/91		---	---	---
	03/18/92 <sup>a</sup>		13.15	0.24	180.41
	05/28/92 <sup>a</sup>		16.22	0.12	177.25
	08/19/92 <sup>a</sup>		18.05	0.09	175.39
	11/17/92		18.89	---	174.48
	02/12/93		11.78	<0.01	181.59
	06/10/93		14.20	---	179.17
	08/18/93		15.95	0.01	177.43
	11/19/93		18.48	0.01	174.90
	02/28/94		14.60	<0.01	178.77
	05/04/94		16.15	<0.01	177.22
	08/10/94		17.58	0.02	175.81
	11/08/94		15.05	0.05	178.36
	02/01/95		10.71	0.04	182.69
	05/10/95		11.90	0.06	181.52
	08/24/95		14.97	0.02	178.42
	11/10/95		17.27	---	176.10
	02/24/96		10.44	0.03	182.95
	05/22/96		11.88	0.03	181.51
	08/19/96		15.23	0.02	178.16
	12/05/96		14.70	0.02	178.69

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	01/08/97		11.60	0.02	181.79
	<b>02/20/97</b>		<b>11.91</b>	<b>---</b>	<b>181.46</b>
MW-5	08/30/91	190.35	16.74	---	173.61
	11/22/91		17.27	---	173.08
	03/18/92		11.28	---	179.07
	05/28/92 <sup>b</sup>		---	---	---
	08/19/92		15.99	---	174.36
	11/17/92		16.84	---	173.51
	02/12/93		10.30	---	180.05
	06/10/93		12.36	---	177.99
	08/18/93		14.02	---	176.33
	11/19/93		16.50	---	173.85
	02/28/94		12.55	---	177.80
	05/04/94		14.27	---	176.08
	08/10/94		15.60	---	174.75
	11/08/94		12.85	---	177.50
	02/01/95		8.98	---	181.37
	05/10/95		10.16	---	180.19
	08/24/95		12.98	---	177.37
	11/10/95		15.12	---	175.23
	02/24/96 <sup>b</sup>		---	---	---
	05/22/96		10.10	---	180.25
	08/19/96		13.09	---	177.26
	12/05/96		13.31	---	177.04
	<b>02/20/97</b>		<b>9.55</b>	<b>---</b>	<b>180.80</b>
MW-6	09/21/93	189.05	14.64	---	174.41
	11/19/93		---	---	---
	02/28/94		12.18	---	176.87
	05/04/94		13.62	---	175.43
	08/10/94		14.98	---	174.07
	11/08/94		12.20	---	176.85
	02/01/95		8.70	---	180.35
	05/10/95		9.86	---	179.19
	08/24/95		12.46	---	176.59
	11/10/95		14.56	---	174.49
	02/24/96 <sup>b</sup>		---	---	---
	05/22/96		10.23	---	178.82
	08/19/96		12.61	---	176.44
	12/05/96		12.47	---	176.58
	<b>02/20/97</b>		<b>9.85</b>	<b>---</b>	<b>179.20</b>

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**Table 1. Ground Water Elevations - Shell Service Station WIC #204-5508-3301, 6039  
College Avenue, Oakland, California (continued)**

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**Notes:**

- a = When separate-phase hydrocarbons are present, ground water elevation is corrected by the relation: Corrected ground water elevation = (Top-of-Casing Elevation) - (depth to water) + (0.8 x separate-phase hydrocarbon thickness).
- b = Well inaccessible.
- msl = mean sea level
- = Data not available.



**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	parts per billion (µg/L)				X
					B	E	T		
MW-1	02/13/90	17.73	95	---	ND	0.37	0.67	3.2	
	05/14/90	18.92	95	---	0.70	0.71	0.57	3.5	
	09/12/90	19.81	ND	---	ND	ND	ND	ND	
	11/27/90	20.39	---	---	---	---	---	---	
	03/08/91	16.85	ND	---	ND	ND	ND	ND	
	06/03/91	17.82	ND	---	ND	ND	ND	ND	
	08/30/91	19.87	16.85	---	ND	ND	ND	ND	
	11/22/91	20.58	<50	---	<0.5	<0.5	<0.5	<0.5	
	03/18/92	13.55	<30	---	<0.3	<0.3	<0.3	<0.3	
	05/28/92	17.08	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/19/92	19.07	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/17/92	20.11	<50	---	<0.5	<0.5	<0.5	<0.5	
	02/12/93	12.10	<50	---	<0.5	<0.5	<0.5	<0.5	
	06/10/93	14.87	<50	---	<0.5	<0.5	<0.5	<0.5	
	06/10/93 <sup>dup</sup>	14.87	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/18/93	16.90	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/19/93	19.72	<50	---	<0.5	<0.5	<0.5	<0.5	
	02/18/94	15.08	<50	---	<0.5	<0.5	<0.5	1.7	
	05/04/94	17.20	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/10/94	18.76	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/10/94 <sup>dup</sup>	18.76	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/08/94	16.00	<50	---	<0.5	<0.5	<0.5	<0.5	
	02/01/95	10.18	<50	---	<0.5	<0.5	<0.5	<0.5	
	05/10/95	11.88	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/24/95	15.60	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/10/95	18.24	<50	---	<0.5	<0.5	<0.5	<0.5	
	02/24/96	9.88	<50	---	<0.5	<0.5	<0.5	<0.5	
	05/22/96	12.24	<50	<2.5	<0.5	<0.5	<0.5	<0.5	
	08/19/96	15.86	<50	<2.5	<0.5	<0.5	<0.5	<0.5	
	12/05/96	16.21	160	<2.5	7.3	5.5	8.2	23	
	01/08/97	9.73	<50	<2.5	<0.50	<0.50	<0.50	<0.50	
	02/20/97	11.60	<50	<2.5	<0.50	<0.50	<0.50	<0.50	
	02/20/97 <sup>dup</sup>	11.60	<50	<2.5	<0.50	<0.50	<0.50	<0.50	

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	parts per billion (µg/L)				X
					B	E	T		
MW-2	02/13/90	16.90	ND	---	ND	ND	ND	ND	ND
	05/14/90	18.01	ND	---	ND	ND	ND	ND	ND
	09/12/90	19.00	ND	---	ND	ND	ND	ND	ND
	11/27/90	19.44	ND	---	ND	ND	ND	ND	ND
	03/08/91	15.96	ND	---	ND	ND	ND	ND	ND
	06/03/91	17.00	ND	---	ND	ND	ND	ND	ND
	08/30/91	18.95	ND	---	ND	ND	ND	ND	ND
	11/22/91	19.55	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	03/18/92	12.91	<30	---	<0.3	<0.3	<0.3	<0.3	<0.3
	05/28/92	16.25	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	08/19/92	18.21	<50	---	<0.5	1.2	2	1.9	1.9
	11/17/92	19.15	<50	---	<0.5	1.2	2	1.9	1.9
	02/12/93 <sup>dup</sup>	11.60	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	02/12/93	11.60	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	06/10/93	14.14	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	08/18/93	16.10	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	08/18/93 <sup>dup</sup>	16.10	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	11/19/93	18.77	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	02/18/94	14.55	<50	---	<0.5	<0.5	<0.5	<0.5	1.6
	05/04/94	16.34	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	08/10/94	15.79	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	11/08/94	15.04	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	02/01/95	10.08	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	05/10/95	11.68	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	08/24/95	14.94	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	11/10/95	13.36	<50	---	1.7	1.4	0.8	4.9	4.9
	02/24/96	9.90	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	02/24/96 <sup>dup</sup>	9.90	<50	---	<0.5	<0.5	<0.5	<0.5	<0.5
	05/22/96	11.80	<50	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/19/96	15.08	<50	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5
	08/19/96 <sup>dup</sup>	15.08	<50	<2.5	<0.5	<0.5	<0.5	<0.5	<0.5
	12/05/96	15.16	<50	<2.5	1.5	1.2	1.6	5.2	5.2
	01/08/97	9.76	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50
	02/20/97	11.47	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	parts per billion (µg/L)			
					B	E	T	X
MW-3	02/13/90	15.81	4,700	---	320	110	29	33
	02/13/90 <sup>dup</sup>	15.81	4,600	---	380	160	8.6	57
	05/14/90	16.97	1,400	---	130	40	8.6	17
	05/14/90 <sup>dup</sup>	16.97	8,200	---	120	38	31	13
	09/12/90	18.78	2,000	---	58	16	5.8	15
	11/27/90	18.27	540	---	18	8.7	1.5	2.5
	03/08/91	14.86	3,400	---	630	270	33	18
	06/03/91	15.84	1,700	---	260	98	13	24
	08/30/91	17.79	870	---	44	10	6.1	2.9
	11/22/91	18.40	310	---	18	3.3	1.2	2.9
	03/18/92	12.03	67,100	---	620	220	28	38
	05/28/92	15.16	2,300	---	200	71	9	17
	08/19/92	17.03	5,700	---	71	52	77	130
	11/17/92	17.94	3,600	---	16	24	8.6	50
	02/12/93	9.16	4,700	---	820	130	58	77
	06/10/93	13.20	2,200	---	310	89	23	23
	08/18/93	14.93	260	---	27	7.0	2.0	2.2
	11/19/93	17.58	1,500 <sup>a</sup>	---	24	37	54	17
	02/18/94	13.30	2,700	---	65	16	5.2	6.3
	02/18/94 <sup>dup</sup>		3,100	---	82	19	6.7	7.9
	05/04/94	15.25	780	---	120	21	7.5	6.9
	05/04/94 <sup>dup</sup>	15.25	920	---	120	22	7.7	7.1
	08/10/94	16.63	920	---	20	3.0	2.3	2.2
	11/08/94	13.88	1,300	---	180	7.0	16	12
	11/08/94 <sup>dup</sup>	13.88	1,200	---	170	7.2	15	11
	02/01/95	9.25	1,400	---	210	11	8.5	8.7
	05/10/95	10.76	460	---	97	1.0	10	19
	08/24/95	13.90	640	---	68	14	21	19
	11/10/95	16.20	350	---	15	1.2	2.3	2.5
	02/24/96	8.93	3,300	---	240	38	53	55
	05/22/96	10.86	1,300	3,500	110	<10	15	<10
	08/19/96	13.97	350	340	15	3.4	3.3	3.3
	12/05/96	14.06	290	370	12	5.4	7.6	16
	12/05/96 <sup>dup</sup>	14.06	290	360	13	5.8	7.6	17

