CAMBRIA

# LETTER OF TRANSMITTAL

LOP 3618

**To:** Alameda County
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

**Date:** November 5, 1997

**Project:** Shell Service Station
5755 Broadway
Oakland, California
WIC #204-5510-0303

**ATTN:** **Ms. Susan Hugo**

1) **For Review and Comment ( X )**
2) **For Approval ( X )**
3) **As Requested ( )**
4) **For Your Use ( X )**

**Via:** **Facsimile ( )**
**U.S. Mail ( X )**
**Overnight Delivery ( )**
**Courier Delivery ( )**

**We are enclosing ( X ) / Sending under separate cover ( ):**

| No. of Copies | Description |
|---|---|
| 1 | Third Quarter 1997 Monitoring Report dated November 5, 1997 |
| 1 | Sampling Frequency Reduction Request dated November 5, 1997 |
| | |
| | |
| | |

**Comments:**

Dear Ms. Hugo:

Cambria Environmental Technology, Inc. is pleased to submit the enclosed documents for your review. Please note that a *Sampling Frequency Reduction Request* has been submitted for your approval.

Please do not hesitate to call if you have any questions or comments.

**By:** Maureen Feineman

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

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

CAMBRIA

November 5, 1997

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

Re: **Third Quarter 1997 Monitoring Report**
Shell Service Station
5755 Broadway
Oakland, California
WIC #204-5510-0303
Cambria Project #240-314-397

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. Presented below are a hydrocarbon and ground water removal summary, the third quarter 1997 activities, and the anticipated fourth quarter 1997 activities.

## HYDROCARBON AND GROUND WATER REMOVAL SUMMARY

| Hydrocarbon Phase | This Quarter | Cumulative | |
|---|---|---|---|
| | | (pounds) | (gallons) |
| Separate-Phase | 0 | 0.55 | - |
| Ground Water with Aqueous-Phase Hydrocarbons | 0 | - | 388,738 |

The table above summarizes removal of separate-phase hydrocarbons by manual bailing reported in pounds, and the removal of ground water with aqueous-phase hydrocarbons from the tank-pit area by vacuum truck reported in gallons. During the first quarter of 1997, 57,400 gallons of water were pumped from the tank pit. No water was pumped during the third quarter of 1997.

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

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## THIRD QUARTER 1997 ACTIVITIES

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

## ANTICIPATED FOURTH QUARTER 1997 ACTIVITIES

***Quarterly Ground Water Sampling:*** Blaine will measure ground water depths and collect water samples from the wells. Cambria will tabulate the data and prepare a quarterly monitoring report.

***Tank-Pit Dewatering:*** Cambria will continue to monitor water levels and arrange dewatering of the tankpit, when necessary.

***Sampling Frequency Reduction Request:*** Based on current and historic site conditions, Cambria is preparing a *Sampling Frequency Reduction Request* which will be submitted separately.

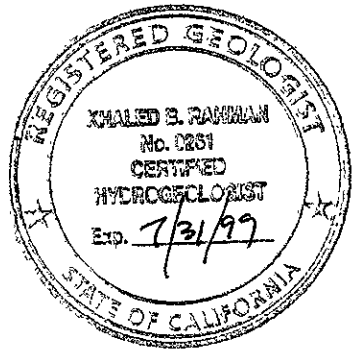
## CLOSING

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 Quarterly Ground Water Monitoring Report

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

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Environmental Technology, Inc.

