URS

January 29, 2005

Mr. Charles Carmel
Altantic Richfield Company
P.O. Box 977
Alamo, CA 94507

04936
06.a2

Re: Quarterly Groundwater Monitoring Report
Fourth Quarter 2004, for ARCO Service Station No. 4936
Located at 1010 Fourth Street, Santa Rosa, California

Dear Mr. Carmel:

URS Corporation Americas (URS) is submitting the attached report on the behalf of Atlantic Richfield Company (ARCO – a BP affiliated company), which presents the results of the fourth quarter 2004 groundwater monitoring and sampling event at ARCO Service Station No. 4936, located at 1010 Fourth Street in Santa Rosa, California.

If you have any questions regarding this report, please call Mr. Scott Dressler at (530) 893-9675.

Sincerely,

URS Corporation Americas

REGISTERED GEOLOGIST
DARREN SCOTT DRESSLER
No. 7091
1/25/05
STATE OF CALIFORNIA

Amanda Atkinson
Graduate Hydrologist

Scott Dressler, R.G.
Project Manager

Attachment: Quarterly Groundwater Monitoring Report, Fourth Quarter 2004

cc: Mr. Jim Tischler, North Coast Regional Water Quality Control Board,
5550 Skylane Blvd., Suite A, Santa Rosa, CA 95403
Project File

URS Corporation
1550 Humboldt Road, Suite 2
Chico, CA 95928
Tel: 530.893.9675
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QUARTERLY GROUNDWATER MONITORING REPORT

FOURTH QUARTER 2004

ARCO Service Station #4936
1010 Fourth Street
Santa Rosa, California

Prepared for:

Atlantic Richfield Company

Prepared by:

URS

1550 Humboldt Road
Suite 2
Chico, California 95928

January 2005

Date: January 29, 2005
Quarter: 4th Quarter 2004

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Former Facility No.:	4936
Address	1010 Fourth Street, Santa Rosa, California
Atlantic Richfield Co. Environmental Engineer:	Chuck Carmel
Consulting Co./Contact Person:	URS Corporation /Scott Dressler
Consultant Project No.:	38466499.0A143
Primary Agency:	North Coast Regional Water Quality Control Board

WORK PERFORMED THIS QUARTER (Fourth 2004):

1. Performed groundwater monitoring event.
2. Prepared and submitted groundwater monitoring report.
3. Submitted workplan and workplan addendum for installation of four lower-zone monitoring wells.

WORK PROPOSED FOR NEXT QUARTER (First 2005):

1. Perform groundwater monitoring event.
2. Prepare and submit groundwater monitoring report.
3. Upon approval of workplan begin installation of monitoring wells.

QUARTERLY RESULTS SUMMARY (Fourth 2004)

Current Phase of Project:	GW monitoring/sampling
Frequency of Groundwater Sampling:	MW-3A, MW-4, MW-5A , MW-6 and MW-7 quarterly; MW-8, MW-9 MW-10 semi-annually (Q1, Q3); MW-2 annually (Q4)
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
Bulk Soil Removed to Date:	600 Cubic Yards
Current Remediation Techniques:	Natural Attenuation
Approximate Depth to Groundwater:	17.24 to 18.62 feet below ground surface
Groundwater Gradient (direction):	South at approximately 0.004

ANALYTICAL DATA REVIEW:

Based on the review of the electronic and hardcopy data (chain-of-custody records, blanks, dilutions, holding times, LCS/LCSD results, MS/MSD results, and surrogate recoveries), the data are acceptable as reported by the laboratory without limitations.

DISCUSSION:

Gasoline Range Organics (GRO), benzene, toluene, ethylbenzene, total xylenes (BTEX) and methyl tert-butyl ether (MtBE) were reported in monitoring wells this quarter. Total Xylenes were detected at a historally high

concentration of 22ug/L in MW-6. All other constituent concentrations were generally consistent with historic data. Groundwater elevations across the site generally decreased relative to the previous monitoring event. The groundwater flow direction was south at an approximate gradient of 0.004 feet per foot.

This report is based on data, site conditions, and other information that are generally applicable as of the date of the report, and the conclusions and recommendations herein are therefore applicable only to that time frame.

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Table 2 Fuel Oxygenates Analytical Data
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Appendix C Geotracker Upload Confirmation
Appendix D RWQCB Correspondence

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Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-1	6/12/1996	--	175.04	16.26	158.78	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	175.04	19.14	155.90	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	11/27/1996	--	175.04	19.08	155.96	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	4/2/1997	--	175.04	16.88	158.16	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/1997	--	175.04	18.37	156.67	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	--	175.04	19.43	155.61	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/8/1997	--	175.04	16.76	158.28	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/24/1998	--	175.04	11.00	164.04	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	5/29/1998	--	175.04	15.73	159.31	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/25/1998	NP	175.04	18.21	156.83	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/1/1998	--	175.04	18.86	156.18	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	[5]
	2/5/1999	--	175.04	16.50	158.54	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	5/6/1999	--	175.04	15.82	159.22	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/17/1999	--	175.04	19.19	155.85	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/2/1999	NP	175.04	18.62	156.42	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	3/21/2000	--	175.04	14.72	160.32	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	4/27/2000	--	175.04	15.95	159.09	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/21/2000	--	175.04	19.36	155.68	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	11/22/2000	NP	175.04	19.41	155.63	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	3/21/2001	--	175.04	16.29	158.75	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/28/2001	--	175.04	19.34	155.70	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/18/2001	--	175.04	20.22	154.82	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/28/2001	--	175.04	15.00	160.04	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
	3/27/2002	--	175.04	15.91	159.13	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/2002	--	175.04	18.66	156.38	NS	--	NS	NS	NS	NS	NS	--	Not sampled, [7]
	9/13/2002	--	175.04	20.10	154.94	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/11/2002	P	175.04	19.73	155.31	ND<50.0	--	ND<0.500	ND<0.500	ND<0.500	ND<1.00	ND<5.00	--	
	03/25/2003	P	175.04	15.83	159.21	--	--	--	--	--	--	--	--	Not Sampled
	05/01/2003	--	175.04	15.68	159.36	--	--	--	--	--	--	--	--	Not Sampled
	07/15/2003	--	175.04	18.54	156.50	--	--	--	--	--	--	--	--	Not Sampled
	10/06/2003	--	--	--	--	--	--	--	--	--	--	--	--	Well Abandoned
MW-2	3/15/1996	--	173.8	13.03	160.77	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/12/1996	--	173.8	14.99	158.81	NS	--	NS	NS	NS	NS	NS	--	Not sampled

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Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-2	9/1/1996	--	173.8	17.87	155.93	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	11/27/1996	--	173.8	17.81	155.99	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	56	--	
	4/2/1997	--	173.8	15.70	158.10	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/1997	--	173.8	17.13	156.67	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	--	173.8	--	--	NS	--	NS	NS	NS	NS	NS	--	Not sampled, Dry
	12/8/1997	--	173.8	15.53	158.27	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	[5]
	2/24/1998	--	173.8	10.88	162.92	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	5/29/1998	--	173.8	14.47	159.33	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/25/1998	NP	173.8	17.15	156.65	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/1/1998	--	173.8	17.61	156.19	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/5/1999	--	173.8	15.25	158.55	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	5/6/1999	--	173.8	14.53	159.27	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/17/1999	--	173.8	17.96	155.84	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/2/1999	NP	173.8	17.38	156.42	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	3/21/2000	--	173.8	13.55	160.25	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	4/27/2000	--	173.8	15.07	158.73	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/21/2000	--	173.8	--	--	NS	--	NS	NS	NS	NS	NS	--	Not sampled, Dry
	11/22/2000	NP	173.8	18.22	155.58	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	3/21/2001	--	173.8	15.44	158.36	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/28/2001	--	173.8	18.11	155.69	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/18/2001	--	173.8	19.06	154.74	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/28/2001	P	173.8	13.80	160.00	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
	3/27/2002	--	173.8	14.65	159.15	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/2002	--	173.8	17.42	156.38	NS	--	NS	NS	NS	NS	NS	--	Not sampled, [7]
	9/13/2002	--	173.8	18.87	154.93	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/11/2002	P	173.8	18.50	155.30	ND<50.0	--	ND<0.500	ND<0.500	ND<0.500	ND<1.00	ND<5.00	--	
	03/25/2003	P	173.80	14.64	159.16	--	--	--	--	--	--	--	--	Not Sampled
	05/01/2003	--	173.80	14.44	159.36	--	--	--	--	--	--	--	--	Not Sampled
	07/15/2003	--	173.80	17.28	156.52	--	--	--	--	--	--	--	--	Not Sampled
	12/24/2003	--	173.80	--	--	--	--	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	--	176.12	13.18	162.94	--	--	--	--	--	--	--	--	Not Sampled
	04/13/2004	--	176.12	15.75	160.37	--	--	--	--	--	--	--	--	Not Sampled
	07/12/2004	--	176.12	17.71	158.41	--	--	--	--	--	--	--	--	Not Sampled

