



ENVIRONMENTAL  
PROTECTION  
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April 27, 1998

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

Re: **First Quarter 1998 Monitoring Report**  
Shell Service Station  
3420 San Pablo Avenue  
Oakland, California  
WIC #204-5508-5306  
Cambria Project #24-314-198

Dear Ms. Hugo:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this monitoring report to satisfy the quarterly reporting requirements prescribed by California Administrative Code Title 23, Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

### **FIRST QUARTER 1998 ACTIVITIES**

**Station Renovation:** The Shell service station at 3420 San Pablo Avenue, Oakland, California is undergoing building renovations. Although the facility is not currently operational, it will be used as a service station and training center when the renovations are completed.

**January 27, 1998 Meeting:** Paul Waite, Pete McKereghan, and Sampath Rangarajan of Cambria met with Susan Hugo and Madhulla Logan of the Alameda County Department of Environmental Health (ACDEH) on January 27, 1998 to discuss site renovation activities. At that meeting, it was decided that Shell will install perforated plastic piping into the gravel base coarse beneath the planned building on site. The piping will be capped outside of the building to allow future access, if necessary. The purpose of the piping is to give Shell a method to remove hydrocarbon vapors that accumulate beneath the building in the future. This piping has been installed and the construction of the building is progressing.

In addition, a modified risk-based corrective action (RBCA) analysis to evaluate the potential risk presented by residual hydrocarbons in soil and ground water to the future occupants of the building was also discussed during the meeting.

CAMBRIA  
ENVIRONMENTAL  
TECHNOLOGY, INC.  
1144 65TH STREET,  
SUITE B  
OAKLAND,  
CA 94608  
PH: (510) 420-0700  
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Susan Hugo  
April 27, 1998

CAMBRIA

**Ground Water Monitoring:** Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected water samples from the accessible site wells (Figure 1). The Blaine report, describing these sampling activities and presenting the analytical results, is included as Attachment A. Cambria summarized separate-phase hydrocarbon (SPH) removal (Table 1), calculated ground water elevations (Table 2), compiled the analytical data (Table 3), and prepared a ground water elevation contour map (Figure 1).

#### ANTICIPATED SECOND QUARTER 1998 ACTIVITIES

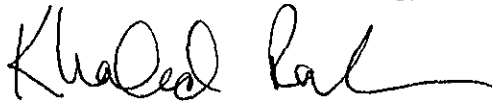
**Ground Water Monitoring:** Blaine will gauge ground water elevations, check for SPH, and sample selected monitoring wells. Cambria will submit a report presenting a summary of activities for the upcoming quarter.

**Station Renovation:** Site renovations will continue. Ground water monitoring wells will be installed to replace wells MW-3 and MW-6 that were destroyed after onsite construction activities are complete. We will keep you updated on the schedule of the project, and we will discuss the results of the risk analysis before the building is occupied.

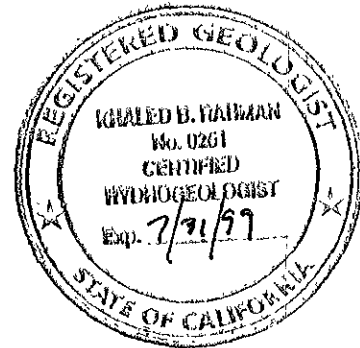
#### CLOSING

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 8080, Martinez, California 94553

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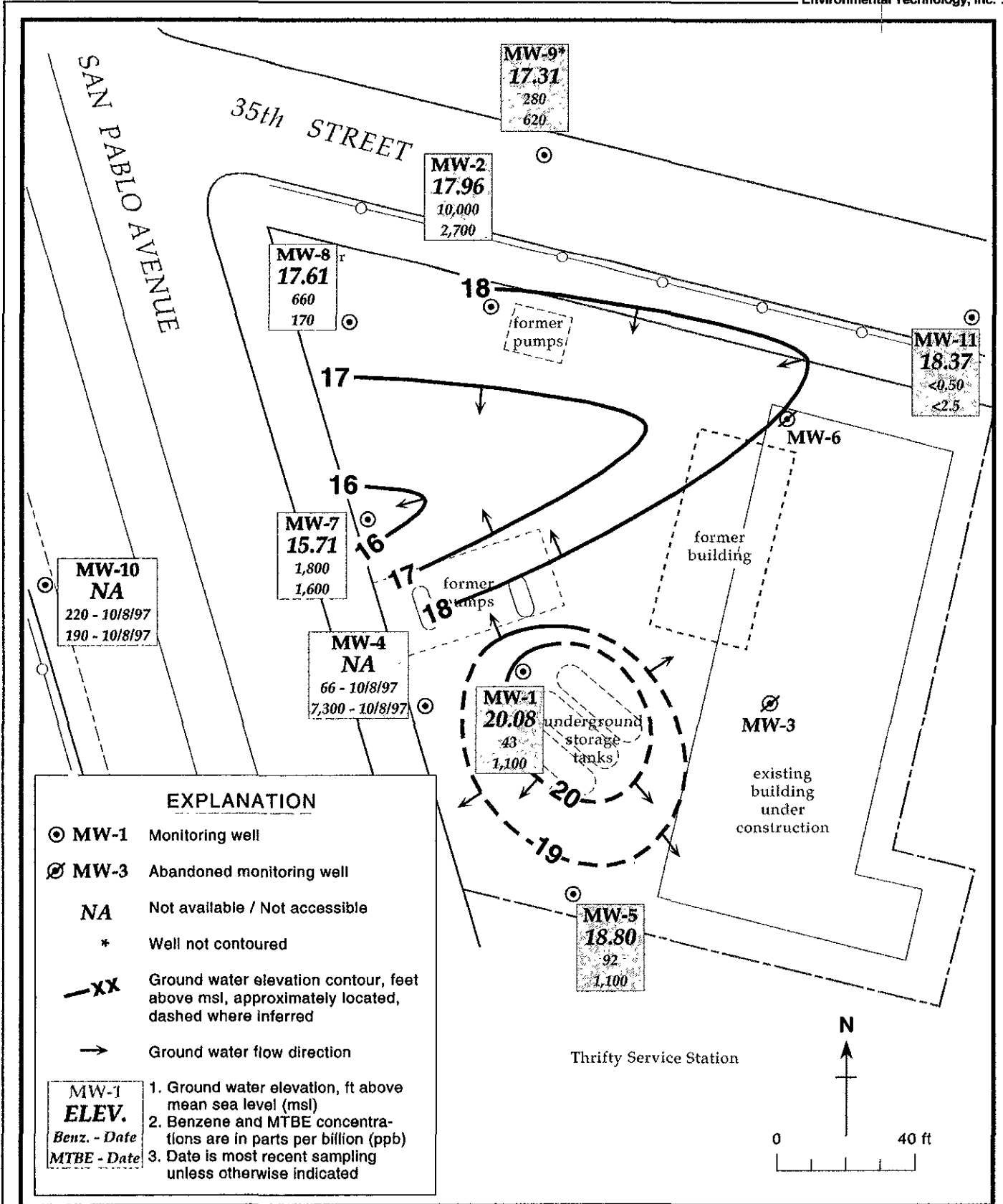


Figure 1. Ground Water Elevation Contours - January 19, 1998 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

**Table 1. Separate-Phase Hydrocarbon Removal - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Separate-Phase Hydrocarbons Removed (lbs)
MW-1	10/23/91	0.01	---	---
	05/04/92	<0.01	---	---
	10/12/92	0.09	---	---
	01/12/93	0.02	3.12	3.12
	04/06/93	<0.01	0.78	3.90
	07/12/93	0.01	0.18	4.08
	10/13/93	0.01	0.06	4.14
	01/20/94	0.01	0.03	4.17
	04/03/94	0.02	0.12	4.29
MW-2	10/12/92	0.03	---	---
	01/12/93	0.01	1.56	1.56
	04/06/93	<0.01	0.78	2.34
	04/03/94	<0.01	0.03	2.37
MW-4	10/12/92	0.78	---	---
	01/12/93	1.0	---	---
	04/06/93	0.95	---	---
	07/12/93	0.03	6.36	6.36
	10/13/93	0.12	0.78	7.14
	01/20/94	0.02	0.03	7.17
	04/13/94	0.01	0.12	7.29
	10/27/94	0.03	0.79	8.08
	01/03/95	0.01	0.16	8.24
04/13/95	0.03	0.16	8.40	
MW-5	10/12/92	0.01	---	---
	01/12/93	<0.01	---	---
	10/13/93	0.03	---	---
	01/20/94	0.01	---	---
	04/13/94	0.01	0.03	0.03
MW-6	10/12/92	0.48	---	---
	01/12/93	<0.01	---	---
	10/13/93	0.2	---	---
	01/20/94	0.02	---	---
	04/13/94	0.01	0.03	0.03
	07/19/94	0.07	0.03	0.06
	10/27/94	0.11	1.43	1.49
	01/03/95	0.02	0.12	1.61
	04/13/95	0.02	0.13	1.74
MW-7	01/20/94	0.05	---	---
	04/13/94	0.16	0.66	0.66

