



ENVIRONMENTAL  
PROTECTION

March 19, 1998

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Pamela Evans  
Alameda County Department of Environmental Health  
Hazardous Materials Division  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **Fourth Quarter 1997 Monitoring Report**  
Shell Service Station  
29 Wildwood Avenue  
Piedmont, California  
WIC #204-6001-0109  
Cambria Project #24-314-497

Dear Ms. Evans:

On behalf of Shell Oil Products Company, 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.

#### **FOURTH QUARTER 1997 ACTIVITIES**

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

**Oxygen Releasing Compound (ORC) Installation:** Cambria installed ORCs in wells MW-1, MW-2, and MW-3 after the fourth quarter 1997 sampling event.

#### **ANTICIPATED FUTURE 1998 ACTIVITIES**

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

**Other Activities:** A dispenser upgrade is scheduled for first quarter 1998. At that time, Cambria will prepare a report summarizing our inspection of upgrade activities at the site.

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

Pamela Evans  
March 19, 1998

CAMBRIA

**CLOSING**

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

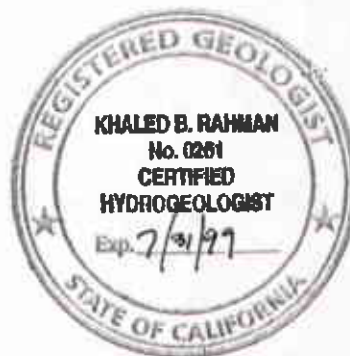
Sincerely,  
Cambria Environmental Technology, Inc.



Maureen D. Feineman  
Staff Geologist



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



Attachments: A - Blaine Tech Ground Water Monitoring Report

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

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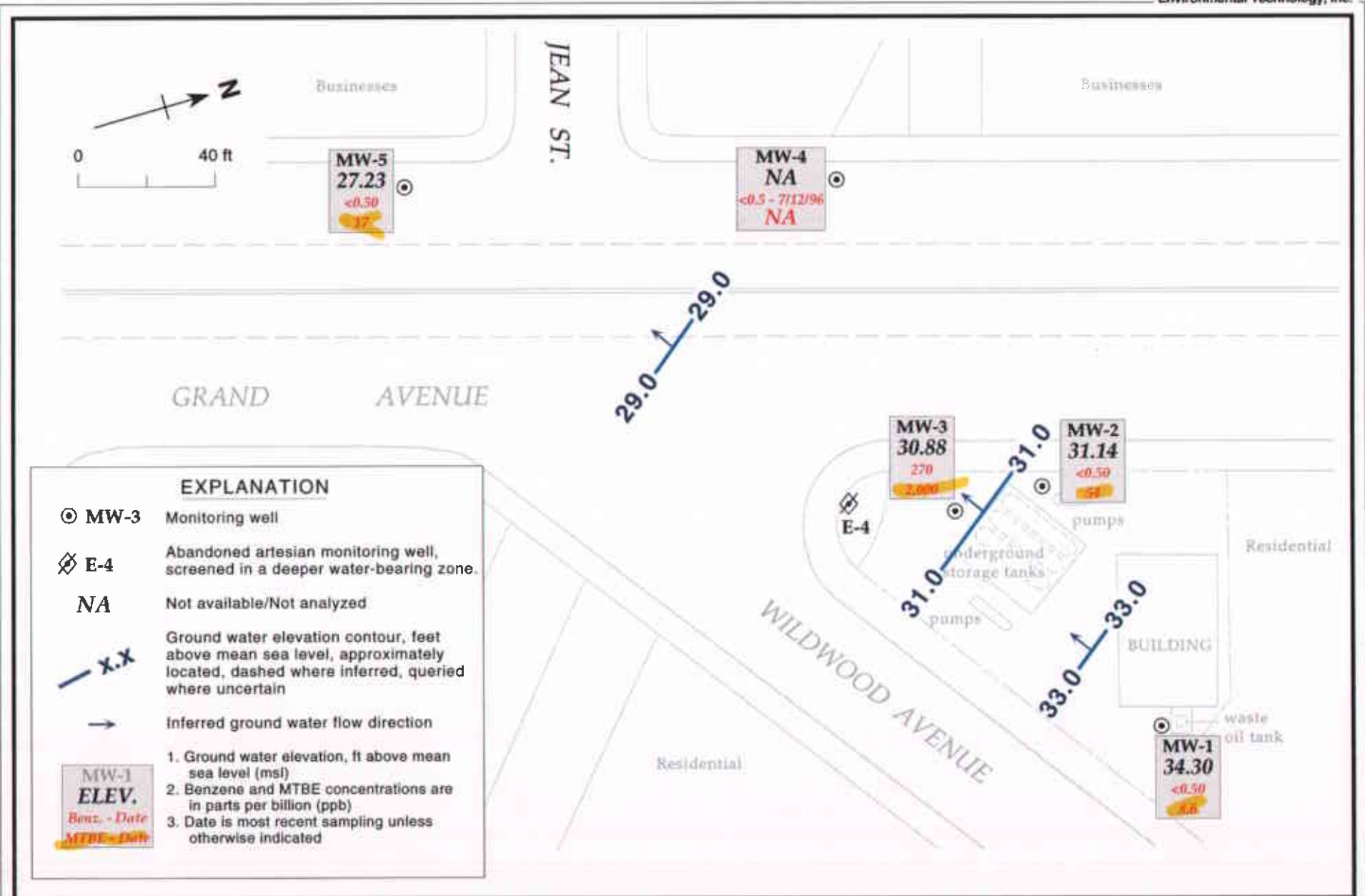


