



June 30, 1996

Scott Seery  
Alameda County Department of  
Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

ENVIRONMENTAL  
PROTECTION  
96 JUL 15 AM 8:56

Re: **Second Quarter 1996**  
Shell Service Station  
WIC #204-5508-3301  
6039 College Avenue  
Oakland, California  
WA Job #81-0618-206

Dear Mr. Seery:

This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

**Second Quarter 1996 Activities:**

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured depths to ground water and collected ground water samples from the site wells. The BTS report describing these activities and the analytic results for ground water are included as Attachment A.
- Weiss Associates (WA) compiled the ground water elevation and analytic data (Tables 1 and 2) and prepared a map showing ground water elevations and benzene concentrations (Figure 2). SPH removal data is included in Table 3. To date, about 11 pounds of SPHs have been removed from the subsurface.

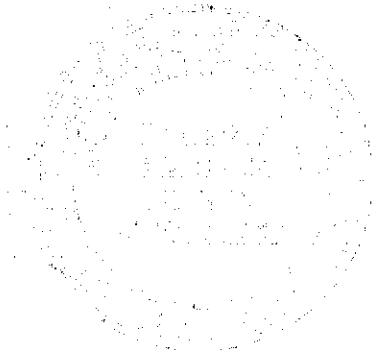
**Anticipated Third Quarter 1996 Activities:**


- WA will submit a report presenting the results of third quarter 1996 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

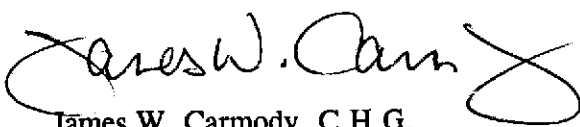
Scott Seery  
June 30, 1996

Please call if you have any questions.

Sincerely,  
Weiss Associates



  
Grady S. Glasser  
Technical Assistant

  
James W. Carmody, C.H.G.  
Senior Project Hydrogeologist

Attachments: A - BTS Ground Water Monitoring Report

cc: R. Jeff Granberry, Shell Oil Products Company, P.O. Box 4023, Concord, CA 94524  
Tom Callaghan, San Francisco Bay Regional Water Quality Control Board, 2101 Webster  
Street, Oakland, CA 94612

GSG/JWC:all  
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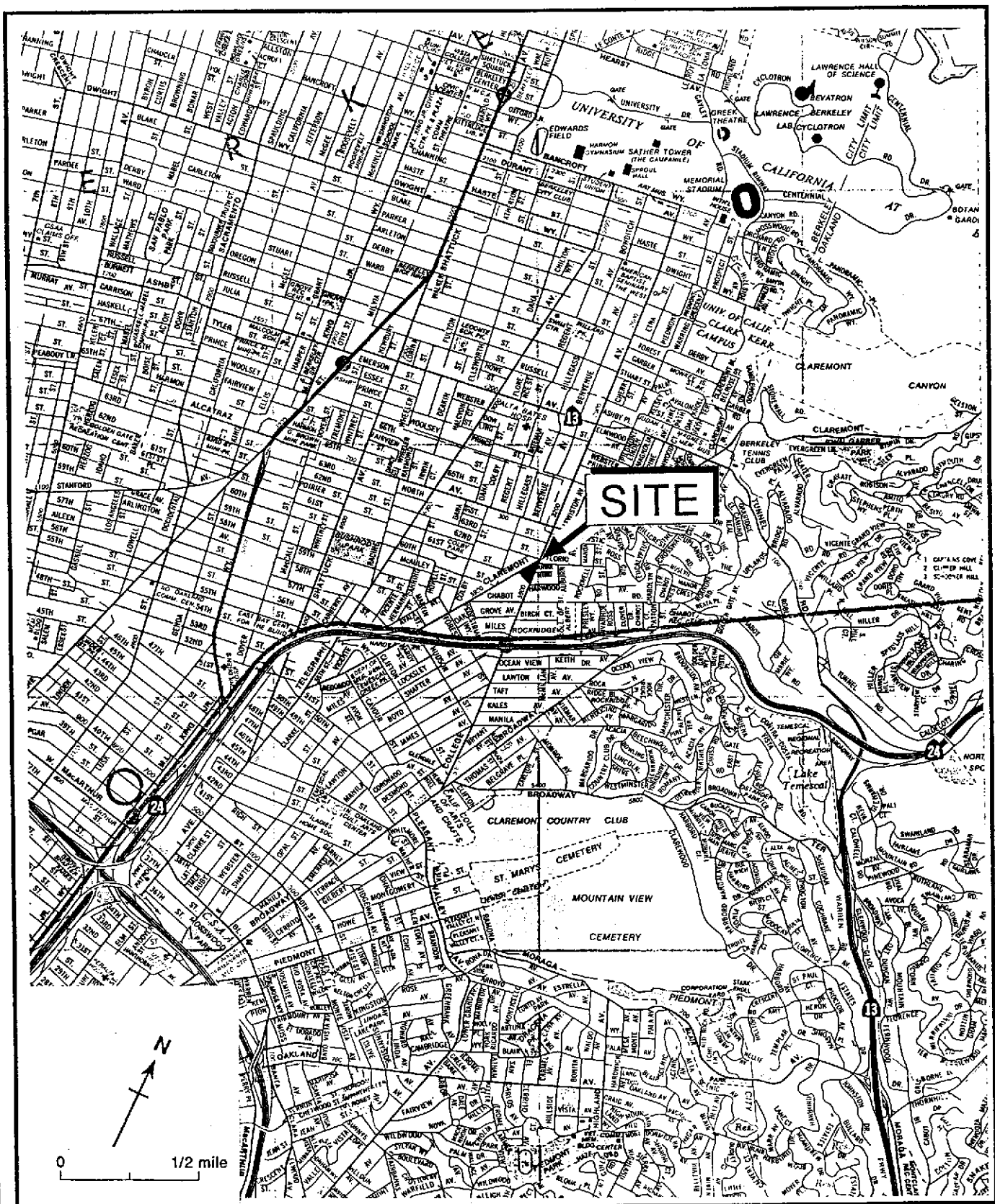