**Table 1. Separate-Phase Hydrocarbon Removal - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)**

Well ID	Date	Separate-Phase Hydrocarbon Thickness (ft)	Separate-Phase Hydrocarbons Removed (lbs)	Cumulative Separate-Phase Hydrocarbons Removed (lbs)
	07/19/94	0.20	0.04	0.70
	10/27/94	0.04	1.11	1.81
	01/03/95	0.02	0.16	1.97
	04/13/95	0.02	0.16	2.13
	10/31/95	0.04	0.80	2.93
	01/17/96	0.04	0.09	3.02
	04/10/96	0.05	0.00	3.02
	07/03/96	0.03	0.00	3.02
	10/17/96	0.02	0.16	3.18
	07/14/97	0.03	0.16	3.34
	10/08/97	0.01	0.0	3.34
Total Separate-Phase Hydrocarbons Removed				20.17

**Notes and Abbreviations:**

ft = Feet

lbs = Pounds

--- = Not available

Weight of separate-phase hydrocarbons converted from volume using the relation: 1 liter gasoline = 1.61 pounds

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
MW-1	08/06/91	21.28	10.86	---	10.43
	10/23/91		11.05	0.01	10.24
	01/28/92		10.84	---	10.44
	05/04/92		9.42	<0.01	11.86
	07/13/92		11.36	---	9.92
	10/12/92		13.14	0.09	8.21
	01/12/93		7.52	0.02	13.78
	04/06/93		7.13	<0.01	14.16
	07/12/93		11.02	0.01	10.27
	10/13/93		12.18	0.01	9.11
	01/20/94		9.18	0.01	12.10
	04/13/94		8.72	0.02	12.58
	07/19/94		8.76	---	12.52
	10/27/94		10.49	---	10.79
	01/03/95		6.15	---	15.13
	04/13/95		5.24	---	16.04
	06/30/95		7.24	---	14.04
	10/11/91		9.48	---	11.80
	01/17/96		6.48	---	14.80
	04/10/96		5.38	---	15.90
	07/30/96		7.61	---	13.67
	10/17/96		8.66	---	12.62
	01/22/97		5.00	---	16.28
	04/01/97		6.42	---	14.86
	07/14/97		8.92	---	12.36
	10/08/97		9.43	---	11.85
<b>01/19/98</b>			<b>1.20</b>		<b>20.08</b>
MW-2	08/06/91	21.56	9.72	---	11.84
	10/23/91		10.03	---	11.53
	01/28/92		8.78	---	12.78
	05/04/92		7.58	---	13.98
	07/13/92		9.63	---	11.93
	10/12/92		11.66	0.03	9.92
	01/12/93		7.13	0.01	14.44
	04/06/93		6.40	<0.01	15.17
	07/12/93		8.75	---	12.81
	10/13/93		10.28	---	11.28
	01/20/94		---	---	---
	04/13/94		7.35	<0.01	14.22
	07/19/94		8.24	---	13.32
	10/27/94		10.26	---	13.32
	01/03/95		6.44	---	15.12
	04/13/95		5.89	---	15.67
06/30/95	7.41	---	14.15		

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	10/11/95		8.02	---	13.54
	01/17/96		7.42	---	14.14
	04/10/96		6.91	---	14.65
	07/30/96		7.63	---	13.93
	10/17/96		8.28	---	13.29
	01/22/97		7.09	---	14.47
	04/01/97		6.91	---	14.65
	07/14/97		9.93	---	11.63
	10/08/97		10.43	---	11.13
	<b>01/19/98</b>		<b>3.60</b>	<b>---</b>	<b>17.96</b>
MW-3 <sup>c</sup>	08/06/91	21.78	11.18	---	10.60
	10/23/91		11.69	---	10.09
	01/28/92		9.99	---	11.79
	05/04/92		9.46	---	12.32
	07/13/92		11.29	---	10.49
	10/12/92		13.10	---	8.68
	01/12/93		7.32	---	14.46
	04/06/93		7.44	---	14.34
	07/12/93		10.62	---	11.16
	10/13/93		12.05	---	9.73
	01/20/94		9.62	---	12.16
	04/13/94		9.15	---	12.63
	07/19/94		10.13	---	11.65
	10/27/94		11.66	---	10.12
	01/03/95		6.89	---	14.89
	04/13/95		6.79	---	14.99
	06/30/95		8.94	---	12.84
	10/11/95		10.62	---	11.16
	01/17/96		7.18	---	14.60
	04/10/96		6.76	---	15.02
	07/30/96		9.04	---	12.74
	10/17/96		9.04	---	12.74
	01/22/97		5.03	---	16.75
	04/01/97		8.23	---	13.55
	07/14/97		9.09	---	12.69
	10/08/97		10.23	---	11.55
MW-4	08/06/91	20.31	10.57	---	9.74
	10/23/91		10.46	---	9.85
	01/28/92		9.54	---	10.77
	05/04/92		8.33	---	11.98
	07/13/92		9.87	---	10.44
	10/12/92		12.43	0.78	8.50

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	01/12/93		7.12	1.0	13.99
	04/06/93		7.23	0.95	13.84
	07/12/93		10.08	0.03	10.25
	10/13/93		11.35	0.12	9.06
	01/20/94		9.06	0.02	11.26
	04/13/94		8.58	0.01	11.74
	07/19/94		9.71	---	10.60
	10/27/94		10.60	0.03	9.73
	01/03/95		5.49	0.01	14.83
	04/13/95		6.53	0.03	13.80
	06/30/95		9.57	---	10.74
	10/11/95		10.30	---	10.01
	01/17/96		6.68	---	13.63
	04/10/96		7.90	---	12.41
	07/30/96		8.73	---	11.58
	10/17/96		9.97	---	10.34
	01/22/97		5.26	---	15.05
	04/01/97		8.02	---	12.29
	07/14/97		10.05	---	10.26
	10/08/97		10.22	---	10.09
	<b>01/19/98<sup>b</sup></b>		---	---	---
MW-5	08/06/91	20.91	10.23	---	10.68
	10/23/91		10.89	---	10.02
	01/28/92		8.45	---	12.46
	05/04/92		8.05	---	12.86
	07/13/92		10.00	---	10.91
	10/12/92		11.83	0.01	9.09
	01/12/93		6.10	<0.01	14.81
	04/06/93		6.18	---	14.73
	07/12/93		9.59	---	11.32
	10/13/93		10.80	0.03	10.13
	01/20/94		7.42	0.01	13.49
	04/13/94		7.05	0.01	13.87
	07/19/94		8.57	---	12.34
	10/27/94		10.14	---	10.77
	01/03/95		5.84	---	15.07
	04/13/95		5.28	---	15.63
	06/30/95		7.43	---	13.48
	10/11/95		8.90	---	12.01
	01/17/96		6.40	---	14.51
	04/10/96		5.70	---	15.21
	07/30/96		7.71	---	13.20
	10/17/96		9.04	---	11.87



