5500 Shellmound Street, Emeryville, CA 94608-2411

Fax: 510-547-5043 Phone: **510-450-6000** 

SIFT -5 (11) 1:01

January 26, 1995

Britt Johnson Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, 2nd Floor Alameda, CA 94502-6577

> Re: Shell Service Station WIC #204-0079-0109 999 San Pablo Avenue Albany, California WA Job #81-0699-105

Dear Mr. Johnson:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 2652.d. Included below are descriptions and results of activities performed in the fourth quarter 1994 and proposed work for the first quarter 1995.

#### Fourth Quarter 1994 Activities:

- Blaine Tech Services, Inc. (BTS) of San Jose, California measured ground water depths and collected ground water samples from the site wells scheduled to be sampled this quarter. Well S-5 located immediately adjacent to the ARCO station across Marin Avenue contained 1.8 ft of separate-phase hydrocarbons, probably originating from the ARCO station, and was not sampled. BTS' report describing these activities and the analytic report for the ground water samples are included as Attachment A. Ground water samples from Well S-7 contained 450 parts per million (ppm) Total Dissolved Solids (TDS) while containing no hydrocarbons.
- Weiss Associates (WA) calculated ground water elevations and compiled the analytic data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 2).



#### Anticipated First Quarter 1995 Activities:

WA will submit a report presenting the results of the first quarter 1995 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, ground water elevations and a ground water elevation contour map.

### Conclusions and Recommendations:

- Since the separate-phase hydrocarbons measured in monitoring well S-5 appear to
  originate from the ARCO Station across Marin Avenue south of the Shell site, WA does
  not intend to install a hydrocarbon skimmer or bail separate-phase hydrocarbons from this
  well.
- WA recommends continued monitoring at this time in accordance to the sampling frequency schedule originally proposed in our first quarter 1994 quarterly monitoring report in Table 3.

Please call if you have any questions.

CERTIFIED ENGINEERING

GEOLÒGI\$1

Sincerely,

Weiss Associates

J. Michael Asport

Staff Scientist I

James W. Carmody, C.E.G.

Senior Project Hydrogeologist

JMA/JWC:kam

J:\SHELL\0699\QM\94Q4R.WP

Attachments: A - Blaine Tech's Ground Water Monitoring Report

Cc: Dan Kirk, Shell Oil Company, P.O. Box 4023, Concord, California 94524
 Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region, 2101
 Webster Street, Suite 500, Oakland, California 94612



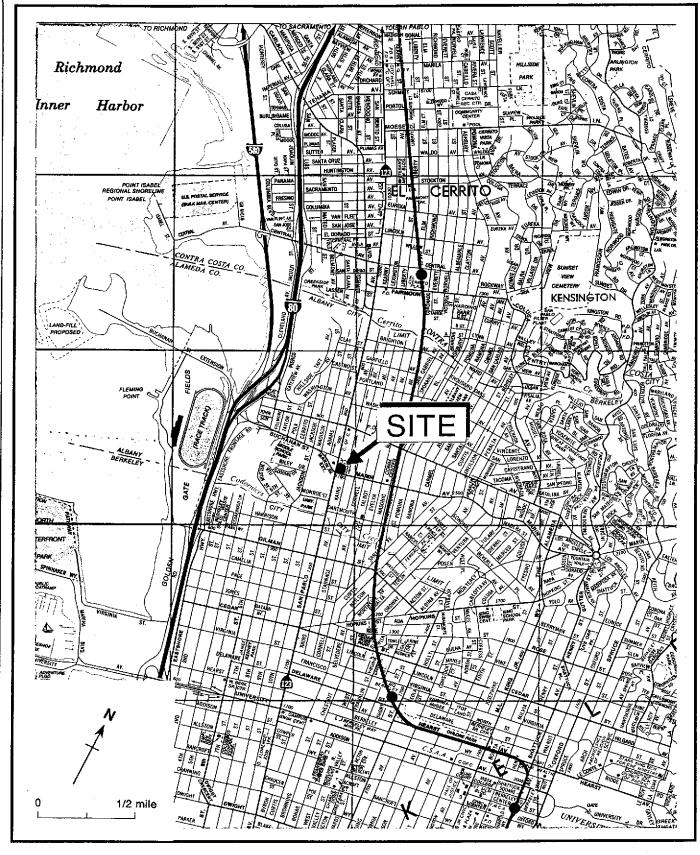


Figure 1. Site Location Map - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - October 10, 1994- Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

S699-009.ai

01/26/95

Base map from GeoStrategies Inc.