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	parts per billion (µg/L)			X
					B	E	T	
	<b>02/20/97</b>	<b>10.60</b>	<b>980</b>	<b>3,200</b>	<b>69</b>	<b>14</b>	<b>7.9</b>	<b>15</b>
MW-4	02/13/90	16.73	ND	---	ND	ND	ND	ND
	05/14/90	17.88	650	---	160	1.9	7	3.1
	09/12/90	17.85	440	---	91	0.75	1.1	0.79
	09/12/90 <sup>dup</sup>	17.85	520	---	85	0.71	0.71	0.81
	11/27/90	19.16	470	---	64	0.80	1.2	2.7
	03/08/91	15.77	1,100	---	330	88	3.5	5.8
	06/03/91	16.77	670	---	240	1.6	2.3	2.3
	08/30/91	18.71	570	---	64	0.9	1.8	0.9
	11/22/91 <sup>SPH</sup>	---	---	---	---	---	---	---
	03/18/92 <sup>SPH</sup>	13.15	---	---	---	---	---	---
	05/28/92 <sup>SPH</sup>	16.22	---	---	---	---	---	---
	08/19/92 <sup>SPH</sup>	18.05	---	---	---	---	---	---
	11/17/92 <sup>SPH</sup>	18.89	---	---	---	---	---	---
	02/12/93 <sup>SPH</sup>	11.78	---	---	---	---	---	---
	06/10/93	14.20	---	---	---	---	---	---
	08/18/93 <sup>SPH</sup>	15.95	---	---	---	---	---	---
	11/19/93 <sup>SPH</sup>	18.48	---	---	---	---	---	---
	02/28/94 <sup>SPH</sup>	14.60	---	---	---	---	---	---
	05/04/94 <sup>SPH</sup>	16.15	---	---	---	---	---	---
	08/10/94 <sup>SPH</sup>	17.58	---	---	---	---	---	---
	11/08/94 <sup>SPH</sup>	15.05	---	---	---	---	---	---
	02/01/95 <sup>SPH</sup>	10.71	---	---	---	---	---	---
	05/10/95	11.90	---	---	---	---	---	---
	08/24/95	14.97	---	---	---	---	---	---
	11/10/95	17.27	4,700	---	100	23	22	38
	02/24/96	10.44	---	---	---	---	---	---
	08/19/96 <sup>SPH</sup>	15.23	---	---	---	---	---	---
	12/05/96 <sup>SPH</sup>	14.07	---	---	---	---	---	---
	01/08/97	11.60	<10,000	24,000	<100	<100	<100	<100
	<b>02/20/97</b>	<b>11.91</b>	<b>&lt;10,000</b>	<b>59,000</b>	<b>490</b>	<b>&lt;100</b>	<b>&lt;100</b>	<b>&lt;100</b>

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	parts per billion (µg/L)			
					B	E	T	X
MW-5	08/30/91	16.74	ND	---	ND	ND	ND	ND
	11/22/91	17.27	<50	---	<0.5	<0.5	<0.5	<0.5
	03/18/92	11.28	<30	---	<0.3	<0.3	<0.3	<0.3
	05/28/92 <sup>b</sup>	---	---	---	---	---	---	---
	08/19/92	15.99	<50	---	<0.5	<0.5	<0.5	<0.5
	11/17/92	16.84	<50	---	<0.5	<0.5	<0.5	<0.5
	02/12/93	10.30	<50	---	<0.5	<0.5	<0.5	<0.5
	06/10/93	12.36	<50	---	<0.5	<0.5	<0.5	<0.5
	08/18/93	14.02	<50	---	<0.5	<0.5	<0.5	<0.5
	11/19/93	16.50	<50	---	<0.5	<0.5	<0.5	<0.5
	11/19/93 <sup>dup</sup>	16.50	<50	---	<0.5	<0.5	<0.5	<0.5
	02/18/94	12.55	<50	---	<0.5	<0.5	<0.5	<0.5
	05/04/94	14.27	<50	---	<0.5	<0.5	<0.5	<0.5
	08/10/94	15.60	70 <sup>f</sup>	---	<0.5	<0.5	<0.5	<0.5
	11/08/94	12.85	<50	---	<0.5	<0.5	<0.5	<0.5
	02/01/95	8.98	<50	---	<0.5	<0.5	<0.5	<0.5
	05/10/95	10.16	<50	---	<0.5	<0.5	<0.5	<0.5
	05/10/95 <sup>dup</sup>	10.16	<50	---	<0.5	<0.5	<0.5	<0.5
	08/24/95	12.98	<50	---	<0.5	<0.5	<0.5	<0.5
	11/10/95	15.12	<50	---	<0.5	<0.5	<0.5	<0.5
	02/24/96 <sup>b</sup>	---	---	---	---	---	---	---
	05/22/96	10.10	<2,000	9,800	<20	<20	<20	<20
	08/19/96	13.09	<2,500	13,000	<25	<25	<25	<25
12/05/96	13.31	<500	2,800	<5.0	<5.0	<5.0	<5.0	
02/20/97	9.55	<1,000	5,600	<10	<10	<10	<10	
MW-6	09/21/93	14.64	<50	---	<0.5	<0.5	<0.5	<0.5
	11/19/93 <sup>c</sup>	---	---	---	---	---	---	---
	02/28/94	12.18	98 <sup>d</sup>	---	<0.5	<0.5	<0.5	<0.5
	05/04/94	13.62	<50	---	<0.5	<0.5	<0.5	<0.5
	08/10/94	14.98	80 <sup>f</sup>	---	<0.5	<0.5	<0.5	<0.5
	11/08/94 <sup>b</sup>	12.20	---	---	---	---	---	---
	02/01/95	8.70	120	---	3.5	3.4	21	22
	02/01/95 <sup>dup</sup>	8.70	110	---	0.6	0.5	0.6	0.9