**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	01/22/97		4.85	---	16.06
	04/01/97		6.54	---	14.37
	07/14/97		8.54	---	12.37
	10/08/97		9.09	---	11.82
	<b>01/19/98</b>		<b>2.11</b>	<b>---</b>	<b>18.80</b>
MW-6 <sup>c</sup>	08/06/91	22.32	10.61	---	11.71
	10/23/91		11.68	---	10.64
	01/28/92		8.90	---	13.42
	05/04/92		8.01	---	14.31
	07/13/92		10.77	---	11.55
	10/12/92		13.36	0.48	9.34
	01/12/93		6.40	<0.01	15.92
	04/06/93		5.93	---	16.39
	07/12/93		10.25	---	12.07
	10/13/93		12.28	0.2	10.20
	01/20/94		9.14	0.02	13.20
	04/13/94		7.67	0.01	14.66
	07/19/94		10.07	0.07	12.31
	10/27/94		11.84	0.11	10.57
	01/03/95		7.80	0.02	14.54
	04/13/95		5.77	0.02	16.57
	06/30/95		7.78	---	14.54
	10/11/95		10.06	---	12.26
	01/17/96		6.91	---	15.41
	04/10/96		5.92	---	16.40
	07/30/96		8.97	---	13.35
	10/17/96		9.87	---	12.45
	01/22/97		4.43	---	17.89
	04/01/97		6.84	---	15.48
	07/14/97		10.30	---	12.02
	10/08/97		10.46	---	11.86
MW-7	08/06/91	20.36	8.00	---	12.36
	10/23/91		8.16	---	12.20
	01/28/92		7.11	---	13.25
	05/04/92		6.47	---	13.89
	07/13/92		7.73	---	12.63
	10/12/92		8.68	---	11.68
	01/12/93		6.26	---	14.10
	04/06/93		5.92	---	14.44
	07/12/93		7.27	---	13.09
	10/13/93		9.40	---	10.96
	01/20/94		7.03	0.05	13.37

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC))	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	04/13/94		6.56	0.16	13.93
	07/19/94		6.91	0.20	13.61
	10/27/94		8.28	0.04	12.11
	01/03/95		6.48	0.02	13.90
	04/13/95		6.54	0.02	13.84
	06/30/95		7.08	---	13.28
	10/11/95		7.88	0.04	12.51
	01/17/96		7.26	0.04	13.13
	04/10/96		6.98	0.05	13.42
	07/30/96		7.34	0.03	13.04
	10/17/96		7.63	0.02	12.75
	01/22/97		6.46	---	13.90
	04/01/97		6.97	---	13.39
	07/14/97		8.90	0.03	11.48
	10/08/97		9.21	0.01	11.15
	<b>01/19/98</b>		<b>4.65</b>	<b>---</b>	<b>15.71</b>
MW-8	08/06/91	20.95	9.60	---	11.35
	10/23/91		9.73	---	11.22
	01/28/92		7.72	---	13.23
	05/04/92		6.48	---	14.47
	07/13/92		8.55	---	12.40
	10/12/92		9.97	---	10.98
	01/12/93		6.94	---	14.01
	04/06/93		5.72	---	15.23
	07/12/93		7.65	---	13.30
	10/13/93		8.25	---	12.70
	01/20/94		7.25	---	13.70
	04/13/94		7.12	---	13.83
	07/19/94		7.43	---	13.52
	10/27/94		7.55	---	13.40
	01/03/95		6.04	---	14.91
	04/13/95		5.04	---	15.91
	06/30/95		5.72	---	15.23
	10/11/95		7.06	---	13.89
	01/17/96		5.84	---	15.11
	04/10/96		5.03	---	15.92
	07/30/96		6.36	---	14.59
	10/17/96		5.94	---	15.01
	01/22/97		5.93	---	15.02
	04/01/97		6.24	---	14.71
	07/14/97		8.59	---	12.36
	10/08/97		9.04	---	11.91
	<b>01/19/98</b>		<b>3.34</b>	<b>---</b>	<b>17.61</b>

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
MW-9	08/06/91	21.19	10.33	---	10.86
	10/23/91		11.13	---	10.06
	01/28/92		9.02	---	12.17
	05/04/92		7.67	---	13.52
	07/13/92		10.26	---	10.93
	10/12/92		12.19	---	9.0
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93 <sup>b</sup>		---	---	---
	07/12/93 <sup>b</sup>		---	---	---
	10/13/92		11.17	---	10.02
	01/20/94		8.03	---	13.16
	04/13/94		7.81	---	13.38
	07/19/94		8.96	---	12.23
	10/27/94		11.00	---	10.19
	01/03/95		6.60	---	14.59
	04/13/95		6.73	---	14.46
	06/30/95		7.32	---	13.87
	10/11/95		8.10	---	13.09
	01/17/96		5.75	---	15.44
	04/10/96		5.17	---	16.02
	07/30/96		8.10	---	13.09
	10/17/96		9.12	---	12.07
	01/22/97		4.72	---	16.47
04/01/97	6.86	---	14.33		
07/14/97	10.04	---	11.15		
10/08/97	11.38	---	9.81		
<b>01/19/98</b>			<b>3.88</b>	---	<b>17.31</b>
MW-10	10/23/91	19.74	8.57	---	11.17
	01/28/92		7.60	---	12.14
	05/04/92		7.54	---	12.20
	07/13/92		8.59	---	11.15
	10/12/92		10.23	---	9.51
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93		6.70	---	13.04
	07/12/93 <sup>b</sup>		8.05	---	11.69
	10/13/93		8.25	---	11.49
	01/20/94		7.20	---	12.54
	04/13/94		7.57	---	12.17
	07/19/94		8.18	---	11.56
	10/27/94		8.68	---	11.06
	01/03/95		6.86	---	12.88
	04/13/95		6.91	---	12.83
	06/30/95		7.61	---	12.13

**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	Separate-Phase Hydrocarbon Thickness (ft)	Ground Water Elevation (ft above msl) <sup>a</sup>
	10/11/95		---	---	---
	01/17/96		7.00	---	12.74
	07/30/96 <sup>b</sup>		---	---	---
	10/17/96		---	---	---
	01/22/97		6.68	---	13.06
	04/01/97		7.34	---	12.40
	07/14/97		8.10	---	11.64
	10/08/97		8.20	---	11.54
	<b>01/19/98<sup>b</sup></b>		---	---	---
MW-11	10/23/91	22.06	14.00	---	8.06
	01/28/92		8.74	---	3.32
	05/04/92		8.29	---	13.77
	07/13/92		10.50	---	11.56
	10/12/92		12.40	---	9.66
	01/12/93 <sup>b</sup>		---	---	---
	04/06/93 <sup>b</sup>		---	---	---
	07/12/93 <sup>b</sup>		---	---	---
	10/13/93		11.47	---	10.59
	01/20/94		9.09	---	12.97
	04/13/94		8.02	---	14.04
	07/19/94		9.82	---	12.24
	10/27/94		11.66	---	10.40
	01/03/95		6.15	---	15.91
	04/13/95		6.00	---	16.06
	06/30/95		8.31	---	13.75
	10/11/95		10.30	---	11.76
	01/17/96		6.45	---	15.61
	04/10/96		6.05	---	16.01
	07/30/96		8.92	---	13.14
	10/17/96		9.24	---	12.82
	01/22/97		5.12	---	16.94
	04/01/97		7.41	---	14.65
	07/14/97		9.74	---	12.32
	10/08/97		10.23	---	11.83
	<b>01/19/98<sup>b</sup></b>		<b>3.69</b>	---	<b>18.37</b>

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**Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306,  
3420 San Pablo, Avenue, Oakland, California (continued)**

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**Notes and Abbreviations:**

- a = When separate-phase hydrocarbons are present ground water elevation is adjusted using the relation: Corrected Ground Water Elevation = Top of casing elevation - depth to water + (0.8 x hydrocarbon thickness)
- b = Well inaccessible
- c = Well abandoned December 5, 1997
- = Not measured/not available
- ft = Feet
- msl = Mean sea level
- TOC = Top of casing