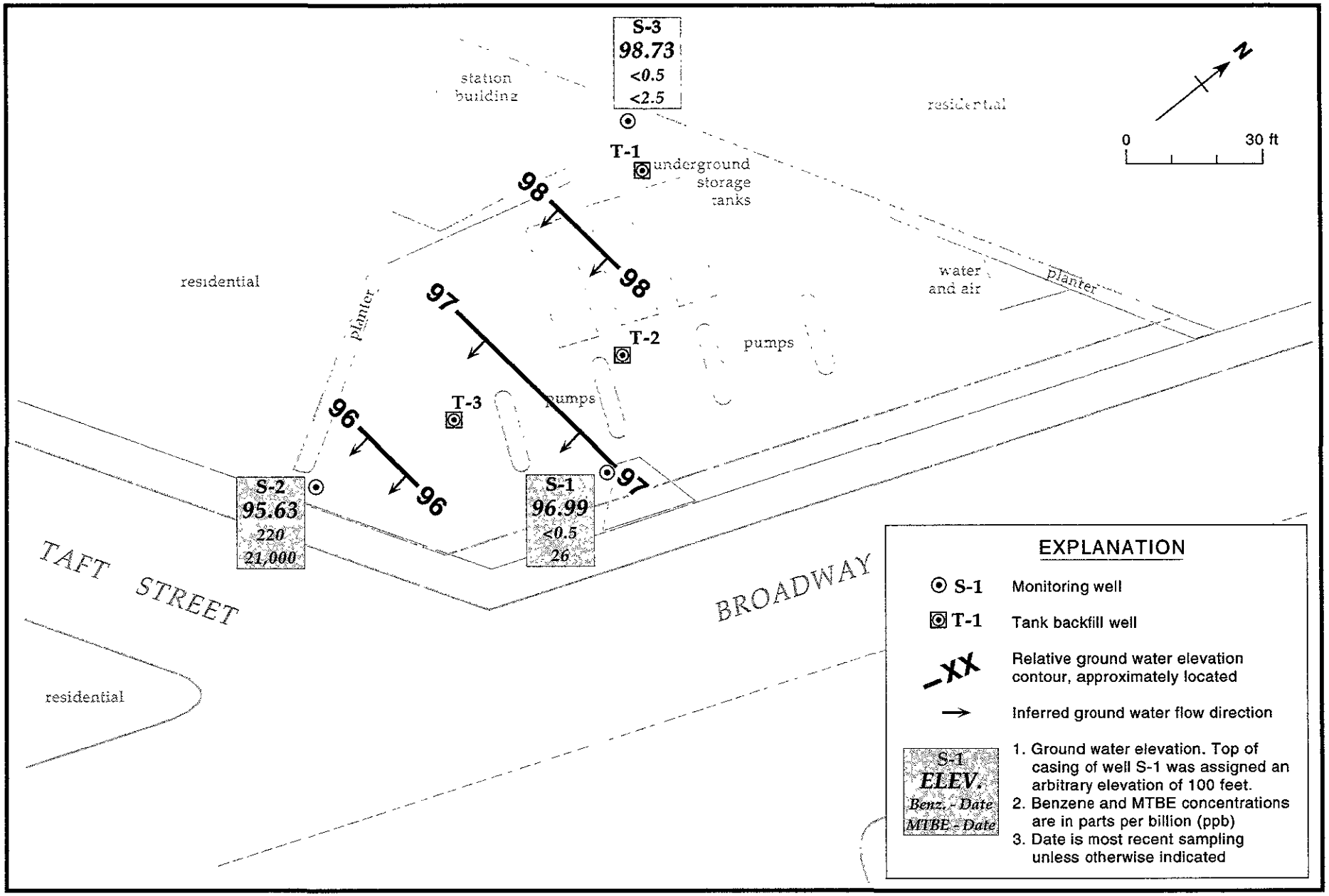


Figure 1. Ground Water Elevation Contours - August 21, 1997 - Shell Service Station WIC#204-5510-0303, 5755 Broadway, Oakland, California.

**Table 1.** **Ground Water Elevations** - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California

| Well ID | Date | TOC Elevation[a] | Depth to Water (ft below TOC) | Relative Ground Water Elevation (ft) |
|---|---|---|---|---|
| S-1 | 01/25/91 | 100.00 | 3.88 | 96.12 |
| | 06/03/91 | | 3.51 | 96.49 |
| | 08/30/91 | | 4.24 | 95.76 |
| | 11/22/91 | | 4.29 | 95.71 |
| | 03/13/92 | | 2.87 | 97.13 |
| | 05/28/92 | | 3.79 | 96.21 |
| | 08/19/92 | | 4.43 | 95.57 |
| | 11/18/92 | | 4.34 | 95.66 |
| | 02/10/93 | | 4.20 | 95.80 |
| | 06/11/93 | | 3.39 | 96.61 |
| | 08/03/93 | | 3.69 | 96.31 |
| | 11/02/93 | | 4.26 | 95.74 |
| | 12/16/93 | | 2.73 | 97.27 |
| | 02/01/94 | | 3.38 | 96.62 |
| | 05/04/94 | | 3.00 | 97.00 |
| | 08/18/94 | | 3.70 | 96.30 |
| | 11/09/94 | | 2.52 | 97.48 |
| | 02/22/95 | | 4.08 | 95.92 |
| | 05/02/95 | | 2.58 | 97.42 |
| | 08/30/95 | | 3.48 | 96.52 |
| | 11/28/95 | | 3.99 | 96.01 |
| | 02/02/96 | | 2.00 | 98.00 |
| | 03/09/96 | | 3.38 | 99.62 |
| | 08/22/96 | | 3.43 | 96.57 |
| | 11/07/96 | | 3.70 | 96.30 |
| | 02/20/97 | | 3.60 | 96.40 |
| | 05/30/97 | | 3.47 | 96.53 |
| | **08/21/97** | | **3.01** | **96.99** |
| S-2 | 01/25/91 | 98.92 | 4.52 | 94.40 |
| | 06/03/91 | | 4.02 | 94.90 |
| | 08/30/91 | | 4.70 | 94.22 |
| | 11/22/91 | | 4.72 | 94.20 |
| | 03/13/92 | | 3.47 | 95.45 |
| | 05/28/92 | | 4.45 | 94.45 |
| | 08/19/92 | | 4.84 | 94.08 |
| | 11/18/92 | | 4.73 | 94.19 |
| | 02/10/93 | | 4.83 | 94.09 |
| | 06/11/93 | | 3.74 | 95.18 |
| | 08/03/93 | | 4.23 | 94.69 |
| | 11/02/93 | | 4.72 | 94.20 |
| | 12/16/93 | | 3.00 | 95.92 |
| | 02/01/94 | | 3.48 | 95.44 |