Table 1. Ground Water Elevations - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California

Well ID	Date	Top-of-Vault Elevation	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft) <sup>a</sup>	Ground Water Elevation (ft above msl)
S-1	05/13/91	42.73	8.24		34.49
	08/23/91		8.37		34.36
	11/07/91		8.30		34.43
	01/28/92		7.84		34.89
	05/06/92		7.95		34.78
	08/26/92		8.24		34.49
	10/28/92		8.52		34.21
	01/19/93		6.54	·	36.19
	04/29/93		7.93	· 	34.80
	07/22/93		8.09		34.64
	10/21/93		9.43		33.30
	01/04/94		8.25		34.48
	04/13/94		8.02		34.71
	07/25/94		8.22		34.51
	10/10/94		8.29		34.44
S-2	05/13/91	40.73	8.50		32.23
- <del>-</del>	08/23/91		8.80	She free bas	31.93
					01.70
	11/07/91		8.61		32.12
	11/07/91 01/28/92		8.61 7.80		32.12 32.93
	01/28/92 05/06/92		7.80	 	32.93
	01/28/92		7.80 8.10		32.93 32.63
	01/28/92 05/06/92		7.80 8.10 8.37	  	32.93 32.63 32.36
	01/28/92 05/06/92 08/26/92		7.80 8.10 8.37 8.64	  	32.93 32.63 32.36 32.09
	01/28/92 05/06/92 08/26/92 10/28/92		7.80 8.10 8.37	   	32.93 32.63 32.36 32.09 34.91
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93	•	7.80 8.10 8.37 8.64 5.82 7.70	   	32.93 32.63 32.36 32.09 34.91 33.03
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93		7.80 8.10 8.37 8.64 5.82	   	32.93 32.63 32.36 32.09 34.91
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93		7.80 8.10 8.37 8.64 5.82 7.70 8.38		32.93 32.63 32.36 32.09 34.91 33.03 32.35
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93		7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94		7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15
	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94		7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86 <b>8.12</b>		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87 32.61
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94 10/10/94	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86 8.12		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87 32.61
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94 10/10/94	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86 8.12		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87 32.61
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94 10/10/94 05/13/91 08/23/91 11/07/91	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86 8.12 7.90 8.14 7.91		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87 32.61
S-3	01/28/92 05/06/92 08/26/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94 10/10/94 05/13/91 08/23/91 11/07/91 01/28/92	41.46	7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 7.70 7.62 7.86 8.12 7.90 8.14 7.91 7.53		32.93 32.63 32.36 32.09 34.91 33.03 32.35 32.15 33.03 33.11 32.87 32.61 33.56 33.32 33.55 33.93

<sup>--</sup> Table 1 continues on next page --

Table 1. Ground Water Elevations - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California (continued)