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G B T E X MTBE							DO (mg/L)
			(µg/L)							
MW-1	08/06/91 <sup>SPH</sup>	10.86	----	----	----	----	----	----	----	----
	10/23/91	11.05	32,000	2,700	360	550	3,700	----	----	
	01/28/92	10.84	14,000	1,000	106	450	1,600	----	----	
	05/05/92	9.42	98,000	11,000	1,200	3,500	18,000	----	----	
	07/13/92	11.36	11,000	1,100	130	740	1,300	----	----	
	10/12/92 <sup>SPH</sup>	13.14	----	----	----	----	----	----	----	
	01/12/93 <sup>SPH</sup>	7.52	----	----	----	----	----	----	----	
	04/06/93 <sup>SPH</sup>	7.13	----	----	----	----	----	----	----	
	07/12/93 <sup>SPH</sup>	11.02	----	----	----	----	----	----	----	
	10/13/93 <sup>SPH</sup>	12.18	----	----	----	----	----	----	----	
	01/20/94 <sup>SPH</sup>	9.18	----	----	----	----	----	----	----	
	04/13/94 <sup>SPH</sup>	8.72	----	----	----	----	----	----	----	
	07/19/94	8.76	17,000	420	140	530	1,300	----	----	
	10/27/94	10.49	23,000	1,200	130	990	960	----	----	
	01/03/95	6.15	31,000	610	160	1,200	5,000	----	----	
	04/13/95	5.24	20,000	340	42	680	2,900	----	----	
	06/30/95	7.24	16,000	450	62	460	1,200	----	----	
	10/11/95	9.48	8,400	660	47	510	850	8,000	----	
	10/13/95	----	7,400	730	54	490	1,100	8,200	----	
	01/17/96	6.48	24,000	570	110	820	2,900	15,000	----	
	04/10/96	5.38	20,000	120	11	420	1,400	15,000	----	
	07/30/96	7.61	7,900	240	22	170	300	12,000	----	
	10/17/96	8.66	6,600	1,000	20	120	130	10,000	1.4	
01/22/97	5.00	13,000	170	<50	330	1,200	18,000	1.6		
04/01/97	6.42	7,900	240	26	130	200	6,400	1.4		
07/14/97	8.92	5,000	<20	<20	59	61	9,000	1.9		
10/08/97	9.43	3,200	180	7.6	18	6.1	11,000	4.8		
01/19/98	1.20	5,100	39	<20	250	660	1,100	2.6		
01/19/98 <sup>dup</sup>	1.20	8,200	43	<20	250	660	1,100	2.6		
MW-2	08/06/91	9.72	50,000	15,000	----	2,700	13,000	----	----	
	10/23/91	10.03	120,000	11,000	1,400	3,500	19,000	----	----	
	01/28/92	8.78	49,000	7,400	800	1,800	8,300	----	----	
	05/05/92	7.58	52,000	12,000	1,100	2,200	12,000	----	----	
	07/13/92	9.63	47,000	15,000	2,400	4,500	16,000	----	----	
	10/12/92 <sup>SPH</sup>	11.66	----	----	----	----	----	----	----	
	01/12/93 <sup>SPH</sup>	7.13	----	----	----	----	----	----	----	
	04/06/93 <sup>SPH</sup>	6.40	----	----	----	----	----	----	----	
	07/12/93	8.75	59,000	12,000	950	2,400	11,000	----	----	
	10/13/93	10.28	54,000	14,000	1,200	3,700	22,000	----	----	
	01/20/94	----	----	----	----	----	----	----	----	
	04/13/94	7.35	79,000	9,400	740	2,100	12,000	----	----	
	04/13/94 <sup>dup</sup>	7.35	110,000	11,000	710	2,400	13,000	----	----	
	07/19/94	8.24	63,000	13,000	810	1,900	13,000	----	----	
	07/19/94 <sup>dup</sup>	8.24	12,000	12,000	140	340	12,000	----	----	
	10/27/94	10.26	64,000	8,800	480	2,100	10,000	----	----	
	01/03/95	6.44	67,000	9,800	720	2,800	11,000	----	----	
	01/03/95 <sup>dup</sup>	6.44	58,000	9,700	620	2,700	12,000	----	----	
	04/13/95	5.89	83,000	10,000	490	2,600	13,000	----	----	
	04/13/95 <sup>dup</sup>	5.89	74,000	9,500	350	2,100	11,000	----	----	

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G	(µg/L)				MTBE	DO (mg/L)
				B	T	E	X		
	06/30/95	7.41	65,000	12,000	1,800	2,400	12,000	---	---
	10/11/95	8.02	68,000	8,800	840	3,000	13,000	1,400	---
	01/17/96	7.42	79,000	12,000	640	2,700	14,000	2,200	---
	01/17/96 <sup>dup</sup>	7.42	78,000	12,000	920	2,500	12,000	2,500	---
	04/10/96	6.91	84,000	7,200	310	1,700	7,800	2,900	---
	07/30/96	7.63	26,000	6,800	210	1,300	5,500	4,500	---
	10/17/96	8.27	46,000	9,800	340	2,000	6,500	4,900	1.8
	01/22/97	7.09	52,000	6,200	220	1,400	6,600	3,000	1.9
	01/22/97 <sup>dup</sup>	7.09	54,000	6,100	230	1,400	6,500	2,600	1.9
	04/01/97	6.91	69,000	6,000	380	2,400	11,000	3,800	2.0
	07/14/97	9.93	53,000	7,700	260	1,600	5,200	2,400	1.2
	07/14/97 <sup>dup</sup>	9.93	59,000	8,700	400	1,900	6,900	2,700	1.2
	10/08/97	10.43	56,000	8,500	320	1,600	5,100	4,200	2.1
	10/08/97 <sup>dup</sup>	10.43	53,000	8,300	330	1,600	5,200	2,900	2.1
	<b>01/19/98</b>	<b>3.60</b>	<b>64,000</b>	<b>10,000</b>	<b>230</b>	<b>2,400</b>	<b>12,000</b>	<b>2,700</b>	<b>2.4</b>
MW-3 <sup>d</sup>	08/06/91	11.18	430	8	1	4	15	---	---
	10/23/91	11.69	390	2.10	<0.3	0.48	2	---	---
	01/28/92	9.99	190	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/92	9.46	190	<1	<1	<1	0.71	---	---
	07/20/92	11.29	200 <sup>d</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	10/12/92	13.10	180 <sup>d</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	01/12/93	7.32	180	<0.5	2.3	0.9	5.6	---	---
	01/12/93 <sup>dup</sup>	7.32	260	<0.5	<0.5	<0.5	<0.5	---	---
	04/06/93	7.44	280	<0.5	<0.5	<0.5	<0.5	---	---
	07/12/93	10.62	310 <sup>a</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	10/13/93	12.05	150	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/94	9.62	180	<0.5	<0.5	<0.5	<0.5	---	---
	04/13/94	9.15	270	<0.5	<0.5	<0.5	<0.5	---	---
	07/19/94	10.13	190*	<0.5	<0.5	<0.5	<0.5	---	---
	10/27/94	11.66	160*	<0.5	<0.5	<0.5	<0.5	---	---
	01/03/95	6.89	100*	<0.5	<0.5	<0.5	<0.5	---	---
	04/13/95	6.79	120*	<0.5	<0.5	<0.5	<0.5	---	---
	06/30/95	8.94	180*	<0.5	<0.5	<0.5	<0.5	---	---
	10/11/95	10.62	150	2.2	<0.5	<0.5	<0.5	2.3	---
	01/17/96	7.18	120	<0.5	<0.5	<0.5	<0.5	7.8	---
	04/10/96	6.76	160	<0.5	<0.5	<0.5	<0.5	12	---
	07/30/96	9.04	57	<0.5	<0.5	<0.5	<0.5	<2.5	---
	10/17/96	9.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.0
	01/22/97	5.03	<50	<0.5	<0.5	<0.5	<0.5	3.7	2.4
	04/01/97	8.23	71	<0.50	<0.50	<0.50	<0.50	---	1.6
	07/14/97	9.09	<50	<0.50	<0.50	<0.50	1.5	---	1.9
	10/08/97	10.23	73	<0.50	<0.50	<0.50	<0.50	---	5.5
MW-4	08/06/91	10.57	1,300	28	18	68	150	---	---
	10/23/91	10.46	1,900	97	6.10	38	77	---	---
	01/28/92	9.54	200	7.60	<0.5	3	3.30	---	---
	05/04/92	8.33	690	98	3	13	<1	---	---
	07/13/92	9.87	1,500	140	2.90	17	12	---	---
	07/13/92 <sup>dup</sup>	9.87	870	95	1.90	10	7.10	---	---