Figure 1. Ground Water Elevation Contours - October 24, 1997 - Shell Service Station, 29 Wildwood Avenue, Piedmont, California

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-6001-0109,  
29 Wildwood Avenue, Piedmont, California**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	07/12/89	37.96	2.76	35.20
	01/30/90		3.10	34.86
	04/27/90		3.24	34.72
	07/31/90		4.26	33.70
	10/30/90		4.25	33.71
	01/31/91		3.66	34.30
	04/30/91		3.46	34.50
	07/30/91		4.14	33.82
	10/29/91		3.96	34.00
	01/20/92		3.59	34.37
	04/14/92		3.18	31.71
	07/21/92		4.17	33.79
	10/02/92		4.29	33.67
	01/20/93		2.32	35.64
	05/03/93		3.50	34.46
	06/28/93		3.76	34.20
	07/21/93		4.09	33.87
	10/19/93		3.58	34.38
	01/20/94		---	---
	04/12/94		3.60	34.36
	07/20/94		4.10	33.86
	10/06/94		4.30	33.66
	01/20/95		2.94	35.02
	07/06/95		3.68	34.28
	01/24/96		2.12	35.84
	07/12/96		3.58	34.38
	01/16/97		2.30	35.66
			<b>10/24/97</b>	
MW-2	07/12/89	34.89	3.66	31.23
	01/30/90		3.49	31.40
	04/27/90		3.79	31.10
	07/31/90		4.03	30.86
	10/30/90		4.21	30.68
	01/31/91		4.09	30.80
	04/30/91		3.95	30.94
	07/30/91		4.07	30.82
	10/29/91		4.11	30.78
	01/20/92		3.86	31.03
	04/14/92		3.66	34.30
	07/21/92		3.92	30.97
	10/02/92		4.45	30.44
	01/20/93		3.74	31.15
	05/03/93		3.77	31.12

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	06/28/93		3.96	30.93
	07/21/93		4.39	30.50
	10/19/93		3.92	30.97
	01/20/94		4.45	30.44
	04/12/94		4.72	30.17
	07/20/94		5.32	29.57
	10/06/94		4.03	30.86
	01/20/95		3.89	31.00
	07/06/95		8.84	26.05
	01/24/96		3.80	31.09
	07/12/96		3.85	31.04
	01/16/97		3.84	31.05
	<b>10/24/97</b>		<b>3.75</b>	<b>31.14</b>
MW-3	07/12/89	35.00	3.83	31.17
	01/30/90		3.24	31.76
	04/27/90		4.02	30.98
	07/31/90		4.31	30.69
	10/30/90		4.52	30.48
	01/31/91		4.33	30.67
	04/30/91		3.79	31.21
	07/30/91		4.37	30.63
	10/29/91		4.00	31.00
	01/20/92		3.87	31.13
	04/14/92		3.15	31.85
	07/21/92		4.17	30.83
	10/02/92		4.43	30.57
	01/20/93		2.20	32.80
	05/03/93		3.50	31.50
	06/28/93		4.08	30.92
	07/21/93		4.12	30.88
	10/19/93		4.20	30.80
	01/20/94		4.08	30.92
	04/12/94		3.70	31.30
	07/20/94		4.26	30.74
	10/06/94		4.31	30.69
	01/20/95		3.00	32.00
	07/06/95		3.75	31.25
	01/24/96		3.26	31.74
	07/12/96		3.77	31.23
	01/16/97		2.38	32.62
	<b>10/24/97</b>		<b>4.12</b>	<b>30.88</b>