					···
Well ID	Date	Top-of-Vault Elevation	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft) <sup>a</sup>	Ground Water Elevation (ft above msl)
	01/19/93		6.12	***	35.34
	04/29/93		7.27		34.19
	07/22/93		7.62		33.84
	10/21/93		7.81		33.65
	01/04/94		7.49		33.97
	04/13/94		7.32		34.14
	07/25/94		7.66		33.80
	10/10/94		7.49		33.97
S-4	05/13/91	41.10	7.44		33.66
<b>5</b> 4	08/23/91	71.10	8.32		32.78
	11/07/91		8.32		32.78
	01/28/92		7.40		33.70
	05/06/92		7.40		33.89
	08/26/92		8.13		32.97
	10/28/92		8.73	to- ++ <b>-</b> -	32.37
	01/19/93		5.86	Br nor en-	35.24
	04/29/93		7.02		34.08
	07/22/93		7.76		33.34
	10/21/93		8.53		32.57
	01/04/94		7.92		33.18
	04/13/94		7.71		33.39
	07/25/94		7.82		33.28
	10/10/94		8.15	# <del>22</del>	32.95
S-5	05/13/91	39.99	14.60	6.48	30.57
	08/23/91		15.14	5.50	29.25
	11/07/91		15.10	5.35	29.17
	01/28/92		14.05	4.90	29.86
	05/06/92		14.31	5.66	30.21
	08/26/92		14.26	3.80	28.77
	10/28/92		14.22	3.81	28.82
	01/19/93		12.36	3.96	30.80
	04/29/93		9.64	0.90	31.07
	07/22/93		9.55	0.90	31.16
	10/21/93		11.23	0.73	29.34
	01/04/94		11.69	1.90	29.82
	04/13/94		11.42	1.62	29.87

Table 1. Ground Water Elevations - Shell Service Station WIC #204-0079-0109, 999 San Pablo Avenue, Albany, California (continued)

Well ID	Date	Top-of-Vault Elevation	Depth to Water (ft)	Separate-Phase Hydrocarbon Thickness (ft) <sup>a</sup>	Ground Water Elevation (ft above msl)
	10/10/94		12.05	1.8	29.38
S-6	05/13/91	40.12	7.82		32.30
	08/23/91		9.58		30.54
	11/07/91		10.86		29.26
	01/28/92		8.97		31.15
	05/06/92		8.27	- <del></del>	31.85
	08/26/92		9.57		31.55
	10/28/92		8.90		32.22
	01/19/93		4.84		35.28
	04/29/93		5.61	~~~	34.51
	07/22/93	•	6.56		33.56
	10/21/93	•	8.73	~~~	31.39
	01/04/94		7.14		32.98
	04/13/94		7.21		32.91
	07/25/94		6.85		33.27
	10/10/94		6.20	<u></u>	33.92
S-7	05/13/91	40.10	10.56	N	29.54
	08/23/91		11.16	<del></del>	28.94
	11/07/91		11.48		28.62
	01/28/92		10.72		29.38
	05/06/92		10.34		29.76
	08/26/92		11.13	***	28.97
	10/28/92		11.52		28.58
	01/19/93		8.68		31.42
	04/29/93		9.90		30.20
	07/22/93				
	10/21/93		11.10	·	29.00
	01/04/94		10.40		29.70
	04/13/94		10.20		29.90
	07/25/94		10.48	~~~	29.62
	10/10/94		10.64	<u> </u>	29.46

## Notes:

a = When separate-phase hydrocarbons are present, ground water elevation corrected by the relation: corrected ground water elevation = (top-of-box elevation) - (depth to water) + (0.8 x separate-phase hydrocarbon thickness)