**Table 1.** **Ground Water Elevations** - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Well ID | Date | TOC Elevation[a] | Depth to Water (ft below TOC) | Relative Ground Water Elevation (ft) |
|---|---|---|---|---|
| | 05/04/94 | | 3.26 | 95.66 |
| | 08/18/94 | | 3.98 | 94.94 |
| | 11/09/94 | | 3.10 | 95.82 |
| | 02/22/95 | | 4.02 | 94.90 |
| | 05/02/95 | | 2.86 | 96.06 |
| | 08/30/95 | | 4.06 | 94.86 |
| | 11/28/95 | | 4.48 | 94.44 |
| | 02/02/96 | | 1.99 | 96.93 |
| | 03/09/96 | | 3.27 | 95.65 |
| | 08/22/96 | | 3.85 | 95.07 |
| | 11/07/96 | | 4.00 | 94.92 |
| | 02/20/97 | | 3.20 | 95.72 |
| | 05/30/97 | | 3.87 | 95.05 |
| | **08/21/97** | | **3.29** | **95.63** |
| S-3 | 01/25/91 | 101.67 | 3.84 | 97.83 |
| | 06/03/91 | | 3.25 | 98.42 |
| | 08/03/91 | | 4.73 | 96.94 |
| | 11/22/91 | | 4.81 | 96.86 |
| | 03/13/92 | | 2.29 | 99.38 |
| | 05/28/92 | | 3.62 | 98.05 |
| | 08/19/92 | | 4.66 | 97.01 |
| | 11/18/92 | | 4.51 | 97.16 |
| | 02/10/93 | | 4.36 | 97.31 |
| | 06/11/93 | | 2.91 | 98.76 |
| | 08/03/93 | | 3.70 | 97.97 |
| | 11/02/93[b] | | --- | --- |
| | 12/16/93 | | 2.12 | 99.55 |
| | 02/01/94 | | 2.90 | 98.77 |
| | 05/04/94 | | 2.54 | 99.13 |
| | 08/18/94 | | 3.51 | 98.16 |
| | 11/09/94 | | 2.44 | 99.23 |
| | 02/22/95 | | 4.12 | 97.55 |
| | 05/02/95 | | 2.83 | 98.84 |
| | 08/30/95 | | 3.16 | 98.51 |
| | 11/28/95 | | 3.87 | 97.80 |
| | 02/02/96 | | 2.24 | 99.43 |
| | 03/09/96 | | 3.05 | 98.62 |
| | 08/22/96 | | 2.85 | 98.82 |
| | 11/07/96 | | 3.35 | 98.32 |
| | 02/20/97 | | 3.00 | 98.67 |
| | 05/30/97 | | 3.00 | 98.67 |
| | **08/21/97** | | **2.94** | **98.73** |

**Table 1.** **Ground Water Elevations** - Shell Service Station WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Well ID | Date | TOC Elevation[a] | Depth to Water (ft below TOC) | Relative Ground Water Elevation (ft) |
|---|---|---|---|---|
| T-1 | 05/30/97 | Not Surveyed | 2.65 | --- |
| | **08/21/97** | | **2.69** | **---** |
| T-2 | 05/30/97 | Not Surveyed | 1.81 | --- |
| | **08/21/97** | | **1.89** | **---** |
| T-3 | 05/30/97 | Not Surveyed | 2.31 | --- |
| | **08/21/97** | | **1.57** | **---** |

**Notes:**

a = Top of casing elevations referenced to arbitrary elevation of 100 ft.
b = Well inaccessible
NA = Not available
TOC = Top of Casing