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

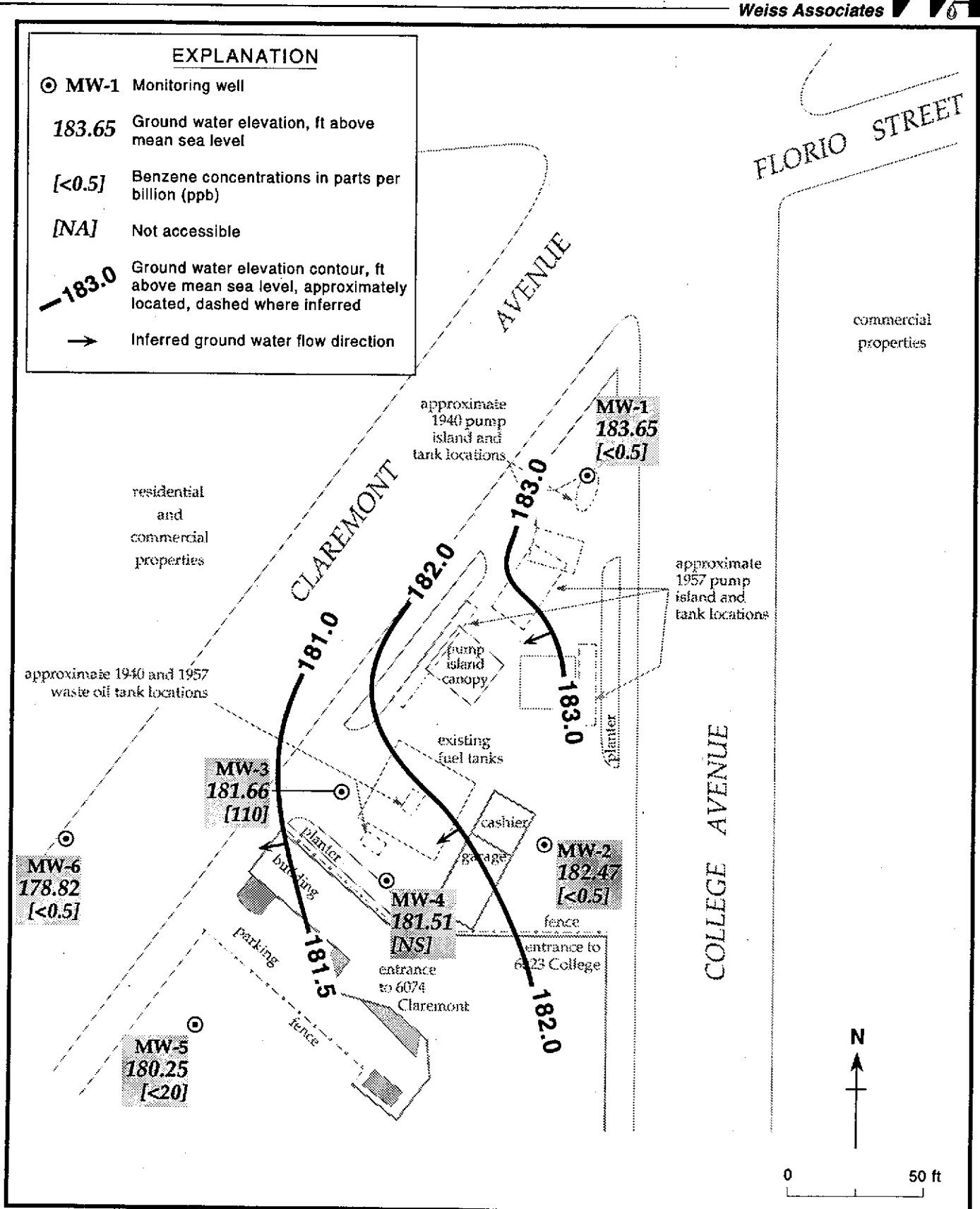


Figure 2. Monitoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - May 22, 1996 - Shell Service Station WIC #204-5508-3301, 6039 College Avenue, Oakland, California

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		
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
	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

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>
	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
	<b>05/22/96</b>		<b>11.80</b>		<b>182.47</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
	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
	<b>05/22/96</b>		<b>10.86</b>		<b>181.66</b>

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>
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		
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		



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>
	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
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