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G					X	MTBE	DO (mg/L)
			B	T	E	(µg/L)				
	10/12/92 <sup>SPH</sup>	12.43	---	---	---	---	---	---	---	
	01/12/93 <sup>SPH</sup>	7.12	---	---	---	---	---	---	---	
	04/06/93 <sup>SPH</sup>	7.23	---	---	---	---	---	---	---	
	07/12/93 <sup>SPH</sup>	10.08	---	---	---	---	---	---	---	
	10/13/93 <sup>SPH</sup>	11.35	---	---	---	---	---	---	---	
	01/20/94 <sup>SPH</sup>	9.06	---	---	---	---	---	---	---	
	04/13/94 <sup>SPH</sup>	8.58	---	---	---	---	---	---	---	
	07/18/94	9.71	12,000	230	43	230	660	---	---	
	10/27/94 <sup>SPH</sup>	10.60	---	---	---	---	---	---	---	
	01/03/95 <sup>SPH</sup>	5.49	---	---	---	---	---	---	---	
	04/13/95 <sup>SPH</sup>	6.53	---	---	---	---	---	---	---	
	06/30/95	9.57	7,400	140	<0.5	160	350	---	---	
	10/11/95	10.30	3,000	29	10	100	82	9,700	---	
	01/17/96	6.68	9,700	190	<0.5	190	410	4,500	---	
	04/10/96	7.90	2,800	16	<0.5	22	50	6,100	---	
	07/30/96	8.73	1,600	68	<12	58	39	8,500	2.8	
	10/17/96	7.63	4,800	120	<25	150	96	11,000	2.8	
	01/22/97	5.26	12,000	83	<20	170	240	4,300	2.6	
	04/01/97	8.02	4,800	65	<5.0	81	93	3,200	2.4	
	07/14/97	10.05	2,400	35	<10	30	20	6,000	2.0	
	10/08/97	10.22	2,900	66	<20	<20	<20	7,300	5.9	
	<b>01/19/98<sup>b</sup></b>									
MW-5	08/06/91	10.23	9,100	210	27	240	660	---	---	
	10/23/91	10.89	12,000	92	18	230	450	---	---	
	01/28/92	8.45	3,300	130	10	180	220	---	---	
	05/04/92	8.05	3,900	95	<12.5	260	120	---	---	
	07/13/92	10.00	4,100	180	12	250	73	---	---	
	10/12/92 <sup>SPH</sup>	11.83	---	---	---	---	---	---	---	
	01/12/93 <sup>SPH</sup>	6.10	---	---	---	---	---	---	---	
	04/06/93	6.18	6,200	71	<0.5	53	150	---	---	
	07/12/93	9.59	3,400	130	<0.5	170	130	---	---	
	10/13/93 <sup>SPH</sup>	10.80	---	---	---	---	---	---	---	
	01/20/94 <sup>SPH</sup>	7.42	---	---	---	---	---	---	---	
	04/13/94 <sup>SPH</sup>	7.05	---	---	---	---	---	---	---	
	07/19/94	8.57	11,000	180	13	180	260	---	---	
	10/27/94	10.14	6,900	82	<5	210	1110	---	---	
	01/03/95	5.84	12,000	110	46	790	510	---	---	
	04/13/95	5.28	10,000	61	<20	330	140	---	---	
	06/30/95	7.43	12,000	180	8.60	440	340	---	---	
	10/11/95	8.90	11,000	<50	<50	440	340	5,100	---	
	10/11/96 <sup>dup</sup>	8.90	11,000	95	<50	440	330	660	---	
	01/17/96	6.40	82,000	330	120	960	1,400	820	---	
	04/10/96	5.70	23,000	<50	<50	360	190	770	---	
	04/10/96 <sup>dup</sup>	5.70	19,000	84	<50	430	200	590	---	
	07/30/96	7.71	38,000	3,000	<100	1,100	2,600	560	---	
	10/17/96	9.04	13,000	36	<10	210	160	720	1.4	
	10/17/96 <sup>dup</sup>	9.04	11,000	75	<10	180	150	450	1.4	
	01/22/97	4.85	20,000	63	<50	380	390	650	1.6	
	04/01/97	6.54	16,000	110	<50	390	320	2,200	1.4	



**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G	B T E X				MTBE	DO (mg/L)
				(µg/L)					
	07/14/97	8.54	15,000	70	<20	220	170	450	1.8
	10/08/97	9.09	9,100	27	11	170	57	530	4.7
	01/19/98	2.11	9,500	92	<50	200	77	1,100	2.5
MW-6 <sup>d</sup>	08/06/91	10.61	28,000	1,400	200	1,300	4,200	---	---
	10/23/91	11.68	53,000	1,400	230	1,800	6,700	---	---
	01/28/92	8.90	87,000	1,200	470	2,000	6,600	---	---
	05/05/92	8.01	230,000	<500	<500	3,200	11,000	---	---
	07/13/92	10.77	2,700,000	<2,500	3,500	14,000	36,000	---	---
	10/12/92 <sup>SPH</sup>	8.68	---	---	---	---	---	---	---
	01/12/93 <sup>SPH</sup>	6.40	---	---	---	---	---	---	---
	04/06/93	5.93	320,000	2,500	14,000	980	14,000	---	---
	07/12/93	10.25	31,000	1,100	4,500	150	4,500	---	---
	07/12/93 <sup>dhp</sup>	10.25	25,000	1,200	4,800	270	4,800	---	---
	10/13/93 <sup>SPH</sup>	12.28	---	---	---	---	---	---	---
	01/20/94 <sup>SPH</sup>	9.14	---	---	---	---	---	---	---
	04/13/94 <sup>SPH</sup>	7.67	---	---	---	---	---	---	---
	07/19/94 <sup>SPH</sup>	10.07	---	---	---	---	---	---	---
	10/27/94 <sup>SPH</sup>	11.84	---	---	---	---	---	---	---
	01/03/95 <sup>SPH</sup>	7.80	---	---	---	---	---	---	---
	04/13/95 <sup>SPH</sup>	5.77	---	---	---	---	---	---	---
	06/30/95	7.78	1,100,000	6,600	6,100	12,000	29,000	---	---
	10/11/95	10.06	30,000	130	<50	1,400	4,200	710	---
	01/17/96	6.91	450,000	510	1,400	2,700	11,000	630	---
	04/10/96	5.92	22,000	47	<10	350	860	<50	---
	07/30/96	8.97	38,000	3,000	<100	1,100	2,600	560	---
	07/30/96 <sup>dhp</sup>	8.97	38,000	450	100	1,000	3,100	800	---
10/17/96 <sup>SPH</sup>	9.87	34,000	470	<100	1,300	3,900	<500	1.0	
01/22/97	4.43	26,000	<100	<100	600	1,700	<500	1.3	
04/01/97	6.84	30,000	96	33	840	2,600	190	1.4	
07/14/97	10.30	29,000	200	<100	690	2,000	<500	2.3	
10/08/97	10.46	55,000	500	110	640	1,500	900	0.0	
MW-7	08/06/91	8.00	13,000	4,300	76	770	730	---	---
	10/23/91	8.16	18,000	3,200	31	660	770	---	---
	01/28/92	7.11	5,000	1,200	<10	220	54	---	---
	05/05/92	6.47	9,500	3,100	72	620	880	---	---
	07/13/92	7.73	20,000	4,200	130	1,600	1,100	---	---
	10/12/92	9.97	16,000	2,500	170	560	170	---	---
	01/12/93	6.26	15,000	2,300	<50	690	440	---	---
	04/06/93	5.92	26,000	5,400	<0.5	1,200	3,000	---	---
	04/06/93 <sup>dhp</sup>	5.92	21,000	5,200	180	1,200	3,000	---	---
	07/12/93	7.27	10,000	3,000	100	510	530	---	---
	10/13/93	9.40	59,000	13,000	4,400	4,400	20,000	---	---
	01/20/94 <sup>SPH</sup>	7.03	---	---	---	---	---	---	---
	04/13/94 <sup>SPH</sup>	6.56	---	---	---	---	---	---	---
	07/19/94 <sup>SPH</sup>	6.91	---	---	---	---	---	---	---
	10/27/94 <sup>SPH</sup>	8.28	---	---	---	---	---	---	---
	01/03/95 <sup>SPH</sup>	6.48	---	---	---	---	---	---	---
	04/13/95 <sup>SPH</sup>	6.54	---	---	---	---	---	---	---