Well ID Sampling requency	Date	Depth to Water (ft)	ТРН-G <	В	Ε -parts per billion (μg.	T /L)	Х >
5-1 (Bi-annually, Lst & 3rd Qtrs)	05/13/91 08/23/91 11/07/91 01/28/92 05/06/92 07/29/93 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 07/25/94	8.24 8.37 8.30 7.95 8.24 8.52 6.54 7.93 8.09 9.43 8.25 8.22	1.500 2.900 2.900 2.000 1.200 2.000 1.300 1.500 2.000 620 1.200 860 1.200	20 27 8 11 5.5 9.4 27 13 15 1.1 34 <2.5 8.3	86 75 46 60 80 130 72 29 82 3.5 15 5.7	2.6 <2.5 <2.5 <2.5 <2.5 <2.5 3.2 <2.5 4.2 <2.5 4.2 <7.4	74 18 26 20 36 <2.5 13 31 <65 13 9.5 5.3 20
5-2 Bi-annually, st & 3rd Qtrs)	05/13/91 08/23/91 11/07/91 01/28/92 05/06/92 07/29/92 10/28/92 01/19/93 04/29/93 07/22/93 07/22/93 10/21/93 10/21/93 01/04/94 01/04/94 07/25/94	8.50 8.80 8.61 7.80 8.10 8.37 8.64 5.82 7.70 8.38 8.58 8.58 7.70 7.70	23.000 23.000 40.000 22.000 20.000 42.000 34.000 20.000 40.000 22.000 17.000 14.000 21.000 22.000 43.000	3.900 4.400 4.000 1.600 2.600 5.000 4.800 2.300 2.000 3.000 3.000 2.800 2.100 2.100 2.600	1,100 1,900 1,020 420 860 1,100 1,600 660 900 1,000 1,000 1,000 870 960 990 910	230 260 160 70 110 160 330 370 67 120 110 74 53 67 64 490	3.200 2,400 3.400 1.700 1.900 3.500 2.900 1.300 1.900 1.600 1.500 1.100 820 770 750 1.300
-3 Bi-annually, st & 3rd Qtrs)	05/13/91 08/23/91 11/07/91 01/28/92 01/28/92 05/06/92 07/29/92 10/28/92 01/19/93 04/29/93 07/22/93 10/21/93 01/04/94 07/25/94	7.90 8.14 7.91 7.53 7.55 7.55 7.53 7.95 6.12 7.27 7.62 7.81 7.49 7.66	3.300 2.000 4,000 2.100 6.600 5.800 3.000 3.100 3.100 2.600 2.500 4.800 2.600	30 25 20 21 18 38 18 55 <5 31 3.1 73 13 6.1	26 9.3 5 6.7 7.1 45 29 16 11 <5 23 16 <12.5 3.8	3.6 4.9 7.6 6.1 51 12 11 5.1 22 43 14 21 4.0	13 4.5 4.9 15 14 65 60 32 16 14 53 32 33 12
-4	05/13/91	7.44	<50	<0.5	<0.5	<0.5	<0.5

<sup>--</sup> Table 2 continues on next page --

Well ID & Sampling Frequency	. Date	Depth to Water (ft)	TPH-G <	В	Ε parts per billion (μς	T g/L)	χ >
(Annually 1st Qtr)	08/23/91 11/07/91 01/28/92 05/06/92 07/29/92 10/28/92 01/19/93 04/29/93 04/29/93 10/21/93 01/04/94	8.32 8.32 7.40 7.21 8.13 8.73 5.86 7.02 7.02 7.76 8.53 7.92	<50 260 110° 54 67 <50 86 <50 <50 <50 <50 <50	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<pre></pre>	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5
S-5 (Quarterly)	05/13/91 <sup>5PH</sup> 08/23/91 <sup>5PH</sup> 11/07/91 <sup>5PH</sup> 11/07/91 <sup>5PH</sup> 01/28/92 <sup>5PH</sup> 05/06/92 <sup>5PH</sup> 07/29/92 <sup>5PH</sup> 10/28/92 <sup>5PH</sup> 01/19/93 <sup>5PH</sup> 04/29/93 <sup>5PH</sup> 07/22/93 <sup>5PH</sup> 10/21/93 <sup>5PH</sup> 10/21/93 <sup>5PH</sup> 01/04/94 <sup>5PH</sup> 07/25/94 <sup>5PH</sup>	14.60 15.14 15.10 14.05 14.31 14.26 14.22 12.36 9.64 9.55 11.23 11.69 12.01					
S-6 (Bi-annually, 1st & 3rd Qtrs)	05/13/91 08/23/91 11/07/91 01/28/92 05/06/92 07/29/92 10/28/92 01/19/93 04/29/93 10/21/93 01/04/94 07/25/94	7.82 9.58 10.86 8.97 8.27 9.57 8.90 4.84 5.61 6.56 8.73 7.14 6.85 6.85	13,000 9,800 6,200 5,600 7,100 13,000 10,000 4,800 7,000 5,800 5,500 7,100 12,000 7,200	600 480 240 250 330 240 470 100 430 260 270 180 190	210 120 25 41 110 56 67 27 <12.5 65 120 63 30 31	140 80 23 15 29 <50 210 26 20 120 69 58 52 32	310 150 27 36 210 780 170 45 42 150 140 62 39 34
S-7 (Quarterly)	05/13/91 08/23/91 11/07/91	10.56 11.16 11.48	<50 <50 <50	<0.5 <0.5 <0.5	<0.5 <0.5 <0.5	<0.5 <0.5 <0.5	<0.5 <0.5 <0.5

