



June 22, 2005

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

Alameda County  
JUL 08 2005  
Environmental Health

**Re: Second Quarter 2005 Groundwater Monitoring Report  
ARCO Service Station #6148  
5131 Shattuck Avenue  
Oakland, California  
ACEH Case #3626**

Dear Ms. Drogas:

On behalf of Atlantic Richfield Company, a BP affiliated company, URS Corporation (URS) is submitting the *Second Quarter 2005 Groundwater Monitoring Report* for the ARCO Service Station #6148, located at 5131 Shattuck Avenue, Oakland, California.

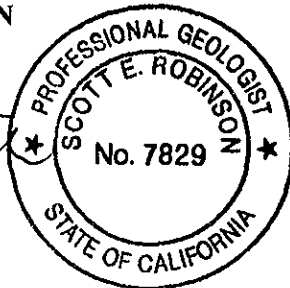
If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

**URS CORPORATION**

*Scott Robinson*

Scott Robinson, P.G.  
Project Manager



Enclosure: Second Quarter 2005 Groundwater Monitoring Report

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



Atlantic Richfield Company  
(a BP affiliated company)

P.O. Box 6549  
Moraga, California 94570  
Phone: (925) 299-8891  
Fax: (925) 299-8872



Alameda County  
JUL 08 2005  
Environmental Health

June 22, 2005

Re: Second Quarter 2005 Groundwater Monitoring Report  
ARCO Service Station #6148  
5131 Shattuck Avenue  
Oakland, California  
ACEH Case #3626

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

**REPORT**

**SECOND QUARTER 2005  
GROUNDWATER MONITORING  
REPORT**

ARCO SERVICE STATION #6148  
5131 SHATTUCK AVENUE  
OAKLAND, CALIFORNIA

*Prepared for*  
RM

June 22, 2005

**URS**

URS Corporation  
1333 Broadway, Suite 800  
Oakland, California 94612

Date: June 22, 2005  
Quarter: 2Q 05

## SECOND QUARTER 2005 GROUNDWATER MONITORING REPORT

Facility No.: 6148 Address: 5131 Shattuck Avenue, Oakland, California  
RM Environmental Business Manager: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson  
Primary Agency: Alameda County Environmental Health (ACEH)  
ACEH Case #: 3626

### WORK PERFORMED THIS QUARTER (Second – 2005):

1. Performed second quarter 2005 groundwater monitoring event on May 9, 2005.
2. Prepared and submitted this Second Quarter 2005 Groundwater Monitoring Report.

### WORK PROPOSED FOR NEXT QUARTER (Third – 2005):

1. Perform third quarter 2005 groundwater monitoring event.
2. Prepare and submit Third Quarter 2005 Groundwater Monitoring Report.

### SITE SUMMARY:

Current Phase of Project: GW monitoring/sampling  
Frequency of Groundwater Sampling: Quarterly : MW-1, MW-2, MW-3, & MW-5  
Semi-Annually (1<sup>st</sup>/3<sup>rd</sup> Quarter): Well MW-4  
Annually (3<sup>rd</sup> Quarter): MW-6 & MW-7  
Frequency of Groundwater Monitoring: Quarterly  
Is Free Product (FP) Present On-Site: No  
Current Remediation Techniques: None  
Previous Remediation Techniques: Soil Vapor Extraction (Shut down 1<sup>st</sup> quarter 1999), Air-Sparge and Air-Bubbling Systems  
Bulk Soil Removed to Date: 560 cubic yards  
Approximate Depth to Groundwater: 13.45 (MW-6) to 16.77 (MW-1) feet  
Groundwater Gradient (direction): Southwest  
Groundwater Gradient (magnitude): 0.02 feet per foot

### DISCUSSION:

Gasoline range organics were detected at or above laboratory reporting limit in one of the four wells sampled this quarter at a concentration of 50 micrograms per liter ( $\mu\text{g/L}$ ) (MW-3). Methyl-tert-butyl ether was detected at or above laboratory reporting limit in all four wells at concentrations ranging from 0.55  $\mu\text{g/L}$  (MW-1) to 1.8  $\mu\text{g/L}$  (MW-2). Benzene was detected at or above laboratory reporting limit in one well at a concentration of 0.68  $\mu\text{g/L}$  (MW-2). No other fuel components were detected at or above their respective laboratory reporting limits during this sampling event.

**RECOMMENDATIONS:**

URS submitted a Soil Investigation for Site Closure on June 1, 2004. In that report, URS recommended closure of this site at the end of 2004.

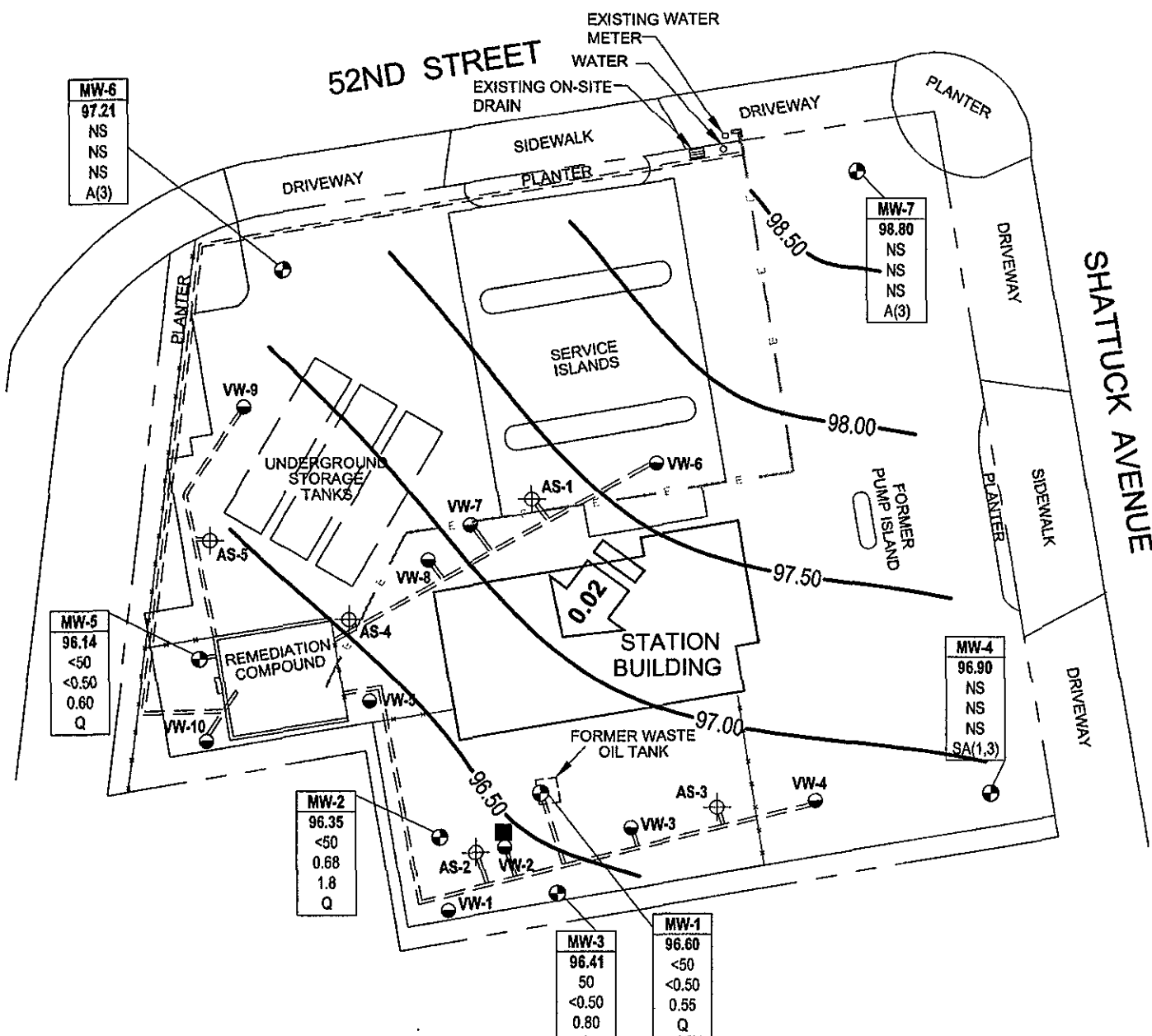
As URS previously recommended, the sampling frequency at the site will be reduced to an annual schedule. The first annual sampling event is scheduled to occur in the third quarter, 2005.