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-4	01/30/90	33.73	4.50	29.23
	04/27/90		3.62	30.11
	07/31/90		4.19	29.54
	10/30/90		4.19	29.54
	01/31/91		4.49	29.24
	04/30/91		4.02	29.71
	07/30/91		4.39	29.34
	10/29/91		3.75	29.98
	01/20/92		3.94	29.79
	04/14/92		3.71	30.02
	07/21/92		4.02	29.71
	10/02/92		4.13	29.60
	01/20/93		3.10	30.63
	05/03/93		3.70	30.03
	06/28/93		3.81	29.92
	07/21/93		3.81	29.92
	10/19/93		3.94	29.79
	01/20/94		4.00	29.73
	04/12/94		4.01	29.72
	07/20/94		3.91	29.82
	10/06/94		3.99	29.74
	01/20/95		3.56	30.17
	07/06/95		3.85	29.88
	01/24/96		2.56	31.17
07/12/96	3.36	30.37		
01/16/97 <sup>c</sup>	---	---		
10/24/97 <sup>c</sup>	---	---		
MW-5	01/30/90	31.38	7.12	24.26
	04/27/90		4.19	27.19
	07/31/90		4.09	27.29
	10/30/90		4.39	26.99
	01/31/91		4.49	26.89
	04/30/91		4.27	27.11
	07/30/91		4.32	27.06
	10/29/91		3.79	27.59
	01/20/92		4.09	27.29
	04/14/92		4.12	27.26
	07/21/92		4.13	27.25
	10/02/92		4.30	27.08
	01/20/93		3.12	28.26
	05/03/93		4.07	27.31
	06/28/93		4.08	27.30
	07/21/93		4.05	27.33

**Table 1. Ground Water Elevations - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
	10/19/93		4.20	27.18
	01/20/94		4.40	26.98
	04/12/94		4.18	27.20
	07/20/94		4.06	27.32
	10/06/94		4.01	27.37
	01/20/95		3.49	27.89
	07/06/95		4.06	27.32
	01/24/96		2.90	28.48
	07/12/96		4.02	27.36
	01/16/97		2.59	28.79
	10/24/97		4.15	27.23
E-4 <sup>d</sup>	07/12/89	34.63	a	>39.13
	01/30/90		b	>34.63
	04/27/90		b	>34.63
	07/31/90		b	>34.63
	10/30/90		b	>34.63
	01/31/91		b	>34.63
	04/30/91		b	>34.63
	07/30/91		b	>34.63
	10/29/91		b	>34.63
	01/20/92		b	>34.63
	04/14/92		b	>34.63
	07/21/92		b	>34.63
	10/02/92		b	>34.63
	01/20/93		b	>34.63
	05/03/93		b	>34.63
	06/28/93		b	>34.63
	07/21/93		b	>34.63
	10/19/93		b	>34.63
	01/20/94		b	>34.63
	04/12/94		b	>34.63
	07/20/94		b	>34.63
	10/06/94		b	>34.63
	01/20/95		b	>34.63

**Notes:**

- a = Well E-4 is a flowing artesian well. The potentiometric surface was greater than 4.5 ft above the top of the well casing.
- b = Well E-4 potentiometric surface was higher than the top of the well casing
- c = Well inaccessible
- d = Well destroyed on June 16, 1995

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	Dissolved Oxygen <sup>a</sup>
MW-1 (4 <sup>th</sup> Quarter)	07/12/89	2.76	<50	<0.5	<1	<1	<3	---	---
	01/30/90	3.10	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/27/90	3.24	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/31/90	4.26	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/30/90	4.25	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/31/91	3.66	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/30/91	3.46	<50	0.8	<0.5	0.6	1.2	---	---
	07/30/91	4.14	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/29/91	3.96	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/92	3.59	<30	<0.3	<0.3	<0.3	<0.3	---	---
	04/14/92	3.18	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/92	4.17	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92	4.29	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93	2.32	<50	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/93	3.50	<50	<0.5	<0.5	<0.5	<0.5	---	1,930
	07/21/93	4.09	<50	<0.5	<0.5	<0.5	<0.5	---	4,640
	10/19/93	3.58	50	<0.5	<0.5	<0.5	<0.5	---	4,310
	01/20/94 <sup>b</sup>	---	---	---	---	---	---	---	---
	04/12/94	3.60	<50	<0.5	<0.5	<0.5	<0.5	---	7,460
	07/20/94	4.10	<50	<0.5	<0.5	<0.5	<0.5	---	3,200
10/06/94	4.30	<50	<0.5	<0.5	<0.5	<0.5	---	3,200	
01/20/95	2.94	<50	<0.5	<0.5	<0.5	<0.5	---	10,600	
07/06/95	3.68	<50	<0.5	<0.5	<0.5	<0.5	---	---	
01/24/96	2.12	<50	<0.5	<0.5	<0.5	<0.5	---	---	
07/12/96	3.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2,700	
01/16/97	2.30	120	14	10	3.6	14	<2.5	3,000	
<b>10/24/97</b>	<b>3.66</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>8.6</b>	<b>4,500</b>	
MW-2 (4 <sup>th</sup> Quarter)	07/12/89	3.66	60	2.7	<1	<1	<3	---	---
	01/30/90	3.49	<50	6.6	<0.5	0.54	0.93	---	---