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	←———— parts per billion (µg/L) —————→				X
					B	E	T		
	05/10/95	9.86	---	---	---	---	---	---	
	08/24/95	12.46	80	---	<0.5	1.8	<0.5	2.4	
	08/24/95 <sup>dap</sup>	12.46	70	---	<0.5	1.2	<0.5	1.3	
	11/10/95	14.56	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/10/95	14.56	60	---	<0.5	<0.5	<0.5	<0.5	
	02/24/96 <sup>b</sup>	---	---	---	---	---	---	---	
	05/22/96	10.23	<50	290	<0.5	<0.5	<0.5	<0.5	
	08/19/96	12.61	<1,250	1,100	<12	<12	<12	<12	
	12/05/96	12.47	<125	440	<1.2	<1.2	<1.2	<1.2	
	<b>02/20/97</b>	<b>9.85</b>	<b>&lt;100</b>	<b>480</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	<b>&lt;1.0</b>	
BH-A	09/09/93	16.50	4,900	---	18	54	<5	11	
BH-B	09/09/93	15.85	<50	---	<0.5	<0.5	<0.5	<0.5	
BH-C <sup>e</sup>	09/10/93	15.80	640 <sup>f</sup>	---	3.5	0.6	<0.5	<0.5	
BH-D <sup>e</sup>	09/10/93	14.2	24,000 <sup>f</sup>	---	720	44	86	11	
Bailer	08/19/92	---	<50	---	<0.5	<0.5	<0.5	<0.5	
Blank	11/17/92	---	<50	---	<0.5	<0.5	<0.5	<0.5	
Trip	02/13/90	---	ND	---	ND	ND	ND	ND	
Blank	05/14/90	---	ND	---	ND	ND	ND	ND	
	09/12/90	---	ND	---	ND	ND	ND	ND	
	03/08/91	---	ND	---	ND	ND	ND	ND	
	06/03/91	---	ND	---	ND	ND	ND	ND	
	08/30/91	---	ND	---	ND	ND	ND	ND	
	03/18/92	---	<30	---	<0.3	<0.3	<0.3	<0.3	
	05/28/92	---	<50	---	<0.5	<0.5	<0.5	<0.5	
	08/19/92	---	<50	---	<0.5	<0.5	<0.5	<0.5	
	11/17/92	---	<50	---	<0.5	<0.5	<0.5	<0.5	
	02/12/93	---	<50	---	<0.5	<0.5	<0.5	<0.5	
	06/10/93	---	<50	---	<0.5	<0.5	<0.5	<0.5	

**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	←———— parts per billion (µg/L) —————→			X
					B	E	T	
	11/19/93	---	<50	---	<0.5	<0.5	<0.5	<0.5
	02/28/94	---	<50	---	<0.5	<0.5	<0.5	<0.5
	05/04/94	---	<50	---	<0.5	<0.5	<0.5	<0.5
	08/10/94	---	<50	---	<0.5	<0.5	<0.5	<0.5
	11/08/94	---	<50	---	<0.5	<0.5	<0.5	<0.5
	02/01/95	---	<50	---	<0.5	<0.5	<0.5	<0.5
	05/10/95	---	<50	---	<0.5	<0.5	<0.5	<0.5
	08/24/95	---	<50	---	<0.5	<0.5	<0.5	<0.5
	11/10/95	---	<50	---	<0.5	<0.5	0.7	<0.5
MCLs			NE	---	1	700	150	1,750

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**Table 2a. Analytic Results for Ground Water - Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039  
College Avenue, Oakland, California (continued)**

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**Abbreviations:**

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015  
B = Benzene by EPA Method 8020  
E = Ethylbenzene by EPA Method 8020  
T = Toluene by EPA Method 8020  
X = Xylenes by EPA Method 8020  
NE = Not established  
MCLs = California Primary Maximum Contaminant Levels drinking water  
(22CCR64444)  
--- = Not analyzed or measured  
<n = Not detected at detection limits of n ppb  
ND = Not detected, detection limit not known  
SPH = Separate-phase hydrocarbons in well, not sampled  
dup = Duplicate sample

**Notes:**

a = Concentration reported as gasoline is due to the presence of gasoline and a discrete peak not indicative of gasoline  
b = Well inaccessible and not sampled  
c = Well inadvertently not sampled  
d = The concentration reported as gasoline is primarily due to the presence of a discrete peak not indicative of gasoline  
e = Due to chain of custody mis-communication analyses run after holding time expiration  
f = The positive result has an atypical pattern for gasoline analysis



**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D ←	TPH-MO →	POG parts per billion (µg/L)	Naphthalene*	2-Methylnaphthalene*	DO (mg/L)
MW-1	02/13/90	17.73	650	770	---	---	---	---
	05/14/90	18.92	ND	770	---	---	---	---
	09/12/90	19.81	84	ND	---	---	---	---
	11/27/90	20.39	---	---	---	---	---	---
	03/08/91	16.85	50	ND	---	---	---	---
	06/03/91	17.82	ND	ND	---	---	---	---
	08/30/91	19.87	520	ND	---	---	---	---
	11/22/91	20.58	<50	<500	---	---	---	---
	03/18/92	13.55	<50	---	---	---	---	---
	05/28/92	17.08	<50	---	---	---	---	---
	08/19/92	19.07	<50	---	---	---	---	---
	11/17/92	20.11	<50	---	---	---	---	---
	02/12/93	12.10	<50	---	---	---	---	---
	06/10/93	14.87	---	---	---	---	---	---
	06/10/93 <sup>dup</sup>	14.87	---	---	---	---	---	---
	08/18/93	16.90	---	---	---	---	---	---
	11/19/93	19.72	---	---	---	---	---	---
	02/18/94	15.08	---	---	---	---	---	---
	05/04/94	17.20	---	---	---	---	---	---
	08/10/94	18.76	---	---	---	---	---	---
	08/10/94 <sup>dup</sup>	18.76	---	---	---	---	---	---
	11/08/94	16.00	---	---	---	---	---	---
	02/01/95	10.18	---	---	---	---	---	---
	05/10/95	11.88	---	---	---	---	---	---
	08/24/95	15.60	---	---	---	---	---	---
	11/10/95	18.24	---	---	---	---	---	---
	02/24/96	9.88	---	---	---	---	---	---
	05/22/96	12.24	---	---	---	---	---	---
	08/19/96	15.86	---	---	---	---	---	---
	12/05/96	16.21	---	---	---	---	---	8.6
	02/20/97	11.60	---	---	---	---	---	8.0

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D	TPH-MO	POG	Naphthalene*		2-Methylnaphthalene*	DO (mg/L)
						parts per billion (µg/L)			
MW-2	02/13/90	16.90	560	ND	---	---	---	---	---
	05/14/90	18.01	ND	ND	---	---	---	---	---
	09/12/90	19.00	ND	ND	---	---	---	---	---
	11/27/90	19.44	ND	ND	---	---	---	---	---
	03/08/91	15.96	ND	ND	---	---	---	---	---
	06/03/91	17.00	ND	ND	---	---	---	---	---
	08/30/91	18.95	ND	ND	---	---	---	---	---
	11/22/91	19.55	<50	<500	---	---	---	---	---
	03/18/92	12.91	---	---	---	---	---	---	---
	05/28/92	16.25	---	---	---	---	---	---	---
	08/19/92	18.21	---	---	---	---	---	---	---
	11/17/92	19.15	---	---	---	---	---	---	---
	02/12/93 <sup>dup</sup>	11.60	---	---	---	---	---	---	---
	02/12/93	11.60	---	---	---	---	---	---	---
	06/10/93	14.14	---	---	---	---	---	---	---
	08/18/93	16.10	---	---	---	---	---	---	---
	08/18/93 <sup>dup</sup>	16.10	---	---	---	---	---	---	---
	11/19/93	18.77	---	---	---	---	---	---	---
	02/18/94	14.55	---	---	---	---	---	---	---
	05/04/94	16.34	---	---	---	---	---	---	---
	08/10/94	15.79	---	---	---	---	---	---	---
	11/08/94	15.04	---	---	---	---	---	---	---
	02/01/95	10.08	---	---	---	---	---	---	---
	05/10/95	11.68	---	---	---	---	---	---	---
	08/24/95	14.94	---	---	---	---	---	---	---
	11/10/95	13.36	---	---	---	---	---	---	---
	02/24/96	9.90	---	---	---	---	---	---	---
	02/24/96 <sup>dup</sup>	9.90	---	---	---	---	---	---	---
	05/22/96	11.80	---	---	---	---	---	---	---
	08/19/96	15.08	---	---	---	---	---	---	---
	08/19/96 <sup>dup</sup>	15.08	---	---	---	---	---	---	---
	12/05/96	15.16	---	---	---	---	---	---	7.0
	<b>02/20/97</b>	<b>11.47</b>	---	---	---	---	---	---	<b>7.1</b>