**ATTACHMENTS:**

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map –May 9, 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

52ND STREET

SHATTUCK AVENUE

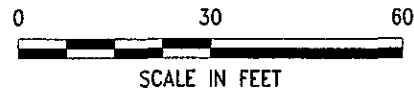


**LEGEND:**

- ⊕ MONITORING WELL
- ⊕ AIR SPARGING WELL
- SOIL VAPOR EXTRACTION WELL
- DESTROYED WELL

- ELECTRICAL LINE
- FENCING
- == REMEDIATION PIPING
- ← 0.02 → GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)
- 96.00 GROUNDWATER ELEVATION CONTOUR (FT/MSL)

Well	WELL DESIGNATION
ELEV	GROUNDWATER ELEVATION (FT ABOVE MSL)
GRO	CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUNDWATER (µg/L)
Benzene	
MTBE	
Q/A/SA	SAMPLING FREQUENCY
A(3)	SAMPLED ANNUALLY, 3RD QUARTER
Q	SAMPLED QUARTERLY
SA(1,3)	SAMPLED SEMI-ANNUALLY, 1ST & 3RD QUARTERS
<	NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NS	NOT SAMPLED



NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

Jun 03, 2005 - 12:03pm X:\env\wastair\BP\_GEM\Sheet\Scott\_Robinson\Paul\_Supples\148\Monitoring\2005 Ctr. 2\Drawings\6148-2005-GW.dwg



Project No. 38487190  
 ARCO Service Station #6148  
 5131 Shattuck Avenue  
 Oakland, California

**GROUNDWATER ELEVATION CONTOUR  
 AND ANALYTICAL SUMMARY MAP  
 Second Quarter 2005 (May 9, 2005)**

FIGURE  
 1

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #6148  
5131 Shattuck Ave., 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	6/21/2000	--		107.80	13.00	26.00	17.49	90.31	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--
	9/20/2000	--		107.80	13.00	26.00	17.64	90.16	<50	<0.5	0.677	<0.5	0.969	<2.5	--	--
	12/22/2000	--		107.80	13.00	26.00	16.87	90.93	186	5.38	0.522	9.52	30.2	8.91	--	--
	3/26/2001	--		107.80	13.00	26.00	16.60	91.20	<50	<0.5	<0.5	<0.5	<0.5	9.1	--	--
	5/30/2001	--		107.80	13.00	26.00	17.10	90.70	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	9/23/2001	--		107.80	13.00	26.00	17.53	90.27	<50	<0.5	<0.5	<0.5	<0.5	6.7	--	--
	12/28/2001	--		107.80	13.00	26.00	15.57	92.23	<50	2.7	<0.5	<0.5	<0.5	20	--	--
	3/21/2002	--		107.80	13.00	26.00	15.57	92.23	--	--	--	--	--	--	--	--
	4/17/2002	--		107.80	13.00	26.00	16.25	91.55	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	8/19/2002	--		107.80	13.00	26.00	17.69	90.11	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.0	7.1
	11/27/2002	--		107.80	13.00	26.00	17.45	90.35	<50	<0.50	1.8	0.65	3.5	1.7	1.0	6.3
	2/5/2003	--	d	107.80	13.00	26.00	16.93	90.87	<50	<0.50	<0.50	<0.50	<0.50	1.1	1.2	7.3
	5/13/2003	--		107.80	13.00	26.00	16.95	90.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.0	6.5
	7/31/2003	--		107.80	13.00	26.00	17.74	90.06	<50	<0.50	<0.50	<0.50	<0.50	0.55	1.2	6
	12/17/2003	NP		107.80	13.00	26.00	17.03	90.77	<50	<0.50	<0.50	<0.50	<0.50	2.5	2.0	6.5
	02/13/2004	NP	e	113.37	13.00	26.00	16.85	96.52	<50	<0.50	<0.50	<0.50	<0.50	1.9	1.0	6.4
	05/05/2004	NP		113.37	13.00	26.00	17.28	96.09	<50	<0.50	<0.50	<0.50	<0.50	0.60	2.6	6.4
	08/25/2004	NP		113.37	13.00	26.00	17.72	95.65	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.2	6.9
	11/29/2004	NP		113.37	13.00	26.00	17.45	95.92	<50	<0.50	<0.50	<0.50	<0.50	0.62	0.92	6.8
	01/31/2005	NP		113.37	13.00	26.00	16.67	96.70	<50	<0.50	<0.50	<0.50	<0.50	0.59	1.63	6.1
	05/09/2005	NP		113.37	13.00	26.00	16.77	96.60	<50	<0.50	<0.50	<0.50	<0.50	0.55	1.03	6.7
MW-2	6/21/2000	--		107.28	14.00	26.00	17.19	90.09	69	<0.5	<0.5	<0.5	<1.0	12	--	--
	9/20/2000	--		107.28	14.00	26.00	17.31	89.97	<50	0.964	<0.5	<0.5	<0.5	5.05	--	--
	12/22/2000	--		107.28	14.00	26.00	16.58	90.70	2,140	174	60.2	118	438	123	--	--
	3/26/2001	--		107.28	14.00	26.00	16.45	90.83	8,490	333	148	495	1,660	<250	--	--
	5/30/2001	--		107.28	14.00	26.00	16.83	90.45	4,700	200	71	260	780	43	--	--
	9/23/2001	--		107.28	14.00	26.00	17.30	89.98	160	5.9	1.8	0.8	41	14	--	--
	12/28/2001	--		107.28	14.00	26.00	15.38	91.90	1,800	54	<5.0	<5.0	240	30	--	--
	3/21/2002	--		107.28	14.00	26.00	15.36	91.92	--	--	--	--	--	--	--	--
	4/17/2002	--		107.28	14.00	26.00	16.01	91.27	<50	<0.5	<0.5	<0.5	<0.5	10	--	--
	8/19/2002	--	a	107.28	14.00	26.00	17.53	89.75	170	22	0.92	14	26	<2.5	3.0	6.9
	11/27/2002	--		107.28	14.00	26.00	17.21	90.07	340	22	0.68	13	26	<0.50	1.6	6.6
	2/5/2003	--	d	107.28	14.00	26.00	16.72	90.56	83	2.7	<0.50	0.97	15	4.3	0.7	7.0

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #6148  
5131 Shattuck Ave., 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-2	05/13/2003	NP	f	107.28	14.00	26.00	16.72	90.56	<50	0.91	<0.50	<0.50	0.6	2.8	0.7	6.5
	7/31/2003	--		107.28	14.00	26.00	17.51	89.77	<50	<0.50	<0.50	<0.50	<0.50	2.0	7.1	6.7
	12/17/2003	NP		107.28	14.00	26.00	16.78	90.50	51	1.0	<0.50	<0.50	<0.50	2.4	8.1	7.1
	02/13/2004	NP	e	112.87	14.00	26.00	16.63	96.24	50	0.70	<0.50	0.54	0.90	1.6	5.6	6.7
	05/05/2004	NP		112.87	14.00	26.00	17.04	95.83	<50	<0.50	<0.50	<0.50	<0.50	0.99	4.3	6.9
	08/25/2004	NP		112.87	14.00	26.00	17.55	95.32	<50	<0.50	<0.50	<0.50	<0.50	0.63	7.5	6.6
	11/29/2004	NP		112.87	14.00	26.00	17.24	95.63	85	10	<0.50	4.6	1.0	0.55	1.41	6.9
	01/31/2005	NP		112.87	14.00	26.00	16.48	96.39	<50	<0.50	<0.50	<0.50	<0.50	1.2	0.76	6.1
	05/09/2005	NP		112.87	14.00	26.00	16.52	96.35	<50	0.68	<0.50	<0.50	<0.50	1.8	0.7	6.6
MW-3	6/21/2000	--		107.61	14.00	26.00	17.52	90.09	200	<0.5	<0.5	<0.5	2.1	24	--	--
	9/20/2000	--		107.61	14.00	26.00	17.61	90.00	<50	<0.5	<0.5	<0.5	<0.5	20	--	--
	12/22/2000	--		107.61	14.00	26.00	16.85	90.76	227	4.73	1.06	2.58	5.22	27.3	--	--
	3/26/2001	--		107.61	14.00	26.00	16.79	90.82	287	6.29	1.58	6.47	12.1	24.2	--	--
	5/30/2001	--		107.61	14.00	26.00	17.11	90.50	500	10	<0.5	7.00	16	20	--	--
	9/23/2001	--		107.61	14.00	26.00	17.57	90.04	400	6.4	0.74	<0.5	0.62	22	--	--
	12/28/2001	--		107.61	14.00	26.00	15.41	92.20	270	2.5	2.4	<0.5	2.3	9.2	--	--
	3/21/2002	--		107.61	14.00	26.00	15.58	92.03	--	--	--	--	--	--	--	--
	4/17/2002	--		107.61	14.00	26.00	16.25	91.36	360	2.5	0.72	<0.5	<0.5	12	--	--
	8/19/2002	--	b	107.61	14.00	26.00	17.66	89.95	750	11	2.1	<0.5	2.4	14	1.4	6.8
	11/27/2002	--		107.61	14.00	26.00	17.69	89.92	470	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6
	2/5/2003	--	d	107.61	14.00	26.00	16.82	90.79	<50	<0.50	<0.50	<0.50	<0.50	2.4	1.3	6.6
	5/13/2003	--		107.61	14.00	26.00	17.12	90.49	300	<0.50	<0.50	<0.50	<0.50	2.2	1.4	6.7
	7/31/2003	--		107.61	14.00	26.00	17.72	89.89	320	<0.50	<0.50	<0.50	<0.50	2.1	1.4	6.8
	12/17/2003	NP		107.61	14.00	26.00	16.95	90.66	340	0.51	<0.50	<0.50	<0.50	4.8	1.3	6.7
	02/13/2004	NP	e	113.05	14.00	26.00	16.77	96.28	<50	<0.50	<0.50	<0.50	<0.50	3.1	2.1	7.1
	05/05/2004	NP		113.05	14.00	26.00	17.22	95.83	<50	<0.50	<0.50	<0.50	<0.50	1.3	1.2	6.9
	08/25/2004	NP		113.05	14.00	26.00	17.66	95.39	<50	<0.50	<0.50	<0.50	<0.50	3.3	1.2	7.1
11/29/2004	NP		113.05	14.00	26.00	17.47	95.58	110	<0.50	<0.50	<0.50	<0.50	1.4	1.0	6.9	
01/31/2005	NP		113.05	14.00	26.00	16.16	96.89	<50	<0.50	<0.50	<0.50	<0.50	2.0	0.87	6.2	
05/09/2005	NP		113.05	14.00	26.00	16.64	96.41	50	<0.50	<0.50	<0.50	<0.50	0.80	0.83	6.7	
MW-4	6/21/2000	--		106.71	11.50	26.50	16.00	90.71	1,400	5.3	7.3	36	85	4	--	--
	9/20/2000	--		106.71	11.50	26.50	16.03	90.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	12/22/2000	--		106.71	11.50	26.50	--	--	--	--	--	--	--	--	--	--



Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #6148  
5131 Shattuck Ave., 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)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	DO (mg/L)	pH	
MW-4	3/26/2001	--		106.71	11.50	26.50	15.05	91.66	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
	5/30/2001	--		106.71	11.50	26.50	15.62	91.09	--	--	--	--	--	--	--	--	
	9/23/2001	--		106.71	11.50	26.50	16.07	90.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
	12/28/2001	--		106.71	11.50	26.50	13.68	93.03	--	--	--	--	--	--	--	--	
	3/21/2002	--		106.71	11.50	26.50	14.04	92.67	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
	4/17/2002	--		106.71	11.50	26.50	14.78	91.93	--	--	--	--	--	--	--	--	
	8/19/2002	--		106.71	11.50	26.50	16.18	90.53	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<2.5	1.4	6.8
	11/27/2002	--		106.71	11.50	26.50	15.89	90.82	--	--	--	--	--	--	--	--	
	2/5/2003	--	d	106.71	11.50	26.50	15.40	91.31	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.6
	5/13/2003	--		106.71	11.50	26.50	15.42	91.29	--	--	--	--	--	--	--	--	
	7/31/2003	--		106.71	11.50	26.50	16.23	90.48	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.4	6.4
	12/17/2003	--		106.71	11.50	26.50	15.57	91.14	--	--	--	--	--	--	--	--	
	02/13/2004	P	e	112.15	11.50	26.50	15.30	96.85	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.1	6.3
	05/05/2004	--		112.15	11.50	26.50	15.69	96.46	--	--	--	--	--	--	--	--	
	08/25/2004	P		112.15	11.50	26.50	16.07	96.08	<50	<0.50	<0.50	<0.50	0.51	<0.50	<0.50	1.6	6.4
	11/29/2004	--		112.15	11.50	26.50	15.86	96.29	--	--	--	--	--	--	--	--	
01/31/2005	P		112.15	11.50	26.50	15.17	96.98	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1.61	6.2	
05/09/2005	--		112.15	11.50	26.50	15.25	96.90	--	--	--	--	--	--	--	--		
MW-5	3/26/2000	--		106.60	10.00	25.00	15.45	91.15	767	12.4	<5.0	<5.0	<5.0	163	--	--	
	6/21/2000	--		106.60	10.00	25.00	16.52	90.08	67	<0.5	<0.5	<0.5	<1.0	10	--	--	
	9/20/2000	--		106.60	10.00	25.00	16.34	90.26	<50	<0.5	<0.5	<0.5	<0.5	3.48	--	--	
	12/22/2000	--		106.60	10.00	25.00	15.58	91.02	341	11.5	2.53	4.02	6.25	146	--	--	
	5/30/2001	--		106.60	10.00	25.00	15.77	90.83	110	2.3	<0.5	<0.5	0.81	72	--	--	
	9/23/2001	--		106.60	10.00	25.00	16.16	90.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
	12/28/2001	--		106.60	10.00	25.00	14.09	92.51	240	2.8	1.9	<0.5	2.6	48	--	--	
	3/21/2002	--		106.60	10.00	25.00	14.43	92.17	--	<0.5	<0.5	<0.5	<0.5	--	--	--	
	4/17/2002	--		106.60	10.00	25.00	14.96	91.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
	8/19/2002	--	c	106.60	10.00	25.00	16.34	90.26	--	--	--	--	--	--	--	--	
	11/27/2002	--	c	106.60	10.00	25.00	--	--	--	--	--	--	--	--	--	--	
	2/5/2003	--	c, d	106.60	10.00	25.00	--	--	--	--	--	--	--	--	--	--	
	5/13/2003	NP	f	106.60	10.00	25.00	15.43	91.17	<50	<0.50	<0.50	<0.50	<0.50	15	1.4	6.2	
7/31/2003	--		106.60	10.00	25.00	16.47	90.13	<50	<0.50	<0.50	<0.50	<0.50	1.2	14.1	8.1		
12/17/2003	NP		106.60	10.00	25.00	15.99	90.61	<50	<0.50	<0.50	<0.50	<0.50	1.8	15.4	8.5		

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #6148  
5131 Shattuck Ave., 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-5	02/13/2004	NP	e	112.04	10.00	25.00	15.90	96.14	<50	<0.50	<0.50	<0.50	<0.50	2.6	11.1	7.0
	05/05/2004	NP		112.04	10.00	25.00	16.28	95.76	51	<0.50	<0.50	<0.50	<0.50	1.2	0.8	7.2
	08/25/2004	NP		112.04	10.00	25.00	16.67	95.37	<50	<0.50	<0.50	<0.50	<0.50	1.1	10.5	--
	11/29/2004	NP		112.04	10.00	25.00	16.37	95.67	<50	<0.50	<0.50	<0.50	<0.50	0.61	1.0	7.0
	01/31/2005	NP		112.04	10.00	25.00	15.73	96.31	<50	<0.50	<0.50	<0.50	<0.50	0.86	1.63	6.3
	05/09/2005	NP		112.04	10.00	25.00	15.90	96.14	<50	<0.50	<0.50	<0.50	<0.50	0.60	1.12	7.2
MW-6	6/21/2000	--		105.13	12.00	27.00	13.91	91.22	--	--	--	--	--	--	--	--
	9/20/2000	--		105.13	12.00	27.00	14.03	91.10	--	--	--	--	--	--	--	--
	12/22/2000	--		105.13	12.00	27.00	--	--	--	--	--	--	--	--	--	--
	3/26/2001	--		105.13	12.00	27.00	12.59	92.54	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	5/30/2001	--		105.13	12.00	27.00	13.40	91.73	--	--	--	--	--	--	--	--
	9/23/2001	--		105.13	12.00	27.00	13.49	91.64	--	--	--	--	--	--	--	--
	12/28/2001	--		105.13	12.00	27.00	12.07	93.06	--	--	--	--	--	--	--	--
	3/21/2002	--		105.13	12.00	27.00	11.79	93.34	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	4/17/2002	--		105.13	12.00	27.00	12.45	92.68	--	--	--	--	--	--	--	--
	8/19/2002	--		105.13	12.00	27.00	13.96	91.17	<50	<0.5	<0.5	<0.5	<0.5	<2.5	2.8	6.9
	11/27/2002	--		105.13	12.00	27.00	14.07	91.06	--	--	--	--	--	--	--	--
	2/5/2003	--	d	105.13	12.00	27.00	13.55	91.58	--	--	--	--	--	--	--	--
	5/13/2003	--		105.13	12.00	27.00	13.57	91.56	--	--	--	--	--	--	--	--
	7/31/2003	--		105.13	12.00	27.00	14.18	90.95	67	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	6.5
	12/17/2003	--		105.13	12.00	27.00	14.12	91.01	--	--	--	--	--	--	--	--
	02/13/2004	--	e	110.66	12.00	27.00	13.51	97.15	--	--	--	--	--	--	--	--
05/05/2004	--		110.66	12.00	27.00	13.95	96.71	--	--	--	--	--	--	--	--	
08/25/2004	P		110.66	12.00	27.00	14.42	96.24	55	<0.50	0.98	<0.50	1.5	<0.50	3.6	6.7	
11/29/2004	--		110.66	12.00	27.00	14.20	96.46	--	--	--	--	--	--	--	--	
01/31/2005	--		110.66	12.00	27.00	13.33	97.33	--	--	--	--	--	--	--	--	
05/09/2005	--		110.66	12.00	27.00	13.45	97.21	--	--	--	--	--	--	--	--	
MW-7	6/21/2000	--		107.05	12.00	27.00	14.57	92.48	--	--	--	--	--	--	--	--
	9/20/2000	--		107.05	12.00	27.00	14.58	92.47	--	--	--	--	--	--	--	--
	12/22/2000	--		107.05	12.00	27.00	13.21	93.84	--	--	--	--	--	--	--	--
	3/26/2001	--		107.05	12.00	27.00	13.18	93.87	71.4	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	5/30/2001	--		107.05	12.00	27.00	13.80	93.25	--	--	--	--	--	--	--	--
	9/23/2001	--		107.05	12.00	27.00	14.27	92.78	--	--	--	--	--	--	--	--

