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URS

March 19, 2004

Mr. Don Hwang
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: First Quarter 2004 Groundwater Monitoring Report
ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California
URS Project #38486730

Dear Mr. Hwang:

On behalf of Atlantic Richfield Company (ARCO – a BP affiliated company), URS Corporation (URS) is submitting the *First Quarter 2004 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

REGISTERED GEOLOGIST
JAMES F. DURKIN
No. 759
CERTIFIED HYDROGEOLOGIST
Exp. 2/28/05
STATE OF CALIFORNIA

Scott Robinson
Project Manager

James F. Durkin, C.Hg.
Senior Geologist

Enclosure: First Quarter 2004 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO, (electronic copy uploaded to ENFOS)

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

Atlantic Richfield Company
(a BP affiliated company)

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

March 19, 2004

RE: First Quarter 2004 Groundwater Monitoring Report
ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California
URS Project #38486730

"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

FIRST QUARTER 2004 GROUNDWATER MONITORING

ARCO SERVICE STATION #6148
5131 SHATTUCK AVENUE
OAKLAND, CALIFORNIA

Prepared for
Atlantic Richfield Company

March 19, 2004

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

38486730

Date: March 19, 2004
Quarter: 1Q 04

ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.: 6148 Address: 5131 Shattuck Avenue, Oakland, California
ARCO Environmental Business Manager: Paul Supple
Consulting Co./Contact Person: URS Corporation / Scott Robinson
Consultant Project No.: 38486730
Primary Agency: Alameda County Health Care Services Agency (ACHCSA)

WORK PERFORMED THIS QUARTER (First – 2004):

1. Performed first quarter 2004 groundwater monitoring event on February 13, 2004.
2. Prepared and submitted first quarter 2004 groundwater monitoring report.
3. Performed well elevation survey on January 29, 2004 (Attachment E).
4. Well repairs performed on December 30, 2003 (Attachment F).

WORK PROPOSED FOR NEXT QUARTER (Second – 2004):

1. Perform second quarter 2004 groundwater monitoring event.
2. Prepare and submit second quarter 2004 groundwater monitoring report.

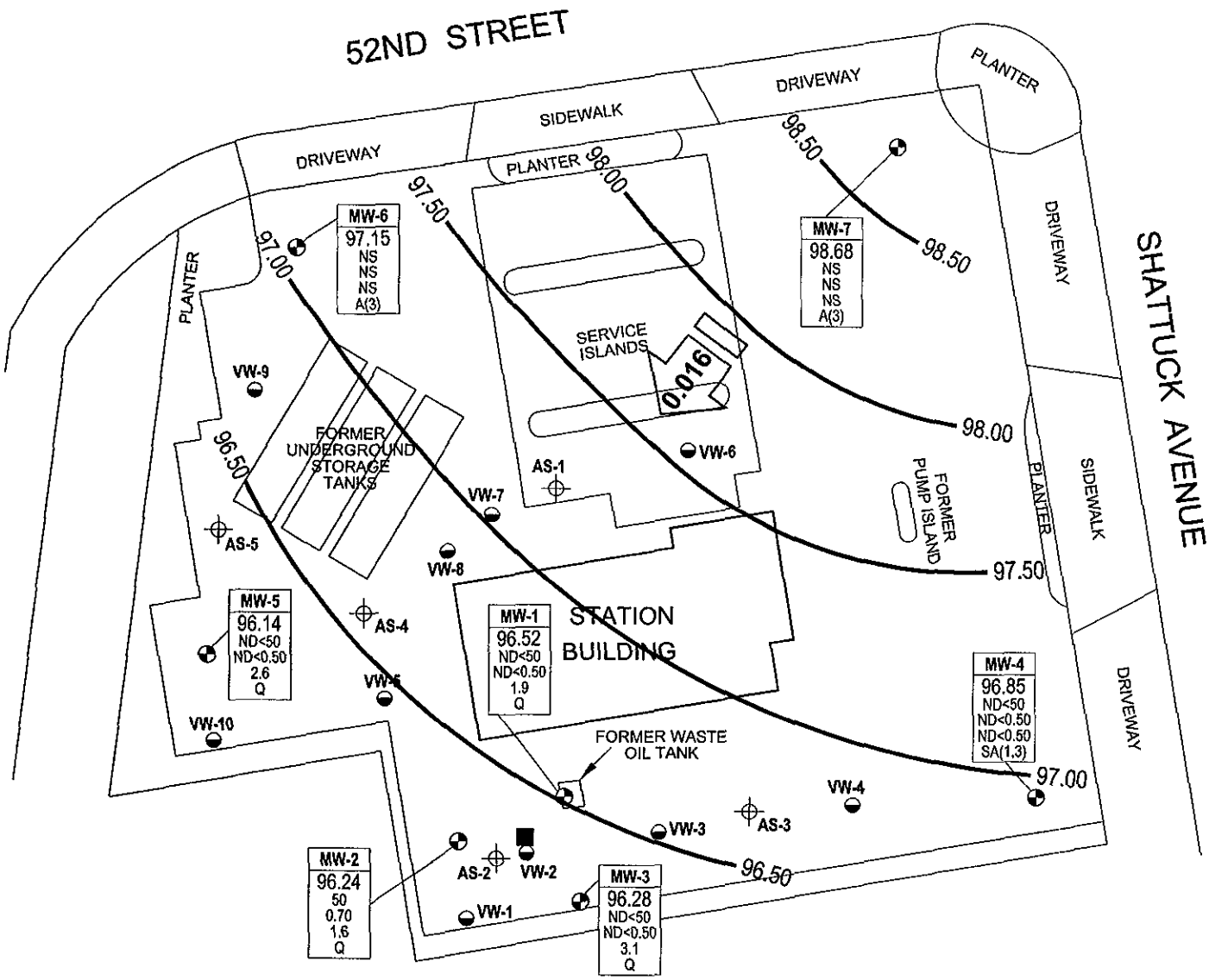
Current Phase of Project:	GW monitoring/sampling
Frequency of Groundwater Sampling:	Quarterly : MW-1, MW-2, MW-3, & MW-5
	Semi-Annually (1st/3rd Quarter): Well MW-4
	Annually (3rd Quarter): MW-6 & MW-7
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
Current Remediation Techniques:	ORC: (MW-2 and MW-5)
Previous Remediation Techniques	Soil Vapor Extraction (SVE), Air-Sparge and Air-Bubbling Systems
Bulk Soil Removed to Date:	560 cubic yards
Approximate Depth to Groundwater:	13.51 (MW-6) to 16.85 (MW-1) feet
Groundwater Gradient (direction):	Southwest
Groundwater Gradient (magnitude):	0.016 feet per foot