**Table 2. Analytic Results for Ground Water** - Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California

| Sample ID | Date | Depth to Water (ft below TOC) | TPH-G | B | T | E | X | MTBE | DO (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ← parts per billion (µg/L) → | | | | | | |
| S-1 | 01/25/91 | 3.88 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 06/03/91 | 3.51 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 08/30/91 | 4.24 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 11/22/91 | 4.29 | <30 | 2.3 | <0.46 | 0.3 | <0.65 | --- | --- |
| | 03/13/92 | 2.87 | <30 | <0.52 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 05/28/92 | 3.79 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/19/92 | 4.43 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/18/92 | 4.34 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/10/93 | 4.20 | 51 | 1.4 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/10/93[dup] | 4.20 | <50 | 1.2 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 06/11/93 | 3.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/03/93 | 3.69 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/02/93 | 4.26 | 70[a] | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/01/94 | 3.38 | 60[a] | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 05/04/94 | 3.00 | <50 | 1.1 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/18/94 | 3.70 | <50 | 0.6 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/18/94[dup] | 3.70 | 60[b] | 0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/09/94 | 2.52 | <50 | 4.0 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/22/95 | 4.08 | 50 | 0.8 | 0.7 | <0.5 | 1.3 | --- | --- |
| | 05/02/95 | 2.58 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/30/95 | 3.48 | <50 | 1.7 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/28/95 | 3.99 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/02/96 | 2.00 | <50 | 11 | <0.5 | 0.9 | <0.5 | --- | --- |
| | 03/09/96 | 3.38 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/22/96 | 3.43 | <50 | 1.5 | <0.5 | <0.5 | <0.5 | 130 | --- |
| | 11/07/96 | 3.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 57 | 4.33 |
| | 02/20/97 | 3.60 | <50 | 0.64 | <0.50 | <0.50 | 1.6 | 6.5 | 2.0 |
| | 05/30/97 | 3.47 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 46 | 7.0 |
| | 05/30/97 | 3.47 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 47 | 7.0 |
| | **08/21/97** | **3.01** | **<50** | **<0.50** | **<0.50** | **<0.50** | **0.84** | **26** | **3.1** |

**Table 2.** **Analytic Results for Ground Water** - Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Sample ID | Date | Depth to Water (ft below TOC) | TPH-G | B | T | E | X | MTBE | DO (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ← parts per billion (µg/L) → | | | | | | |
| S-2 | 01/25/91 | 4.52 | 450 | 140 | 1.8 | 6.2 | 15 | --- | --- |
| | 06/03/91 | 4.02 | 490 | 150 | 2.7 | 8.2 | 7 | --- | --- |
| | 08/30/91 | 4.70 | 70 | 0.37 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 11/22/91 | 4.72 | 1,600 | 110 | 9.3 | 29 | 150 | --- | --- |
| | 03/13/92 | 3.47 | 1,300 | 210 | 5.7 | 34 | 79 | --- | --- |
| | 05/28/92 | 4.45 | 100 | 28 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/19/92 | 4.84 | 470 | 42 | <0.5 | 8.3 | 4.0 | --- | --- |
| | 11/18/92 | 4.73 | 490 | 43 | 39 | 17 | 29 | --- | --- |
| | 02/10/93 | 4.83 | 19,000 | 710 | 760 | 80 | 370 | --- | --- |
| | 06/11/93 | 3.74 | 33,000 | 3,100 | 1,600 | 370 | 1,100 | --- | --- |
| | 08/03/93 | 4.23 | 18,000 | 1,400 | 130 | 81 | 130 | --- | --- |
| | 08/03/93$^{dup}$ | 4.23 | 19,000 | 1,400 | 140 | 86 | 150 | --- | --- |
| | 11/02/93 | 4.72 | 12,000[a] | 470 | 47 | 31 | 92 | --- | --- |
| | 11/02/93$^{dup}$ | 4.72 | 13,000[a] | 530 | 47 | 35 | 96 | --- | --- |
| | 02/01/94 | 3.48 | 31,000[a] | 430 | 46 | 50 | 130 | --- | --- |
| | 02/01/94$^{dup}$ | 3.48 | 31,000[a] | 300 | 33 | 30 | 100 | --- | --- |
| | 05/04/94 | 3.26 | 3,900 | 1,200 | 31 | 53 | 71 | --- | --- |
| | 05/04/94$^{dup}$ | 3.26 | 4,500 | 1,200 | 37 | 57 | 110 | --- | --- |
| | 08/18/94 | 3.98 | 24,000 | 600 | 8.3 | 15 | 27 | --- | --- |
| | 11/09/94 | 3.10 | 1,400[a] | 240 | 9.3 | 13 | 20 | --- | --- |
| | 11/09/94$^{dup}$ | 3.10 | 1,800 | 260 | 8.5 | 13 | 21 | --- | --- |
| | 02/22/95 | 4.02 | 29,000 | 550 | 18 | 12 | 63 | --- | --- |
| | 02/22/95$^{dup}$ | 4.02 | 28,000 | 530 | 17 | 10 | 60 | --- | --- |
| | 05/02/95 | 2.86 | 4,400 | 1,000 | 25 | 38 | 77 | --- | --- |
| | 05/02/95$^{dup}$ | 2.86 | 4,400 | 1,000 | 26 | 41 | 83 | --- | --- |
| | 08/30/95 | 4.06 | 800 | 350 | 20 | 6.7 | 16 | --- | --- |
| | 08/30/95$^{dup}$ | 4.06 | 960 | 220 | 22 | 12 | 48 | --- | --- |
| | 11/28/95 | 4.48 | 2,000 | 230 | 220 | 50 | 230 | --- | --- |