Table 1

## Groundwater Elevation and Analytical Data

ARCO Service Station #6148  
5131 Shattuck Ave., 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	12/28/2001	--		107.05	12.00	27.00	12.24	94.81	--	--	--	--	--	--	--	--
	3/21/2002	--		107.05	12.00	27.00	12.16	94.89	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--
	4/17/2002	--		107.05	12.00	27.00	13.08	93.97	--	--	--	--	--	--	--	--
	8/19/2002	--		107.05	12.00	27.00	14.73	92.32	<50	<0.5	<0.5	<0.5	<0.5	<2.5	1.4	6.7
	11/27/2002	--		107.05	12.00	27.00	14.76	92.29	--	--	--	--	--	--	--	--
	2/5/2003	--	d	107.05	12.00	27.00	14.07	92.98	--	--	--	--	--	--	--	--
	5/13/2003	--		107.05	12.00	27.00	14.00	93.05	--	--	--	--	--	--	--	--
	7/31/2003	--		107.05	12.00	27.00	14.00	92.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.6	6.4
	12/17/2003	--		107.05	12.00	27.00	14.10	92.95	--	--	--	--	--	--	--	--
	02/13/2004	--	e	112.59	12.00	27.00	13.91	98.68	--	--	--	--	--	--	--	--
	05/05/2004	--		112.59	12.00	27.00	14.60	97.99	--	--	--	--	--	--	--	--
	08/25/2004	P		112.59	12.00	27.00	15.25	97.34	<50	<0.50	0.53	<0.50	0.91	<0.50	1.2	6.4
	11/29/2004	--		112.59	12.00	27.00	15.00	97.59	--	--	--	--	--	--	--	--
	01/31/2005	--		112.59	12.00	27.00	13.69	98.90	--	--	--	--	--	--	--	--
	05/09/2005	--		112.59	12.00	27.00	13.79	98.80	--	--	--	--	--	--	--	--

**Table 1**

**Groundwater Elevation and Analytical Data**  
ARCO Service Station #6148  
5131 Shattuck Ave., Oakland, CA

**SYMBOLS AND ABBREVIATIONS:**

-- = Not analyzed/applicable/measured/available  
< = Not detected at or above specified laboratory reporting limit  
DO = Dissolved Oxygen  
DTW = Depth to water in feet below ground surface  
ft bgs = feet below ground surface  
GWE = Groundwater measured in feet above mean sea level  
GRO = Gasoline Range Organics  
mg/L = Milligrams per liter or parts per million (ppm)  
MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted (Prior to 2/5/03)  
NP = No Purge  
P = Purge  
TOC = Top of casing measured in feet above mean sea level  
TPH-g = Total Petroleum Hydrocarbons as Gasoline  
ug/L = Micrograms per liter

**FOOTNOTES:**

a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel (TPHg/GRO).  
b = Chromatogram Pattern: Gasoline C6-C10 (TPHg/GRO).  
c = Well MW-5 not sampled due to ORC sock wedged in well.  
d = TPH-g, BTEX, and MTBE analyzed by EPA method 8260B beginning on 1st quarter sampling event (2/5/03).  
e = Wells surveyed to NAVD'88 datum on January 29, 2004.  
f = During this monitoring event, the oxygen releasing compounds (ORC) were replaced for this well.

**NOTES:**

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g has been changed to GRO. The resulting data may be impacted by the potential inclusion of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported. Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

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

The data within this table collected prior to August 2002 was provided to URS by RM and their previous consultants. URS has not verified the accuracy of this information.

The top and bottom of screen depths for wells MW-1, MW-2 and MW-3 were obtained from EMCON O&M sampling sheets not from well logs.

Table 2

**Fuel Additives Analytical Data**  
**ARCO Service Station #6148**  
**5131 Shattuck Ave., 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	2/5/2003	<40	<20	1.1	<0.50	<0.50	<0.50	--	--	
	5/13/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
	7/31/2003	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/17/2003	<100	<20	2.5	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/13/2004	<100	<20	1.9	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/05/2004	<100	<20	0.60	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
	11/29/2004	<100	<20	0.62	<0.50	<0.50	<0.50	<0.50	<0.50	
	01/31/2005	<100	<20	0.59	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/09/2005	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-2	2/5/2003	<40	<20	4.3	<0.50	<0.50	<0.50	--	--	
	5/13/2003	<100	<20	2.8	<0.50	<0.50	<0.50	--	--	
	7/31/2003	<100	<20	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/17/2003	<100	<20	2.4	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/13/2004	<100	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/05/2004	<100	<20	0.99	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	0.63	<0.50	<0.50	<0.50	<0.50	<0.50	
	11/29/2004	<100	<20	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
	01/31/2005	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/09/2005	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-3	2/5/2003	<40	<20	2.4	<0.50	<0.50	<0.50	--	--	
	5/13/2003	<100	<20	2.2	<0.50	<0.50	<0.50	--	--	
	7/31/2003	<100	<20	2.1	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/17/2003	<100	<20	4.8	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/13/2004	<100	<20	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/05/2004	<100	<20	1.3	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	3.3	<0.50	<0.50	<0.50	<0.50	<0.50	
	11/29/2004	<100	<20	1.4	<0.50	<0.50	<0.50	<0.50	<0.50	
	01/31/2005	<100	<20	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/09/2005	<100	<20	0.80	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-4	7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/13/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

Table 2

**Fuel Additives Analytical Data**  
 ARCO Service Station #6148  
 5131 Shattuck Ave., 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-4	01/31/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-5	5/13/2003	<100	<20	15	<0.50	<0.50	1.1	--	--	
	7/31/2003	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
	12/17/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
	02/13/2004	<100	<20	2.6	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/05/2004	<100	<20	1.2	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	1.1	<0.50	<0.50	<0.50	<0.50	<0.50	
	11/29/2004	<100	<20	0.61	<0.50	<0.50	<0.50	<0.50	<0.50	
	01/31/2005	<100	<20	0.86	<0.50	<0.50	<0.50	<0.50	<0.50	
	05/09/2005	<100	<20	0.60	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6	7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-7	7/31/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
	08/25/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

## Table 2

### Fuel Additives Analytical Data ARCO Service Station #6148 5131 Shattuck Ave., Oakland, CA

#### SYMBOLS AND ABBREVIATIONS:

< = Not detected at or above the specified laboratory reporting limit

-- = Not available/analyzed/applicable

DIPE = Di-isopropyl ether

EDB = 1,2-Dibromoethane

ETBE = Ethyl tert butyl ether

MTBE = Methyl tert-butyl ether

1,2-DCA = 1,2-Dichloroethane

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

ug/L = micrograms per liter

#### FOOTNOTES:

a = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose.

**Table 3**

**Groundwater Gradient Data**  
ARCO Service Station #6148  
5131 Shattuck Ave., Oakland, CA

<b>Date Sampled</b>	<b>Approximate Flow Direction</b>	<b>Approximate Hydraulic Gradient</b>
6/21/2000	South-Southwest	0.016
9/20/2000	South-Southwest	0.017
12/22/2000	South-Southwest	0.022
3/26/2001	South-Southwest	0.02
5/30/2001	South-Southwest	0.02
9/23/2001	South-Southwest	0.019
12/28/2001	Southwest	0.019
3/21/2002	Southwest	0.019
4/17/2002	Southwest	0.017
8/19/2002	Southwest	0.016
11/27/2002	Southwest	0.015
2/5/2003	Southwest	0.017
5/13/2003	Southwest	0.013
7/31/2003	Southwest	0.014
2/13/2004	Southwest	0.016
5/5/2004	Southwest	0.016
8/25/2004	Southwest	0.013
11/29/2004	Southwest	0.013
1/31/2005	Southwest	0.02
5/9/2005	Southwest	0.02

Source: 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 # 050509-wc.2 Date 5/9/05 Client URS@Arco648

Site 5131 Shattuck Ave., 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 TOP	NP@
MW-1	4					16.77	25.50	↓	11.5'
MW-2	4					16.52	25.50		12'
MW-3	4					16.64	21.00		10'
MW-4	4					15.25	26.09		
MW-5	4					15.90	22.09		12'
MW-6	4					13.45	26.41		
MW-7	4					13.79	26.94		↓

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050509-WC-2</u>	Station # <u>6148</u>
Sampler: <u>WC</u>	Date: <u>5/9/05</u>
Well I.D.: <u>MW-1</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>25.56</u>	Depth to Water: <u>16.77</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>OC</u> Grade	D.O. Meter (if req'd): <u>St.</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: <u>Bailer</u> Disposable Bailer Positive Air Displacement Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> Disposable Bailer Extraction Port Other: _____
--	--

Top of Screen: 11.5' 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-purge	Gals.
1 Case Volume (Gals.)	Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
<u>1428</u>	<u>72.2</u>	<u>6.7</u>	<u>464</u>	—	<u>clear</u>