Analytic Results for Ground Water, Former Shell Service Station, WIC #204-0079-0109, 999 San Pablo, Albany, California (continued)

Table 2.

Table 2.	Analytic Results for Gro	ound Water, Former S	Shell Service Station	WIC #204-0079-01	109. 999 San Pablo. A	lbany, California (	(continued)
Well ID & Sampling Frequency	Date	Depth to Water (ft)	TPH-G <	В	E parts per billion (µg	T /L) <u></u>	χ >
	01/28/92 05/06/92 07/29/92 10/28/92 01/19/93 04/29/93 10/21/93 01/04/94 04/13/94 04/13/94 07/25/94	10.72 10.34 11.13 11.52 8.68 9.90  11.10 10.40 10.20 10.20 10.48	<50 <50 160 <50 50 <50 <50 <50 <50 <50 <50	<0.5 <0.5 <0.5 <0.5 1.1 <0.5  <0.5 <0.5 1.4 1.4 <0.5	<0.5 <0.5 <0.5 <0.5 1.9 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 0.6 <0.5  <0.5 0.61 0.61 0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.64 0.66 <0.5
Trip Blank	01/28/92 04/29/93 07/22/93 10/21/93 01/04/94 04/13/94 07/25/94	aja Nakawa	<50 <50 <50 <50 <50 <50 <50	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 < <b>0.5</b>
DTSC MCLs			NE.	1	680	10 <sup>6</sup>	1.750

#### Abbreviations:

 $\ensuremath{\mathsf{TPH-G}}$  = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015

B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 602 or 8020
--- = Not analyzed

DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water

NE = Not established

<n = Not detected at detection limits of n ppb

dup = Duplicate sample SPH = Separate-phase hydrocarbons detected, no sample collected

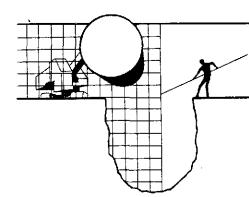
#### Notes:

a = Well inaccessible
 b = DTSC recommended action level for drinking water; MCL not established
 c = Compounds detected and calculated as gasoline are not characteristic of the standard gasoline chromatographic pattern
 d = Sample analyzed for Total Dissolved Solids (450,000 ppb).



## ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



# BLAINE TECH SERVICES INC.

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

October 28, 1994

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

Attn: Daniel T. Kirk

SITE: Shell WIC #204-0079-0109 999 San Pablo Avenue Albany, California

QUARTER: 4th quarter of 1994

#### QUARTERLY GROUNDWATER SAMPLING REPORT 941010-J-2

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

#### STANDARD PROCEDURES

#### Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water water may be removed in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty-four hours and collect sample material from the water which has recharged into the well case.

#### Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

#### Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

### Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

## Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

#### Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

#### Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company Chain of Custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the Chain of Custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

## Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

## **Objective Information Collection**

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

## Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

**RCBlp** 

Attachments: table of well gauging data

chain of custody

certified analytical report

cc: Weiss Associates

5500 Shellmound Street Emeryville, CA 94608-2411 ATTN: Michael Asport

# TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feel)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1	10/10/95	TOB		NONE	· -		8.29	11.98
<b>\$-2</b>	10/10/95	TOB	<del>-</del>	NONE		<del>-</del>	8.12	12.14
S-3	10/10/95	TOB	-	NONE	-	-	7.49	12.20
S-4	10/10/95	TOB		NONE	-	_	8.15	14.16
S-5	10/10/95	TOB	FREE PRODUCT	10.25	1.80		12.05	
S-6	10/10/95	TOB	-	NONE	_	-	6.20	15.23
S-7	10/10/95	TOB	-	NONE		-	10.64	15.04