**Table 2.** **Analytic Results for Ground Water** - Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Sample ID | Date | Depth to Water (ft below TOC) | TPH-G | B | T | E | X | MTBE | DO (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ← parts per billion (µg/L) → | | | | | | |
| | 11/28/95[dup] | 4.48 | 2,100 | 240 | 230 | 51 | 230 | --- | --- |
| | 02/02/96 | 2.00 | 18,000 | 540 | 18 | 12 | 22 | --- | --- |
| | 02/02/96[dup] | 2.00 | 11,000 | 600 | 18 | 13 | 28 | --- | --- |
| | 03/09/96 | 3.27 | 3,800 | 1,500 | 27 | 30 | 58 | --- | --- |
| | 03/09/96[dup] | 3.27 | 3,500 | 1,300 | 24 | 21 | 53 | --- | --- |
| | 08/22/96 | 3.85 | <20,000 | 490 | <200 | <200 | <200 | 43,000 | --- |
| | 08/22/96[dup] | 3.85 | <20,000 | 570 | <200 | <200 | <200 | 59,000 (51,000) | --- |
| | 11/07/96 | 4.00 | <5,000 | 290 | <50 | <50 | <50 | 32,000 | 3.51 |
| | 11/07/96[dup] | 4.00 | <5,000 | 290 | <50 | <50 | <50 | 32,000 | 3.51 |
| | 02/20/97 | 3.20 | <10,000 | 520 | <100 | <100 | <100 | 28,000 | 1.0 |
| | 02/20/97[dup] | 3.20 | <10,000 | 520 | <100 | <100 | <100 | 35,000 | 1.0 |
| | 05/30/97 | 3.87 | 150 | 15 | 11 | 3.5 | 15 | 11 | 6.0 |
| | **08/21/97** | **3.29** | **1,600** | **220** | **<10** | **20** | **<10** | **18,000** | **3.3** |
| | **08/21/97[dup]** | **3.29** | **1,500** | **180** | **<10** | **16** | **<10** | **21,000** | **3.3** |
| S-3 | 01/25/91 | NA | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 06/03/91 | 3.25 | <30 | <0.3 | 0.3 | 0.3 | 0.3 | --- | --- |
| | 08/30/91 | 4.73 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 11/22/91 | 4.81 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 03/13/92 | 2.29 | <30 | <0.3 | 0.3 | 0.3 | 0.3 | --- | --- |
| | 05/28/92 | 3.62 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/19/92 | 4.66 | <50 | <0.5 | <0.5 | <0.5 | 0.5 | --- | --- |
| | 11/18/92 | 4.51 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/10/93 | 4.36 | 30 | 1.9 | 3.2 | 2.4 | 5.6 | --- | --- |
| | 06/11/93 | 2.91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 06/11/93[dup] | 2.91 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/03/93 | 3.70 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/02/93[c] | --- | --- | --- | --- | --- | --- | --- | --- |

**Table 2.** **Analytic Results for Ground Water** - Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Sample ID | Date | Depth to Water (ft below TOC) | TPH-G | B | T | E | X | MTBE | DO (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ← parts per billion (µg/L) → | | | | | | |
| | 02/01/94 | 2.90 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 05/04/94 | 2.54 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/18/94 | 3.51 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/09/94 | 2.44 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/22/95 | 4.12 | 80 | <0.5 | 0.5 | <0.5 | 0.5 | --- | --- |
| | 05/02/95 | 2.83 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/30/95 | 3.16 | <50 | 0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/28/95 | 3.87 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/02/96 | 2.24 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 03/09/96 | 3.05 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/22/96 | 2.85 | <50 | 0.80 | <0.5 | <0.5 | <0.5 | <2.5 | 4.6 |
| | 11/07/96 | 3.35 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <2.5 | 4.6 |
| | 02/20/97 | 3.00 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <2.5 | 1.0 |
| | 05/30/97 | 3.00 | 140 | 14 | 10 | 3.3 | 14 | 8.6 | 8.0 |
| | **08/21/97** | **2.94** | **<50** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<2.5** | **3.3** |
| Bailer Blank | 08/19/92 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/22/91 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/22/95 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| Trip Blank | 03/13/92 | | <50 | <0.3 | <0.3 | <0.3 | <0.3 | --- | --- |
| | 05/28/92 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/19/92 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/18/92 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/10/93 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/03/93 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/02/93 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/01/94 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |

**Table 2.** **Analytic Results for Ground Water** - Shell Service Station, WIC #204-5510-0303, 5755 Broadway, Oakland, California (continued)

| Sample ID | Date | Depth to Water (ft below TOC) | TPH-G | B | T | E | X | MTBE | DO (mg/L) |
|---|---|---|---|---|---|---|---|---|---|
| | | | ← parts per billion (µg/L) → | | | | | | |
| | 05/04/94 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/09/94 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 02/22/95 | | <50 | <0.5 | <0.5 | 1.0[d] | <0.5 | --- | --- |
| | 05/02/95 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 08/30/95 | | <50 | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| | 11/28/95 | | <50 | <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
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
MTBE = Methyl tert-Butyl Ether by EPA Method 8020.
(x) indicates MTBE by EPA Method 8260
DO = Dissolved Oxygen
--- = Not analyzed
MCLs = California Primary maximum contaminant levels for drinking water (22 CCR 64444)
NA = Not available
NE = Not established
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
ppb = Parts per billion
µg/L = Micrograms per liter
mg/L = Milligrams per liter
TOC = Top of Casing

**Notes:**
a = Concentrations reported as gasoline are primarily due to presence of a discrete peak not indicative of gasoline.
b = This positive result has an atypical pattern for gasoline
c = Well inaccessible.
d = Positive result confirmed by secondary column or gas chromatography/mass spectrometry analysis.