Did well dewater? Yes <u>(No)</u>	Gallons actually evacuated: <u>—</u>	
Sampling Time: <u>1430</u>	Sampling Date: <u>5/9/05</u>	
Sample I.D.: <u>MW-1</u>	Laboratory: Pace <u>Seo</u> Joia Other _____	
Analyzed for: GRO BTEX MTBE DRO Other: <u>see coc</u>		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>1.03</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <b>050509-WC-2</b>	Station # <b>6148</b>
Sampler: <b>WC</b>	Date: <b>5/9/05</b>
Well I.D.: <b>MW-2</b>	Well Diameter: 2 3 <input checked="" type="checkbox"/> 6 8 <input type="checkbox"/>
Total Well Depth: <b>25.50</b>	Depth to Water: <b>16.52</b>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Grade	D.O. Meter (if req'd): <input checked="" type="checkbox"/> YSI <input type="checkbox"/> 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: 12' 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 x purge** = \_\_\_\_\_ Gals.  
 1 Case Volume (Gals.)      Specified Volumes      Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
1436	69.0	6.6	429	-	clear

Did well dewater? Yes  No  Gallons actually evacuated: \_\_\_\_\_

Sampling Time: **1438** Sampling Date: **5/9/05**

Sample I.D.: **MW-2** Laboratory: Pace  Sequoia  Other \_\_\_\_\_

Analyzed for: GRO BTEX MTBE DRO Other:	D.O. (if req'd):	Pre-purge:	$\text{mg/L}$	Post-purge:	<b>0.70</b> $\text{mg/L}$
	O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050509-WC-2</u>	Station # <u>6148</u>
Sampler: <u>WC</u>	Date: <u>5/9/05</u>
Well I.D.: <u>MW-3</u>	Well Diameter: 2 3 <input checked="" type="radio"/> 6 8 _____
Total Well Depth: <u>21.00</u>	Depth to Water: <u>16.64</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="radio"/> VC Grade	D.O. Meter (if req'd): <input checked="" type="radio"/> HI 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       Disposable Bailer  
 Positive Air Displacement       Extraction Port  
 Electric Submersible  
 Extraction Pump  
 Other: \_\_\_\_\_

Top of Screen: 10'      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>no-purge</u>	Gals.
1 Case Volume (Gals.)	Specified Volumes
	Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
1448	67.1	6.7	587	—	clear

Did well dewater? Yes  No

Gallons actually evacuated: —

Sampling Time: 1450      Sampling Date: 5/9/05

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

Analyzed for: GRO BTEX MTBE DRO      Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.83 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>050509-WC-2</u>	Station # <u>6148</u>
Sampler: <u>WC</u>	Date: <u>5/19/05</u>
Well I.D.: <u>MW-5</u>	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: <u>22.09</u>	Depth to Water: <u>15.90</u>
Depth to Free Product:	Thickness of Free Product (feet):
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: 12' 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>No</u> 1 Case Volume (Gals.)	<u>purge</u> Specified Volumes	Gals. Calculated Volume
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Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
<u>1358</u>	<u>69.8</u>	<u>7.2</u>	<u>482</u>	—	<u>Clear w/ orange sediment</u>

Did well dewater? Yes   No Gallons actually evacuated: —

Sampling Time: 1400 Sampling Date: 5/19/05

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

Analyzed for: GRO BTEX MTBE DRO Other: See COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	<u>1.12</u> mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

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



**Sequoia  
Analytical**

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

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25 May, 2005

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

RE: ARCO #6148, Oakland, CA  
Work Order: MOE0428

Enclosed are the results of analyses for samples received by the laboratory on 05/10/05 15:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tim Costello For Lisa Race  
Senior Project Manager

CA ELAP Certificate #1210

URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #6148, Oakland, CA Project Number: G0C2J-0004 Project Manager: Scott Robinson	MOE0428 Reported: 05/25/05 16:24
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**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MOE0428-01	Water	05/09/05 14:30	05/10/05 15:22
MW-2	MOE0428-02	Water	05/09/05 14:38	05/10/05 15:22
MW-3	MOE0428-03	Water	05/09/05 14:50	05/10/05 15:22
MW-5	MOE0428-04	Water	05/09/05 14:00	05/10/05 15:22
TB-6148-050905	MOE0428-05	Water	05/09/05 00:00	05/10/05 15:22

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.

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

 Project: ARCO #6148, Oakland, CA  
 Project Number: G0C2J-0004  
 Project Manager: Scott Robinson

 MOE0428  
 Reported:  
 05/25/05 16:24

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (MOE0428-01) Water</b> Sampled: 05/09/05 14:30 Received: 05/10/05 15:22									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5E17003	05/17/05	05/17/05	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	0.55	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>		101 %	60-135	"	"	"	"	"	
<b>MW-2 (MOE0428-02) Water</b> Sampled: 05/09/05 14:38 Received: 05/10/05 15:22									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5E17003	05/17/05	05/17/05	EPA 8260B	
Benzene	0.68	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	1.8	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>		90 %	60-135	"	"	"	"	"	



URS Corporation [Arco] 1333 Broadway, Suite 800 Oakland CA, 94612	Project: ARCO #6148, Oakland, CA Project Number: G0C2J-0004 Project Manager: Scott Robinson	MOE0428 Reported: 05/25/05 16:24
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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>MW-3 (MOE0428-03) Water</b> <b>Sampled: 05/09/05 14:50</b> <b>Received: 05/10/05 15:22</b>									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5E17003	05/17/05	05/17/05	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	<b>0.80</b>	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	<b>50</b>	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<b>98 %</b>	<b>60-135</b>		"	"	"	"	
<b>MW-5 (MOE0428-04) Water</b> <b>Sampled: 05/09/05 14:00</b> <b>Received: 05/10/05 15:22</b>									
tert-Amyl methyl ether	ND	0.50	ug/l	1	5E17003	05/17/05	05/17/05	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	<b>0.60</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>		<b>88 %</b>	<b>60-135</b>		"	"	"	"	



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

Project: ARCO #6148, Oakland, CA  
Project Number: G0C2J-0004  
Project Manager: Scott Robinson

MOE0428  
Reported:  
05/25/05 16:24

**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 5E17003 - EPA 5030B P/T / EPA 8260B**

**Blank (5E17003-BLK1)**

Prepared & Analyzed: 05/17/05

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	5.02		"	5.00		100	60-135			

**Laboratory Control Sample (5E17003-BS1)**

Prepared & Analyzed: 05/17/05

tert-Amyl methyl ether	9.65	0.50	ug/l	10.0		96	80-115			
Benzene	8.66	0.50	"	10.0		87	65-115			
tert-Butyl alcohol	49.2	20	"	50.0		98	75-150			
Di-isopropyl ether	8.93	0.50	"	10.0		89	75-125			
1,2-Dibromoethane (EDB)	9.38	0.50	"	10.0		94	85-120			
1,2-Dichloroethane	9.91	0.50	"	10.0		99	85-130			
Ethanol	143	100	"	200		72	70-135			
Ethyl tert-butyl ether	9.67	0.50	"	10.0		97	75-130			
Ethylbenzene	9.02	0.50	"	10.0		90	75-135			
Methyl tert-butyl ether	9.94	0.50	"	10.0		99	65-125			
Toluene	9.38	0.50	"	10.0		94	85-120			
Xylenes (total)	27.2	0.50	"	30.0		91	85-125			
Surrogate: 1,2-Dichloroethane-d4	4.87		"	5.00		97	60-135			



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

Project: ARCO #6148, Oakland, CA  
Project Number: G0C2J-0004  
Project Manager: Scott Robinson

MOE0428  
Reported:  
05/25/05 16:24

**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 SE17003 - EPA 5030B P/T / EPA 8260B**

Laboratory Control Sample (SE17003-BS2)				Prepared & Analyzed: 05/17/05						
Benzene	4.93	0.50	ug/l	6.08		81	65-115			
Ethylbenzene	8.11	0.50	"	7.84		103	75-135			
Methyl tert-butyl ether	8.41	0.50	"	9.60		88	65-125			
Toluene	36.8	0.50	"	32.9		112	85-120			
Xylenes (total)	41.9	0.50	"	38.5		109	85-125			
Gasoline Range Organics (C4-C12)	420	50	"	440		95	70-124			
Surrogate: 1,2-Dichloroethane-d4	4.35		"	5.00		87	60-135			

Laboratory Control Sample Dup (SE17003-BSD1)				Prepared & Analyzed: 05/17/05						
tert-Amyl methyl ether	9.18	0.50	ug/l	10.0		92	80-115	5	15	
Benzene	9.22	0.50	"	10.0		92	65-115	6	20	
tert-Butyl alcohol	49.7	20	"	50.0		99	75-150	1	25	
Di-isopropyl ether	9.48	0.50	"	10.0		95	75-125	6	15	
1,2-Dibromoethane (EDB)	9.35	0.50	"	10.0		94	85-120	0.3	15	
1,2-Dichloroethane	9.56	0.50	"	10.0		96	85-130	4	20	
Ethanol	137	100	"	200		68	70-135	4	35	HM
Ethyl tert-butyl ether	9.28	0.50	"	10.0		93	75-130	4	25	
Ethylbenzene	9.85	0.50	"	10.0		98	75-135	9	15	
Methyl tert-butyl ether	9.66	0.50	"	10.0		97	65-125	3	20	
Toluene	10.2	0.50	"	10.0		102	85-120	8	20	
Xylenes (total)	29.5	0.50	"	30.0		98	85-125	8	20	
Surrogate: 1,2-Dichloroethane-d4	4.41		"	5.00		88	60-135			