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
- = Data not available



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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	MTBE	parts per billion (µg/L)				SVOCs	
								B	E	T	X		
MW-1	02/13/90	17.73	95	650	770	---	---	ND	0.37	0.67	3.2	---	
	05/14/90	18.92	95	ND	770	---	---	0.70	0.71	0.57	3.5	---	
	09/12/90	19.81	ND	84	ND	---	---	ND	ND	ND	ND	---	
	11/27/90	20.39	---	---	---	---	---	---	---	---	---	---	
	03/08/91	16.85	ND	50	ND	---	---	ND	ND	ND	ND	---	
	06/03/91	17.82	ND	ND	ND	---	---	ND	ND	ND	ND	---	
	08/30/91	19.87	16.85	520	ND	---	---	ND	ND	ND	ND	---	
	11/22/91	20.58	<50	<50	<500	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	03/18/92	13.55	<30	<50	---	---	---	<0.3	<0.3	<0.3	<0.3	<0.3	---
	05/28/92	17.08	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	08/19/92	19.07	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	11/17/92	20.11	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	02/12/93	12.10	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	06/10/93	14.87	<50	---	---	---	---	<0.5	<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	<0.5	---
	08/18/93	16.90	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	11/19/93	19.72	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	02/18/94	15.08	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	1.7	---
	05/04/94	17.20	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	08/10/94	18.76	<50	---	---	---	---	<0.5	<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	<0.5	---
	11/08/94	16.00	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	02/01/95	10.18	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	05/10/95	11.88	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	08/24/95	15.60	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	11/10/95	18.24	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
	02/24/96	9.88	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	---
05/22/96	12.24	<50	---	---	---	---	<2.5	<0.5	<0.5	<0.5	<0.5	---	
MW-2	02/13/90	16.90	ND	560	ND	---	---	ND	ND	ND	ND	---	
	05/14/90	18.01	ND	ND	ND	---	---	ND	ND	ND	ND	---	
	09/12/90	19.00	ND	ND	ND	---	---	ND	ND	ND	ND	---	
	11/27/90	19.44	ND	ND	ND	---	---	ND	ND	ND	ND	---	

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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	parts per billion (µg/L)					SVOCs
							MTBE	B	E	T	X	
	03/08/91	15.96	ND	ND	ND	---	---	ND	ND	ND	ND	---
	06/03/91	17.00	ND	ND	ND	---	---	ND	ND	ND	ND	---
	08/30/91	18.95	ND	ND	ND	---	---	ND	ND	ND	ND	---
	11/22/91	19.55	<50	<50	<500	---	---	<0.5	<0.5	<0.5	<0.5	---
	03/18/92	12.91	<30	---	---	---	---	<0.3	<0.3	<0.3	<0.3	---
	05/28/92	16.25	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/19/92	18.21	<50	---	---	---	---	<0.5	1.2	2	1.9	---
	11/17/92	19.15	<50	---	---	---	---	<0.5	1.2	2	1.9	---
	02/12/93 <sup>dup</sup>	11.60	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/12/93	11.60	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	06/10/93	14.14	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/18/93	16.10	<50	---	---	---	---	<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	---
	11/19/93	18.77	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/18/94	14.55	<50	---	---	---	---	<0.5	<0.5	<0.5	1.6	---
	05/04/94	16.34	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/10/94	15.79	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/08/94	15.04	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/01/95	10.08	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	05/10/95	11.68	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	08/24/95	14.94	<50	---	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/10/95	13.36	<50	---	---	---	---	1.7	1.4	0.8	4.9	---
	02/24/96	9.90	<50	---	---	---	---	<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	---
	05/22/96	11.80	<50	---	---	---	<2.5	<0.5	<0.5	<0.5	<0.5	---
MW-3	02/13/90	15.81	4,700	3,100	3,000	---	---	320	110	29	33	---
	02/13/90 <sup>dup</sup>	15.81	4,600	4,500	8,300	---	---	380	160	8.6	57	---
	05/14/90	16.97	1,400	620	40,000	---	---	130	40	8.6	17	---
	05/14/90 <sup>dup</sup>	16.97	8,200	660	10,000	---	---	120	38	31	13	---
	09/12/90	18.78	2,000	1,500	19,000	---	---	58	16	5.8	15	---
	11/27/90	18.27	540	240	460	---	---	18	8.7	1.5	2.5	---
	03/08/91	14.86	3,400	2,100	ND	---	---	630	270	33	18	---

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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	MTBE	B	E	T	X	SVOCs
	06/03/91	15.84	1,700	690 <sup>a</sup>	ND	---	---	260	98	13	24	---
	08/30/91	17.79	870	370 <sup>b</sup>	500	---	---	44	10	6.1	2.9	---
	11/22/91	18.40	310	140	500	---	---	18	3.3	1.2	2.9	---
	03/18/92	12.03	67,100	1,900	20,000	---	---	620	220	28	38	---
	05/28/92	15.16	2,300	1,100 <sup>c</sup>	4,600	---	---	200	71	9	17	---
	08/19/92	17.03	5,700	1,000 <sup>c</sup>	1,800	---	---	71	52	77	130	---
	11/17/92	17.94	3,600	160 <sup>c</sup>	1,200	---	---	16	24	8.6	50	---
	02/12/93	9.16	4,700	560 <sup>c</sup>	< 50	---	---	820	130	58	77	---
	06/10/93	13.20	2,200	---	940 <sup>d</sup>	---	---	310	89	23	23	---
	08/18/93	14.93	260	---	460 <sup>d</sup>	---	---	27	7.0	2.0	2.2	---
	11/19/93	17.58	1,500 <sup>e</sup>	---	960 <sup>d</sup>	< 5,000	---	24	37	54	17	---
	02/18/94	13.30	2,700	---	1,600	< 5,000	---	65	16	5.2	6.3	---
	02/18/94 <sup>dup</sup>		3,100	---	2,200	< 5,000	---	82	19	6.7	7.9	---
	05/04/94	15.25	780	---	710	< 5,000	---	120	21	7.5	6.9	f
	05/04/94 <sup>dup</sup>	15.25	920	---	1,600	< 5,000	---	120	22	7.7	7.1	g
	08/10/94	16.63	920	---	< 500	< 5,000	---	20	3.0	2.3	2.2	r
	11/08/94	13.88	1,300	---	1,300	---	---	180	7.0	16	12	---
	11/08/94 <sup>dup</sup>	13.88	1,200	---	730	---	---	170	7.2	15	11	---
	02/01/95	9.25	1,400	---	900 <sup>f</sup>	---	---	210	11	8.5	8.7	t
	05/10/95	10.76	460	---	---	< 5,000	---	97	1.0	10	19	r
	08/24/95	13.90	640	---	---	< 5,000	---	68	14	21	19	u
	11/10/95	16.20	350	---	---	< 5,000	---	15	1.2	2.3	2.5	---
	02/24/96	8.93	3,300	---	---	< 5,000	---	240	38	53	55	---
	05/22/96	10.86	1,300	---	---	< 5,000	---	110	< 10	15	< 10	v
	05/22/96 <sup>dup</sup>	10.86	1,300	---	---	< 5,000	---	110	< 10	17	< 10	w
												naphthalene + 2-methyl naphthalene
MW-4	02/13/90	16.73	ND	1,200	3,000	---	---	ND	ND	ND	ND	---
	05/14/90	17.88	650	350	12,000	---	---	160	1.9	7	3.1	---
	09/12/90	17.85	440	260	2,600	---	---	91	0.75	1.1	0.79	---
	09/12/90 <sup>dup</sup>	17.85	520	1,100	16,000	---	---	85	0.71	0.71	0.81	---
	11/27/90	19.16	470	2,400	1,000	---	---	64	0.80	1.2	2.7	---
	03/08/91	15.77	1,100	2,600	15,000	---	---	330	88	3.5	5.8	---
	06/03/91	16.77	670 <sup>b</sup>	1,100 <sup>i</sup>	ND	---	---	240	1.6	2.3	2.3	---