**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	(concentrations in µg/L)						Dissolved Oxygen <sup>a</sup>
			TPH-G	B	T	E	X	MTBE	
	04/27/90	3.79	60	2.1	<0.5	<0.5	<0.5	---	---
	07/31/90	4.03	70	1.5	<0.5	<0.5	<0.5	---	---
	10/30/90	4.21	70	<0.5	0.7	<0.5	1.6	---	---
	01/31/91	4.09	80	<0.5	<0.5	0.9	1.9	---	---
	04/30/91	3.95	100	5.9	0.6	0.7	2.0	---	---
	07/30/91	4.07	<50	<0.5	<0.7	<0.5	<0.5	---	---
	10/29/91	4.11	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/92	3.86	<30	0.84	<0.3	<0.41	<0.48	---	---
	04/14/92	3.66	70	16	<0.5	3.1	2.1	---	---
	07/21/92	3.92	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92	4.45	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93	3.74	<50	3.8	<0.5	0.52	<0.5	---	---
	05/04/93	3.77	680 <sup>c</sup>	2.8	<0.5	<0.5	<0.5	---	900
	07/21/93	4.39	<50	8.0	1.2	1.8	7.9	---	5,880
	10/19/93	3.92	<50	<0.5	<0.5	<0.5	<0.5	---	5,700
	01/20/94	4.45	<50	1.5	<0.5	<0.5	<0.5	---	3,200
	04/12/94	4.72	<50	2.9	<0.5	<0.5	<0.5	---	11,380
	07/20/94	5.32	<50	<0.5	<0.5	<0.5	<0.5	---	2,400
	10/06/94	4.03	<50	<0.5	<0.5	<0.5	<0.5	---	2,900
	01/20/95	3.89	290	28	<0.5	<0.5	<0.5	---	4,600
	07/06/95	3.84	120	3.0	<0.5	<0.5	<0.5	---	---
	01/24/96	3.80	70	3.1	<0.5	0.8	1.5	---	---
	01/24/96 <sup>dup</sup>	3.80	70	3.2	0.5	0.7	1.5	---	---
	07/12/96	3.85	<50	0.68	<0.5	<0.5	<0.5	270	3,800
	01/16/97	3.84	230	34	1.6	1.6	4.2	460	---
	<b>10/24/97</b>	<b>3.75</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>54</b>	<b>2,900</b>
MW-3	07/12/89	3.83	3,900	380	41	99	30	---	---
(4 <sup>th</sup> Quarter)	01/30/90	3.24	5,500	440	35	79	130	---	---
	04/27/90	4.02	4,500	310	26	37	110	---	---

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	Dissolved Oxygen <sup>a</sup>
	07/31/90	4.31	3,500	210	17	8.4	62	---	---
	10/30/90	4.52	2,300	610	<0.5	<0.5	28	---	---
	01/31/91	4.33	4,100	300	20	19	81	---	---
	04/30/91	3.79	3,800	370	19	8.6	60	---	---
	07/30/91	4.37	3,300	160	13	15	87	---	---
	10/29/91	4.00	1,000	35	2.8	2.9	8.1	---	---
	01/20/92	3.87	6,900	380	18	47	48	---	---
	04/14/92	3.15	6,000	480	38	41	55	---	---
	07/21/92	4.17	3,700	330	13	30	23	---	---
	10/02/92	4.43	4,200	260	10	13	12	---	---
	01/20/93	2.20	4,200	360	15	32	26	---	---
	01/20/93 <sup>dup</sup>	2.20	3,900	370	15	32	26	---	---
	05/04/93	3.50	12,000	290	520	120	620	---	630
	07/21/93	4.12	2,000	170	12	<10	11	---	4,340
	07/21/93 <sup>dup</sup>	4.12	2,000	170	10	<10	14	---	---
	10/19/93	4.20	2,000	240	<0.5	<0.5	<0.5	---	5,740
	01/20/94	4.08	4,200	280	<10	<10	<10	---	4,100
	01/20/94 <sup>dup</sup>	4.08	3,800	250	<10	<10	<10	---	4,100
	04/12/94	3.70	4,700	380	<10	<10	<10	---	10,620
	04/12/94 <sup>dup</sup>	3.70	3,400	370	<25	<25	<25	---	---
	07/20/94	4.26	5,100	320	77	15	34	---	2,300
	07/20/94 <sup>dup</sup>	4.26	4,400	250	14	13	32	---	---
	10/06/94	4.31	4,300	280	9.7	4.0	15	---	2,300
	01/20/95	3.00	4,600	180	18	16	10	---	11,100
	01/20/95 <sup>dup</sup>	3.00	4,300	170	12	15	7.2	---	---
	07/06/95	3.75	3,900	310	<0.5	7.6	13	---	---
	07/06/95 <sup>dup</sup>	3.75	4,100	330	<0.5	7.9	2.4	---	---
	01/24/96	3.26	5,000	210	14	14	12	---	---
	07/12/96	3.77	2,700	210	<0.5	<0.5	<0.5	3,600	2,400
	07/12/96 <sup>dup</sup>	3.77	2,800	210	<0.5	<0.5	<0.5	3,400	2,400

