



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 6549  
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October 18, 2005

Re: Third Quarter 2005 Groundwater Monitoring Report  
ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California  
ACEH Case No. 3854

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:

Paul Supple  
Environmental Business Manager



Alameda County  
OCT 21 2005  
Environmental Health



October 18, 2005

Ms. Donna Drogos  
Alameda County Environmental Health (ACEH)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Alameda County  
OCT 21 2005  
Environmental Health

**Re: Third Quarter 2005 Groundwater Monitoring Report  
ARCO Service Station #4494  
566 Hegenberger Road  
Oakland, California  
ACEH Case No. 3854**

Dear Ms. Drogos:

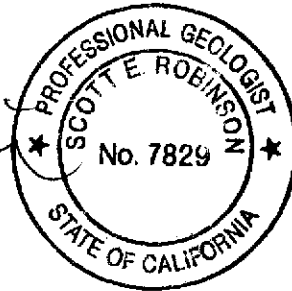
On behalf of Atlantic Richfield Company, a BP affiliated company, URS Corporation (URS) is submitting the *Third Quarter 2005 Groundwater Monitoring Report* for ARCO Service Station #4494, located at 566 Hegenberger Road, Oakland, California.

If you have any questions regarding this submission, please call me at (510) 874-3280.

Sincerely,

**URS CORPORATION**

Scott Robinson, P.G.  
Project Manager



Enclosure: Third Quarter 2005 Groundwater Monitoring Report

cc: Mr. Paul Supple, Atlantic Richfield Company (RM), electronic copy uploaded to ENFOS

**R E P O R T**

**THIRD QUARTER 2005  
GROUNDWATER MONITORING  
REPORT**

ARCO SERVICE STATION #4494  
566 HEGENBERGER ROAD  
OAKLAND, CALIFORNIA

*Prepared for*  
RM

October 18, 2005

**URS**

URS Corporation  
1333 Broadway, Suite 800  
Oakland, California 94612

Date: October 18, 2005  
Quarter: 3Q 05

**THIRD QUARTER 2005 GROUNDWATER MONITORING REPORT**

Facility No.: 4494 Address: 566 Hegenberger Road, Oakland, California  
RM Environmental Business Manager: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Primary Agency/Regulatory ID No. Alameda County Environmental Health (ACEH)  
ACEH Case #: 3854

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

1. Prepared and submitted the Second Quarter 2005 Groundwater Monitoring Report.
2. Performed the third quarter 2005 monitoring event on August 31, 2005.

**WORK PROPOSED FOR NEXT QUARTER (Fourth – 2005):**

1. Prepare and submit this Third Quarter 2005 Status Report.
2. Change to new groundwater sampling schedule as proposed in the First Quarter 2005 Groundwater Monitoring Report.

**SITE SUMMARY:**

Current Phase of Project: GW monitoring/sampling  
Frequency of Groundwater Sampling: CURRENT:  
Quarterly: MW-1 and MW-7  
Semi-annually (1<sup>st</sup> & 3<sup>rd</sup> quarter): MW-3 to MW-6, and RW-1  
NEW (Fourth Quarter 2005):  
Semi-annually (1<sup>st</sup> & 3<sup>rd</sup> quarter): MW-1 and MW-6  
Annually (3<sup>rd</sup> quarter): MW-3 to MW-5, and RW-1  
Frequency of Groundwater Monitoring: Quarterly; changes to Semi-annually in Fourth Quarter 2005  
Is Free Product (FP) Present On-Site: No  
Bulk Soil Removed to Date: 1,550 cubic yards  
Current Remediation Techniques: None  
Approximate Depth to Groundwater: 6.19 (MW-6) to 9.31 (MW-3) feet  
Groundwater Gradient (direction): Northwest (onsite)  
Groundwater Gradient (magnitude): 0.02 feet per foot

**DISCUSSION:**

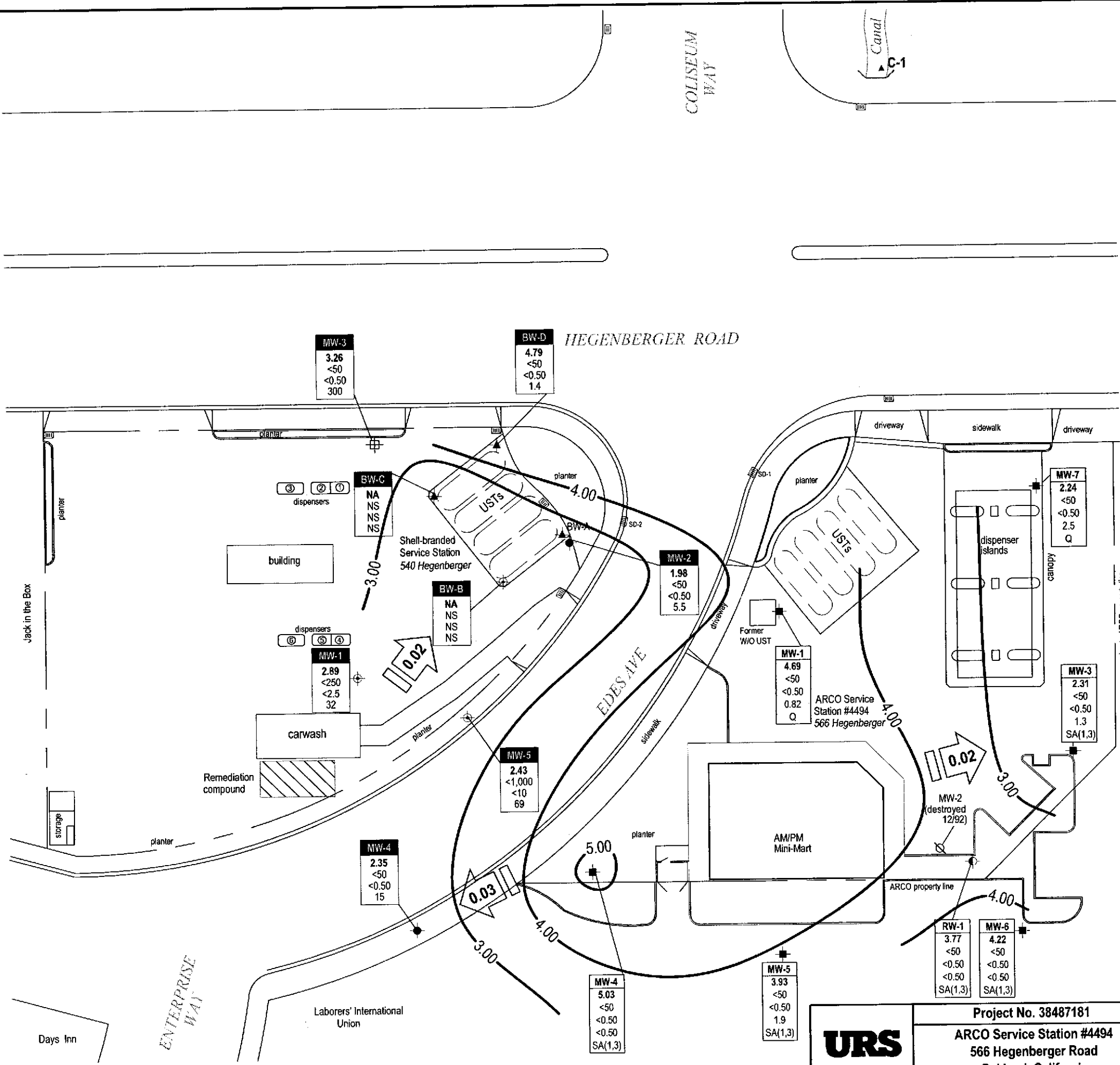
Methyl tert-butyl ether was detected at or above the laboratory-reporting limit in four of the seven wells sampled this quarter at concentrations ranging from 0.82 micrograms per liter ( $\mu\text{g/L}$ ) (MW-1) to 2.5  $\mu\text{g/L}$  (MW-7). Tert-butyl alcohol was detected at or above the laboratory-reporting limit in one well at a concentration of 41  $\mu\text{g/L}$

(MW-7). No other fuel components were detected at or above their respective laboratory reporting limits. During purging, well MW-1 de-watered after removing 22 gallons.

**ATTACHMENTS:**

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – August 31, 2005
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Fuel Additives Analytical Data
- Table 3 – Groundwater Gradient Data
- Attachment A – Field Procedures and Field Data Sheets
- Attachment B – Laboratory Procedures, Certified Analytical Reports, and Chain-of-Custody Records
- Attachment C – Historical Groundwater Data
- Attachment D – Error Check Reports and EDF/Geowell Submittal Confirmations
- Attachment E – Joint Monitoring Data

Oct 18, 2005 - 12:08pm  
 X:\a\_sav\waste\BP GEN\Sites\Scot Robinson\Paul\_Supple\4494\Monitoring\2005 Qtr. 3\Drawings\4494-3Q05-GW.dwg



### EXPLANATION

- ◆ Shell monitoring well
- ▲ Tank backfill well
- ⊕ Well used for groundwater extraction
- ARCO monitoring well
- ⊖ ARCO recovery well
- ▲ Canal sampling location

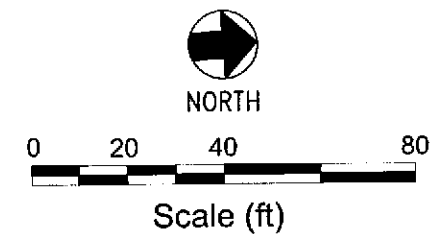
Well designation

Well	Well designation
ELEV	Groundwater elevation
GRO	Concentration of GRO, Benzene and MTBE in groundwater (µg/L)
Benzene	
MTBE	
Q or A	Sampling period

SA(1,3) Sampled semi-annually, 1st & 3rd quarters  
 < Not detected at or above laboratory reporting limits  
 NS Not sampled  
 Q Sampled quarterly

← 0.02 Approximate groundwater flow direction and gradient (ft/ft)  
 - 3.00 Groundwater elevation contour (ft/MSL) (dashed where estimated)

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



	Project No. 38487181 ARCO Service Station #4494 566 Hegenberger Road Oakland, California	<b>GROUNDWATER ELEVATION CONTOUR          AND ANALYTICAL SUMMARY MAP</b> Third Quarter 2005 (August 31, 2005)	FIGURE <b>1</b>
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Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	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)	pH
MW-1	6/20/2000	--	a	106.1	13.00	--	7.02	99.08	<1,000	<10	<10	<10	<20	14000/ 15000	---	---
	9/28/2000	--	a	106.1	13.00	--	7.07	99.03	<500	<5.0	<5.0	<5.0	<5.0	13000/ 18800	---	---
	12/17/2000	--		106.1	13.00	--	6.95	99.15	<50	<0.5	<0.5	<0.5	<0.5	10,600	---	---
	3/28/2001	--		106.1	13.00	--	6.88	99.22	<500	<5.0	<5.0	<5.0	<5.0	16,900	---	---
	6/21/2001	--		106.1	13.00	--	7.18	98.92	<1,000	<10	<10	<10	<10	3,400	---	---
	9/23/2001	--	a	106.1	13.00	--	7.11	98.99	<1,000	<10	<10	<10	<10	2200/1800	---	---
	12/31/2001	--		106.1	13.00	--	6.91	99.19	<5,000	<50	<50	<50	<50	14,000	---	---
	3/14/2002	--		106.1	13.00	--	6.85	99.25	<5,000	<50	<50	<50	<50	6,200	---	---
	4/17/2002	--		106.1	13.00	--	5.89	100.21	<5,000	<50	<50	<50	<50	4,500	---	---
	8/8/2002	--	a, b	106.1	13.00	--	7.19	98.91	230	<2.0	<2.0	<2.0	<2.0	660/440	4.5	7.8
	12/12/2002	--	a, d	106.1	13.00	--	7.28	98.82	630	<5.0	<5.0	<5.0	<5.0	1300/830	1.9	7.6
	3/20/2003	--	e	106.1	13.00	--	6.91	99.19	1,100	<5.0	<5.0	<5.0	<5.0	780	2.2	8.5
	6/23/2003	--		106.1	13.00	--	7.61	98.49	530	<5.0	<5.0	<5.0	<5.0	260	1.2	7.6
	9/22/2003	--		11.36	13.00	--	7.78	3.58	<50	<0.50	<0.50	<0.50	<0.50	17	3.5	7.7
	12/03/2003	P		11.36	13.00	--	7.90	3.46	410	2.6	9.8	<2.5	11	260	2.10	6.9
	03/18/2004	P		11.36	13.00	--	6.68	4.68	<250	<2.5	<2.5	<2.5	<2.5	130	2.40	7.0
	05/25/2004	P		11.36	13.00	--	7.55	3.81	<250	<2.5	<2.5	<2.5	<2.5	120	1.30	7.0
	09/22/2004	P		11.36	13.00	--	6.78	4.58	150	1.5	<1.0	<1.0	<1.0	140	3.80	7.12
	12/22/2004	P		11.36	13.00	--	6.44	4.92	<500	<5.0	<5.0	<5.0	<5.0	74	1.70	6.8
	02/23/2005	P		11.36	13.00	--	7.03	4.33	<50	<0.50	<0.50	<0.50	<0.50	6.0	2.10	7.2
	06/27/2005	P		11.36	13.00	--	6.66	4.70	<250	<2.5	<2.5	<2.5	<2.5	150	3.60	7.4
	08/31/2005	P		11.36	13.00	--	6.67	4.69	<50	<0.50	<0.50	<0.50	<0.50	0.82	3.80	7.2
MW-3	6/20/2000	--	a	106.29	7.00	--	9.18	97.11	<50	<0.5	<0.5	<0.5	<1.0	27/27	---	---
	9/28/2000	--	a	106.29	7.00	--	9.33	96.96	<50	<0.5	<0.5	<0.5	<1.0	4.3/<2.0	---	---
	12/17/2000	--		106.29	7.00	--	9.31	96.98	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	3/28/2001	--		106.29	7.00	--	9.23	97.06	<50	<0.5	<0.5	<0.5	<0.5	7.42	---	---
	6/21/2001	--		106.29	7.00	--	9.58	96.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	9/23/2001	--		106.29	7.00	--	9.76	96.53	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	12/31/2001	--		106.29	7.00	--	8.78	97.51	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	3/14/2002	--		106.29	7.00	--	9.25	97.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	4/17/2002	--		106.29	7.00	--	8.44	97.85	<50	<0.5	<0.5	<0.5	<0.5	4.0	---	---
	8/8/2002	--		106.29	7.00	--	9.63	96.66	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
															2.6	7.9