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Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-2	**11/29/2004**	**P**	**176.12**	**17.57**	**158.55**	**<50**	**--**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**3.7**	
MW-3	3/15/1996	--	174.79	14.07	160.72	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/12/1996	--	174.79	16.10	158.69	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	174.79	18.98	155.81	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	11/27/1996	--	174.79	18.92	155.87	2,400	--	61	170	70	380	ND<2.5	--	
	4/2/1997	--	174.79	16.70	158.09	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/1997	--	174.79	18.18	156.61	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	NP	174.79	19.23	155.56	1,100	--	ND<10	ND<10	120	45	1,200(1,200)	--	[4]
	12/8/1997	NP	174.79	16.59	158.20	ND<50	--	ND<0.5	ND<0.5	3.5	1.7	42	--	
	2/24/1998	NP	174.79	11.17	163.62	9,000	--	ND<5	23	370	860	490	--	
	5/29/1998	--	174.79	15.60	159.19	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	8/25/1998	NP	174.79	18.21	156.58	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	NP	174.79	18.62	156.17	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/5/1999	NP	174.79	16.33	158.46	ND<50	--	ND<0.5	ND<0.5	ND<0.5	0.8	5	--	
	5/6/1999	NP	174.79	15.67	159.12	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4	--	
	9/17/1999	NP	174.79	18.98	155.81	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	174.79	18.30	156.49	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	3/21/2000	NP	174.79	14.66	160.13	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	22	--	
	4/27/2000	NP	174.79	15.84	158.95	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	5	--	
	8/21/2000	NP	174.79	19.24	155.55	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	5	--	
	11/22/2000	NP	174.79	19.27	155.52	1,150	--	ND<0.5	10.5	15.6	0.97	3.44	--	
	3/21/2001	P	174.79	15.17	159.62	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	5.13	--	
	6/28/2001	NP	174.79	19.20	155.59	55	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--	[1]
	6/28/2001	P	174.79	19.20	155.59	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--	
	9/18/2001	P	174.79	20.13	154.66	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
	12/28/2001	P	174.79	14.95	159.84	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	29	--	
	3/27/2002	P	174.79	15.80	158.99	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	2.1	--	
	6/19/2002	--	174.79	18.50	156.29	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	[7]
	9/13/2002	P	174.79	19.94	154.85	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	12/11/2002	P	174.79	19.57	155.22	ND<50.0	--	ND<0.500	ND<0.500	ND<0.500	ND<1.00	ND<5.00	--	
	03/25/2003	P	174.79	15.62	159.17	<50	--	<0.50	<0.50	<0.50	<0.50	5.8	--	
	05/01/2003	P	174.79	15.47	159.32	<50	--	<0.50	<0.50	<0.50	<0.50	1.9	2.5	
	07/15/2003	P	174.79	18.29	156.50	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	5.0	

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
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Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-3	10/06/2003	--	--	--	--	--	--	--	--	--	--	--	--	Well Abandoned
MW-3A	03/09/2004	P	177.09	14.31	162.78	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	5.0	
	04/13/2004	P	177.09	15.76	161.33	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	
	07/12/2004	P	177.09	18.79	158.30	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.7	
	11/29/2004	**P**	**177.09**	**18.62**	**158.47**	**<50**	**--**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**4.9**	
MW-4	3/15/1996	--	173.6	12.76	160.84	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	--	
	6/12/1996	--	173.6	14.86	158.74	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	9/1/1996	--	173.6	17.17	156.43	250	--	43	ND<0.5	23	11	1,200	--	
	11/27/1996	--	173.6	17.11	156.49	660	--	2.4	4.6	38	130	290	--	
	4/2/1997	NP	173.6	14.90	158.70	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/19/1997	NP	173.6	16.97	156.63	ND<50	--	ND<1	ND<0.5	1.5	5.6	18	--	
	9/3/1997	NP	173.6	18.05	155.55	200	--	4.1	0.9	19	29	36	--	
	12/8/1997	NP	173.6	15.36	158.24	52	--	1.4	ND<0.5	0.6	3.9	16	--	
	2/24/1998	NP	173.6	10.88	162.72	ND<50	--	ND<0.5	1.2	ND<0.5	2	1.2	--	
	5/29/1998	NP	173.6	14.32	159.28	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	8/25/1998	NP	173.6	17.00	156.60	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	NP	173.6	17.42	156.18	ND<50	--	ND<0.5	ND<0.5	ND<0.5	0.5	12	--	
	2/5/1999	NP	173.6	15.10	158.50	ND<50	--	0.9	0.6	2	2.1	ND<3	--	
	5/6/1999	NP	173.6	14.41	159.19	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	9/17/1999	NP	173.6	17.78	155.82	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	173.6	17.18	156.42	89	--	ND<0.5	1.9	2.5	1.6	ND<3	--	
	3/21/2000	NP	173.6	13.41	160.19	ND<50	--	ND<0.5	0.8	ND<0.5	ND<1	ND<3	--	
	4/27/2000	NP	173.6	14.57	159.03	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	8/21/2000	NP	173.6	18.01	155.59	ND<50	--	ND<0.5	ND<0.5	2.5	ND<1	8	--	
	11/22/2000	NP	173.6	18.09	155.51	707	--	3.12	15.1	53.6	71.2	17.1	--	
	3/21/2001	P	173.6	14.90	158.70	104	--	0.935	ND<0.5	7.55	11.2	ND<2.50	--	
	6/28/2001	NP	173.6	17.98	155.62	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--	
	6/28/2001	P	173.6	17.98	155.62	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--	
	9/18/2001	P	173.6	18.88	154.72	130	--	13	11	3.7	18	ND<5.0	--	
	12/28/2001	P	173.6	13.70	159.90	66	--	0.91	2.2	0.66	2.2	21	--	
	3/27/2002	P	173.6	14.61	158.99	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.8	--	
	6/19/2002	--	173.6	17.30	156.30	250	--	1.8	0.62	34	13	3.8	--	[7]

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-4	9/13/2002	P	173.6	18.72	154.88	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	12/11/2002	P	173.6	18.37	155.23	160	--	1.32	ND<0.500	9.93	8.6	ND<5.00	--	
	03/25/2003	P	173.60	14.52	159.08	<50	--	<0.50	<0.50	<0.50	<0.50	3.0	--	
	05/01/2003	P	173.60	14.33	159.27	<50	--	<0.50	<0.50	<0.50	<0.50	1.5	1.5	
	07/15/2003	P	173.60	16.85	156.75	110 R	--	<2.5	<2.5	13	<2.5	150	2.3	
	12/24/2003	--	173.60	--	--	--	--	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	P	176.40	13.55	162.85	<50	--	<0.50	<0.50	<0.50	<0.50	0.58	4.3	
	04/13/2004	P	176.40	15.11	161.29	<50	--	<0.50	<0.50	<0.50	<0.50	1.0	--	
	07/12/2004	P	176.40	18.00	158.40	<50	--	<0.50	<0.50	<0.50	<0.50	2.3	3.6	
	11/29/2004	**P**	**176.40**	**17.95**	**158.45**	**<50**	**--**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**0.93**	**2.0**	
MW-5	3/15/1996	--	174.17	13.55	160.62	630	--	16	0.95	6.1	3.6	NA	--	
	6/12/1996	--	174.17	15.58	158.59	590	--	22	1.1	8.7	4.6	ND<2.5	--	
	9/1/1996	--	174.17	17.83	156.34	2,800	--	130	15	27	27	300	--	
	11/27/1996	--	174.17	17.78	156.39	3,900	--	59	35	20	20	86	--	
	4/2/1997	NP	174.17	15.64	158.53	140	--	3.5	0.52	ND<0.5	ND<0.5	7.3	--	
	6/19/1997	NP	174.17	17.65	156.52	230	--	4.2	0.7	0.7	ND<0.5	ND<10	--	
	9/3/1997	NP	174.17	18.71	155.46	1,700	--	140	ND<10	ND<10	ND<10	420	--	
	12/8/1997	NP	174.17	16.03	158.14	<200	--	9	ND<2	ND<2	8	140	--	
	2/24/1998	NP	174.17	10.74	163.43	400	--	8	3.1	5.9	9.1	14	--	
	5/29/1998	NP	174.17	15.08	159.09	130	--	1.6	ND<0.5	ND<0.5	1.9	ND<0.5	--	
	8/25/1998	NP	174.17	17.65	156.52	110	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	NP	174.17	18.08	156.09	3,000	--	74	5	8	7	36	--	
	2/5/1999	NP	174.17	15.81	158.36	170	--	2.9	0.9	ND<0.5	0.5	ND<3	--	
	5/6/1999	NP	174.17	15.18	158.99	<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	9/17/1999	NP	174.17	18.42	155.75	1,800	--	52	2.6	2.6	3.2	13	--	
	12/2/1999	NP	174.17	17.82	156.35	2,300	--	55	5.2	3.2	8.8	11	--	
	3/21/2000	NP	174.17	14.20	159.97	420	--	7	2.9	1.8	5.5	7	--	
	4/27/2000	NP	174.17	15.33	158.84	1,000	--	10	2.9	1.1	8.2	7	--	
	8/21/2000	NP	174.17	18.68	155.49	370	--	15	1.5	1.1	2	7	--	
	11/22/2000	NP	174.17	18.55	155.62	3,840	--	27.8	24.4	14.7	14.4	33.6	--	
	3/21/2001	P	174.17	15.68	158.49	5,550	--	19.4	37.6	53	29.5	197 (ND<10)	--	[4]
	6/28/2001	NP	174.17	18.68	155.49	5,900	--	59	8.4	22	17	ND<50	--	
	6/28/2001	P	174.17	18.68	155.49	NS	--	NS	NS	NS	NS	NS	--	Sheen, Not sampled