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	Dissolved Oxygen <sup>a</sup>
			(concentrations in µg/L)						
	01/16/97	2.38	4,200	130	19	10	34	4,400(4,600)	2,300
	10/24/97	4.12	4,100	270	9.0	5.1	8.8	2,000	1,900
	10/24/97 <sup>dup</sup>	4.12	1,700	220	<5.0	<5.0	<5.0	1,500	1,900
MW-4 (4 <sup>th</sup> Quarter)	01/31/90	4.50	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/27/90	3.62	130 <sup>e</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	07/31/90	4.19	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/30/90	4.19	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/31/91	4.49	50 <sup>e</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	04/30/91	4.02	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/30/91	4.39	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/29/91	3.75	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/92	3.94	<30	<0.3	<0.3	<0.3	<0.3	---	---
	04/14/92	3.71	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/92	4.02	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92	4.13	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93	3.10	<50	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/93	3.70	<50	<0.5	<0.5	<0.5	<0.5	---	1,740
	07/21/93	3.81	<50	0.56	<0.5	<0.5	<0.5	---	4,510
	10/10/93	3.94	<50	<0.5	<0.5	<0.5	<0.5	---	5,750
	01/20/94	4.00	<50	0.71	<0.5	<0.5	<0.5	---	4,400
	04/12/94	4.01	<50	<0.5	<0.5	<0.5	<0.5	---	7,290
	07/20/94	3.91	160	<0.5	<0.5	<0.5	<0.5	---	6,400
	10/11/94	3.99	410	<0.5	<0.5	<0.5	<0.5	---	5,000
	01/20/95	3.56	<50	<0.5	<0.5	<0.5	<0.5	---	4,900
	07/06/95	3.85	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/24/96	2.56	<50	<0.5	<0.5	0.6	1.8	---	---
	07/12/96	3.36	<50	<0.5	<0.5	<0.5	<0.5	--- <sup>c</sup>	2,700
	01/16/97 <sup>b</sup>	---	---	---	---	---	---	---	---
	10/24/97 <sup>b</sup>	---	---	---	---	---	---	---	---

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	Dissolved Oxygen <sup>a</sup>
MW-5 (4 <sup>th</sup> Quarter)	01/31/90	7.12	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/27/90	4.19	210 <sup>p</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	07/31/90	4.09	90	<0.5	<0.5	<0.5	<0.5	---	---
	10/30/90	4.39	100	0.8	0.7	0.6	1.4	---	---
	01/31/91	4.49	80 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	04/30/91	4.27	90	<0.5	<0.5	<0.5	<0.5	---	---
	07/30/91	4.37	90	<0.5	<0.5	<0.5	<0.5	---	---
	10/29/91	3.79	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/92	4.09	<30	<0.3	<0.3	<0.3	<0.3	---	---
	04/14/92	4.12	<50 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/92	4.13	74 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92	4.30	76 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93	3.12	72 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/93	4.07	70 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	1,620
	05/04/93 <sup>dup</sup>	4.07	80 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/93	4.05	<50	<0.5	<0.5	<0.5	<0.5	---	3,460
	10/19/93	4.20	51	<0.5	<0.5	<0.5	<0.5	---	3,820
	01/20/94	4.40	90	<0.5	<0.5	<0.5	<0.5	---	4,200
	04/12/94	4.18	67	<0.5	<0.5	<0.5	<0.5	---	---
	07/20/94	4.06	<50	<0.5	<0.5	<0.5	<0.5	---	3,200
	10/06/94	4.01	80	<0.5	<0.5	<0.5	<0.5	---	2,100
	10/06/94 <sup>dup</sup>	4.01	60	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/95	3.49	<50	<0.5	<0.5	<0.5	<0.5	---	3,200
	07/06/95	4.06	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/24/96	2.90	70	<0.5	<0.5	<0.5	0.8	2.9	---
	07/12/96	4.02	62	<0.5	<0.5	<0.5	<0.5	---	1,900
	01/16/97	2.59	66	0.91	0.89	<0.50	1.7	<2.5	2,200
01/16/97 <sup>dup</sup>	2.59	<50	0.70	0.78	<0.50	1.3	<2.5	2,200	
<b>10/24/97</b>	<b>4.15</b>	<b>59</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>17</b>	<b>4,600</b>	