Matrix Spike (SE17003-MS1)				Source: MOE0430-01 Prepared & Analyzed: 05/17/05						
Benzene	637	50	ug/l	608	140	82	65-115			
Ethylbenzene	860	50	"	784	62	102	75-135			
Methyl tert-butyl ether	2610	50	"	960	1800	84	65-125			
Toluene	3720	50	"	3290	16	113	85-120			
Xylenes (total)	4170	50	"	3850	ND	108	85-125			
Gasoline Range Organics (C4-C12)	43900	5000	"	44000	3100	93	70-124			
Surrogate: 1,2-Dichloroethane-d4	4.56		"	5.00		91	60-135			

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

 Project: ARCO #6148, Oakland, CA  
 Project Number: G0C2J-0004  
 Project Manager: Scott Robinson

 MOE0428  
 Reported:  
 05/25/05 16:24

**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 5E17003 - EPA 5030B P/T / EPA 8260B**

<b>Matrix Spike Dup (5E17003-MSD1)</b>	<b>Source: MOE0430-01</b>			<b>Prepared &amp; Analyzed: 05/17/05</b>						
Benzene	602	50	ug/l	608	140	76	65-115	6	20	
Ethylbenzene	819	50	"	784	62	97	75-135	5	15	
Methyl tert-butyl ether	2620	50	"	960	1800	85	65-125	0.4	20	
Toluene	3500	50	"	3290	16	106	85-120	6	20	
Xylenes (total)	3940	50	"	3850	ND	102	85-125	6	20	
Gasoline Range Organics (C4-C12)	41500	5000	"	44000	3100	87	70-124	6	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.25</i>		<i>"</i>	<i>5.00</i>		<i>85</i>	<i>60-135</i>			



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

Project: ARCO #6148, Oakland, CA  
Project Number: G0C2J-0004  
Project Manager: Scott Robinson

MOE0428  
Reported:  
05/25/05 16:24

**Notes and Definitions**

HM Analyte recovery below established limit  
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 OMR sampling  
 BP BU/AR Region/Enfos Segment: BP > Americas > West Coast > Retail > WCBU > CA > Central > 6148 > 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: 1830 Temp: 64°F  
 Off-site Time: 1500 Temp: 66°F  
 Sky Conditions: Dark Patchy Clouds  
 Meteorological Events: Showers  
 Wind Speed: 5-15 mph Direction: W

Lab Name: <u>Sequoia</u>	BP/AR Facility No.: <u>6148</u>	Consultant/Contractor: <u>URS</u>
Address: <u>885 Jarvis Drive</u> <u>Morgan Hill, CA 95037</u>	BP/AR Facility Address: <u>5131 Shattuck Ave., Oakland, CA 94609</u>	Address: <u>1333 Broadway, Suite 800</u> <u>Oakland, CA 94612</u>
Lab PM: <u>Lisa Race</u>	Site Lat/Long: <u>37.837591 / -122.264</u>	Consultant/Contractor Project No.: <u>38487040</u>
Tele/Fax: <u>408.782.8156 / 408.782.6308</u>	California Global ID No.: <u>T0600100103</u>	Consultant/Contractor PM: <u>Scott Robinson</u>
BP/AR PM Contact: <u>Paul Supple</u>	Enfos Project No.: <u>G0C2I-0004</u>	Tele/Fax: <u>510.874.3280 / 510.874.3268</u>
Address: <u>P.O. Box 6549</u> <u>Moraga, CA 94570</u>	Provision or RCOP: <u>Provision</u>	Report Type & QC Level: <u>Level 1 with BDF</u>
Tele/Fax: <u>925.299.8891 / 925.299.8872</u>	Phase/WBS: <u>04 - Mon/Remed by Natural Attenuation</u>	E-mail BDD To: <u>Rachel.Lindvall@urscorp.com</u>
	Sub Phase/Task: <u>03 - Analytical</u>	Invoice to: <u>Atlantic Richfield Company</u>
	Cost Element: <u>05 - Subcontracted Costs</u>	

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)	MTBE, TAME, ETBE (8260)	DPE, TBA (8260)	EDB, 1,2-DCA (8260)	Stanol (8260)		
1	MW-1	1430	5/16/05		X		01	3												
2	MW-2	1438	↓		↓		02	1												
3	MW-3	1450	↓		↓		03	1												
4	MW-5	1400	↓		↓		04	1												
5	TB-6148-050905	—	↓		↓		05	2												on hold
6																				
7																				
8																				
9																				
10																				

MDC 6428

on hold

Sampler's Name: <u>Will Crow</u>	Relinquished By / Affiliation: <u>Will Crow</u>	Date: <u>5/16/05</u>	Time: <u>1403</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>5/16/05</u>	Time: <u>1405</u>
Sampler's Company: <u>Blaine Tech</u>		Date: <u>5/16/05</u>	Time: <u>1436</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>5/16/05</u>	Time: <u>1522</u>
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						
Special Instructions:						

Custody Seals In Place Yes  No  Temp Blank Yes  No  Cooler Temperature on Receipt  F/C  Trip Blank Yes  No   
 Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor  
 BP COC Rev. 4 10/01/04

## SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: ARL # 6148  
 REC. BY (PRINT) JAY  
 WORKORDER: MDE 6428

DATE REC'D AT LAB: 5/10/05  
 TIME REC'D AT LAB: 1522  
 DATE LOGGED IN: 5-11-05

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

(For clients requiring preservation checks at receipt, document here ↓)

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) <u>Present</u> / Absent <del>Intact</del> / Broken*	<u>01</u>		<u>MW-1</u>	<u>(3) UVA</u>	<u>HCl</u>	<u>-</u>	<u>W</u>	<u>5/9/05</u>	
2. Chain-of-Custody <u>Present</u> / Absent*	<u>02</u>		<u>MW-2</u>	↓	↓	↓	↓	↓	
3. Traffic Reports or Packing List: Present / <u>Absent</u>	<u>03</u>		<u>MW-3</u>	↓	↓	↓	↓	↓	
4. Airbill: Airbill / Sticker Present / <u>Absent</u>	<u>04</u>		<u>MW-5</u>	↓	↓	↓	↓	↓	
5. Airbill #:	<u>05</u>		<u>FB-61484509205</u>	<u>(2) UVA</u>	↓	↓	↓	↓	
6. Sample Labels: <u>Present</u> / Absent									
7. Sample IDs: <u>Listed</u> / Not Listed on Chain-of-Custody									
8. Sample Condition: <del>Intact</del> / Broken* / Leaking*									
9. Does information on chain-of-custody, traffic reports and sample labels agree? <u>Yes</u> / No*									
10. Sample received within hold time? <u>Yes</u> / No*									
11. Adequate sample volume received? <u>Yes</u> / No*									
12. Proper Preservatives used? <u>Yes</u> / No*									
13. Trip Blank / Temp Blank Received? (circle which, if yes) <u>Yes</u> / No*									
14. Temp Rec. at Lab: <u>5.3</u> Is temp 4 +/-2°C? <u>Yes</u> / No**									

JCA  
5/10/05

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

**ATTACHMENT C**

**HISTORICAL GROUNDWATER DATA**

**Table 1**  
**Historical Groundwater Elevation and Analytical Data**  
**Petroleum Hydrocarbons and Their Constituents**  
**1995 - Present\*\***

**ARCO Service Station 6148**  
**5131 Shattuck Avenue, Oakland, California**

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPH					Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)	
						Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)			MTBE (µg/L)
MW-1	03-20-95	108.03	15.75	ND	92.28	830	140	5	41	110	--	--	
MW-1	06-06-95	108.03	17.68	ND	90.35	210	30	<0.5	7.3	16	--	--	
MW-1	08-24-95	107.80	17.45	ND	90.35	Not sampled: well was inaccessible due to construction							
MW-1	11-16-95	107.80	17.64	ND	90.16	<50	5.6	<0.5	1.4	1.2	55	--	
MW-1	02-27-96	107.80	15.21	ND	92.59	1,400	240	88	44	110	200	--	
MW-1	05-15-96	107.80	17.53	ND	90.27	Not sampled: well sampled semi-annually, during the first and third quarter							
MW-1	08-14-96	107.80	17.15	ND	90.65	98	18	<0.5	1.9	1	45	--	
MW-1	11-11-96	107.80	17.78	ND	90.02	Not sampled: well sampled semi-annually, during the first and third quarter							
MW-1	03-25-97	107.80	17.68	ND	90.12	<50	<0.5	<0.5	<0.5	<0.5	<3	--	
MW-1	05-15-97	107.80	17.91	ND	89.89	Not sampled: well sampled semi-annually, during the first and third quarter							
MW-1	10-26-97	107.80	18.85	ND	88.95	<50	<0.5	<0.5	<0.5	<0.5	<3	--	
MW-1	11-10-97	107.80	18.10	ND	89.70	<50	<0.5	<0.5	<0.5	<0.5	4	--	
MW-1	02-13-98	107.80	13.15	ND	94.65	<100	8.4	<1	<1	14	130	--	
MW-1	05-12-98	107.80	12.30	ND	95.50	<50	<0.5	<0.5	<0.5	<0.5	<3	--	
MW-1	07-28-98	107.80	17.04	ND	90.75	<50	<0.5	<0.5	<0.5	<0.5	<3	--	
MW-1	10-28-98	107.80	18.10	ND	89.70	<50	<0.5	<0.5	<0.5	<0.5	<3	--	
MW-1	02-12-99	107.80	15.84	ND	91.95	72	<0.5	<0.5	<0.5	<0.5	23	--	
MW-1	06-03-99	107.80	17.62	ND	90.18	890	33	1.5	12	2.8	250	--	1.44 NP
MW-1	10-26-99	107.80	16.92	ND	90.88	<50	<0.5	<0.5	<0.5	<1	9	--	9.58 NP
MW-2	03-20-95	107.43	15.50	ND#	91.93	Not sampled: floating product entered well during purging							
MW-2	06-06-95	107.43	17.43	ND	90.00	1,200	60	21	35	140	--	--	
MW-2	08-24-95	107.28	17.22	ND	90.05	Not sampled: well was inaccessible due to construction							
MW-2	11-16-95	107.28	17.36	ND	89.92	360	45	1.3	7.1	7.5	210	--	
MW-2	02-27-96	107.28	14.82	ND	92.45	8,900	1,400	980	150	550	940	--	
MW-2	05-15-96	107.28	17.40	ND	89.83	480	82	48	8	48	87	--	
MW-2	08-14-96	107.28	17.00	ND	90.23	130	22	4	2	9	120	--	