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-5	9/18/2001	P	174.17	18.79	155.38	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	12/28/2001	P	174.17	NM	--	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/27/2002	P	174.17	15.31	158.86	2,700	--	15	7	14	11	0.82	--	
	6/19/2002	--	174.17	17.97	156.20	490	--	3.3	1.1	6.7	1	ND<5.0	--	[7]
	9/13/2002	P	174.17	19.34	154.38	720	--	1.6	2.5	6.1	3.7	27	--	
	12/11/2002	P	174.17	19.03	155.14	2,160	--	7.72	2.01	7.52	18.0	6.36(ND<1.00)	--	[4], [6]
	03/25/2003	P	174.17	14.53	159.64	4,200	--	3.2	<2.5	7.4	5.5	3.2	--	
	05/01/2003	P	174.17	15.08	159.09	950	--	4.7	1.4	2.8	4.5	0.78	2.1	
	07/15/2003	P	174.17	17.74	156.43	1,700 R	--	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	
	10/06/2003	--	--	--	--	--	--	--	--	--	--	--	--	Well Abandoned
MW-5A	03/09/2004	P	176.59	13.97	162.62	120	--	<0.50	<0.50	1.7	<0.50	1.5	2.5	
	04/13/2004	P	176.59	15.40	161.19	<50	--	<0.50	<0.50	<0.50	<0.50	0.80	--	
	07/12/2004	P	176.59	18.34	158.25	<50	--	<0.50	<0.50	<0.50	<0.50	3.0	4.5	
	11/29/2004	**P**	**176.59**	**18.19**	**158.40**	**<50**	**--**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**3.8**	**3.9**	
MW-6	3/15/1996	--	174.34	13.63	160.71	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	--	
	6/12/1996	--	174.34	15.69	158.65	ND<50	--	0.75	ND<0.5	0.68	ND<0.5	ND<2.5	--	
	9/1/1996	--	174.34	17.99	156.35	130	--	4.7	0.82	4.4	2	36	--	
	11/27/1996	--	174.34	17.93	156.41	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	4/2/1997	NP	174.34	15.74	158.60	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/19/1997	NP	174.34	17.79	156.55	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	9/3/1997	NP	174.34	18.84	155.50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/8/1997	NP	174.34	16.18	158.16	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/24/1998	NP	174.34	10.79	163.55	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	
	5/29/1998	NP	174.34	15.18	159.16	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	8/25/1998	NP	174.34	17.80	156.54	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	NP	174.34	18.24	156.10	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/5/1999	NP	174.34	15.91	158.43	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	5/6/1999	NP	174.34	15.27	159.07	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	9/17/1999	NP	174.34	18.58	155.76	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	174.34	18.00	156.34	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	3/21/2000	NP	174.34	14.28	160.06	ND<50	--	ND<0.5	0.6	ND<0.5	ND<1	ND<3	--	
	4/27/2000	NP	174.34	15.42	158.92	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-6	8/21/2000	NP	174.34	18.81	155.53	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	11/22/2000	NP	174.34	18.90	155.44	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	3/21/2001	P	174.34	15.78	158.56	1,490	--	15.1	20.6	52.1	10.8	119	--	
	6/28/2001	NP	174.34	18.80	155.54	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	--	
	6/28/2001	P	174.34	18.80	155.54	3,300	--	ND<5.0	7.7	5.2	8.8	ND<50	--	
	9/18/2001	P	174.34	19.70	154.64	1,000	--	14	7.9	8	16	ND<10	--	[2]
	12/28/2001	P	174.34	14.52	159.82	180	--	1.8	ND<0.50	3.5	0.66	ND<5.0	--	[3]
	3/27/2002	P	174.34	15.39	158.95	180	--	1.1	ND<0.50	2	0.74	ND<0.50	--	
	6/19/2002	--	174.34	18.10	156.24	640	--	4.6	ND<1.0	3.3	2.3	16	--	[7]
	9/13/2002	P	174.34	19.53	154.81	310	--	2.8	0.83	NDND<0.5	0.99	4	--	
	12/11/2002	P	174.34	19.28	155.06	618	--	1.85	0.615	5.9	4.56	ND<5.00	--	
	03/25/2003	P	174.34	15.39	158.95	830	--	0.58	<0.50	0.50	0.55	0.87	--	
	05/01/2003	P	174.34	15.16	159.18	220	--	1.2	0.60	3.7	1.2	0.67	2.8	
	07/15/2003	P	174.34	17.96	156.38	130	--	<0.50	<0.50	1.0	<0.50	<0.50	2.3	
	12/24/2003	P	174.34	16.67	157.67	350	--	<2.5	<2.5	5.9	6.7	<2.5	2.1	
	03/09/2004	P	176.22	13.48	162.74	150	--	<0.50	<0.50	2.0	0.53	<0.50	2.3	
	04/13/2004	P	176.22	15.02	161.20	97	--	<0.50	<0.50	0.85	<0.50	<0.50	--	
	07/12/2004	P	176.22	17.90	158.32	290	--	1.2	0.53	1.1	1.8	<0.50	1.8	
	11/29/2004	**P**	**176.22**	**17.79**	**158.43**	**1,000**	**--**	**19**	**3.9**	**30**	**22**	**<0.50**	**1.4**	
MW-7	3/15/1996	--	173.48	12.74	160.74	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/12/1996	--	173.48	14.80	158.68	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	173.48	17.68	155.80	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	11/27/1996	--	173.48	17.08	156.40	2,200	--	30	110	64	460	2,600	--	
	4/2/1997	--	173.48	14.83	158.65	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	6/19/1997	--	173.48	16.95	156.53	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	NP	173.48	17.95	155.53	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	16	--	
	12/8/1997	NP	173.48	15.34	158.14	320	--	ND<0.5	ND<0.5	3.8	37	90	--	
	2/24/1998	NP	173.48	10.34	163.14	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	39	--	
	5/29/1998	NP	173.48	14.43	159.05	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	8/25/1998	NP	173.48	16.98	156.50	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	NP	173.48	17.32	156.16	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	2/5/1999	NP	173.48	15.11	158.37	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	5/6/1999	NP	173.48	14.50	158.98	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	

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1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-7	9/17/1999	NP	173.48	17.67	155.81	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	173.48	17.07	156.41	74	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	3/21/2000	NP	173.48	13.61	159.87	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	3	--	
	4/27/2000	NP	173.48	14.69	158.79	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	8/21/2000	NP	173.48	18.02	155.46	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	11/22/2000	NP	173.48	18.07	155.41	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	3/21/2001	P	173.48	15.02	158.46	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/28/2001	NP	173.48	18.02	155.46	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
	6/28/2001	P	173.48	18.02	155.46	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5	--	
	9/18/2001	P	173.48	18.91	154.57	100	--	20	9.5	2.8	14	ND<5.0	--	
	12/28/2001	P	173.48	13.79	159.69	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	5.8	--	
	3/27/2002	P	173.48	14.66	158.82	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	
	6/19/2002	--	173.48	17.28	156.20	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	[7]
	9/13/2002	P	173.48	18.70	154.78	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<2.5	--	
	12/11/2002	P	173.48	18.36	155.12	ND<50	--	2.08	ND<0.50	ND<0.50	ND<1.0	ND<5.0	--	
	03/25/2003	P	173.48	14.60	158.88	<50	--	<0.50	<0.50	<0.50	<0.50	0.61	--	
	05/01/2003	P	173.48	14.45	159.03	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	
	07/15/2003	P	173.48	17.10	156.38	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	
	12/24/2003	--	173.48	--	--	--	--	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	P	175.94	13.38	162.56	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	
	04/13/2004	P	175.94	14.88	161.06	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	
	07/12/2004	P	175.94	17.62	158.32	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	
	11/29/2004	**P**	**175.94**	**17.25**	**158.69**	**<50**	**--**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**2.9**	
MW-8	3/15/1996	--	172.36	13.31	159.05	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	--	
	6/12/1996	--	172.36	15.36	157.00	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	172.36	16.61	155.75	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	11/27/1996	--	172.36	16.57	155.79	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	4/2/1997	NP	172.36	14.40	157.96	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/19/1997	--	172.36	16.43	155.93	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	NP	172.36	17.47	154.89	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/8/1997	--	172.36	14.64	157.72	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/24/1998	NP	172.36	9.82	162.54	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	
	5/29/1998	--	172.36	13.84	158.52	NS	--	NS	NS	NS	NS	NS	--	Not sampled