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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	parts per billion (µg/L)					SVOCs
							←	←	←	←	←	
	08/30/91	18.71	570	280 <sup>l</sup>	2,000	---	---	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	---	---	29,000	---	100	23	22	38	---
	02/24/96	10.44	---	---	---	---	---	---	---	---	---	---
MW-5	08/30/91	16.74	ND	80	ND	---	---	ND	ND	ND	ND	---
	11/22/91	17.27	<50	<50	<500	---	---	<0.5	<0.5	<0.5	<0.5	---
	03/18/92	11.28	<30	<50	---	---	---	<0.3	<0.3	<0.3	<0.3	---
	05/28/92 <sup>l</sup>	---	---	---	---	---	---	---	---	---	---	---
	08/19/92	15.99	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	11/17/92	16.84	<50	<50	---	---	---	<0.5	<0.5	<0.5	<0.5	---
	02/12/93	10.30	<50	<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	---

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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	MTBE	parts per billion (µg/L)				SVOCs
								B	E	T	X	
	08/10/94	15.60	70 <sup>o</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>j</sup>	---	---	---	---	---	---	---	---	---	---	---
	05/22/96	10.10	<2,000	---	---	---	9,800	<20	<20	<20	<20	---
MW-6	09/21/93	14.64	<50	<50	---	<5,000	---	<0.5	<0.5	<0.5	<0.5	<10-50
	11/19/93 <sup>k</sup>	---	---	---	---	---	---	---	---	---	---	---
	02/28/94	12.18	98 <sup>l</sup>	---	---	<5,000	---	<0.5	<0.5	<0.5	<0.5	---
	05/04/94	13.62	<50	---	---	<5,000	---	<0.5	<0.5	<0.5	<0.5	<2-10
	08/10/94	14.98	80 <sup>o</sup>	---	---	<5,000	---	<0.5	<0.5	<0.5	<0.5	r
	11/08/94 <sup>l</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	---
	05/10/95	9.86	---	---	---	---	---	---	---	---	---	---
	08/24/95	12.46	80	---	---	---	---	<0.5	1.8	<0.5	2.4	---
	08/24/95 <sup>dup</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>j</sup>	---	---	---	---	---	---	---	---	---	---	---
	05/22/96	10.23	<50	---	---	---	200	<0.5	<0.5	<0.5	<0.5	---
BH-A	09/09/93	16.50	4,900	2,900 <sup>c</sup>	---	<5,000	---	18	54	<5	11	m
BH-B	09/09/93	15.85	<50	150	---	<5,000	---	<0.5	<0.5	<0.5	<0.5	ND
BH-C <sup>n</sup>	09/10/93	15.80	640 <sup>o</sup>	100	---	<5,000	---	3.5	0.6	<0.5	<0.5	ND
BH-D <sup>n</sup>	09/10/93	14.2	24,000 <sup>o</sup>	25,000 <sup>c</sup>	---	20,000	---	720	44	86	11	p



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

Well/ Boring ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D	TPH-MO	POG	parts per billion (µg/L)				SVOCs	
							MTBE	B	E	T		X
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	<50	---	---	---	<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	---
	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	---
DTSC MCLs			NE	NE	NE	---	---	1	680	100 <sup>a</sup>	1,750	---

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

**Abbreviations:**

- TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
- TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
- TPH-MO = Total petroleum hydrocarbons as motor oil by 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
- POG = Petroleum Oil & Grease by EPA Method 5520B/F
- SVOCs = Semivolatile organic compounds by EPA Method 8270
- NE = Not established
- DTSC MCLs = California Department of Toxic Substances Control Maximum Contaminant Levels drinking water
- = 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 = 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 = Concentration reported as gasoline is due to the presence of gasoline and a discrete peak not indicative of gasoline
- f = Compounds are within chromatographic range of gasoline but are not characteristic of the standard gasoline pattern
- g = Results include compounds apparently due to gasoline as well as those due to diesel
- h = 6.5 ppb Naphthalene detected
- i = 11.0 ppb Naphthalene detected
- j = Well inaccessible and not sampled
- k = Well inadvertently not sampled
- l = The concentration reported as gasoline is primarily due to the presence of a discrete peak not indicative of gasoline
- m = 13 ppb-methylnaphthalene and 23 ppb naphthalene detected
- n = Due to chain of custody mis-communication analyses run after holding time expiration
- o = The positive result has an atypical pattern for gasoline analysis
- p = 75 ppb 2-methylnaphthalene and 18 ppb naphthalene detected
- q = DTSC recommended action level; MCL not established
- r = Not detected at detection limits between 10 and 50 ppb
- s = Concentration reported as motor oil is due to the presence of heavier and lighter petroleum products.
- t = 27 ppb Naphthalene detected
- u = 12 ppb Naphthalene detected
- v = 37 ppb Napthalene, 8.4 ppb 2methylnaphthalene detected.
- w = 37 ppb Napthalene, 7.8 ppb 2methylnaphthalene detected.