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	TPH-G	B	T	E	X	MTBE	Dissolved Oxygen <sup>a</sup>
E-4 <sup>f</sup>	07/12/89	d	<50	<0.5	<1	<1	<3	---	---
	01/31/90	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/27/90	d	120 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
	07/31/90	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/30/90	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/31/91	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/30/91	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/30/91	d	<50	<0.5	0.6	<0.5	<0.5	---	---
	10/29/91	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/92	d	<30	<0.3	<0.3	<0.3	<0.3	---	---
	04/14/92	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/92	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	05/04/93	d	<50	<0.5	<0.5	<0.5	<0.5	---	630
	07/21/93	d	<50	5.4	0.72	1.0	4.4	---	5,440
	10/19/93	d	<50	<0.5	<0.5	<0.5	<0.5	---	5,630
	01/20/94	d	<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/12/94	d	<50	<0.5	<0.5	<0.5	<0.5	---	9,410
	07/20/94	d	<50	<0.5	<0.5	<0.5	<0.5	---	2,000
10/06/94	d	<50	<0.5	<0.5	<0.5	<0.5	---	1,300	
01/20/95	d	<50	<0.5	<0.5	<0.5	<0.5	---	3,700	
Trip Blank	07/12/89		<50	<0.5	<1	<1	<3	---	---
	01/31/90		<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/27/90		<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/31/90		<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/30/90		<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/31/91		<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/30/91		<50	<0.5	<0.5	<0.5	<0.5	---	---

**Table 2. Analytical Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

Well ID (Sampling Frequency)	Date Sampled	Depth to Water (ft)	(concentrations in µg/L)					MTBE	Dissolved Oxygen <sup>a</sup>
			TPH-G	B	T	E	X		
	07/30/91		<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/29/91		<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92		<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/93		<50	<0.5	<0.5	<0.5	<0.5	---	---
	05/03/93		<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/21/93		<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/19/93		<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/94		<50	<0.5	<0.5	<0.5	<0.5	---	---
	04/12/94		<50	<0.5	0.71	<0.5	<0.5	---	---
	07/20/94		<50	<0.5	<0.5	<0.5	<0.5	---	---
	10/06/94		<50	<0.5	<0.5	<0.5	<0.5	---	---
	01/20/95		<50	<0.5	<0.5	<0.5	<0.5	---	---
	07/06/95		<50	<0.5	<0.5	<0.5	<0.5	---	---
Bailer	04/27/90		110 <sup>c</sup>	<0.5	<0.5	<0.5	<0.5	---	---
Blank	01/31/91		<5	<0.5	<0.5	<0.5	<0.5	---	---
	10/02/92		ND	ND	ND	ND	ND	---	---
MCLs			NE	1	150	700	1,750	NE	

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**Table 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6001-0109, 29 Wildwood Avenue, Piedmont, California (continued)**

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**Abbreviations:**

TPH-G = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015  
B = Benzene by EPA Method 602 or 8020  
T = Toluene by EPA Method 602 or 8020  
E = Ethylbenzene by EPA Method 602 or 8020  
X = Xylenes by EPA Method 602 or 8020  
MTBE = Methyl tert-butyl ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260.  
µg/L = Micrograms per liter  
--- = Not analyzed/Not available  
MCLs = California Primary Maximum Contaminant Levels for drinking water (22 CCR 64444)  
NE = MCLs not established  
<n = Below detection limit of n µg/L  
ND = Not detected

**Notes:**

a = Field measurement of dissolved oxygen concentration  
b = Well inaccessible; not sampled  
c = Chromatogram contained discrete peaks not representative of gasoline  
d = Artesian well; potentiometric surface above top-of-casing elevation  
e = Due to coelution with early eluters, no result could be determined for MTBE  
f = Well destroyed June 16, 1995