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D	TPH-MO	POG			Naphthalene*	2-Methylnaphthalene*	DO (mg/L)
					parts per billion (µg/L)					
MW-3	02/13/90	15.81	3,100	3,000	---	---	---	---	---	
	02/13/90 <sup>dup</sup>	15.81	4,500	8,300	---	---	---	---	---	
	05/14/90	16.97	620	40,000	---	---	---	---	---	
	05/14/90 <sup>dup</sup>	16.97	660	10,000	---	---	---	---	---	
	09/12/90	18.78	1,500	19,000	---	---	---	---	---	
	11/27/90	18.27	240	460	---	---	---	---	---	
	03/08/91	14.86	2,100	ND	---	---	---	---	---	
	06/03/91	15.84	690 <sup>a</sup>	ND	---	---	---	---	---	
	08/30/91	17.79	370 <sup>b</sup>	500	---	---	---	---	---	
	11/22/91	18.40	140	500	---	---	---	---	---	
	03/18/92	12.03	1,900	20,000	---	---	---	---	---	
	05/28/92	15.16	1,100 <sup>c</sup>	4,600	---	---	---	---	---	
	08/19/92	17.03	1,000 <sup>c</sup>	1,800	---	---	---	---	---	
	11/17/92	17.94	160 <sup>c</sup>	1,200	---	---	---	---	---	
	02/12/93	9.16	560 <sup>c</sup>	<50	---	---	---	---	---	
	06/10/93	13.20	---	940 <sup>d</sup>	---	---	---	---	---	
	08/18/93	14.93	---	460 <sup>d</sup>	---	---	---	---	---	
	11/19/93	17.58	---	960 <sup>d</sup>	<5,000	---	---	---	---	
	02/18/94	13.30	---	1,600	<5,000	---	---	---	---	
	02/18/94 <sup>dup</sup>	---	---	2,200	<5,000	---	---	---	---	
	05/04/94	15.25	---	710	<5,000	e	e	---	---	
	05/04/94 <sup>dup</sup>	15.25	---	1,600	<5,000	f	f	---	---	
	08/10/94	16.63	---	<500	<5,000	ND	ND	---	---	
	11/08/94	13.88	---	1,300	---	---	---	---	---	
	11/08/94 <sup>dup</sup>	13.88	---	730	---	---	---	---	---	
	02/01/95	9.25	---	900 <sup>j</sup>	---	27	ND	---	---	
	05/10/95	10.76	---	---	<5,000	ND	ND	---	---	
	08/24/95	13.90	---	---	<5,000	12	ND	---	---	
	11/10/95	16.20	---	---	<5,000	---	---	---	---	
	02/24/96	8.93	---	---	<5,000	---	---	---	---	
	05/22/96	10.86	---	---	<5,000	37	8.4	---	---	
	08/19/96	13.97	---	---	9,200	ND	ND	---	---	
	12/05/96	14.06	---	---	---	ND	ND	---	8.4	

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D ←	TPH-MO	POG parts per billion (µg/L)	Naphthalene* →		2-Methylnaphthalene*	DO (mg/L)
	12/05/96 <sup>dup</sup>	14.06	---	---	---	ND	ND	ND	8.4
	02/20/97	10.60	---	---	<5.0	23	<5.0	<5.0	8.2
MW-4	02/13/90	16.73	1,200	3,000	---	---	---	---	---
	05/14/90	17.88	350	12,000	---	---	---	---	---
	09/12/90	17.85	260	2,600	---	---	---	---	---
	09/12/90 <sup>dup</sup>	17.85	1,100	16,000	---	---	---	---	---
	11/27/90	19.16	2,400	1,000	---	---	---	---	---
	03/08/91	15.77	2,600	15,000	---	---	---	---	---
	06/03/91	16.77	1,100	ND	---	6.5	---	---	---
	08/30/91	18.71	280	2,000	---	11.0	---	---	---
	11/22/91 <sup>SPH</sup>	---	---	---	---	---	---	---	---
	03/18/92 <sup>SPH</sup>	13.15	---	---	---	---	---	---	---
	05/28/92 <sup>SPH</sup>	16.22	---	---	---	---	---	---	---
	08/19/92 <sup>SPH</sup>	18.05	---	---	---	---	---	---	---
	11/17/92 <sup>SPH</sup>	18.89	---	---	---	---	---	---	---
	02/12/93 <sup>SPH</sup>	11.78	---	---	---	---	---	---	---
	06/10/93	14.20	---	---	---	---	---	---	---
	08/18/93 <sup>SPH</sup>	15.95	---	---	---	---	---	---	---
	11/19/93 <sup>SPH</sup>	18.48	---	---	---	---	---	---	---
	02/28/94 <sup>SPH</sup>	14.60	---	---	---	---	---	---	---
	05/04/94 <sup>SPH</sup>	16.15	---	---	---	---	---	---	---
	08/10/94 <sup>SPH</sup>	17.58	---	---	---	---	---	---	---
	11/08/94 <sup>SPH</sup>	15.05	---	---	---	---	---	---	---
	02/01/95 <sup>SPH</sup>	10.71	---	---	---	---	---	---	---
	05/10/95	11.90	---	---	---	---	---	---	---
	08/24/95	14.97	---	---	---	---	---	---	---
	11/10/95	17.27	---	---	29,000	---	---	---	---
	02/24/96	10.44	---	---	---	---	---	---	---
	08/19/96 <sup>SPH</sup>	15.23	---	---	---	---	---	---	---
	12/05/96 <sup>SPH</sup>	14.07	---	---	---	---	---	---	---
	02/20/97	11.91	---	---	8.7	5.6	<5.0	<5.0	7.0

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D	TPH-MO	POG	Naphthalene*	2-Methylnaphthalene*	DO (mg/L)
			←————— parts per billion (µg/L) —————→					
MW-5	08/30/91	16.74	80	ND	---	---	---	---
	11/22/91	17.27	<50	<500	---	---	---	---
	03/18/92	11.28	<50	---	---	---	---	---
	05/28/92 <sup>E</sup>	---	---	---	---	---	---	---
	08/19/92	15.99	<50	---	---	---	---	---
	11/17/92	16.84	<50	---	---	---	---	---
	02/12/93	10.30	<50	---	---	---	---	---
	06/10/93	12.36	---	---	---	---	---	---
	08/18/93	14.02	---	---	---	---	---	---
	11/19/93	16.50	---	---	---	---	---	---
	11/19/93 <sup>dup</sup>	16.50	---	---	---	---	---	---
	02/18/94	12.55	---	---	---	---	---	---
	05/04/94	14.27	---	---	---	---	---	---
	08/10/94	15.60	---	---	---	---	---	---
	11/08/94	12.85	---	---	---	---	---	---
	02/01/95	8.98	---	---	---	---	---	---
	05/10/95	10.16	---	---	---	---	---	---
	05/10/95 <sup>dup</sup>	10.16	---	---	---	---	---	---
	08/24/95	12.98	---	---	---	---	---	---
	11/10/95	15.12	---	---	---	---	---	---
	02/24/96 <sup>i</sup>	---	---	---	---	---	---	---
	05/22/96	10.10	---	---	---	---	---	---
	08/19/96	13.09	---	---	---	---	---	---
12/05/96	13.31	---	---	---	---	---	4.0	
<b>02/20/97</b>	<b>9.55</b>	---	---	---	---	---	<b>4.2</b>	
MW-6	09/21/93	14.64	<50	---	<5,000	<10-50	<10-50	---
	11/19/93 <sup>h</sup>	---	---	---	---	---	---	---
	02/28/94	12.18	---	---	<5,000	---	---	---
	05/04/94	13.62	---	---	<5,000	<2-10	<2-10	---
	08/10/94	14.98	---	---	<5,000	ND	ND	---
	11/08/94 <sup>j</sup>	12.20	---	---	---	---	---	---
	02/01/95	8.70	---	---	---	---	---	---
	02/01/95 <sup>dup</sup>	8.70	---	---	---	---	---	---