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

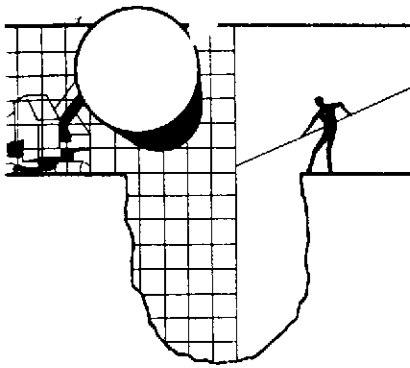
Notes:

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



**ATTACHMENT A**

**BTS GROUND WATER MONITORING REPORT**



# BLAINE TECH SERVICES INC.

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

June 10, 1996

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

Attn: R. Jeff Granberry

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

2nd Quarter 1996

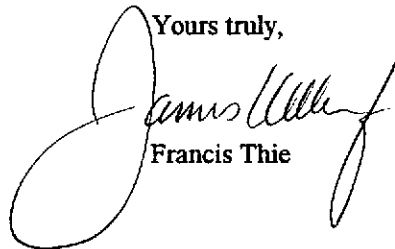
## Quarterly Groundwater Monitoring Report 960522-A-2

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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) 995-5535 ext. 201.

Yours truly,



Francis Thie

attachments: Table of Well Gauging Data  
Chain of Custody  
Field Data Sheets  
Certified Analytical Report

cc: Weiss Associates  
5500 Shellmound Street  
Emeryville, CA 94608-2411  
Attn: Grady Glasser

(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	5/22/96	TOC	--	NONE	--	--	12.24	24.57
MW-2	5/22/96	TOC	--	NONE	--	--	11.80	24.35
MW-3 *	5/22/96	TOC	SHEEN/ODOR	--	--	--	10.86	24.77
MW-4	5/22/96	TOC	FREE PRODUCT	11.85	0.03	--	11.88	--
MW-5	5/22/96	TOC	--	NONE	--	--	10.10	28.57
MW-6	5/22/96	TOC	--	NONE	--	--	10.23	24.20
T-1	5/22/96	TOC	DRY	NONE	--	--	--	4.37
T-2	5/22/96	TOC	DRY	NONE	--	--	--	8.25

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



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

**CHAIN OF CUSTODY RECORD**

Serial No: 960522-AZ

Date: 5-22-96

Page 1 of 1

Site Address: 6039 College Ave., Oakland

**Analysis Required**

LAB: SEQ U01A

WICH: 204-5508-3301

Shell Engineer: Ben Kirk R. Jeff Granbery Phone No.: (510) 675-6168  
Fax #: 675-6160

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

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

Comments:

Sampled by: L. VALENTINE  
Printed Name:

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	EPA 8270	Oil & Grease	Asbestos	Container Size	Preparation Used	Composite Y/N	

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6441	48 hours <input type="checkbox"/>
Soil Cleanup/Disposal <input type="checkbox"/>	6442	15 days <input checked="" type="checkbox"/> (Normal)
Water Cleanup/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	6462	NOTE: Notify lab as soon as possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M <input type="checkbox"/>	6463	
Other <input type="checkbox"/>		

Sample ID	Date	Sludge	Soil	Water	Air	No. of confs.	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	EPA 8270	Oil & Grease	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1	5/22			X		3						X								
MW-2				X		3						X								
MW-3				X		7						X	X	Y						9605 F38
MW-5				X		3						X								
MW-6				X		3						X								
ETB				X		3						X								
DUP				X		7						X	X	X						

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>L. VALENTINE</u>	Date: <u>5-23-96</u>	Time: <u>11:30</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>James Howie</u>	Date: <u>5-23-96</u>	Time: <u>11:50</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>James Howie</u>	Date: <u>5-23-96</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> </u>	Date: <u> </u>	Time: <u> </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 Technical Services  
985 Timothy Drive  
San Jose, CA 95133  
Attention: Jim Keller

Project: Shell/Oakland/960522-A2

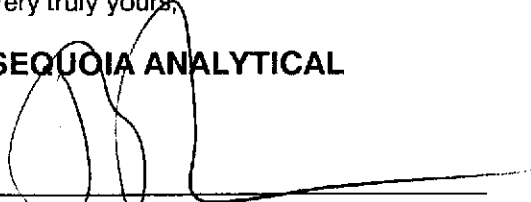
Enclosed are the results from samples received at Sequoia Analytical on May 23, 1996.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9605F38 -01	LIQUID, MW-1	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -02	LIQUID, MW-2	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -03	LIQUID, MW-3	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -03	LIQUID, MW-3	05/22/96	8270 SemiVolatile Organi
9605F38 -03	LIQUID, MW-3	05/22/96	Tot Oil&Grease (5520B Mod)
9605F38 -04	LIQUID, MW-5	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -05	LIQUID, MW-6	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -06	LIQUID, EB	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -07	LIQUID, DUP	05/22/96	TPGBMW Purgeable TPH/BTEX
9605F38 -07	LIQUID, DUP	05/22/96	8270 SemiVolatile Organi
9605F38 -07	LIQUID, DUP	05/22/96	Tot Oil&Grease (5520B Mod)

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 Services  
1555 Timothy Drive  
San Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Lab Proj. ID: 9605F38

Sampled: 05/22/96  
Received: 05/23/96  
Analyzed: see below

Attention: Jim Keller

Reported: 06/10/96

**LABORATORY ANALYSIS**

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9605F38-03 Sample Desc: LIQUID,MW-3				
Tot Oil&Grease (5520B Mod)	mg/L	06/04/96	5.0	N.D.
Lab No: 9605F38-07 Sample Desc: LIQUID,DUP				
Tot Oil&Grease (5520B Mod)	mg/L	06/04/96	5.0	N.D.