CAMBRIA

**ATTACHMENT A**

Blaine Quarterly Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.

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

September 10, 1997

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

Attn: Alex Perez

Shell WIC #204-5510-0303
5755 Broadway
Oakland, California

3rd Quarter 1997

# Groundwater Monitoring Report 970821-S-1

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. Copies of our Sampling Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,

Francis Thie

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

cc: Cambria Environmental Technology, Inc.
1144 65th Street, Suite C
Oakland, CA 94608
Attn: Josh Bergstrom

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

# TABLE OF WELL GAUGING DATA

| WELL I.D. | DATA COLLECTION DATE | MEASUREMENT REFERENCED TO | QUALITATIVE OBSERVATIONS (sheen) | DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet) | THICKNESS OF IMMISCIBLES LIQUID ZONE (feet) | VOLUME OF IMMISCIBLES REMOVED (ml) | DEPTH TO WATER (feet) | DEPTH TO WELL BOTTOM (feet) |
|---|---|---|---|---|---|---|---|---|
| S-1 | 08/21/97 | TOC | -- | NONE | -- | -- | 3.01 | 11.61 |
| S-2 * | 08/21/97 | TOC | ODOR | NONE | -- | -- | 3.29 | 9.51 |
| S-3 | 08/21/97 | TOC | -- | NONE | -- | -- | 2.94 | 9.60 |
| T-1 | 08/21/97 | TOC | -- | NONE | -- | -- | 2.69 | 13.40 |
| T-2 | 08/21/97 | TOC | -- | NONE | -- | -- | 1.89 | 13.06 |
| T-3 | 08/21/97 | TOC | -- | NONE | -- | -- | 1.57 | 8.65 |

* Sample DUP was a duplicate sample taken from well S-2.

# SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

## CHAIN OF CUSTODY RECORD
Serial No: 970821-51

Date:
Page 1 of 1

Site Address: 5755 Broadway, Oakland, CA

WIC#: 204-5510-0303

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:

Printed Name: DOUG SANDERS

Analysis Required 9708108

LAB: SEQUOIA

| Sample ID | Date | Sludge | Soil | Water | Air | No. of conts. | TPH (EPA 8015 Mod. Gas) | TPH (EPA 8015 Mod. Diesel) | BTEX (EPA 8020/602) | Volatile Organics (EPA 8240) | Test for Disposal | Combination TPH 8015 & BTEX 8020 & MTBE | | | Asbestos | Container Size | Preparation Used | Composite Y/N | MATERIAL DESCRIPTION | SAMPLE CONDITION/ COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 S-1 | 8/21/97 | | | X | | 3 | | | | | | X | | | | | | | | |
| 2 S-2 | | | | X | | 3 | | | | | | X | | | | | | | | |
| 3 S-3 | | | | X | | 3 | | | | | | X | | | | | | | | |
| 4 EB | | | | X | | 3 | | | | | | X | | | | | | | | |
| 5 DUP | | | | X | | 3 | | | | | | X | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

CHECK ONE (1) BOX ONLY

| | CT/DT | TURN AROUND TIME |
|---|---|---|
| G.W. Monitoring | X 4461 | 24 hours ☐ |
| Site Investigation | ☐ 4441 | 48 hours ☐ |
| Soil Classify/Disposal | ☐ 4442 | 15 days X (Normal) |
| Water Classify/Disposal | ☐ 4443 | Other ☐ |
| Soil/Air Rem. or Sys. O & M | ☐ 4452 | NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT. |
| Water Rem. or Sys. O & M | ☐ 4453 | |
| Other | ☐ | |

UST AGENCY:

| Relinquished By (signature): | Printed Name: | Date: | Time: | Received (signature): | Printed Name: | Date: | Time: |
|---|---|---|---|---|---|---|---|
| | DOUG SANDERS | 8/21/97 | 1100 | Steve Ten | Steve Ten | 8/22/97 | 1100 |
| Relinquished By (signature): | Printed Name: | Date: | Time: | Received (signature): | Printed Name: | Date: | Time: |
| | | 8/22/97 | | | | | 1322 |
| Relinquished By (signature): | Printed Name: | Date: | Time: | Received (signature): | Printed Name: | Date: | Time: |
| | | | | Tara Parsley | Tara Parsley | 8/22/97 | 1413 |

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

13

Shell Oil Chain of Custody

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Project: Shell Oakland/970821-S1