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1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-8	8/25/1998	NP	172.36	16.42	155.94	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	--	172.36	16.85	155.51	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/5/1999	NP	172.36	14.64	157.72	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	5/6/1999	--	172.36	14.08	158.28	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/17/1999	NP	172.36	17.20	155.16	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	172.36	16.56	155.80	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2000	NP	172.36	13.03	159.33	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	4/27/2000	--	172.36	14.28	158.08	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/21/2000	NP	172.36	17.48	154.88	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	11/22/2000	--	172.36	17.47	154.89	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2001	P	172.36	14.58	157.78	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/28/2001	--	172.36	17.50	154.86	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/18/2001	P	172.36	18.33	154.03	400	--	66	46	14	61	ND<10	--	
	12/28/2001	--	172.36	13.28	159.08	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/27/2002	P	172.36	14.17	158.19	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.50	--	
	6/19/2002	--	172.36	16.70	155.66	NS	--	NS	NS	NS	NS	NS	--	Not sampled, [7]
	9/13/2002	P	172.36	18.40	153.96	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	12/11/2002	--	172.36	17.82	154.54	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	03/25/2003	--	172.36	14.11	158.25	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	
	05/01/2003	--	172.36	13.87	158.49	--	--	--	--	--	--	--	--	Not Sampled
	07/15/2003	P	172.36	16.65	155.71	<50	--	1.7	0.57	0.98	3.5	1.0	4.8	
	12/24/2003	--	172.36	14.90	157.46	--	--	--	--	--	--	--	--	Not Sampled
	03/09/2004	P	175.49	13.24	162.25	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	4.2	
	04/13/2004	--	175.49	15.72	159.77	--	--	--	--	--	--	--	--	Not Sampled
	07/12/2004	P	175.49	17.50	157.99	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.4	
	11/29/2004	**--**	**175.49**	**17.33**	**158.16**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Not Sampled**
MW-9A	3/15/1996	--	172.71	12.23	160.48	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	--	
	6/12/1996	--	172.71	14.02	158.69	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	172.71	16.80	155.91	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	11/27/1996	--	172.71	16.19	156.52	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	4/2/1997	NP	172.71	13.98	158.73	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/19/1997	--	172.71	NM	NM	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	NP	172.71	16.99	155.72	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	

Table 1

Groundwater Elevation and Analytical Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-9A	12/8/1997	--	172.71	14.42	158.29	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/24/1998	NP	172.71	9.54	163.17	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	
	5/29/1998	--	172.71	13.62	159.09	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/25/1998	NP	172.71	16.02	156.69	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	11/20/1998	--	172.71	16.32	156.39	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/5/1999	NP	172.71	14.25	158.46	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	5/6/1999	--	172.71	13.76	158.95	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/17/1999	NP	172.71	16.63	156.08	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	12/2/1999	NP	172.71	16.01	156.70	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2000	NP	172.71	13.07	159.64	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	17	--	
	4/27/2000	--	172.71	14.14	158.57	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/21/2000	NP	172.71	17.27	155.44	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<1	ND<3	--	
	11/22/2000	--	172.71	17.30	155.41	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2001	P	172.71	14.44	158.27	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/28/2001	--	172.71	17.27	155.44	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/18/2001	P	172.71	18.06	154.65	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<5.0	--	
	12/28/2001	--	172.71	13.30	159.41	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/27/2002	P	172.71	14.07	158.64	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	--	
	6/19/2002	--	172.71	16.50	156.21	NS	--	NS	NS	NS	NS	NS	--	Not sampled, [7]
	9/13/2002	P	172.71	17.90	154.81	ND<50	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	12/11/2002	--	172.71	17.65	155.06	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	03/25/2003	--	172.71	14.03	158.68	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	--	
	05/01/2003	--	172.71	13.79	158.92	--	--	--	--	--	--	--	--	Not Sampled
	07/15/2003	P	172.71	16.48	156.23	<50	--	2.1	0.85	1.2	3.3	<0.50	3.2	
	12/24/2003	--	172.71	14.86	157.85	--	--	--	--	--	--	--	--	Not Sampled
	03/09/2004	P	175.16	13.07	162.09	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	4.3	
	04/13/2004	--	175.16	15.66	159.50	--	--	--	--	--	--	--	--	Not Sampled
	07/12/2004	P	175.16	17.32	157.84	<50	--	<0.50	<0.50	<0.50	<0.50	<0.50	4.1	
	11/29/2004	**--**	**175.16**	**17.24**	**157.92**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Not Sampled**
MW-10	3/15/1996	--	173.42	12.71	160.71	1,500	--	ND<5.0	ND<5.0	28	5.1	NA	--	
	6/12/1996	--	173.42	14.50	158.92	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/1/1996	--	173.42	16.91	156.51	3,000	--	12	ND<5.0	9.3	ND<5.0	ND<25	--	
	11/27/1996	--	173.42	16.59	156.83	2,000	--	9.7	3.3	6.7	3.8	10	--	

Table 1

Groundwater Elevation and Analytical Data

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Well Number	Date Sampled	P/ NP	TOC Elevation (feet msl)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)	TPHg (µg/L)	TPHd (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L)	DO (mg/L)	Comments
MW-10	4/2/1997	NP	173.42	14.33	159.09	2,000	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<2.5	--	
	6/19/1997	NP	173.42	16.46	156.96	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/3/1997	NP	173.42	17.60	155.82	3,500	--	ND<5	ND<5	ND<5	ND<5	ND<30	--	
	12/8/1997	NP	173.42	14.86	158.56	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/24/1998	NP	173.42	10.16	163.26	810	--	ND<1	2	7	5	ND<0.5	--	
	5/29/1998	--	173.42	13.80	159.62	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/25/1998	--	173.42	16.46	156.96	2,100	--	ND<5	ND<5	ND<5	ND<5	71	--	
	11/20/1998	--	173.42	17.00	156.42	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	2/5/1999	--	173.42	14.30	159.12	130	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3	--	
	5/6/1999	--	173.42	14.06	159.36	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/17/1999	NP	173.42	17.50	155.92	2,200	--	ND<0.5	0.9	1.1	1.2	ND<3	--	
	12/2/1999	--	173.42	16.72	156.70	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2000	NP	173.42	13.20	160.22	1,100	--	ND<0.5	2.2	1	1.7	ND<3	--	
	4/27/2000	--	173.42	14.14	159.28	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	8/21/2000	--	173.42	17.33	156.09	1,600	--	ND<0.5	ND<0.5	2.3	1.6	ND<3	--	
	11/22/2000	--	173.42	17.30	156.12	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/21/2001	P	173.42	14.36	159.06	1,310	--	ND<1.25	ND<1.25	2.22	1.6	ND<6.25	--	
	6/28/2001	--	173.42	16.95	156.47	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	9/18/2001	P	173.42	18.23	155.19	2,100	--	82	63	22	95	ND<25	--	
	12/28/2001	--	173.42	13.37	160.05	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	3/27/2002	P	173.42	14.05	159.37	1,500	--	ND<0.50	0.82	1.5	ND<0.50	ND<1.2	--	
	6/19/2002	--	173.42	16.13	157.29	NS	--	NS	NS	NS	NS	NS	--	Not sampled, [7]
	9/13/2002	P	173.42	17.60	155.82	450	--	1.2	NDND<1	NDND<1	1.6	18	--	
	12/11/2002	--	173.42	17.25	156.17	NS	--	NS	NS	NS	NS	NS	--	Not sampled
	03/25/2003	--	173.42	0.00	173.42	620	--	<0.50	<0.50	<0.50	0.54	<0.50	--	
	05/01/2003	--	173.42	14.01	159.41	--	--	--	--	--	--	--	--	Not Sampled
	07/15/2003	P	173.42	16.04	157.38	360	--	<1.0	<1.0	1.3	3.5	<1.0	2.6	
	12/24/2003	--	173.42	14.81	158.61	--	--	--	--	--	--	--	--	Not Sampled
	03/09/2004	P	176.18	13.21	162.97	280	--	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	
	04/13/2004	--	176.18	15.73	160.45	--	--	--	--	--	--	--	--	Not Sampled
	07/12/2004	P	176.18	17.41	158.77	760 J	--	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	
	11/29/2004	**--**	**176.18**	**17.30**	**158.88**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**Not Sampled**

Table 1

Groundwater Elevation and Analytical Data

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TPH = Total petroleum hydrocarbons
MtBE = Methyl Tertiary Butyl Ether
mg/L = Micrograms per liter
NP = No Purge
P = Purge
MSL = Mean Sea Level
TOC = Top of Casing
NA = Not analyzed
NM = Not monitored
NS = Not sampled
ND = Not Detected
-- = not measured or analyzed
[1] = Chromatogram Pattern; Unidentified Hydrocarbons C6-C12
[2] = The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
[3] = Chromatogram Pattern: Weathered Gasoline C6 - C12
[4] = Confirmed by using EPA Method 8260
[5] = Depth to water measured 11/20/98
[6] = The analyte concentration maybe artificially elevated due to coeluting componds or components
[7] = Analyzed by gasoline range organics (GRO) begining second quarter 2002.
Source : The data within this table collected prior to June 2002 was provided to URS by BP Group Environmental Management Company and their previous consultants. URS has not verified the accuracy of this information.