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9605F38-01	Sampled: 05/22/96 Received: 05/23/96  Analyzed: 05/24/96 Reported: 06/10/96
Attention: Jim Keller		

QC Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

**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	93

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

**SEQUOIA ANALYTICAL** - ELAP #1210



Peggy Penner  
Project Manager





Line Technical Services  
15 Timothy Drive  
San Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Sample Descript: MW-2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9605F38-02

Sampled: 05/22/96  
Received: 05/23/96  
Analyzed: 05/24/96  
Reported: 06/10/96

Attention: Jim Keller

Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Diethyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
o-Xyl Benzene	0.50	N.D.
m-Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Surrogates		
1,2-Dichlorobenzene	Control Limits % 70	% Recovery 95

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Gregory Penner  
Project Manager







Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9605F38-03	Sampled: 05/22/96 Received: 05/23/96  Analyzed: 05/24/96 Reported: 06/10/96
--	--	---

QC Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	1300
Methyl t-Butyl Ether	50	3500
Benzene	10	110
Toluene	10	15
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	N.D.
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70      130	120

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Penner  
Project Manager





laine Technical Services  
35 Timothy Drive  
San Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Sample Descript: MW-3  
Matrix: LIQUID  
Analysis Method: EPA 8270  
Lab Number: 9605F38-03

Sampled: 05/22/96  
Received: 05/23/96  
Extracted: 05/24/96  
Analyzed: 05/24/96  
Reported: 06/10/96

Attention: Jim Keller

Batch Number: MS0522968270EXA  
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.
Bromophenyl phenyl ether	5.0	N.D.
butyl benzyl phthalate	5.0	N.D.
Chloroaniline	10	N.D.
Chloronaphthalene	5.0	N.D.
Chloro-3-methylphenol	5.0	N.D.
Chlorophenol	5.0	N.D.
Chlorophenyl phenyl ether	5.0	N.D.
Chrysene	5.0	N.D.
benzo(a,h)anthracene	5.0	N.D.
benzofuran	5.0	N.D.
n-butyl phthalate	10	N.D.
2-Dichlorobenzene	5.0	N.D.
3-Dichlorobenzene	5.0	N.D.
4-Dichlorobenzene	5.0	N.D.
3-Dichlorobenzidine	5.0	N.D.
4-Dichlorophenol	10	N.D.
diethyl phthalate	5.0	N.D.
4-Dimethylphenol	5.0	N.D.
dimethyl phthalate	5.0	N.D.
5-Dinitro-2-methylphenol	5.0	N.D.
4-Dinitrophenol	10	N.D.
4-Dinitrotoluene	10	N.D.
	5.0	N.D.





# Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
 404 N. Wiget Lane Walnut Creek, CA 94598 (510) 988-9600 FAX (510) 988-9673  
 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: EPA 8270 Lab Number: 9605F38-03	Sampled: 05/22/96 Received: 05/23/96 Extracted: 05/24/96 Analyzed: 05/24/96 Reported: 06/10/96
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QC Batch Number: MS0522968270EXA  
 Instrument ID: F4

Analyte	Detection Limit ug/L	Sample Results ug/L
2,6-Dinitrotoluene	5.0	N.D.
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.
<b>2-Methylnaphthalene</b>	<b>5.0</b>	<b>8.4</b>
2-Methylphenol	5.0	N.D.
4-Methylphenol	5.0	N.D.
<b>Naphthalene</b>	<b>5.0</b>	<b>37</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	57
Phenol-d5	10	110	37
Nitrobenzene-d5	35	114	75
2-Fluorobiphenyl	43	116	74
2,4,6-Tribromophenol	10	123	93
p-Terphenyl-d14	33	141	93

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
 Peggy Penner  
 Project Manager





Sequoia Analytical Services  
35 Timothy Drive  
San Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Sample Descript: MW-5  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9605F38-04

Sampled: 05/22/96  
Received: 05/23/96  
Analyzed: 05/24/96  
Reported: 06/10/96

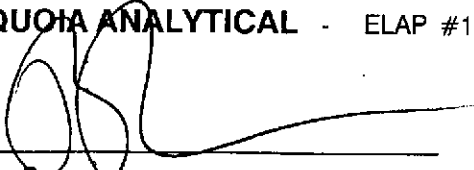
Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	N.D.
ethyl t-Butyl Ether	100	9800
Benzene	20	N.D.
Toluene	20	N.D.
ethyl Benzene	20	N.D.
Arenes (Total)	20	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
1,2-difluorotoluene	70 130	84

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

SEQUOIA ANALYTICAL - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: MW-6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9605F38-05	Sampled: 05/22/96 Received: 05/23/96 Analyzed: 05/24/96 Reported: 06/10/96
Attention: Jim Keller		

QC Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

**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	290
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	79

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





aine Technical Services  
5 Timothy Drive  
an Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Sample Descript: EB  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9605F38-06