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**Petroleum Hydrocarbons and Their Constituents**  
**1995 - Present\*\***

**ARCO Service Station 6148**  
**5131 Shattuck Avenue, Oakland, California**

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TRPH (mg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-2	11-11-96	107.28	17.55	ND	89.73	1,200	150	120	21	160	110	--		
MW-2	03-25-97	107.28	17.32	ND	89.96	670	23	58	13	120	28	--		
MW-2	05-15-97	107.28	17.61	ND	89.67	<50	<0.5	<0.5	<0.5	<0.5	23	--		
MW-2	10-26-97	107.28	18.43	ND	88.85	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-2	11-10-97	107.28	17.84	ND	89.44	<100	<1	<1	<1	1	74	--		
MW-2	02-13-98	107.28	12.75	ND	94.55	220	9.5	3.9	3.7	48	84	--		
MW-2	05-12-98	107.28	17.02	ND	90.26	3,900	210	280	86	910	35	--		
MW-2	07-28-98	107.28	17.30	ND	89.98	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-2	10-28-98	107.28	17.80	ND	89.48	170	17	<0.5	1.7	5.0	24	--		
MW-2	02-12-99	107.28	15.55	ND	91.73	12,000	620	95	490	2,200	270	--		
MW-2	06-03-99	107.28	17.31	ND	89.97	<50	<0.5	<0.5	<0.5	1.1	8	--	2.53	NP
MW-2	10-26-99	107.28	16.58	ND	90.70	<50	1.0	<0.5	<0.5	3	<3	--	8.17	NP
MW-3	03-20-95	107.77	15.60	ND	92.17	29,000	880	190	760	2,000	--	16		
MW-3	06-06-95	107.77	17.54	ND	90.23	22,000	450	54	380	1,300	--	7.1		
MW-3	08-24-95	107.61	17.42	ND	90.19	Not sampled: well was inaccessible due to construction								
MW-3	11-16-95	107.61	17.58	ND	90.03	13,000	210	<20	320	1,000	790	8.3		
MW-3	02-27-96	107.61	15.03	ND	92.58	9,700	94	15	290	720	430	10		
MW-3	05-15-96	107.61	17.35	ND	90.26	5,600	66	12	37	67	230	--		
MW-3	08-14-96	107.61	17.10	ND	90.51	830	17	<1*	8	7	110	--		
MW-3	11-11-96	107.61	17.73	ND	89.88	500	28	3	12	13	150	--		
MW-3	03-25-97	107.61	17.99	ND	89.62	<50	<0.5	<0.5	<0.5	<0.5	94	--		
MW-3	05-15-97	107.61	17.84	ND	89.77	<50	<0.5	<0.5	<0.5	<0.5	65	--		
MW-3	10-26-97	107.61	18.50	ND	89.11	220	4	<1	<1	<1	160	--		
MW-3	11-10-97	107.61	18.00	ND	89.61	350	8	<2	3	3	230	--		
MW-3	02-13-98	107.61	13.00	ND	94.61	<50	1.3	<0.5	<0.5	1	21	--		
MW-3	05-12-98	107.61	17.20	ND	90.41	120	<0.5	<0.5	<0.5	<0.9	71	--		

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**1995 - Present\*\***

**ARCO Service Station 6148**  
**5131 Shattuck Avenue, Oakland, California**

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPII					Dissolved Oxygen (mg/L)	Purged/ Not Purged (F/NP)		
						Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)			MTBE (µg/L)	TRPH (mg/L)
MW-3	07-28-98	107.61	17.46	ND	90.15	<50	1.4	<0.5	<0.5	<0.5	52	--		
MW-3	10-28-98	107.61	18.00	ND	89.61	170	<0.5	<0.5	<0.5	0.7	35	--		
MW-3	02-12-99	107.61	15.76	ND	91.85	120	2.0	0.6	<0.5	1.3	37	--		
MW-3	06-03-99	107.61	Well inaccessible: Surveyed well VW-1 as an alternative											
MW-3	10-26-99	107.61	16.69	ND	90.92	630	14	0.7	13	2	38	--	1.24 NP	
MW-4	03-20-95	106.58	13.85	ND	92.73	88	1	<0.5	<0.5	0.7	--	--		
MW-4	06-06-95	106.58	15.70	ND	90.88	<50	<0.5	<0.5	<0.5	<0.5	--	--		
MW-4	08-24-95	106.71	15.86	ND	90.85	Not sampled: well was inaccessible due to construction								
MW-4	11-16-95	106.71	16.10	ND	90.61	<50	<0.5	<0.5	<0.5	<0.5	6	--		
MW-4	02-27-96	106.71	13.72	ND	92.99	<50	<0.5	<0.5	<0.5	<0.5	10	--		
MW-4	05-15-96	106.71	15.90	ND	90.81	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	08-14-96	106.71	15.68	ND	91.03	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-4	11-11-96	106.71	16.19	ND	90.52	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	03-25-97	106.71	16.10	ND	90.61	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-4	05-15-97	106.71	16.38	ND	90.33	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	10-26-97	106.71	17.78	ND	88.93	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-4	11-10-97	106.71	16.43	ND	90.28	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	02-13-98	106.71	13.05	ND	93.66	<50	1.3	0.7	<0.5	2.3	19	--		
MW-4	05-12-98	106.71	15.69	ND	91.02	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	07-28-98	106.71	15.93	ND	90.78	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-4	10-28-98	106.71	16.40	ND	90.31	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	02-12-99	106.71	14.13	ND	92.58	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-4	06-03-99	106.71	16.00	ND	90.71	Not sampled: well sampled semi-annually, during the first and third quarter								
MW-4	10-26-99	106.71	15.76	ND	90.95	Not sampled: well sampled semi-annually, during the first and third qtr.						1.72		
MW-5	03-20-95	106.68	14.92	ND	91.76	21,000	6,900	450	800	1,300	--	--		

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**Petroleum Hydrocarbons and Their Constituents**  
**1995 - Present\*\***

ARCO Service Station 6148  
 5131 Shattuck Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPH			Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TRPH (mg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
						Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)						
MW-5	06-06-95	106.68	16.61	ND	90.07	6,500	1,700	<20	120	69	--	--		
MW-5	08-24-95	106.60	16.47	ND	90.13	Not sampled: well was inaccessible due to construction								
MW-5	11-16-95	106.60	16.69	ND	89.91	1,800	470	<5	17	5	1,000	--		
MW-5	02-27-96	106.60	14.35	ND	92.25	10,000	1,000	71	690	1,000	440/450*	--		
MW-5	05-15-96	106.60	16.58	ND	90.02	3,400	350	6	72	20	220	--		
MW-5	08-14-96	106.60	17.26	ND	89.34	2,100	130	2.7	47	4.7	220	--		
MW-5	11-11-96	106.60	16.62	ND	89.98	1,200	31	1	8	2	130	--		
MW-5	03-25-97	106.60	16.38	ND	90.22	<50	<0.5	<0.5	<0.5	<0.5	5	--		
MW-5	05-15-97	106.60	16.54	ND	90.06	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-5	10-26-97	106.60	17.60	ND	89.00	<50	<0.5	<0.5	<0.5	<0.5	7	--		
MW-5	11-10-97	106.60	16.78	ND	89.82	<50	<0.5	<0.5	<0.5	<0.5	24	--		
MW-5	02-13-98	106.60	12.21	ND	94.39	11,200	51	<10	<10	<10	2,000	--		
MW-5	05-12-98	106.60	NR	ND	NR	Not sampled: well inaccessible								
MW-5	07-28-98	106.60	16.47	ND	90.13	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-5	10-28-98	106.60	16.80	ND	89.80	<50	0.8	<0.5	<0.5	<0.5	99	--		
MW-5	02-12-99	106.60	14.88	ND	91.72	<1,000	<10	<10	<10	<10	1,100	--		
MW-5	06-03-99	106.60	16.65	ND	89.95	290	10	<0.5	<0.5	0.6	200	--	2.45	NP
MW-5	10-26-99	106.60	16.10	ND	90.50	<50	<0.5	<0.5	<0.5	<1	11	--	NM	NP
MW-6	03-20-95	105.16	12.13	ND	93.03	<50	<0.5	<0.5	<0.5	<0.5	--	--		
MW-6	06-06-95	105.16	13.95	ND	91.21	<50	<0.5	<0.5	<0.5	<0.5	--	--		
MW-6	08-24-95	105.13	14.07	ND	91.06	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-6	11-16-95	105.13	14.34	ND	90.79	<60	<0.5	<0.5	<0.5	<0.5	--	--		
MW-6	02-27-96	105.13	12.00	ND	93.13	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-6	05-15-96	105.13	14.10	ND	91.03	Not sampled: well sampled annually, during the first quarter								
MW-6	08-14-96	105.13	13.70	ND	91.43	Not sampled: well sampled annually, during the first quarter								
MW-6	11-11-96	105.13	14.11	ND	91.02	Not sampled: well sampled annually, during the first quarter								