Table 2

Fuel Oxygenates Analytical Data
ARCO Service Station No. 4936

1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MtBE (µg/L)	DIPE (µg/L)	EtBE (µg/L)	TAME (µg/L)	Comments
MW-1	03/25/2003	--	--	--	--	--	--	Not Sampled
	05/01/2003	--	--	--	--	--	--	Not Sampled
	07/15/2003	--	--	--	--	--	--	Not Sampled
	10/06/2003	--	--	--	--	--	--	Well Abandoned
MW-2	03/25/2003	--	--	--	--	--	--	Not Sampled
	05/01/2003	--	--	--	--	--	--	Not Sampled
	07/15/2003	--	--	--	--	--	--	Not Sampled
	12/24/2003	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	--	--	--	--	--	--	Not Sampled
	04/13/2004	--	--	--	--	--	--	Not Sampled
	07/12/2004	--	--	--	--	--	--	Not Sampled
	11/29/2004	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-3	03/25/2003	130	<20	5.8	<0.50	<0.50	<0.50	
	05/01/2003	<100	<20	1.9	<0.50	<0.50	<0.50	
	07/15/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	
	10/06/2003	--	--	--	--	--	--	Well Abandoned
MW-3A	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-4	03/25/2003	<100	<20	3.0	<0.50	<0.50	<0.50	
	05/01/2003	<100	<20	1.5	<0.50	<0.50	<0.50	
	07/15/2003	<500	<100	150	<5.0	<5.0	<5.0	
	12/24/2003	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	<100	<20	0.58	<1.0	<1.0	<1.0	
	04/13/2004	<100	<20	1.0	<1.0	<1.0	<1.0	
	07/12/2004	<100	<20	2.3	<1.0	<1.0	<1.0	
	11/29/2004	**<100**	**<20**	**0.93**	**<0.50**	**<0.50**	**<0.50**	
MW-5	03/25/2003	<500	<100	3.2	<2.5	<2.5	<2.5	
	05/01/2003	<100	<20	0.78	<0.50	<0.50	<0.50	
	07/15/2003	<200	<40	<1.0	<2.0	<2.0	<2.0	
	10/06/2003	--	--	--	--	--	--	Well Abandoned
MW-5A	03/09/2004	<100	<20	1.5	<1.0	<1.0	<1.0	
	04/13/2004	<100	<20	0.80	<1.0	<1.0	<1.0	
	07/12/2004	<100	<20	3.0	<1.0	<1.0	<1.0	
	11/29/2004	**<100**	**<20**	**3.8**	**<0.50**	**<0.50**	**<0.50**	
MW-6	03/25/2003	<100	<20	0.87	<0.50	<0.50	<0.50	
	05/01/2003	<100	<20	0.67	<0.50	<0.50	<0.50	
	07/15/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	
	12/24/2003	<500	<100	<2.5	<5.0	<5.0	<5.0	
	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-7	03/25/2003	<100	<20	0.61	<0.50	<0.50	<0.50	

Table 2

Fuel Oxygenates Analytical Data
ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MtBE (µg/L)	DIPE (µg/L)	EtBE (µg/L)	TAME (µg/L)	Comments
MW-7	05/01/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	
	07/15/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	
	12/24/2003	--	--	--	--	--	--	Well Inaccessible
	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**<100**	**<20**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-8	03/25/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	
	05/01/2003	--	--	--	--	--	--	Not Sampled
	07/15/2003	<100	<20	1.0	<1.0	<1.0	<1.0	
	12/24/2003	--	--	--	--	--	--	Not Sampled
	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	--	--	--	--	--	--	Not Sampled
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**--**	**--**	**--**	**--**	**--**	**--**	
MW-9A	03/25/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	
	05/01/2003	--	--	--	--	--	--	Not Sampled
	07/15/2003	<100	<20	<0.50	<1.0	<1.0	<1.0	
	12/24/2003	--	--	--	--	--	--	Not Sampled
	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	--	--	--	--	--	--	Not Sampled
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**--**	**--**	**--**	**--**	**--**	**--**	
MW-10	03/25/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	
	05/01/2003	--	--	--	--	--	--	Not Sampled
	07/15/2003	<200	<40	<1.0	<2.0	<2.0	<2.0	
	12/24/2003	--	--	--	--	--	--	Not Sampled
	03/09/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	04/13/2004	--	--	--	--	--	--	Not Sampled
	07/12/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	
	11/29/2004	**--**	**--**	**--**	**--**	**--**	**--**	

Table 2

Fuel Oxygenates Analytical Data
ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Notes:
µg/L= micrograms per liter
-- = not measured or analyzed
< = analyte not detected at or above the reporting limit
TBA= tert-butly alcohol
MTBE= Methyl tert-butyl ether
DIPE= Di-isopropyl ether
ETBE = Ethyl tert butyl ether
TAME= tert-amyl methyl ether