Sampled: 05/22/96  
Received: 05/23/96  
Analyzed: 05/24/96  
Reported: 06/10/96

Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
ethyl t-Butyl Ether	2.5	N.D.
benzene	0.50	N.D.
toluene	0.50	N.D.
ethyl Benzene	0.50	N.D.
Arenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1,2-dichlorobenzene	70	130
1,4-dichlorobenzene		90

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9605F38-07	Sampled: 05/22/96 Received: 05/23/96  Analyzed: 05/24/96 Reported: 06/10/96
Attention: Jim Keller		


QC Batch Number: GC052496BTEX20A  
Instrument ID: GCHP20

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	1300
Methyl t-Butyl Ether	50	3400
Benzene	10	110
Toluene	10	17
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	N.D.
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	104

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager





aine Technical Services  
35 Timothy Drive  
San Jose, CA 95133

Client Proj. ID: Shell/Oakland/960522-A2  
Sample Descript: DUP  
Matrix: LIQUID  
Analysis Method: EPA 8270  
Lab Number: 9605F38-07

Sampled: 05/22/96  
Received: 05/23/96  
Extracted: 05/24/96  
Analyzed: 05/24/96  
Reported: 06/10/96

Attention: Jim Keller

Batch Number: MS0522968270EXA  
Instrument ID: F4

**Semivolatile Organics (EPA 8270)**

Analyte	Detection Limit ug/L	Sample Results ug/L
benzophenone	5.0	N.D.
benzophenylene	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.
Bromophenyl phenyl ether	5.0	N.D.
butyl benzyl phthalate	5.0	N.D.
Chloroaniline	10	N.D.
Chloronaphthalene	5.0	N.D.
Chloro-3-methylphenol	5.0	N.D.
Chlorophenol	5.0	N.D.
Chlorophenyl phenyl ether	5.0	N.D.
chrysene	5.0	N.D.
benzo(a,h)anthracene	5.0	N.D.
benzofuran	5.0	N.D.
n-butyl phthalate	10	N.D.
2-Dichlorobenzene	5.0	N.D.
3-Dichlorobenzene	5.0	N.D.
4-Dichlorobenzene	5.0	N.D.
3-Dichlorobenzidine	10	N.D.
4-Dichlorophenol	5.0	N.D.
diethyl phthalate	5.0	N.D.
4-Dimethylphenol	5.0	N.D.
dimethyl phthalate	5.0	N.D.
6-Dinitro-2-methylphenol	10	N.D.
4-Dinitrophenol	10	N.D.
4-Dinitrotoluene	5.0	N.D.







# Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063 (415) 364-9600 FAX (415) 364-9233  
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 819 Striker Avenue, Suite 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100

Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell/Oakland/960522-A2 Sample Descript: DUP Matrix: LIQUID Analysis Method: EPA 8270 Lab Number: 9605F38-07	Sampled: 05/22/96 Received: 05/23/96 Extracted: 05/24/96 Analyzed: 05/24/96 Reported: 06/10/96
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QC Batch Number: MS0522968270EXA  
Instrument ID: F4

Analyte	Detection Limit ug/L	Sample Results ug/L
2,6-Dinitrotoluene	5.0	N.D.
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.
<b>2-Methylnaphthalene</b>	<b>5.0</b>	<b>7.8</b>
2-Methylphenol	5.0	N.D.
4-Methylphenol	5.0	N.D.
<b>Naphthalene</b>	<b>5.0</b>	<b>37</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	59
Phenol-d5	10	110	38
Nitrobenzene-d5	35	114	78
2-Fluorobiphenyl	43	116	77
2,4,6-Tribromophenol	10	123	95
p-Terphenyl-d14	33	141	94

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner  
Project Manager





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

Client Project ID: Shell, Oakland / 960522-A2  
Matrix: Liquid

Work Order #: 9605F38 -03, 07

Reported: Jun 11, 1996

**QUALITY CONTROL DATA REPORT**

**Analyte:** Total Oil & Grease

**QC Batch#:** OP0603965520EXA

**Analy. Method:** SM 5520 B-MOD

**Prep. Method:** SPE

**Analyst:** C. Alcayde

**MS/MSD #:** BLK060396

**Sample Conc.:** N.D.

**Prepared Date:** 6/3/96

**Analyzed Date:** 6/4/96

**Instrument I.D.#:** Manual

**Conc. Spiked:** 20 mg/L

**Result:** 19

**MS % Recovery:** 95

**Dup. Result:** 20

**MSD % Recov.:** 100

**RPD:** 5.1

**RPD Limit:** 0-20

**LCS #:** -

**Prepared Date:** -

**Analyzed Date:** -

**Instrument I.D.#:** -

**Conc. Spiked:** -

**LCS Result:** -

**LCS % Recov.:** -

**MS/MSD** 75-125

**LCS** 80-120

**Control Limits**

**Please Note:**

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

**SEQUOIA ANALYTICAL**

Reggy Penner  
Project Manager

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

9605F38.BLA <1>





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

Client Project ID: Shell, Oakland / 960522-A2  
Matrix: Liquid

Work Order #: 9605F38-01-07

Reported: Jun 11, 1996

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC052496BTEX20A	GC052496BTEX20A	GC052496BTEX20A	GC052496BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	J. Woo	J. Woo	J. Woo	J. Woo
MS/MSD #:	960597804	960597804	960597804	960597804
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.5	9.4	9.6	29
MS % Recovery:	95	94	96	97
Dup. Result:	9.8	10	9.8	29
MSD % Recov.:	98	100	98	97
RPD:	3.1	6.2	2.1	0.0
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK052496	BLK052496	BLK052496	BLK052496
Prepared Date:	5/24/96	5/24/96	5/24/96	5/24/96
Analyzed Date:	5/24/96	5/24/96	5/24/96	5/24/96
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	10	10	10	30
LCS % Recov.:	100	100	100	100