DISCUSSION:

GRO was detected above laboratory reporting limits in one of the five wells sampled this quarter at a concentration of 50 µg/L (MW-2). Benzene was detected above laboratory reporting limits in one well at a concentration of 0.70 µg/L (MW-2). MTBE was detected above laboratory reporting limits in four wells sampled this quarter at concentrations ranging from 1.6 µg/L (MW-2) to 3.1 µg/L (MW-3). No other fuel oxygenates were detected above laboratory reporting limits during this sampling event.

ATTACHMENTS:

- Figure 1 – Groundwater Elevation Contour and Analytical Summary Map – February 13, 2004
- Table 1 – Groundwater Elevation and Analytical Data
- Table 2 – Groundwater Flow Direction and Gradient
- Table 3 – Fuel Oxygenate Analytical Data
- 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
- Attachment E – Well Survey Data
- Attachment F – Well Repair Data



LEGEND:

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

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

NORTH

0 30 60

SCALE IN FEET

"Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPHg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported."

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

URS	Project No. 38486730 Arco Service Station 6148 5131 Shattuck Avenue Oakland, California	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP First Quarter 2004 (February 13, 2004)	FIGURE 1

X:\x_env_waste\BP GEM\Sites\Scott Robinson\Paul Supple\6148\Monitoring\Qtr. 1, 2004\Drawings\GWEC-AS_2-13.dwg, 03/16/2004 11:19:53 AM, jkangi0

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Well Number	Date Sampled	Purge/ Not Purge	TOC Elevation (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Well Depth (ft bgs)	Depth to Groundwater (ft TOC)	Groundwater Elevation (ft)	GRO / TPH-g[7] (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[5] (mg/L)	pH[5]
MW-1	06/21/00		107.80	11.50	25.70	25.70	17.49	90.31	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<1.0	ND<3.0	NA	NA
	09/20/00						17.64	90.16	ND<50	ND<0.5	0.677	ND<0.5	0.969	ND<2.5	NA	NA
	12/22/00						16.87	90.93	186	5.38	0.522	9.52	30.2	8.91	NA	NA
	03/26/01						16.60	91.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	9.1	NA	NA
	05/30/01						17.10	90.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	09/23/01						17.53	90 27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	6.7	NA	NA
	12/28/01						15.57	92.23	ND<50	2.7	ND<0.5	ND<0.5	ND<0 5	20	NA	NA
	03/21/02						15.57	92.23	NS	NS	NS	NS	NS	NS	NA	NA
	04/17/02						16.25	91.55	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/19/02						17.69	90.11	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	2.0	7.1
	11/27/02						17.45	90.35	ND <50	ND<0 50	1.8	0.65	3.5	1 7	1.0	6.3
	02/05/03[4]						16.93	90.87	ND <50	ND<0 50	ND<0.50	ND<0.50	ND<0.50	1.1	1.2	7.3
	05/13/03	NP					16.95	90.85	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.0	6.5
	07/31/03	NP					17.74	90.06	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	0.55	1.2	6.0
	12/17/03	NP					17.03	90.77	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.5	2.0	6.5
	02/13/04[8]	**NP**	**113.37**				**16.85**	**96.52**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**1.9**	**1.0**	**6.4**
MW-2	06/21/00		107.28	12.00	25.80	25.80	17.19	90.09	69	ND<0 5	ND<0.5	ND<0.5	ND<1.0	12	NA	NA
	09/20/00						17.31	89.97	ND<50	0.964	ND<0.5	ND<0.5	ND<.05	5.05	NA	NA
	12/22/00						16.58	90.70	2,140	174	60.2	118	438	123	NA	NA
	03/26/01						16.45	90.83	8,490	333	148	495	1,660	ND<250	NA	NA
	05/30/01						16.83	90.45	4,700	200	71	260	780	43	NA	NA
	09/23/01						17.30	89.98	160	5.9	1.8	0.80	41	14	NA	NA
	12/28/01						15.38	91.90	1,800	54	ND<5.0	ND<5.0	240	30	NA	NA
	03/21/02						15.36	91.92	NS	NS	NS	NS	NS	NS	NA	NA
	04/17/02						16.01	91.27	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0 5	10	NA	NA
	08/19/02						17.53	89.75	170 [1]	22	0.92	14	26	ND<2.5	3.0	6.9
	11/27/02						17.21	90.07	340	22	0.68	13	26	ND<0.50	1.6	6.6
	02/05/03[4]						16.72	90.56	83	2.7	ND<0.50	0.97	15	4.3	0.7	7.0
	05/13/03[6]	NP					16.72	90.56	ND<50	0.91	ND<0.50	ND<0.50	0.60	2.8	0.7	6.5
	07/31/03	NP					17.51	89.77	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.0	7.1	6.7
	12/17/03	NP					16.78	90.50	51	1.0	ND<0.50	ND<0.50	ND<0.50	2.4	8.1	7.1
	02/13/04[8]	**NP**	**112.87**				**16.63**	**96.24**	**50**	**0.70**	**ND<0.50**	**0.54**	**0.90**	**1.6**	**5.6**	**6.7**

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ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Well Number	Date Sampled	Purge/ Not Purge	TOC Elevation (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Well Depth (ft bgs)	Depth to Groundwater (ft TOC)	Groundwater Elevation (ft)	GRO / TPH-g[7] (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[5] (mg/L)	pH[5]
MW-3	06/21/00		107.61	10.00	25.90	25.90	17.52	90.09	200	ND<0.5	ND<0.5	ND<0.5	2.1	24	NA	NA
	09/20/00						17.61	90.00	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	20	NA	NA
	12/22/00						16.85	90.76	227	4.73	1.06	2.58	5.22	27.3	NA	NA
	03/26/01						16.79	90.82	287	6.29	1.58	6.47	12.1	24.2	NA	NA
	05/30/01						17.11	90.50	500	10	ND<0.5	7.00	16	20	NA	NA
	09/23/01						17.57	90.04	400	6.4	0.74	ND<0.5	0.62	22	NA	NA
	12/28/01						15.41	92.20	270	2.5	2.4	ND<0.5	2.3	9.2	NA	NA
	03/21/02						15.58	92.03	NS	NS	NS	NS	NS	NS	NA	NA
	04/17/02						16.25	91.36	360	2.5	0.72	ND<0.5	ND<0.5	12	NA	NA
	08/19/02						17.66	89.95	750[2]	11	2.1	ND<0.5	2.4	14	1.4	6.8
	11/27/02						17.69	89.92	470	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	6.6
	02/05/03[4]						16.82	90.79	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.4	1.3	6.6
	05/13/03	NP					17.12	90.49	300	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.2	1.4	6.7
	07/31/03	NP					17.72	89.89	320	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.1	1.4	6.8
	07/31/03	NP					16.95	90.66	340	0.51	ND<0.50	ND<0.50	ND<0.50	4.8	1.3	6.7
	07/31/03	NP					16.95	90.66	340	0.51	ND<0.50	ND<0.50	ND<0.50	4.8	1.3	6.7
	02/13/04[8]	**NP**	**113.05**				**16.77**	**96.28**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**3.1**	**2.1**	**7.1**
MW-4	06/21/00		106.71	13.00	26.00	26.00	16.00	90.71	1,400	5.3	7.3	36	85	4	NA	NA
	09/20/00						16.03	90 68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/22/00						NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/26/01						15.05	91.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	05/30/01						15.62	91.09	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01						16.07	90.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/28/01						13.68	93.03	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02						14.04	92.67	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02						14.78	91.93	NS	NS	NS	NS	NS	NS	NS	NS
	08/19/02						16.18	90.53	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	1.4	6.8
	11/27/02						15.89	90.82	NS	NS	NS	NS	NS	NS	NS	NS
	02/05/03[4]						15.40	91.31	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.1	6 6
	05/13/03						15.42	91.29	NS	NS	NS	NS	NS	NS	NS	NS
	07/31/03	P					16.23	90.48	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.4	6.4
	12/17/03						15.57	91.14	NS	NS	NS	NS	NS	NS	NS	NS
	02/13/04[8]	**P**	**112.15**				**15.30**	**96.85**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**1.1**	**6.3**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Well Number	Date Sampled	Purge/ Not Purge	TOC Elevation (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Well Depth (ft bgs)	Depth to Groundwater (ft TOC)	Groundwater Elevation (ft)	GRO / TPH-g[7] (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[5] (mg/L)	pH[5]
MW-5	06/21/00		106.60	12.00	25.00	25.00	16.52	90.08	67	ND<0.5	ND<0.5	ND<0.5	ND<1.0	10	NA	NA
	09/20/00						16.34	90.26	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3.48	NA	NA
	12/22/00						15.58	91.02	341	11.5	2.53	4.02	6.25	146	NA	NA
	03/26/00						15.45	91.15	767	12.4	ND<5.0	ND<5.0	ND<5.0	163	NA	NA
	05/30/01						15.77	90.83	110	2.3	ND<0.5	ND<0.5	0.81	72	NA	NA
	09/23/01						16.16	90 44	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	12/28/01						14.09	92 51	240	2.8	1.9	ND<0.5	2.6	48	NA	NA
	03/21/02						14.43	92.17	NS	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NS	NS	NS
	04/17/02						14.96	91.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	08/19/02						16.34	90.26	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
	11/27/02						NM[3]	NM[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS	NS
	02/05/03[4]						NM[3]	NM[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]	NS[3]
	05/13/03[6]	NP					15.43	91.17	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	15	1.4	6.2
	07/31/03	NP					16.47	90.13	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2	14.1	8.1
	12/17/03	NP					15.99	90.61	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	15.4	8.5
	02/13/04[8]	**NP**	**112.04**				**15.90**	**96.14**	**ND<50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**2.6**	**11.1**	**7.0**
MW-6	06/21/00		105.13	14.00	26.60	26.60	13.91	91.22	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00						14.03	91.10	NS	NS	NS	NS	NS	NS	NS	NS
	12/22/00						NM	NC	NS	NS	NS	NS	NS	NS	NS	NS
	03/26/01						12 59	92.54	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	05/30/01						13.40	91.73	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01						13.49	91.64	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01						12.07	93.06	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02						11.79	93.34	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02						12.45	92.68	NS	NS	NS	NS	NS	NS	NS	NS
	08/19/02						13.96	91.17	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	2.8	6.9
	11/27/02						14.07	91.06	NS	NS	NS	NS	NS	NS	NS	NS
	02/05/03[4]						13.55	91.58	NS	NS	NS	NS	NS	NS	NS	NS
	05/13/03						13.57	91.56	NS	NS	NS	NS	NS	NS	NS	NS
	07/31/03	P					14.18	90.95	67	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	6 5
	12/17/03						14.12	91.01	NS	NS	NS	NS	NS	NS	NS	NS
	02/13/04[8]		**110.66**				**13.51**	**97.15**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Well Number	Date Sampled	Purge/ Not Purge	TOC Elevation (ft MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Well Depth (ft bgs)	Depth to Groundwater (ft TOC)	Groundwater Elevation (ft)	GRO / TPH-g[7] (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen[5] (mg/L)	pH[5]
MW-7	06/21/00		107.05	14.00	27.00	27.00	14.57	92.48	NS	NS	NS	NS	NS	NS	NS	NS
	09/20/00						14.58	92.47	NS	NS	NS	NS	NS	NS	NS	NS
	12/22/00						13.21	93.84	NS	NS	NS	NS	NS	NS	NS	NS
	03/26/01						13.18	93.87	71.4	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	05/30/01						13.80	93.25	NS	NS	NS	NS	NS	NS	NS	NS
	09/23/01						14.27	92.78	NS	NS	NS	NS	NS	NS	NS	NS
	12/28/01						12.24	94.81	NS	NS	NS	NS	NS	NS	NS	NS
	03/21/02						12.16	94.89	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	NA	NA
	04/17/02						13.08	93.97	NS	NS	NS	NS	NS	NS	NS	NS
	08/19/02						14.73	92.32	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	1.4	6.7
	11/27/02						14.76	92.29	NS	NS	NS	NS	NS	NS	NS	NS
	02/05/03[4]						14.07	92.98	NS	NS	NS	NS	NS	NS	NS	NS
	05/13/03						14.00	93.05	NS	NS	NS	NS	NS	NS	NS	NS
	07/31/03	P					14.88	92.17	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.6	6.4
	12/17/03						14.10	92.95	NS	NS	NS	NS	NS	NS	NS	NS
	02/13/04[8]		**112.59**				**13.91**	**98.68**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station # 6148
5131 Shattuck Avenue
Oakland, California

bgs	= below ground surface
ft	= Feet
GRO	= Gasoline Range Organics
µg/L	= Micrograms per liter
mg/L	= Milligrams per liter
MSL	= Mean Sea Level
MTBE	= Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted (Prior to 2/5/03)
NA	= Not available
ND<	= Not detected at or above specified laboratory reporting limit
NP	= No Purge
NS	= Not Sampled
P	= Purge
TOC	= Top of Casing
TPH-g	= Total Petroleum Hydrocarbons as gasoline
1	= Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
2	= Chromatogram Pattern: Gasoline C6-C10
3	= Well MW-5 not sampled due to ORC sock wedged in well.
4	= TPH-g, BTEX, and MTBE analyzed by EPA meathod 8260B beginning on 1st Quarter Sampling Event (2/5/03)
5	= pH and dissolved oxygen are field measurements.
6	= During this monitoring event, the oxyegen releasing compounds (ORC) were replaced for this well.
7	= Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPHg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.
8	= Wells surveyed to NAVD'88 datum on January 29, 2004.
Source:	The data within this table collected prior to August 2002 was provided to URS by the Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station #6148
5131 Shattuck Avenue
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/21/00	South-Southwest	0.02
09/20/00	South-Southwest	0.017
12/22/00	South-Southwest	0.022
03/26/01	South-Southwest	0.020
05/30/01	South-Southwest	0.020
09/23/01	South-Southwest	0.019
12/28/01	Southwest	0.019
03/21/02	Southwest	0.019
04/17/02	Southwest	0.017
08/19/02	Southwest	0.016
11/27/02	Southwest	0.015
02/05/03	Southwest	0.017
05/13/03	Southwest	0.013
07/31/03	Southwest	0.014
12/17/03	Southwest	0.017
02/13/04	**Southwest**	**0.016**

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

Table 3
Fuel Oxygenate Analytical Data

ARCO Service Station #6148
5131 Shattuck 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)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1	02/05/03	ND<40	ND<20	1.1	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/13/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/31/03	ND<100	ND<20	0.55	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/17/03	ND<100	ND<20	2.5	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	02/13/04	**ND<100**	**ND<20**	**1.9**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-2	02/05/03	ND<40	ND<20	4.3	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/13/03	ND<100	ND<20	2.8	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/31/03	ND<100	ND<20	2.0	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/17/03	ND<100	ND<20	2.4	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	02/13/04	**ND<100**	**ND<20**	**1.6**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-3	02/05/03	ND<40	ND<20	2.4	ND<0.50	ND<0.50	ND<0.50	NA	NA
	05/13/03	ND<100	ND<20	2.2	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/31/03	ND<100	ND<20	2.1	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/17/03	ND<100	ND<20	4.8	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	02/13/04	**ND<100**	**ND<20**	**3.1**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-4	02/05/03	ND<40	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	NA	NA
	07/31/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	02/13/04	**ND<100**	**ND<20**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-5	05/13/03	ND<100	ND<20	15	ND<0.50	ND<0.50	1.1	NA	NA
	07/31/03	ND<100	ND<20	1.2	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/17/03	ND<100	ND<20	1.8	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	02/13/04	**ND<100**	**ND<20**	**2.6**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-6	07/31/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
MW-7	07/31/03	ND<100	ND<20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert butyl ether
µg/L = micrograms per liter
MTBE = Methyl tert-butyl ether
NA = Data not available, not analyzed, or not applicable
ND< = Not detected at or above the laboratory reporting limit
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol

ATTACHMENT A

FIELD PROCEDURES AND FIELD DATA SHEETS

FIELD PROCEDURES

Sampling Procedures

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

WELL GAUGING DATA

Project # 040213-DA1 Date 2/13/04 Client 6148

Site 5131 Shattuck Ave. Oakland, CA

	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	NP@
	MW-1	4					16.85	25.60	TOC	11.5'
*	MW-2	4					16.63	25.59		12'
*	MW-3	4					16.77	25.58		10'
	MW-4	4					15.30	26.15		P
*	MW-5	4					15.90	24.84		12'
	MW-6	4					13.51	26.69		—
	MW-7	4					13.91	27.07	↓	—
	* Gauged w/ ORC's in well									

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA1	Station # 6148
Sampler: DA	Date: 2/13/04
Well I.D.: MW-1	Well Diameter: ~~2~~ 3 (4) 6 8 ____
Total Well Depth: 25.60	Depth to Water: 16.85
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
(2")	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

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

Sampling Method: Bailer / X 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.

____ (1 Case Volume (Guls.)) x No Purge (Specified Volumes) = ____ (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0854	65.1	6.4	893	-	clear

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

Sampling Time: 0857 Sampling Date: 2/13/04

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

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's, EDB, 1,2 DCA, Ethanol

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 #: 040213-DA1	Station # 6148
Sampler: DA	Date: 2/13/04
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 25.59	Depth to Water: 16.63
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

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

Sampling Method: Bailer / X 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.

1 Case Volume (Gals.)	X	Specified Volumes	=	Calculated Volume
____	X	No Purge	=	____ Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0935	63.8	6.7	537	—	orange tint, cloudy

Did well dewater? Yes (No)		Gallons actually evacuated: —	
Sampling Time: 0938		Sampling Date: 2/13/04	
Sample I.D.: MW-2		Laboratory: Pace (Sequoia) Other____	
Analyzed for: (TPH-G) (BTEX) MTBE TPH-D		Other: Oxy's, EDB, 1,2 DCA, Ethanol	
D.O. (if req'd):	Pre-purge: ____ mg/L	Post-purge:	5.6 mg/L
O.R.P. (if req'd):	Pre-purge: ____ mV	Post-purge:	____ mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA1	Station # 6148
Sampler: DA	Date: 2/13/04
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 25.58	Depth to Water: 16.77
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

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

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / 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.