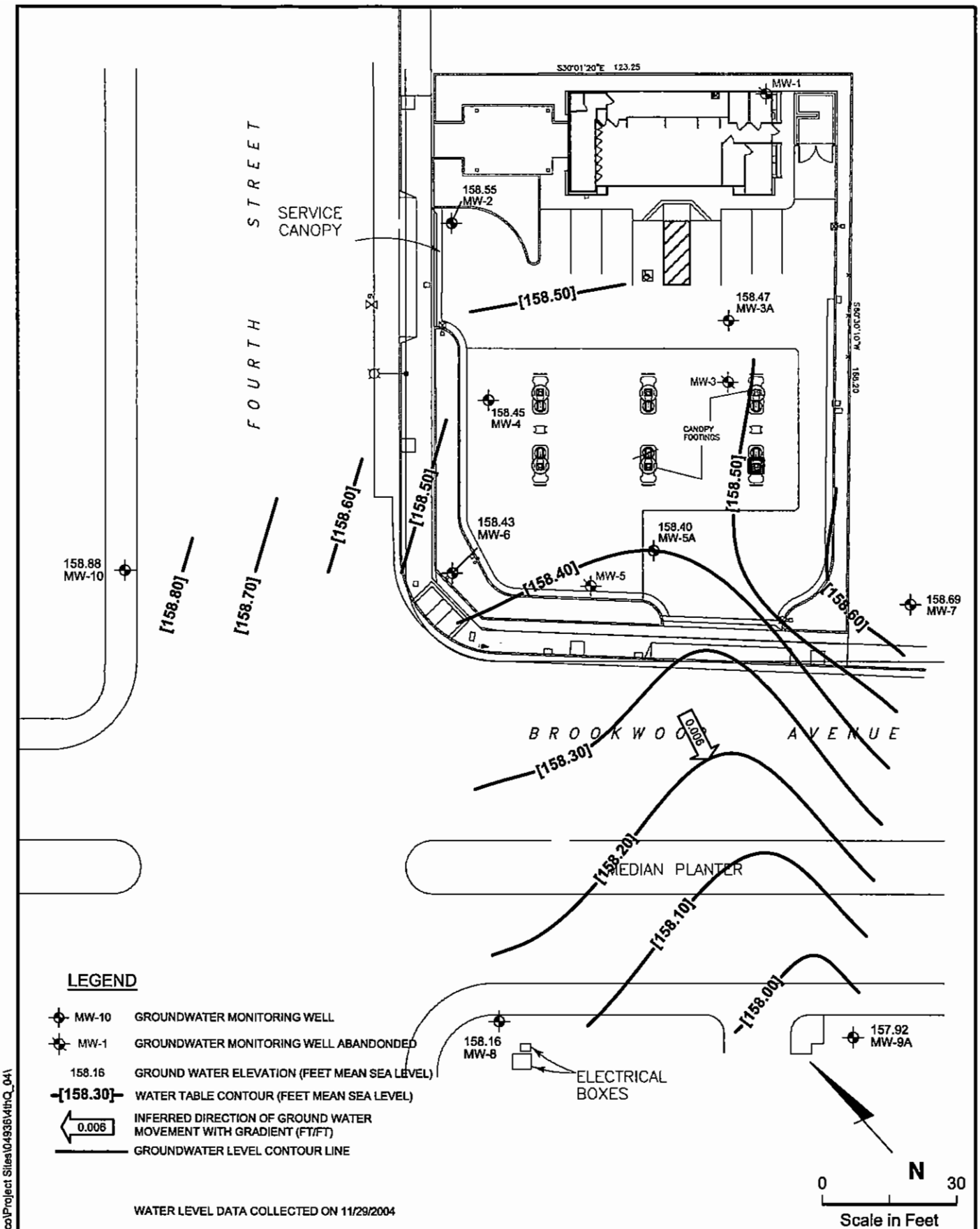
Table 3

Groundwater Gradient Data

ARCO Service Station No. 4936
1010 Fourth Street, Santa Rosa, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/21/2000	S to SW	0.005
4/24/2000	S to SW	0.005
8/21/2000	SW	0.002
11/22/2000	SW	0.0019
3/21/2001	SW	0.003
6/28/2001	SW	0.003
9/18/2001	SW	0.001
12/28/2001	SW	0.001
3/27/2002	SW	0.003
6/19/2002	SW	0.009
9/12/2002	S	0.012
12/11/2002	S to SW	0.002
3/25/2003	S to SW	0.007
5/1/2003	SW to SE	0.006
7/15/2003	Variable to SW	0.007
12/24/2003	Variable to SW	0.006 to 0.014
3/9/2004	S to SW	0.005
4/13/2004	Variable	0.015 to 0.019
7/12/2004	Variable	0.004 to 0.006
11/29/2004	**South**	**0.004**

Figures



LEGEND

MW-10	GROUNDWATER MONITORING WELL
MW-1	GROUNDWATER MONITORING WELL ABANDONDED
158.16	GROUND WATER ELEVATION (FEET MEAN SEA LEVEL)
[158.30]	WATER TABLE CONTOUR (FEET MEAN SEA LEVEL)
0.006	INFERRED DIRECTION OF GROUND WATER MOVEMENT WITH GRADIENT (FT/FT)
	GROUNDWATER LEVEL CONTOUR LINE

WATER LEVEL DATA COLLECTED ON 11/29/2004

URS
1550 Humboldt Road, Ste. 2
Chico, CA 95928
TEL: (530) 893-9675
FAX: (530) 893-9682

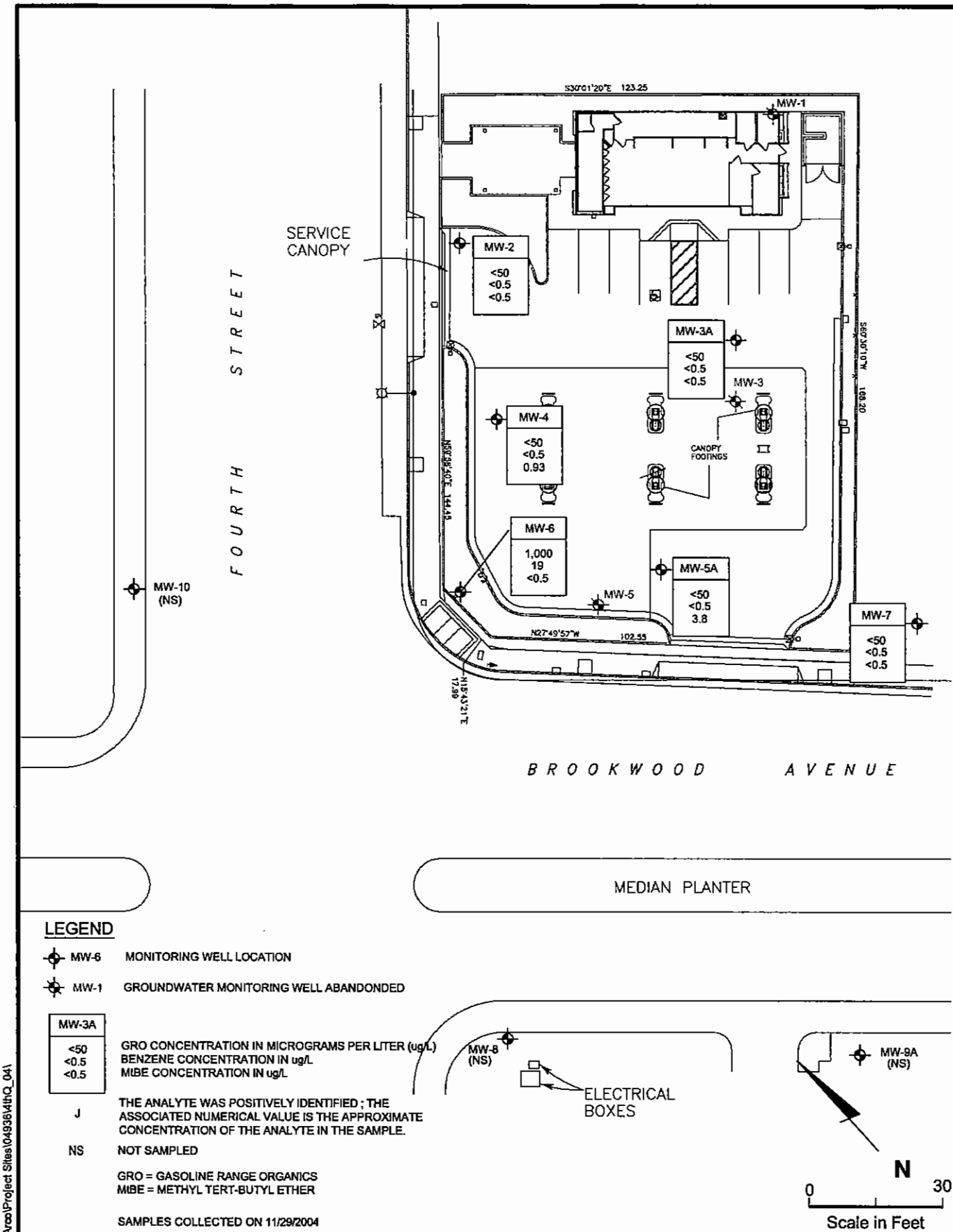
GROUNDWATER ELEVATION CONTOURS

ARCO Service Station No. 4936
1010 Fourth Street
Santa Rosa, California

ARCO Quarterly Groundwater
Monitoring Report - 4th Quarter 2004

FIGURE
1

PLOT BY: RTAYLOR - Jan 12, 2005 - 11:27:56am
IMAGES:
XREFS:
DRAWING: 4936-102904-4Q04-F1-gwcont.dwg
DRAWING: U:\Projects\BP - Arco\Project Sites\04936\4thQ_04\



LEGEND

MW-6 — MONITORING WELL LOCATION

MW-1 — GROUNDWATER MONITORING WELL ABANDONDED

MW-3A
<50
<0.5
<0.5

GRO CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
BENZENE CONCENTRATION IN ug/L
MtBE CONCENTRATION IN ug/L

J — THE ANALYTE WAS POSITIVELY IDENTIFIED ; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

NS — NOT SAMPLED

GRO = GASOLINE RANGE ORGANICS
MtBE = METHYL TERT-BUTYL ETHER

SAMPLES COLLECTED ON 11/29/2004

URS
1550 Humboldt Road, Ste. 2
Chico, CA 95928
TEL: (530) 893-9675
FAX: (530) 893-9682

GROUNDWATER ANALYTICAL SUMMARY

ARCO Service Station 4936
1010 Fourth Street
Santa Rosa, California

ARCO Quarterly Groundwater Monitoring Report - 4th Quarter 2004

FIGURE 2

PLOT BY: RTAYLOR - Dec 29, 2004 - 7:15:01am
IMAGES:
XREFS:
DRAWING: 4936-102904-4Q04-F2-SUM.dwg
DRAWING: U:\Projects\BP - Arco\Project Sites\04936\4thQ_04\

APPENDIX A

Field and Laboratory Procedures

APPENDIX A
FIELD AND LABORATORY PROCEDURES

Sampling Procedures

Sampling equipment is thoroughly cleaned prior to each sample. The sampling procedure for each well includes measuring the water level and checking for the presence of separate-phase hydrocarbons (SPH), using either an electronic indicator and a clear Teflon® bailer or an oil-water interface probe. Wells not containing SPH that do not have submerged screens are then sampled without purging. Wells that have submerged screens are purged of approximately three casing volumes of water (or to dryness) using a centrifugal pump, gas displacement pump, or bailer. The equipment and purging method used for the current sampling event are noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored in order to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially recover. Groundwater samples (both purge and no-purge) are collected using a Teflon® bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to a California state-certified laboratory.