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

9605F38.BLA <2>





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

Client Project ID: Shell, Oakland / 960522-A2  
Matrix: Liquid

Work Order #: 9605F38-03, 07

Reported: Jun 11, 1996

**QUALITY CONTROL DATA REPORT**

Analyte:	Phenol	2-Chlorophenol	1,4-Dichloro benzene	N-Nitroso-Di-N-propylamine
QC Batch#:	MS0522968270EXA	MS0522968270EXA	MS0522968270EXA	MS0522968270EXA
Analy. Method:	EPA 8270	EPA 8270	EPA 8270	EPA 8270
Prep. Method:	EPA 3510	EPA 3510	EPA 3510	EPA 3510

Analyst:	B. Pitamah	B. Pitamah	B. Pitamah	B. Pitamah
MS/MSD #:	9605A2603	9605A2603	9605A2603	9605A2603
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/22/96	5/22/96	5/22/96	5/22/96
Analyzed Date:	5/22/96	5/22/96	5/22/96	5/22/96
Instrument I.D.#:	F4	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L	200 µg/L
Result:	72	150	140	160
MS % Recovery:	36	75	70	80
Dup. Result:	73	150	150	160
MSD % Recov.:	37	75	75	80
RPD:	1.4	0.0	6.9	0.0
RPD Limit:	0-20	0-15	0-13	0-18

LCS #:	BLK052296	BLK052296	BLK052296	BLK052296
Prepared Date:	5/22/96	5/22/96	5/22/96	5/22/96
Analyzed Date:	5/22/96	5/22/96	5/22/96	5/22/96
Instrument I.D.#:	F4	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L	200 µg/L
LCS Result:	78	160	150	170
LCS % Recov.:	39	80	75	85

MS/MSD LCS Control Limits	12-110	27-123	36-97	41-116
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**SEQUOIA ANALYTICAL**

Peggy Fenner  
Project Manager





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

Client Project ID: Shell, Oakland / 960522-A2  
Matrix: Liquid

Work Order #: 9605F38-03, 07

Reported: Jun 11, 1996

**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b>	1,2,4-Trichloro benzene	4-Chloro-3 Methylphenol	Acenaphthene	4-Nitrophenol
<b>QC Batch#:</b>	MS0522968270EXA	MS0522968270EXA	MS0522968270EXA	MS0522968270EXA
<b>Analy. Method:</b>	EPA 8270	EPA 8270	EPA 8270	EPA 8270
<b>Prep. Method:</b>	EPA 3510	EPA 3510	EPA 3510	EPA 3510

<b>Analyst:</b>	B. Pitamah	B. Pitamah	B. Pitamah	B. Pitamah
<b>MS/MSD #:</b>	9605A2603	9605A2603	9605A2603	9605A2603
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.
<b>Prepared Date:</b>	5/22/96	5/22/96	5/22/96	5/22/96
<b>Analyzed Date:</b>	5/22/96	5/22/96	5/22/96	5/22/96
<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>	150	130	170	69
<b>MS % Recovery:</b>	75	65	85	35
<b>Dup. Result:</b>	160	130	180	82
<b>MSD % Recov.:</b>	80	65	90	41
<b>RPD:</b>	6.5	0.0	5.7	17
<b>RPD Limit:</b>	0-18	0-20	0-18	0-47

<b>LCS #:</b>	BLK052296	BLK052296	BLK052296	BLK052296
<b>Prepared Date:</b>	5/22/96	5/22/96	5/22/96	5/22/96
<b>Analyzed Date:</b>	5/22/96	5/22/96	5/22/96	5/22/96
<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>	160	150	160	33
<b>LCS % Recov.:</b>	80	75	80	17

<b>MS/MSD</b>				
<b>LCS</b>	39-98	23-97	46-118	10 to 80
<b>Control Limits</b>				

**SEQUOIA ANALYTICAL**

Peggy Renner  
Project Manager

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Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133 Attention: Jim Keller	Client Project ID: Shell, Oakland / 960522-A2 Matrix: Liquid  Work Order #: 9605F38-03, 07	Reported: Jun 11, 1996
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**QUALITY CONTROL DATA REPORT**

Analyte:	2,4-Dinitro-toluene	Pentachloro-phenol	Pyrene
QC Batch#:	MS0522968270EXA	MS0522968270EXA	MS0522968270EXA
Analy. Method:	EPA 8270	EPA 8270	EPA 8270
Prep. Method:	EPA 3510	EPA 3510	EPA 3510

Analyst:	B. Pitamah	B. Pitamah	B. Pitamah
MS/MSD #:	9605A2603	9605A2603	9605A2603
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	5/22/96	5/22/96	5/22/96
Analyzed Date:	5/22/96	5/22/96	5/22/96
Instrument I.D.#:	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L
Result:	160	190	130
MS % Recovery:	80	95	65
Dup. Result:	160	190	130
MSD % Recov.:	80	95	65
RPD:	0.0	0.0	0.0
RPD Limit:	0-13	0-27	0-17

LCS #:	BLK052296	BLK052296	BLK052296
Prepared Date:	5/22/96	5/22/96	5/22/96
Analyzed Date:	5/22/96	5/22/96	5/22/96
Instrument I.D.#:	F4	F4	F4
Conc. Spiked:	200 µg/L	200 µg/L	200 µg/L
LCS Result:	170	79	230
LCS % Recov.:	85	40	115

MS/MSD LCS Control Limits	24-96	9-103	26-127
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**SEQUOIA ANALYTICAL**

Peggy Fenner  
Project Manager