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D	TPH-MO	POG	Naphthalene*	2-Methylnaphthalene*	DO (mg/L)
			←————— parts per billion (µg/L) —————→					
	05/10/95	9.86	---	---	---	---	---	---
	08/24/95	12.46	---	---	---	---	---	---
	08/24/95 <sup>dup</sup>	12.46	---	---	---	---	---	---
	11/10/95	14.56	---	---	---	---	---	---
	11/10/95	14.56	---	---	---	---	---	---
	02/24/96 <sup>j</sup>	---	---	---	---	---	---	---
	05/22/96	10.23	---	---	---	---	---	---
	08/19/96	12.61	---	---	---	---	---	---
	12/05/96	12.47	---	---	---	---	---	3.6
	02/20/97	9.85	---	---	---	---	---	3.9
BH-A	09/09/93	16.50	2,900 <sup>e</sup>	---	<5,000	23	13	---
BH-B	09/09/93	15.85	150	---	<5,000	ND	ND	---
BH-C <sup>i</sup>	09/10/93	15.80	100	---	<5,000	ND	ND	---
BH-D <sup>i</sup>	09/10/93	14.2	25,000 <sup>e</sup>	---	20,000	18	75	---
Bailer	08/19/92	---	---	---	---	---	---	---
Blank	11/17/92	---	---	---	---	---	---	---
Trip	02/13/90	---	---	---	---	---	---	---
Blank	05/14/90	---	---	---	---	---	---	---
	09/12/90	---	---	---	---	---	---	---
	03/08/91	---	---	---	---	---	---	---
	06/03/91	---	---	---	---	---	---	---
	08/30/91	---	---	---	---	---	---	---
	03/18/92	---	<50	---	---	---	---	---
	05/28/92	---	---	---	---	---	---	---
	08/19/92	---	---	---	---	---	---	---
	11/17/92	---	---	---	---	---	---	---
	02/12/93	---	---	---	---	---	---	---
	06/10/93	---	---	---	---	---	---	---

**Table 2b. Analytic Results for Groundwater - Non-Gasoline Components - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California (continued)**

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-D	TPH-MO	POG	Naphthalene*		2-Methylnaphthalene*	DO (mg/L)
						parts per billion (µg/L)			
	11/19/93	---	---	---	---	---	---	---	---
	02/28/94	---	---	---	---	---	---	---	---
	05/04/94	---	---	---	---	---	---	---	---
	08/10/94	---	---	---	---	---	---	---	---
	11/08/94	---	---	---	---	---	---	---	---
	02/01/95	---	---	---	---	---	---	---	---
	05/10/95	---	---	---	---	---	---	---	---
	08/24/95	---	---	---	---	---	---	---	---
	11/10/95	---	---	---	---	---	---	---	---

**Abbreviations:**

TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015  
 TPH-MO = Total petroleum hydrocarbons as motor oil by Modified EPA Method 8015  
 POG = Petroleum Oil & Grease by EPA Method 5520B/F  
 \* = Semivolatile organic compounds by EPA Method 8270; only detected compounds tabulated  
 --- = Not analyzed or measured  
 <n = Not detected at detection limits of n ppb  
 ND = Not detected, detection limit not known  
 SPH = Separate-phase hydrocarbons in well, not sampled  
 dup = Duplicate sample  
 mg/L = milligrams per liter  
 ug/L = micrograms per liter  
 ft = feet

**Notes:**

a = Positive results for diesel appear to be less volatile constituents of gasoline  
 b = Positive results for diesel has a typical diesel pattern  
 c = Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene  
 d = Concentration reported as motor oil is due to the presence of a combination of motor oil and a lighter petroleum product of hydrocarbon range C6-C12, possibly gasoline  
 e = Compounds are within chromatographic range of gasoline but are not characteristic of the standard gasoline pattern  
 f = Results include compounds apparently due to gasoline as well as those due to diesel  
 g = Well inaccessible and not sampled  
 h = Well inadvertently not sampled  
 i = Due to chain of custody mis-communication analyses run after holding time expiration  
 j = Concentration reported as motor oil is due to the presence of heavier and lighter petroleum products.

**Table 3. Separate-Phase Hydrocarbon Removal - Shell Service Station  
WIC #204-5508-3301, 6039 College Avenue, Oakland, California**

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Hydrocarbons Removed (lbs)
MW-4 <sup>a</sup>	01/15/92	---	3.12	3.12
	02/15/92	---	3.12	6.24
	03/18/92	0.24	---	6.24
	04/29/92	---	1.50	7.74
	05/28/92	0.12	0.18	7.92
	08/19/92	0.09	0.96	8.86
	11/17/92	---	0.96	9.82
	02/12/93	<0.01	---	9.82
	06/10/93	0.02	0.06	9.88
	08/18/93	0.01	0.06	9.94
	11/19/93	0.01	0.06	10.00
	02/28/94	0.01	0.06	10.06
	05/04/94	0.00	0.06	10.12
	08/10/94	0.02	0.06	10.18
	11/10/94	0.05	0.08	10.26
	02/01/95	0.04	0.06	10.32
	05/10/95	0.06	0.16	10.48
	08/24/95	0.02	---	10.48
	11/10/95	<0.01	---	10.48
	02/24/96	0.03	0.44	10.92
	05/22/96	0.03	---	10.92
	08/19/96	0.02	---	10.92
	12/05/96	0.02	---	10.92
01/08/97	0.02	0.08	11.00	

**Notes:**

- a = Petrotrap separate-phase hydrocarbon skimmer installed in well.
- = Not measured or no hydrocarbons removed.



CAMBRIA

**ATTACHMENT A**

Blaine Quarterly Ground Water Monitoring Report



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

March 18, 1997

Shell Oil Company  
P.O. Box 5278  
Concord, CA 94520-9998

Attn: Alex Perez

Shell WIC #204-5508-3301  
6039 College Avenue  
Oakland, California

1st Quarter 1997

## Quarterly Groundwater Monitoring Report 970220-H-2

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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)
MW-1 *	2/20/97	TOC	—	NONE	—	—	11.60	24.67
MW-2	2/20/97	TOC	—	NONE	—	—	11.47	24.26
MW-3	2/20/97	TOC	—	NONE	—	—	10.60	24.88
MW-4	2/20/97	TOC	—	NONE	—	—	11.91	24.45
MW-5	2/20/97	TOC	—	NONE	—	—	9.55	28.64
MW-6	2/20/97	TOC	—	NONE	—	—	9.85	24.28
T-1	2/20/97	TOC	DRY	NONE	—	—	—	4.28
T-2	2/20/97	TOC	DRY	NONE	—	—	—	8.17

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



**SHELL OIL COMPANY**  
RETAIL ENVIRONMENTAL ENGINEERING - WEST

**CHAIN OF CUSTODY RECORD**

Serial No: 970220-42

Date: 2/20/97

Page 1 of 1

Silo Address: 6039 College Ave., Oakland

WIC#: 204-5508-3301

Shell Engineer: R. Jeff Granberry  
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

Commons:

Sampled by: Printed Name: TROY N. HORNER

**Analysis Required**

LAB: JFEQUINA

CHECK ONE (1) BOX ONLY	CT/DI	TURN AROUND TIME
Quantity Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Clarity/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Normal)
Water Clarity/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6462	
Water Rem. or Sys. O & M <input type="checkbox"/>	6463	
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.  
970220-42

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	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 <u>MTBE</u>	<u>EPA 8270</u>	<u>OIL &amp; GREASE</u>	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
																					1 MW-1
2 MW-2	2/20			X		3						X									
3 MW-3	2/20			X		7						X	X								
4 MW-4	2/20			X		7						X	X								
5 MW-5	2/20			X		3						X									
6 MW-6	2/20			X		3						X									
7 DUP	2/20			X		3						X									
8 EB	2/20			X		3						X									

Relinquished By (signature): <u>Troy N. Horner</u>	Printed Name: <u>TROY N. HORNER</u>	Date: <u>2/21/97</u>	Time: <u>10:25</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>JOHN HOWE</u>	Date: <u>2/21/97</u>	Time: <u>10:25</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>JOHN HOWE</u>	Date: <u>2/21/97</u>	Time: <u></u>	Received (signature): <u>[Signature]</u>	Printed Name: <u></u>	Date: <u></u>	Time: <u></u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u></u>	Date: <u></u>	Time: <u></u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>R. Herling</u>	Date: <u>2/21/97</u>	Time: <u>12:58</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