Decontamination Procedures

Prior to sampling each well, reels and pumps are decontaminated with a steam cleaner. Sensitive equipment such as the water level sounder are sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water. All water used for equipment decontamination is collected and contained in a truck-mounted water tank.

Laboratory Procedures

The groundwater samples were analyzed for the presence of benzene, toluene, ethylbenzene, total xylenes (BTEX) and fuel oxygenates (including MtBE) using EPA Method 8260B. The presence of GRO was analyzed using EPA Method 8015B. The methods of analysis for the groundwater samples are documented in the laboratory analytical report. The laboratory analytical report, chain-of-custody documentation, and field data sheets are presented as Appendix B.

Purge and Rinsate Water Disposal

Water generated during well sampling and equipment cleaning is pumped into a truck-mounted water tank. The water is transported to Blain Tech Services holding facility in Roseville, California, for temporary storage. Dillard Environmental Services then transports the water to the Altamont Landfill and Resource Recovery Facility in Altamont, California for disposal.

APPENDIX B

Laboratory Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets

Sequoia
Analytical

885 Jarvis Drive
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20 December, 2004

Scott Dressler
URS Corporation [Arco2]
1550 Humbolt Road, Suite 2
Chico, CA 95928

RE: ARCO #4936, Santa Rosa, CA
Work Order: MNL0134

Enclosed are the results of analyses for samples received by the laboratory on 12/06/04 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race
Senior Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

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URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	MNL0134-01	Water	11/29/04 14:40	12/06/04 15:30
MW-3A	MNL0134-02	Water	11/29/04 15:20	12/06/04 15:30
MW-4	MNL0134-03	Water	11/29/04 15:40	12/06/04 15:30
MW-5A	MNL0134-04	Water	11/29/04 15:55	12/06/04 15:30
MW-6	MNL0134-05	Water	11/29/04 14:18	12/06/04 15:30
MW-7	MNL0134-06	Water	11/29/04 15:04	12/06/04 15:30
TB-493611292004	MNL0134-07	Water	11/29/04 00:00	12/06/04 15:30

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

These samples were received with no custody seals.

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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1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-2 (MNL0134-01) Water Sampled: 11/29/04 14:40 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*80 %*	*78-129*		"	"	"	"	
MW-3A (MNL0134-02) Water Sampled: 11/29/04 15:20 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*78 %*	*78-129*		"	"	"	"	

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Sequoia Analytical

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URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-4 (MNL0134-03) Water Sampled: 11/29/04 15:40 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**0.93**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*84 %*	*78-129*		"	"	"	"	
MW-5A (MNL0134-04) Water Sampled: 11/29/04 15:55 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**3.8**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*83 %*	*78-129*		"	"	"	"	

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URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6 (MNL0134-05) Water Sampled: 11/29/04 14:18 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	**19**	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**30**	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	**3.9**	0.50	"	"	"	"	"	"	
Xylenes (total)	**22**	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	**1000**	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*79 %*	*78-129*		"	"	"	"	
MW-7 (MNL0134-06) Water Sampled: 11/29/04 15:04 Received: 12/06/04 15:30									
tert-Amyl methyl ether	ND	0.50	ug/l	1	4L11002	12/11/04	12/11/04	EPA 8260B	
Benzene	ND	0.50	"	"	"	"	"	"	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethanol	ND	100	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C4-C12)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*78 %*	*78-129*		"	"	"	"	

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Sequoia Analytical

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URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4L11002 - EPA 5030B P/T / EPA 8260B										
Blank (4L11002-BLK1)				Prepared & Analyzed: 12/11/04						
tert-Amyl methyl ether	ND	0.50	ug/l							
Benzene	ND	0.50	"							
tert-Butyl alcohol	ND	20	"							
Di-isopropyl ether	ND	0.50	"							
Ethanol	ND	100	"							
Ethyl tert-butyl ether	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Methyl tert-butyl ether	ND	0.50	"							
Toluene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C4-C12)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*2.09*		"	*2.50*		*84*	*78-129*			
Laboratory Control Sample (4L11002-BS1)				Prepared & Analyzed: 12/11/04						
tert-Amyl methyl ether	11.1	0.50	ug/l	10.0		111	82-140			
Benzene	11.1	0.50	"	10.0		111	69-124			
tert-Butyl alcohol	55.1	20	"	50.0		110	56-131			
Di-isopropyl ether	11.8	0.50	"	10.0		118	76-130			
Ethanol	120	100	"	200		60	31-143			
Ethyl tert-butyl ether	10.6	0.50	"	10.0		106	81-121			
Ethylbenzene	9.98	0.50	"	10.0		100	84-132			
Methyl tert-butyl ether	11.7	0.50	"	10.0		117	63-137			
Toluene	10.9	0.50	"	10.0		109	78-129			
Xylenes (total)	29.3	0.50	"	30.0		98	83-137			
Surrogate: 1,2-Dichloroethane-d4	*2.10*		"	*2.50*		*84*	*78-129*			
Laboratory Control Sample (4L11002-BS2)				Prepared & Analyzed: 12/11/04						
Benzene	6.21	0.50	ug/l	6.40		97	69-124			
Ethylbenzene	7.64	0.50	"	7.52		102	84-132			
Methyl tert-butyl ether	9.69	0.50	"	9.92		98	63-137			
Toluene	36.3	0.50	"	31.9		114	78-129			
Xylenes (total)	36.4	0.50	"	36.6		99	83-137			
Gasoline Range Organics (C4-C12)	443	50	"	440		101	70-124			
Surrogate: 1,2-Dichloroethane-d4	*2.02*		"	*2.50*		*81*	*78-129*			

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URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	Reported:
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4L11002 - EPA 5030B P/T / EPA 8260B										
Laboratory Control Sample Dup (4L11002-BSD1)				Prepared & Analyzed: 12/11/04						
tert-Amyl methyl ether	11.0	0.50	ug/l	10.0		110	82-140	0.9	20	
Benzene	10.6	0.50	"	10.0		106	69-124	5	20	
tert-Butyl alcohol	56.7	20	"	50.0		113	56-131	3	20	
Di-isopropyl ether	11.4	0.50	"	10.0		114	76-130	3	20	
Ethanol	149	100	"	200		74	31-143	22	20	RB
Ethyl tert-butyl ether	10.2	0.50	"	10.0		102	81-121	4	20	
Ethylbenzene	9.42	0.50	"	10.0		94	84-132	6	20	
Methyl tert-butyl ether	11.3	0.50	"	10.0		113	63-137	3	20	
Toluene	10.4	0.50	"	10.0		104	78-129	5	20	
Xylenes (total)	28.0	0.50	"	30.0		93	83-137	5	20	
Surrogate: 1,2-Dichloroethane-d4	*1.95*		*"*	*2.50*		*78*	*78-129*			
Matrix Spike (4L11002-MS1)	**Source: MNL0095-08**			Prepared & Analyzed: 12/11/04						
Benzene	29.6	2.5	ug/l	32.0	ND	92	69-124			
Ethylbenzene	36.4	2.5	"	37.6	ND	97	84-132			
Methyl tert-butyl ether	87.0	2.5	"	49.6	36	103	63-137			
Toluene	175	2.5	"	160	ND	109	78-129			
Xylenes (total)	176	2.5	"	183	ND	96	83-137			
Gasoline Range Organics (C4-C12)	2280	250	"	2200	190	95	70-124			
Surrogate: 1,2-Dichloroethane-d4	*2.08*		*"*	*2.50*		*83*	*78-129*			
Matrix Spike Dup (4L11002-MSD1)	**Source: MNL0095-08**			Prepared & Analyzed: 12/11/04						
Benzene	30.8	2.5	ug/l	32.0	ND	96	69-124	4	20	
Ethylbenzene	37.2	2.5	"	37.6	ND	99	84-132	2	20	
Methyl tert-butyl ether	88.0	2.5	"	49.6	36	105	63-137	1	20	
Toluene	176	2.5	"	160	ND	110	78-129	0.6	20	
Xylenes (total)	182	2.5	"	183	ND	99	83-137	3	20	
Gasoline Range Organics (C4-C12)	2340	250	"	2200	190	98	70-124	3	20	
Surrogate: 1,2-Dichloroethane-d4	*1.92*		*"*	*2.50*		*77*	*78-129*			*LG*

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

URS Corporation [Arco2]	Project:ARCO #4936, Santa Rosa, CA	MNL0134
1550 Humbolt Road, Suite 2	Project Number:INTRIM-50457	**Reported:**
Chico CA, 95928	Project Manager:Scott Dressler	12/20/04 12:00

Notes and Definitions

RB	RPD exceeded method control limit; % recoveries within limits.
LG	Surrogate recovery below the acceptance limits.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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.