**Attachment A**

Blaine Tech Services Report



**BLAINE**  
TECH SERVICES INC

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



February 5, 1998

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

Attn: Alex Perez

Shell WIC #204-6001-0109  
29 Wildwood Ave.  
Piedmont, California

4th Quarter 1997

## Groundwater Monitoring Report 971024-F-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: Cambria Environmental  
1144 65th St. Suite C  
Oakland, CA 94608  
Attn: Josh Bergstrom

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

### TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	10/24/97	TOC	-	NONE	-	-	3.66	13.19
MW-2	10/24/97	TOC	-	NONE	-	-	3.75	11.43
MW-3 *	10/24/97	TOC	-	NONE	-	-	4.12	9.01
MW-4	10/24/97	INACCESSIBLE	-	-	-	-	-	-
MW-5	10/24/97	TOC	-	NONE	-	-	4.15	15.90

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



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

**CHAIN OF CUSTODY RECORD**

Serial No: 971024 - FV

Date: 10/24/97  
Page (of) 1

Silo Address: 29 Wildwood Ave., Piedmont, CA

WIC#: 204-6001-0109

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

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

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

Comments:

Sampled by: TC

Printed Name: Tom Graf

Analysis Required 9710611

LAB: SEQUOIA

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 8020/6020	Asbestos	Container Size	Preparation Used	Composite Y/N
					X				
					X				
					X				
					X				
					X				
					X				
					X				

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4441	24 hours <input type="checkbox"/>
SIA 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"/>		

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
<u>MW-1</u>	<u>10/24</u>			<u>W</u>		<u>3</u>		
<u>MW-2</u>						<u>3</u>		
<u>MW-3</u>						<u>3</u>		
<u>MW-5</u>						<u>3</u>		
<u>ER</u>						<u>3</u>		
<u>DUP</u>	<u>10/24</u>			<u>W</u>		<u>3</u>		

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Tom Graf</u>	Date: <u>10/27/97</u>	Time: <u>10:10</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>Perialex</u>	Date: <u>10/27/97</u>	Time: <u>10:20</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Perialex</u>	Date: <u>10/27/97</u>	Time:	Received (signature): <u>[Signature]</u>	Printed Name:	Date:	Time:
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date:	Time:	Received (signature): <u>[Signature]</u>	Printed Name: <u>Tara Parsley</u>	Date: <u>10/27/97</u>	Time: <u>11:30</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

(650) 364-9600  
(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

Project: Shell Piedmont/971024-F2


Enclosed are the results from samples received at Sequoia Analytical on October 27, 1997.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9710G11 -01	LIQUID, MW-1	10/24/97	TPGM2W Purgeable TPH/BTEX
9710G11 -02	LIQUID, MW-2	10/24/97	TPGM2W Purgeable TPH/BTEX
9710G11 -03	LIQUID, MW-3	10/24/97	TPGM2W Purgeable TPH/BTEX
9710G11 -04	LIQUID, MW-5	10/24/97	TPGM2W Purgeable TPH/BTEX
9710G11 -05	LIQUID, EB	10/24/97	TPGM2W Purgeable TPH/BTEX
9710G11 -06	LIQUID, DUP	10/24/97	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 Piedmont/971024-F2 Sample Descript: MW-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9710G11-01	Sampled: 10/24/97 Received: 10/27/97 Analyzed: 10/30/97 Reported: 11/04/97
Attention: Fran Thie		

QC Batch Number: GC103097BTEX06A  
Instrument ID: GCHP06

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	8.6
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:	0.50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	99

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 Piedmont/971024-F2 Sample Descript: MW-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9710G11-02	Sampled: 10/24/97 Received: 10/27/97 Analyzed: 11/03/97 Reported: 11/04/97
Attention: Fran Thie		
QC Batch Number: GC103197BTEX07B		
Instrument ID: GCHP07		

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	54
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:	0.50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	91

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 Piedmont/971024-F2 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9710G11-03	Sampled: 10/24/97 Received: 10/27/97 Analyzed: 10/30/97 Reported: 11/04/97
QC Batch Number: GC103097BTEX06A Instrument ID: GCHP06		

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	
Methyl t-Butyl Ether	25	4100
Benzene	5.0	2000
Toluene	5.0	270
Ethyl Benzene	5.0	9.0
Xylenes (Total)	5.0	5.1
Chromatogram Pattern:	5.0	8.8
		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	110

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager



Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Piedmont/971024-F2  
Sample Descript: MW-5  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9710G11-04

Sampled: 10/24/97  
Received: 10/27/97  
Analyzed: 10/30/97  
Reported: 11/04/97

QC Batch Number: GC103097BTEX06A  
Instrument ID: GCHP06

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	59
Methyl t-Butyl Ether	2.5	17
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		C6-C8
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	107

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 Piedmont/971024-F2 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9710G11-05	Sampled: 10/24/97 Received: 10/27/97 Analyzed: 10/30/97 Reported: 11/04/97
Attention: Fran Thie		

QC Batch Number: GC103097BTEX06A  
Instrument ID: GCHP06

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:	0.50	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	102

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager



Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Piedmont/971024-F2 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9710G11-06	Sampled: 10/24/97 Received: 10/27/97 Analyzed: 10/31/97 Reported: 11/04/97
QC Batch Number: GC103197BTEX02A Instrument ID: GCHP02		

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas		
Methyl t-Butyl Ether	500	1700
Benzene	25	1500
Toluene	5.0	220
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:	5.0	N.D.
		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70	130
		102

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

**SEQUOIA ANALYTICAL - ELAP #1210**

*[Signature]*  
Peggy Pappas  
Project Manager



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

Client Project ID: Shell Piedmont / 971024-F2  
Matrix: Liquid

Work Order #: 9710G11 -01, 03-05

Reported: Nov 7, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC103097BTEX06A	GC103097BTEX06A	GC103097BTEX06A	GC103097BTEX06A	GC103097BTEX06A
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. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9710E3405	9710E3405	9710E3405	9710E3405	9710E3405
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97
Analyzed Date:	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	10	11	32	68
MS % Recovery:	110	100	110	107	113
Dup. Result:	10	10	10	30	66
MSD % Recov.:	100	100	100	100	110
RPD:	9.5	0.0	9.5	6.5	3.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK103097	BLK103097	BLK103097	BLK103097	BLK103097
Prepared Date:	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97
Analyzed Date:	10/30/97	10/30/97	10/30/97	10/30/97	10/30/97
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	12	11	12	35	74
LCS % Recov.:	120	110	120	117	123

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					

**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

9710G11.BLA <1>

SEQUOIA ANALYTICAL

Feggy Penner  
Project Manager



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

Client Project ID: Shell Piedmont / 971024-F2  
Matrix: Liquid

Work Order #: 9710G11-02

Reported: Nov 7, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC110397BTEX07A	GC110397BTEX07A	GC110397BTEX07A	GC110397BTEX07A	GC110397BTEX07A
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. Porter	A. Porter	A. Porter	A. Porter	A. Porter
MS/MSD #:	9710G1301	9710G1301	9710G1301	9710G1301	9710G1301
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	11/3/97	11/3/97	11/3/97	11/3/97	11/3/97
Analyzed Date:	11/3/97	11/3/97	11/3/97	11/3/97	11/3/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	11	11	32	64
MS % Recovery:	110	110	110	107	107
Dup. Result:	11	10	10	31	60
MSD % Recov.:	110	100	100	103	100
RPD:	0.0	9.5	9.5	3.2	6.5
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK110397	BLK110397	BLK110397	BLK110397	BLK103097
Prepared Date:	11/3/97	11/3/97	11/3/97	11/3/97	11/3/97
Analyzed Date:	11/3/97	11/3/97	11/3/97	11/3/97	11/3/97
Instrument I.D.#:	GCHP7	GCHP7	GCHP7	GCHP7	GCHP7
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	12	11	11	34	66
LCS % Recov.:	120	110	110	113	110

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

Reggy 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



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

Client Project ID: Shell Piedmont / 971024-F2  
Matrix: Liquid

Work Order #: 9710G11-06

Reported: Nov 7, 1997

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC103197BTEX02A	GC103197BTEX02A	GC103197BTEX02A	GC103197BTEX02A	GC103197BTEX02A
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:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9710D1102	9710D1102	9710D1102	9710D1102	9710D1102
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
Analyzed Date:	10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
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:	11	11	11	33	65
MS % Recovery:	110	110	110	110	108
Dup. Result:	11	10	10	31	65
MSD % Recov.:	110	100	100	103	108
RPD:	0.0	9.5	9.5	6.3	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK103197	BLK103197	BLK103197	BLK103197	BLK103197
Prepared Date:	10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
Analyzed Date:	10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
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:	11	10	10	31	65
LCS % Recov.:	110	100	100	103	108

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 Permer  
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.



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

Client Proj. ID: Shell Piedmont/971024-F2

Received: 10/27/97

Lab Proj. ID: 9710G11

Reported: 11/04/97

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 11 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