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SHELL RETAIL EN						ING -	WE	ST			Cŀ	IAII Se	0 <i>V</i> 1 loh	F C	:US 94	101 10	)Y ]0	REC	CORD	Dale Pag	e: 10/10/94 e 1 01 1
Sile Address: 999 San	Pab	lo Ave	., A1	bany	•	•				An	alys	sls R	equ	lrec	<u> </u>				LAB: _AET		k
WIC#: 204-007	79-01	109																	CHECK OHE (1) LOX OHLY	CI/DI	TURN AROUND TIME
204-0079-0109  Shell Engineer:  Dan Kirk  Consultoni Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133  Consultant Contact:  Jim Keller  Comments:  Phone No.: (408) 995-5535 Fax #: 293-8773					5 Mod. Gas)	5 Mod. Diesel).	8020/602)	Inics (EPA 8240)	sol	1 TPH 8015 & BTEX 8020	Ś		•	0	Sed	N/A	Site Investigation  Soil Classity/Disposat  Water Classity/Disposat  Soil Air Rents or Sys.  Old Air	] 642 ] 642 ] 642 ] 643	24 hours   48 hours   18 days XXIIHorman  Other   HOTE: Holling Lab as soon as Possible of 24/48 hrs. TAT.		
Printed Name: JEAN GATWEAU  Sample ID Dole Studge Soll Water Alt No. of					No. of	TPH (EPA 801	TPH (EPA 8015	BIEX (EPA 80	Volatile Organics	Test for Disposal	Combination TPH	T. D.		Asbestos	Container Size	Preparation Used	Composite Y	MATERIAL DESCRIPTION		SAMPLE CONDITION/	
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	7			X		२	! 					X	•								
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Printed Name:  THE LABORATORY MUST PROVIDE				Tim Dat Tim	9; /C 9; / 0: 9:	0:16 0/11 6:07	Rec	alvoc 4- (	1 (NO.	nature	/)-0 ): ):	a h			Printe Printe	d Name: Ann Le De d Name!		Date: /0//// Ilme: /0//// Date: 10/12/A Ilme: 08: 10 Date: Ilme:			



Santa Rosa Division 435 Tesconi Circle Santa Rosa, CA 95401

Tel: (707) 526-7200 Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 10/19/1994

NET Client Acct. No: 1821 NET Pacific Job No: 94.04786

Received: 10/12/1994

Client Reference Information

SHELL, 999 San Pablo Ave., Albany, 941070J2

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley Project Coordinator

Serations Manager

Enclosure(s)





Client Acct: 1821

® NET Job No: 94.04786

Date: 10/19/1994

ELAP Cert: 1386

Page: 2

Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

SAMPLE DESCRIPTION: S-7

Date Taken: 10/10/1994

Time Taken:

NET Sample No: 219430

		Reporting	3		Date	Date
Parameter	Results Flags	Limit	Units	Method	Extracted	Analyzed
Tot. Dissolved Solids (TFR)	450,000	10,000	ug/L	160.1		10/13/1994
TPH (Gas/BTXE,Liquid)						
METHOD 5030/M8015						10/16/1994
DILUTION FACTOR*	1					10/16/1994
as Gasoline	ND ·	50	ug/L	5030		10/16/1994
Carbon Range:						10/16/1994
METHOD 8020 (GC, Liquid)						10/16/1994
Benzene	ND	0.5	ug/L	8020		10/16/1994
Toluene	ND	0.5	ug/L	8020		10/16/1994
Ethylbenzene	ND	0.5	ug/L	8020		10/16/1994
Xylenes (Total)	ND	0.5	ug/L	8020		10/16/1994
SURROGATE RESULTS						10/16/1994
Bromofluorobenzene (SURR)	117		% Rec.	5030		10/16/1994



Client Acct: 1821

® NET Job No: 94.04786

Date: 10/19/1994

ELAP Cert: 1386

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Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

SAMPLE DESCRIPTION: T.B.

