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April 4, 2003

Ms. Susan Hugo  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Alameda County  
APR 16 2003  
Environmental Health

**Re: First Quarter 2003 Groundwater Monitoring Report  
ARCO Service Station #2169  
889 West Grand Avenue  
Oakland, California  
URS Project #38486121**

Dear Ms. Hugo:

On behalf of Atlantic Richfield Company (ARCO-an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *First Quarter 2003 Groundwater Monitoring Report* for ARCO Service Station #2169, located at 889 West Grand Avenue, Oakland, California.

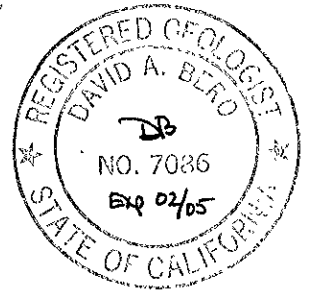
If you have any questions regarding this submission, please call at (510) 874-3280.

Sincerely,

**URS CORPORATION**

Scott Robinson  
Project Manager

David A. Bero, P.G., R.G.  
Senior Geologist



Enclosure: First Quarter 2003 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO, P.O. Box 6549, Moraga, CA 94570

URS Corporation  
500 12th Street, Suite 200  
Oakland, CA 94607-4014  
Tel: 510.893.3600  
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**REPORT**

Alameda County  
APR 16 2003  
Environmental Health

**FIRST QUARTER 2003  
GROUNDWATER MONITORING**

ARCO SERVICE STATION #2169  
889 WEST GRAND AVENUE  
OAKLAND, CALIFORNIA

*Prepared for*  
Atlantic Richfield Company

April 4, 2003

**URS**

URS Corporation  
500 12th Street, Suite 200  
Oakland, California 94607

38486121

Date: April 4, 2003  
Quarter: 1Q 03

### ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 2169 Address: 889 West Grand Avenue, Oakland, California  
Atlantic Richfield Co. Environmental Engineer: Paul Supple  
Consulting Co./Contact Person: URS Corporation / Scott Robinson / (510) 874-3280  
Consultant Project No.: 38486121  
Primary Agency: Alameda County Health Care Services Agency (ACHCSA)

#### WORK PERFORMED THIS QUARTER (First – 2003):

1. Performed first quarter 2003 groundwater monitoring event on February 12, 2003.
2. Prepared and submitted fourth quarter 2002 groundwater monitoring report.
3. Prepared first quarter 2003 groundwater monitoring report.

#### WORK PROPOSED FOR NEXT QUARTER (Second – 2003):

1. Perform second quarter 2003 groundwater monitoring event.
2. Prepare second quarter 2003 groundwater monitoring report.

Current Phase of Project: GW monitoring/sampling  
Frequency of Groundwater Sampling: Annual (1<sup>st</sup> Quarter): A-3, A-4  
Semi-annual (1<sup>st</sup>/3<sup>rd</sup> Quarter): A-2, AR-1, AR-2  
Quarterly: A-1, A-5, A-6, ADR-1, ADR-2  
Frequency of Groundwater Monitoring: Quarterly  
Is Free Product (FP) Present On-Site: No  
FP Recovered this Quarter: None  
Cumulative FP Recovered to Date: 4.8 gallons, wells ADR-1 and ADR-2  
Bulk Soil Removed This Quarter: None  
Bulk Soil Removed to Date: 2,196 cubic yards of TPH impacted soil  
Current Remediation Techniques: Natural Attenuation  
Approximate Depth to Groundwater: 9.95 (ADR-1) to 11.40 (A-3) feet  
Groundwater Gradient (direction): South  
Groundwater Gradient (magnitude): 0.005feet per foot

#### DISCUSSION:

Beginning this quarter, groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel oxygenates. TPH-g was detected in three of the ten wells sampled this quarter, at concentrations ranging from 51 micrograms per liter ( $\mu\text{g/L}$ ) in well A-6 to 760  $\mu\text{g/L}$  in well ADR-2. Benzene was detected in three wells at concentrations ranging from 9.3  $\mu\text{g/L}$  in well A-1 to 120  $\mu\text{g/L}$  in well ADR-2. MTBE was detected in five wells at concentrations ranging from 0.73  $\mu\text{g/L}$  in well ADR-1 to 22  $\mu\text{g/L}$  in well ADR-2.

**RECOMMENDATIONS:**

We recommend removing wells A-3 and A-4 from the annual sampling schedule due to the consistent non-detect values for the constituents of concern. We further recommend reducing the sampling frequency of wells A-2, AR-1 and AR-2 from semi-annually to annually due to the consistently low to non-detect values for the constituents of concern. Well ADR-1 should be reduced from quarterly to annual sampling for the same reasons. All of the wells would continue to be gauged quarterly for groundwater levels.

**ATTACHMENTS:**

- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Groundwater Flow Direction and Gradient
- Table 3 - Fuel Oxygenate Analytical Data
- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – February 12, 2003
- Attachment A - Field Procedures and Field Data Sheets
- Attachment B - Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C - Historic Groundwater Data
- Attachment D - EDCC and EDF/Geowell Submittal Confirmation

**Table 1  
Groundwater Elevation and Analytical Data**

ARCO Service Station #2169  
889 West Grand Avenue  
Oakland, California

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
AR-1	06/26/00	15.61	11.59	4.02	NA	NA	NA	NA	NA	NA
	07/20/00		12.06	3.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	6
	09/19/00		11.89	3.72	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3
	12/26/00		11.95	3.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/20/01 <sup>a</sup>		NM	NM	NS	NS	NS	NS	NS	NS
	06/12/01		11.87	3.74	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	17
	09/23/01		12.42	3.19	NS	NS	NS	NS	NS	NS
	12/28/01		7.62	7.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/21/02		9.37	6.24	NS	NS	NS	NS	NS	NS
	04/17/02		10.43	5.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	08/14/02		12.08	3.53	ND<50	ND<0.5	ND<0.5	ND<0.5	1.3	ND<2.5
	11/27/02		12.00	3.61	NS	NS	NS	NS	NS	NS
	<b>02/12/03<sup>d</sup></b>		<b>10.89</b>	<b>4.72</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
AR-2	06/26/00	15.28	11.79	3.49	NA	NA	NA	NA	NA	NA
	07/20/00		12.07	3.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3
	09/19/00		12.08	3.2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3
	12/26/00		11.95	3.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/20/01		10.50	4.78	NS	NS	NS	NS	NS	NS
	06/12/01		11.73	3.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	82
	09/23/01		12.43	2.85	NS	NS	NS	NS	NS	NS
	12/28/01		8.60	6.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	30
	03/21/02		9.49	5.79	NS	NS	NS	NS	NS	NS
	04/17/02		10.37	4.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.2
	08/14/02		12.13	3.15	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	11/27/02		12.08	3.20	NS	NS	NS	NS	NS	NS
	<b>02/12/03<sup>d</sup></b>		<b>11.15</b>	<b>4.13</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>

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Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
ADR-1	06/26/00	13.95	10.55	3.40	NA	NA	NA	NA	NA	NA
	07/20/00		10.85	3.10	180	29	ND<0.5	0.8	ND<1.0	22
	09/19/00		11.08	2.87	120	7.4	ND<0.5	1.2	ND<1.0	22
	12/26/00		10.93	3.02	ND<50	1.29	ND<0.5	ND<0.5	ND<0.5	14.7
	03/20/01		9.32	4.63	225	23.4	ND<0.5	8.71	4.13	10.8
	06/12/01		10.65	3.30	250	23	0.5	13	4.2	7.5
	09/23/01		11.25	2.70	ND<50	1.4	ND<0.5	ND<0.5	0.57	2.8
	12/28/01		8.43	5.52	250	16	ND<0.5	1.2	4.1	6.8
	03/21/02		8.27	5.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	04/17/02		9.17	4.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	08/14/02		11.88	2.07	ND<50	1.1	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	11/27/02		10.91	3.04	ND<50	0.54	ND<0.5	ND<0.5	ND<0.5	1.1
	<b>02/12/03<sup>d</sup></b>		<b>9.95</b>	<b>4.00</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
ADR-2	06/26/00	14.64	11.22	3.42	NA	NA	NA	NA	NA	NA
	07/20/00		11.60	3.04	12,000	410	2.5	540	720	23
	09/19/00		11.81	2.83	1,400	530	5	680	740	34
	12/26/00		11.52	3.12	901	26.6	ND<5.0	21.4	32.5	32.8
	03/20/01		10.10	4.54	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen
	06/12/01		11.41	3.23	Sheen	Sheen	Sheen	Sheen	Sheen	Sheen
	09/23/01		11.98	2.66	5300	370	ND<5.0	550	96	60
	12/28/01		9.48	5.16	2,600	190	ND<5.0	160	29	61
	03/21/02		9.1	5.54	180	6	ND<0.5	4.5	3.2	15
	04/17/02		9.93	4.71	730	86	ND<0.5	13	ND<0.5	ND<25
	08/14/02		12.09	2.55	1,300 <sup>b</sup>	170	ND<10	100	47	ND<50
	11/27/02		11.66	2.98	1,800 <sup>b</sup>	240	3.1	120	14	74
	<b>02/12/03<sup>d</sup></b>		<b>10.74</b>	<b>3.90</b>	<b>760</b>	<b>120</b>	<b>ND&lt;5.0</b>	<b>15</b>	<b>5.2</b>	<b>22</b>

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Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-1	06/26/00	14.16	10.75	3.41	NA	NA	NA	NA	NA	NA
	07/20/00		11.01	3.15	3,900	1,100	28	12	46	25
	09/19/00		11.26	2.90	4,800	2,400	27	20	57	32
	12/26/00		10.96	3.20	429	104	2.85	12.2	9.91	18.7
	03/20/01		9.59	4.57	ND<500	13.9	7.12	13.9	23.2	ND<25
	06/12/01		10.83	3.33	140	2.2	ND<0.5	8.7	9.2	25
	09/23/01		11.43	2.73	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	4.5
	12/28/01		8.66	5.50	930	250.0	7.6	21	13	ND<25
	03/21/02		8.43	5.73	ND<50	ND<0.5	ND<0.5	ND<0.5	1.2	ND<2.5
	04/17/02		9.36	4.80	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	08/14/02		11.12	3.04	170 <sup>b</sup>	8.4	ND<0.5	ND<0.5	1.4	4.9
	11/27/02		11.11	3.05	98 <sup>b</sup>	2.9	0.75	ND<0.5	ND<0.5	6.4
	<b>02/12/03<sup>d</sup></b>		<b>10.10</b>	<b>4.06</b>	<b>73</b>	<b>9.3</b>	<b>ND&lt;0.50</b>	<b>1.0</b>	<b>0.53</b>	<b>2.9</b>
A-2	06/26/00	14.55	11.27	3.28	NA	NA	NA	NA	NA	NA
	07/20/00		11.52	3.03	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3
	09/19/00		11.63	2.92	NS	NS	NS	NS	NS	NS
	12/26/00		11.44	3.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/20/01		10.08	4.47	NS	NS	NS	NS	NS	NS
	06/12/01		11.35	3.2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	09/23/01		11.92	2.63	NS	NS	NS	NS	NS	NS
	12/28/01		9.31	5.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/21/02		9.05	5.5	NS	NS	NS	NS	NS	NS
	04/17/02		9.88	4.67	52	ND<0.5	ND<0.5	ND<0.5	ND<0.5	26
	08/14/02		11.62	2.93	ND<50	ND<0.5	ND<0.5	ND<0.5	1.2 <sup>c</sup>	ND<2.5
	11/27/02		11.56	2.99	NS	NS	NS	NS	NS	NS
	<b>02/12/03<sup>d</sup></b>		<b>10.75</b>	<b>3.80</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>12</b>

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Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-3	06/26/00	15.75	11.98	3.77	NS	NS	NS	NS	NS	NS
	07/20/00		12.21	3.54	NS	NS	NS	NS	NS	NS
	09/19/00		12.50	3.25	NS	NS	NS	NS	NS	NS
	12/26/00		12.17	3.58	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/20/01		10.70	5.05	NS	NS	NS	NS	NS	NS
	06/12/01		12.09	3.66	NS	NS	NS	NS	NS	NS
	09/23/01		12.65	3.1	NS	NS	NS	NS	NS	NS
	12/28/01		9.94	5.81	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/21/02		9.69	6.06	NS	NS	NS	NS	NS	NS
	04/17/02		10.61	5.14	NS	NS	NS	NS	NS	NS
	08/14/02		12.27	3.48	NS	NS	NS	NS	NS	NS
	11/27/02		12.22	3.53	NS	NS	NS	NS	NS	NS
	<b>02/12/03<sup>d</sup></b>		<b>11.40</b>	<b>4.35</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>
A-4	06/26/00	15.25	10.99	4.26	NS	NS	NS	NS	NS	NS
	07/20/00		11.16	4.09	NS	NS	NS	NS	NS	NS
	09/19/00		11.97	3.28	NS	NS	NS	NS	NS	NS
	12/26/00		11.19	4.06	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/20/01		9.81	5.44	NS	NS	NS	NS	NS	NS
	06/12/01		11.12	4.13	NS	NS	NS	NS	NS	NS
	09/23/01		11.63	3.62	NS	NS	NS	NS	NS	NS
	12/28/01		8.41	6.84	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5
	03/21/02		8.63	6.62	NS	NS	NS	NS	NS	NS
	04/17/02		9.68	5.57	NS	NS	NS	NS	NS	NS
	08/14/02		11.31	3.94	NS	NS	NS	NS	NS	NS
	11/27/02		11.25	4.00	NS	NS	NS	NS	NS	NS
	<b>02/12/03<sup>d</sup></b>		<b>10.37</b>	<b>4.88</b>	<b>ND&lt;50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>



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Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-5	06/26/00	13.51	10.04	3.47	NA	NA	NA	NA	NA	NA
	07/20/00		10.31	3.20	730	140	11	ND<0.5	8.9	3
	09/19/00		10.55	2.96	160	13	ND<0.5	2.8	1.9	ND<3
	12/26/00		10.37	3.14	8,120	465	108	659	1,450	ND<250
	03/20/01		8.81	4.70	7,990	1110	473	611	1,580	ND<250
	06/12/01		10.13	3.38	450	91	18	35	95	ND<5.0
	09/23/01		10.80	2.71	110	20	ND<0.5	5.0	5.0	2.7
	12/28/01		8.17	5.34	320	24	2	20	27	5
	03/21/02		7.78	5.73	2,500	420	85	130	350	31
	04/17/02		8.68	4.83	1,300	190	36	67	210	ND<25
	08/14/02		10.41	3.10	840 <sup>b</sup>	150	ND<5.0	68	41	ND<25
	11/27/02		10.50	3.01	300 <sup>b</sup>	26	2.3	17	6	ND<0.5
	<b>02/12/03<sup>d</sup></b>		<b>10.81</b>	<b>2.70</b>	<b>ND&lt;500</b>	<b>74</b>	<b>7.0</b>	<b>34</b>	<b>45</b>	<b>ND&lt;5.0</b>
A-6	06/26/00	13.51	10.09	3.42	NA	NA	NA	NA	NA	NA
	07/20/00		10.91	2.60	170	ND<0.5	ND<0.5	0.6	2.0	6
	09/19/00		11.27	2.24	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	6
	12/26/00		10.65	2.86	56.2	ND<0.5	ND<0.5	ND<0.5	ND<0.5	8.17
	03/20/01		8.72	4.79	216	ND<0.5	ND<0.5	ND<0.5	1.8	19.9
	06/12/01		10.80	2.71	80	0.62	ND<0.5	ND<0.5	ND<0.5	15
	09/23/01		10.79	2.72	450	1.7	1.9	2.3	3.3	53
	12/28/01		8.05	5.46	270	0.98	3.5	0.77	1.4	26
	03/21/02		7.83	5.68	130	ND<0.5	ND<0.5	ND<0.5	ND<0.5	19
	04/17/02		8.73	4.78	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	16
	08/14/02		10.43	3.08	980 <sup>b</sup>	4.8	2.6	2.0	4.9	75
	11/27/02		10.47	3.04	280 <sup>b</sup>	ND<0.5	0.74	ND<0.5	ND<0.5	16
	<b>02/12/03<sup>d</sup></b>		<b>10.44</b>	<b>3.07</b>	<b>51</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>ND&lt;0.50</b>	<b>9.9</b>

**Table 1**  
**Groundwater Elevation and Analytical Data**

ARCO Service Station #2169  
889 West Grand Avenue  
Oakland, California

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TPH	= Total Petroleum Hydrocarbons
MTBE	= Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted
µg/L	= Micrograms per liter
NM	= Not measured
NC	= Not calculated
NA	= Not analyzed
NS	= Not sampled
ND<	= Not detected at or above specified laboratory method detection limit
a	= Well was covered by stockpiled soil and not accessible
b	= Chromatogram Pattern: Gasoline C6-C10
c	= Primary and confirmation results varied by greater than 40% RPD. The values may still be useful for their intended purpose
d	= TPH-g, BTEX, and MTBE analyzed using EPA Method 8260B

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

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**Table 2**  
**Groundwater Flow Direction and Gradient**

ARCO Service Station #2169  
889 West Grand Avenue  
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
07/20/00	Northwest	0.004
09/19/00	West-Northwest	0.003
12/26/00	Northwest	0.004
03/20/01	Northwest	0.003
06/12/01	Northwest	0.004
09/23/01	Northwest	0.004
12/28/01	Variable	Variable
03/21/02	Northwest	0.004
04/17/02	Northwest	0.003
08/14/02	West	0.003
11/27/02	West	0.003
<b>02/12/03</b>	<b>South</b>	<b>0.005</b>

Source: The data within this table collected prior to August 2002 was provided to URS by Group Environmental Management Company and their previous consultants. URS has not verified the accuracy of this information.

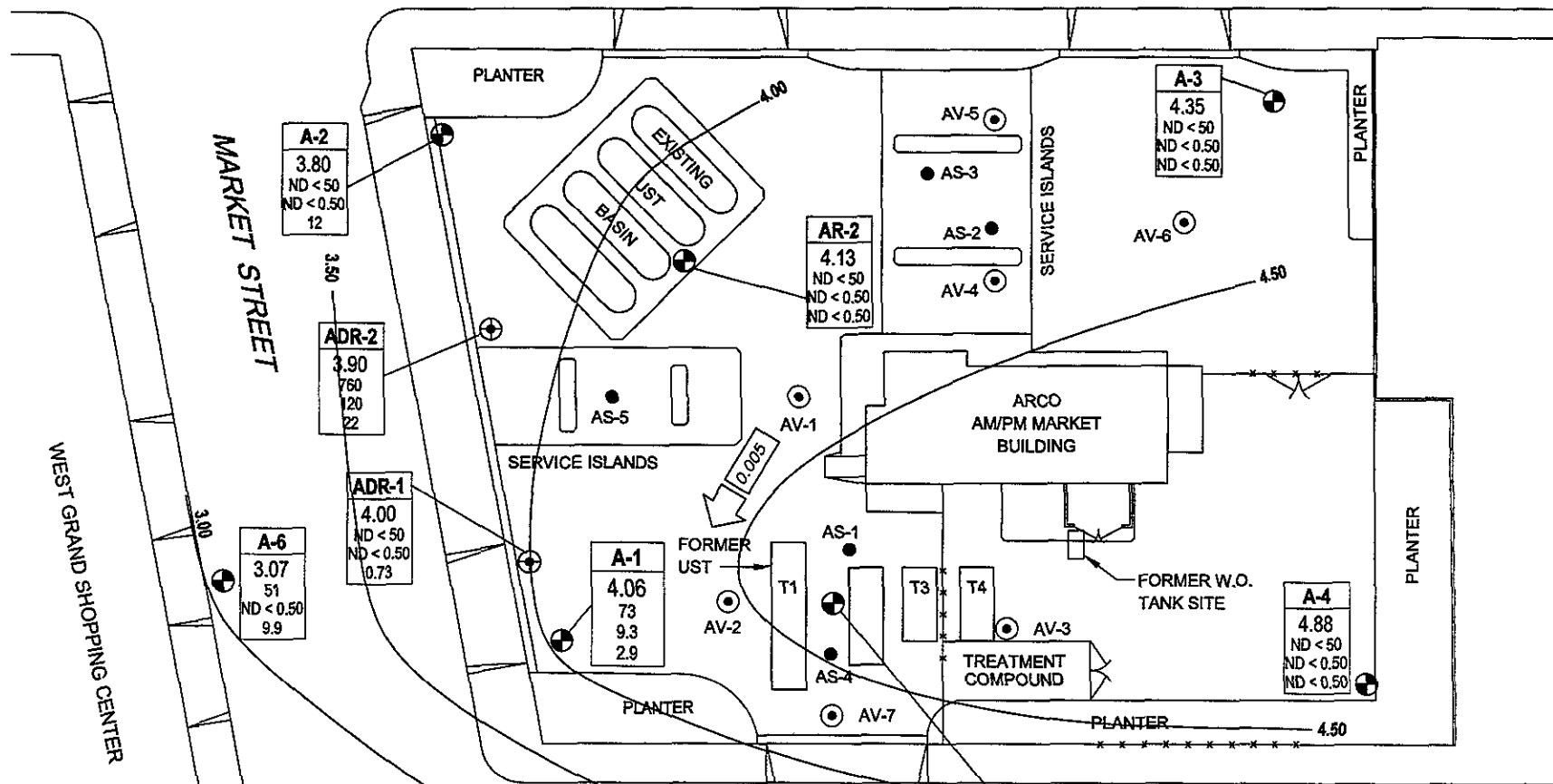
**Table 3  
Fuel Oxygenate Analytical Data**

ARCO Service Station #2169  
889 West Grand Avenue  
Oakland, California

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)
AR-1	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50
AR-2	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50
ADR-1	02/12/03	ND<40	ND<20	0.73	ND<0.50	ND<0.50	ND<0.50
ADR-2	02/12/03	ND<400	ND<200	22	ND<5.0	ND<5.0	ND<5.0
A-1	02/12/03	ND<40	ND<20	2.9	ND<0.50	ND<0.50	ND<0.50
A-2	02/12/03	ND<40	ND<20	12	ND<0.50	ND<0.50	ND<0.50
A-3	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50
A-4	02/12/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50
A-5	02/12/03	ND<400	ND<200	ND<5.0	ND<5.0	ND<5.0	ND<5.0
A-6	02/12/03	ND<40	ND<20	9.9	ND<0.50	ND<0.50	ND<0.50

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B  
TBA = tert-Butyl alcohol  
MTBE = Methyl tert-Butyl ether  
DIPE = Di-isopropyl ether  
ETBE = Ethyl tert Butyl ether  
TAME = tert-Amyl Methyl ether  
µg/L = micrograms per liter  
ND< = Not detected at or above the laboratory detection limit

WEST GRAND AVENUE

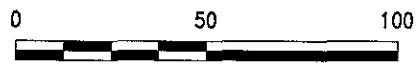


**LEGEND**

- MONITORING WELL LOCATION
- VAPOR EXTRACTION WELL LOCATION
- GROUNDWATER MONITORING/VAPOR EXTRACTION WELL
- AIR SPARGING WELL LOCATION
- 3.00 GROUNDWATER TABLE CONTOUR (FEET ABOVE MSL)
- 0.005 APPROXIMATE GROUNDWATER FLOW GRADIENT AND DIRECTION
- Well** — WELL DESIGNATION
- ELEV** — GROUNDWATER ELEVATION (FEET ABOVE MSL)
- TPH-g** — CONCENTRATION OF TPH-g, BENZENE AND MTBE IN MICROGRAMS PER LITER
- Benzene**
- MTBE**
- \* NOT USED IN CONTOURING
- ND< NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMIT
- NS NOT SAMPLED



NORTH



SCALE IN FEET

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

	Project No. 38486121	<b>GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP</b> First Quarter 2003 (February 12, 2003)	FIGURE <b>1</b>
	Arco Service Station 2169 889 West Grand Avenue Oakland, California		

**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 # 030212-ACZ Date 2-12-03 Client Arco 2169

Site 889 W. Ervand 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 (TOC)		
A-1	3					10.10	24.50	↓	P	2
A-2	3					10.75	26.20		P.	3
A-3	3					11.40	30.10		NP@9'	4
A-4	3					10.37	28.40		NP@8'	5
A-5	2					10.81	30.00		NP@5'	2
A-6	2					10.44	28.50		NP@5'	1
AR-1	6					10.89	28.00		P	6
AR-2	4					11.15	27.30		NP@8.5'	5
ADR-1	4					9.95	21.70		NP@5'	8
ADR-2	4					10.74	26.30		NP@5'	1



## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-AC2</u>	Station # <u>Arco 2169</u>
Sampler: <u>AC</u>	Date: <u>2-12-03</u>
Well I.D.: <u>A-1</u>	Well Diameter: 2 <u>3</u> 4 6 8 _____
Total Well Depth: <u>24.50</u>	Depth to Water: <u>10.10</u>
Depth to Free Product:	Thickness of Free Product (feet): <u>1</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: <u>Bailer</u> Disposable Bailer <del>Middleburg</del> Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <del>Disposable Bailer</del> 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>5.3</u>	x	<u>3</u>	=	<u>15.9</u>	Gals.
1 Chse Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or <del>µS</del> )	Gals. Removed	Observations
<u>1355</u>	<u>67.2</u>	<u>7.3</u>	<u>1045</u>	<u>5.5</u>	<u>odor</u>
<u>1359</u>	<u>66.6</u>	<u>7.2</u>	<u>1061</u>	<u>11</u>	<u>odor</u>
<u>1404</u>	<u>66.8</u>	<u>7.2</u>	<u>1059</u>	<u>16.5</u>	<u>odor</u>

Did well dewater? Yes <u>No</u>	Gallons actually evacuated: <u>16.5</u>	
Sampling Time: <u>1410</u>	Sampling Date: <u>2-12-03</u>	
Sample I.D.: <u>A-1</u>	Laboratory: Pace <u>Sequim</u> Other _____	
Analyzed for: <u>TPH-D</u> <u>BTEX</u> MTBE TPH-D Other: <u>oxy's(s)</u> , <u>Ethanol by 8260</u>		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>2.1</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030212-ACZ	Station # Arco 2169
Sampler: AC	Date: 2-12-03
Well I.D.: A-2	Well Diameter: 2 <u>3</u> 4 6 8
Total Well Depth: 26.20	Depth to Water: 10.75
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSL</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  Middleburg  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.

5.7	x	3	=	17.1	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
1304	65.4	7.4	967	6	
1310	66.7	7.2	992	12	
1317	67.4	7.1	981	18	

Did well dewater? Yes  No  Gallons actually evacuated: 18

Sampling Time: 1325 Sampling Date: 2-12-03

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

Analyzed for: TPH-D BTEX MTBE TPH-D Other: oxy's (5), Ethanol by 8260

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.9	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ACZ</u>	Station # <u>Arco 2169</u>
Sampler: <u>AC</u>	Date: <u>2-12-03</u>
Well I.D.: <u>A-3</u>	Well Diameter: 2 <u>3</u> 4 6 8 <u>    </u>
Total Well Depth: <u>30-10</u>	Depth to Water: <del>10-75</del> <u>11-10</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: <u>Bailer</u> Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> *Disposable Bailer Extraction Port Other: _____
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Top of Screen: 9' 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>	x	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
<u>1155</u>	<u>67.8</u>	<u>6.9</u>	<u>1244</u>	<u>—</u>	

Did well dewater? Yes <input checked="" type="radio"/> <u>No</u>	Gallons actually evacuated: <u>    </u>	
Sampling Time: <u>1155</u>	Sampling Date: <u>2-12-03</u>	
Sample I.D.: <u>A-3</u>	Laboratory: Pace <u>Sequith</u> Other _____	
Analyzed for: <u>TPH-C</u> <u>BTEX</u> MTBE TPH-D Other: <u>oxy's (5)</u> , <u>Ethanol by 8260</u>		
D.O. (if req'd):	Pre-purge: _____ mg/l	Post-purge: <u>1.2</u> mg/l
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-AC2</u>	Station # <u>Arco 2169</u>
Sampler: <u>AC</u>	Date: <u>2-12-03</u>
Well I.D.: <u>A-4</u>	Well Diameter: 2 <u>(3)</u> 4 6 8 _____
Total Well Depth: <u>28.40</u>	Depth to Water: <u>10.37</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: <u>Bailer</u> <u>Disposable Bailer</u> <u>Middleburg</u> <u>Electric Submersible</u> <u>Extraction Pump</u> Other: _____	Sampling Method: <u>Bailer</u> <u>(X) Disposable Bailer</u> <u>Extraction Port</u> Other: _____
---	--

Top of Screen: 8'      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>	X	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>(S)</u> )	Gals. Removed	Observations
1145	67.1	7.1	1120	—	

Did well dewater? Yes <u>(S)</u>	Gallons actually evacuated: <u>—</u>
Sampling Time: <u>1145</u>	Sampling Date: <u>2-12-03</u>
Sample I.D.: <u>A-4</u>	Laboratory: Pace <u>(Sequoia)</u> Other _____
Analyzed for: <u>(TPH-C)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>oxy's (5), Ethanol by 8260</u>	
D.O. (if req'd):	Pre-purge: _____ mg/L <u>(Post-purge):</u> <u>.9</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV      Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ACZ</u>	Station # <u>Arco 2169</u>
Sampler: <u>AC</u>	Date: <u>2-12-03</u>
Well I.D.: <u>A-5</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth: <u>30.00</u>	Depth to Water: <u>16.81</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	Multplier	Well Diameter	Multplier
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  
 Middleburg      Extraction Port  
 Electric Submersible      Other: \_\_\_\_\_  
 Extraction Pump  
 Other: \_\_\_\_\_

Top of Screen: 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.

<u>NO PURGE</u>	x	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1450	67.1	7.3	1114	—	

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

Sampling Time: 1450      Sampling Date: 2-12-03

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

Analyzed for: TPH-D BTEX MTBE TPH-D Other: oxy's(S), Ethanol by 8260

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.0	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ACZ</u>	Station # <u>Arco 2169</u>
Sampler: <u>AC</u>	Date: <u>2-12-03</u>
Well I.D.: <u>A-6</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <u>28.50</u>	Depth to Water: <u>10.44</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:  Bailor  Disposable Bailor  Middleburg  Electric Submersible Extraction Pump  
 Other: \_\_\_\_\_

Sampling Method:  Bailor  Disposable Bailor  Extraction Port  
 Other: \_\_\_\_\_

Top of Screen: 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.

<u>NO PURGE</u>	x	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>(S)</u> )	Gals. Removed	Observations
1435	67.4	7.1	1091	—	

Did well dewater? Yes   No Gallons actually evacuated: —

Sampling Time: 1435 Sampling Date: 2-12-03

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

Analyzed for: (TPH-D) (BTEX) MTBE TPH-D Other: oxy's(S), Ethanol by 8260

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

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: 030212-Acz	Station # Arco 2167
Sampler: Ac	Date: 2-12-03
Well I.D.: AR-1	Well Diameter: 2 3 4 <u>6</u> 8
Total Well Depth: 28.00	Depth to Water: 10.89
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: <input type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Disposable Bailer <input type="checkbox"/> 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.

25	x	3	=	75	Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume	

Time	Temp (°F)	pH	Conductivity (mS or $\mu$ S)	Gals. Removed	Observations
1332	66.5	8.4	514	25	odor
1338	66.6	8.2	465	50	odor
1343	68.0	7.9	725	75	odor

Did well dewater? Yes <input type="checkbox"/> <u>No</u>	Gallons actually evacuated: 75
Sampling Time: 1350	Sampling Date: 2-12-03
Sample I.D.: AR-1	Laboratory: Pace <u>Sequoia</u> Other _____
Analyzed for: <u>TPH-D</u> <u>BTEX</u> MTBE TPH-D Other: <u>Oil's (5), Ethanol by 8260</u>	
D.O. (if req'd):	Pre-purge: _____ mg/L
	Post-purge: <u>1.8</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV
	Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ARZ</u>	Station # <u>Arco 2167</u>
Sampler: <u>Ac</u>	Date: <u>2-12-03</u>
Well I.D.: <u>AR-2</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth: <u>29.30</u>	Depth to Water: <u>11.15</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: <u>Bailer</u> Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> <input checked="" type="checkbox"/> Disposable Bailer Extraction Port Other: _____
---	--

Top of Screen: 8.5'      If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

<u>NO PURGE</u>	X	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>(uS)</u> )	Gals. Removed	Observations
<u>1210</u>	<u>70.2</u>	<u>7.5</u>	<u>942</u>	<u>-</u>	

Did well dewater? Yes <input checked="" type="checkbox"/> <u>No</u>	Gallons actually evacuated: <u>-</u>	
Sampling Time: <u>1210</u>	Sampling Date: <u>2-12-03</u>	
Sample I.D.: <u>AR-2</u>	Laboratory: Pace <u>Sequoia</u> Other _____	
Analyzed for: <u>(TPH-D)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>oxy's (CS), Ethanol by 8260</u>		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>(1.2)</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV



## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ACZ</u>	Station # <u>Arco 2167</u>
Sampler: <u>A</u>	Date: <u>2-12-03</u>
Well I.D.: <u>ADR-1</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 <u>   </u>
Total Well Depth: <u>21.90</u>	Depth to Water: <u>9.95</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: <u>Bailer</u> Disposable Bailer Middleburg Electric Submersible Extraction Pump Other: _____	Sampling Method: <u>Bailer</u> X Disposable Bailer Extraction Port Other: _____
---	--

Top of Screen: 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.

<u>NO PURGE</u>	x	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
<u>grab</u>	<u>sample</u>				
<u>1130</u>	<u>65.1</u>	<u>7.2</u>	<u>1221</u>	<u>—</u>	

Did well dewater? Yes <u>(No)</u>	Gallons actually evacuated: <u>—</u>	
Sampling Time: <u>1130</u>	Sampling Date: <u>2-12-03</u>	
Sample I.D.: <u>ADR-1</u>	Laboratory: Pace <u>(Sequon)</u> Other _____	
Analyzed for: <u>(TPH-D)</u> <u>(BTEX)</u> MTBE TPH-D Other: <u>oxy's (CS)</u> , <u>Etanol</u> by 8260		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>1.9</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

## ARCO / BP WELL MONITORING DATA SHEET

BTS #: <u>030212-ACZ</u>	Station # <u>Arco 2162</u>
Sampler: <u>A</u>	Date: <u>2-12-03</u>
Well I.D.: <u>ADR-2</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth: <u>26.30</u>	Depth to Water: <u>10.74</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: <u>Bailer</u>	Sampling Method: <u>Bailer</u>
<u>Disposable Bailer</u>	<input checked="" type="checkbox"/> <u>Disposable Bailer</u>
<u>Middleburg</u>	<u>Extraction Port</u>
<u>Electric Submersible</u>	Other: _____
<u>Extraction Pump</u>	
Other: _____	

Top of Screen: 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.

<u>NO PURGE</u>	x	<u>3</u>	=	_____ Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or <u>µS</u> )	Gals. Removed	Observations
<u>1240</u>	<u>70.4</u>	<u>7.1</u>	<u>1348</u>	—	

Did well dewater? Yes <input checked="" type="checkbox"/> <u>No</u>	Gallons actually evacuated: <u>—</u>	
Sampling Time: <u>1240</u>	Sampling Date: <u>2-12-03</u>	
Sample I.D.: <u>ADR-2</u>	Laboratory: Pace <u>Sequoia</u> Other _____	
Analyzed for: <u>TPH-C</u> <u>BTEX</u> MTBE TPH-D Other: <u>oxy'scs</u> , <u>Ethanol by 8260</u>		
D.O. (if req'd):	Pre-purge: _____ mg/L	Post-purge: <u>1.3</u> mg/L
O.R.P. (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

# WELLHEAD INSPECTION CHECKLIST

Client Arco 2169 Date 2-12-03

Site Address 887 W. Grand Ave Oakland

Job Number D30212-AC2 Technician Ac

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
A-1		X						
A-2	X							
A-3	X							
A-4	X							
A-5	X							
A-6	X							
AR-1	X							
AR-2								
ADR-1	X							
ADR-2	X							

NOTES: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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

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

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

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

*Arco 2169*

Station #

*899 W. Grand Ave Oakland*

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

*120.*

added equip.

rinse water *20*

any other

adjustments \_\_\_\_\_

**TOTAL GALS.**

**RECOVERED** *140*

loaded onto

BTS vehicle # *11*

BTS event #

*030212-AC2*

time

date

*1500* *2/12/03*

signature

*[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 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 Group Environmental Management Company have been reviewed and verified by that laboratory.



5 March, 2003

Scott Robinson  
URS Corporation  
500 12th Street, Suite 100  
Oakland, CA 94607

RE: ARCO #2169, Oakland, Ca  
Sequoia Work Order: MMB0456

Enclosed are the results of analyses for samples received by the laboratory on 02/13/03 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya Pelt  
Project Manager  
CA ELAP Certificate #1210

URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
Project Number: ARCO #2169, Oakland, CA  
Project Manager: Scott Robinson

MMB0456  
**Reported:**  
03/05/03 12:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
A-1	MMB0456-01	Water	02/12/03 14:10	02/13/03 15:45
A-2	MMB0456-02	Water	02/12/03 13:25	02/13/03 15:45
A-3	MMB0456-03	Water	02/12/03 11:55	02/13/03 15:45
A-4	MMB0456-04	Water	02/12/03 11:45	02/13/03 15:45
A-5	MMB0456-05	Water	02/12/03 14:50	02/13/03 15:45
A-6	MMB0456-06	Water	02/12/03 14:35	02/13/03 15:45
AR-1	MMB0456-07	Water	02/12/03 13:50	02/13/03 15:45
AR-2	MMB0456-08	Water	02/12/03 12:10	02/13/03 15:45
ADR-1	MMB0456-09	Water	02/12/03 11:30	02/13/03 15:45
ADR-2	MMB0456-10	Water	02/12/03 12:40	02/13/03 15:45

There were no custody seals that were received with this project.





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

URS Corporation 500 12th Street, Suite 100 Oakland CA, 94607	Project: ARCO #2169, Oakland, Ca Project Number: ARCO #2169, Oakland, CA Project Manager: Scott Robinson	MMB0456 <b>Reported:</b> 03/05/03 12:48
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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>A-1 (MMB0456-01) Water Sampled: 02/12/03 14:10 Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>2.9</b>	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
<b>Benzene</b>	<b>9.3</b>	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.0</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.53</b>	0.50	"	"	"	"	"	"	
<b>Gasoline Range Organics (C6-C10)</b>	<b>73</b>	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.6 %		78-129	"	"	"	"	
<b>A-2 (MMB0456-02) Water Sampled: 02/12/03 13:25 Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>12</b>	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
<b>Gasoline Range Organics (C6-C10)</b>	<b>ND</b>	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %		78-129	"	"	"	"	

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  
 500 12th Street, Suite 100  
 Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
 Project Number: ARCO #2169, Oakland, CA  
 Project Manager: Scott Robinson

MMB0456  
**Reported:**  
 03/05/03 12:48

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>A-3 (MMB0456-03) Water    Sampled: 02/12/03 11:55    Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	78-129		"	"	"	"	
<b>A-4 (MMB0456-04) Water    Sampled: 02/12/03 11:45    Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	78-129		"	"	"	"	

Sequoia Analytical - Morgan Hill

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**Sequoia  
Analytical**

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URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
Project Number: ARCO #2169, Oakland, CA  
Project Manager: Scott Robinson

MMB0456  
**Reported:**  
03/05/03 12:48

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>A-5 (MMB0456-05) Water    Sampled: 02/12/03 14:50    Received: 02/13/03 15:45</b>									
Ethanol	ND	400	ug/l	10	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	200	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	5.0	"	"	"	"	"	"	
<b>Benzene</b>	<b>74</b>	<b>5.0</b>	"	"	"	"	"	"	
<b>Toluene</b>	<b>7.0</b>	<b>5.0</b>	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>34</b>	<b>5.0</b>	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>45</b>	<b>5.0</b>	"	"	"	"	"	"	
<b>Gasoline Range Organics (C6-C10)</b>	<b>ND</b>	<b>500</b>	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>101 %</i>	<i>78-129</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<b>A-6 (MMB0456-06) Water    Sampled: 02/12/03 14:35    Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
<b>Methyl tert-butyl ether</b>	<b>9.9</b>	<b>0.50</b>	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
<b>Gasoline Range Organics (C6-C10)</b>	<b>51</b>	<b>50</b>	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>101 %</i>	<i>78-129</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Sequoia Analytical - Morgan Hill

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URS Corporation  
 500 12th Street, Suite 100  
 Oakland CA, 94607

 Project: ARCO #2169, Oakland, Ca  
 Project Number: ARCO #2169, Oakland, CA  
 Project Manager: Scott Robinson

 MMB0456  
**Reported:**  
 03/05/03 12:48

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>AR-1 (MMB0456-07) Water</b> <b>Sampled: 02/12/03 13:50</b> <b>Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B24035	02/24/03	02/25/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	78-129	"	"	"	"	"	
<b>AR-2 (MMB0456-08) Water</b> <b>Sampled: 02/12/03 12:10</b> <b>Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B26019	02/26/03	02/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	78-129	"	"	"	"	"	

URS Corporation  
 500 12th Street, Suite 100  
 Oakland CA, 94607

 Project: ARCO #2169, Oakland, Ca  
 Project Number: ARCO #2169, Oakland, CA  
 Project Manager: Scott Robinson

 MMB0456  
**Reported:**  
 03/05/03 12:48

### Volatile Organic Compounds by EPA Method 8260B

#### Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>ADR-1 (MMB0456-09) Water</b> <b>Sampled: 02/12/03 11:30</b> <b>Received: 02/13/03 15:45</b>									
Ethanol	ND	40	ug/l	1	3B26019	02/26/03	02/26/03	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>0.73</b>	0.50	"	"	"	"	"	"	"
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	"
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	"
Benzene	ND	0.50	"	"	"	"	"	"	"
Toluene	ND	0.50	"	"	"	"	"	"	"
Ethylbenzene	ND	0.50	"	"	"	"	"	"	"
Xylenes (total)	ND	0.50	"	"	"	"	"	"	"
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	"
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	78-129	"	"	"	"	"	"
<b>ADR-2 (MMB0456-10) Water</b> <b>Sampled: 02/12/03 12:40</b> <b>Received: 02/13/03 15:45</b>									
Ethanol	ND	400	ug/l	10	3B26019	02/26/03	02/26/03	EPA 8260B	
tert-Butyl alcohol	ND	200	"	"	"	"	"	"	"
<b>Methyl tert-butyl ether</b>	<b>22</b>	5.0	"	"	"	"	"	"	"
Di-isopropyl ether	ND	5.0	"	"	"	"	"	"	"
Ethyl tert-butyl ether	ND	5.0	"	"	"	"	"	"	"
tert-Amyl methyl ether	ND	5.0	"	"	"	"	"	"	"
<b>Benzene</b>	<b>120</b>	5.0	"	"	"	"	"	"	"
Toluene	ND	5.0	"	"	"	"	"	"	"
<b>Ethylbenzene</b>	<b>15</b>	5.0	"	"	"	"	"	"	"
<b>Xylenes (total)</b>	<b>5.2</b>	5.0	"	"	"	"	"	"	"
<b>Gasoline Range Organics (C6-C10)</b>	<b>760</b>	500	"	"	"	"	"	"	"
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	78-129	"	"	"	"	"	"



URS Corporation  
 500 12th Street, Suite 100  
 Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
 Project Number: ARCO #2169, Oakland, CA  
 Project Manager: Scott Robinson

MMB0456  
**Reported:**  
 03/05/03 12:48

**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 3B24035 - EPA 5030B P/T**

**Blank (3B24035-BLK1)**

Prepared & Analyzed: 02/24/03

Ethanol	ND	40	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							

*Surrogate: 1,2-Dichloroethane-d4*      4.93      "      5.00      98.6      78-129

**Laboratory Control Sample (3B24035-BS1)**

Prepared & Analyzed: 02/24/03

Methyl tert-butyl ether	10.4	0.50	ug/l	10.0		104	63-137			
Benzene	10.6	0.50	"	10.0		106	78-124			
Toluene	10.8	0.50	"	10.0		108	78-129			

*Surrogate: 1,2-Dichloroethane-d4*      4.43      "      5.00      88.6      78-129

**Laboratory Control Sample (3B24035-BS2)**

Prepared & Analyzed: 02/24/03

Methyl tert-butyl ether	8.76	0.50	ug/l	9.04		96.9	63-137			
Benzene	5.62	0.50	"	5.44		103	78-124			
Toluene	33.3	0.50	"	32.8		102	78-129			
Gasoline Range Organics (C6-C10)	382	50	"	440		86.8	70-113			

*Surrogate: 1,2-Dichloroethane-d4*      4.77      "      5.00      95.4      78-129

Sequoia Analytical - Morgan Hill

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URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
Project Number: ARCO #2169, Oakland, CA  
Project Manager: Scott Robinson

MMB0456  
Reported:  
03/05/03 12:48

**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 3B24035 - EPA 5030B P/T**

<b>Matrix Spike (3B24035-MS1)</b>		<b>Source: MMB0456-05</b>		<b>Prepared: 02/24/03</b>		<b>Analyzed: 02/25/03</b>	
Methyl tert-butyl ether	84.4	5.0	ug/l	90.4	ND	93.4	0-200
Benzene	139	5.0	"	54.4	74	119	78-124
Toluene	334	5.0	"	328	7.0	99.7	78-129
Gasoline Range Organics (C6-C10)	4040	500	"	4400	ND	81.6	70-113
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.16</i>		<i>"</i>	<i>5.00</i>		<i>103</i>	<i>78-129</i>

<b>Matrix Spike Dup (3B24035-MSD1)</b>		<b>Source: MMB0456-05</b>		<b>Prepared: 02/24/03</b>		<b>Analyzed: 02/25/03</b>				
Methyl tert-butyl ether	95.4	5.0	ug/l	90.4	ND	106	0-200	12.2	200	
Benzene	145	5.0	"	54.4	74	131	78-124	4.23	12	QM-07
Toluene	367	5.0	"	328	7.0	110	78-129	9.42	10	
Gasoline Range Organics (C6-C10)	4550	500	"	4400	ND	93.2	70-113	11.9	9	QR-02
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>4.82</i>		<i>"</i>	<i>5.00</i>		<i>96.4</i>	<i>78-129</i>			

**Batch 3B26019 - EPA 5030B P/T**

<b>Blank (3B26019-BLK1)</b>				<b>Prepared &amp; Analyzed: 02/26/03</b>	
Ethanol	ND	40	ug/l		
tert-Butyl alcohol	ND	20	"		
Methyl tert-butyl ether	ND	0.50	"		
Di-isopropyl ether	ND	0.50	"		
Ethyl tert-butyl ether	ND	0.50	"		
tert-Amyl methyl ether	ND	0.50	"		
1,2-Dichloroethane	ND	0.50	"		
1,2-Dibromoethane (EDB)	ND	0.50	"		
Benzene	ND	0.50	"		
Toluene	ND	0.50	"		
Ethylbenzene	ND	0.50	"		
Xylenes (total)	ND	0.50	"		
Gasoline Range Organics (C6-C10)	ND	50	"		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>5.31</i>		<i>"</i>	<i>5.00</i>	<i>106 78-129</i>

Sequoia Analytical - Morgan Hill

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Project: ARCO #2169, Oakland, Ca  
Project Number: ARCO #2169, Oakland, CA  
Project Manager: Scott Robinson

MMB0456  
Reported:  
03/05/03 12:48

**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 3B26019 - EPA 5030B P/T**

Laboratory Control Sample (3B26019-BS1)				Prepared & Analyzed: 02/26/03					
Methyl tert-butyl ether	10.0	0.50	ug/l	10.0		100	63-137		
Benzene	9.35	0.50	"	10.0		93.5	78-124		
Toluene	9.96	0.50	"	10.0		99.6	78-129		
Surrogate: 1,2-Dichloroethane-d4	5.15		"	5.00		103	78-129		

Laboratory Control Sample (3B26019-BS2)				Prepared & Analyzed: 02/26/03					
Methyl tert-butyl ether	8.68	0.50	ug/l	9.04		96.0	63-137		
Benzene	5.50	0.50	"	5.44		101	78-124		
Toluene	34.5	0.50	"	32.8		105	78-129		
Gasoline Range Organics (C6-C10)	450	50	"	440		102	70-113		
Surrogate: 1,2-Dichloroethane-d4	5.21		"	5.00		104	78-129		

Matrix Spike (3B26019-MS1)				Source: MMB0456-10		Prepared & Analyzed: 02/26/03			
Methyl tert-butyl ether	100	5.0	ug/l	90.4	22	86.3	0-200		
Benzene	173	5.0	"	54.4	120	97.4	78-124		
Toluene	342	5.0	"	328	ND	104	78-129		
Gasoline Range Organics (C6-C10)	4410	500	"	4400	760	83.0	70-113		
Surrogate: 1,2-Dichloroethane-d4	5.32		"	5.00		106	78-129		

Matrix Spike Dup (3B26019-MSD1)				Source: MMB0456-10		Prepared & Analyzed: 02/26/03			
Methyl tert-butyl ether	113	5.0	ug/l	90.4	22	101	0-200	12.2	200
Benzene	176	5.0	"	54.4	120	103	78-124	1.72	12
Toluene	357	5.0	"	328	ND	109	78-129	4.29	10
Gasoline Range Organics (C6-C10)	5250	500	"	4400	760	102	70-113	17.4	9
Surrogate: 1,2-Dichloroethane-d4	5.19		"	5.00		104	78-129		QR-02

Sequoia Analytical - Morgan Hill

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URS Corporation  
500 12th Street, Suite 100  
Oakland CA, 94607

Project: ARCO #2169, Oakland, Ca  
Project Number: ARCO #2169, Oakland, CA  
Project Manager: Scott Robinson

MMB0456  
**Reported:**  
03/05/03 12:48

### Notes and Definitions

- QM-07 The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QR-02 The RPD result exceeded the control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



### Chain of Custody Record

Project Name 030212-ACZ  
 BP BU/GEM CO Portfolio: \_\_\_\_\_  
 BP Laboratory Contract Number: \_\_\_\_\_

Date: 2-12-03

Requested Due Date (mm/dd/yyyy) \_\_\_\_\_

MMB0956

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Send To:	BP/GEM Facility No.:	Consultant/Contractor: URS
Lab Name: SEQUOIA	BP/GEM Facility Address: 889 W. GRAND AVE, OAKLAND, CA	Address: 500 12th St, Ste. 200
Lab Address: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 2169	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #: T0600100112	Consultant/Contractor Project No.: J5-00002169.01 00427
Lab PM: Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tel./Fax: 510-874-1735/510-874-3268
Tel./Fax: 408-776-9600 / 408-782-6308	Address:	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDF Reports		Invoice to: Consultant/Contractor or BP/GEM (circle one)
BP/GEM Account No.:	Tel./Fax:	BP/GEM Work Release No: INTRIM -50325

Item No.	Sample Description	Time	Matrix				Laboratory No.	No. of containers	Preservatives				Requested Analysis				Sample Point Lat/Long and Comments
			Soil/Solid	Water/Liquid	Sediments	Air			Unpreserved	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	TPH-G/STPH (8015-8024) 8260	TPH-D (8015)	MTBE (8021)	MTBE, XANE, STBE, DIBP, TBA (8260)	
1	A-1	1410	X				3					X	X	X			
2	A-2	1325	X				3					X	X	X			
3	A-3	1155	X				3					X	X	X			
4	A-4	1415	X				3					X	X	X			
5	A-5	1450	X				3					X	X	X			
6	A-6	1435	X				3					X	X	X			
7	AR-1	1350	X				3					X	X	X			
8	AR-2	1210	X				3					X	X	X			
9	ADR-1	1130	X				3					X	X	X			
10	ADR-2	1240	X				3					X	X	X			

Sampler's Name: <u>Aaron Costa</u>	Relinquished By / Affiliation: <u>Aaron Costa / Blaine Tech</u>	Date: <u>2/13/03</u>	Time: <u>1110</u>	Accepted By / Affiliation: <u>[Signature]</u>	Date: <u>2/13/03</u>	Time: <u>1110</u>
Sampler's Company: <u>Blaine Tech</u>		Date: <u>2/13/03</u>	Time: <u>1545</u>		Date: <u>2/13/03</u>	Time: <u>1545</u>
Shipment Date:						
Shipment Method:						
Shipment Tracking No.:						

Special Instructions: Address Invoice to BP/GEM but send to URS for approval

Seals in Place Yes  No  Temperature Blank Yes  No  Cooler Temperature on Receipt  °F/C Trip Blank Yes  No

**SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG**

CLIENT NAME: <u>UKS</u>	DATE Received at Lab: <u>2/13/03</u>	Drinking water for regulatory purposes: YES/NO <input checked="" type="checkbox"/>
REC. BY (PRINT) <u>R</u>	TIME Received at Lab: <u>1545</u>	Wastewater for regulatory purposes: YES/NO <input checked="" type="checkbox"/>
WORKORDER: <u>MHB0056</u>	LOG IN DATE: <u>2-14-03</u>	

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	#	CLIENT ID	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present/Absent Intact/Broken*	1		A-1	(2) Vials He	L	2/12/03	
	2		A-2				
2. Chain-of-Custody Present/Absent*	3		A-3				
3. Traffic Reports or Packing List: Present/Absent	4		A-4				
	5		A-5				
4. Airbill: Airbill/Sticker Present/Absent	6		A-6				
	7		AR-1				
5. Airbill #: _____	8		AR-2				
6. Sample Labels: Present/Absent	9		ADR-1				
7. Sample IDs: Listed/Not Listed on Chain-of-Custody	10		ADR-2				
8. Sample Condition: Intact/Broken*/Leaking*							
9. Docs information on custody reports, traffic reports and sample labels agree? <input checked="" type="checkbox"/> Yes/No*							
10. Sample received within hold time: <input checked="" type="checkbox"/> Yes/No*							
11. Proper Preservatives used: <input checked="" type="checkbox"/> Yes/No*							
12. Temp Rec. at Lab: Is temp 4 +/-2°C? <input checked="" type="checkbox"/> Yes/No**							
(Acceptance range for samples requiring thermal pres.)							
**Exception (if any): Metals / DEF on ice? / DEF no ice? or Problem COC							

**\*If Circled, contact Project Manager and attach record of resolution.**

**ATTACHMENT C**

**HISTORIC GROUNDWATER DATA**

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC	Depth	FP	Groundwater	Date Sampled	TPH			Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/Not Purged (P/NP)
		Elevation (ft-MSL)	to Water (feet)	Thickness (feet)	Elevation (ft-MSL)		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)							
A-1	03-24-95	14.16	8.10	ND	6.06	03-24-95	1,200	230	39	34	66	--	--	160		
A-1	06-05-95	14.16	11.13	ND	3.03	06-05-95	1,500	310	27	36	76	--	--	710		
A-1	08-17-95	14.16	11.71	ND	2.45	08-18-95	1,600	470	35	48	110	120	--	240		
A-1	12-04-95	14.16	12.28	ND	1.88	12-04-95	1,200	240	17	25	56	--	120	--		
A-1	03-01-96	14.16	8.78	ND	5.38	03-13-96	1,300	300	74	29	73	100	--	--		
A-1	05-29-96	14.16	9.85	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-29-96	14.16	11.08	ND	3.08	08-29-96	1,200	320	5.9	25	27	110	--	--		
A-1	11-21-96	14.16	10.54	ND	3.62	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	03-26-97	14.16	10.55	ND	3.61	03-26-97	<50	0.8	<0.5	<0.5	<0.5	64	--	--		
A-1	05-21-97	14.16	11.10	ND	3.06	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-1	08-08-97	14.16	11.32	ND	2.84	08-08-97	91	7	<0.5	0.5	3.9	<60	--	--		
A-1	11-18-97	14.16	3.46	ND	10.70	11-18-97	54	<0.5	<0.5	<0.5	0.6	27	--	--		
A-1	02-20-98	14.16	7.10	ND	7.06	02-23-98	590	160	22	15	28	70	--	--		
A-1	05-11-98	14.16	9.87	ND	4.29	05-11-98	280	26	<0.5	0.8	2.3	6	--	--		
A-1	07-30-98	14.16	10.73	ND	3.43	07-30-98	1,000	210	5	<5	38	<30	--	--		
A-1	10-08-98	14.16	11.15	ND	3.01	10-08-98	3,100	740	11	<10	24	<60	--	--		
A-1	02-18-99	14.16	8.00	ND	6.16	02-18-99	510	87	7.1	6.4	13	52	--	--		
A-1	05-26-99	14.16	10.60	ND	3.56	05-26-99	240	26	<0.5	1.2	6.2	34	--	--		
A-1	08-23-99	14.16	11.22	ND	2.94	08-23-99	79	3.9	0.6	<0.5	1.7	38	--	--	0.68	NP
A-1	10-27-99	14.16	11.37	ND	2.79	10-27-99	110	2.2	<0.5	<0.5	<1	25	--	--	0.80	NP
A-1	01-31-00	14.16	9.44	ND	4.72	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC	Depth	FP	Groundwater	Date Sampled	TPH			Ethyl-	Total	MTBE	MTBE	TPH	Dissolved	Purged/
		Elevation (ft-MSL)	to Water (feet)	Thickness (feet)	Elevation (ft-MSL)		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	benzene (µg/L)	Xylenes (µg/L)	8021B* (µg/L)	8260 (µg/L)	Diesel (µg/L)	Oxygen (mg/L)	Not Purged (P/NP)
A-2	03-24-95	14.55	8.64	ND	5.91	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	06-05-95	14.55	11.72	ND	2.83	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	08-17-95	14.55	12.35	ND	2.20	08-17-95	<50	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-2	12-04-95	14.55	12.74	ND	1.81	12-04-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-2	03-01-96	14.55	9.34	ND	5.21	03-13-96	<50	<0.5	0.6	<0.5	1.3	<9	--	--		
A-2	05-29-96	14.55	10.40	ND	4.15	05-29-96	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	08-29-96	14.55	11.50	ND	3.05	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	<39	--	--		
A-2	11-21-96	14.55	11.06	ND	3.49	11-21-96	<50	<0.5	<0.5	<0.5	<0.5	<30	--	--		
A-2	03-26-97	14.55	11.12	ND	3.43	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	05-21-97	14.55	11.58	ND	2.97	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	08-08-97	14.55	11.82	ND	2.73	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<20	--	--		
A-2	11-18-97	14.55	3.33	ND	11.22	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
A-2	02-20-98	14.55	7.68	ND	6.87	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-2	05-11-98	14.55	10.45	ND	4.10	05-11-98	Not sampled									
A-2	07-30-98	14.55	11.23	ND	3.32	07-30-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	10-08-98	14.55	11.62	ND	2.93	10-08-98	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	02-18-99	14.55	8.62	ND	5.93	02-18-99	93	<0.5	<0.5	<0.5	<1	26	--	--		
A-2	05-26-99	14.55	11.16	ND	3.39	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-2	08-23-99	14.55	11.69	ND	2.86	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	10-27-99	14.55	11.88	ND	2.67	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters									
A-2	01-31-00	14.55	10.17	ND	4.38	01-31-00	<50	<0.5	<0.5	<0.5	<1	<3	--	--	1.0	NP

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH			Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
							Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)							
A-3	03-24-95	15.75	8.83	ND	6.92	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-3	06-05-95	15.75	12.44	ND	3.31	06-05-95	Not sampled: well sampled annually									
A-3	08-17-95	15.75	13.04	ND	2.71	08-17-95	Not sampled: well sampled annually									
A-3	12-04-95	15.75	13.57	ND	2.18	12-04-95	Not sampled: well sampled annually									
A-3	03-01-96	15.75	9.90	ND	5.85	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-29-96	15.75	11.08	ND	4.67	05-29-96	Not sampled: well sampled annually									
A-3	08-29-96	15.75	12.38	ND	3.37	08-29-96	Not sampled: well sampled annually									
A-3	11-21-96	15.75	11.86	ND	3.89	11-21-96	Not sampled: well sampled annually									
A-3	03-26-97	15.75	11.81	ND	3.94	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-21-97	15.75	12.35	ND	3.40	05-21-97	Not sampled: well sampled annually									
A-3	08-08-97	15.75	12.62	ND	3.13	08-08-97	Not sampled: well sampled annually									
A-3	11-18-97	15.75	3.75	ND	12.00	11-18-97	Not sampled: well sampled annually									
A-3	02-20-98	15.75	8.06	ND	7.69	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	05-11-98	15.75	11.19	ND	4.56	05-11-98	Not sampled: well sampled annually									
A-3	07-30-98	15.75	12.05	ND	3.70	07-30-98	Not sampled: well sampled annually									
A-3	10-08-98	15.75	12.43	ND	3.32	10-08-98	Not sampled: well sampled annually									
A-3	02-18-99	15.75	9.05	ND	6.70	02-18-99	Not sampled: well sampled annually									
A-3	05-26-99	15.75	11.93	ND	3.82	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-3	08-23-99	15.75	12.57	ND	3.18	08-23-99	Not sampled: well sampled annually								0.88	
A-3	10-27-99	15.75	12.65	ND	3.10	10-27-99	Not sampled: well sampled annually									
A-3	01-31-00	15.75	9.55	ND	6.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/Not Purged (P/NP)
A-4	03-24-95	15.25	7.20	ND	8.05	03-24-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--		
A-4	06-05-95	15.25	11.70	ND	3.55	06-05-95	Not sampled: well sampled annually									
A-4	08-17-95	15.25	12.28	ND	2.97	08-17-95	Not sampled: well sampled annually									
A-4	12-04-95	15.25	12.63	ND	2.62	12-04-95	Not sampled: well sampled annually									
A-4	03-01-96	15.25	8.55	ND	6.70	03-13-96	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-29-96	15.25	10.32	ND	4.93	05-29-96	Not sampled: well sampled annually									
A-4	08-29-96	15.25	11.55	ND	3.70	08-29-96	Not sampled: well sampled annually									
A-4	11-21-96	15.25	10.83	ND	4.42	11-21-96	Not sampled: well sampled annually									
A-4	03-26-97	15.25	10.97	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-21-97	15.25	11.51	ND	3.74	05-21-97	Not sampled: well sampled annually									
A-4	08-08-97	15.25	11.73	ND	3.52	08-08-97	Not sampled: well sampled annually									
A-4	11-18-97	15.25	4.37	ND	10.88	11-18-97	Not sampled: well sampled annually									
A-4	02-20-98	15.25	6.25	ND	9.00	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	05-11-98	15.25	10.33	ND	4.92	05-11-98	Not sampled: well sampled annually									
A-4	07-30-98	15.25	11.25	ND	4.00	07-30-98	Not sampled: well sampled annually									
A-4	10-08-98	15.25	11.62	ND	3.63	10-08-98	Not sampled: well sampled annually									
A-4	02-18-99	15.25	7.12	ND	8.13	02-18-99	Not sampled: well sampled annually									
A-4	05-26-99	15.25	11.12	ND	4.13	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
A-4	08-23-99	15.25	11.62	ND	3.63	08-23-99	Not sampled: well sampled annually									
A-4	10-27-99	15.25	11.74	ND	3.51	10-27-99	Not sampled: well sampled annually									
A-4	01-31-00	15.25	9.45	ND	5.80	01-31-00	<50	<0.5	<0.5	<0.5	<1	4	--	--	1.0	NP



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**1995 - Present\*\*\***

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC	Depth	FP	Groundwater	Date Sampled	TPH			Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/Not Purged (P/NP)	
		Elevation (ft-MSL)	to Water (feet)	Thickness (feet)	Elevation (ft-MSL)		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)								
A-5	03-24-95	13.51	7.40	ND	6.11	03-24-95	3,300	200	310	130	460	--	--	--			
A-5	06-05-95	13.51	10.43	ND	3.08	06-05-95	57,000	2,700	4,600	1,500	6,800	--	--	--			
A-5	08-17-95	13.51	11.15	ND	2.36	08-18-95	34,000	1,600	2,700	1,100	5,100	<28	--	--			
A-5	12-04-95	13.51	11.42	ND	2.09	12-04-95	61	<0.5	<0.5	<0.5	<0.5	--	--	--			
A-5	03-01-96	13.51	8.11	ND	5.40	03-13-96	11,000	860	960	380	1,600	<100	--	--			
A-5	05-29-96	13.51	9.30	ND	4.21	05-29-96	19,000	1,600	1,900	880	3,300	<100	--	--			
A-5	08-29-96	13.51	10.60	ND	2.91	08-29-96	7,700	490	450	260	990	<30	--	--			
A-5	11-21-96	13.51	10.05	ND	3.46	11-21-96	8,000	450	550	340	1,100	<30	--	--			
A-5	03-26-97	13.51	9.87	ND	3.64	03-26-97	3,100	190	140	130	340	<30	--	--			
A-5	05-21-97	13.51	10.25	ND	3.26	05-21-97	16,000	1,500	900	700	2,700	<120	--	--			
A-5	08-08-97	13.51	10.42	ND	3.09	08-08-97	9,000	690	240	440	1,300	<30	--	--			
A-5	11-18-97	13.51	Not surveyed: well inaccessible														
A-5	02-20-98	13.51	Not surveyed: well inaccessible														
A-5	05-11-98	13.51	Not surveyed: well inaccessible														
A-5	07-30-98	13.51	Not surveyed: well inaccessible														
A-5	10-08-98	13.51	Not surveyed: well inaccessible														
A-5	02-18-99	13.51	7.63	ND	5.88	02-18-99	<50	0.8	<0.5	<0.5	1.5	<10	--	--			
A-5	05-26-99	13.51	9.85	ND	3.66	05-26-99	1,700	240	41	110	330	<12	--	--			
A-5	08-23-99	13.51	10.60	ND	2.91	08-23-99	560	65	3	30	52	<6	--	--	0.73	NP	
A-5	10-27-99	13.51	10.72	ND	2.79	10-27-99	480	93	1.0	16	19	<3	--	--	0.65	NP	
A-5	01-31-00	13.51	9.37	ND	4.14	01-31-00	Not sampled: well was inaccessible										

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**1995 - Present\*\*\***

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC	Depth	FP	Groundwater	Date Sampled	TPH				Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
		Elevation (ft-MSL)	to Water (feet)	Thickness (feet)	Elevation (ft-MSL)		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)						
A-6	03-24-95	13.51	7.89	ND	5.62	03-24-95	120	<0.5	<1	<0.5	<1.5	--	--	--		
A-6	06-05-95	13.51	10.06	ND	3.45	06-05-95	160	<0.5	<0.6	<0.5	<0.5	--	--	--		
A-6	08-17-95	13.51	11.10	ND	2.41	08-18-95	530	<0.5	<0.5	<2.4	<4.2	6	--	--		
A-6	12-04-95	13.51	11.52	ND	1.99	12-04-95	28,000	1,600	1,800	880	3,600	--	--	--		
A-6	03-01-96	13.51	8.21	ND	5.30	03-13-96	1,400	<3	<15	<7	<10	<20	--	--		
A-6	05-29-96	13.51	9.25	ND	4.26	05-29-96	410	<2	<2	<2	<2	3	--	--		
A-6	08-29-96	13.51	10.52	ND	2.99	08-29-96	80	<0.5	<0.5	<0.5	<0.5	6	--	--		
A-6	11-21-96	13.51	10.54	ND	2.97	11-21-96	62	<0.5	<0.5	<0.5	<0.5	12	--	--		
A-6	03-26-97	13.51	9.93	ND	3.58	03-26-97	110	<0.5	0.8	1	1.4	15	--	--		
A-6	05-21-97	13.51	10.54	ND	2.97	05-21-97	600	0.6	0.6	<2	2.7	<3	--	--		
A-6	08-08-97	13.51	10.77	ND	2.74	08-08-97	850	<0.5	<0.5	6.1	<0.5	<4	--	--		
A-6	11-18-97	13.51	3.41	ND	10.10	11-18-97	690	<1	<1	3	2	7	--	--		
A-6	02-20-98	13.51	6.73	ND	6.78	02-20-98	60	<0.5	0.6	1.3	0.5	4	--	--		
A-6	05-11-98	13.51	9.26	ND	4.25	05-11-98	140	<0.5	0.7	0.6	<0.5	6	--	--		
A-6	07-30-98	13.51	10.12	ND	3.39	07-30-98	910	<2	<2	3	7	34	--	--		
A-6	10-08-98	13.51	10.53	ND	2.98	10-08-98	1,300	<2	4	3	4	21	--	--		
A-6	02-18-99	13.51	7.50	ND	6.01	02-18-99	150	<0.5	<0.5	1.4	1.7	35	--	--		
A-6	05-26-99	13.51	10.00	ND	3.51	05-26-99	100	<0.5	<0.5	<0.5	<0.5	17	--	--		
A-6	08-23-99	13.51	10.70	ND	2.81	08-23-99	98	0.6	<0.5	1.1	4.3	13	--	--	2.42	NP
A-6	10-27-99	13.51	11.00	ND	2.51	10-27-99	<50	<0.5	<0.5	<0.5	<1	7	--	--	13.23	NP
A-6	01-31-00	13.51	9.31	ND	4.20	01-31-00	<50	<0.5	<0.5	<0.5	<1	9	--	--	1.0	NP

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/Not Purged (P/NP)
AR-1	03-24-95	15.61	7.25	ND	8.36	03-24-95	270	14	0.6	2.5	2.1	--	--	130		
AR-1	06-05-95	15.61	11.37	ND	4.24	06-05-95	190	10	<0.5	0.8	0.5	--	--	580		
AR-1	08-17-95	15.61	12.40	ND	3.21	08-17-95	960	110	12	4.5	150	14	--	<50		
AR-1	12-04-95	15.61	12.90	ND	2.71	12-04-95	<50	1.5	<0.5	<0.5	0.8	--	--	--		
AR-1	03-01-96	15.61	8.19	ND	7.42	03-13-96	150	3.8	0.5	1.4	1.3	<3	--	--		
AR-1	05-29-96	15.61	10.41	ND	5.20	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-29-96	15.61	12.12	ND	3.49	08-29-96	<50	<0.5	<0.5	<0.5	0.8	<3	--	--		
AR-1	11-21-96	15.61	11.52	ND	4.09	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	03-26-97	15.61	11.33	ND	4.28	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	05-21-97	15.61	12.02	ND	3.59	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	08-08-97	15.61	12.31	ND	3.30	08-08-97	<50	0.7	<0.5	1	<0.5	<3	--	--		
AR-1	11-18-97	15.61	3.97	ND	11.64	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters									
AR-1	02-20-98	15.61	6.42	ND	9.19	02-23-98	<200	<2	<2	<2	<2	160	--	--		
AR-1	05-11-98	15.61	10.93	ND	4.68	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	4	--	--		
AR-1	07-30-98	15.61	11.82	ND	3.79	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	10-08-98	15.61	12.24	ND	3.37	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	6	--	--		
AR-1	02-18-99	15.61	7.75	ND	7.86	02-18-99	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--		
AR-1	05-26-99	15.61	11.62	ND	3.99	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--		
AR-1	08-23-99	15.61	9.32	ND	6.29	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	10-27-99	15.61	12.14	ND	3.47	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters									
AR-1	01-31-00	15.61	Not surveyed: well inaccessible													

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**1995 - Present\*\*\***

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC	Depth	FP	Groundwater	Date Sampled	TPH				Total	MTBE	MTBE	TPH	Dissolved	Purged/	
		Elevation (ft-MSL)	to Water (feet)	Thickness (feet)	Elevation (ft-MSL)		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	8021B* (µg/L)	8260 (µg/L)	Diesel (µg/L)	Oxygen (mg/L)	Not Purged (P/NP)	
AR-2	03-24-95	15.28	9.13	ND	6.15	03-24-95	<50	6.2	<0.5	<0.5	0.6	--	--	<50			
AR-2	06-05-95	15.28	12.09	ND	3.19	06-05-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	<50			
AR-2	08-17-95	15.28	12.78	ND	2.50	08-18-95	<50	<0.5	<0.5	<0.5	<0.5	4	--	<50			
AR-2	12-04-95	15.28	11.44	ND	3.84	12-13-95	<50	<0.5	<0.5	<0.5	<0.5	--	--	--			
AR-2	03-01-96	15.28	9.83	ND	5.45	03-13-96	190	26	2.6	3.3	13	200	--	--			
AR-2	05-29-96	15.28	10.97	ND	4.31	05-29-96	Not sampled: well sampled semi-annually, during the first and third quarters										
AR-2	08-29-96	15.28	12.20	ND	3.08	08-29-96	<50	<0.5	<0.5	<0.5	<0.5	95	--	--			
AR-2	11-21-96	15.28	11.57	ND	3.71	11-21-96	Not sampled: well sampled semi-annually, during the first and third quarters										
AR-2	03-26-97	15.28	11.60	ND	3.68	03-26-97	<50	<0.5	<0.5	<0.5	<0.5	9	--	--			
AR-2	05-21-97	15.28	12.12	ND	3.16	05-21-97	Not sampled: well sampled semi-annually, during the first and third quarters										
AR-2	08-08-97	15.28	12.35	ND	2.93	08-08-97	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--			
AR-2	11-18-97	15.28	3.48	ND	11.80	11-18-97	Not sampled: well sampled semi-annually, during the first and third quarters										
AR-2	02-20-98	15.28	8.00	ND	7.28	02-20-98	<50	<0.5	<0.5	<0.5	<0.5	43	--	--			
AR-2	05-11-98	15.28	10.97	ND	4.31	05-11-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--			
AR-2	07-30-98	15.28	11.76	ND	3.52	07-30-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--			
AR-2	10-08-98	15.28	12.17	ND	3.11	10-08-98	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--			
AR-2	02-18-99	15.28	9.17	ND	6.11	02-18-99	<50	<0.5	<0.5	<0.5	<1.0	<10	--	--			
AR-2	05-26-99	15.28	11.72	ND	3.56	05-26-99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--			
AR-2	08-23-99	15.28	12.31	ND	2.97	08-23-99	Not sampled: well sampled semi-annually, during the first and second quarters										0.61
AR-2	10-27-99	15.28	12.42	ND	2.86	10-27-99	Not sampled: well sampled semi-annually, during the first and second quarters										
AR-2	01-31-00	15.28	10.31	ND	4.97	01-31-00	Not sampled										

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**1995 - Present\*\*\***

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)	
ADR-1	03-24-95	13.95	8.04	0.01	** 5.92	03-24-95	Not sampled: well contained floating product										
ADR-1	06-05-95	13.95	11.02	ND	2.93	06-05-95	23,000	310	420	300	1,900	--	--	13,000			
ADR-1	08-17-95	13.95	11.86	ND	2.09	08-18-95	4,400	150	120	95	620	120	--	4,500			
ADR-1	12-04-95	13.95	10.05	ND	3.90	12-13-95	8,800	100	130	120	990	--	--	--			
ADR-1	03-01-96	13.95	8.76	ND	5.19	03-13-96	89,000	370	1,000	840	8,100	<500	--	--			
ADR-1	05-29-96	13.95	9.74	ND	4.21	05-30-96	27,000	230	380	370	2,700	<100	--	--			
ADR-1	08-29-96	13.95	10.77	ND	3.18	08-29-96	5,300	190	58	76	470	85	--	--			
ADR-1	11-21-96	13.95	10.49	ND	3.46	11-21-96	1,900	82	21	32	270	110	--	--			
ADR-1	03-26-97	13.95	10.37	ND	3.58	03-26-97	1,300	260	6	39	27	95	--	--			
ADR-1	05-21-97	13.95	10.90	ND	3.05	05-21-97	2,100	300	18	37	200	79	--	--			
ADR-1	08-08-97	13.95	11.12	ND	2.83	08-08-97	3,900	620	49	110	470	<200	--	--			
ADR-1	11-18-97	13.95	3.47	ND	10.48	11-18-97	18,000	900	140	360	2,700	<60	--	--			
ADR-1	02-20-98	13.95	Not surveyed: well inaccessible														
ADR-1	05-11-98	13.95	Not surveyed: well inaccessible														
ADR-1	07-30-98	13.95	Not surveyed: well inaccessible														
ADR-1	10-08-98	13.95	Not surveyed: well inaccessible														
ADR-1	02-18-99	13.95	7.80	ND	6.15	02-18-99	200	4.4	<0.5	1.3	1.3	43	--	--			
ADR-1	05-26-99	13.95	10.40	ND	3.55	05-26-99	160	10	<0.5	1.7	1.8	43	--	--			
ADR-1	08-23-99	13.95	10.70	ND	3.25	08-23-99	7,400	310	16	210	970	18	--	--	0.37	NP	
ADR-1	10-27-99	13.95	10.82	ND	3.13	10-27-99	5,000	210	6.3	180	490	5	--	--	0.73	NP	
ADR-1	01-31-00	13.95	9.21	ND	4.74	01-31-00	290	3.6	<0.5	1.1	<1	26	--	--	1.0	NP	

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE 8021B* (µg/L)	MTBE 8260 (µg/L)	TPH Diesel (µg/L)	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)	
ADR-2	03-24-95	14.64	8.41	>3.00	NR[1]	03-24-95	Not sampled: well contained floating product										
ADR-2	06-05-95	14.64	11.45	>3.00	NR[1]	06-05-95	Not sampled: well contained floating product										
ADR-2	08-17-95	14.64	12.10	0.03	** 2.56	08-17-95	Not sampled: well contained floating product										
ADR-2	12-04-95	14.64	10.93	0.03	** 3.73	12-13-95	Not sampled: well contained floating product										
ADR-2	03-01-96	14.64	8.74	ND	5.90	03-13-96	29,000	1,100	1,200	710	3,800	<500	--	--			
ADR-2	05-29-96	14.64	10.43	ND	4.21	05-29-96	33,000	510	500	470	2,300	120	--	--			
ADR-2	08-29-96	14.64	11.64	ND	3.00	08-29-96	8,000	230	180	150	730	53	--	--			
ADR-2	11-21-96	14.64	11.23	ND	3.41	11-21-96	15,000	630	440	390	2,100	75	--	--			
ADR-2	03-26-97	14.64	11.13	ND	3.51	03-26-97	6,100	320	23	180	400	32	--	--			
ADR-2	05-21-97	14.64	11.64	ND	3.00	05-21-97	6,100	380	22	210	320	<30	--	--			
ADR-2	08-08-97	14.64	11.85	ND	2.79	08-08-97	8,400	380	35	230	910	<30	--	--			
ADR-2	11-18-97	14.64	3.33	ND	11.31	11-18-97	11,000	230	29	300	1,200	<60	--	--			
ADR-2	02-20-98	14.64	7.67	ND	6.97	02-20-98	4,700	320	30	130	360	20	--	--			
ADR-2	05-11-98	14.64	10.47	ND	4.17	05-11-98	Not sampled										
ADR-2	07-30-98	14.64	Not surveyed: well inaccessible														
ADR-2	10-08-98	14.64	11.67	ND	2.97	10-08-98	Not sampled										
ADR-2	02-18-99	14.64	Not surveyed: well inaccessible														
ADR-2	05-26-99	14.64	11.02	ND	3.62	05-26-99	5,900	670	5	340	104	16	--	--			
ADR-2	08-23-99	14.64	9.82	ND	4.82	08-23-99	9,100	570	12	410	1,000	28	--	--	0.50	NP	
ADR-2	10-27-99	14.64	9.85	Sheen	4.79	10-27-99	Not sampled: sheen present										
ADR-2	01-31-00	14.64	10.15	ND	4.49	01-31-00	7,700	280	3.4	370	390	23	--	--	2.0	NP	

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

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

Well Number	Date Gauged	TOC Elevation (ft-MSL)	Depth to Water (feet)	FP Thickness (feet)	Groundwater Elevation (ft-MSL)	Date Sampled	TPH Gasoline ( $\mu\text{g/L}$ )	TPH Benzene ( $\mu\text{g/L}$ )	TPH Toluene ( $\mu\text{g/L}$ )	TPH Ethyl-benzene ( $\mu\text{g/L}$ )	TPH Total Xylenes ( $\mu\text{g/L}$ )	MTBE 8021B* ( $\mu\text{g/L}$ )	MTBE 8260 ( $\mu\text{g/L}$ )	TPH Diesel ( $\mu\text{g/L}$ )	Dissolved Oxygen (mg/L)	Purged/ Not Purged (P/NP)
-------------	-------------	------------------------	-----------------------	---------------------	--------------------------------	--------------	----------------------------------	---------------------------------	---------------------------------	---------------------------------------	---------------------------------------	---------------------------------	-------------------------------	--------------------------------	-------------------------	---------------------------

TOC: top of casing

ft-MSL: elevation in feet, relative to mean sea level

TPH: total petroleum hydrocarbons, California DHS LUFT Method

BTEX: benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/27/99).

MTBE: Methyl tert-butyl ether

$\mu\text{g/L}$ : micrograms per liter

mg/L: milligrams per liter

ND: none detected

NR: not reported, data not available or not measurable

--: not analyzed or not applicable

< denotes concentration not present at or above laboratory detection limit stated to the right.

[1] well contained more than 3 feet of floating product, exact product thickness and groundwater elevation could not be measured

\*: EPA method 8020 prior to 10/27/99

\*\*: [corrected elevation (Z')] = Z + (h \* 0.73) where Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water

\*\*\*: For previous historical groundwater elevation data please refer to *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 2169, 889 West Grand Avenue, Oakland, California, (EMCON, March 4, 1996).*

**Table 2**  
**Groundwater Flow Direction and Gradient**

**ARCO Service Station 2169**  
**889 West Grand Avenue, Oakland, California**

<b>Date Measured</b>	<b>Average Flow Direction</b>	<b>Average Hydraulic Gradient</b>
03-24-95	Northwest	0.009
06-05-95	Northwest	0.002
08-17-95	West	0.001
12-04-95	North-Northwest	0.002
03-01-96	Northwest	0.003
05-29-96	Northwest	0.002
08-29-96	West	0.002
11-21-96	West-Northwest	0.002
03-26-97	Northwest	0.002
05-21-97	North-Northwest	0.002
08-08-97	North-Northwest	0.002
11-18-97	North-Northwest	0.003
02-20-98	North	0.013
05-11-98	North	0.03
07-30-98	North	0.002
10-08-98	North-Northwest	0.002
02-18-99	Northwest	0.008
05-26-99	North-Northwest	0.003
08-23-99	Variable	Variable
10-27-99	Variable	Variable
<b>01-31-00</b>	<b>West-Northwest</b>	<b>0.006</b>



**ATTACHMENT D**

**EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION**

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## Error Summary Log

03/07/03

EDF 1.2i All files present in deliverable.

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Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #2169, Oakland, Ca
Work Order Number:	MMB0456
Global ID:	T0600100112
Lab Report Number:	MMB0456030520031248

## Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
MMB04560305200 A-1 31248		MMB045601	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 A-2 31248		MMB045602	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 A-3 31248		MMB045603	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 A-4 31248		MMB045604	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 A-5 31248		MMB045605	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 A-6 31248		MMB045606	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 ADR-1 31248		MMB045609	W	CS	8260+OX	SW5030B	02/12/03	02/26/03	02/26/03	3B26019	1	
MMB04560305200 ADR-2 31248		MMB045610	W	CS	8260+OX	SW5030B	02/12/03	02/26/03	02/26/03	3B26019	1	
MMB04560305200 AR-1 31248		MMB045607	W	CS	8260+OX	SW5030B	02/12/03	02/24/03	02/25/03	3B24035	1	
MMB04560305200 AR-2 31248		MMB045608	W	CS	8260+OX	SW5030B	02/12/03	02/26/03	02/26/03	3B26019	1	
		3B24035BS1	WQ	BS1	8260+OX	SW5030B	//	02/24/03	02/24/03	3B24035	1	
		3B24035BS2	WQ	BS2	8260+OX	SW5030B	//	02/24/03	02/24/03	3B24035	1	
		3B24035BLK1	WQ	LB1	8260+OX	SW5030B	//	02/24/03	02/24/03	3B24035	1	
		3B24035MS1	W	MS1	8260+OX	SW5030B	//	02/24/03	02/25/03	3B24035	1	
		3B24035MSD1	W	SD1	8260+OX	SW5030B	//	02/24/03	02/25/03	3B24035	1	
		3B26019BS1	WQ	BS1	8260+OX	SW5030B	//	02/26/03	02/26/03	3B26019	1	
		3B26019BS2	WQ	BS2	8260+OX	SW5030B	//	02/26/03	02/26/03	3B26019	1	
		3B26019BLK1	WQ	LB1	8260+OX	SW5030B	//	02/26/03	02/26/03	3B26019	1	
		3B26019MS1	W	MS1	8260+OX	SW5030B	//	02/26/03	02/26/03	3B26019	1	
		3B26019MSD1	W	SD1	8260+OX	SW5030B	//	02/26/03	02/26/03	3B26019	1	

# EDFSAMP: Error Summary Log

03/07/03

Error type	Logcode	Projname	Npdtwo	Sampid	Matrix
There are no errors in this data file					

# EDFTEST: Error Summary Log

03/07/03

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					//	0

# EDFRES: Error Summary Log

03/07/03

Error type	Labsampid	Qcocode	Matrix	Anmcode	Pvcocode	Anadate	Run number	Parlabel
Warning: extra parameter	3B24035MS1	MS1	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	3B24035MSD1	SD1	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	3B26019MS1	MS1	W	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	3B26019MSD1	SD1	W	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	MMB045601	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045601	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045602	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045602	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045603	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045603	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045604	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045604	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045605	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045605	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045606	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045606	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045607	CS	W	8260+OX	PR	02/25/03	1	GROC6C10
Warning: extra parameter	MMB045607	CS	W	8260+OX	PR	02/25/03	1	XYLENES
Warning: extra parameter	MMB045608	CS	W	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	MMB045608	CS	W	8260+OX	PR	02/26/03	1	XYLENES
Warning: extra parameter	MMB045609	CS	W	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	MMB045609	CS	W	8260+OX	PR	02/26/03	1	XYLENES
Warning: extra parameter	MMB045610	CS	W	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	MMB045610	CS	W	8260+OX	PR	02/26/03	1	XYLENES
Warning: extra parameter	3B24035BLK1	LB1	WQ	8260+OX	PR	02/24/03	1	GROC6C10

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	3B24035BLK1	LB1	WQ	8260+OX	PR	02/24/03	1	XYLENES
Warning: extra parameter	3B24035BS2	BS2	WQ	8260+OX	PR	02/24/03	1	GROC6C10
Warning: extra parameter	3B26019BLK1	LB1	WQ	8260+OX	PR	02/26/03	1	GROC6C10
Warning: extra parameter	3B26019BLK1	LB1	WQ	8260+OX	PR	02/26/03	1	XYLENES
Warning: extra parameter	3B26019BS2	BS2	WQ	8260+OX	PR	02/26/03	1	GROC6C10

# EDFQC: Error Summary Log

03/07/03

Error type	Lablotctl	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					



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## EDFCL: Error Summary Log

03/07/03

---

Error type	Cirevdate	Anmcode	Exmcode	Parlabel	Cicode
There are no errors in this data file	//				

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**Facility Global ID:** T0600100112

**Facility Name:** ARCO

**Submittal Title:** 1st Qtr 2003 Monitoring Report #2169

**Submittal Type:** GW Monitoring Report

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