Enclosed are the results from samples received at Sequoia Analytical on August 22, 1997. The requested analyses are listed below:

| SAMPLE # | SAMPLE DESCRIPTION | DATE COLLECTED | TEST METHOD |
|---|---|---|---|
| 9708D08 -01 | LIQUID, S-1 | 08/21/97 | TPGM2W Purgeable TPH/BTEX |
| 9708D08 -02 | LIQUID, S-2 | 08/21/97 | TPGM2W Purgeable TPH/BTEX |
| 9708D08 -03 | LIQUID, S-3 | 08/21/97 | TPGM2W Purgeable TPH/BTEX |
| 9708D08 -04 | LIQUID, EB | 08/21/97 | TPGM2W Purgeable TPH/BTEX |
| 9708D08 -05 | LIQUID, DUP | 08/21/97 | 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 Renner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | |
|---|---|---|
| Blaine Tech Services | Client Proj. ID: Shell Oakland/970821-S1 | Sampled: 08/21/97 |
| 1680 Rogers Avenue | Sample Descript: S-1 | Received: 08/22/97 |
| San Jose, CA 95112 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 08/29/97 |
| Attention: Fran Thie | Lab Number: 9708D08-01 | Reported: 09/04/97 |

QC Batch Number: GC082997BTEX22A
Instrument ID: GCHP22

## 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** | **26** |
| Benzene | 0.50 | N.D. |
| Toluene | 0.50 | N.D. |
| Ethyl Benzene | 0.50 | N.D. |
| **Xylenes (Total)** | **0.50** | **0.84** |
| Chromatogram Pattern: | | |

| 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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | |
|---|---|---|
| Blaine Tech Services | Client Proj. ID: Shell Oakland/970821-S1 | Sampled: 08/21/97 |
| 1680 Rogers Avenue | Sample Descript: S-2 | Received: 08/22/97 |
| San Jose, CA 95112 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 08/27/97 |
| Attention: Fran Thie | Lab Number: 9708D08-02 | Reported: 09/04/97 |

QC Batch Number: GC082797BTEX06A
nstrument ID: GCHP06

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

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| **TPPH as Gas** | **1000** | **1600** |
| **Methyl t-Butyl Ether** | **250** | **18000** |
| **Benzene** | **10** | **220** |
| Toluene | 10 | N.D. |
| **Ethyl Benzene** | **10** | **20** |
| Xylenes (Total) | 10 | N.D. |
| **Chromatogram Pattern:** | | **C6-C10** |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 74 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | |
|---|---|---|
| Blaine Tech Services | Client Proj. ID: Shell Oakland/970821-S1 | Sampled: 08/21/97 |
| 1680 Rogers Avenue | Sample Descript: S-3 | Received: 08/22/97 |
| San Jose, CA 95112 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 08/27/97 |
| Attention: Fran Thie | Lab Number: 9708D08-03 | Reported: 09/04/97 |

QC Batch Number: GC082797BTEX06A
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: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 72 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Renner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

| | | |
|---|---|---|
| Blaine Tech Services | Client Proj. ID: Shell Oakland/970821-S1 | Sampled: 08/21/97 |
| 1680 Rogers Avenue | Sample Descript: EB | Received: 08/22/97 |
| San Jose, CA 95112 | Matrix: LIQUID | |
| | Analysis Method: 8015Mod/8020 | Analyzed: 08/27/97 |
| Attention: Fran Thie | Lab Number: 9708D08-04 | Reported: 09/04/97 |

QC Batch Number: GC082797BTEX06A
nstrument 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: | | |

| Surrogates | Control Limits % | | % Recovery |
|---|---|---|---|
| Trifluorotoluene | 70 | 130 | 81 |

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970821-S1
Sample Descript: DUP
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9708D08-05

Sampled: 08/21/97
Received: 08/22/97

Analyzed: 09/02/97
Reported: 09/04/97

QC Batch Number: GC090297BTEX06A
Instrument ID: GCHP06

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

| Analyte | Detection Limit ug/L | Sample Results ug/L |
|---|---|---|
| **TPPH as Gas** | **1000** | **1500** |
| **Methyl t-Butyl Ether** | **250** | **21000** |
| **Benzene** | **10** | **180** |
| Toluene | 10 | N.D. |
| **Ethyl Benzene** | **10** | **16** |
| Xylenes (Total) | 10 | N.D. |
| **Chromatogram Pattern:** | | **C6-C10** |

| 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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
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Blaine Tech Services, Inc.
1680 Rogers Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 970821-S1
Matrix: Liquid
Work Order #: 9708D08 -01
Reported: Sep 4, 1997