(415) 364-9600  
(510) 988-9600  
(916) 921-9600

FAX (415) 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/970220-H2

Enclosed are the results from samples received at Sequoia Analytical on February 21, 1997.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9702C62 -01	LIQUID, MW-1	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -02	LIQUID, MW-2	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -03	LIQUID, MW-3	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -03	LIQUID, MW-3	02/20/97	8270 SemiVolatile Organi
9702C62 -03	LIQUID, MW-3	02/20/97	TRPH (SM 5520 B&F)
9702C62 -04	LIQUID, MW-4	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -04	LIQUID, MW-4	02/20/97	8270 SemiVolatile Organi
9702C62 -04	LIQUID, MW-4	02/20/97	TRPH (SM 5520 B&F)
9702C62 -05	LIQUID, MW-5	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -06	LIQUID, MW-6	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -07	LIQUID, DUP	02/20/97	TPGBMW Purgeable TPH/BTEX
9702C62 -08	LIQUID, EB	02/20/97	TPGBMW Purgeable TPH/BTEX

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

Very truly yours,

**SEQUOIA ANALYTICAL**

  
Peggy Rehner  
Project Manager






Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970220-H2  Lab Proj. ID: 9702C62	Sampled: 02/20/97 Received: 02/21/97 Analyzed: see below  Reported: 03/06/97
Attention: Fran Thie		

**LABORATORY ANALYSIS**

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9702C62-03 Sample Desc : LIQUID,MW-3				
TRPH (SM 5520 B&F)	mg/L	02/28/97	5.0	N.D.
Lab No: 9702C62-04 Sample Desc : LIQUID,MW-4				
TRPH (SM 5520 B&F)	mg/L	02/28/97	5.0	8.7

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
\_\_\_\_\_  
Peggy Periner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970220-H2 Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-01	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 03/03/97 Reported: 03/06/97
--	--	---

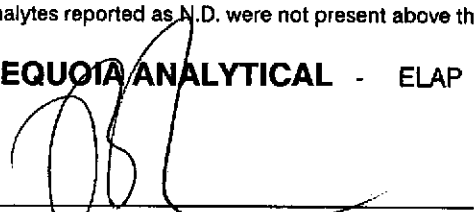
GC Batch Number: GC030397BTEX03A  
Instrument ID: GCHP3

**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:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
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

Client Proj. ID: Shell Oakland/970220-H2  
Sample Descript: MW-2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9702C62-02

Sampled: 02/20/97  
Received: 02/21/97  
Analyzed: 02/28/97  
Reported: 03/06/97

QC Batch Number: GC022897BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	72

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/970220-H2 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-03	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 02/28/97 Reported: 03/06/97
--	--	---

QC Batch Number: GC022897BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	980
Methyl t-Butyl Ether	25	3200
Benzene	5.0	69
Toluene	5.0	7.9
Ethyl Benzene	5.0	14
Xylenes (Total)	5.0	15
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	93

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/970220-H2  
Sample Descript: MW-3  
Matrix: LIQUID  
Analysis Method: EPA 8270  
Lab Number: 9702C62-03

Sampled: 02/20/97  
Received: 02/21/97  
Extracted: 02/27/97  
Analyzed: 02/28/97  
Reported: 03/06/97

QC Batch Number: MS0221978270EXA  
Instrument ID: F4

**Semivolatile Organics (EPA 8270)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzoic Acid	10	N.D.
Benzo(a)anthracene	5.0	N.D.
Benzo(b)fluoranthene	5.0	N.D.
Benzo(k)fluoranthene	5.0	N.D.
Benzo(g,h,i)perylene	5.0	N.D.
Benzo(a)pyrene	5.0	N.D.
Benzyl alcohol	5.0	N.D.
Bis(2-chloroethoxy)methane	5.0	N.D.
Bis(2-chloroethyl)ether	5.0	N.D.
Bis(2-chloroisopropyl)ether	5.0	N.D.
Bis(2-ethylhexyl)phthalate	10	N.D.
4-Bromophenyl phenyl ether	5.0	N.D.
Butyl benzyl phthalate	5.0	N.D.
4-Chloroaniline	10	N.D.
2-Chloronaphthalene	5.0	N.D.
4-Chloro-3-methylphenol	5.0	N.D.
2-Chlorophenol	5.0	N.D.
4-Chlorophenyl phenyl ether	5.0	N.D.
Chrysene	5.0	N.D.
Dibenzo(a,h)anthracene	5.0	N.D.
Dibenzofuran	5.0	N.D.
Di-n-butyl phthalate	10	N.D.
1,2-Dichlorobenzene	5.0	N.D.
1,3-Dichlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	5.0	N.D.
3,3-Dichlorobenzidine	10	N.D.
2,4-Dichlorophenol	5.0	N.D.
Diethyl phthalate	5.0	N.D.
2,4-Dimethylphenol	5.0	N.D.
Dimethyl phthalate	5.0	N.D.
4,6-Dinitro-2-methylphenol	10	N.D.
2,4-Dinitrophenol	10	N.D.
2,4-Dinitrotoluene	5.0	N.D.
2,6-Dinitrotoluene	5.0	N.D.





# Sequoia Analytical

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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970220-H2 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: EPA 8270 Lab Number: 9702C62-03	Sampled: 02/20/97 Received: 02/21/97 Extracted: 02/27/97 Analyzed: 02/28/97 Reported: 03/06/97
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QC Batch Number: MS0221978270EXA  
Instrument ID: F4

Analyte	Detection Limit ug/L	Sample Results ug/L	
Di-n-octyl phthalate	5.0	N.D.	
Fluoranthene	5.0	N.D.	
Fluorene	5.0	N.D.	
Hexachlorobenzene	5.0	N.D.	
Hexachlorobutadiene	5.0	N.D.	
Hexachlorocyclopentadiene	10	N.D.	
Hexachloroethane	5.0	N.D.	
Indeno(1,2,3-cd)pyrene	5.0	N.D.	
Isophorone	5.0	N.D.	
2-Methylnaphthalene	5.0	N.D.	
2-Methylphenol	5.0	N.D.	
4-Methylphenol	5.0	N.D.	
<b>Naphthalene</b>	<b>5.0</b>	<b>23</b>	
2-Nitroaniline	10	N.D.	
3-Nitroaniline	10	N.D.	
4-Nitroaniline	10	N.D.	
Nitrobenzene	5.0	N.D.	
2-Nitrophenol	5.0	N.D.	
4-Nitrophenol	10	N.D.	
n-Nitrosodiphenylamine	5.0	N.D.	
n-Nitroso-di-n-propylamine	5.0	N.D.	
Pentachlorophenol	10	N.D.	
Phenanthrene	5.0	N.D.	
Phenol	5.0	N.D.	
Pyrene	5.0	N.D.	
1,2,4-Trichlorobenzene	5.0	N.D.	
2,4,5-Trichlorophenol	10	N.D.	
2,4,6-Trichlorophenol	5.0	N.D.	
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>	
2-Fluorophenol	21	110	53
Phenol-d5	10	110	37
Nitrobenzene-d5	35	114	79
2-Fluorobiphenyl	43	116	78
2,4,6-Tribromophenol	10	123	76
p-Terphenyl-d14	33	141	97

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

SEQUOIA ANALYTICAL - ELAP #1210

  
Peggy Renner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970220-H2 Sample Descript: MW-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-04	Sampled: 02/20/97 Received: 02/21/97  Analyzed: 03/03/97 Reported: 03/06/97
Attention: Fran Thie		

QC Batch Number: GC030397BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	N.D.
Methyl t-Butyl Ether	500	59000
Benzene	100	490
Toluene	100	N.D.
Ethyl Benzene	100	N.D.
Xylenes (Total)	100	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	79

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/970220-H2 Sample Descript: MW-4 Matrix: LIQUID Analysis Method: EPA 8270 Lab Number: 9702C62-04	Sampled: 02/20/97 Received: 02/21/97 Extracted: 02/27/97 Analyzed: 02/28/97 Reported: 03/06/97
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QC Batch Number: MS0221978270EXA  
Instrument ID: F4