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G						MTBE	DO (mg/L)
			B	T	E	X				
	06/30/95	7.08	900,000	11,000	8,500	14,000	52,000	---	---	
	10/11/95 <sup>SPH</sup>	7.88	---	---	---	---	---	---	---	
	01/17/96 <sup>SPH</sup>	7.26	---	---	---	---	---	---	---	
	04/10/96 <sup>SPH</sup>	6.98	---	---	---	---	---	---	---	
	07/30/96	7.34	---	---	---	---	---	---	---	
	10/17/96 <sup>SPH</sup>	7.63	---	---	---	---	---	---	---	
	01/22/97	6.46	56,000	2,000	520	1,400	8,400	1,800	0.5	
	04/01/97	6.97	66,000	3,600	460	2,400	10,000	2,300	1.6	
	07/14/97 <sup>SPH</sup>	8.90	---	---	---	---	---	---	---	
	10/08/97	9.21	68,000	3,200	470	2,400	9,700	3,300	2.1	
	<b>01/19/98</b>	<b>4.65</b>	<b>44,000</b>	<b>1,800</b>	<b>220</b>	<b>1,700</b>	<b>7,800</b>	<b>1,600</b>	<b>1.6</b>	
MW-8	08/06/91	9.60	32,000	3,700	1,100	1,400	6,100	---	---	
	10/23/91	9.73	63,000	4,800	1,300	1,300	6,900	---	---	
	01/28/92	7.72	32,000	1,900	750	1,400	6,300	---	---	
	05/05/92	6.48	180,000	2,200	2,000	2,700	13,000	---	---	
	07/13/92	8.55	56,000	4,500	1,500	2,700	9,100	---	---	
	10/12/92	9.97	34,000	2,400	550	1,400	6,400	---	---	
	10/12/92 <sup>dup</sup>	9.97	34,000	3,100	700	1,500	7,200	---	---	
	01/12/93	6.94	110,000	2,100	1,200	2,400	12,000	---	---	
	04/06/93	5.72	38,000	2,500	840	1,100	4,900	---	---	
	07/12/93	7.65	27,000	2,800	990	1,200	5,300	---	---	
	10/13/93	8.25	32,000	3,300	1,300	1,600	8,400	---	---	
	10/13/93 <sup>dup</sup>	8.25	47,000	3,200	1,300	1,600	8,500	---	---	
	01/20/94	7.25	78,000	1,900	670	1,300	6,600	---	---	
	01/20/94 <sup>dup</sup>	7.25	60,000	1,700	680	1,100	5,500	---	---	
	04/13/94	7.12	41,000	1,300	720	1,200	6,000	---	---	
	07/19/94	7.43	140,000	1,800	1,400	2,000	9,000	---	---	
	10/27/94	7.55	32,000	1,200	670	1,200	5,700	---	---	
	10/27/94 <sup>dup</sup>	7.55	42,000	1,100	650	1,100	5,700	---	---	
	01/03/95	6.04	38,000	1,000	700	1,500	7,500	---	---	
	04/13/95	5.04	31,000	1,200	570	1,000	5,300	---	---	
	06/30/95	5.72	110,000	2,000	1,500	2,000	9,700	---	---	
	10/11/95	7.06	36,000	170	60	1,300	6,300	510	---	
	01/17/96	5.84	38,000	1,000	520	1,100	6,200	950	---	
	04/10/96	5.03	54,000	650	260	850	4,700	<250	---	
	07/30/96	6.36	33,000	780	330	830	4,200	1,700	---	
	10/17/96	5.94	35,000	750	300	1,100	5,000	1,200	1.6	
	01/22/97	5.93	25,000	260	78	420	2,400	120	1.8	
	04/01/97	6.24	22,000	680	180	550	2,500	260	1.8	
	07/14/97	8.59	29,000	870	200	850	3,100	500	1.4	
	10/08/97	9.04	27,000	1,000	190	960	3,000	170	4.6	
	<b>01/19/98</b>	<b>3.34</b>	<b>21,000</b>	<b>660</b>	<b>160</b>	<b>740</b>	<b>3,300</b>	<b>170</b>	<b>2.2</b>	
MW-9	08/06/91	10.33	11,000	1,700	95	520	1,400	---	---	
	10/23/91	11.13	20,000	1,000	47	<0.3	940	---	---	
	01/28/92	9.02	3,500	120	<10	280	36	---	---	
	05/04/92	7.67	7,700	1,200	<50	380	630	---	---	
	07/20/92	10.26	11,000	910	<50	220	1,200	---	---	
	10/12/92	12.19	2,100	340	15	77	44	---	---	

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G	B	T	E	X	MTBE	DO
	01/12/93 <sup>h</sup>	----	----	----	----	----	----	----	----
	04/06/93 <sup>b</sup>	----	----	----	----	----	----	----	----
	07/12/93 <sup>b</sup>	----	----	----	----	----	----	----	----
	10/13/93	11.17	2,900	140	<5	<5	120	----	----
	01/20/94	8.03	1,700	380	6.90	150	400	----	----
	04/13/94	7.81	6,000	1,000	<20	450	420	----	----
	07/19/94	8.96	12,000	1,400	<5	740	1,200	----	----
	10/27/94	11.00	10,000	1,200	160	280	860	----	----
	01/03/95	6.60	4,400	680	7.70	180	370	----	----
	04/13/95	6.73	1,700	270	<10	69	170	----	----
	06/30/95	7.32	14,000	2,200	18	900	2,600	----	----
	06/30/95 <sup>dup</sup>	7.32	13,000	2,100	17	870	2,500	----	----
	10/11/95	8.10	9,600	35	12	360	980	590	----
	01/17/96	5.75	2,800	150	7.41	54	130	170	----
	04/10/96	5.17	5,200	290	<5	92	220	240	----
	07/30/96	8.1	5,100	960	<10	380	770	670	----
	10/17/96	9.12	15,000	2,100	<25	590	1,300	1,500	2.4
	01/22/97	4.72	5,600	690	<5.0	140	310	620	2.2
	04/01/97	6.86	4,000	590	<10	140	200	600	2.2
	04/01/97 <sup>dup</sup>	6.86	4,800	660	<25	160	230	810	2.2
	07/14/97	10.04	7,100	860	<10	51	230	950	3.8
	10/08/97	11.38	1,500	57	<2.0	2.0	13	540	8.2
	<b>01/19/98</b>	<b>3.88</b>	<b>2,500</b>	<b>280</b>	<b>&lt;20</b>	<b>79</b>	<b>61</b>	<b>620</b>	<b>1.4</b>
MW-10	10/23/91	8.57	27,000	1,600	110	1,800	510	----	----
	01/28/92	7.60	3,800	360	14	170	39	----	----
	05/04/92	7.54	3,000	360	<12.5	140	26	----	----
	07/20/92	8.59	15,000	400	<25	180	67	----	----
	10/12/92	10.23	16,000	320	<50	360	100	----	----
	01/12/93 <sup>h</sup>	----	----	----	----	----	----	----	----
	04/06/93	6.70	14,000	370	<0.5	880	210	----	----
	07/12/93	8.05	10,000	440	58	890	220	----	----
	10/13/93	8.25	15,000	1,000	51	810	170	----	----
	01/20/94	7.20	12,000	820	56	1,100	350	----	----
	04/13/94	7.57	18,000	760	36	700	130	----	----
	07/19/94	8.18	24,000	400	2.30	800	22	----	----
	10/27/94	8.68	11,000	360	43	310	89	----	----
	01/03/95	6.86	17,000	770	38	690	160	----	----
	04/13/95	6.91	9,900	650	16	280	40	----	----
	06/30/95	7.61	12,000	750	20	480	130	----	----
	01/17/96	7.00	17,000	870	260	93	830	----	----
	04/10/96	6.80	14,000	470	38	110	370	----	----
	07/30/96	----	----	----	----	----	----	----	----
	10/17/96	----	----	----	----	----	----	----	----
	01/22/97	6.68	10,000	520	<20	64	32	180	3.1
	04/01/97	7.34	11,000	590	<20	53	32	210	2.8
	07/14/97	8.10	6,600	410	13	28	11	89	1.4
	10/08/97	8.2	7,600	220	13	65	22	190	6.4
	<b>01/19/98<sup>h</sup></b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>	<b>---</b>