Date Taken: 10/10/1994

Time Taken:

NET Sample No: 219431

•		Reportin	q		Date	Date
Parameter	Results Flags	Limit	 	Method	Extracted	Analyzed
TPH (Gas/BTXE, Liquid)	_					
METHOD 5030/M8015						10/16/1994
DILUTION FACTOR*	1					10/16/1994
as Gasoline	ND	50	ug/L	5030		10/16/1994
Carbon Range:						10/16/1994
METHOD 8020 (GC, Liquid)						10/16/1994
Benzene	ND	0.5	ug/L	8020		10/16/1994
Toluene	ND	0.5	ug/L	8020		10/16/1994
Ethylbenzene	ND	0.5	ug/L	8020		10/16/1994
Xylenes (Total)	ND	0.5	ug/L	8020		10/16/1994
SURROGATE RESULTS						10/16/1994
Bromofluorobenzene (SURR)	89		% Rec.	5030		10/16/1994



NET Job No: 94.04786

Date: 10/19/1994

ELAP Cert: 1386

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Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

# CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

	CCV	CCV Standard	CCV Standard			
	Standard	Amount	Amount		Date	Analyst
Parameter	% Recovery	Found	Expected	Units	Analyzed	<u>Initials</u>
TPH (Gas/BTXE, Liquid)						
as Gasoline	88.0	0.88	1.00	mg/L	10/16/1994	lss
Benzene	111.8	5.59	5.00	ug/L	10/16/1994	lss
Toluene	99.6	4.98	5.00	ug/L	10/16/1994	lss
Ethylbenzene	103.0	5.15	5.00	ug/L	10/16/1994	lss
Xylenes (Total)	96.7	14.5	15.0	ug/L	10/16/1994	lss
Bromofluorobenzene (SURR)	115.0	115	100	% Rec.	10/16/1994	lss



Date: 10/19/1994

ELAP Cert: 1386 Page: 5

Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

# METHOD BLANK REPORT

Method Blank

	224124				
	Amount	Reporting		Date	Analyst
Parameter	Found	Limit	Units	Analyzed	Initials
Tot. Dissolved Solids (TFR)	ND	10	mg/L	10/13/1994	bbh
TPH (Gas/BTXE, Liquid)					
as Gasoline	ND	0.05	mg/L	10/16/1994	lss
Benzene	ND	0.5	ug/L	10/16/1994	lss
Toluene	ND	0.5	ug/L	10/16/1994	lss
Ethylbenzene	ND	0.5	ug/L	10/16/1994	lss
Xylenes (Total)	ND	0.5	ug/L	10/16/1994	lss
Bromofluorobenzene (SURR)	96		% Rec.	10/16/1994	lss



Date: 10/19/1994

ELAP Cert: 1386 Page: 6

Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

# MATRIX SPIKE / MATRIX SPIKE DUPLICATE

	Matrix Spike	Matrix Spike Dup		Spike	Sample	Matrix Spike	Matrix Spike Dup.		Date	Analyst
Parameter	% Rec.	% Rec.	RPD	Amount	Conc.	Conc.	Conc.	Units	Analyzed	Initials
TPH (Gas/BTXE, Liquid)										
as Gasoline	90.0	109.0	19.0	1.00	ND	0.90	1.09	mg/L	10/16/1994	lss
Benzene	102.6	116.1	12.3	27.3	ND	28.0	31.7	ug/L	10/16/1994	lss
Toluene	102.7	109.0	6.0	87.9	MD	90.3	95.8	ug/L	10/16/1994	lss



Date: 10/19/1994

ELAP Cert: 1386

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Ref: SHELL, 999 San Pablo Ave., Albany, 941070J2

# LABORATORY CONTROL SAMPLE REPORT

		LCS	LCS			
	LCS	Amount	Amount		Date	Analyst
Parameter	% Recovery RPD	Found	Expected	Units	Analyzed	Initials
Tot. Dissolved Solids (TFR)	98.9	989	1,000	mg/L	10/13/1994	bbh



#### KEY TO ABBREVIATIONS and METHOD REFERENCES

: Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.

: Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. Do not multiply the reporting limits or reported values by the dilution factor.

dw : Result expressed as dry weight.

mean : Average; sum of measurements divided by number of measurements.

mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of

sample, wet-weight basis (parts per million).

mg/L : Concentration in units of milligrams of analyte per liter of sample.

mL/L/hr : Milliliters per liter per hour.

MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.

N/A : Not applicable.

NA : Not analyzed.

ND : Not detected; the analyte concentration is less than the applicable

listed reporting limit.

NTU : Nephelometric turbidity units.

RPD : Relative percent difference, 100 [Value 1 - Value 2]/mean value.

SNA : Standard not available.

ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample,

wet-weight basis (parts per billion).

ug/L : Concentration in units of micrograms of analyte per liter of sample.

umhos/cm : Micromhos per centimeter.

#### Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

<u>Methods</u> 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

<u>SM</u>: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993 abb.93

# COOLER RECEIPT FORM

Project: <u>shell 999 San Pablo</u> Cooler received on: 10/12/24 and	Auc. Albany Log checked on 6/12/94	No: _by <i>4_L</i>	ppe	
	(signature	10/28	<u> </u>	
Were custody papers present?			NO	
Were custody papers properly fill	led out?	YES	NO	
Were the custody papers signed?		YES	NO AL	
Was sufficient ice used?		YES	NO+ 70E	3.60
Did all bottles arrive in good co	ondition (unbroken)?	YES	ИО	
Did bottle labels match COC?		·····YES	NO	
Were proper bottles used for anal	lysis indicated?	····ÝĒ\$	NO	
Correct preservatives used?		YES	ИО	
VOA vials checked for headspace by Note which woas (if any)		···· YES	NO	
Sample descriptor:	Number of vials:			
	· · · · · · · · · · · · · · · · · · ·			
		• .		
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*All VOAs with headspace bubbles used for analysis			ll not be	
		•		
List here all other jobs received	d in the same cooler:	Ç-İ		
Client Job #	NET log #	-		
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(coolerrec)

														3126		
SHELL OIL (	WEST	CHAIN OF CUSTODY RECORD VEST Serial No: 941010 もる							CORD	Dale: 10/10/94 Page   01 ]						
Sile Address: 999 San Pablo Ave., Albany				Analysis Regulred LAB:							LAB: AET	ET				
WIC#: 204-0079-0109											٠.			CHECK OHE (I) TOX OHLY	CI/DI TUR	HAR CHUORA H
Shell Engineer:  Dan Kirk  Dan Kirk  Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Drive San Jose, CA 95133  Consultant Contact: Jim Keller  Comments:  Phone No.: (408) 995-5535 Fox #: 293-8773			TPH (EPA 8015 Mod. Gas) TPH (EPA 8015 Mod. Diesel)	020/602)	janics (EPA 8240)	०ऽवा	on TPH 8015 & BTEX 8020	Ś		•	e7	Used	Y/N	Sale Investigation  Soli Clausky/Disposal  Water  Clausky/Disposal  Soli/Ak Rem. or Sys.  O & M	\$441 A4 h	ours
Printed Name: EAN GA Sample ID Dale SI	TWEAU	Alr No. of	TPH (EPA 80 TPH (EPA 80	BTEX (EPA 8020/602)	Volaille Organics	Test for Disposal	Combination 1PH	T. D.		Asbestos	Container Size	Preparation Used	Composite	MATERIAL DESCRIPTION	CO	SAMPLE - CONDITION/ COMMENTS
5-7 19/10	X	5				:	X	X								_
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Relinquished By (signature);	Printed Nome: THE LABORATORY	-	Dale: Time:		Rece	ohod	(7 <u>0</u> 1	nature	):			i	•	d Name:	0	ote: