Atlantic Richfield Company
(a BP affiliated company)

6 Centerpointe Drive, Room 172
La Palma, CA 90623-1066
Phone: (714) 670-5303
Fax: (714) 670-5195



bp RO 456

December 5, 2005

Re: Fourth Quarter 2005 Groundwater Monitoring Report
Former BP Service Stataion #11102
100 MacArthur Boulevard
Oakland, California
ACEH Case #1108

"I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct.

Submitted by:

Kyle Christie
Environmental Business Manager

URS



December 5, 2005

Ms. Donna Drogos
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-8577

**Re: Fourth Quarter 2005 Groundwater Monitoring Report**
**Former BP Service Station #11102**
**100 MacArthur Boulevard**
**Oakland, California**
**ACEH Case # 1108**

Dear Ms. Drogos:

On behalf of the Atlantic Richfield Company, a BP affiliated company, URS Corporation (URS) is submitting the *Fourth Quarter 2005 Groundwater Monitoring Report* for Former BP Service Station #11102, located at 100 MacArthur Boulevard, Oakland, California.

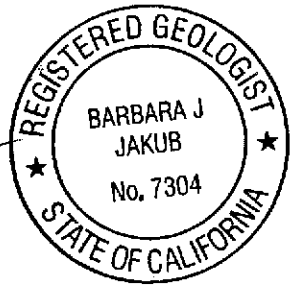
If you have any questions regarding this submission, please call (510) 874–1758.

Sincerely,

**URS CORPORATION**

Lynelle Onishi
Project Manager

Barbara J. Jakub, P.G.
Senior Geologist




Enclosure: Fourth Quarter 2005 Groundwater Monitoring Report

cc: Mr. Kyle Christie, Atlantic Richfield Company (RM), electronic copy uploaded to ENFOS
Ms. Shelby Lathrop, ConocoPhillips, electronic copy uploaded to URS ftp server
Mr. Chris Jimmerson, Delta Environmental Consultants, electronic copy uploaded to ENFOS

URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612-1924
Tel: 510.893.3600
Fax: 510.874.3268

**REPORT**

# FOURTH QUARTER 2005 GROUNDWATER MONITORING REPORT

FORMER BP SERVICE STATION #11102
100 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA



*Prepared for*
RM

December 5, 2005

URS
URS Corporation
1333 Broadway, Suite 800
Oakland, California 94612

Date: December 5, 2005

Quarter: 4Q 05

# FOURTH QUARTER 2005 GROUNDWATER MONITORING REPORT

| | | | |
|---|---|---|---|
| Facility No.: | 11102 | Address: | 100 MacArthur Boulevard, Oakland, CA |
| RM Environmental Business Manager: | | | Kyle Christie |
| Consulting Co./Contact Person: | | | URS Corporation/ Lynelle Onishi |
| Primary Agency | | | Alameda County Environmental Health (ACEH) |
| Primary Agency Case #: | | | RO 0000456 |

**WORK PERFORMED THIS QUARTER (Fourth – 2005):**

1. Performed the fourth quarter 2005 groundwater monitoring event on October 17, 2005.
2. Prepared and submitted this Fourth Quarter 2005 Groundwater Monitoring Report.
3. Completed the off-site assessment on October 7, 2005.
4. Prepare and submit a supplemental soil and water investigation report.

**WORK PROPOSED FOR NEXT QUARTER (First – 2006):**

1. Perform the first quarter 2006 groundwater monitoring event.
2. Prepare and submit the First Quarter 2006 Groundwater Monitoring Report.

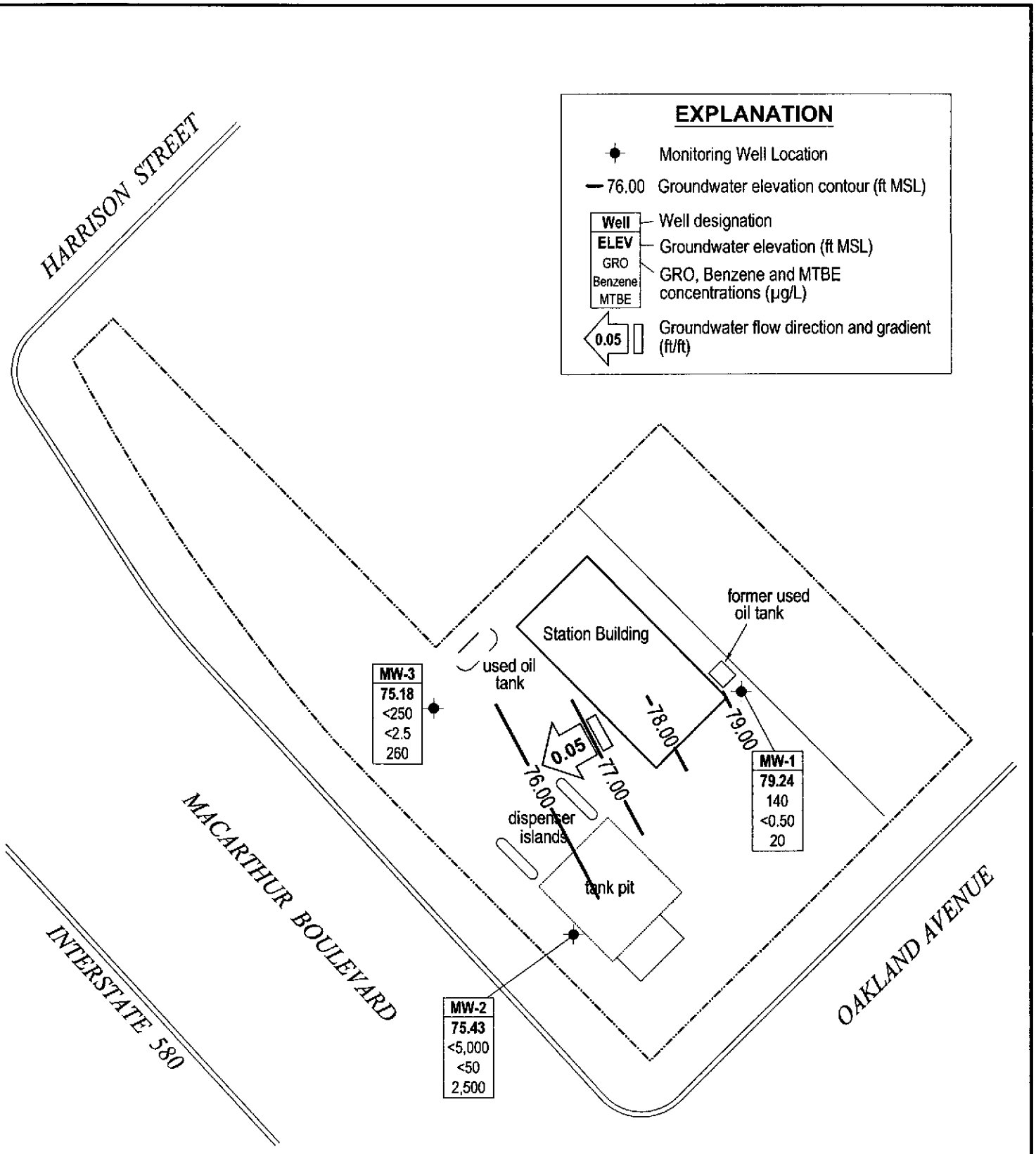
| | |
|---|---|
| Current Phase of Project: | GW monitoring/sampling |
| Frequency of Groundwater Sampling: | Wells MW-1 through MW-3 quarterly |
| Frequency of Groundwater Monitoring: | Quarterly |
| Is Free Product (FP) Present On-Site: | No |
| Current Remediation Techniques: | None |
| Approximate Depth to Groundwater: | 10.96 (MW-1) to 12.48 (MW-2) feet |
| Groundwater Gradient (direction): | Southwest |
| Groundwater Gradient (magnitude): | 0.05 feet per foot |

**DISCUSSION:**

Gasoline range organics were detected at or above the laboratory reporting limit in one of the three wells sampled this quarter at a concentration of 140 micrograms per liter (µg/L) (MW-1). Methyl tert-butyl ether was detected at or above the laboratory reporting limit in all three wells at concentrations ranging from 20 µg/L (MW-1) to 2,500 µg/L (MW-2). Tert-butyl alcohol was detected at or above the laboratory reporting limit in two wells at concentrations of 450 µg/L (MW-1) and 5,200 µg/L (MW-2). Tert-amyl methyl ether was detected at or above the laboratory reporting limit in one well at a concentration of 4.2 µg/L (MW-3). No other fuel components were detected at or above their respective laboratory reporting limits in any of the wells sampled this quarter.