____ (1 Case Volume (Gals.)) x No Purge (Specified Volumes) = ____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0925	64.0	7.1	629	—	clear

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

Sampling Time: 0928 Sampling Date: 2/13/04

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

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's, EDB, 1,2 DCA, Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.1 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA1	Station # 6148
Sampler: DA	Date: 2/13/04
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 26.15	Depth to Water: 15.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

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

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

Top of Screen: ___

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

7.0 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 21.0 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0946	66.6	6.4	492	7	clear
0948	66.8	6.3	445	14	"
0949	70.4	6.3	443	21	"

Did well dewater? Yes (No) Gallons actually evacuated: 21

Sampling Time: 0952 Sampling Date: 2/13/04

Sample I.D.: MW-4 Laboratory: Pace (Severn) Other ___

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's, EDB, 1,2 DCA, Ethanol

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.1 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040213-DA1	Station # 6148
Sampler: DA	Date: 2/13/04
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 24.84	Depth to Water: 15.90
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

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

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

Sampling Method: Bailer X 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.

____ (1 Case Volume (Gals.)) X No Purge (Specified Volumes) = ____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
0909	62.7	7.0	675	—	clear

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

Sampling Time: 0912 Sampling Date: 2/13/04

Sample I.D.: MW-5 Laboratory: Pace (Sequoia) Other ____

Analyzed for: (TPH-G) (BTEX) MTBE TPH-D Other: Oxy's, EDB, 1,2 DCA, Ethanol

D.O. (if req'd):	Pre-purge:		mg/L	Post-purge:	11.1 ✓ mg/L
O.R.P. (if req'd):	Pre-purge:		mV	Post-purge:	mV

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

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

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

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

6148

Station #

5131 Shattuck Ave. Oakland, CA

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

21

added equip. rinse water 4

any other adjustments

TOTAL GALS. RECOVERED 25

loaded onto BTS vehicle # 49

BTS event #	time	date
040213-DA 1	1000	2/13/04

signature David Allbut

* *

REC'D AT	time	date
		/ /

unloaded by signature

ATTACHMENT B

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

LABORATORY PROCEDURES

Laboratory Procedures

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

3 March, 2004

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

RE: ARCO #6148,Oakland, CA
Work Order: MNB0496

Enclosed are the results of analyses for samples received by the laboratory on 02/17/04 15:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

James Hartley For Lisa Race
Senior Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MNB0496-01	Water	02/13/04 08:57	02/17/04 15:15
MW-2	MNB0496-02	Water	02/13/04 09:38	02/17/04 15:15
MW-3	MNB0496-03	Water	02/13/04 09:25	02/17/04 15:15
MW-4	MNB0496-04	Water	02/13/04 09:52	02/17/04 15:15
MW-5	MNB0496-05	Water	02/13/04 09:12	02/17/04 15:15

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MNB0496-01) Water Sampled: 02/13/04 08:57 Received: 02/17/04 15:15									
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**1.9**	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	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.2 %*		*78-129*		"	"	"	
MW-2 (MNB0496-02) Water Sampled: 02/13/04 09:38 Received: 02/17/04 15:15									
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**1.6**	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	**0.70**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**0.54**	0.50	"	"	"	"	"	"	
Xylenes (total)	**0.90**	0.50	"	"	"	"	"	"	
Gasoline Range Organics	**50**	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.2 %*		*78-129*		"	"	"	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
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URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MNB0496-03) Water Sampled: 02/13/04 09:25 Received: 02/17/04 15:15									
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**3.1**	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	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*93.8 %*	*78-129*		"	"	"	"	
MW-4 (MNB0496-04) Water Sampled: 02/13/04 09:52 Received: 02/17/04 15:15									
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	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	"	"	"	"	"	"	
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	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*	*78-129*		"	"	"	"	

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URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (MNB0496-05) Water	**Sampled: 02/13/04 09:12**	**Received: 02/17/04 15:15**							
Ethanol	ND	100	ug/l	1	4B27015	02/27/04	02/27/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**2.6**	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	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*97.0 %*		*78-129*	"	"	"	"	

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URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B27015 - EPA 5030B P/T										
Blank (4B27015-BLK1)				Prepared & Analyzed: 02/27/04						
Ethanol	ND	100	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	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*4.73*		"	*5.00*		*94.6*	*78-129*			
Laboratory Control Sample (4B27015-BS1)				Prepared & Analyzed: 02/27/04						
Ethanol	171	100	ug/l	200		85.5	31-143			
tert-Butyl alcohol	47.2	20	"	50.0		94.4	56-131			
Methyl tert-butyl ether	10.2	0.50	"	10.0		102	63-137			
Di-isopropyl ether	9.95	0.50	"	10.0		99.5	76-130			
Ethyl tert-butyl ether	10.8	0.50	"	10.0		108	81-121			
tert-Amyl methyl ether	10.6	0.50	"	10.0		106	82-140			
1,2-Dichloroethane	9.67	0.50	"	10.0		96.7	77-136			
1,2-Dibromoethane (EDB)	10.9	0.50	"	10.0		109	77-132			
Benzene	10.0	0.50	"	10.0		100	78-124			
Toluene	*10.1*	*0.50*	"	*10.0*		*101*	*78-129*			
Ethylbenzene	9.08	0.50	"	10.0		90.8	84-117			
Xylenes (total)	28.2	0.50	"	30.0		94.0	83-125			
Surrogate: 1,2-Dichloroethane-d4	*4.71*		"	*5.00*		*94.2*	*78-129*			

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URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/03/04 19:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4B27015 - EPA 5030B P/T										
Laboratory Control Sample (4B27015-BS2)				Prepared & Analyzed: 02/27/04						
Methyl tert-butyl ether	9.41	0.50	ug/l	10.1		93.2	63-137			
Benzene	5.70	0.50	"	6.48		88.0	78-124			
Toluene	35.0	0.50	"	29.7		118	78-129			
Ethylbenzene	7.27	0.50	"	7.20		101	84-117			
Xylenes (total)	37.3	0.50	"	33.7		111	83-125			
Gasoline Range Organics	379	50	"	440		86.1	70-113			
Surrogate: 1,2-Dichloroethane-d4	*4.68*		"	*5.00*		*93.6*	*78-129*			
Laboratory Control Sample Dup (4B27015-BSD1)				Prepared: 02/27/04 Analyzed: 02/28/04						
Ethanol	237	100	ug/l	200		118	31-143	32.4	20	QR-02
tert-Butyl alcohol	47.4	20	"	50.0		94.8	56-131	0.423	20	
Methyl tert-butyl ether	10.0	0.50	"	10.0		100	63-137	1.98	13	
Di-isopropyl ether	9.63	0.50	"	10.0		96.3	76-130	3.27	9	
Ethyl tert-butyl ether	10.4	0.50	"	10.0		104	81-121	3.77	9	
tert-Amyl methyl ether	10.4	0.50	"	10.0		104	82-140	1.90	12	
1,2-Dichloroethane	10.1	0.50	"	10.0		101	77-136	4.35	13	
1,2-Dibromoethane (EDB)	10.6	0.50	"	10.0		106	77-132	2 79	9	
Benzene	9.74	0.50	"	10.0		97.4	78-124	2.63	12	
Toluene	10.1	0.50	"	10.0		101	78-129	0.00	10	
Ethylbenzene	9.17	0.50	"	10.0		91.7	84-117	0.986	10	
Xylenes (total)	28.2	0.50	"	30.0		94.0	83-125	0.00	11	
Surrogate: 1,2-Dichloroethane-d4	*4.77*		"	*5.00*		*95.4*	*78-129*			
Laboratory Control Sample Dup (4B27015-BSD2)				Prepared: 02/27/04 Analyzed: 02/28/04						
Methyl tert-butyl ether	9.35	0.50	ug/l	10.1		92.6	63-137	0.640	13	
Benzene	5.77	0.50	"	6.48		89.0	78-124	1.22	12	
Toluene	35.9	0.50	"	29.7		121	78-129	2.54	10	
Ethylbenzene	7.29	0.50	"	7.20		101	84-117	0.275	10	
Xylenes (total)	38.0	0.50	"	33.7		113	83-125	1.86	11	
Gasoline Range Organics	369	50	"	440		83.9	70-113	2.67	9	
Surrogate: 1,2-Dichloroethane-d4	*5.00*		"	*5.00*		*100*	*78-129*			

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URS Corporation [Arco]	Project: ARCO #6148,Oakland, CA	MNB0496
1333 Broadway, Suite 800	Project Number: INTRIM-50769	**Reported:**
Oakland CA, 94612	Project Manager. Scott Robinson	03/03/04 19:15

Notes and Definitions

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

MNB0496

Project Name 6148 GWM
BP BU/GEM CO Portfolio Retail
BP Laboratory Contract Number: Atlantic Richfield Company
Date: 2/13/04 Requested Due Date (mm/dd/yy) 14 day TAT

On-site Time: 0945	Temp: 56.3
Off-site Time: 1030	Temp: 58.2
Sky Conditions: cloudy	
Meteorological Events: —	
Wind Speed: 10	Direction: N

Send To:		BP/GEM Facility No.: ARCO 6148	Consultant/Contractor: URS
Lab Name: SEQUOIA		BP/GEM Facility Address: 5131 Shattuck Ave, OAKLAND, CA	Address: 500 12th St., Ste. 200
Lab Address: 885 Jarvis Dr.		Site ID No. ARCO 6148	Oakland, CA 94609-4014
Morgan Hill, CA 95037		Site Lat/Long:	e-mail RDD: donna_cosper@URSCorp.com
		California Global ID #: T0600100103	Consultant/Contractor Project No.: 15-00006148.01 00427
Lab PM Theresa Allen		BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-893-3600/510-874-3268
Tele/Fax: 408-776-9600 / 408-782-6308		Address: P.O. Box 6549	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: 1 Send EDF Reports		Moraga, CA 94570	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:		Tele/Fax: 925-299-8891/925-299-8872	BP/GEM Work Release No: INTRIM -50769

Lab Bottle Order No:			Matrix					Preservatives				Requested Analysis										
Item No.	Sample Description	Time	Soil/Solid	Water/Liquid	Sediments	Air	Laboratory No.	No. of containers	Unpreserved	H_2SO_4	HNO_3	HCl	TPH-G / BTEX (8015/8021/8260)	TPH-D (8015)	MTBE (8021)	MTBE (8260)	MTBE, TAME, ETBE DIPE, TBA (8260)	1,2-DCA & EDB (8260)	Ethanol (8260)			Sample Point Lat/Long and Comments
1	MW-1	0957		X			01	3				X	X				X	X	X			
2	MW-2	0938					02						X				X	X	X			
3	MW-3	0925					03						X				X	X	X			
4	MW-4	0952					04						X				X	X	X			
5	MW-5	0912					05						X				X	X	X			
6	TB-6148-021304	—					06	2														on hold
7																						
8																						
9																						
10																						

Sampler's Name: David Allnut	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: Blaine Tech	David Allnut / BTS	2/17/04	1912		2/17/04	1912
Shipment Date:		2/17/04	1515	Helen Hernandez	2-17-04	1515
Shipment Method:						
Shipment Tracking No:						

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

Ice: Yes — No X Temperature Blank: Yes X No — Cooler Temperature on Receipt 6 °F/C Trip Blank: Yes X No

White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: bp
REC.-BY (PRINT): HH
WORKORDER: MNB04916

DATE REC'D AT LAB: 2-17-04
TIME REC'D AT LAB: 1410
DATE LOGGED IN: 2-18-04

DRINKING WATER for regulatory purposes: YES / (NO)
WASTE WATER for regulatory purposes: YES / (NO)

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) Present / (Absent) Intact / Broken*	01		MW-1	(3) VOS	HCL	L	2-17-04	3316070
2. Chain-of-Custody (Present) / Absent*	02		MW-2	↓	↓	↓	↓	3316070
3. Traffic Reports or Packing List: Present (Absent)	03		MW-3					3316070
4. Airbill: Airbill / Sticker Present (Absent)	04		MW-4					↓
5. Airbill #:	05		MW-5	↓	↓	↓	↓	↓
6. Sample Labels: (Present) / Absent	06		TB-6148-021304	(2) VOS	HCL	L	2-17-04	—
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody								
8. Sample Condition: (Intact) / Broken* / Leaking*								
9. Does information on chain-of-custody, traffic reports and sample labels agree? (Yes) / No*								
10. Sample received within hold time: (Yes) / No*								
11. Adequate sample volume received? (Yes) / No*								
12. Proper Preservatives used: (Yes) / No*								
13. Temp Rec. at Lab: Is temp 4 +/-2°C? (Yes) / No**								

(Acceptance range for samples requiring thermal pres.)
**Exception (if any): METALS / OFF ON ICE or Problem COC

2-17-04

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

IV 4.xls
4 (11/10/03)
Revision 3 (03/18/03)
4/03

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 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-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	90.76	<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	91.96	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	90.06	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	92.46	8,900	1,400	980	150	550	940	--		
MW-2	05-15-96	107.28	17.40	ND	89.88	480	82	48	8	48	87	--		
MW-2	08-14-96	107.28	17.00	ND	90.28	130	22	4	2	9	120	--		

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-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	94.53	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	--		

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-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	--	--		

Table 1
Historical Groundwater Elevation and Analytical Data
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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-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 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-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								

Pinnacle

Table 1
Historical Groundwater Elevation and Analytical Data
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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 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							1.97	
VW-1	06-03-99	NR	17.51	ND	NR	420	2.3	0.6	2.0	2.2	74	--	1.28	P

ft-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

EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

Error Summary Log

03/04/04

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #6148,Oakland, CA
Work Order Number:	MNB0496
Global ID:	T0600100103
Lab Report Number:	MNB0496030320041915

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run Sub
MNB04960303200 41915	MW-1	MNB049601	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04960303200 41915	MW-2	MNB049602	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04960303200 41915	MW-3	MNB049603	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04960303200 41915	MW-4	MNB049604	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
MNB04960303200 41915	MW-5	MNB049605	W	CS	8260TPH	SW5030B	02/13/04	02/27/04	02/27/04	4B27015	1
		4B27015BSD1	WQ	BD1	8260TPH	SW5030B	/ /	02/27/04	02/28/04	4B27015	1
		4B27015BSD2	WQ	BD2	8260TPH	SW5030B	/ /	02/27/04	02/28/04	4B27015	1
		4B27015BS1	WQ	BS1	8260TPH	SW5030B	/ /	02/27/04	02/27/04	4B27015	1
		4B27015BS2	WQ	BS2	8260TPH	SW5030B	/ /	02/27/04	02/27/04	4B27015	1
		4B27015BLK1	WQ	LB1	8260TPH	SW5030B	/ /	02/27/04	02/27/04	4B27015	1

EDFSAMP: Error Summary Log

03/04/04

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

EDFTEST: Error Summary Log

03/04/04

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

EDFRES: Error Summary Log

03/04/04

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

EDFQC: Error Summary Log

03/04/04

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

EDFCL: Error Summary Log

03/04/04

Error type	Clrevdate	Anmcode	Exmcode	Parlabel	Clcode
There are no errors in this data file	/ /				

AB2886 Electronic Delivery

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

Your EDF file has been succcessfully uploaded!

Confirmation Number: 9780547022
Date/Time of Submittal: 3/4/2004 3:02:31 PM
Facility Global ID: T0600100103
Facility Name: ARCO
Submittal Title: 1st Qtr 2004 Monitoring Report #6148
Submittal Type: GW Monitoring Report

Logged in as URSCORP-OAKLAND (CONTRACTOR)

CONTACT SITE ADMINISTRATOR.

AB2886 Electronic Delivery

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

UPLOADING A GEO_WELL FILE

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

Submittal Title:	**1st Quarter 2004 Geowell Data for Site #6148**
Submittal Date/Time:	**2/23/2004 2:29:10 PM**
Confirmation Number:	**6978275895**

Back to Main Menu

Logged in as URSCORP-OAKLAND (CONTRACTOR)

CONTACT SITE ADMINISTRATOR.

ATTACHMENT E

WELL SURVEY DATA

BP/ARCO Survey Sheet

Site: **6148**

FIELD_PT_NAME	ELEV_SURVEY_ DATE	ELEVATION ft	ELEV_METHOD	ELEV_DATUM	ELEV_ACC_VAL	RISER_HT	ELEV_DESC
AS-1	1/29/2004	113.58	CGPS	88	0.02	0.00	*
AS-2	1/29/2004	112.94	CGPS	88	0.02	-0.51	4"Sealed threaded cap
AS-3	1/29/2004	113.44	CGPS	88	0.02	-0.45	4"Sealed threaded cap
AS-4	1/29/2004	112.35	CGPS	88	0.02	-0.46	4"Sealed threaded cap
AS-5	1/29/2004	111.77	CGPS	88	0.02	-0.56	4"Sealed threaded cap
CP10	1/29/2004	112.06	CGPS	88	0.02	0.00	0
CP11	1/29/2004	113.18	CGPS	88	0.02	0.00	0
CP12	1/29/2004	111.95	CGPS	88	0.02	0.00	0
MW-1	1/29/2004	113.37	CGPS	88	0.02	-0.50	4"Sealed threaded cap
MW-2	1/29/2004	112.87	CGPS	88	0.02	-0.42	4"Sealed threaded cap
MW-3	1/29/2004	113.05	CGPS	88	0.02	-0.58	4"PVC
MW-4	1/29/2004	112.15	CGPS	88	0.02	-0.58	4"PVC
MW-5	1/29/2004	112.04	CGPS	88	0.02	-0.47	4"PVC
MW-6	1/29/2004	110.66	CGPS	88	0.02	-0.59	4"PVC
MW-7	1/29/2004	112.59	CGPS	88	0.02	-0.58	4"PVC
VW-10	1/29/2004	112.27	CGPS	88	0.02	-0.46	4"Sealed threaded cap
VW-2	1/29/2004	113.24	CGPS	88	0.02	-0.40	4"Sealed threaded cap
VW-3	1/29/2004	113.46	CGPS	88	0.02	-0.43	4"Sealed threaded cap
VW-4	1/29/2004	113.12	CGPS	88	0.02	-0.47	4"Sealed threaded cap
VW-5	1/29/2004	112.32	CGPS	88	0.02	-0.44	4"Sealed threaded cap
VW-6	1/29/2004	113.27	CGPS	88	0.02	-0.41	4"Sealed threaded cap
VW-7	1/29/2004	113.02	CGPS	88	0.02	-0.45	4"Sealed threaded cap
VW-8	1/29/2004	112.92	CGPS	88	0.02	-0.49	4"Sealed threaded cap
VW-9	1/29/2004	111.68	CGPS	88	0.02	-0.38	4"Sealed threaded cap

* No measure to casing for AS-1; broken PVC well head.
Elevation shown is top of lid.

BP/ARCO Survey Sheet

Site: 6148

FIELD_PT_NAME	FIELD_PT_CLASS	XY_SURVEY_DATE	LATITUDE	LONGTITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	GPS_EQUIP_TYPE
AS-1		38015	37.8374592	-122.2645445	CGPS	NAD83	0.02	T48
AS-2		38015	37.8372753	-122.2645881	CGPS	NAD83	0.02	T48
AS-3		38015	37.8372951	-122.2644299	CGPS	NAD83	0.02	T48
AS-4		38015	37.8374	-122.2646667	CGPS	NAD83	0.02	T48
AS-5		38015	37.8374435	-122.2647559	CGPS	NAD83	0.02	T48
CP10	BM	38015	37.837294	-122.2641776	CGPS	NAD83	0.02	T48
CP11	BM	38015	37.8376136	-122.2643063	CGPS	NAD83	0.02	T48
CP12	BM	38015	37.8376162	-122.2645961	CGPS	NAD83	0.02	T48
MW-1	MW	38015	37.8373051	-122.2645455	CGPS	NAD83	0.02	T48
MW-2	MW	38015	37.8372844	-122.2646116	CGPS	NAD83	0.02	T48
MW-3	MW	38015	37.8372538	-122.2645365	CGPS	NAD83	0.02	T48
MW-4	MW	38015	37.8372985	-122.2642507	CGPS	NAD83	0.02	T48
MW-5	MW	38015	37.8373806	-122.2647646	CGPS	NAD83	0.02	T48
MW-6	MW	38015	37.8375839	-122.2647024	CGPS	NAD83	0.02	T48
MW-7	MW	38015	37.8376253	-122.2643262	CGPS	NAD83	0.02	T48
VW-10		38015	37.8373375	-122.2647627	CGPS	NAD83	0.02	T48
VW-2		38015	37.8372776	-122.2645689	CGPS	NAD83	0.02	T48
VW-3		38015	37.837286	-122.2644866	CGPS	NAD83	0.02	T48
VW-4		38015	37.8372972	-122.2643652	CGPS	NAD83	0.02	T48
VW-5		38015	37.8373569	-122.264655	CGPS	NAD83	0.02	T48
VW-6		38015	37.8374762	-122.2644625	CGPS	NAD83	0.02	T48
VW-7		38015	37.8374472	-122.264585	CGPS	NAD83	0.02	T48
VW-8		38015	37.8374296	-122.2646133	CGPS	NAD83	0.02	T48
VW-9		38015	37.8375128	-122.264731	CGPS	NAD83	0.02	T48

BP/ARCO Survey Sheet

Site: 6148

Well ID	X-coord (NAD'83)	Y-coord (NAD'83)	Top of Casing (NAVD'88)	Top of Lid (NAVD'88)	Ground Surface (NAVD'88)	Comments
[illegible]	-122.2645455	37.8373051	113.37	113.87	113.87	
[illegible]	-122.2646116	37.8372844	112.87	113.29	113.29	
[illegible]	-122.2645365	37.8372538	113.05	113.63	113.63	
[illegible]	-122.2642507	37.8372985	112.15	112.73	112.73	
[illegible]	-122.2647646	37.8373806	112.04	112.51	112.51	
[illegible]	-122.2647024	37.8375839	110.66	111.25	111.25	
[illegible]	-122.2643262	37.8376253	112.59	113.17	113.17	
AS-1	-122.2645445	37.8374592		113.58	113.58	No measure to casing. Broken PVC well head.
AS-2	-122.2645881	37.8372753	112.94	113.45	113.45	
AS-3	-122.2644299	37.8372951	113.44	113.89	113.89	
AS-4	-122.2646667	37.8374000	112.35	112.81	112.81	
AS-5	-122.2647559	37.8374435	111.77	112.33	112.33	
VW-1						Unable to survey. Under large trash pile.
VW-2	-122.2645689	37.8372776	113.24	113.64	113.64	
VW-3	-122.2644866	37.8372860	113.46	113.89	113.89	
VW-4	-122.2643652	37.8372972	113.12	113.59	113.59	
VW-5	-122.2646550	37.8373569	112.32	112.76	112.76	
VW-6	-122.2644625	37.8374762	113.27	113.68	113.68	
VW-7	-122.2645850	37.8374472	113.02	113.47	113.47	
VW-8	-122.2646133	37.8374296	112.92	113.41	113.41	
VW-9	-122.2647310	37.8375128	111.68	112.06	112.06	
VW-10	-122.2647627	37.8373375	112.27	112.73	112.73	

ATTACHMENT F

WELL REPAIR DATA

REPAIR DATA SHEET

Client ARCO # 6148 Date Dec 30, 2003

Site Address 5131 Shattuck Ave Oakland Ca.

Job Number 031230-MK2 Technician Mike Kovich

Repair Location MW-4	Repair Location
Deficiencies Corrected 2 Bolts & Nuts Added 2 New Bolts	Deficiencies Corrected
Materials Used 2 Bolts	Materials Used
Repair Location	Repair Location
Deficiencies Corrected	Deficiencies Corrected
Materials Used	Materials Used
Repair Location	Repair Location
Deficiencies Corrected	Deficiencies Corrected
Materials Used	Materials Used