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G	(µg/L)				MTBE	DO (mg/L)	
				B	T	E	X			
MW-11	10/23/91	8.06	140	<12	<0.3	0.37	0.56	---	---	
	01/28/92	13.32	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	05/04/92	13.77	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	07/13/92	11.56	140	<0.5	<0.5	<0.5	<0.5	---	---	
	10/12/92	12.40	75	<0.5	<0.5	<0.5	<0.5	---	---	
	01/12/93 <sup>b</sup>	---	---	---	---	---	---	---	---	
	04/06/93 <sup>b</sup>	---	---	---	---	---	---	---	---	
	07/12/93 <sup>b</sup>	---	---	---	---	---	---	---	---	
	10/13/93	11.47	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	01/20/94	9.09	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	04/13/94	8.02	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	07/19/94	9.82	50	<0.5	<0.5	<0.5	<0.5	---	---	
	10/27/94	11.66	60*	<0.5	<0.5	<0.5	<0.5	---	---	
	01/03/95	6.15	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	04/13/95	6.00	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	06/30/95	8.31	70	<0.5	<0.5	<0.5	<0.5	---	---	
	10/11/95	10.30	60	53	<0.5	<0.5	<0.5	0.80	3.0	
	01/17/96	6.45	<50	<0.5	<0.5	<0.5	<0.5	<2	---	
	04/10/96	6.05	<50	<0.5	<0.5	<0.5	<0.5	3.9	---	
	07/30/96	8.92	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	
	10/17/96	9.24	3,000	28	23	29	210	76	---	
	01/22/97	5.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5	3.7	
	04/01/97	7.41	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.8	
	07/14/97	9.74	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.9	
	10/08/97	10.23	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.4	
<b>01/19/98</b>	<b>3.69</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;2.5</b>	<b>3.2</b>	
Equipment	07/13/92	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
Blank	07/20/92	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	10/12/92	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	04/13/94	---	<50	<0.5	0.67	<0.5	<0.5	---	---	
	07/19/94	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	10/27/94	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	01/03/95	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	04/13/95	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	06/30/95	---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
	10/11/95	---	<50	<0.5	<0.5	<0.5	<0.5	<0.5	---	
	01/17/96	---	<50	<0.5	<0.5	<0.5	<0.5	<2	---	
	Trip Blank	01/28/92	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
		05/05/92	---	<50	<0.5	<0.5	<0.5	<0.5	---	---
07/13/92		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
07/20/92		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
10/12/92		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
01/12/93		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
04/06/93		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
07/12/93		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
10/13/93		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
01/20/94		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	
04/13/94		---	<50	<0.5	<0.5	<0.5	<0.5	---	---	

**Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California**

Well ID	Date Sampled	Depth to water (ft below TOC)	TPH-G	B	T	E	X	MTBE	DO
			(µg/L)					(mg/L)	
	07/19/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/27/94	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	01/03/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	04/13/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	06/30/95	----	<50	<0.5	<0.5	<0.5	<0.5	----	----
	10/11/95	----	<50	<0.5	<0.5	<0.5	<0.5	<0.5	----
MCLs			NE	1	150	700	1,750	NE	

**Abbreviations:**

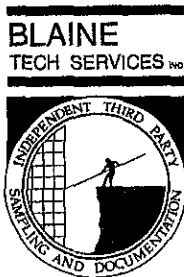
TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015  
 B = Benzene by EPA Method 8020  
 T = Toluene by EPA Method 8020  
 E = Ethylbenzene by EPA Method 8020  
 X = Xylenes by EPA Method 8020  
 MTBE = Methyl tert-butyl ether by EPA Method 8020  
 DO = Dissolved oxygen  
 MCLs = California Primary maximum contaminant levels for drinking water (22 CCR 64444)  
 NE = MCLs not established  
 ---- = Not analyzed  
 < n = Not detected at detection limits of n µg/L  
 dup = Duplicate sample  
 SPH = Not sampled, separate-phase hydrocarbons detected in well  
 µg/L = Micrograms per liter  
 mg/L = Milligrams per liter  
 TOC = Top of casing

**Notes:**

a = Concentration reported as gasoline is due to the presence of a discrete hydrocarbon peak that is not indicative of gasoline  
 b = Not sampled; well inaccessible  
 c = Analytic laboratory noted that MTBE could not be quantified due to co-eluting compounds  
 d = Well abandoned December 5, 1997  
 \* = The result for gasoline is an unknown hydrocarbon which consists of a single peak as confirmed by NET Laboratory

**ATTACHMENT A**

Blaine Quarterly Ground Water Monitoring Report



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

February 18, 1998

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

Attn: Alex Perez

Shell WIC #204-5508-5306  
3420 San Pablo Avenue  
Oakland, California

1st Quarter 1998

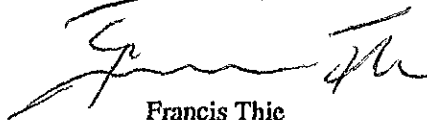
## Groundwater Monitoring Report 980119-G-1

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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: Maureen Feinemen

(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 *	01/19/98	TOC	ODOR/SHEEN	NONE	--	--	1.20	25.03
MW-2	01/19/98	TOC	ODOR/SHEEN	NONE	--	--	3.60	19.21
MW-3	01/19/98	INACCESSIBLE	--	--	--	--	--	--
MW-4	01/19/98	INACCESSIBLE	--	--	--	--	--	--
MW-5	01/19/98	TOC	ODOR/SHEEN	NONE	--	--	2.11	24.91
MW-6	01/19/98	INACCESSIBLE	--	--	--	--	--	--
MW-7	01/19/98	TOC	ODOR/SHEEN	NONE	--	--	4.65	19.43
MW-8	01/19/98	TOC	ODOR/SHEEN	NONE	--	--	3.34	19.97
MW-9	01/19/98	TOC	ODOR	NONE	--	--	3.88	19.49
MW-10	01/19/98	INACCESSIBLE	--	--	--	--	--	--
MW-11	01/19/98	TOC	--	NONE	--	--	3.69	18.79

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





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

**CHAIN OF CUSTODY RECORD**

Serial No: 980119-61

Date: 1/19/98

Page 1 of 2

Site Address: 3420 San Pablo Ave., Oakland, CA

WIC#: 204-5506-5306

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

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

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

Comments:

Sampled by: [Signature]

Printed Name: Morgan Gillies

Analysis Required

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/302)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020/MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1	1/19/98	1		X		3						X						
MW-2		2										X						
MW-5		3										X						
MW-7		4										X						
MW-8		5										X						
MW-9		6										X						
MW-11		7										X						
EB		8										X						

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Morgan Gillies</u>	Date: <u>1/20/98</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>Fletcher</u>	Date: <u>1/20/98</u>
Acquiesced By (signature): <u>[Signature]</u>	Printed Name: _____	Date: <u>1/20/98</u>	Received (signature): _____	Printed Name: _____	Date: _____
Witnessed By (signature): _____	Printed Name: _____	Date: _____	Received (signature): <u>[Signature]</u>	Printed Name: <u>MIKE young</u>	Date: <u>1/20/98</u>

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

22



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

**CHAIN OF CUSTODY RECORD**

Serial No: 980119-61

Date: 1/19/98  
Page 2 of 2

Site Address: 3420 San Pablo Ave., Oakland, CA

WIC#: 204-5506-5306

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

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

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

Comments:

Sampled by: [Signature]  
Printed Name: Morgan Gillies

980119-61 Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 / <u>MTBE</u>	Asbestos	Container Size	Preparation Used	Composite Y/N
-------------------------	----------------------------	---------------------	------------------------------	-------------------	--	----------	----------------	------------------	---------------

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CT/DI	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	4442	15 days: <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	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>	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
<u>Rup</u>	<u>1/19/98</u>	<u>9</u>		<u>X</u>		<u>3</u>						<u>X</u>							<u>5 20</u>

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Morgan Gillies</u>	Date: <u>1/20/98</u> Time: <u>10:45</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>Fletcher</u>	Date: <u>1/20/98</u> Time: <u>10:45</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>1/20/98</u> Time:	Received (signature): <u>[Signature]</u>	Printed Name:	Date: <u>1/20/98</u> Time:
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>1/20/98</u> Time:	Received (signature): <u>[Signature]</u>	Printed Name: <u>MIKE YONG</u>	Date: <u>1/20/98</u> Time: <u>11:21</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

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(510) 988-9600  
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FAX (650) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100