# QUALITY CONTROL DATA REPORT

| Analyte: | Benzene | Toluene | Ethyl Benzene | Xylenes | Gas |
|---|---|---|---|---|---|
| QC Batch#: | GC082997BTEX22A | GC082997BTEX22A | GC082997BTEX22A | GC082997BTEX22A | GC082997BTEX22A |
| 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: | R. Geckler | R. Geckler | R. Geckler | R. Geckler | R. Geckler |
| MS/MSD #: | 9708B9205 | 9708B9205 | 9708B9205 | 9708B9205 | 9708B9205 |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Prepared Date: | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 |
| Analyzed Date: | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 |
| Instrument I.D.#: | GCHP22 | GCHP22 | GCHP22 | GCHP22 | GCHP22 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| Result: | 8.4 | 9.1 | 9.7 | 28 | 55 |
| MS % Recovery: | 84 | 91 | 97 | 93 | 92 |
| Dup. Result: | 7.6 | 8.3 | 8.8 | 25 | 50 |
| MSD % Recov.: | 76 | 83 | 88 | 83 | 83 |
| RPD: | 10 | 9.2 | 9.7 | 11 | 9.5 |
| RPD Limit: | 0-25 | 0-25 | 0-25 | 0-25 | 0-25 |
| LCS #: | BLK082997 | BLK082997 | BLK082997 | BLK082997 | BLK082997 |
| Prepared Date: | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 |
| Analyzed Date: | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 | 8/29/97 |
| Instrument I.D.#: | GCHP22 | GCHP22 | GCHP22 | GCHP22 | GCHP22 |
| Conc. Spiked: | 10 µg/L | 10 µg/L | 10 µg/L | 30 µg/L | 60 µg/L |
| LCS Result: | 8.2 | 9.0 | 9.6 | 27 | 54 |
| LCS % Recov.: | 82 | 90 | 96 | 90 | 90 |
| 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 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

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Shell Oakland / 970821-S1
Matrix: Liquid
Work Order #: 9708D08-02-04
Reported: Sep 4, 1997

# QUALITY CONTROL DATA REPORT

| Analyte: | Benzene | Toluene | Ethyl Benzene | Xylenes | Gas |
|---|---|---|---|---|---|
| QC Batch#: | GC082797BTEX06A | GC082797BTEX06A | GC082797BTEX06A | GC082797BTEX06A | GC082797BTEX06A |
| 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 #: | 9708B7202 | 9708B7202 | 9708B7202 | 9708B7202 | 9708B7202 |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Prepared Date: | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 |
| Analyzed Date: | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 |
| 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: | 8.9 | 9.0 | 9.5 | 28 | 60 |
| MS % Recovery: | 89 | 90 | 95 | 93 | 100 |
| Dup. Result: | 8.0 | 8.6 | 9.2 | 27 | 58 |
| MSD % Recov.: | 80 | 86 | 92 | 90 | 97 |
| RPD: | 11 | 4.5 | 3.2 | 3.6 | 3.4 |
| RPD Limit: | 0-25 | 0-25 | 0-25 | 0-25 | 0-25 |
| LCS #: | BLK082797 | BLK082797 | BLK082797 | BLK082797 | BLK082797 |
| Prepared Date: | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 |
| Analyzed Date: | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 | 8/27/97 |
| 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: | 8.4 | 8.6 | 9.0 | 27 | 58 |
| LCS % Recov.: | 84 | 86 | 90 | 90 | 97 |
| MS/MSD Control Limits | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS Control Limits | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |

SEQUOIA ANALYTICAL

Reggy Penner
Project Manager

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

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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Shell Oakland / 970821-S1
Matrix: Liquid
Work Order #: 9708D08-05

Reported: Sep 4, 1997

# QUALITY CONTROL DATA REPORT

| Analyte: | Benzene | Toluene | Ethyl Benzene | Xylenes | Gas |
|---|---|---|---|---|---|
| QC Batch#: | GC090297BTEX06A | GC090297BTEX06A | GC090297BTEX06A | GC090297BTEX06A | GC090297BTEX06A |
| 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 #: | 9708D7801 | 9708D7801 | 9708D7801 | 9708D7801 | 9708D7801 |
| Sample Conc.: | N.D. | N.D. | N.D. | N.D. | N.D. |
| Prepared Date: | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 |
| Analyzed Date: | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 |
| 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: | 8.5 | 8.9 | 8.7 | 25 | 58 |
| MS % Recovery: | 85 | 89 | 87 | 83 | 97 |
| Dup. Result: | 8.9 | 9.2 | 9.1 | 27 | 61 |
| MSD % Recov.: | 89 | 92 | 91 | 90 | 102 |
| RPD: | 4.6 | 3.3 | 4.5 | 7.7 | 5.0 |
| RPD Limit: | 0-25 | 0-25 | 0-25 | 0-25 | 0-25 |
| LCS #: | BLK090297 | BLK090297 | BLK090297 | BLK090297 | BLK090297 |
| Prepared Date: | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 |
| Analyzed Date: | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 | 9/2/97 |
| 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: | 9.0 | 9.3 | 9.2 | 27 | 61 |
| LCS % Recov.: | 90 | 93 | 92 | 90 | 102 |
| MS/MSD Control Limits | 60-140 | 60-140 | 60-140 | 60-140 | 60-140 |
| LCS Control Limits | 70-130 | 70-130 | 70-130 | 70-130 | 70-130 |

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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