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	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)	pH
MW-3	12/12/2002	--	d	106.29	7.00	--	9.51	96.78	<50	<0.5	<0.5	<0.5	<0.5	<2.5	3.0	6.8
	3/20/2003	--	e	106.29	7.00	--	9.40	96.89	<50	<0.50	<0.50	<0.50	<0.50	6.1	1.2	7.0
	6/23/2003	--		106.29	7.00	--	9.36	96.93	<50	<0.50	<0.50	<0.50	<0.50	5.2	0.9	8.2
	9/22/2003	--		11.62	7.00	--	9.48	2.14	<50	<0.50	<0.50	<0.50	<0.50	3.9	1.4	7.9
	12/03/2003	--	g	11.62	7.00	--	9.44	2.18	--	--	--	--	--	--	--	--
	03/18/2004	NP		11.62	7.00	--	8.76	2.86	<50	<0.50	<0.50	<0.50	<0.50	4.6	0.80	7.3
	05/25/2004	--	g	11.62	7.00	--	9.55	2.07	--	--	--	--	--	--	--	--
	09/22/2004	NP		11.62	7.00	--	9.44	2.18	<50	<0.50	<0.50	<0.50	<0.50	4.7	--	--
	12/22/2004	--		11.62	7.00	--	9.06	2.56	--	--	--	--	--	--	--	--
	02/23/2005	NP		11.62	7.00	--	8.75	2.87	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.60	8.2
	06/27/2005	--		11.62	7.00	--	9.35	2.27	--	--	--	--	--	--	--	--
	08/31/2005	NP		11.62	7.00	--	9.31	2.31	<50	<0.50	<0.50	<0.50	<0.50	1.3	0.50	7.7
MW-4	6/20/2000	--		107.4	7.00	--	8.49	98.91	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--
	9/28/2000	--		107.4	7.00	--	8.70	98.70	<50	<0.5	<0.5	<0.5	<1.0	<2.5	--	--
	12/17/2000	--		107.4	7.00	--	8.53	98.87	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/28/2001	--		107.4	7.00	--	8.59	98.81	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	6/21/2001	--		107.4	7.00	--	8.79	98.61	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	9/23/2001	--		107.4	7.00	--	8.67	98.73	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	12/31/2001	--		107.4	7.00	--	8.03	99.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/14/2002	--		107.4	7.00	--	8.48	98.92	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	4/17/2002	--		107.4	7.00	--	7.79	99.61	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	8/8/2002	--		107.4	7.00	--	8.90	98.50	<50	<0.5	<0.5	<0.5	<0.5	5.6	--	--
	12/12/2002	--	d	107.4	7.00	--	9.07	98.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.5	8.0
	3/20/2003	--	e	107.4	7.00	--	8.85	98.55	<50	<0.50	<0.50	<0.50	<0.50	<2.5	5.6	6.2
	6/23/2003	--		107.4	7.00	--	9.26	98.14	<50	<0.50	<0.50	<0.50	0.50	<0.50	4.8	7.8
	9/22/2003	--		13.18	7.00	--	9.22	3.96	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.3	7.5
	12/03/2003	--	g	13.18	7.00	--	9.48	3.70	--	--	--	--	<0.50	<0.50	7.4	8.0
	03/18/2004	NP		13.18	7.00	--	8.32	4.86	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	05/25/2004	--	g	13.18	7.00	--	9.03	4.15	--	--	--	<0.50	<0.50	<0.50	4.50	8.4
	09/22/2004	NP		13.18	7.00	--	8.62	4.56	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	12/22/2004	--		13.18	7.00	--	7.80	5.38	--	--	--	<0.50	<0.50	<0.50	3.70	--
	02/23/2005	NP		13.18	7.00	--	7.74	5.44	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	06/27/2005	--		13.18	7.00	--	8.38	4.80	--	--	--	<0.50	<0.50	<0.50	1.10	7.3



Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	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)	pH
MW-4	08/31/2005	NP		13.18	7.00	--	8.15	5.03	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.70	6.9
MW-5	6/20/2000	--		105.19	8.00	--	7.65	97.54	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--
	9/28/2000	--		105.19	8.00	--	6.82	98.37	<50	<0.5	<0.5	<0.5	<1.0	<2.5	--	--
	12/17/2000	--		105.19	8.00	--	6.50	98.69	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/28/2001	--		105.19	8.00	--	6.34	98.85	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	6/21/2001	--		105.19	8.00	--	7.88	97.31	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	9/23/2001	--		105.19	8.00	--	6.98	98.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	12/31/2001	--		105.19	8.00	--	5.01	100.18	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/14/2002	--		105.19	8.00	--	5.93	99.26	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	4/17/2002	--		105.19	8.00	--	5.37	99.82	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	8/8/2002	--	b	105.19	8.00	--	6.85	98.34	<50	<0.5	<0.5	<0.5	<0.5	8.5	--	--
	12/12/2002	--	d	105.19	8.00	--	6.53	98.66	<50	2.2	4.7	1.3	6.8	<2.5	0.7	7.3
	3/20/2003	--	e	105.19	8.00	--	6.40	98.79	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	7.0
	6/23/2003	--		105.19	8.00	--	6.72	98.47	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	7.1
	9/22/2003	--	f	10.63	8.00	--	6.76	3.87	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.3	7.2
	12/03/2003	--	g	10.63	8.00	--	6.56	4.07	--	--	--	--	--	<0.50	1.7	7.2
	03/18/2004	P		10.63	8.00	--	5.98	4.65	<50	<0.50	<0.50	<0.50	<0.50	--	--	--
	05/25/2004	--	g	10.63	8.00	--	6.77	3.86	--	--	--	--	--	<0.50	0.70	7.3
	09/22/2004	P		10.63	8.00	--	6.90	3.73	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	12/22/2004	--		10.63	8.00	--	6.18	4.45	--	--	--	--	--	<0.50	1.0	7.17
	02/23/2005	P		10.63	8.00	--	5.36	5.27	<50	<0.50	<0.50	<0.50	<0.50	<0.50	--	--
	06/27/2005	--		10.63	8.00	--	6.26	4.37	--	--	--	--	--	<0.50	1.0	7.2
	08/31/2005	P		10.63	8.00	--	6.70	3.93	<50	<0.50	<0.50	<0.50	<0.50	1.9	0.80	7.2
MW-6	6/20/2000	--		105.07	8.00	--	6.24	98.83	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--
	9/28/2000	--		105.07	8.00	--	6.45	98.62	<50	<0.5	<0.5	<0.5	<1.0	<2.5	--	--
	12/17/2000	--		105.07	8.00	--	6.26	98.81	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/28/2001	--		105.07	8.00	--	6.10	98.97	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	6/21/2001	--		105.07	8.00	--	7.68	97.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	9/23/2001	--		105.07	8.00	--	6.72	98.35	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	12/23/2001	--		105.07	8.00	--	4.68	100.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	3/14/2002	--		105.07	8.00	--	5.55	99.52	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	4/17/2002	--		105.07	8.00	--	4.96	100.11	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	8/8/2002	--		105.07	8.00	--	6.46	98.61	<50	<0.5	<0.5	<0.5	<0.5	7.0	--	--

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	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)	pH	
MW-6	12/12/2002	--	d	105.07	8.00	--	6.18	98.89	65	3.3	8.4	2.7	14	<2.5	1.1	6.9	
	3/20/2003	--	e	105.07	8.00	--	6.18	98.89	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.2	7.0	
	6/23/2003	--		105.07	8.00	--	6.15	98.92	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.0	7.1	
	9/22/2003	--	f	10.41	8.00	--	6.43	3.98	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.5	7.0	
	12/03/2003	--	g	10.41	8.00	--	6.12	4.29	--	--	--	--	--	--	--	--	
	03/18/2004	P		10.41	8.00	--	5.40	5.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	7.2	
	05/25/2004	--	g	10.41	8.00	--	6.30	4.11	--	--	--	--	--	--	--	--	
	09/22/2004	P		10.41	8.00	--	6.43	3.98	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.30	7.01	
	12/22/2004	--		10.41	8.00	--	5.73	4.68	--	--	--	--	--	--	--	--	
	02/23/2005	P		10.41	8.00	--	4.61	5.80	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.0	2.60	7.1
	06/27/2005	--		10.41	8.00	--	5.78	4.63	--	--	--	--	--	--	--	--	
	08/31/2005	P		10.41	8.00	--	6.19	4.22	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	7.0	
	MW-7	6/20/2000	--	a	105.52	9.00	--	8.65	96.87	<50	<0.5	<0.5	<0.5	<1.0	13/13	---	---
		9/28/2000	--	a	105.52	9.00	--	8.75	96.77	<50	<0.5	<0.5	<0.5	<1.0	136/261	---	---
12/17/2000		--		105.52	9.00	--	8.62	96.90	<50	<0.5	<0.5	<0.5	<0.5	27.1	---	---	
3/28/2001		--		105.52	9.00	--	8.66	96.86	<50	<0.5	<0.5	<0.5	<0.5	51.5	---	---	
6/21/2001		--		105.52	9.00	--	8.84	96.68	<50	<0.5	<0.5	<0.5	<0.5	53	---	---	
9/23/2001		--	a	105.52	9.00	--	8.75	96.77	<50	<0.5	<0.5	<0.5	<0.5	35/21	---	---	
12/23/2001		--		105.52	9.00	--	7.79	97.73	<50	<0.5	<0.5	<0.5	<0.5	440	---	---	
3/14/2002		--		105.52	9.00	--	8.30	97.22	<50	<0.5	<0.5	<0.5	<0.5	18	---	---	
4/17/2002		--		105.52	9.00	--	7.43	98.09	<50	<0.5	<0.5	<0.5	<0.5	67	---	---	
8/8/2002		--	a, b	105.52	9.00	--	8.61	96.91	55	<0.5	<0.5	<0.5	<0.5	130/100	1.1	7.1	
12/12/2002		--	a, d, h	105.52	9.00	--	8.55	---	75	<0.5	<0.5	<0.5	<0.5	160/130	1.2	7.0	
3/20/2003		--	e	105.52	9.00	--	8.38	---	<50	<0.50	<0.50	<0.50	<0.50	32	2.2	7.2	
6/23/2003		--		105.52	9.00	--	8.37	---	<50	<0.50	<0.50	<0.50	<0.50	14	0.8	7.1	
9/22/2003		--	f	10.51	9.00	--	8.95	1.56	<50	<0.50	<0.50	<0.50	<0.50	5.3	2.2	7.2	
12/03/2003		P		10.51	9.00	--	8.86	1.65	<50	<0.50	<0.50	<0.50	<0.50	4.2	0.10	7.2	
03/18/2004		P		10.51	9.00	--	8.03	2.48	<50	<0.50	<0.50	<0.50	<0.50	3.0	1.0	7.2	
05/25/2004		P		10.51	9.00	--	8.37	2.14	<50	<0.50	<0.50	<0.50	<0.50	4.1	0.70	7.1	
09/22/2004		P		10.51	9.00	--	8.90	1.61	<50	<0.50	<0.50	<0.50	<0.50	2.3	0.90	7.27	
12/22/2004		P		10.51	9.00	--	7.90	2.61	<50	<0.50	<0.50	<0.50	<0.50	2.7	2.80	7.2	
02/23/2005		P		10.51	9.00	--	8.23	2.28	180	<0.50	<0.50	<0.50	<0.50	<0.50	1.30	7.1	
06/27/2005	P		10.51	9.00	--	8.24	2.27	<50	<0.50	<0.50	<0.50	<0.50	4.2	0.10	6.7		

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

Well No.	Date	P/ NP	Footnotes/ Comments	TOC (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (ft bgs)	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)	pH
MW-7	08/31/2005	P		10.51	9.00	--	8.27	2.24	<50	<0.50	<0.50	<0.50	<0.50	2.5	1.60	7.2
RW-1	6/20/2000	--		--	--	--	8.21	---	<50	<0.5	1.1	<0.5	<1.0	<10	---	---
	9/28/2000	--		--	--	--	8.28	---	<50	<0.5	<0.5	<0.5	<1.0	<2.5	---	---
	12/17/2000	--		--	--	--	8.29	---	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	3/28/2001	--		--	--	--	8.16	---	<50	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	6/21/2001	--		--	--	--	9.37	---	160	5.1	<0.5	1.1	3.2	<2.5	---	---
	9/23/2001	--		--	--	--	8.75	---	57	<0.5	<0.5	<0.5	<0.5	<2.5	---	---
	12/31/2001	--		--	--	--	6.80	---	520	3.1	<0.5	6.4	4.7	<2.5	---	---
	3/14/2002	--		--	--	--	7.86	---	240	3.7	<0.5	0.7	2.8	<2.5	---	---
	4/17/2002	--		--	--	--	7.13	---	<50	<0.5	1.6	<0.5	0.72	<2.5	---	---
	8/8/2002	--	a, c	--	--	--	8.48	---	<50	<0.5	<0.5	<0.5	<0.5	3.7/<0.5	1.1	7.0
	12/12/2002	--		--	--	--	8.63	---	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.9	6.9
	3/20/2003	--	e	--	--	--	8.08	---	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	7.3
	6/23/2003	--		--	--	--	8.28	---	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	7.3
	9/22/2003	--	f	11.97	--	--	8.42	3.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	7.1
	12/03/2003	--	g	11.97	--	--	8.05	3.92	--	--	--	--	--	--	--	--
	03/18/2004	P		11.97	--	--	7.18	4.79	50	0.54	<0.50	<0.50	<0.50	<0.50	0.90	7.1
	05/25/2004	--	g	11.97	--	--	8.32	3.65	--	--	--	--	--	--	--	--
	09/22/2004	P		11.97	--	--	8.42	3.55	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	6.7
	12/22/2004	--		11.97	--	--	7.23	4.74	--	--	--	--	--	--	--	--
	02/23/2005	P		11.97	--	--	6.89	5.08	190	<0.50	<0.50	<0.50	<0.50	<0.50	0.71	7.2
	06/27/2005	--		11.97	--	--	7.86	4.11	--	--	--	--	--	--	--	--
	08/31/2005	P		11.97	--	--	8.20	3.77	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.70	7.2

**Table 1**

**Groundwater Elevation and Analytical Data**

ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

**SYMBOLS AND ABBREVIATIONS:**

-- = Not calculated, surveyed, available, applicable, analyzed.  
< = Not detected at or above specified laboratory reporting limit.  
DO = Dissolved oxygen.  
DTW = Depth to water.  
ft bgs = Feet below ground surface.  
ft MSL = Feet above mean sea level.  
GRO = Gasoline range organics.  
GWE = Groundwater elevation.  
mg/L = Milligrams per liter.  
MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B prior to 3/20/03 unless otherwise noted.  
NP = Well not purged prior to sampling.  
P = Well purged prior to sampling.  
TPH-g = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8015M prior to 3/20/03 and by 8260b henceforth.  
TOC = Top of casing.  
ug/L = Micrograms per liter.

**FOOTNOTES:**

a = MTBE confirmation analyzed by EPA Method 8260.  
b = Hydrocarbon pattern is present in the requested fuel quantitation range for TPH-g/GRO but does not resemble the pattern of the requested fuel.  
c = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.  
d = Analyzed by EPA Method 8215B/8021B for TPHg/GRO.  
e = TPH-g, BTEX, and MTBE analyzed by EPA method 8260B beginning on 2003 sampling event (03/20/03).  
f = Top of casing elevations were re-surveyed on July 18, 2003 by URS Corporation of Pleasant Hill, CA.  
g = Wells MW-3, MW-4, MW-5, MW-6 and RW-1 are sampled semi-annually in the 1st and 3rd quarters.  
h = Top of casing was found shattered on December 12, 2002. Top of Casing (TOC) unknown.

**NOTES:**

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.

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 has been changed from C6-C10 to C4-C12.

The values for pH and DO were obtained through field measurements.

Table 2

**Fuel Additives Analytical Data**  
**ARCO Service Station #4494**  
**566 Hegenberger Rd., 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	3/20/2003	<1,000	640	780	<5.0	<5.0	<5.0	—	—	
	6/23/2003	<1,000	<200	260	<5.0	<5.0	<5.0	<5.0	<5.0	
	9/22/2003	<100	250	17	<0.50	<0.50	<0.50	—	—	
	12/03/2003	<500	<100	260	<2.5	<2.5	<2.5	—	—	
	03/18/2004	<500	<100	130	<2.5	<2.5	<2.5	<2.5	<2.5	
	05/25/2004	<500	<100	120	<2.5	<2.5	<2.5	<2.5	<2.5	
	09/22/2004	<200	<40	140	<1.0	<1.0	<1.0	<1.0	<1.0	
	12/22/2004	<1,000	<200	74	<5.0	<5.0	<5.0	<5.0	<5.0	
	02/23/2005	<100	<20	6.0	<0.50	<0.50	2.4	<0.50	<0.50	
	06/27/2005	<500	<100	150	<2.5	<2.5	<2.5	<2.5	<2.5	
	08/31/2005	<100	<20	0.82	<0.50	<0.50	<0.50	<0.50	<0.50	a
MW-3	3/20/2003	<100	<20	601	<0.50	<0.50	1.1	—	—	
	6/23/2003	<100	<20	5.2	<0.50	<0.50	0.75	<0.50	<0.50	
	9/22/2003	<100	<20	3.9	<0.50	<0.50	<0.50	—	—	
	03/18/2004	<100	<20	4.6	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/22/2004	<100	<20	4.7	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/23/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
		08/31/2005	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50
MW-4	3/20/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	—	—	
	6/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	9/22/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	—	—	
	03/18/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/22/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/23/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
		08/31/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW-5	3/20/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	—	—	
	6/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	9/22/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	—	—	
	03/18/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/22/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/23/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
		08/31/2005	<100	<20	1.9	<0.50	<0.50	<0.50	<0.50	<0.50
MW-6	3/20/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	—	—	

Table 2

**Fuel Additives Analytical Data**  
**ARCO Service Station #4494**  
**566 Hegenberger Rd., 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-6	6/23/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	9/22/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	---	---	
	03/18/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	09/22/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/23/2005	<100	140	5.0	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/31/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-7	3/20/2003	<100	<20	21	<0.50	<0.50	0.62	---	---	
	6/23/2003	<100	170	14	<0.50	<0.50	<0.50	<0.50	<0.50	
	9/22/2003	<100	170	5.3	<0.50	<0.50	<0.50	---	---	
	12/03/2003	<100	85	4.2	<0.50	<0.50	<0.50	---	---	
	03/18/2004	<100	<20	3.0	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/25/2004	<100	43	4.1	<0.50	<0.50	<0.50	<0.50	<0.50	a
	09/22/2004	<100	<20	2.3	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/22/2004	<100	34	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/23/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	06/27/2005	<100	86	4.2	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/31/2005	<100	41	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
	RW-1	3/20/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	---	---
6/23/2003		<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/22/2003		<100	<20	<0.50	<0.50	<0.50	<0.50	---	---	
03/18/2004		<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/22/2004		<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/23/2005		<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/31/2005		<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 2**

**Fuel Additives Analytical Data**  
ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

**SYMBOLS AND ABBREVIATIONS:**

< = Not detected at or above the laboratory reporting limit

— = Not analyzed, sampled, available

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 continuing calibration verification for ethanol was outside of client contractual acceptance limits. However, it was within method acceptance limits and should be useful for its intended purpose.

**NOTES:**

All fuel oxygenate compounds were analyzed using EPA Method 8260B.

**Table 3**

**Groundwater Gradient Data**  
ARCO Service Station #4494  
566 Hegenberger Rd., Oakland, CA

<b>Date Sampled</b>	<b>Approximate Flow Direction</b>	<b>Approximate Hydraulic Gradient</b>
6/20/2000	North-Northeast	0.02
9/28/2000	North	0.02
12/17/2000	North-Northwest	0.01
3/28/2001	Northwest	0.01
6/21/2001	North	0.02
9/23/2001	North	0.02
12/31/2001	North-Northwest	0.02
3/14/2002	North-Northwest	0.02
4/14/2002	Northwest	0.01
8/8/2002	North-Northwest	0.02
12/12/2002	North-Northwest	0.02
3/20/2003	North-Northwest	0.02
6/23/2003	Northwest	0.01
9/22/2003	Northwest	0.02
12/3/2003	Northwest	0.01
3/18/2004	North-Northwest	0.01
5/25/2004	North-Northwest	0.01
9/22/2004	North-Northwest	0.02
12/22/2004	Northwest	0.02
2/23/2005	Northwest	0.02 (onsite)
6/27/2005	Northwest	0.02 (onsite)
8/31/2005	Northwest	0.02 (onsite)

**NOTE:**

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.



**ATTACHMENT A**  
**FIELD PROCEDURES AND FIELD DATA SHEETS**

## FIELD PROCEDURES

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### 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 # 050831-BAI Date 8/31/05 Client Arco 4494

Site 566 Hegenberger Rd, 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					6.67	23.07	TOC	
MW-3	4					9.31	17.88	↓	NPE7'
MW-4	4					8.15	16.57		NPE7'
MW-5	2					6.70	16.96		
MW-6	2					6.19	18.12		
						9.31	17.88		
MW-7	4					8.27	13.48		
RW-1	2					8.20	11.77		↓

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050831-BA1</u>	Station # <u>4494</u>
Sampler: <u>Brian Alcom</u>	Date: <u>8/31/05</u>
Well I.D.: <u>Mw-1</u>	Well Diameter: 2 3 <u>(4)</u> 6 8
Total Well Depth: <u>23.07</u>	Depth to Water: <u>6.67</u>
Depth to Free Product: <u>—</u>	Thickness of Free Product (feet): <u>—</u>
Referenced to: <u>(PVC)</u> Grade	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Purge Method: Bailer      Sampling Method: Bailer  
Disposable Bailer  
Positive Air Displacement  
Electric Submersible      Disposable Bailer  
Extraction Pump      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.

<u>10.7</u>	x	<u>3</u>	=	<u>32.1</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <del>µS</del> )	Gals. Removed	Observations
0938	75.7	7.1	11,660	11.0	clear
0942	73.1	6.7	29,900	22.0	clear
	Well Dewatered @ 22 gallons				
1030	73.7	7.2	12,890	22.0	"

Did well dewater? (Yes) No      Gallons actually evacuated: 22

Sampling Time: 1030 Departure      Sampling Date: 8/31/05

Sample I.D.: MW-1      Laboratory: Pace (Sequoia) Other: \_\_\_\_\_

Analyzed for: (GEO) (BTEX) MTBE DRO (Oxy) (1,2-DC) (EDB) (Ethanol) Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	<u>3.8</u>	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050831-BAH	Station # 4494
Sampler: Brian Alcom	Date: 8/31/05
Well I.D.: MW-3	Well Diameter: 2 3 <b>4</b> 6 8
Total Well Depth: 17.88	Depth to Water: 9.31
Depth to Free Product: —	Thickness of Free Product (feet): —
Referenced to: <b>PVC</b> Grade	D.O. Meter (if req'd): <b>YSI</b> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 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: 7' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

No Purse

1 Case Volume (Gals.)	X	Specified Volumes	=	Gals. Calculated Volume
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Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
0900	73.8	7.7	1,845	—	clear

Did well dewater? Yes  No  Gallons actually evacuated: N/A

Sampling Time: 0900 Sampling Date: 8/31/05

Sample I.D.: MW-3 Laboratory: Pace **Sequoia** Other \_\_\_\_\_

Analyzed for: **GRO** **BTEX** MTBE DRO Other: Org, 12 DCA, EDB, Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.5 mg/L
	O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050831-BA1	Station # 4494
Sampler: Brian Alcom	Date: 8/31/05
Well I.D.: MW-4	Well Diameter: 2 3 ④ 6 8
Total Well Depth: 16.57	Depth to Water: 8.15
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 <sup>2</sup> * 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: 7' If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

_____	X	_____	=	_____	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or μS)	Gals. Removed	Observations
0810	69.5	6.9	1,010	—	clear

Did well dewater? Yes  No  Gallons actually evacuated: N/A

Sampling Time: 0810 Sampling Date: 8/31/05

Sample I.D.: MW-4 Laboratory: Pace Sequoia Other \_\_\_\_\_

Analyzed for: GRO BTEX MTBE DRO Oxy's 2-DC EDB Ethanol Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.7	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050831-BA1	Station # 4494
Sampler: Brian Alcom	Date: 8/31/05
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8
Total Well Depth: 16.96	Depth to Water: 6.70
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 <sup>2</sup> * 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.

<u>1.75</u>	x	<u>3</u>	=	<u>5.25</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or (uS))	Gals. Removed	Observations
0917	71.7	7.2	13,200	1.75	clear yellow-gray, odor
0920	71.4	7.2	12,290	3.5	clear gray, odor
0923	71.0	7.2	11,410	5.25	" "

Did well dewater? Yes  No

Gallons actually evacuated: 5.25

Sampling Time: 0925      Sampling Date: 8/31/05

Sample I.D.: MW-5      Laboratory: Pace Sequoia Other \_\_\_\_\_

Analyzed for: (GRO) (BTEX) MTBE DRO Other: ORP, 12-PCA, EDB, Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.8	mg/L
	O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050831-BA1	Station # 4494
Sampler: Brian Alcom	Date: 8/31/05
Well I.D.: MW-6	Well Diameter: (2) 3 4 6 8
Total Well Depth: 18.12	Depth to Water: 6.19
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 <sup>2</sup> * 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.

<u>1.9</u>	x	<u>3</u>	=	<u>5.7</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0956	73.0	7.1	6,134	2.0	clear-gray
1001	72.7	7.0	5,937	4.0	"
1005	72.7	7.0	5,921	6.0	"

Did well dewater? Yes  No  Gallons actually evacuated: 6

Sampling Time: 1008 Sampling Date: 8/31/05

Sample I.D.: MW-6 Laboratory: Pace (Sequoia) Other \_\_\_\_\_

Analyzed for: (GRO) (BTEX) MTBE DRO Other: OXS, 12-DCA, EDB, Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.9	mg/L
	O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV



## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 050831-BA1	Station # 4494
Sampler: Brian Alcom	Date: 8/31/05
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8
Total Well Depth: 13.48	Depth to Water: 8.27
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 <sup>2</sup> * 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.

3.4	x	3	=	10.2	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or µS)	@ 1.5gpm Gals. Removed	Observations
0841	71.1	7.0	3,570	3.5	cloudy dark strong yellow, H <sub>2</sub> S odor
0843	70.4	7.2	10,240	7.0	" "
0845	69.6	7.2	11,620	10.5	clear dark yellow "

Did well dewater? Yes  No  Gallons actually evacuated: 10.5

Sampling Time: 0848 Sampling Date: 8/31/05

Sample I.D.: MW-7 Laboratory: Pace (Sequoia) Other: \_\_\_\_\_

Analyzed for: (GRO) (TEX) MTBE DRO (VOCs) (DCA) (EDB) (Ethene) Other: \_\_\_\_\_

D.O. (if req'd): Pre-purge: \_\_\_\_\_ mg/L Post-purge: 1.6 mg/L

O.R.P. (if req'd): Pre-purge: \_\_\_\_\_ mV Post-purge: \_\_\_\_\_ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050831-BA1</u>	Station # <u>4494</u>
Sampler: <u>Brian Alcorn</u>	Date: <u>8/31/05</u>
Well I.D.: <u>RW-1</u>	Well Diameter: <u>(2)</u> 3 4 6 8
Total Well Depth: <u>11.77</u>	Depth to Water: <u>8.20</u>
Depth to Free Product: <u>—</u>	Thickness of Free Product (feet): <u>—</u>
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 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.

<u>0.6</u>	X	<u>3</u>	=	<u>1.8</u>	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
<del>1021</del> <del>72.8</del>	72.8	7.1	18,580	0.6	clear
1022	71.9	7.2	18,720	1.2	"
1023	71.8	7.2	18,150	1.8	"

Did well dewater? Yes  No  Gallons actually evacuated: 1.8

Sampling Time: 1023 Sampling Date: 8/31/05

Sample I.D.: RW-1 Laboratory: Pace Sequoia Other \_\_\_\_\_

Analyzed for:  GRO  BTEX MTBE DRO Other: O<sub>2</sub>S, 12-DCA, EDB, Ethanol

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 PLAINE 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:

4494

Station #

566 Hegenberger Rd, Oakland

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

46

added equip. 10  
rinse water

any other adjustments

TOTAL GALS. 56  
RECOVERED 46

loaded onto  
BTS vehicle # 64

BTS event #  
050831-BA1

time date  
1100 8/31/05

signature 

\*\*\*\*\*

REC'D AT time date

unloaded by  
signature

**ATTACHMENT B**

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

## **LABORATORY PROCEDURES**

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### **Laboratory Procedures**

The groundwater samples were analyzed for the presence of the chemicals noted on 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**

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20 September, 2005

Scott Robinson  
URS Corporation [Arco]  
1333 Broadway, Suite 800  
Oakland, CA 94612

RE: ARCO #4494, Oakland, CA  
Work Order: MOI0083

Enclosed are the results of analyses for samples received by the laboratory on 09/01/05 09:27. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race For Jamshid Kekobad  
Project Manager

CA ELAP Certificate #1210



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

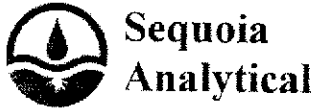
Project: ARCO #4494, Oakland, CA  
Project Number: G0C2G-0003  
Project Manager: Scott Robinson

MOI0083  
Reported:  
09/20/05 11:00

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MOI0083-01	Water	08/31/05 10:30	09/01/05 09:27
MW-3	MOI0083-02	Water	08/31/05 09:00	09/01/05 09:27
MW-4	MOI0083-03	Water	08/31/05 08:10	09/01/05 09:27
MW-5	MOI0083-04	Water	08/31/05 09:25	09/01/05 09:27
MW-6	MOI0083-05	Water	08/31/05 10:08	09/01/05 09:27
MW-7	MOI0083-06	Water	08/31/05 08:48	09/01/05 09:27
RW-1	MOI0083-07	Water	08/31/05 10:25	09/01/05 09:27
TB-4494-08312005	MOI0083-08	Water	08/31/05 07:30	09/01/05 09:27

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 intact custody seals.



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

Project: ARCO #4494, Oakland, CA  
 Project Number: G0C2G-0003  
 Project Manager: Scott Robinson

MOI0083  
 Reported:  
 09/20/05 11:00

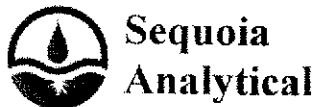
**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>MW-1 (MOI0083-01) Water Sampled: 08/31/05 10:30 Received: 09/01/05 09:27</b>									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5112002	09/12/05	09/12/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	IC
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>0.82</b>	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		78 %		60-135	"	"	"	"	
<b>MW-3 (MOI0083-02) Water Sampled: 08/31/05 09:00 Received: 09/01/05 09:27</b>									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5109007	09/09/05	09/09/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>1.3</b>	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		78 %		60-135	"	"	"	"	

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.*





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

Project: ARCO #4494, Oakland, CA  
 Project Number: GOC2G-0003  
 Project Manager: Scott Robinson

MOI0083  
 Reported:  
 09/20/05 11:00

**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-4 (MOI0083-03) Water** Sampled: 08/31/05 08:10 Received: 09/01/05 09:27

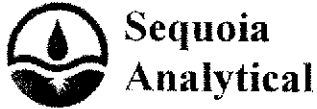
tert-Amyl methyl ether	ND	0.50	ug/l	1	5I09007	09/09/05	09/09/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl 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 76 % 60-135 " " " "

**MW-5 (MOI0083-04) Water** Sampled: 08/31/05 09:25 Received: 09/01/05 09:27

tert-Amyl methyl ether	ND	0.50	ug/l	1	5I09007	09/09/05	09/09/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	1.9	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 78 % 60-135 " " " "



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Oakland CA, 94612

Project: ARCO #4494, Oakland, CA  
Project Number: G0C2G-0003  
Project Manager: Scott Robinson

MOI0083  
Reported:  
09/20/05 11:00

**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**MW-6 (MOI0083-05) Water** Sampled: 08/31/05 10:08 Received: 09/01/05 09:27

tert-Amyl methyl ether	ND	0.50	ug/l	1	5109007	09/09/05	09/10/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
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

74 % 60-135

**MW-7 (MOI0083-06) Water** Sampled: 08/31/05 08:48 Received: 09/01/05 09:27

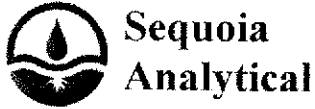
tert-Amyl methyl ether	ND	0.50	ug/l	1	5109007	09/09/05	09/10/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	41	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	2.5	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4

76 % 60-135

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Project: ARCO #4494, Oakland, CA  
 Project Number: G0C2G-0003  
 Project Manager: Scott Robinson

MOI0083  
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**Volatile Organic Compounds by EPA Method 8260B**  
**Sequoia Analytical - Morgan Hill**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>RW-1 (MOI0083-07) Water    Sampled: 08/31/05 10:25    Received: 09/01/05 09:27</b>									
tert-Amyl methyl ether	ND	0.50	ug/l	1	SI09007	09/09/05	09/10/05	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
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		79 %		60-135	"	"	"	"	



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**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
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**Batch 5109007 - EPA 5030B P/T / EPA 8260B**

**Blank (5109007-BLK1)**

Prepared & Analyzed: 09/09/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	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	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							

Surrogate: 1,2-Dichloroethane-d4

1.86

"

2.50

74

60-135

**Blank (5109007-BLK2)**

Prepared & Analyzed: 09/09/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
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

1.91

"

2.50

76

60-135



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Reported:  
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**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
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**Batch 5109007 - EPA 5030B P/T / EPA 8260B**

**Laboratory Control Sample (5109007-BS1)**

Prepared & Analyzed: 09/09/05

tert-Amyl methyl ether	15.1	0.50	ug/l	15.0		101	80-115			
Benzene	5.41	0.50	"	5.16		105	65-115			
tert-Butyl alcohol	167	20	"	143		117	75-150			
Di-isopropyl ether	15.6	0.50	"	15.1		103	75-125			
1,2-Dibromoethane (EDB)	16.9	0.50	"	14.8		114	85-120			
1,2-Dichloroethane	14.0	0.50	"	14.7		95	85-130			
Ethanol	265	100	"	141		188	70-135			IC, HL
Ethyl tert-butyl ether	14.8	0.50	"	15.0		99	75-130			
Ethylbenzene	7.99	0.50	"	7.54		106	75-135			
Methyl tert-butyl ether	7.14	0.50	"	7.02		102	65-125			
Toluene	38.5	0.50	"	37.2		103	85-120			
Xylenes (total)	45.2	0.50	"	41.4		109	85-125			
Gasoline Range Organics (C4-C12)	486	50	"	440		110	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.87</i>		<i>"</i>	<i>2.50</i>		<i>75</i>	<i>60-135</i>			

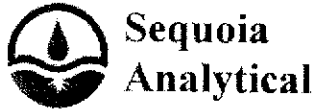
**Laboratory Control Sample (5109007-BS2)**

Prepared & Analyzed: 09/09/05

tert-Amyl methyl ether	14.7	0.50	ug/l	15.0		98	80-115			
Benzene	5.26	0.50	"	5.16		102	65-115			
tert-Butyl alcohol	154	20	"	143		108	75-150			
Di-isopropyl ether	15.4	0.50	"	15.1		102	75-125			
1,2-Dibromoethane (EDB)	17.0	0.50	"	14.8		115	85-120			
1,2-Dichloroethane	13.5	0.50	"	14.7		92	85-130			
Ethanol	254	100	"	141		180	70-135			HL
Ethyl tert-butyl ether	14.5	0.50	"	15.0		97	75-130			
Ethylbenzene	7.80	0.50	"	7.54		103	75-135			
Methyl tert-butyl ether	6.68	0.50	"	7.02		95	65-125			
Toluene	37.7	0.50	"	37.2		101	85-120			
Xylenes (total)	43.6	0.50	"	41.4		105	85-125			
Gasoline Range Organics (C4-C12)	460	50	"	440		105	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.79</i>		<i>"</i>	<i>2.50</i>		<i>72</i>	<i>60-135</i>			

Sequoia Analytical - Morgan Hill

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Project Number: G0C2G-0003  
Project Manager: Scott Robinson

MOI0083  
Reported:  
09/20/05 11:00

**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
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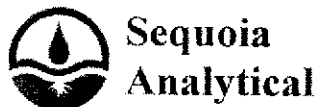
**Batch 5109007 - EPA 5030B P/T / EPA 8260B**

<b>Matrix Spike (5109007-MS1)</b>		<b>Source: MOI0065-01RE1</b>			<b>Prepared &amp; Analyzed: 09/09/05</b>					
tert-Amyl methyl ether	151	5.0	ug/l	150	4.8	97	80-115			
Benzene	227	5.0	"	51.6	180	91	65-115			
tert-Butyl alcohol	4070	200	"	1430	780	230	75-120			LM
Di-isopropyl ether	157	5.0	"	151	ND	104	75-125			
1,2-Dibromoethane (EDB)	168	5.0	"	148	ND	114	85-120			
1,2-Dichloroethane	138	5.0	"	147	ND	94	85-130			
Ethanol	3550	1000	"	1410	ND	252	70-135			IC, HL
Ethyl tert-butyl ether	145	5.0	"	150	ND	97	75-130			
Ethylbenzene	96.7	5.0	"	75.4	16	107	75-135			
Methyl tert-butyl ether	968	5.0	"	70.2	1000	NR	65-125			BB, LN
Toluene	390	5.0	"	372	8.5	103	85-120			
Xylenes (total)	472	5.0	"	414	15	110	85-125			
Gasoline Range Organics (C4-C12)	6170	500	"	4400	1100	115	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.80</i>		<i>"</i>	<i>2.50</i>		<i>72</i>	<i>60-135</i>			

<b>Matrix Spike Dup (5109007-MSD1)</b>		<b>Source: MOI0065-01RE1</b>			<b>Prepared &amp; Analyzed: 09/09/05</b>					
tert-Amyl methyl ether	154	5.0	ug/l	150	4.8	99	80-115	2	15	
Benzene	221	5.0	"	51.6	180	79	65-115	3	20	
tert-Butyl alcohol	8450	200	"	1430	780	536	75-120	70	25	LM, BA
Di-isopropyl ether	151	5.0	"	151	ND	100	75-125	4	15	
1,2-Dibromoethane (EDB)	168	5.0	"	148	ND	114	85-120	0	15	
1,2-Dichloroethane	134	5.0	"	147	ND	91	85-130	3	20	
Ethanol	5660	1000	"	1410	ND	401	70-135	46	35	IC, HL, BA
Ethyl tert-butyl ether	146	5.0	"	150	ND	97	75-130	0.7	25	
Ethylbenzene	97.6	5.0	"	75.4	16	108	75-135	0.9	15	
Methyl tert-butyl ether	961	5.0	"	70.2	1000	NR	65-125	0.7	20	BB, LN
Toluene	380	5.0	"	372	8.5	100	85-120	3	20	
Xylenes (total)	464	5.0	"	414	15	108	85-125	2	20	
Gasoline Range Organics (C4-C12)	6000	500	"	4400	1100	111	70-124	3	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.86</i>		<i>"</i>	<i>2.50</i>		<i>74</i>	<i>60-135</i>			

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MOI0083  
 Reported:  
 09/20/05 11:00

**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
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**Batch 5H12002 - EPA 5030B P/T / EPA 8260B**

**Blank (5H12002-BLK1)**

Prepared & Analyzed: 09/12/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	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	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.85</i>		<i>"</i>	<i>2.50</i>		<i>74</i>	<i>60-135</i>			

**Blank (5H12002-BLK2)**

Prepared & Analyzed: 09/12/05

tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
Ethanol	ND	100	"							
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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.91</i>		<i>"</i>	<i>2.50</i>		<i>76</i>	<i>60-135</i>			

Sequoia Analytical - Morgan Hill

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Project: ARCO #4494, Oakland, CA  
 Project Number: G0C2G-0003  
 Project Manager: Scott Robinson

MOI0083  
 Reported:  
 09/20/05 11:00

**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
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**Batch 5I12002 - EPA 5030B P/T / EPA 8260B**

**Laboratory Control Sample (5I12002-BS1)**

Prepared & Analyzed: 09/12/05

tert-Amyl methyl ether	15.3	0.50	ug/l	15.0		102	80-115			
Benzene	5.30	0.50	"	5.16		103	65-115			
tert-Butyl alcohol	154	20	"	143		108	75-150			
Di-isopropyl ether	15.7	0.50	"	15.1		104	75-125			
1,2-Dibromoethane (EDB)	17.3	0.50	"	14.8		117	85-120			
1,2-Dichloroethane	13.5	0.50	"	14.7		92	85-130			
Ethanol	123	100	"	141		87	70-135			IC
Ethyl tert-butyl ether	14.8	0.50	"	15.0		99	75-130			
Ethylbenzene	7.75	0.50	"	7.54		103	75-135			
Methyl tert-butyl ether	7.29	0.50	"	7.02		104	65-125			
Toluene	37.9	0.50	"	37.2		102	85-120			
Xylenes (total)	44.3	0.50	"	41.4		107	85-125			
Gasoline Range Organics (C4-C12)	494	50	"	440		112	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.87</i>		<i>"</i>	<i>2.50</i>		<i>75</i>	<i>60-135</i>			

**Laboratory Control Sample (5I12002-BS2)**

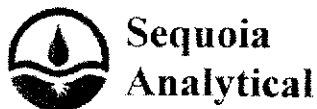
Prepared & Analyzed: 09/12/05

tert-Amyl methyl ether	14.8	0.50	ug/l	15.0		99	80-115			
Benzene	5.20	0.50	"	5.16		101	65-115			
tert-Butyl alcohol	141	20	"	143		99	75-150			
Di-isopropyl ether	14.6	0.50	"	15.1		97	75-125			
1,2-Dibromoethane (EDB)	16.8	0.50	"	14.8		114	85-120			
1,2-Dichloroethane	13.8	0.50	"	14.7		94	85-130			
Ethanol	125	100	"	141		89	70-135			
Ethyl tert-butyl ether	14.4	0.50	"	15.0		96	75-130			
Ethylbenzene	7.57	0.50	"	7.54		100	75-135			
Methyl tert-butyl ether	7.05	0.50	"	7.02		100	65-125			
Toluene	36.9	0.50	"	37.2		99	85-120			
Xylenes (total)	43.1	0.50	"	41.4		104	85-125			
Gasoline Range Organics (C4-C12)	463	50	"	440		105	70-124			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>1.81</i>		<i>"</i>	<i>2.50</i>		<i>72</i>	<i>60-135</i>			

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.*





1885 Jarvis Drive  
Morgan Hill, CA 95037  
(408) 776-9600  
FAX (408) 782-6308  
www.sequoialabs.com

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

Project: ARCO #4494, Oakland, CA  
Project Number: G0C2G-0003  
Project Manager: Scott Robinson

MOI0083  
Reported:  
09/20/05 11:00

**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
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**Batch 5I12002 - EPA 5030B P/T / EPA 8260B**

**Laboratory Control Sample Dup (5I12002-BSD1)**

Prepared & Analyzed: 09/12/05

tert-Amyl methyl ether	15.1	0.50	ug/l	15.0		101	80-115	1	15	
Benzene	5.28	0.50	"	5.16		102	65-115	0.4	20	
tert-Butyl alcohol	143	20	"	143		100	75-150	7	25	
Di-isopropyl ether	15.7	0.50	"	15.1		104	75-125	0	15	
1,2-Dibromoethane (EDB)	17.1	0.50	"	14.8		116	85-120	1	15	
1,2-Dichloroethane	13.6	0.50	"	14.7		93	85-130	0.7	20	
Ethanol	113	100	"	141		80	70-135	8	35	IC
Ethyl tert-butyl ether	14.8	0.50	"	15.0		99	75-130	0	25	
Ethylbenzene	7.78	0.50	"	7.54		103	75-135	0.4	15	
Methyl tert-butyl ether	7.18	0.50	"	7.02		102	65-125	2	20	
Toluene	38.3	0.50	"	37.2		103	85-120	1	20	
Xylenes (total)	44.4	0.50	"	41.4		107	85-125	0.2	20	
Gasoline Range Organics (C4-C12)	492	50	"	440		112	70-124	0.4	20	
Surrogate: 1,2-Dichloroethane-d4	1.80		"	2.50		72	60-135			

Sequoia Analytical - Morgan Hill

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. Unless otherwise stated, results are reported on a wet weight basis. This analytical report must be reproduced in its entirety.*



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

Project: ARCO #4494, Oakland, CA  
Project Number: G0C2G-0003  
Project Manager: Scott Robinson

MOI0083  
Reported:  
09/20/05 11:00

**Notes and Definitions**

LM MS and/or MSD above acceptance limits. See Blank Spike(LCS).  
IC Calib. verif. is within method limits but outside contract limits  
HL Analyte recovery above established limit  
BB, LN Sample > 4x spike concentration.  
BA Relative percent difference out of control  
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 > 4494 > Historical/BL  
 State or Lead Regulatory Agency: California Regional Water Quality Control Board - San Francisco  
 Requested Due Date (mm/dd/yy): 10 Day TAT

On-site Time: 0730 Temp: 70  
 Off-site Time: 1100 Temp: 70  
 Sky Conditions: Clear  
 Meteorological Events:  
 Wind Speed: Direction:

Lab Name: Sequoia	BP/AR Facility No.: 4494	Consultant/Contractor: URS
Address: 885 Jarvis Drive Morgan Hill, CA 95037	BP/AR Facility Address: 566 Hegenberger Rd., Oakland, CA 94621	Address: 1333 Broadway, Suite 800 Oakland, CA 94612
Lab PM: Lisa Race / Jamshid Kekobad	Site Lat/Long: 37.745046 / -122.195	Consultant/Contractor Project No.: 38487029
Tele/Fax: 408.782.8156 / 408.782.6308	California Global ID No.: T0600100104	Consultant/Contractor PM: Scott Robinson
BP/AR PM Contact: Paul Supple	Enfos Project No.: G0C2G-0003	Tele/Fax: 510.874.3280 / 510.874.3268
Address: P.O. Box 6549 Moraga, CA 94570	Provision or RCOP: Provision	Report Type & QC Level: Level 1 with EDF
Tele/Fax: 925.299.8891 / 925.299.8872	Phase/WBS: 04 - Mon/Remed by Natural Attenuation	E-mail EDD To: Donna_Cosper@urscorp.com
Lab Bottle Order No: 4494	Sub Phase/Task: 03 - Analytical	Invoice to: Atlantic Richfield Company
	Cost Element: 05 - Subcontracted Costs	

Item No.	Sample Description	Time	Date	Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis				Sample Point Lat/Long and Comments	
				Soil/Solid	Water/Liquid	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Methanol	GRX / BTEX (8260)	MIBX, TAME, ETBE DPE, TEA (8260)	EDB, 1,2-DCA (8260)	Ethanol (8260)		
1	MW-1	8/30	8/31	X			01	3					X	X	X	X			
2	MW-3	0900	1	X			02	3					X	X	X	X			
3	MW-4	0810	1	X			03	3					X	X	X	X			
4	MW-5	0925	1	X			04	3					X	X	X	X			
5	MW-6	1008	1	X			05	3					X	X	X	X			
6	MW-7	0848	1	X			06	3					X	X	X	X			
7	RW-1	1025	1	X			07	3					X	X	X	X			
8	TB-4494-0831 2005	0730	1	X			08	2											ON HOLD
9																			
10																			

Sampler's Name: Brian Alcom	Relinquished-BP/ Affiliation	Date	Time	Accepted By/ Affiliation	Date	Time
Sampler's Company: Blainetech Services		8/3/05	1610		8/3/05	1635
Shipment Date:		9/1/05	0950		9/1/05	0850
Shipment Method:		9/1/05	9:27		9/1/05	0912
Shipment Tracking No:						

Special Instructions:

Custody Seals In Place Yes  No Temp Blank Yes  No Cooler Temperature on Receipt 3.2 °C Trip Blank Yes  No

## SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: BP URS 4494  
 REC. BY (PRINT): L.P.  
 WORKORDER: MOL 0083

DATE REC'D AT LAB: 9-1-05  
 TIME REC'D AT LAB: 09:27  
 DATE LOGGED IN: 9-2-05

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

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) <input checked="" type="radio"/> Present / <input type="radio"/> Absent <input checked="" type="radio"/> Intact / <input type="radio"/> Broken*	61	AC	MW-1	100-3	HCL	-	L	8-31-05	
2. Chain-of-Custody <input checked="" type="radio"/> Present / <input type="radio"/> Absent*	02	1	-3						
3. Traffic Reports or Packing List: <input type="radio"/> Present / <input checked="" type="radio"/> Absent	03	1	-4						
4. Airbill: <input type="radio"/> Airbill / <input checked="" type="radio"/> Sticker <input type="radio"/> Present / <input checked="" type="radio"/> Absent	04	1	-5						
5. Airbill #:	04	1	-6						
6. Sample Labels: <input checked="" type="radio"/> Present / <input type="radio"/> Absent	04	1	-7						
7. Sample IDs: <input checked="" type="radio"/> Listed / <input type="radio"/> Not Listed on Chain-of-Custody	07	1	RW-1						
8. Sample Condition: <input checked="" type="radio"/> Intact / <input type="radio"/> Broken* / <input type="radio"/> Leaking*	07	1							
9. Does information on chain-of-custody, traffic reports and sample labels agree? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
10. Sample received within hold time? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
11. Adequate sample volume received? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
12. Proper preservatives used? <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
13. Trip Blank / Temp-Blank Received? (circle which, if yes) <input checked="" type="radio"/> Yes / <input type="radio"/> No*									
14. Read Temp: <u>3.7c</u> Corrected Temp: <u>3.2c</u> Is corrected temp 4 +/-2°C? <input checked="" type="radio"/> Yes / <input type="radio"/> No** <small>(Acceptance range for samples requiring thermal pres.)</small>									
**Exception (if any): METALS / DFF ON ICE or Problem COC									

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

**ATTACHMENT C**  
**HISTORICAL GROUNDWATER DATA**

Table 2  
Liquid Surface Elevation Data  
ARCO Service Station 4-84  
508 Hagerburg Road at Eden Avenue  
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TCC)	Depth to Liquis (feet, TCC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
KV7-1	08/08/80	10531	8.86	8.86	0.00	88.86
	08/21/80		7.09	7.09	0.00	88.84
	08/27/80		7.05	7.05	0.00	88.85
	09/07/80		7.24	7.24	0.00	88.87
	11/20/80		7.46	7.46	0.00	87.85
	12/18/80		7.46	7.40	0.00	87.91
	01/20/81		6.99	6.99	0.00	88.32
	02/27/81		7.29	7.28	0.00	88.08
	03/03/81		7.45	7.45	0.00	87.88
	03/23/81		8.08	8.08	0.00	88.35
	03/30/81		8.02	8.02	0.00	88.28
	03/31/81		7.04	7.04	0.00	88.27
	07/24/81		8.75	8.71	0.00	88.00
	08/28/81		8.91	8.91	0.00	88.40
	08/31/81		8.85	8.85	0.00	88.40
	09/17/81		7.04	7.04	0.00	88.27
	11/21/81		7.22	7.22	0.00	88.09
	12/18/81		7.77	7.77	0.00	88.14
	01/12/82		7.48	7.48	0.00	87.96
	02/20/82		7.44	7.44	0.00	87.87
	03/20/82		8.25	8.25	0.00	88.05
	04/20/82		8.40	8.40	0.00	88.43
	05/18/82		8.88	8.88	0.00	88.43
	06/08/82		7.10	7.10	0.00	88.21
	07/15/82		7.22	7.22	0.00	88.00
	08/05/82		7.82	7.82	0.00	87.58
	10/29/82		7.28	7.28	0.00	88.81
	11/23/82		7.51	7.51	0.00	88.78
	06/18/83		8.18	8.18	0.00	88.88
	11/17/83		7.28	7.28	0.00	88.88
	02/21/84		7.28	7.28	0.00	88.87
	05/11/84		8.58	8.58	0.00	88.88
08/12/84	8.87	8.87	0.00	88.84		
11/17/84	7.52	7.52	0.00	88.83		
02/22/85	8.28	8.28	0.00	88.88		
05/24/85	7.28	7.28	0.00	88.28		
08/22/85	7.07	7.07	0.00	88.78		
11/17/85	7.50	7.50	0.00	88.88		
			7.72	7.72	0.00	88.58
MV42	08/08/80	10578	9.02	9.00	0.02	88.88
	08/18/80		8.81	8.81	0.17	88.81
	08/27/80		8.81	8.81	0.17	88.81
	11/20/80		8.24	8.17	0.17	88.44
	11/23/80		8.20	8.2	Sheets	88.58
	12/18/80		8.68	8.68	Sheets	88.58
	01/28/81		8.01	8.08	0.00	88.88
	02/27/81		8.14	8.14	Sheets	88.77
	03/03/81		8.94	8.94	Sheets	88.84
	03/23/81		8.11	8.11	Sheets	88.84
	05/02/81		8.72	8.72	0	87.57

330042BWO25TELA.2.LB1Table2

Recreated from hand copies of tables developed by Pacific Environmental Group, Inc.

February 15, 1985

Table 2 (continued)  
Liquid Surface Elevation Data  
ARCO Service Station 444  
600 Hagenburger Road at Eden Avenue  
Delton, California

Well Number	Date Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TDC)	Depth to Liquid (feet, TDC)	GPI Thickness (feet)	Liquid Surface Elevation (feet, MSL)
11742 (cont.)	082191	100.57	8.23	8.1	0.13	98.06
	082201		8.28	8.25	0.03	98.08
	082211		8.20	8.23	0.03	98.08
	107191		8.34	8.31	0.03	98.08
	112191		8.38	8.35	0.03	98.47
	127191		8.28	8.2	0	98.38
	011191		8.28	8.28	0	98.58
	022092		8.52	8.58	0.06	98.58
	032092		8.15	8.18	0.03	98.32
	042092		8.41	8.31	0.1	98.68
	051092		8.38	8.38	0.0	98.47
	060092		8.82	8.82	0.0	98.09
	071092		8.84	8.82	0.02	98.85
	080092		10.18	10.18	0.0	98.94
	102092		10.05	10.05	0.0	98.59
	112092		10.00	10.00	0.0	98.62
120092	8.28	8.27	0.01	98.57		
11743	081090	105.81	8.87	8.87	0.00	98.04
	082190		8.28	8.28	0.00	98.89
	080790		8.88	8.88	0.00	98.89
	112090		8.18	8.18	0.00	98.41
	112090		8.08	8.08	0.00	98.49
	127090		8.87	8.87	0.00	98.34
	012091		8.99	8.98	0.01	98.55
	022791		8.71	8.71	0.00	98.80
	030791		8.48	8.48	0.00	97.82
	050291		7.85	7.85	0.00	97.88
	062791		8.82	8.82	0.00	98.88
	072491		8.94	8.94	0.00	98.87
	082291		8.98	8.98	0.00	98.98
	090991		8.82	8.82	0.00	98.58
	107791		8.84	8.84	0.00	98.47
	112191		8.82	8.82	0.00	98.68
	127191		8.82	8.82	0.00	98.59
	011092		8.97	8.97	0.00	98.94
	022092		8.89	8.89	0.00	98.82
	032092		7.78	7.78	0.00	97.78
	042092		8.18	8.18	0.00	97.38
	051092		8.57	8.57	0.00	98.54
	060092		8.78	8.78	0.00	98.78
	071092		8.74	8.74	0.00	98.77
	080092		8.12	8.12	0.00	98.38
	102092		8.95	8.95	0.00	97.24
112092	8.78	8.78	0.00	97.81		
081092	8.91	8.91	0.00	98.28		
117792	8.82	8.82	0.00	97.87		
022194	8.72	8.72	0.00	97.87		
031194	7.91	7.91	0.00	98.38		
	8.09	8.09	0.00	98.29		

3000412B/ACSTBL&KLS7table2

Recreated from hard copies of tables developed by Pacific Environmental Group, Inc.

February 15, 1998

Table 2 (continued)  
Liquid Surface Elevation Data  
ARCO Service Station 4494  
665 Hagerman Road at Echo Avenue  
Oakland, California

Well Number	Date Collected	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (in.)	Liquid Surface Elevation (feet, MSL)
NW-3 (cont.)	08/22/84		8.78	8.78	0.00	87.23
	11/17/84		8.48	8.48	0.00	87.54
	02/22/85		8.85	8.85	0.00	87.21
	05/24/85		8.87	8.87	0.00	87.22
	08/23/85		8.77	8.77	0.00	87.32
11/17/85		8.28	8.28	0.00	88.00	
NW-4	08/21/80	108.61	8.18	8.18	0.00	88.45
	08/21/80		8.22	8.22	0.00	88.25
	08/27/80		8.28	8.28	0.00	88.22
	11/20/80		8.67	8.67	0.00	88.22
	11/20/80		8.83	8.83	0.00	88.04
	12/10/80		8.18	8.18	0.00	88.02
	01/05/81		8.08	8.08	0.00	88.48
	02/02/81		8.44	8.44	0.00	87.85
	03/07/81		8.18	8.18	0.00	88.17
	03/20/81		7.98	7.98	0.00	88.43
	03/22/81		8.25	8.25	0.00	88.09
	04/27/81		7.78	7.78	0.00	88.58
	07/24/81		8.12	8.12	0.00	88.88
	08/23/81		7.88	7.88	0.00	88.48
	08/23/81		8.38	8.38	0.00	88.88
	10/17/81		8.42	8.42	0.00	88.38
	11/21/81		8.08	8.08	0.00	88.18
	12/14/81		8.85	8.85	0.00	87.98
	01/13/82		8.77	8.77	0.00	87.84
	02/20/82		8.42	8.42	0.00	88.18
	03/20/82		7.88	7.88	0.00	88.18
	04/23/82		7.81	7.81	0.00	88.01
	05/18/82		8.18	8.18	0.00	88.00
	06/04/82		8.14	8.14	0.00	88.48
	07/18/82		8.40	8.40	0.00	88.47
	08/04/82		8.72	8.72	0.00	88.21
	10/28/82	107.40	8.82	8.82	0.00	87.88
	11/23/82		8.68	8.68	0.00	88.04
	06/18/83		8.78	8.78	0.00	88.77
	11/17/83		8.88	8.88	0.00	88.88
02/21/84		8.11	8.11	0.00	88.71	
03/14/84		8.18	8.18	0.00	88.58	
03/12/84		8.28	8.28	0.00	88.24	
04/28/84		8.78	8.78	0.00	88.11	
11/17/84		8.48	8.48	0.00	88.28	
02/22/85		8.72	8.72	0.00	88.00	
05/24/85		8.68	8.68	0.00	88.88	
08/23/85		8.80	8.80	0.00	88.77	
11/17/85		8.18	8.18	0.00	100.58	
NW-5	08/08/82	108.10	7.18	7.18	0.00	88.08
	10/28/82		8.88	8.88	0.00	88.28
	11/22/82		8.08	8.08	0.00	88.28
	03/18/83		7.08	7.08	0.00	88.28
	11/17/83		8.01	7.88	0.00	88.78
	02/21/84		8.01	8.01	0.00	88.28
	05/11/84		8.18	8.18	0.00	88.87
	08/12/84		8.81	8.81	0.00	88.01
11/17/84		8.58	8.58	0.00	88.28	
02/22/85		8.28	8.28	0.00	88.81	

3300-RT284/035TBLSJL5/1table2

Recreated from hard copies of tables developed by Pacific Environmental Group, Inc.

February 15, 1988



Table 2 (continued)  
Liquid Surface Elevation Data  
ARCO Service Station 4094  
505 Hegenberger Road at Edge Avenue  
Oakland, California

Well Number	Date Gaged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Light (feet, TOC)	SPM Thickness (inches)	Liquid Surface Elevation (feet, MSL)
MW-5 (cont.)	02/20/94		8.30	8.30	0.00	98.89
	08/23/95		8.30	8.30	0.00	98.89
	11/17/96		7.02	7.02	0.00	98.17
MW-6	09/08/92	105.07	7.01	7.01	0.00	98.06
	10/28/92		6.70	6.70	0.00	98.37
	11/22/92		6.75	6.75	0.00	98.32
	08/15/93		6.71	6.71	0.00	98.36
	11/17/93		6.97	6.97	0.00	98.10
	02/21/94		6.81	6.81	0.00	98.26
	05/11/94		6.98	6.98	0.00	98.09
	08/12/94		6.60	6.60	0.00	98.48
	11/17/94		6.09	6.09	0.00	99.00
	02/22/95		6.95	6.95	0.00	98.14
	05/24/95		6.92	6.92	0.00	98.17
	08/22/95		6.50	6.50	0.00	98.59
	11/17/95		6.78	6.78	0.00	98.32
	09/09/92	105.52	8.28	8.28	0.00	97.24
10/28/92		8.02	8.02	0.00	98.50	
11/22/92		8.21	8.21	0.00	97.31	
08/15/93		8.11	8.11	0.00	97.41	
11/17/93		7.34	7.34	0.00	97.45	
02/21/94		7.45	7.45	0.00	98.19	
05/11/94		8.13	8.13	0.00	98.07	
11/17/94		7.90	7.90	0.00	97.30	
02/22/95		8.40	8.40	0.00	97.82	
05/24/95		8.29	8.29	0.00	97.92	
08/22/95		8.59	8.59	0.00	97.23	
11/17/95		8.78	8.78	0.00	96.92	
RW-4	09/18/93	103				98.79
	11/17/93					
	02/21/94		7.99	7.99	0.00	NM
	05/11/94		7.95	7.95	0.00	NM
	08/12/94		7.98	7.98	0.00	NM
	11/17/94		7.88	7.88	0.00	NM
	02/22/95		8.00	8.00	0.00	NM
	05/24/95		8.10	8.10	0.00	NM
08/22/95		8.67	8.67	0.00	NM	
11/17/95		8.18	8.18	0.00	NM	

MSL = Mean Sea Level  
TOC = Top of casing  
\* = Separate phase hydrocarbons present in well.  
\*\* = Shallow inclusions (12/24/01)  
NM = Not measured

3300-N-25W-080705-XL-6178262

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February 15, 1996



Table 3 (continued)  
 Groundwater Analytical Data  
 Total Petroleum Hydrocarbons  
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4404  
 558 Hegenberger Road at 52nd Avenue  
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	BTEX (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)
MW-3 (cont.)	02/22/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/17/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	09/28/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/17/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/22/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
Well Sampled Annually								
Well Sampled Annually								
Well Sampled Annually								
MW-4	08/18/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	09/07/83	NA	NA	NA	NA	NA	NA	NA
	11/28/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	<0.005
	04/07/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/22/84	<0.5	0.75	1.1	<0.5	1.5	NA	NA
	09/30/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	12/18/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/22/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	06/06/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/06/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/19/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/17/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/22/86	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	05/15/86	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/12/86	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
08/22/86	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	
11/17/86	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	
Well Sampled Annually								
Well Sampled Annually								
Well Sampled Annually								
MW-5	08/08/82	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/28/82	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/16/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/17/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/22/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/14/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/28/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/17/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
Well Sampled Annually								
Well Sampled Annually								
Well Sampled Annually								
MW-6	08/08/82	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/28/82	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/16/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/17/83	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/22/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/14/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
08/28/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	
11/17/84	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	
02/22/85	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	
Well Sampled Annually								

33004128V02STLSXLSIT669

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February 15, 1988

**Table 3 (continued)**  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
**(TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)**

**ARCO Service Station 4184**  
**500 Highways Road at Edin Avenue**  
**Oakland, California**

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)
MW-6 (cont.)	0222005	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	1117005	<.50	<.50	<.50	<.50	<.50	N/A	N/A
Well Sampled Annually								
MW-7	0620002	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	1023002	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0620003	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	1117003	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0222004	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0621004	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0812004	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	1117004	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0222005	<.50	<.50	<.50	<.50	<.50	N/A	N/A
	0920006	<.50	<.50	<.50	<.50	<.50	N/A	N/A
0920005	<.50	<.50	<.50	<.50	<.50	N/A	N/A	
1117005	<.50	<.50	<.50	<.50	<.50	N/A	N/A	
Well Sampled Annually								
MW-8	0310003	NS	NS	NS	NS	NS	NS	NS
	1117003	NS	NS	NS	NS	NS	NS	NS
	0222004	200	2,300	NS	NS	NS	NS	NS
	0621004	3,300	32	70	40	60	N/A	N/A
	0620004	4,500	40	20	87	310	N/A	N/A
	1117004	1,400	50	30	100	400	N/A	N/A
	0222005	6,100	1,00	40	20	210	N/A	N/A
	0622005	500	50	0.70	600	500	N/A	N/A
	0622006	600	2.1	2.0	11	1.4	N/A	N/A
	1117006	1,100	7.0	21	40	100	N/A	N/A

ppb = Parts per billion  
 ppm = Parts per million  
 N/A = Not applicable  
 NS = Not sampled

33004128\AQ067BL5.XL9T\table3

Recreated from hard copies of tables developed by Pacific Environmental Group, Inc.

February 15, 1996

**Table 4**  
**Groundwater Analytical Data**  
**Total Methyl Ethyl Ether**

**ARCO Service Station 4004**  
**505 Hagerlöcher Road at Eden Avenue**  
**Colton, California**

Well Number	Date Sampled	Meq/L 1-Ethyl Ether (Total)
MW-1	08/23/98	NS
MW-2	08/23/98	NS
MW-3	08/23/98	NS
MW-4	08/23/98	NS
MW-5	08/23/98	NS
MW-6	08/23/98	NS
MW-7	08/23/98	NS
MW-8	08/23/98	NS

NS = None per MDEQ  
 N/A = Not Analyzed  
 See certified analytical report for detection limit.

**ATTACHMENT D**

**ERROR CHECK REPORTS AND EDF/GEOWELL SUBMITTAL  
CONFIRMATIONS**

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**Submittal Title:** 3Q 2005 QMR GeoWell BP/ARCO  
4494

**Submittal Date/Time:** 9/30/2005 12:50:55 PM

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<u>ORGANIZATION NAME:</u>	URS Corporation-Oakland Office
<u>USER NAME:</u>	URSCORP-OAKLAND
<u>DATE CHECKED:</u>	9/30/2005 12:52:32 PM
<u>GLOBAL ID:</u>	T0600100104
<u>FILE UPLOADED:</u>	ARCO#4494-EDF-MOI0083.zip

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<b>ARCO # 04494</b>	<b><u>Regional Board - Case #: 01-0112</u></b>
566 HEGENBERGER	SAN FRANCISCO BAY RWQCB (REGION 2)
RD	- (BG)
OAKLAND, CA 94621	<b><u>Local Agency (lead agency) - Case #: 3854</u></b>
	ALAMEDA COUNTY LOP - (AG)

### SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	7
# FIELD POINTS WITH DETECTIONS	4
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	0
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	N
- MATRIX SPIKE DUPLICATE	N

- 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% N

**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**

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPD</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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**Confirmation Number:** 8846879184  
**Date/Time of Submittal:** 9/30/2005 12:54:31 PM  
**Facility Global ID:** T0600100104  
**Facility Name:** ARCO # 04494  
**Submittal Title:** 3Q05 QMR EDF BP/ARCO 4494  
**Submittal Type:** GW Monitoring Report

Click [here](#) to view the detections report for this upload.

<b>ARCO # 04494</b> 566 HEGENBERGER RD OAKLAND, CA 94621	<b>Regional Board - Case #: 01-0112</b> SAN FRANCISCO BAY RWQCB (REGION 2) - (BG) <b>Local Agency (lead agency) - Case #: 3854</b> ALAMEDA COUNTY LOP - (AG)
--	---

CONF #	TITLE	QUARTER
8846879184	3Q05 QMR EDF BP/ARCO 4494	Q3 2005
SUBMITTED BY	SUBMIT DATE	STATUS
Srijesh Thapa	9/30/2005	PENDING REVIEW

### SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	7
# FIELD POINTS WITH DETECTIONS	4
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	0
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	N
- MATRIX SPIKE DUPLICATE	N
- 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%	N

**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**

<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPD.</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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**ATTACHMENT E**

**JOINT MONITORING DATA**

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1 (a)	08/26/1998	2,700	28	55	59	39	33,000	NA	NA	NA	NA	NA	NA	10.54	7.91	2.63	1.8
MW-1 (b)	08/26/1998	<1,000	22	<10	<10	<10	17,000	NA	NA	NA	NA	NA	NA	10.54	7.91	2.63	2.2
MW-1	12/28/1998	<5,000	<50.0	<50.0	<50.0	<50.0	153,000	33,000	NA	NA	NA	NA	NA	10.54	8.75	1.79	1.9
MW-1	03/29/1999	<2,000	<20.0	<20.0	<20.0	<20.0	693,000	NA	NA	NA	NA	NA	NA	10.54	8.32	2.22	2.0
MW-1	06/22/1999	20,000	<200	<200	<200	<200	150,000	NA	NA	NA	NA	NA	NA	10.54	9.05	1.49	1.7
MW-1	09/30/1999	<2,500	<25.0	<25.0	<25.0	<25.0	30,900	NA	NA	NA	NA	NA	NA	10.54	8.35	2.19	2.6
MW-1	11/19/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.58	0.96	NA
MW-1	11/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.65	0.89	NA
MW-1	12/02/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.55	0.99	NA
MW-1	12/10/1999	<50.0	29.7	<20.0	<20.0	<20.0	76,300	NA	NA	NA	NA	NA	NA	10.54	8.86	1.68	1.2
MW-1	03/02/2000	<2,500	<25.0	<25.0	<25.0	<25.0	27,600	NA	NA	NA	NA	NA	NA	10.54	8.83	1.71	3.2
MW-1	06/08/2000	<2,000	<20.0	<20.0	<20.0	<20.0	59,000	67,600	NA	NA	NA	NA	NA	10.54	7.78	2.76	1.9
MW-1	09/05/2000	<10,000	411	<100	<100	<100	71,100	115,000 <sup>e</sup>	NA	NA	NA	NA	NA	10.54	7.84	2.70	NA
MW-1	12/15/2000	35,600	1,310	<50.0	<50.0	<50.0	136,000	f	NA	NA	NA	NA	NA	10.54	7.65	2.89	NA
MW-1	03/09/2001	<10,000	1,390	<100	<100	<100	89,600	164,000	NA	NA	NA	NA	NA	10.54	6.44	4.10	NA
MW-1	06/27/2001	<5,000	<50	<50	<50	<50	NA	19,000	NA	NA	NA	NA	NA	10.54	8.46	2.08	NA
MW-1	09/19/2001	<5,000	<50	<50	<50	<50	NA	52,000	NA	NA	NA	NA	NA	10.54	8.10	2.44	NA
MW-1	12/31/2001	<5,000	<25	<25	<25	<25	NA	17,000	NA	NA	NA	NA	NA	10.54	7.31	3.23	NA
MW-1	03/14/2002	<20,000	<200	<200	<200	<200	NA	60,000	NA	NA	NA	NA	NA	10.54	7.68	2.86	NA
MW-1	06/25/2002	<5,000	<50	<50	<50	<50	NA	34,000	NA	NA	NA	NA	NA	10.54	8.40	2.14	NA
MW-1	09/19/2002	<2,500	<25	<25	<25	<25	NA	18,000	NA	NA	NA	NA	NA	10.52	8.58	1.94	NA
MW-1	12/12/2002	<5,000	<50	<50	<50	<50	NA	30,000	NA	NA	NA	NA	NA	10.52	8.41	2.11	NA
MW-1	01/02/2003	NA	<0.50	<0.50	<0.50	<1.0	NA	NA	NA	NA	NA	NA	NA	10.52	7.45	3.07	NA
MW-1	03/20/2003 g	3,800	<25	<25	<25	<25	5,500	NA	NA	NA	NA	NA	NA	10.52	8.21	2.31	NA
MW-1	06/23/2003	<10,000	<100	<100	<100	<200	NA	35,000	NA	NA	NA	NA	NA	10.52	9.02	1.50	NA
MW-1	09/22/2003	<5,000	<50	<50	<50	<100	NA	15,000	NA	NA	NA	NA	NA	10.52	15.74	-5.22	NA
MW-1	12/03/2003	<1,300	<13	<13	<13	<25	NA	3,600	NA	NA	NA	NA	NA	10.52	18.35 h	NA	NA
MW-1	03/18/2004	<250	<2.5	<2.5	<2.5	<5.0	NA	570	NA	NA	NA	NA	NA	10.52	7.32	3.20	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1	05/25/2004	<250	<2.5	<2.5	<2.5	<5.0	NA	250	NA	NA	NA	NA	NA	10.52	6.80	3.72	NA
MW-1	09/22/2004	<2,000	<20	<20	<20	<40	NA	170	<80	<80	<80	20,000	<2,000	10.52	6.55	3.97	NA
MW-1	12/22/2004	<500	<5.0	<5.0	<5.0	<10	NA	57	NA	NA	NA	NA	NA	10.52	6.44	4.08	NA
MW-1	02/23/2005	<2,000	<20	<20	<20	<40	NA	110	NA	NA	NA	NA	NA	10.52	5.79	4.73	NA
MW-1	06/27/2005	<250	<2.5	<2.5	<2.5	<5.0	NA	16	NA	NA	NA	NA	NA	10.52	6.43	4.09	NA
MW-1	08/31/2005	<250	<2.5	<2.5	<2.5	<5.0	NA	32	<10	<10	<10	4,000	<250	9.27	6.38	2.89	NA
MW-2 (a)	08/26/1998	<250	3.2	<2.5	<2.5	<2.5	4,000	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.4
MW-2 (b)	08/26/1998	<250	3.1	<2.5	<2.5	<2.5	4,800	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.7
MW-2 (D)(b)	08/26/1998	<250	4.8	<2.5	<2.5	6.0	3,300	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.7
MW-2	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	28.8	NA	NA	NA	NA	NA	NA	9.21	7.34	1.87	2.1
MW-2	03/29/1999	235	<0.500	<0.500	<0.500	3.4	101	NA	NA	NA	NA	NA	NA	9.21	6.85	2.36	2.0
MW-2	06/22/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	NA	NA	NA	NA	NA	9.21	7.10	2.11	1.9
MW-2	09/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	1,700	NA	NA	NA	NA	NA	NA	9.21	8.06	1.15	1.0
MW-2	12/10/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	NA	NA	NA	NA	NA	9.21	8.61	0.60	1.4
MW-2	03/02/2000	<500	11.5	<5.00	<5.00	<5.00	5,280	NA	NA	NA	NA	NA	NA	9.21	6.33	2.88	0.4
MW-2	06/08/2000	<50.0	0.670	<0.500	<0.500	<0.500	3,160	NA	NA	NA	NA	NA	NA	9.21	6.87	2.34	1.6
MW-2	09/05/2000	<1,000	<10.0	<10.0	<10.0	<10.0	9,600	NA	NA	NA	NA	NA	NA	9.21	6.79	2.42	NA
MW-2	12/15/2000	<200	<2.00	<2.00	<2.00	<2.00	6,320	NA	NA	NA	NA	NA	NA	9.21	6.76	2.45	NA
MW-2	03/09/2001	<500	<5.00	<5.00	<5.00	<5.00	17,200	NA	NA	NA	NA	NA	NA	9.21	6.28	2.93	NA
MW-2	06/27/2001	<100	1.4	<1.0	<1.0	<2.0	NA	470	NA	NA	NA	NA	NA	9.21	7.12	2.09	NA
MW-2	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	330	NA	NA	NA	NA	NA	9.21	7.17	2.04	NA
MW-2	12/31/2001	<100	<1.0	<1.0	<1.0	<1.0	NA	420	NA	NA	NA	NA	NA	9.21	6.24	2.97	NA
MW-2	03/14/2002	<250	4.5	3.3	<2.5	<2.5	NA	1,600	NA	NA	NA	NA	NA	9.21	6.72	2.49	NA
MW-2	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	NA	NA	NA	NA	NA	9.21	7.23	1.98	NA
MW-2	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	90	NA	NA	NA	NA	NA	9.19	7.48	1.71	NA
MW-2	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	170	NA	NA	NA	NA	NA	9.19	7.33	1.86	NA
MW-2	03/20/2003 g	56	<0.50	<0.50	<0.50	<0.50	58	NA	NA	NA	NA	NA	NA	9.19	7.65	1.54	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	44	NA	NA	NA	NA	NA	9.19	8.72	0.47	NA
MW-2	09/22/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	37	NA	NA	NA	NA	NA	9.19	8.84	0.35	NA
MW-2	12/03/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	99	NA	NA	NA	NA	NA	9.19	8.95	0.24	NA
MW-2	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	24	NA	NA	NA	NA	NA	9.19	7.19	2.00	NA
MW-2	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	53	NA	NA	NA	NA	NA	9.19	8.40	0.79	NA
MW-2	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	24	<2.0	<2.0	<2.0	100	<50	9.19	7.08	2.11	NA
MW-2	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	39	NA	NA	NA	NA	NA	9.19	7.09	2.10	NA
MW-2	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	38	NA	NA	NA	NA	NA	9.19	6.50	2.69	NA
MW-2	06/27/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	28	NA	NA	NA	NA	NA	9.19	7.17	2.02	NA
MW-2	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	5.5	<2.0	<2.0	<2.0	19	<50	9.19	7.21	1.98	NA
MW-3 (a)	08/26/1998	2,300	180	330	<0.50	420	44,000	NA	NA	NA	NA	NA	NA	9.45	6.52	2.93	1.8
MW-3 (b)	08/26/1998	<50	<0.50	<0.50	<0.50	<0.50	52,000	75,000	NA	NA	NA	NA	NA	9.45	6.52	2.93	2.3
MW-3	12/28/1998	<5,00	139	<50.0	<50.0	<50.0	15,100	NA	NA	NA	NA	NA	NA	9.45	6.73	2.72	1.7
MW-3	03/29/1999	52,500	5,500	6,900	1,360	6,250	508,000	630,000 (c)	NA	NA	NA	NA	NA	9.45	6.21	3.24	2.1
MW-3	06/22/1999	58,000	6,600	9,850	1,640	6,950	677,000	653,000	NA	NA	NA	NA	NA	9.45	7.00	2.45	1.3
MW-3	09/30/1999	4,360	121	122	36.1	647	33,700	35,600	NA	NA	NA	NA	NA	9.45	6.84	2.61	0.6
MW-3	11/19/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	7.93	1.52	NA
MW-3	11/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	8.25	1.20	NA
MW-3	12/02/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	7.55	1.90	NA
MW-3	12/10/1999	4,220	973	26.3	273	584	88,200	NA	NA	NA	NA	NA	NA	9.45	7.28	2.17	2.5
MW-3	03/02/2000	65,300	5,210	10,300	2,650	15,100	56,800	59,800e	NA	NA	NA	NA	NA	9.45	5.87	3.58	d
MW-3	06/08/2000	72,700	3,570	10,200	2,100	13,400	44,400	NA	NA	NA	NA	NA	NA	9.45	5.32	4.13	1.1
MW-3	09/05/2000	26,100	959	2,910	1,090	5,640	24,000	NA	NA	NA	NA	NA	NA	9.45	5.60	3.85	NA
MW-3	12/15/2000	5,190	438	8.39	483	530	19,100	11,800f	NA	NA	NA	NA	NA	9.45	6.27	3.18	NA
MW-3	03/09/2001	5,880	472	42.2	392	1,290	41,800	NA	NA	NA	NA	NA	NA	9.45	5.71	3.74	NA
MW-3	06/27/2001	9,100	330	79	140	1,600	NA	31,000	NA	NA	NA	NA	NA	9.45	6.88	2.57	NA
MW-3	09/19/2001	790	14	18	17	67	NA	8,100	NA	NA	NA	NA	NA	9.45	6.70	2.75	NA