**Semivolatile Organics (EPA 8270)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzoic Acid	10	N.D.
Benzo(a)anthracene	5.0	N.D.
Benzo(b)fluoranthene	5.0	N.D.
Benzo(k)fluoranthene	5.0	N.D.
Benzo(g,h,i)perylene	5.0	N.D.
Benzo(a)pyrene	5.0	N.D.
Benzyl alcohol	5.0	N.D.
Bis(2-chloroethoxy)methane	5.0	N.D.
Bis(2-chloroethyl)ether	5.0	N.D.
Bis(2-chloroisopropyl)ether	5.0	N.D.
Bis(2-ethylhexyl)phthalate	10	N.D.
4-Bromophenyl phenyl ether	5.0	N.D.
Butyl benzyl phthalate	5.0	N.D.
4-Chloroaniline	10	N.D.
2-Chloronaphthalene	5.0	N.D.
4-Chloro-3-methylphenol	5.0	N.D.
2-Chlorophenol	5.0	N.D.
4-Chlorophenyl phenyl ether	5.0	N.D.
Chrysene	5.0	N.D.
Dibenzo(a,h)anthracene	5.0	N.D.
Dibenzofuran	5.0	N.D.
Di-n-butyl phthalate	10	N.D.
1,2-Dichlorobenzene	5.0	N.D.
1,3-Dichlorobenzene	5.0	N.D.
1,4-Dichlorobenzene	5.0	N.D.
3,3-Dichlorobenzidine	10	N.D.
2,4-Dichlorophenol	5.0	N.D.
Diethyl phthalate	5.0	N.D.
2,4-Dimethylphenol	5.0	N.D.
Dimethyl phthalate	5.0	N.D.
4,6-Dinitro-2-methylphenol	10	N.D.
2,4-Dinitrophenol	10	N.D.
2,4-Dinitrotoluene	5.0	N.D.
2,6-Dinitrotoluene	5.0	N.D.





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Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970220-H2  
Sample Descript: MW-4  
Matrix: LIQUID  
Analysis Method: EPA 8270  
Lab Number: 9702C62-04

Sampled: 02/20/97  
Received: 02/21/97  
Extracted: 02/27/97  
Analyzed: 02/28/97  
Reported: 03/06/97

QC Batch Number: MS0221978270EXA  
Instrument ID: F4

Analyte	Detection Limit ug/L	Sample Results ug/L
DI-n-octyl phthalate	5.0	N.D.
Fluoranthene	5.0	N.D.
Fluorene	5.0	N.D.
Hexachlorobenzene	5.0	N.D.
Hexachlorobutadiene	5.0	N.D.
Hexachlorocyclopentadiene	10	N.D.
Hexachloroethane	5.0	N.D.
Indeno(1,2,3-cd)pyrene	5.0	N.D.
Isophorone	5.0	N.D.
2-Methylnaphthalene	5.0	N.D.
2-Methylphenol	5.0	N.D.
4-Methylphenol	5.0	N.D.
<b>Naphthalene</b>	<b>5.0</b>	<b>5.6</b>
2-Nitroaniline	10	N.D.
3-Nitroaniline	10	N.D.
4-Nitroaniline	10	N.D.
Nitrobenzene	5.0	N.D.
2-Nitrophenol	5.0	N.D.
4-Nitrophenol	10	N.D.
n-Nitrosodiphenylamine	5.0	N.D.
n-Nitroso-di-n-propylamine	5.0	N.D.
Pentachlorophenol	10	N.D.
Phenanthrene	5.0	N.D.
Phenol	5.0	N.D.
Pyrene	5.0	N.D.
1,2,4-Trichlorobenzene	5.0	N.D.
2,4,5-Trichlorophenol	10	N.D.
2,4,6-Trichlorophenol	5.0	N.D.

### Surrogates

	Control Limits %		% Recovery
2-Fluorophenol	21	110	50
Phenol-d5	10	110	33
Nitrobenzene-d5	35	114	77
2-Fluorobiphenyl	43	116	79
2,4,6-Tribromophenol	10	123	80
p-Terphenyl-d14	33	141	61

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 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970220-H2 Sample Descript: MW-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-05	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 03/03/97 Reported: 03/06/97
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QC Batch Number: GC030397BTEX02A  
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	N.D.
<b>Methyl t-Butyl Ether</b>	<b>50</b>	<b>5600</b>
Benzene	10	N.D.
Toluene	10	N.D.
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130
		77

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/970220-H2 Sample Descript: MW-6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-06	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 03/03/97 Reported: 03/06/97
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QC Batch Number: GC030397BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	N.D.
Methyl t-Butyl Ether	5.0	480
Benzene	1.0	N.D.
Toluene	1.0	N.D.
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	81

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/970220-H2 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-07	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 02/28/97 Reported: 03/06/97
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QC Batch Number: GC022897BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	74

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/970220-H2 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9702C62-08	Sampled: 02/20/97 Received: 02/21/97 Analyzed: 02/28/97 Reported: 03/06/97
Attention: Fran Thie		

QC Batch Number: GC022897BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	72

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Perner  
Project Manager





Sequoia  
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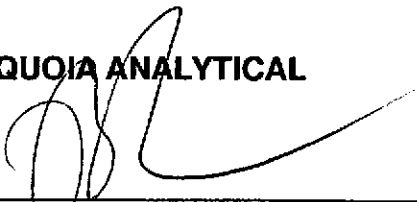
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FAX (916) 921-0100

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell Oakland/970220-H2 Lab Proj. ID: 9702C62	Received: 02/21/97 Reported: 03/06/97
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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 22 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

  
\_\_\_\_\_  
Peggy Renner  
Project Manager





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

Client Project ID: Shell Oakland/970220-H2  
 Matrix: Liquid

Work Order #: 9702C62

Reported: Mar 13, 1997

**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b>	TRPH
<b>QC Batch#:</b>	OP0225971664EXA
<b>Analy. Method:</b>	5520 BF
<b>Prep. Method:</b>	EPA 3510

**Analyst:** J. Aquino  
**MS/MSD #:** BLK022597  
**Sample Conc.:** N.D.  
**Prepared Date:** 2/25/97  
**Analyzed Date:** 2/26/97  
**Instrument I.D.#:** Manual  
**Conc. Spiked:** 10 mg/L

**Result:** 9.5  
**MS % Recovery:** 95

**Dup. Result:** 9.6  
**MSD % Recov.:** 96

**RPD:** 1.0  
**RPD Limit:** 0-50

**LCS #:** BLK022797  
**Prepared Date:** 2/25/97  
**Analyzed Date:** 2/26/97  
**Instrument I.D.#:** Manual  
**Conc. Spiked:** 10 mg/L

**LCS Result:** 7.7  
**LCS % Recov.:** 77

<b>MS/MSD</b>	
<b>LCS</b>	70-110
<b>Control Limits</b>	

**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

9702C62.BLA <1>





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

Client Project ID: Shell Oakland/970220-H2  
Matrix: Liquid

Work Order #: 9702C62 01

Reported: Mar 13, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC030397BTEX03A	GC030397BTEX03A	GC030397BTEX03A	GC030397BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	GW9702C3603C	GW9702C3603C	GW9702C3603C	GW9702C3603C
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/3/97	3/3/97	3/3/97	3/3/97
Analyzed Date:	3/3/97	3/3/97	3/3/97	3/3/97
Instrument I.D.#:	GCHP-03	GCHP-03	GCHP-03	GCHP-03
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	12	12	12	32
MS % Recovery:	120	120	120	107
Dup. Result:	11	11	11	30
MSD % Recov.:	110	110	110	100
RPD:	8.7	8.7	8.7	6.5
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK030397	BLK030397	BLK030397	BLK030397
Prepared Date:	3/3/97	3/3/97	3/3/97	3/3/97
Analyzed Date:	3/3/97	3/3/97	3/3/97	3/3/97
Instrument I.D.#:	GCHP-03	GCHP-03	GCHP-03	GCHP-03
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	11	11	11	31
LCS % Recov.:	110	110	110	103

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

**SEQUOIA ANALYTICAL**

Reggy 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

9702C62.BLA <2>





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

Client Project ID: Shell Oakland/970220-H2  
 Matrix: Liquid

Work Order #: 9702C62 04-06

Reported: Mar 13, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC030397BTEX02A	GC030397BTEX02A	GC030397BTEX02A	GC030397BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	A. MirafTAB	A. MirafTAB	A. MirafTAB	A. MirafTAB
MS/MSD #:	W9702C3603B	W9702C3603B	W9702C3603B	W9702C3603B
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/3/97	3/3/97	3/3/97	3/3/97
Analyzed Date:	3/3/97	3/3/97	3/3/97	3/3/97
Instrument I.D.#:	GCHP-02	GCHP-02	GCHP-02	GCHP-02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.3	8.6	8.6	27
MS % Recovery:	93	86	86	90
Dup. Result:	9.6	8.9	9.0	29
MSD % Recov.:	96	89	90	97
RPD:	3.2	3.4	4.5	7.1
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK030397	BLK030397	BLK030397	BLK030397
Prepared Date:	3/3/97	3/3/97	3/3/97	3/3/97
Analyzed Date:	3/3/97	3/3/97	3/3/97	3/3/97
Instrument I.D.#:	GCHP-02	GCHP-02	GCHP-02	GCHP-02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	8.5	8.4	8.5	27
LCS % Recov.:	85	84	85	90

MS/MSD	60-140	60-140	60-140	60-140
LCS	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

9702C62.BLA <4>





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

Client Project ID: Shell Oakland/970220-H2  
Matrix: Liquid

Work Order #: 9702C62 02,03,07,08

Reported: Mar 13, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC022897BTEX02A	GC022897BTEX02A	GC022897BTEX02A	GC022897BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	W9702C3302B	W9702C3302B	W9702C3302B	W9702C3302B
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/28/97	2/28/97	2/28/97	2/28/97
Analyzed Date:	2/28/97	2/28/97	2/28/97	2/28/97
Instrument I.D.#:	GCHP-02	GCHP-02	GCHP-02	GCHP-02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.8	8.5	8.5	27
MS % Recovery:	88	85	85	90
Dup. Result:	11	9.3	9.4	30
MSD % Recov.:	110	93	94	100
RPD:	22	9.0	10	11
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK022897	BLK022897	BLK022897	BLK022897
Prepared Date:	2/28/97	2/28/97	2/28/97	2/28/97
Analyzed Date:	2/28/97	2/28/97	2/28/97	2/28/97
Instrument I.D.#:	GCHP-02	GCHP-02	GCHP-02	GCHP-02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	8.3	8.0	8.0	25
LCS % Recov.:	83	80	80	83

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

**SEQUOIA ANALYTICAL**

Peggy Penner  
Project Manager

**Please Note:**

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

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Blaine Tech Services, Inc. Client Project ID: Shell Oakland/970220-H2  
 1680 Rogers Avenue Matrix: Liquid  
 San Jose, CA 95112  
 Attention: Fran Thie Work Order #: 9702C62 03,04 Reported: Mar 13, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Phenol	Chlorophenol	1,4-Dichloro-Benzene	N-Nitroso-Di-N-Propylamine
QC Batch#:	MS0221978270EXA	MS0221978270EXA	MS0221978270EXA	MS0221978270EXA
Analy. Method:	EPA 8270	EPA 8270	EPA 8270	EPA 8270
Prep. Method:	EPA 3520	EPA 3520	EPA 3520	EPA 3520

Analyst:	B. Pitamah	B. Pitamah	B. Pitamah	B. Pitamah
MS/MSD #:	BLK022197BS/BS	BLK022197BS/BS	BLK022197BS/BS	BLK022197BS/BS
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/21/97	2/21/97	2/21/97	2/21/97
Analyzed Date:	2/24/97	2/24/97	2/24/97	2/24/97
Instrument I.D.#:	F4	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L	200 µg/L
Result:	68	128	99	148
MS % Recovery:	34	64	50	74
Dup. Result:	53	102	91	147
MSD % Recov.:	27	51	46	74
RPD:	25	23	8.4	0.7
RPD Limit:	0-30	0-30	0-30	0-30

LCS #:	WB0227BS	WB0227BS	WB0227BS	WB0227BS
Prepared Date:	2/27/97	2/27/97	2/27/97	2/27/97
Analyzed Date:	2/28/97	2/28/97	2/28/97	2/28/97
Instrument I.D.#:	F4	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L	200 µg/L
LCS Result:	72	144	120	156
LCS % Recov.:	36	72	60	78

MS/MSD LCS Control Limits	12-110	27-123	36-97	41-116
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Blaine Tech Services, Inc. Client Project ID: Shell Oakland/970220-H2  
 1680 Rogers Avenue Matrix: Liquid  
 San Jose, CA 95112 Work Order #: 9702C62 03,04 Reported: Mar 13, 1997  
 Attention: Fran Thie

**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b>	1,2,4-Trichloro-Benzene	4-Chloro-3-Methylphenol	Acenaphthene	4-Nitrophenol
<b>QC Batch#:</b>	MS0221978270EXA	MS0221978270EXA	MS0221978270EXA	MS0221978270EXA
<b>Analy. Method:</b>	EPA 8270	EPA 8270	EPA 8270	EPA 8270
<b>Prep. Method:</b>	EPA 3520	EPA 3520	EPA 3520	EPA 3520

<b>Analyst:</b>	B. Pitamah	B. Pitamah	B. Pitamah	B. Pitamah
<b>MS/MSD #:</b>	BLK022197BS/BSD	BLK022197BS/BSD	BLK022197BS/BSD	BLK022197BS/BSD
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.
<b>Prepared Date:</b>	2/21/97	2/21/97	2/21/97	2/21/97
<b>Analyzed Date:</b>	2/24/97	2/24/97	2/24/97	2/24/97
<b>Instrument I.D.#:</b>	F4	F4	F4	F4
<b>Conc. Spiked:</b>	200 µg/L	200 µg/L	200 µg/L	200 µg/L
<b>Result:</b>	127	150	131	25
<b>MS % Recovery:</b>	64	75	66	13
<b>Dup. Result:</b>	120	131	131	21
<b>MSD % Recov.:</b>	60	66	66	11
<b>RPD:</b>	5.7	14	0.0	17.0
<b>RPD Limit:</b>	0-30	0-30	0-30	0-30

<b>LCS #:</b>	WB0227BS	WB0227BS	WB0227BS	WB0227BS
<b>Prepared Date:</b>	2/27/97	2/27/97	2/27/97	2/27/97
<b>Analyzed Date:</b>	2/28/97	2/28/97	2/28/97	2/28/97
<b>Instrument I.D.#:</b>	F4	F4	F4	F4
<b>Conc. Spiked:</b>	200 µg/L	200 µg/L	200 µg/L	200 µg/L
<b>LCS Result:</b>	138	152	140	36
<b>LCS % Recov.:</b>	69	76	70	18

<b>MS/MSD LCS Control Limits</b>	39-98	23-97	46-118	10-80
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**SEQUOIA ANALYTICAL**  
  
 Peggy Penner  
 Project Manager

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<b>Blaine Tech Services, Inc.</b> 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	<b>Client Project ID: Shell Oakland/970220-H2</b> <b>Matrix: Liquid</b>	<b>Work Order #: 9702C62 03,04</b>	<b>Reported: Mar 13, 1997</b>
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**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b>	2,4-Dinitro-Toluene	Pentachloro-Toluene	Pyrene
<b>QC Batch#:</b>	MS0221978270EXA	MS0221978270EXA	MS0221978270EXA
<b>Analy. Method:</b>	EPA 8270	EPA 8270	EPA 8270
<b>Prep. Method:</b>	EPA 3520	EPA 3520	EPA 3520

<b>Analyst:</b>	B. Pitamah	B. Pitamah	B. Pitamah
<b>MS/MSD #:</b>	BLK022197BS/BS	BLK022197BS/BS	BLK022197BS/BS
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.
<b>Prepared Date:</b>	2/21/97	2/21/97	2/21/97
<b>Analyzed Date:</b>	2/24/97	2/24/97	2/24/97
<b>Instrument I.D.#:</b>	F4	F4	F4
<b>Conc. Spiked:</b>	200 µg/L	200 µg/L	200 µg/L
<b>Result:</b>	126	134	178
<b>MS % Recovery:</b>	63	67	89
<b>Dup. Result:</b>	130	130	178
<b>MSD % Recov.:</b>	65	65	89
<b>RPD:</b>	3.1	3.0	0.0
<b>RPD Limit:</b>	0-30	0-30	0-30

<b>LCS #:</b>	WB0227BS	WB0227BS	WB0227BS
<b>Prepared Date:</b>	2/27/97	2/27/97	2/27/97
<b>Analyzed Date:</b>	2/28/97	2/28/97	2/28/97
<b>Instrument I.D.#:</b>	F4	F4	F4
<b>Conc. Spiked:</b>	200 µg/L	200 µg/L	200 µg/L
<b>LCS Result:</b>	148	119	170
<b>LCS % Recov.:</b>	74	59	85

<b>MS/MSD</b>			
<b>LCS</b>	24-96	9-103	26-127
<b>Control Limits</b>			

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Project Manager

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