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**5131 Shattuck Avenue, Oakland, California**

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPH					MTBE (µg/L)	TRPH (mg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
						Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)				
MW-6	03-25-97	105.13	14.15	ND	90.98	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-6	05-15-97	105.13	14.44	ND	90.69	Not sampled: well sampled annually, during the first quarter								
MW-6	10-26-97	105.13	16.02	ND	89.11	Not sampled: well sampled annually, during the first quarter								
MW-6	11-10-97	105.13	14.52	ND	90.61	Not sampled: well sampled annually, during the first quarter								
MW-6	02-13-98	105.13	10.06	ND	95.07	<50	<0.5	<0.5	<0.5	<0.5	8	--		
MW-6	05-12-98	105.13	13.75	ND	91.38	Not sampled: well sampled annually, during the first quarter								
MW-6	07-28-98	105.13	14.06	ND	91.07	Not sampled: well sampled annually, during the first quarter								
MW-6	10-28-98	105.13	14.71	ND	90.42	Not sampled: well sampled annually, during the first quarter								
MW-6	02-12-99	105.13	12.22	ND	92.91	<100	<1	<1	<1	<1	110	--		
MW-6	06-03-99	105.13	13.95	ND	91.18	Not sampled: well sampled annually, during the first quarter								
MW-6	10-26-99	105.13	14.06	ND	91.07	Not sampled: well sampled annually, during the first quarter							3.94	
MW-7	03-20-95	107.08	12.32	ND	94.76	<50	<0.5	<0.5	<0.5	<0.5	--	--		
MW-7	06-06-95	107.08	14.59	ND	92.49	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-7	08-24-95	107.05	14.64	ND	92.41	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-7	11-16-95	107.05	15.30	ND	91.75	Not sampled: well sampled semi-annually, during the first and third quarters								
MW-7	02-27-96	107.05	12.24	ND	94.81	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-7	05-15-96	107.05	14.65	ND	92.40	Not sampled: well sampled annually, during the first quarter								
MW-7	08-14-96	107.05	14.35	ND	92.70	Not sampled: well sampled annually, during the first quarter								
MW-7	11-11-96	107.05	14.92	ND	92.13	Not sampled: well sampled annually, during the first quarter								
MW-7	03-25-97	107.05	14.80	ND	92.25	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-7	05-15-97	107.05	15.27	ND	91.78	Not sampled: well sampled annually, during the first quarter								
MW-7	10-26-97	107.05	16.68	ND	90.37	Not sampled: well sampled annually, during the first quarter								
MW-7	11-10-97	107.05	15.37	ND	91.68	Not sampled: well sampled annually, during the first quarter								
MW-7	02-13-98	107.05	10.80	ND	96.25	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-7	05-12-98	107.05	14.32	ND	92.73	Not sampled: well sampled annually, during the first quarter								
MW-7	07-28-98	107.05	14.79	ND	92.26	Not sampled: well sampled annually, during the first quarter								

Table 1  
**Historical Groundwater Elevation and Analytical Data**  
**Petroleum Hydrocarbons and Their Constituents**  
 1995 - Present\*\*

ARCO Service Station 6148  
 5131 Shattuck Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Top of Casing Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TRPH (mg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
MW-7	10-28-98	107.05	15.57	ND	91.48	Not sampled: well sampled annually, during the first quarter								
MW-7	02-12-99	107.05	12.46	ND	94.59	<50	<0.5	<0.5	<0.5	<0.5	<3	--		
MW-7	06-03-99	107.05	14.53	ND	92.52	Not sampled: well sampled annually, during the first quarter								
MW-7	10-26-99	107.05	14.74	ND	92.31	Not sampled: well sampled annually, during the first quarter								
VW-1	06-03-99	NR	17.51	ND	NR	420	2.3	0.6	2.0	2.2	74	--	1.28	P

R-MSL: elevation in feet, relative to mean sea level  
 TPH: total petroleum hydrocarbons as gasoline, California DHS LUFT Method  
 BTEX: Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/26/99)  
 MTBE: Methyl tert-butyl ether by EPA method 8021B. (EPA method 8020 prior to 10/26/99).  
 TRPH: total recoverable petroleum hydrocarbons  
 µg/L: micrograms per liter  
 mg/L: milligrams per liter  
 NR: not reported; data not available  
 ND: none detected  
 #: floating product entered the well during purging  
 -: not analyzed or not applicable  
 \*: confirmed by EPA 8240  
 \*\*: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 6148, Oakland, California, (EMCON, March 4, 1996).*

**ATTACHMENT D**

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

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<u>ORGANIZATION NAME:</u>	URS Corporation-Oakland Office
<u>USER NAME:</u>	URSCORP-OAKLAND
<u>DATE CHECKED:</u>	6/3/2005 7:54:22 AM

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**Submittal Title:** 2Q 2005 QMR Geo\_Well Site  
6148

**Submittal Date/Time:** 6/3/2005 7:56:39 AM

**Confirmation  
Number:** 4730747818

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### SUCCESSFUL EDF CHECK - NO ERRORS

<u>ORGANIZATION NAME:</u>	URS Corporation-Oakland Office
<u>USER NAME:</u>	URSCORP-OAKLAND
<u>DATE CHECKED:</u>	6/3/2005 7:55:42 AM
<u>GLOBAL ID:</u>	T0600100103
<u>FILE UPLOADED:</u>	ARCO#6148-EDF-MOE0428.zip

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

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<b>ARCO # 06148</b> 5131 SHATTUCK AVE OAKLAND, CA 94609	<b><u>Regional Board - Case #: 01-0111</u></b> SAN FRANCISCO BAY RWQCB (REGION 2) - (BG) <b><u>Local Agency (lead agency) - Case #: 3626</u></b> ALAMEDA COUNTY LOP - (RWS)
---	--

#### **SAMPLE DETECTIONS REPORT**

# FIELD POINTS SAMPLED	4
# 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	Y
- MATRIX SPIKE DUPLICATE	Y

- BLANK SPIKE		Y
- SURROGATE SPIKE		Y
<b><u>WATER SAMPLES FOR 8021/8260 SERIES</u></b>		
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%		Y
MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%		Y
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%		Y
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%		Y
<b><u>SOIL SAMPLES FOR 8021/8260 SERIES</u></b>		
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
<b><u>FIELD QC SAMPLES</u></b>		
<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:** 6839145958  
**Date/Time of Submittal:** 6/3/2005 7:57:42 AM  
**Facility Global ID:** T0600100103  
**Facility Name:** ARCO # 06148  
**Submittal Title:** 2Q 2005 QMR EDF Site 6148  
**Submittal Type:** GW Monitoring Report

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

<b>ARCO # 06148</b> 5131 SHATTUCK AVE OAKLAND, CA 94609	<b>Regional Board - Case #: 01-0111</b> SAN FRANCISCO BAY RWQCB (REGION 2) - (BG) <b>Local Agency (lead agency) - Case #: 3626</b> ALAMEDA COUNTY LOP - (RWS)
---	--

<b>CONF #</b> 6839145958	<b>TITLE</b> 2Q 2005 QMR EDF Site 6148	<b>QUARTER</b> Q2 2005
<b>SUBMITTED BY</b> Srijesh Thapa	<b>SUBMIT DATE</b> 6/3/2005	<b>STATUS</b> PENDING REVIEW

**SAMPLE DETECTIONS REPORT**

# FIELD POINTS SAMPLED	4
# 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	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE	Y

**WATER SAMPLES FOR 8021/8260 SERIES**

MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) % RECOVERY BETWEEN 65-135%	Y
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MATRIX SPIKE / MATRIX SPIKE DUPLICATE(S) RPD LESS THAN 30%	Y	
SURROGATE SPIKES % RECOVERY BETWEEN 85-115%	Y	
BLANK SPIKE / BLANK SPIKE DUPLICATES % RECOVERY BETWEEN 70-130%	Y	
<b><u>SOIL SAMPLES FOR 8021/8260 SERIES</u></b>		
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	
<b><u>FIELD QC SAMPLES</u></b>		
<u>SAMPLE</u>	<u>COLLECTED</u>	<u>DETECTIONS &gt; REPD L</u>
QCTB SAMPLES	N	0
QCEB SAMPLES	N	0
QCAB SAMPLES	N	0

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