**ATTACHMENTS:**

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – October 17, 2005
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Fuel Additives Analytical Data
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports, and Chain-of-Custody Records
- Attachment C – Error Check Reports and EDF/Geowell Submittal Confirmations




NOTE: SITE MAP ADAPTED FROM CAMBRIA ENVIRONMENTAL FIGURES.
SITE DIMENSIONS AND FIGURES FACILITY LOCATIONS NOT VERIFIED.

| | | | |
|---|---|---|---|
| URS | Project No. 38487244<br>Former BP Service Station #11102<br>100 MacArthur Boulevard<br>Oakland, California | GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP<br>Fourth Quarter 2005 (October 17, 2005) | FIGURE<br>1 |

Nov 30, 2005 - 2:44pm
X:\x_env_waste\BP GEM \Sites\L\Niles Sites\11102\Reports\Monitoring\2005 Qtr. 4\Drawings\11102-4Q05-GW.dwg

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station #11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (ft MSL) | DTW (ft bgs) | Product Thickness (feet) | GWE (ft MSL) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 11/4/1989 | -- | -- | 90.20 | 13.21 | -- | 76.99 | <500 | 3.4 | 0.6 | <0.3 | <0.3 | -- | -- | SAL | -- | <50 | <5000 | --- |
| | 11/11/1989 | -- | -- | 90.20 | 13.32 | -- | 76.88 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 90.20 | 12.46 | -- | 77.74 | 820 | 64 | 1.9 | 23 | 34 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 90.20 | 12.92 | -- | 77.28 | 190 | 11 | <5.0 | <5.0 | <5.0 | -- | -- | ANA | -- | <50 | <5000 | --- |
| | 11/20/1990 | -- | -- | 90.20 | 14.08 | -- | 76.12 | 50 | 2.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | 79 | <5000 | --- |
| | 3/1/1991 | -- | -- | 90.20 | 13.61 | -- | 76.59 | <100 | 0.9 | <0.3 | <0.3 | 0.3 | -- | -- | SAL | -- | <1000 | 14,000 | --- |
| | 8/19/1991 | -- | -- | 90.20 | 15.74 | -- | 74.46 | 370 | 35 | 0.73 | 6.4 | 5.6 | -- | -- | SEQ | -- | <50 | <5000 | --- |
| | 11/13/1991 | -- | -- | 90.20 | 14.08 | -- | 76.12 | 60 | 0.68 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | <50 | <5000 | --- |
| | 2/24/1992 | -- | -- | 90.20 | 12.52 | -- | 77.68 | 140 | 3.9 | 0.66 | 1.2 | 3.8 | -- | -- | SEQ | -- | 100 | <5000 | --- |
| | 5/19/1992 | -- | -- | 90.20 | 11.80 | -- | 78.40 | 4,200 | 440 | 21 | 250 | 37 | -- | -- | SEQ | -- | 910 | <5000 | --- |
| | 6/17/1992 | -- | -- | 90.20 | 12.01 | -- | 78.19 | 4,000 | 350 | 14 | 150 | 17 | -- | -- | SEQ | -- | 560 | <5000 | --- |
| | 7/22/1992 | -- | -- | 90.20 | 12.42 | -- | 77.78 | 4,000 | <5.0 | 19 | 210 | 61 | -- | -- | ANA | -- | -- | --- | --- |
| | 8/14/1992 | -- | -- | 90.20 | 12.75 | -- | 77.45 | 2,400 | 330 | 20 | 150 | 47 | -- | -- | SEQ | -- | 1,700 | <5000 | --- |
| | 11/11/1992 | -- | -- | 90.20 | 13.69 | -- | 76.51 | 260 | 30 | 3.4 | 7.6 | 6.8 | -- | -- | ANA | -- | 92 | <5000 | --- |
| | 6/7/1993 | -- | c | 90.20 | -- | -- | -- | 3,700 | 120 | 12 | 26 | 9.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 90.20 | 10.93 | -- | 79.27 | 3,400 | 98 | 11 | 21 | 7.6 | -- | -- | PACE | -- | 440 | --- | --- |
| | 12/2/1993 | -- | -- | 90.20 | 12.72 | -- | 77.48 | 1,100 | 8.3 | 3.6 | 0.6 | 1.5 | -- | -- | PACE | -- | 120 | <5000 | --- |
| | 6/22/1994 | -- | c, d | 90.20 | -- | -- | -- | 2,100 | 30 | 3.2 | 2 | 15 | 2,000 | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | d | 90.20 | 11.81 | -- | 78.39 | 2,100 | 32 | 3.8 | 2.2 | 17 | 4,000 | 3.2 | PACE | -- | <50 | <5000 | --- |
| | 1/10/1995 | -- | c | 90.20 | -- | -- | -- | <500 | 120 | <5 | 5 | <10 | -- | -- | ATI | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 90.20 | 10.97 | -- | 79.23 | <500 | 120 | <5 | <5 | <10 | -- | 3.9 | ATI | -- | 420 | --- | --- |
| | 6/21/1995 | -- | c,e | 90.20 | -- | -- | -- | 3,600 | <13 | <5.0 | <5.0 | <10 | -- | -- | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 90.20 | 9.38 | -- | 80.82 | 4,700 | 16 | <5.0 | <5.0 | <10 | -- | 6.7 | ATI | -- | 1,300 | 2,900 | 0.6 |
| | 12/27/1995 | -- | -- | 90.20 | 11.55 | -- | 78.65 | 430 | <2.5 | <2.5 | <2.5 | <5.0 | 1,200 | 6.3 | ATI | -- | 2,100 | 640 | --- |
| | 6/13/1996 | -- | -- | 90.20 | 9.28 | -- | 80.92 | 3,200 | 51 | <12 | <12 | <12 | 4,000 | 6.3 | SPL | -- | 920 | 2,000 | --- |
| | 12/4/1996 | -- | f | 90.20 | 11.91 | -- | 78.29 | 1,400 | 6.2 | <5 | <5 | <5 | 2,600 | 6.7 | SPL | -- | 280 | 2,000 | 6 |
| | 6/10/1997 | -- | c | 90.20 | -- | -- | -- | 7,700 | 14 | <25 | <25 | <25 | 13,000 | -- | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 90.20 | 8.97 | -- | 81.23 | 7,900 | 12 | <10 | <10 | <10 | 15,000 | 6 | SPL | -- | 1,700 | <5 | ND |
| | 12/12/1997 | -- | -- | 90.20 | 11.37 | -- | 78.83 | 440 | 8.8 | <1.0 | 2.6 | 9.4 | 6,700 | 5.5 | SPL | -- | 760 | 1,200 | ND |
| | 6/18/1998 | -- | -- | 90.20 | 8.02 | -- | 82.18 | 7,500 | <2.5 | <5.0 | <5.0 | <5.0 | 5,600 | 4.9 | SPL | -- | 2,900 | <5 | ND |
| | 3/9/1999 | -- | -- | 90.20 | 9.80 | -- | 80.40 | 32,000 | 100 | 16 | 72 | 110 | 49,000 | -- | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 90.20 | 10.78 | -- | 79.42 | 1,000 | <5.0 | <5.0 | <5.0 | <5.0 | 730 | -- | SPL | -- | -- | --- | <1.0 |
| | 10/14/1999 | -- | -- | 90.20 | 10.84 | -- | 79.36 | -- | -- | -- | -- | -- | -- | -- | SPL | -- | 660 | --- | --- |
| | 3/27/2000 | -- | -- | 90.20 | 9.83 | -- | 80.37 | 4,300 | 160 | 19 | 37 | 43 | 28,000 | -- | PACE | -- | -- | --- | --- |
| | 9/28/2000 | -- | -- | 90.20 | 11.33 | -- | 78.87 | 2,700 | 10 | 2.6 | 1.1 | 2.7 | 28,000 | -- | PACE | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station #11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (ft MSL) | DTW (ft bgs) | Product Thickness (feet) | GWE (ft MSL) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 3/8/2001 | -- | -- | 90.20 | 10.96 | -- | 79.24 | 8,200 | 23.5 | 6.09 | 5.23 | 8.97 | 11,600 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 90.20 | 12.07 | -- | 78.13 | 6,000 | 37.9 | <0.5 | <0.5 | <1.5 | 7,370 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 90.20 | 10.48 | -- | 79.72 | 6,400 | 60.8 | <5.0 | 6.43 | <10 | 7,750 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | -- | 90.20 | 11.20 | -- | 79.00 | 1,400 | <5.0 | <5.0 | <5.0 | <5.0 | 6,000 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 90.20 | 11.29 | -- | 78.91 | <10000 | <100 | 110 | <100 | <100 | 4,500 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 90.20 | 11.18 | -- | 79.02 | 710 | 11 | <10 | <10 | <10 | 940 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | -- | -- | 90.20 | 11.74 | -- | 78.46 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 220 | -- | SEQM | 6.6 | -- | -- | -- |
| | 04/23/2004 | P | I | 90.20 | 11.95 | -- | 78.25 | 470 | 3.4 | <2.5 | <2.5 | <2.5 | 150 | -- | SEQM | 6.7 | -- | -- | -- |
| | 07/01/2004 | P | -- | 90.20 | 11.52 | -- | 78.68 | 360 | <2.5 | <2.5 | <2.5 | <2.5 | 96 | -- | SEQM | 6.0 | -- | -- | -- |
| | 10/28/2004 | P | -- | 90.20 | 12.56 | -- | 77.64 | 390 | 0.94 | <0.50 | <0.50 | <0.50 | 43 | -- | SEQM | 6.2 | -- | -- | -- |
| | 01/10/2005 | P | -- | 90.20 | 11.85 | -- | 78.35 | 490 | 17 | <2.5 | 5.8 | 5.4 | 85 | -- | SEQM | 7.6 | -- | -- | -- |
| | 04/13/2005 | P | -- | 90.20 | 10.00 | -- | 80.20 | 1,000 | 27 | <2.5 | <2.5 | 25 | 48 | -- | SEQM | 6.6 | -- | -- | -- |
| | 07/11/2005 | P | -- | 90.20 | 9.27 | -- | 80.93 | 180 | <0.50 | <0.50 | <0.50 | <0.50 | 36 | -- | SEQM | 7.7 | -- | -- | -- |
| | **10/17/2005** | **P** | **--** | **90.20** | **10.96** | **--** | **79.24** | **140** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **20** | **--** | **SEQM** | **8.0** | **--** | **--** | **--** |
| MW-2 | 11/4/1989 | -- | -- | 87.91 | 15.84 | -- | 72.07 | <500 | 6.5 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 11/11/1989 | -- | -- | 87.91 | 14.75 | -- | 73.16 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 87.91 | 15.25 | -- | 72.66 | <500 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 87.91 | 15.59 | -- | 72.32 | 61 | 6.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 11/20/1990 | -- | -- | 87.91 | 17.81 | -- | 70.10 | <50 | 0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 3/1/1991 | -- | -- | 87.91 | 17.11 | -- | 70.80 | <100 | 0.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 8/19/1991 | -- | -- | 87.91 | 17.97 | -- | 69.94 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 11/13/1991 | -- | -- | 87.91 | 16.76 | -- | 71.15 | 38 | 0.32 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 2/24/1992 | -- | -- | 87.91 | 15.07 | -- | 72.84 | <50 | <0.5 | <0.5 | <0.5 | 0.58 | -- | -- | SEQ | -- | -- | --- | --- |
| | 5/19/1992 | -- | -- | 87.91 | 14.70 | -- | 73.21 | <50 | 0.55 | <0.5 | <0.5 | <0.5 | -- | -- | SEQ | -- | -- | --- | --- |
| | 7/22/1992 | -- | -- | 87.91 | 15.60 | -- | 72.31 | 90 | 1.3 | 0.6 | 0.9 | 1.9 | -- | -- | ANA | -- | -- | --- | --- |
| | 8/14/1992 | -- | -- | 87.91 | 15.88 | -- | 72.03 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 11/11/1992 | -- | c | 87.91 | -- | -- | -- | 65 | 3.2 | <0.5 | <0.5 | 1 | -- | -- | ANA | -- | -- | --- | --- |
| | 11/11/1992 | -- | -- | 87.91 | 16.19 | -- | 71.72 | 52 | 2.8 | <0.5 | <0.5 | 0.9 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 87.91 | 14.42 | -- | 73.49 | 1,200 | 14 | 2.8 | 1.9 | 1.71 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | c, d | 87.91 | -- | -- | -- | 2,100 | 32 | 3.8 | 2.2 | 17 | 3,700 | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | d | 87.91 | 14.94 | -- | 72.97 | 790 | 3.4 | 0.5 | 10 | <0.5 | 3,700 | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | d | 87.91 | 14.25 | -- | 73.66 | 110 | <0.5 | <0.5 | <0.5 | <0.5 | 120 | 3.9 | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 87.91 | 13.64 | -- | 74.27 | <50 | <0.5 | <0.5 | 0.6 | 1 | -- | 4.3 | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 87.91 | 11.66 | -- | 76.25 | 4,700 | <10 | <10 | <10 | <20 | -- | 7.8 | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | c | 87.91 | -- | -- | -- | 6,300 | <25 | <25 | <25 | <50 | 19,000 | -- | ATI | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station #11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (ft MSL) | DTW (ft bgs) | Product Thickness (feet) | GWE (ft MSL) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-2 | 12/27/1995 | -- | -- | 87.91 | 13.11 | -- | 74.80 | 6,100 | <25 | <25 | <25 | <50 | 20,000 | 6.7 | ATI | -- | -- | --- | --- |
| | 6/13/1996 | -- | c | 87.91 | -- | -- | -- | 8,700 | <5 | <5 | <5 | <5 | 13,000 | -- | SPL | -- | -- | --- | --- |
| | 6/13/1996 | -- | -- | 87.91 | 10.86 | -- | 77.05 | 8,300 | <2.5 | <2.5 | <2.5 | <2.5 | 13,000 | 6.5 | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | c | 87.91 | -- | -- | -- | 5,900 | <2.5 | <5 | <5 | <5 | 11,000 | -- | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | -- | 87.91 | 13.03 | -- | 74.88 | 5,900 | <2.5 | <5 | <5 | <5 | 11,000 | 6.3 | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 87.91 | 10.04 | -- | 77.87 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.8 | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | -- | 87.91 | 12.44 | -- | 75.47 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.7 | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | c | 87.91 | -- | -- | -- | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | -- | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.91 | 8.89 | -- | 79.02 | 50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.3 | SPL | -- | -- | --- | --- |
| | 3/9/1999 | -- | -- | 87.91 | 10.20 | -- | 77.71 | 15,000 | <5.0 | <5.0 | <5.0 | <5.0 | 23,000 | -- | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 87.91 | 11.81 | -- | 76.10 | 36,000 | <5.0 | 12 | 7 | 26 | 35,000 | -- | SPL | -- | -- | --- | <5.0 |
| | 10/14/1999 | -- | -- | 87.91 | 10.27 | -- | 77.64 | -- | -- | -- | -- | -- | -- | -- | SPL | -- | 100 | --- | --- |
| | 3/27/2000 | -- | -- | 87.91 | 9.98 | -- | 77.93 | 1,300 | <0.5 | <0.5 | 0.51 | <0.5 | 5,800 | -- | PACE | -- | -- | --- | --- |
| | 9/28/2000 | -- | -- | 87.91 | 11.40 | -- | 76.51 | 1,600 | 1.8 | 1.7 | 0.54 | 2.2 | 15,000 | -- | PACE | -- | -- | --- | --- |
| | 3/8/2001 | -- | -- | 87.91 | 11.16 | -- | 76.75 | 20,000 | <0.5 | <0.5 | <0.5 | <0.5 | 29,100 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 87.91 | 11.65 | -- | 76.26 | 5,000 | <0.5 | <0.5 | <0.5 | <1.5 | 6,110 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 87.91 | 9.86 | -- | 78.05 | 3,200 | 35.1 | <0.5 | <0.5 | <1.0 | 4,620 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | -- | 87.91 | 12.32 | -- | 75.59 | 1,900 | <10 | <10 | <10 | <10 | 15,000 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 87.91 | 11.63 | -- | 76.28 | 45,000 | <250 | <250 | <250 | <250 | 32,000 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 87.91 | 12.07 | -- | 75.84 | 9,300 | <500 | <500 | <500 | <500 | 24,000 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | P | -- | 87.91 | 11.45 | -- | 76.46 | <50,000 | <500 | <500 | <500 | <500 | 21,000 | -- | SEQM | 6.9 | -- | -- | -- |
| | 04/23/2004 | P | I | 87.91 | 11.45 | -- | 76.46 | 5,100 | <250 | <250 | <250 | <250 | 22,000 | -- | SEQM | 6.8 | -- | -- | -- |
| | 07/01/2004 | P | -- | 87.91 | 12.32 | -- | 75.59 | <5,000 | <50 | <50 | <50 | <50 | 5,200 | -- | SEQM | 5.6 | -- | -- | -- |
| | 10/28/2004 | P | -- | 87.91 | 13.02 | -- | 74.89 | 8,500 | <50 | <50 | <50 | <50 | 6,800 | -- | SEQM | 6.2 | -- | -- | -- |
| | 01/10/2005 | P | -- | 87.91 | 14.38 | -- | 73.53 | <25,000 | <250 | <250 | <250 | <250 | 7,100 | -- | SEQM | 7.6 | -- | -- | -- |
| | 04/13/2005 | P | -- | 87.91 | 14.03 | -- | 73.88 | <5,000 | <50 | <50 | <50 | <50 | 5,300 | -- | SEQM | 6.6 | -- | -- | -- |
| | 07/11/2005 | P | -- | 87.91 | 11.25 | -- | 76.66 | <5,000 | <50 | <50 | <50 | <50 | 5,300 | -- | SEQM | 7.5 | -- | -- | -- |
| | **10/17/2005** | **P** | **--** | **87.91** | **12.48** | **--** | **75.43** | **<5,000** | **<50** | **<50** | **<50** | **<50** | **2,500** | **--** | **SEQM** | **8.2** | **--** | **--** | **--** |
| MW-3 | 11/4/1989 | -- | -- | 87.02 | 15.40 | -- | 71.62 | <500 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 11/11/1989 | -- | -- | 87.02 | 14.10 | -- | 72.92 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 4/3/1990 | -- | -- | 87.02 | 13.90 | -- | 73.12 | <100 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 7/30/1990 | -- | -- | 87.02 | 13.77 | -- | 73.25 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | <5000 | --- |
| | 11/20/1990 | -- | -- | 87.02 | 14.67 | -- | 72.35 | <50 | 0.3 | 0.8 | 0.4 | 1.5 | -- | -- | SAL | -- | -- | --- | --- |
| | 3/1/1991 | -- | -- | 87.02 | 15.22 | -- | 71.80 | <100 | 0.4 | <0.3 | <0.3 | <0.3 | -- | -- | SAL | -- | -- | --- | --- |
| | 8/19/1991 | -- | -- | 87.02 | 13.15 | -- | 73.87 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station #11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (ft MSL) | DTW (ft bgs) | Product Thickness (feet) | GWE (ft MSL) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-3 | 11/13/1991 | -- | -- | 87.02 | 15.66 | -- | 71.36 | <30 | <0.3 | <0.3 | <0.3 | <0.3 | -- | -- | SEQ | -- | -- | --- | --- |
| | 2/24/1992 | -- | -- | 87.02 | 15.01 | -- | 72.01 | <50 | 0.65 | 1.4 | 0.66 | 4.4 | -- | -- | SEQ | -- | -- | --- | --- |
| | 5/19/1992 | -- | -- | 87.02 | 15.52 | -- | 71.50 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | SEQ | -- | -- | --- | --- |
| | 7/22/1992 | -- | -- | 87.02 | 15.63 | -- | 71.39 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | <50 | <5000 | --- |
| | 8/14/1992 | -- | -- | 87.02 | 13.57 | -- | 73.45 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 11/11/1992 | -- | -- | 87.02 | 14.13 | -- | 72.89 | <50 | <0.5 | 0.7 | <0.5 | 1.3 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | -- | 87.02 | 12.13 | -- | 74.89 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | -- | 87.02 | 13.29 | -- | 73.73 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | -- | 87.02 | 12.78 | -- | 74.24 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | 2.9 | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | -- | 87.02 | 12.01 | -- | 75.01 | <50 | <0.5 | <0.5 | <0.5 | <1 | -- | 3.8 | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | -- | 87.02 | 11.57 | -- | 75.45 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | -- | 7.4 | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | -- | 87.02 | 13.47 | -- | 73.55 | <50 | <0.50 | <0.50 | <0.50 | <1.0 | 5.7 | 7.3 | ATI | -- | -- | --- | --- |
| | 6/13/1996 | -- | -- | 87.02 | 11.22 | -- | 75.80 | 60 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | 6.8 | SPL | -- | -- | --- | --- |
| | 12/4/1996 | -- | -- | 87.02 | 13.28 | -- | 73.74 | <50 | <0.5 | <1 | <1 | <1 | <10 | 6.7 | SPL | -- | -- | --- | --- |
| | 6/10/1997 | -- | -- | 87.02 | 10.22 | -- | 76.80 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 6.1 | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | c | 87.02 | -- | -- | -- | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | -- | SPL | -- | -- | --- | --- |
| | 12/12/1997 | -- | -- | 87.02 | 12.61 | -- | 74.41 | <50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.6 | SPL | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.02 | 12.80 | -- | 74.22 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 6/18/1998 | -- | -- | 87.02 | 9.07 | -- | 77.95 | 50 | <0.5 | <1.0 | <1.0 | <1.0 | <10 | 5.3 | SPL | -- | -- | --- | --- |
| | 9/28/1999 | -- | -- | 87.02 | 13.76 | -- | 73.26 | -- | -- | -- | -- | -- | -- | -- | --- | -- | -- | --- | --- |
| | 3/27/2000 | -- | -- | 87.02 | 13.77 | -- | 73.25 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 1.6 | -- | PACE | -- | -- | --- | --- |
| | 9/28/2000 | -- | -- | 87.02 | 11.28 | -- | 75.74 | <50 | <0.5 | 7.4 | <0.5 | 1.3 | 2 | -- | PACE | -- | -- | --- | --- |
| | 3/8/2001 | -- | -- | 87.02 | 11.75 | -- | 75.27 | <50 | <0.5 | <0.5 | <0.5 | <0.5 | 60.4 | -- | PACE | -- | -- | --- | --- |
| | 9/21/2001 | -- | -- | 87.02 | 11.33 | -- | 75.69 | <50 | <0.5 | <0.5 | <0.5 | <1.5 | 8.18 | -- | PACE | -- | -- | --- | --- |
| | 2/28/2002 | -- | -- | 87.02 | 10.86 | -- | 76.16 | <50 | <0.5 | <0.5 | <0.5 | <1.0 | 25.5 | -- | PACE | -- | -- | --- | --- |
| | 9/6/2002 | -- | -- | 87.02 | 12.73 | -- | 74.29 | <50 | 1.2 | <0.5 | <0.5 | 1 | 16 | -- | SEQ | -- | -- | --- | --- |
| | 2/19/2003 | -- | h | 87.02 | 11.72 | -- | 75.30 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 110 | -- | SEQ | -- | -- | --- | --- |
| | 7/14/2003 | -- | -- | 87.02 | 13.76 | -- | 73.26 | <50 | <0.50 | <0.50 | <0.50 | 0.67 | 28 | -- | SEQ | -- | -- | --- | --- |
| | 01/14/2004 | P | -- | 87.02 | 14.83 | -- | 72.19 | 550 | <5.0 | <5.0 | <5.0 | <5.0 | 380 | -- | SEQM | 8.1 | -- | -- | -- |
| | 04/23/2004 | P | I | 87.02 | 13.17 | -- | 73.85 | <200 | <25 | <25 | <25 | <25 | 560 | -- | SEQM | 6.8 | -- | -- | -- |
| | 07/01/2004 | P | -- | 87.02 | 15.19 | -- | 71.83 | <50 | <0.50 | <0.50 | <0.50 | 0.50 | 48 | -- | SEQM | 6.4 | -- | -- | -- |
| | 10/28/2004 | P | -- | 87.02 | 15.50 | -- | 71.52 | <500 | <5.0 | <5.0 | <5.0 | <5.0 | 290 | -- | SEQM | 6.3 | -- | -- | -- |
| | 01/10/2005 | P | -- | 87.02 | 15.00 | -- | 72.02 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 18 | -- | SEQM | 7.6 | -- | -- | -- |
| | 04/13/2005 | P | -- | 87.02 | 14.34 | -- | 72.68 | <50 | <0.50 | <0.50 | <0.50 | <0.50 | 9.0 | -- | SEQM | 7.1 | -- | -- | -- |
| | 07/11/2005 | P | k | 87.02 | 10.82 | -- | 76.20 | 130 | <1.0 | <1.0 | <1.0 | <1.0 | 120 | -- | SEQM | 7.8 | -- | -- | -- |

## Table 1

### Groundwater Elevation and Analytical Data

Former BP Station #11102

100 MacArthur Blvd., Oakland, CA

| Well No. | Date | P/ NP | Foot Note | TOC (ft MSL) | DTW (ft bgs) | Product Thickness (feet) | GWE (ft MSL) | GRO/ TPH-g (µg/L) | Benzene (µg/L) | Toluene (µg/L) | Ethyl-benzene (µg/L) | Total Xylenes (µg/L) | MTBE (µg/L) | DO (mg/L) | Lab | pH | DRO/ TPH-d (µg/L) | TOG (µg/L) | HVOC (µg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MW-3** | **10/17/2005** | **P** | **--** | **87.02** | **11.84** | **--** | **75.18** | **<250** | **<2.5** | **<2.5** | **<2.5** | **<2.5** | **260** | **--** | **SEQM** | **8.5** | **--** | **--** | **--** |
| QC-2 | 11/11/1992 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | ANA | -- | -- | --- | --- |
| | 6/7/1993 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 12/2/1993 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 6/22/1994 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | PACE | -- | -- | --- | --- |
| | 1/10/1995 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <1 | -- | -- | ATI | -- | -- | --- | --- |
| | 6/21/1995 | -- | g | -- | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | -- | -- | ATI | -- | -- | --- | --- |
| | 12/27/1995 | -- | g | -- | -- | -- | -- | <50 | <0.50 | <0.50 | <0.50 | <1.0 | <5.0 | -- | ATI | -- | -- | --- | --- |
| | 6/13/1996 | -- | g | -- | -- | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <10 | -- | SPL | -- | -- | --- | --- |

## Table 1

## Groundwater Elevation and Analytical Data

Former BP Station #11102
100 MacArthur Blvd., Oakland, CA

ABBREVIATIONS & SYMBOLS:
--- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
BTEX = Benzene, toluene, ethylbenzene and xylenes
DO = Dissolved oxygen
DRO = Diesel range organics
DTW = Depth to water in ft bgs
ft bgs = feet below ground surface
ft MSL = feet above mean sea level
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation measured in ft MSL
HVOC = Halogenated volatile organic compounds
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft MSL
TOG = Total oil and grease
TPH-d = Total petroleum hydrocarbons as diesel
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
ANA = Anametrix, Inc.
PACE = Pace, Inc.
ATI = Analytical Technologies, Inc.
SAL = Superior Analytical Laboratory
SPL = Southern Petroleum Laboratories
SEQ/SEQM = Sequoia Analytical/Sequoia Morgan Hill Laboratories

FOOTNOTES:
c = Blind duplicate.
d = A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
e = Tetrachloroethene
f = Trans-1,2-Dichloroethene
g = Travel blank.
h = TPH-g, BTEX and MTBE analyzed by EPA Method 8260B beginning on 1st Quarter Sampling event (2/19/03)
k = The hydrocarbon result was partly due to individual peaks in the quantification range (GRO).
l = GRO analyzed by EPA Method 8015B.

NOTES:
Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.
Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12
pH and DO are field measurements.
The data within this table collected prior to August 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

## Table 2

### Fuel Additives Analytical Data

Former BP Station #11102
100 MacArthur Blvd., Oakland, CA

| Well Number | Date Sampled | Ethanol (µg/L) | TBA (µg/L) | MTBE (µg/L) | DIPE (µg/L) | ETBE (µg/L) | TAME (µg/L) | 1,2-DCA (µg/L) | EDB (µg/L) | Footnotes/ Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 7/14/2003 | <2000 | 2,700 | 940 | <20 | <20 | <20 | -- | -- | |
| | 01/14/2004 | <1,000 | 2,500 | 220 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| | 04/23/2004 | <500 | 2,500 | 150 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| | 07/01/2004 | <500 | 2,000 | 96 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| | 10/28/2004 | <5.0 | 1,500 | 43 | <0.50 | <0.50 | 0.58 | <0.50 | <0.50 | |
| | 01/10/2005 | <500 | 1,900 | 85 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| | 04/13/2005 | <500 | 1,400 | 48 | <2.5 | <2.5 | <2.5 | <2.5 | <2.5 | |
| | 07/11/2005 | <100 | 550 | 36 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| | **10/17/2005** | **<100** | **450** | **20** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **a** |
| MW-2 | 7/14/2003 | <100000 | <20000 | 24,000 | <1000 | <1000 | <1000 | -- | -- | |
| | 01/14/2004 | <100,000 | <20,000 | 21,000 | <500 | <500 | <500 | <500 | <500 | |
| | 04/23/2004 | <50,000 | 11,000 | 22,000 | <250 | <250 | 420 | <250 | <250 | |
| | 07/01/2004 | <10,000 | 2,900 | 5,200 | <50 | <50 | 110 | <50 | <50 | |
| | 10/28/2004 | <5.0 | 6,700 | 6,800 | <50 | <50 | 120 | <50 | <50 | |
| | 01/10/2005 | <50,000 | <10,000 | 7,100 | <250 | <250 | <250 | <250 | <250 | |
| | 04/13/2005 | <10,000 | 5,300 | 5,300 | <50 | <50 | 95 | <50 | <50 | |
| | 07/11/2005 | <10,000 | 9,000 | 5,300 | <50 | <50 | 99 | <50 | <50 | |
| | **10/17/2005** | **<10,000** | **5,200** | **2,500** | **<50** | **<50** | **<50** | **<50** | **<50** | **a** |
| MW-3 | 7/14/2003 | <100 | <20 | 28 | <1.0 | <1.0 | <1.0 | -- | -- | |
| | 01/14/2004 | <1,000 | <200 | 380 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| | 04/23/2004 | <5,000 | <1,000 | 560 | <25 | <25 | <25 | <25 | <25 | |
| | 07/01/2004 | <100 | <20 | 48 | <0.50 | <0.50 | 0.52 | <0.50 | <0.50 | |
| | 10/28/2004 | <5.0 | <200 | 290 | <5.0 | <5.0 | <5.0 | <5.0 | <5.0 | |
| | 01/10/2005 | <100 | <20 | 18 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| | 04/13/2005 | <100 | <20 | 9.0 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | |
| | 07/11/2005 | <200 | <40 | 120 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | a |
| | **10/17/2005** | **<500** | **<100** | **260** | **<2.5** | **<2.5** | **4.2** | **<2.5** | **<2.5** | **a** |

## Table 2

### Fuel Additives Analytical Data

Former BP Station #11102
100 MacArthur Blvd., Oakland, CA

SYMBOLS & ABBREVIATIONS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above the laboratory reporting limit.
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

FOOTNOTES:
a = The calibration verification for ethanol was within the method limits but outside the contract limits.

NOTES:
All volatile organic compounds were analyzed using EPA Method 8260B.

# ATTACHMENT A

# FIELD PROCEDURES AND FIELD DATA SHEETS

# FIELD PROCEDURES

## Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

# WELL GAUGING DATA

Project # 051017-PC2 Date 10/17/05 Client SP 11102

Site 1002 MacArthur Blvd, Oakland

| Well ID | Well Size (in.) | Sheen / Odor | Depth to Immiscible Liquid (ft.) | Thickness of Immiscible Liquid (ft.) | Volume of Immiscibles Removed (ml) | Depth to water (ft.) | Depth to well bottom (ft.) | Survey Point: TOB or TOC | |
|---|---|---|---|---|---|---|---|---|---|
| MW-1 | 4 | | | | | 10.96 | 32.06 | TOC | |
| MW-2 | 4 | | | | | 12.48 | 32.40 | ↓ | |
| MW-3 | 4 | | | | | 11.84 | 32.46 | ↓ | |
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# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS #: 050117-PC2 | Station # BP 11102 |
| Sampler: PC | Date: 10/17/05 |
| Well I.D.: MW-1 | Well Diameter: 2 3 (4) 6 8 ___ |
| Total Well Depth: 32.06 | Depth to Water: 10.96 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: (PVC) Grade | D.O. Meter (if req'd): YSI HACH |

| Well Diameter | Multiplier | Well Diameter | Multiplier |
|---|---|---|---|
| 1" | 0.04 | 4" | 0.65 |
| 2" | 0.16 | 6" | 1.47 |
| 3" | 0.37 | Other | radius² * 0.163 |

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (Electric Submersible) / Extraction Pump / Other: ___

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ___

Top of Screen: ___

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

13.7 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 41.1 (Calculated Volume) Gals.

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 1250 | 69.6 | 7.4 | 650 | 14 | |
| 1254 | 69.3 | 7.7 | 775 | 28 | |
| 1257 | 69.0 | 8.0 | 779 | 41.5 | |
| | | | | | |
| | | | | | |

Did well dewater? Yes (No) Gallons actually evacuated: 41.5

Sampling Time: 1302 Sampling Date: 10/17/05

Sample I.D.: MW-1 Laboratory: Pace Sequoia Other ___

Analyzed for: (GRO) BTEX MTBE DRO (Oxy's) 1,2-DCA EDB Ethanol Other:

| | | | | | |
|---|---|---|---|---|---|
| D.O. (if req'd): | Pre-purge: | mg/L | Post-purge: | mg/L |
| O.R.P. (if req'd): | Pre-purge: | mV | Post-purge: | mV |

# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS #: 051017-RC1 | Station # BP11102 |
| Sampler: RC | Date: 10/17/05 |
| Well I.D.: MW-2 | Well Diameter: 2 3 (4) 6 8 ____ |
| Total Well Depth: 32.40 | Depth to Water: 12.48 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: (PVC) Grade | D.O. Meter (if req'd): YSI HACH |

| Well Diameter | Multiplier | Well Diameter | Multiplier |
|---|---|---|---|
| 1" | 0.04 | 4" | 0.65 |
| 2" | 0.16 | 6" | 1.47 |
| 3" | 0.37 | Other | radius$^2$ * 0.163 |

Purge Method: Bailer / Disposable Bailer / Positive Air Displacement / (Electric Submersible) / Extraction Pump / Other: ____

Sampling Method: Bailer / (Disposable Bailer) / Extraction Port / Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

12.9 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 38.7 (Calculated Volume) Gals.

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 1345 | 69.6 | 8.6 | 760 | 13 | clear |
| 1348 | 69.8 | 8.5 | 878 | 26 | |
| | well dewatered | | | | |
| 1358 | 20.8 | 8.2 | 2477 | | Site depart DTW: 29.50' |
| | | | | | |

Did well dewater? (Yes) No — Gallons actually evacuated: 29

Sampling Time: 1358 — Sampling Date: 10/17/05

Sample I.D.: MW-2 — Laboratory: Pace (Sequoia) Other ____

Analyzed for: (GRO) (BTEX) MTBE DRO (Oxys) 1,2-DCA (EDB) (Ethanol) Other:

| | | | | |
|---|---|---|---|---|
| D.O. (if req'd): | Pre-purge: | mg/L | Post-purge: | mg/L |
| O.R.P. (if req'd): | Pre-purge: | mV | Post-purge: | mV |

# ARCO / BP WELL MONITORING DATA SHEET

| | |
|---|---|
| BTS.#: 051017-PCE | Station # BP 11102 |
| Sampler: PC | Date: 10/17/05 |
| Well I.D.: MW-3 | Well Diameter: 2 3 ~~4~~ 6 8 ____ |
| Total Well Depth: 32.40 | Depth to Water: 11.84 |
| Depth to Free Product: | Thickness of Free Product (feet): |
| Referenced to: PVC Grade | D.O. Meter (if req'd): YSI HACH |

| Well Diameter | Multiplier | Well Diameter | Multiplier |
|---|---|---|---|
| 1" | 0.04 | 4" | 0.65 |
| 2" | 0.16 | 6" | 1.47 |
| 3" | 0.37 | Other | radius² * 0.163 |

Purge Method:
- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Extraction Pump
- Other: ____

Sampling Method:
- Bailer
- Disposable Bailer
- Extraction Port
- Other: ____

Top of Screen: ____

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

13.4 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 30.2 (Calculated Volume) Gals.

| Time | Temp (°F) | pH | Conductivity (mS or µS) | Gals. Removed | Observations |
|---|---|---|---|---|---|
| 1320 | 69.9 | 7.9 | 616 | 13.5 | |
| 1323 | 71.2 | 8.9 | 609 | 27 | |
| 1326 | 70.4 | 8.5 | 656 | 30.5 | |
| | | | | | |
| | | | | | |

Did well dewater? Yes (No) Gallons actually evacuated: 30.5

Sampling Time: 1332 Sampling Date: 10/17/05

Sample I.D.: MW-3 Laboratory: Pace Sequoia Other ____

Analyzed for: (GRO) BTEX MTBE DRO Oxys 1,2-DCA EDB Ethanol Other:

| | | | | |
|---|---|---|---|---|
| D.O. (if req'd): | Pre-purge: | mg/L | Post-purge: | mg/L |
| O.R.P. (if req'd): | Pre-purge: | mV | Post-purge: | mV |

## BP GEM OIL COMPANY TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING** FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

BP 11102
Station #

100 MacArthur Blvd., Oakland
Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

102

added equip. rinse water 10

any other adjustments

**TOTAL GALS. RECOVERED** 112

loaded onto BTS vehicle # 58

BTS event # 051017:RI

time 1300

date 10/17/05

signature

* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

REC'D AT BTS

time

date 10/17/05

unloaded by

signature

# ATTACHMENT B

# LABORATORY PROCEDURES, CERTIFIED ANALYTICAL REPORTS, AND CHAIN-OF-CUSTODY RECORDS

# LABORATORY PROCEDURES

## Laboratory Procedures

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by RM have been reviewed and verified by that laboratory.

Sequoia
Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

27 October, 2005

Lynelle Onishi
URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland, CA 94612

RE: BP Heritage #11102, Oakland, CA
Work Order: MOJ0988

Enclosed are the results of analyses for samples received by the laboratory on 10/18/05 18:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamshid Kekobad
Project Manager

CA ELAP Certificate #1210

The results in this laboratory report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPGCLN Technical Specifications, applicable Federal, State, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPGCLN. This entire report was reviewed and approved for release.

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www.sequoialabs.com

| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---|---|---|---|---|
| MW-1 | MOJ0988-01 | Water | 10/17/05 13:02 | 10/18/05 18:20 |
| MW-2 | MOJ0988-02 | Water | 10/17/05 13:58 | 10/18/05 18:20 |
| MW-3 | MOJ0988-03 | Water | 10/17/05 13:32 | 10/18/05 18:20 |
| TB-1110210172005 | MOJ0988-04 | Water | 10/17/05 00:00 | 10/18/05 18:20 |

The carbon range for the TPH-GRO has been changed from C6-C10 to C4-C12. The carbon range for TPH-DRO has been changed from C10-C28 to C10-C36. EPA 8015B has been modified to better meet the requirements of California regulatory agencies.

These samples were received with no custody seals.

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

## Volatile Organic Compounds by EPA Method 8260B

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-1 (MOJ0988-01) Water Sampled: 10/17/05 13:02 Received: 10/18/05 18:20** | | | | | | | | | |
| tert-Amyl methyl ether | ND | 0.50 | ug/l | 1 | 5J25010 | 10/25/05 | 10/25/05 | EPA 8260B | |
| Benzene | ND | 0.50 | " | " | " | " | " | " | |
| **tert-Butyl alcohol** | **450** | 20 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 0.50 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 0.50 | " | " | " | " | " | " | |
| Ethanol | ND | 100 | " | " | " | " | " | " | IC |
| Ethyl tert-butyl ether | ND | 0.50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **20** | 0.50 | " | " | " | " | " | " | |
| Toluene | ND | 0.50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.50 | " | " | " | " | " | " | |
| **Gasoline Range Organics (C4-C12)** | **140** | 50 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *110 %* | | *60-135* | | " | " | " | |
| **MW-2 (MOJ0988-02) Water Sampled: 10/17/05 13:58 Received: 10/18/05 18:20** | | | | | | | | | |
| tert-Amyl methyl ether | ND | 50 | ug/l | 100 | 5J25010 | 10/25/05 | 10/25/05 | EPA 8260B | |
| Benzene | ND | 50 | " | " | " | " | " | " | |
| **tert-Butyl alcohol** | **5200** | 2000 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 50 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 50 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 50 | " | " | " | " | " | " | |
| Ethanol | ND | 10000 | " | " | " | " | " | " | IC |
| Ethyl tert-butyl ether | ND | 50 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 50 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **2500** | 50 | " | " | " | " | " | " | |
| Toluene | ND | 50 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 50 | " | " | " | " | " | " | |
| Gasoline Range Organics (C4-C12) | ND | 5000 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *112 %* | | *60-135* | | " | " | " | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

## Volatile Organic Compounds by EPA Method 8260B

### Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---|---|---|---|---|---|---|---|---|---|
| **MW-3 (MOJ0988-03) Water** | **Sampled: 10/17/05 13:32** | **Received: 10/18/05 18:20** | | | | | | | |
| **tert-Amyl methyl ether** | **4.2** | 2.5 | ug/l | 5 | 5J25010 | 10/25/05 | 10/25/05 | EPA 8260B | |
| Benzene | ND | 2.5 | " | " | " | " | " | " | |
| tert-Butyl alcohol | ND | 100 | " | " | " | " | " | " | |
| Di-isopropyl ether | ND | 2.5 | " | " | " | " | " | " | |
| 1,2-Dibromoethane (EDB) | ND | 2.5 | " | " | " | " | " | " | |
| 1,2-Dichloroethane | ND | 2.5 | " | " | " | " | " | " | |
| Ethanol | ND | 500 | " | " | " | " | " | " | IC |
| Ethyl tert-butyl ether | ND | 2.5 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 2.5 | " | " | " | " | " | " | |
| **Methyl tert-butyl ether** | **260** | 2.5 | " | " | " | " | " | " | |
| Toluene | ND | 2.5 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 2.5 | " | " | " | " | " | " | |
| Gasoline Range Organics (C4-C12) | ND | 250 | " | " | " | " | " | " | |
| *Surrogate: 1,2-Dichloroethane-d4* | | *99 %* | *60-135* | | " | " | " | " | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control
## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 5J25010 - EPA 5030B P/T / EPA 8260B** | | | | | | | | | | |
| **Blank (5J25010-BLK1)** | | | | Prepared & Analyzed: 10/25/05 | | | | | | |
| tert-Amyl methyl ether | ND | 0.50 | ug/l | | | | | | | |
| Benzene | ND | 0.50 | " | | | | | | | |
| tert-Butyl alcohol | ND | 5.0 | " | | | | | | | |
| Di-isopropyl ether | ND | 0.50 | " | | | | | | | |
| 1,2-Dibromoethane (EDB) | ND | 0.50 | " | | | | | | | |
| 1,2-Dichloroethane | ND | 0.50 | " | | | | | | | |
| Ethanol | ND | 100 | " | | | | | | | IC |
| Ethyl tert-butyl ether | ND | 0.50 | " | | | | | | | |
| Ethylbenzene | ND | 0.50 | " | | | | | | | |
| Methyl tert-butyl ether | ND | 0.50 | " | | | | | | | |
| Toluene | ND | 0.50 | " | | | | | | | |
| Xylenes (total) | ND | 0.50 | " | | | | | | | |
| Gasoline Range Organics (C4-C12) | ND | 50 | " | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.29* | | " | *2.50* | | *92* | *60-135* | | | |
| **Laboratory Control Sample (5J25010-BS1)** | | | | Prepared & Analyzed: 10/25/05 | | | | | | |
| tert-Amyl methyl ether | 15.7 | 0.50 | ug/l | 15.0 | | 105 | 80-115 | | | |
| Benzene | 5.70 | 0.50 | " | 5.16 | | 110 | 65-115 | | | |
| tert-Butyl alcohol | 147 | 5.0 | " | 143 | | 103 | 75-150 | | | |
| Di-isopropyl ether | 16.9 | 0.50 | " | 15.1 | | 112 | 75-125 | | | |
| 1,2-Dibromoethane (EDB) | 17.6 | 0.50 | " | 14.9 | | 118 | 85-120 | | | |
| 1,2-Dichloroethane | 17.5 | 0.50 | " | 14.7 | | 119 | 85-130 | | | |
| Ethanol | 161 | 100 | " | 142 | | 113 | 70-135 | | | IC |
| Ethyl tert-butyl ether | 16.5 | 0.50 | " | 15.0 | | 110 | 75-130 | | | |
| Ethylbenzene | 6.53 | 0.50 | " | 7.54 | | 87 | 75-135 | | | |
| Methyl tert-butyl ether | 8.07 | 0.50 | " | 7.02 | | 115 | 65-125 | | | |
| Toluene | 40.1 | 0.50 | " | 37.2 | | 108 | 85-120 | | | |
| Xylenes (total) | 38.3 | 0.50 | " | 41.2 | | 93 | 85-125 | | | |
| Gasoline Range Organics (C4-C12) | 515 | 50 | " | 440 | | 117 | 60-140 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.56* | | " | *2.50* | | *102* | *60-135* | | | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

## Sequoia Analytical - Morgan Hill

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch 5J25010 - EPA 5030B P/T / EPA 8260B** | | | | | | | | | | |
| **Matrix Spike (5J25010-MS1)** | **Source: MOJ0988-02** | | | Prepared & Analyzed: 10/25/05 | | | | | | |
| tert-Amyl methyl ether | 1530 | 50 | ug/l | 1500 | 43 | 99 | 80-115 | | | |
| Benzene | 576 | 50 | " | 516 | ND | 112 | 65-115 | | | |
| tert-Butyl alcohol | 17800 | 500 | " | 14300 | 5200 | 88 | 75-120 | | | |
| Di-isopropyl ether | 1710 | 50 | " | 1510 | ND | 113 | 75-125 | | | |
| 1,2-Dibromoethane (EDB) | 1720 | 50 | " | 1490 | ND | 115 | 85-120 | | | |
| 1,2-Dichloroethane | 1650 | 50 | " | 1470 | ND | 112 | 85-130 | | | |
| Ethanol | 30200 | 10000 | " | 14200 | ND | 213 | 70-135 | | | LM, IC |
| Ethyl tert-butyl ether | 1570 | 50 | " | 1500 | ND | 105 | 75-130 | | | |
| Ethylbenzene | 630 | 50 | " | 754 | ND | 84 | 75-135 | | | |
| Methyl tert-butyl ether | 2780 | 50 | " | 702 | 2500 | 40 | 65-125 | | | LN |
| Toluene | 4060 | 50 | " | 3720 | ND | 109 | 85-120 | | | |
| Xylenes (total) | 3700 | 50 | " | 4120 | ND | 90 | 85-125 | | | |
| Gasoline Range Organics (C4-C12) | 50400 | 5000 | " | 44000 | 1700 | 111 | 60-140 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.29* | | " | *2.50* | | *92* | *60-135* | | | |
| **Matrix Spike Dup (5J25010-MSD1)** | **Source: MOJ0988-02** | | | Prepared & Analyzed: 10/25/05 | | | | | | |
| tert-Amyl methyl ether | 1470 | 50 | ug/l | 1500 | 43 | 95 | 80-115 | 4 | 15 | |
| Benzene | 595 | 50 | " | 516 | ND | 115 | 65-115 | 3 | 20 | |
| tert-Butyl alcohol | 16300 | 500 | " | 14300 | 5200 | 78 | 75-120 | 9 | 25 | |
| Di-isopropyl ether | 1680 | 50 | " | 1510 | ND | 111 | 75-125 | 2 | 15 | |
| 1,2-Dibromoethane (EDB) | 1610 | 50 | " | 1490 | ND | 108 | 85-120 | 7 | 15 | |
| 1,2-Dichloroethane | 1620 | 50 | " | 1470 | ND | 110 | 85-130 | 2 | 20 | |
| Ethanol | 26300 | 10000 | " | 14200 | ND | 185 | 70-135 | 14 | 35 | LM, IC |
| Ethyl tert-butyl ether | 1490 | 50 | " | 1500 | ND | 99 | 75-130 | 5 | 25 | |
| Ethylbenzene | 642 | 50 | " | 754 | ND | 85 | 75-135 | 2 | 15 | |
| Methyl tert-butyl ether | 2680 | 50 | " | 702 | 2500 | 26 | 65-125 | 4 | 20 | LN |
| Toluene | 4050 | 50 | " | 3720 | ND | 109 | 85-120 | 0.2 | 20 | |
| Xylenes (total) | 3830 | 50 | " | 4120 | ND | 93 | 85-125 | 3 | 20 | |
| Gasoline Range Organics (C4-C12) | 50600 | 5000 | " | 44000 | 1700 | 111 | 60-140 | 0.4 | 25 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *2.27* | | " | *2.50* | | *91* | *60-135* | | | |

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| | | |
|---|---|---|
| URS Corporation [Arco] | Project:BP Heritage #11102, Oakland, CA | MOJ0988 |
| 1333 Broadway, Suite 800 | Project Number:G07T9-0020 | **Reported:** |
| Oakland CA, 94612 | Project Manager:Lynelle Onishi | 10/27/05 09:16 |

**Notes and Definitions**

| | |
|---|---|
| LN | MS and/or MSD below acceptance limits. See Blank Spike(LCS). |
| LM | MS and/or MSD above acceptance limits. See Blank Spike(LCS). |
| IC | Calib. verif. is within method limits but outside contract limits |
| DET | Analyte DETECTED |
| ND | Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified |
| NR | Not Reported |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |

# Chain of Custody Record



**Project Name:** Analytical for QMR sampling
**BP BU/AR Region/Enfos Segment:** BP > Americas > West Coast > Retail > WCBU > CA > Central > 11102 > HistoricalBL
**State or Lead Regulatory Agency:** California Regional Water Quality Control Board - San Fr
**Requested Due Date (mm/dd/yy):** 10 Day TAT

| | |
|---|---|
| On-site Time: 1200 | Temp: 75°F |
| Off-site Time: 1410 | Temp: 80°F |
| Sky Conditions: clear | |
| Meteorological Events: none | |
| Wind Speed: | Direction: |

| | | |
|---|---|---|
| Lab Name: Sequoia | BP/AR Facility No.: 11102 | Consultant/Contractor: URS |
| Address: 885 Jarvis Drive | BP/AR Facility Address: 100 MacArthur Blvd., Oakland, CA 94610 | Address: 1333 Broadway, Suite 800 |
| Morgan Hill, CA 95037 | Site Lat/Long: 37.819113 / -122.253 | Oakland, CA 94612 |
| Lab PM: Lisa Race / Jamshid Kekobad | California Global ID No.: T0600100908 | Consultant/Contractor Project No.: 38487119 |
| Tele/Fax: 408.782.8156 / 408.782.6308 | Enfos Project No.: G07T9-0020 | Consultant/Contractor PM: Lynelle Onishi |
| BP/AR PM Contact: Kyle Christie | Provision or RCOP: Provision | Tele/Fax: 510.874.1758 / 510.874.3268 |
| Address: 4 Centerpointe Dr. | Phase/WBS: 04 - Mon/Remed by Natural Attenuation | Report Type & QC Level: Level 1 with EDF |
| La Palma, CA 90623 | Sub Phase/Task: 03 - Analytical | E-mail EDD To: Donna_Cosper@urscorp.com |
| Tele/Fax: (714) 670-5303 / (714) 670-5195 | Cost Element: 05 - Subcontracted Costs | Invoice to: Atlantic Richfield Company |

Lab Bottle Order No: 11102

| Item No. | Sample Description | Time | Date | Matrix: Soil/Solid | Matrix: Water/Liquid | Matrix: Air | Laboratory No. | No. of Containers | Preservative: Unpreserved | Preservative: $H_2SO_4$ | Preservative: $HNO_3$ | Preservative: HCl | Preservative: Methanol | Requested Analysis: GRO / BTEX (8260) | Requested Analysis: MTBE, TAME, ETBE DIPE, TBA (8260) | Requested Analysis: EDB, 1,2-DCA (8260) | Requested Analysis: Ethanol (8260) | Sample Point Lat/Long and Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-1 | 1302 | 10/17/05 | | X | | 01 | 3 | | | | X | | X | X | X | X | |
| 2 | MW-2 | 1358 | " | | X | | 02 | 3 | | | | X | | X | X | X | X | |
| 3 | MW3 | 1332 | " | | X | | 03 | 3 | | | | X | | X | X | X | X | |
| 4 | TB-11102101720005 | — | " | | X | | 04 | 2 | | | | X | | X | X | X | X | on hold |
| 5 | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | |

| | Relinquished By / Affiliation | Date | Time | Accepted By / Affiliation | Date | Time |
|---|---|---|---|---|---|---|
| Sampler's Name: BTR Consulting | | | | | | |
| Sampler's Company: BTS | [signature] SAMPLE CUSTODIAN | 10/17/05 | 1600 | [signature] SAMPLE CUSTODIAN | 10/17/05 | 1600 |
| Shipment Date: | [signature] | 10/18/05 | 1700 | [signature] | 10/18/05 | 1200 |
| Shipment Method: | [signature] | 10/18/05 | 1820 | [signature] | 10/18/05 | 1820 |
| Shipment Tracking No: | | | | | | |

Special Instructions:

Custody Seals In Place Yes X No Temp Blank Yes X No Cooler Temperature on Receipt 5.7 °F/C Trip Blank Yes X No

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

# SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: bp
REC. BY (PRINT): JT
WORKORDER: M010968

DATE REC'D AT LAB: 10/18/05
TIME REC'D AT LAB: 18:20
DATE LOGGED IN: 10/19/05

For Regulatory Purposes?
DRINKING WATER YES / (NO)
WASTE WATER YES / (NO)

| CIRCLE THE APPROPRIATE RESPONSE | LAB SAMPLE # | DASH # | CLIENT ID | CONTAINER DESCRIPTION | PRESERV ATIVE | pH | SAMPLE MATRIX | DATE SAMPLED | REMARKS: CONDITION (ETC.) |
|---|---|---|---|---|---|---|---|---|---|
| 1. Custody Seal(s) Present / (Absent) Intact / Broken* | | | | | | | | | |
| 2. Chain-of-Custody (Present) / Absent* | | | | | | | | | |
| 3. Traffic Reports or Packing List: Present / (Absent) | | | | | | | | | |
| 4. Airbill: Airbill / Sticker (Present) / Absent | | | | | | | | | |
| 5. Airbill #: | | | | | | | | | |
| 6. Sample Labels: (Present) / Absent | | | | | | | | | |
| 7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody | | | | | | | | | |
| 8. Sample Condition: (Intact) / Broken* / Leaking* | | | | | | | | | |
| 9. Does information on chain-of-custody, traffic reports and sample labels agree? (Yes) / No* | | | | | | | | | |
| 10. Sample received within hold time? (Yes) / No* | | | | | | | | | |
| 11. Adequate sample volume received? (Yes) / No* | | | | | | | | | |
| 12. Proper preservatives used? (Yes) / No* | | | | | | | | | |
| 13. Trip Blank / Temp Blank Received? (circle which, if yes) (Yes) / No* | | | | | | | | | |
| 14. Read Temp: 5.7°C<br>Corrected Temp: 5.7°C<br>Is corrected temp 4 +/-2°C? (Yes) / No** | | | | | | | | | |

(Acceptance range for samples requiring thermal pres.)

**Exception (if any): METALS / DFF ON ICE or Problem COC

10/18/05 JT see COC

*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.

# ATTACHMENT C

# ERROR CHECK REPORTS AND EDF/GEOWELL SUBMITTAL CONFIRMATIONS

| | | | | | | |
|---|---|---|---|---|---|---|
| T0600100908 | MW-1 | ACT | 10/17/2005 | 10.96 | 32.06 | UNK |
| N | | | | | | |
| T0600100908 | MW-2 | ACT | 10/17/2005 | 12.48 | 32.4 | UNK |
| N | | | | | | |
| T0600100908 | MW-3 | ACT | 10/17/2005 | 11.84 | 32.46 | UNK |
| N | | | | | | |

# Electronic Submittal Information

Main Menu | View/Add Facilities | Upload EDD | Check EDD

**SUCCESSFUL GEO_WELL CHECK - NO ERRORS**

| | |
|---|---|
| ORGANIZATION NAME: | URS Corporation-Oakland Office |
| USER NAME: | URSCORP-OAKLAND |
| DATE CHECKED: | 11/30/2005 3:50:13 PM |

**Processing is complete. No errors were found!**
**You may now proceed to the upload page.**

**Back to Main Menu**

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# Electronic Submittal Information

Main Menu | View/Add Facilities | Upload EDD | Check EDD

## UPLOADING A GEO_WELL FILE

**Processing is complete. No errors were found!**
**Your file has been successfully submitted!**

| | |
|---|---|
| **Submittal Title:** | **4Q 2005 BP/ARCO 11102 GEOWELL** |
| **Submittal Date/Time:** | **11/30/2005 3:51:06 PM** |
| **Confirmation Number:** | **8501295328** |

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CONTACT SITE ADMINISTRATOR.

# Electronic Submittal Information

Main Menu | View/Add Facilities | Upload EDD | Check EDD

**SUCCESSFUL EDF CHECK - NO ERRORS**

| | |
|---|---|
| ORGANIZATION NAME: | URS Corporation-Oakland Office |
| USER NAME: | URSCORP-OAKLAND |
| DATE CHECKED: | 11/30/2005 3:52:45 PM |
| GLOBAL ID: | T0600100908 |
| FILE UPLOADED: | BP#11102-EDF-MOJ0988.zip |

No errors were found in your EDF upload file.

**If you want to submit this file to the SWRCB, choose the "Upload EDD" option in the above menu and follow the instructions.**

When you complete the submittal process, you will be given a confirmation number for your submittal.

**Click here to view the detections report for this upload.**

**BP**
100 MACARTHUR BLVD
OAKLAND, CA 94610

**Regional Board - Case #: 01-0985**
SAN FRANCISCO BAY RWQCB (REGION 2) - **(BG)**
**Local Agency (lead agency) - Case #: 1108**
ALAMEDA COUNTY LOP - **(RWS)**

## SAMPLE DETECTIONS REPORT

| | |
|---|---|
| # FIELD POINTS SAMPLED | 3 |
| # FIELD POINTS WITH DETECTIONS | 3 |
| # FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL | 3 |
| SAMPLE MATRIX TYPES | WATER |

## METHOD QA/QC REPORT

| | |
|---|---|
| METHODS USED | 8260FA |
| TESTED FOR REQUIRED ANALYTES? | N |
| MISSING PARAMETERS NOT TESTED: | |
| - 8260FA REQUIRES DBFM TO BE TESTED | |
| - 8260FA REQUIRES BR4FBZ TO BE TESTED | |
| - 8260FA REQUIRES BZMED8 TO BE TESTED | |
| LAB NOTE DATA QUALIFIERS | Y |

## QA/QC FOR 8021/8260 SERIES SAMPLES

| | |
|---|---|
| TECHNICAL HOLDING TIME VIOLATIONS | 0 |
| METHOD HOLDING TIME VIOLATIONS | 0 |
| LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT | 0 |
| LAB BLANK DETECTIONS | 0 |
| DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING? | |
| - LAB METHOD BLANK | Y |
| - MATRIX SPIKE | Y |
| - MATRIX SPIKE DUPLICATE | Y |
| - BLANK SPIKE | Y |
| - SURROGATE SPIKE | Y |

## WATER SAMPLES FOR 8021/8260 SERIES

| | |
|---|---|
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65- | N |

135%

| | |
|---|---|
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% | Y |
| SURROGATE SPIKES % RECOVERY BETWEEN 85-115% | Y |
| BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% | Y |

## SOIL SAMPLES FOR 8021/8260 SERIES

| | |
|---|---|
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% | n/a |
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% | n/a |
| SURROGATE SPIKES % RECOVERY BETWEEN 70-125% | n/a |
| BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% | n/a |

## FIELD QC SAMPLES

| SAMPLE | COLLECTED | DETECTIONS > REPDL |
|---|---|---|
| QCTB SAMPLES | N | 0 |
| QCEB SAMPLES | N | 0 |
| QCAB SAMPLES | N | 0 |

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# Electronic Submittal Information

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Your EDF file has been successfully uploaded!

**Confirmation Number:** 1893289864
**Date/Time of Submittal:** 11/30/2005 3:53:35 PM
**Facility Global ID:** T0600100908
**Facility Name:** BP
**Submittal Title:** 4Q 2005 BP/ARCO 11102 EDF
**Submittal Type:** GW Monitoring Report

**Click here to view the detections report for this upload.**

**BP**
100 MACARTHUR BLVD
OAKLAND, CA 94610

**Regional Board - Case #: 01-0985**
SAN FRANCISCO BAY RWQCB (REGION 2) - **(BG)**
**Local Agency (lead agency) - Case #: 1108**
ALAMEDA COUNTY LOP - **(RWS)**

| CONF # | TITLE | QUARTER |
|---|---|---|
| 1893289864 | 4Q 2005 BP/ARCO 11102 EDF | Q4 2005 |

| SUBMITTED BY | SUBMIT DATE | STATUS |
|---|---|---|
| Srijesh Thapa | 11/30/2005 | PENDING REVIEW |

## SAMPLE DETECTIONS REPORT

| | |
|---|---|
| # FIELD POINTS SAMPLED | 3 |
| # FIELD POINTS WITH DETECTIONS | 3 |
| # FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL | 3 |
| SAMPLE MATRIX TYPES | WATER |

## METHOD QA/QC REPORT

| | |
|---|---|
| METHODS USED | 8260FA |
| TESTED FOR REQUIRED ANALYTES? | N |
| MISSING PARAMETERS NOT TESTED: | |
| - 8260FA REQUIRES DBFM TO BE TESTED | |
| - 8260FA REQUIRES BR4FBZ TO BE TESTED | |
| - 8260FA REQUIRES BZMED8 TO BE TESTED | |
| LAB NOTE DATA QUALIFIERS | Y |

## QA/QC FOR 8021/8260 SERIES SAMPLES

| | |
|---|---|
| TECHNICAL HOLDING TIME VIOLATIONS | 0 |
| METHOD HOLDING TIME VIOLATIONS | 0 |
| LAB BLANK DETECTIONS ABOVE REPORTING DETECTION LIMIT | 0 |
| LAB BLANK DETECTIONS | 0 |
| DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING? | |
| - LAB METHOD BLANK | Y |
| - MATRIX SPIKE | Y |
| - MATRIX SPIKE DUPLICATE | Y |
| - BLANK SPIKE | Y |
| - SURROGATE SPIKE | Y |

## WATER SAMPLES FOR 8021/8260 SERIES

| | |
|---|---|
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% | N |
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% | Y |
| SURROGATE SPIKES % RECOVERY BETWEEN 85-115% | Y |
| BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% | Y |

## SOIL SAMPLES FOR 8021/8260 SERIES

| | |
|---|---|
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135% | n/a |
| MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30% | n/a |
| SURROGATE SPIKES % RECOVERY BETWEEN 70-125% | n/a |
| BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130% | n/a |

**FIELD QC SAMPLES**

| SAMPLE | COLLECTED | DETECTIONS > REPDL |
|---|---|---|
| QCTB SAMPLES | N | 0 |
| QCEB SAMPLES | N | 0 |
| QCAB SAMPLES | N | 0 |

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