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

Project: Shell Oakland/980119-G1

Enclosed are the results from samples received at Sequoia Analytical on January 20, 1998.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9801A50 -01	LIQUID, MW-1	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -02	LIQUID, MW-2	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -03	LIQUID, MW-5	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -04	LIQUID, MW-7	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -05	LIQUID, MW-8	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -06	LIQUID, MW-9	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -07	LIQUID, MW-11	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -08	LIQUID, EB	01/19/98	TPGM2W Purgeable TPH/BTEX
9801A50 -09	LIQUID, Dup	01/19/98	TPGM2W Purgeable TPH/BTEX

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

Very truly yours,

**SEQUOIA ANALYTICAL**

  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/980119-G1 Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-01	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
--	--	---

QC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

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

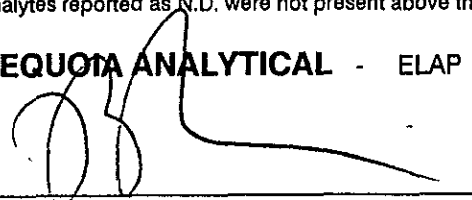
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	8100
Methyl t-Butyl Ether	100	1100
Benzene	20	39
Toluene	20	N.D.
Ethyl Benzene	20	280
Xylenes (Total)	20	660
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70      130	106

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/980119-G1 Sample Descript: MW-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-02	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 02/02/98 Reported: 02/04/98
--	--	---

GC Batch Number: GC020298BTEX02A  
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	64000
Methyl t-Butyl Ether	500	2700
Benzene	100	10000
Toluene	100	230
Ethyl Benzene	100	2400
Xylenes (Total)	100	12000
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	112

Analyses 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/980119-G1 Sample Descript: MW-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-03	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
Attention: Fran Thie		

QC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	9500
Methyl t-Butyl Ether	250	1100
Benzene	50	92
Toluene	50	N.D.
Ethyl Benzene	50	200
Xylenes (Total)	50	77
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	100

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/980119-G1 Sample Descript: MW-7 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-04	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
--	--	---

GC Batch Number: GC013098BTEX02A  
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	44000
Methyl t-Butyl Ether	500	1600
Benzene	100	1800
Toluene	100	220
Ethyl Benzene	100	1700
Xylenes (Total)	100	7800
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
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/980119-G1 Sample Descript: MW-8 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-05	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
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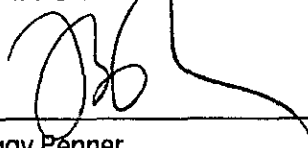
QC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	21000
Methyl t-Butyl Ether	100	170
Benzene	20	660
Toluene	20	160
Ethyl Benzene	20	740
Xylenes (Total)	20	3300
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	97

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/980119-G1 Sample Descript: MW-9 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-06	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
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GC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

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

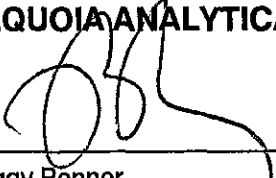
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	2500
Methyl t-Butyl Ether	100	620
Benzene	20	280
Toluene	20	N.D.
Ethyl Benzene	20	79
Xylenes (Total)	20	61
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70	130
		87

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/980119-G1  
Sample Descript: MW-11  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9801A50-07

Sampled: 01/19/98  
Received: 01/20/98  
Analyzed: 02/02/98  
Reported: 02/04/98

Attention: Fran Thie

QC Batch Number: GC020298BTEX02A  
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	86

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/980119-G1 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9801A50-08	Sampled: 01/19/98 Received: 01/20/98 Analyzed: 01/30/98 Reported: 02/04/98
--	--	---

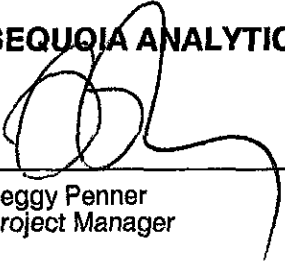
GC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

**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	85

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

SEQUOIA ANALYTICAL - ELAP #1210




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Peggy Penner  
Project Manager





Blaine Tech Services	Client Proj. ID: Shell Oakland/980119-G1	Sampled: 01/19/98
1680 Rogers Avenue	Sample Descript: Dup	Received: 01/20/98
San Jose, CA 95112	Matrix: LIQUID	
Attention: Fran Thie	Analysis Method: 8015Mod/8020	Analyzed: 01/30/98
	Lab Number: 9801A50-09	Reported: 02/04/98

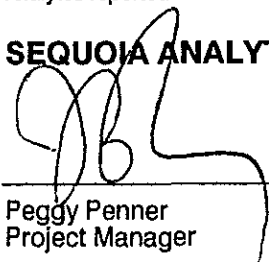
QC Batch Number: GC013098BTEX02A  
Instrument ID: GCHP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	8200
Methyl t-Butyl Ether	100	1100
Benzene	20	43
Toluene	20	N.D.
Ethyl Benzene	20	280
Xylenes (Total)	20	660
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	105

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.  
1680 Rogers Ave.  
San Jose, CA 95112  
Attention: Fran Thie

Client Project ID: Shell Oakland / 980119-G1  
Matrix: Liquid

Work Order #: 9801A50 -01, 03-06, 08-09

Reported: Feb 6, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
<b>QC Batch#:</b>	GC013098BTEX02A	GC013098BTEX02A	GC013098BTEX02A	GC013098BTEX02A	GC013098BTEX02A
<b>Analy. Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
<b>Prep. Method:</b>	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

<b>Analyst:</b>	A. MirafTAB	A. MirafTAB	A. MirafTAB	A. MirafTAB	A. MirafTAB
<b>MS/MSD #:</b>	980191605	980191605	980191605	980191605	980191605
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.	N.D.
<b>Prepared Date:</b>	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
<b>Analyzed Date:</b>	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
<b>Instrument I.D.#:</b>	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
<b>Conc. Spiked:</b>	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
<b>Result:</b>	9.1	8.8	9.0	28	60
<b>MS % Recovery:</b>	91	88	90	93	100
<b>Dup. Result:</b>	8.7	8.3	8.5	26	52
<b>MSD % Recov.:</b>	87	83	85	87	87
<b>RPD:</b>	4.5	5.8	5.7	7.4	14
<b>RPD Limit:</b>	0-25	0-25	0-25	0-25	0-25

<b>LCS #:</b>	BLK013098	BLK013098	BLK013098	BLK013098	BLK013098
<b>Prepared Date:</b>	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
<b>Analyzed Date:</b>	1/30/98	1/30/98	1/30/98	1/30/98	1/30/98
<b>Instrument I.D.#:</b>	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
<b>Conc. Spiked:</b>	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
<b>LCS Result:</b>	8.3	8.0	8.3	25	55
<b>LCS % Recov.:</b>	83	80	83	83	92

<b>MS/MSD</b>	60-140	60-140	60-140	60-140	60-140
<b>LCS</b>	70-130	70-130	70-130	70-130	70-130
<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

9801A50.BLA <1>



Blaine Tech Services, Inc. 1680 Rogers Ave. San Jose, CA 95112 Attention: Fran Thie	Client Project ID: Shell Oakland / 980119-G1 Matrix: Liquid	Work Order #: 9801A50-02, 07	Reported: Feb 6, 1998
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### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC020298BTEX02A	GC020298BTEX02A	GC020298BTEX02A	GC020298BTEX02A	GC020298BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	A. MirafTAB	A. MirafTAB	A. MirafTAB	A. MirafTAB	A. MirafTAB
MS/MSD #:	9801B5604	9801B5604	9801B5604	9801B5604	9801B5604
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Analyzed Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	8.3	8.2	8.5	25	59
MS % Recovery:	83	82	85	83	98
Dup. Result:	8.2	8.0	8.2	25	56
MSD % Recov.:	82	80	82	83	93
RPD:	1.2	2.5	3.6	0.0	5.2
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK020298	BLK020298	BLK020298	BLK020298	BLK020298
Prepared Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Analyzed Date:	2/2/98	2/2/98	2/2/98	2/2/98	2/2/98
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.9	8.8	9.0	28	61
LCS % Recov.:	89	88	90	93	102

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

SEQUOIA ANALYTICAL

Peggy Fenner  
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

9801A50.BLA <2>





Sequoia  
Analytical

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Walnut Creek, CA 94598  
Sacramento, CA 95834

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

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

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell Oakland/980119-G1  Lab Proj. ID: 9801A50	Received: 01/20/98  Reported: 02/04/98
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### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 13 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Peggy Penner  
Project Manager