**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-3	12/31/2001	<5,000	220	<50	86	<50	NA	22,000	NA	NA	NA	NA	NA	9.45	5.92	3.53	NA
MW-3	03/14/2002	<2,500	<25	<25	<25	<25	NA	12,000	NA	NA	NA	NA	NA	9.45	6.25	3.20	NA
MW-3	06/25/2002	<10,000	160	<100	<100	<100	NA	42,000	NA	NA	NA	NA	NA	9.45	6.65	2.80	NA
MW-3	09/19/2002	<10,000	650	<100	280	360	NA	84,000	NA	NA	NA	NA	NA	9.45	6.51	2.94	NA
MW-3	12/12/2002	<10,000	170	<100	<100	<100	NA	45,000	NA	NA	NA	NA	NA	9.45	6.97	2.48	NA
MW-3	01/02/2003	NA	59	<5.0	5.3	<10	NA	NA	NA	NA	NA	NA	NA	9.45	5.90	3.55	NA
MW-3	03/20/2003 g	5,100	<50	<50	<50	<50	4,400	NA	NA	NA	NA	NA	NA	9.45	6.87	2.58	NA
MW-3	06/23/2003	<5,000	<50	<50	<50	<100	NA	8,100	NA	NA	NA	NA	NA	9.45	13.80	-4.35	NA
MW-3	09/22/2003	<250	<2.5	4.6	<2.5	<5.0	NA	470	NA	NA	NA	NA	NA	9.45	6.31	3.14	NA
MW-3	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	180	NA	NA	NA	NA	NA	9.45	14.77 h	NA	NA
MW-3	03/18/2004	<1,000	14	<10	<10	<20	NA	2,500	NA	NA	NA	NA	NA	9.45	6.07	3.38	NA
MW-3	05/25/2004	3,900	<10	66	23	470	NA	140	NA	NA	NA	NA	NA	9.45	14.63	-5.18	NA
MW-3	09/22/2004	<10,000	830	<100	290	450	NA	28,000	<400	<400	<400	13,000	<10,000	9.45	4.86	4.59	NA
MW-3	12/22/2004	94	<0.50	<0.50	<0.50	<1.0	NA	84	NA	NA	NA	NA	NA	9.45	6.93	2.52	NA
MW-3	02/23/2005	<50 i	<0.50	<0.50	<0.50	<1.0	NA	85	NA	NA	NA	NA	NA	9.45	5.68	3.77	NA
MW-3	06/27/2005	<2,500	96	<25	29	<50	NA	6,100	NA	NA	NA	NA	NA	9.45	4.80	4.65	NA
MW-3	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	300	<2.0	<2.0	<2.0	700	<50	8.33	5.07	3.26	NA
MW-4	09/25/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.88	7.64	2.24	NA
MW-4	12/15/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	NA	NA	NA	NA	NA	9.88	7.55	2.33	NA
MW-4	03/09/2001	<50.0	<0.500	0.730	<0.500	0.529	3.16	NA	NA	NA	NA	NA	NA	9.88	7.04	2.84	NA
MW-4	06/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.76	2.12	NA
MW-4	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.69	2.19	NA
MW-4	12/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.08	2.80	NA
MW-4	03/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.57	2.31	NA
MW-4	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.50	1.38	NA
MW-4	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.22	1.66	NA
MW-4	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.08	1.80	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-4	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA	NA	NA	9.88	7.92	1.96	NA
MW-4	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.18	1.70	NA
MW-4	09/22/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	16	NA	NA	NA	NA	NA	9.88	8.28	1.60	NA
MW-4	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	15	NA	NA	NA	NA	NA	9.88	8.44	1.44	NA
MW-4	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	15	NA	NA	NA	NA	NA	9.88	7.52	2.36	NA
MW-4	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	NA	NA	NA	NA	NA	9.88	8.30	1.58	NA
MW-4	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	<2.0	<2.0	<2.0	<5.0	<50	9.88	7.72	2.16	NA
MW-4	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	NA	NA	NA	NA	NA	9.88	7.32	2.56	NA
MW-4	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	18	NA	NA	NA	NA	NA	9.88	6.95	2.93	NA
MW-4	06/27/2005	55	<0.50	<0.50	<0.50	<1.0	NA	14	NA	NA	NA	NA	NA	9.88	7.48	2.40	NA
MW-4	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	15	<2.0	<2.0	<2.0	11	<50	9.88	7.53	2.35	NA
MW-5	06/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.36	NA	NA
MW-5	06/25/2002	<10,000	<100	<100	<100	<100	NA	60,000	NA	NA	NA	NA	NA	NA	8.30	NA	NA
MW-5	09/19/2002	<2,000	<20	<20	<20	<20	NA	7,200	NA	NA	NA	NA	NA	10.03	8.44	1.59	NA
MW-5	12/12/2002	<5,000	<50	<50	<50	<50	NA	33,000	NA	NA	NA	NA	NA	10.03	8.49	1.54	NA
MW-5	03/20/2003 g	12,000	<50	<50	<50	<50	15,000	NA	NA	NA	NA	NA	NA	10.03	8.23	1.80	NA
MW-5	06/23/2003	<1,000	<10	<10	<10	<20	NA	1,700	NA	NA	NA	NA	NA	10.03	16.70	-6.67	NA
MW-5	09/22/2003	<2,500	<25	<25	<25	<50	NA	4,400	NA	NA	NA	NA	NA	10.03	16.70	-6.67	NA
MW-5	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	70	NA	NA	NA	NA	NA	10.03	16.79	-6.76	NA
MW-5	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	43	NA	NA	NA	NA	NA	10.03	16.78	-6.75	NA
MW-5	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	30	NA	NA	NA	NA	NA	10.03	13.02	-2.99	NA
MW-5	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	<2.0	<2.0	<2.0	83	<50	10.03	5.91	4.12	NA
MW-5	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	67	NA	NA	NA	NA	NA	10.03	5.72	4.31	NA
MW-5	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	120	NA	NA	NA	NA	NA	10.03	4.41	5.62	NA
MW-5	06/27/2005	56	<0.50	<0.50	<0.50	<1.0	NA	46	NA	NA	NA	NA	NA	10.03	5.98	4.05	NA
MW-5	08/31/2005	<1,000	<10	<10	<10	<20	NA	69	<40	<40	<40	2,400	<1,000	9.03	6.60	2.43	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
C-1	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	1.44	NA	NA
C-1	03/29/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	2.59	NA	NA
C-1	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	3.72	NA	NA
C-1	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	3.08	NA	NA
C-1	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	0.64	NA	NA
C-1	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA	NA	NA	NA	4.61	NA	NA
SD-1	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-A	06/22/1999	318	<0.50	<0.50	0.590	1.48	4,470	NA	NA	NA	NA	NA	NA	NA	4.71	NA	1.1
BW-A	06/25/2002	<500	<5.0	<5.0	<5.0	18	NA	3,100	NA	NA	NA	NA	NA	NA	5.14	NA	NA
BW-A	09/19/2002	<200	<2.0	<2.0	<2.0	<2.0	NA	<20	NA	NA	NA	NA	NA	NA	7.19	NA	NA
BW-A	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	2,900	NA	NA	NA	NA	NA	NA	6.40	NA	NA
BW-A	03/20/2003 g	<2,500	<25	<25	<25	<25	<250	NA	NA	NA	NA	NA	NA	NA	5.36	NA	NA
BW-A	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	NA	NA	NA	NA	NA	10.27	NA	NA

**WELL CONCENTRATIONS**  
**Shell-branded Service Station**  
**540 Hegenberger Road**  
**Oakland, CA**

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
BW-B	06/22/1999	<250	<2.5	<2.5	<2.5	<2.5	8,600	NA	NA	NA	NA	NA	NA	NA	5.90	NA	1.2
BW-B	06/27/2001	<5,000	<50	<50	<50	<50	NA	40,000	NA	NA	NA	NA	NA	NA	5.83	NA	NA
BW-B	12/31/2001	<2,000	<20	<20	<20	<20	NA	9,200	NA	NA	NA	NA	NA	NA	4.19	NA	NA
BW-B	03/14/2002	<2,000	<20	<20	<20	<20	NA	9,400	NA	NA	NA	NA	NA	NA	5.24	NA	NA
BW-B	06/25/2002	<2,000	<20	<20	<20	<20	NA	6,600	NA	NA	NA	NA	NA	NA	6.19	NA	NA
BW-B	09/19/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	<50	NA	NA	NA	NA	NA	NA	8.46	NA	NA
BW-B	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	1,700	NA	NA	NA	NA	NA	NA	7.46	NA	NA
BW-B	03/20/2003 g	170	<1.0	<1.0	<1.0	<1.0	190	NA	NA	NA	NA	NA	NA	NA	6.23	NA	NA
BW-B	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	43	NA	NA	NA	NA	NA	NA	9.95	NA	NA
BW-C	06/22/1999	<50	<0.50	<0.50	<0.50	0.98	11,000	NA	NA	NA	NA	NA	NA	NA	5.91	NA	1.6
BW-C	06/25/2002	<5,000	<50	<50	<50	<50	NA	20,000	NA	NA	NA	NA	NA	NA	6.49	NA	NA
BW-C	09/19/2002	<1,000	<10	<10	<10	<10	NA	400	NA	NA	NA	NA	NA	NA	8.52	NA	NA
BW-C	12/12/2002	<2,000	<20	<20	<20	<20	NA	8,000	NA	NA	NA	NA	NA	NA	7.57	NA	NA
BW-C	03/20/2003 g	270	<1.0	<1.0	<1.0	<1.0	250	NA	NA	NA	NA	NA	NA	NA	6.48	NA	NA
BW-C	06/23/2003	<1,000	<10	<10	<10	<20	NA	170	NA	NA	NA	NA	NA	NA	11.48	NA	NA
BW-D	06/22/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2,190	NA	NA	NA	NA	NA	NA	NA	4.78	NA	1.4
BW-D	06/25/2002	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-D	07/02/2002	<1,000	23	<10	<10	<10	NA	<100	NA	NA	NA	NA	NA	NA	6.36	NA	NA
BW-D	09/19/2002	<250	<2.5	<2.5	<2.5	<2.5	NA	<25	NA	NA	NA	NA	NA	NA	7.25	NA	NA
BW-D	12/12/2002	<5,000	<50	<50	<50	<50	NA	16,000	NA	NA	NA	NA	NA	NA	6.21	NA	NA
BW-D	03/20/2003 g	71	<0.50	<0.50	<0.50	<0.50	55	NA	NA	NA	NA	NA	NA	NA	5.23	NA	NA
BW-D	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	NA	NA	NA	NA	NA	10.25	NA	NA
BW-D	09/22/2003	<100	<1.0	<1.0	<1.0	<2.0	NA	120	NA	NA	NA	NA	NA	NA	10.18	NA	NA
BW-D	12/03/2003	<1,300	110	<13	<13	29	NA	560	NA	NA	NA	NA	NA	NA	10.20	NA	NA
BW-D	03/18/2004	<50	0.67	<0.50	<0.50	<1.0	NA	12	NA	NA	NA	NA	NA	NA	3.42	NA	NA
BW-D	05/25/2004	<50	1.4	0.96	<0.50	<1.0	NA	1.7	NA	NA	NA	NA	NA	NA	8.83	NA	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
BW-D	09/22/2004	<100	6.9	<1.0	2.1	4.2	NA	210	NA	NA	NA	NA	NA	NA	2.75	NA	NA
BW-D	12/22/2004	61	2.1	2.9	<0.50	3.6	NA	5.4	NA	NA	NA	NA	NA	NA	3.67	NA	NA
BW-D	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	1.2	NA	NA	NA	NA	NA	NA	2.88	NA	NA
BW-D	06/27/2005	53	<0.50	<0.50	<0.50	<1.0	NA	1.8	NA	NA	NA	NA	NA	NA	3.70	NA	NA
BW-D	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	1.4	NA	NA	NA	NA	NA	8.61	3.82	4.79	NA

**Abbreviations:**

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8020.

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether, analyzed by EPA Method 8260B

ETBE = Ethyl tertiary butyl ether, analyzed by EPA Method 8260B

TAME = Tertiary amyl methyl ether, analyzed by EPA Method 8260B

TBA = Tertiary butyl alcohol, analyzed by EPA Method 8260B

TOC = Top of Casing Elevation

GW = Groundwater

DO = Dissolved Oxygen

ppm = Parts per million

ug/L = Parts per billion

MSL = Mean sea level

ft. = Feet

<n = Below detection limit

(D) = Duplicate sample

NA = Not applicable

**WELL CONCENTRATIONS**  
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Notes:

a = Pre-purge

b = Post purge

c = Lab confirmed MTBE by mistake. MTBE value at MW-1 should have been confirmed instead.

d = DO reading not taken.

e = Sample was analyzed outside of the EPA recommended holding time.

f = The second highest MTBE hit was mistakenly confirmed. MTBE for MW-1 should have been confirmed.

g = On March 20, 2003, all analyses run by EPA Method 8015/8020.

h = Depth to top of pump; pump prevented depth to water measurement.

i = The concentration reported reflects individual or discrete unidentified peaks not matching a typical fuel pattern.

Ethanol analyzed by EPA Method 8260B.

Site surveyed September 21, 2000 by Virgil Chavez Land Surveying of Vallejo, CA.

C-1 is a canal sample location.

SD-1 and SD-2 are storm drains.

Wells MW-1 through MW-5 surveyed January 24 and June 19, 2002 by Virgil Chavez Land Surveying of Vallejo, CA.

Wells MW-1, MW-3, MW-5, BW-A, BW-B, BW-C, and BW-D surveyed on September 22, 2005 by Virgil Chavez Land Surveying of Vallejo, CA.