Chain of Custody Record

Project Name ARCO 4936 GW Monitoring
BP BU/GEM CO Portfolio: Atlantic Richfield Co.
BP Laboratory Contract Number: 461000
Requested Due Date (mm/dd/yy) MPL 0134

On-site Time: 1330 Temp: 75°
Off-site Time: 1615 Temp: 70°
Sky Conditions: clear
Meteorological Events: none
Wind Speed: Direction:

Send To:	BP/GEM Facility No.: ARCO 4936	Consultant/Contractor: URS
Lab Name: Sequoia Petaluma	BP/GEM Facility Address: 1010 FOURTH ST, SANTA ROSA, CA	Address: 1550 Humbolt Rd., Ste 2
Lab Address: 1455 N. McDowell Blvd. Suite D	Site ID No. ARCO 4936	Chico, CA 95928
Petaluma, CA 94954	Site Lat/Long:	e-mail EDD: denise_yee@urscorp.com
	California Global ID #: T0600700609	Consultant/Contractor Project No.:
Lab PM: Mike Giles	BP/GEM PM Contact: Chuck Carmel	Consultant Tele/Fax: 916-679-2000 / 916-679-2900
Tele/Fax: 707-792-1865 / 707-792-0342	Address: PO Box 1452	Consultant/Contractor PM: SCOTT DRESSLER
Report Type & QC Level: Level 1 Report & EDF	Alamo, CA 94507-1023	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:	Tele/Fax: 925-946-1085/925-946-1084	BP/GEM Work Release No: INTRIM -50457

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl			Requested Analysis: GRO / BTEX (8260)	DRO (8015)	Ethanol (8260)	MTBE, TAME, ETBE, DIPE, TBA (8260)	1,2-DCA (8260)	EDB (8260)					Sample Point Lat/Long and Comments
1	MW-2	1440	12/2/04		X		01	6				X			X		X	X							
2	MW-3A	1520			X		02	6				X			X		X	X							
3	MW-4	1540			X		03	6				X			X		X	X							
4	MW-5A	1555			X		04	6				X			X		X	X							
5	MW-6	1418			X		05	6				X			X		X	X							
6	MW-7	1504			X		06	6				X			X		X	X							
7	TB-493611292004				X		07	2				X													on hold
8																									
9																									
10																									

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Prestwich						
Sampler's Company: Blaine Tech		12/4/04	1250		12/6/04	1250
Shipment Date:		12/4/04	1550		12/7/04	1530
Shipment Method:						
Shipment Tracking No:						

Special Instructions: Address Invoice to BP/GEM but send to URS for approval
RUN 8260 ANALYTES IN ONE BATCH ANALYSIS

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

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: ARCO 4936
REC. BY (PRINT): JD
WORKORDER: MN66134

DATE REC'D AT LAB: 12/4/09
TIME REC'D AT LAB: 1530
DATE LOGGED IN: 12-4-09

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

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

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	pH	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
	01	A.F	MW-2	VOA (6)	HCl	—	W	11/4/09	
1. Custody Seal(s) Present / Absent; Intact / Broken*	02		MW-3A						
2. Chain-of-Custody Present / Absent*	03		MW-4						
3. Traffic Reports or Packing List: Present / Absent	04		MW-5A						
4. Airbill: Airbill / Sticker Present / Absent	05		MW-6						
	06		MW-7						
	07	A.B	TB-4936 112909	(2)					
5. Airbill #:									
6. Sample Labels: Present / Absent									
7. Sample IDs: Listed / Not Listed on Chain-of-Custody									
8. Sample Condition: Intact / Broken* / Leaking*									
9. Does information on chain-of-custody, traffic reports and sample labels agree? Yes / No*									
10. Sample received within hold time? Yes / No*									
11. Adequate sample volume received? Yes / No*									
12. Proper Preservatives used? Yes / No*									
13. Trip Blank / Temp Blank Received? (circle which, if yes) Yes / No*									
14. Temp Rec. at Lab: 3.2 Is temp 4 +/-2°C? Yes / No**									

(Acceptance range for samples requiring thermal pres.)

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

12/6/09

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

Page ____ of ____

SRL Revision 0
Replaces Rev 5 (06/07/04)

WELL GAUGING DATA

Project # 041129-PC3 Date 11/29/04 Client URS Arco 4936

Site 1010 4th St., Santa Rosa

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or ~~TOC~~	
MW-2	4					17.57	27.04	TOC	
MW-3A	2					18.62	30.28		
MW-4	4					17.90	26.80		
MW-5A	2					18.19	28.40		
MW-6	4					17.79	25.78		
MW-7	4					17.25	26.39		
MW-8	4					17.33	26.89		G.O.
MW-9A	4					17.24	28.86		G.O.
MW-10	4					17.30	24.80		G.O.

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041129-PC3	Station # 4936 Arco
Sampler: PC	Date: 11/29/04
Well I.D.: MW-2	Well Diameter: 2 3 4 6 8 ____
Total Well Depth: 27.04	Depth to Water: 17.57
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.

6.2 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 18.6 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1430	65.7	6.8	562	6.2	cloudy
1432	66.4	6.7	551	12.4	↓
1434	66.7	6.6	545	18.6	

Did well dewater? Yes No	Gallons actually evacuated: 18.6
Sampling Time: 1440	Sampling Date: 11/29/04
Sample I.D.: MW-2	Laboratory: Pace Sequoia Other _____
Analyzed for: GRO BTEX MTBE DRO Oxygs 1,2-DCA EDB Ethanol	Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	3.7 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041129-PC3	Station # Arco 4936
Sampler: PC	Date: 11/29/04
Well I.D.: MW-3A	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 30.28	Depth to Water: 18.62
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.

1.9 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 5.7 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1510	64.5	6.7	532	2	brown
1512	65.1	6.7	529	4	↓
1514	65.4	6.7	531	6	

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Time: 1520 Sampling Date: 11/29/04

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

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

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	4.9 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041129-PC3	Station # Arco 4936
Sampler: PC	Date: 11/29/04
Well I.D.: MW-4	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 26.80	Depth to Water: 17.95
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

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

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

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

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

5.8 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 17.4 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1528	66.1	6.8	551	16	clear
1530	66.6	6.6	550	12	↓
1532	66.9	6.6	547	18	

Did well dewater? Yes (No) Gallons actually evacuated: 18

Sampling Time: 1540 Sampling Date: 11/29/04

Sample I.D.: MW-4 Laboratory: Pace (Sequoia) Other _____

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

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.0 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041129-PC3	Station # Arco 4936
Sampler: PC	Date: 11/29/04
Well I.D.: MW-5A	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 28.40	Depth to Water: 18.19
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

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

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

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

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

1.6 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 4.8 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1545	64.9	6.6	570	1.6	brown
1547	65.4	6.7	581	3.2	↓
1549	65.7	6.7	581	4.8	

Did well dewater? Yes (No)	Gallons actually evacuated: 5
Sampling Time: 1555	Sampling Date: 11/29/04
Sample I.D.: MW-5A	Laboratory: Pace (Sequoia) Other _____
Analyzed for: (GRO) (BTEX) MTBE DRO (OXYS) 1,2-DCA EDB (Halogens)	Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	3.9 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041129-RC3	Station # Arco 4936
Sampler: RC	Date: 11/29/04
Well I.D.: MW-6	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 25.78	Depth to Water: 17.79
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.

5.2	x	3	=	15.6 Gals.
1 Case Volume (Gals.)		Specified Volumes		Calculated Volume

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1405	64.7	7.4	737	5.2	cloudy
1407	66.7	7.0	604	10.4	↓
1409	66.5	6.7	591	15.6	

Did well dewater? Yes (No)	Gallons actually evacuated: 15.6
Sampling Time: 1418	Sampling Date: 11/29/04
Sample I.D.: MW-6	Laboratory: Pace (Sequoia) Other _____
Analyzed for: (GRO) (BTEX) MTBE DRO (Oxy) 1,2-DCA EDB (Ethanol)	Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.4 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 041124-PC3	Station # 4936 Arco
Sampler: PC	Date: 11/29/04
Well I.D.: MW-7	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 26.39	Depth to Water: 17.25
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.

5.9 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 17.7 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or µS)	Gals. Removed	Observations
1452	65.2	6.8	531	6	cloudy
1455	66.4	6.6	527	12	↓
1457	66.6	6.6	528	18	

Did well dewater? Yes (No)	Gallons actually evacuated: 18
Sampling Time: 1504	Sampling Date: 11/29/04
Sample I.D.: MW-7	Laboratory: Pace (Sequoia) Other _____
Analyzed for: (GRO) (BTEX) MTBE DRO (Oxys) 1,2-DCA EDB (Naphth)	Other:

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

Chain of Custody Record

Project Name ARCO 4936 **GW Monitoring**
BP BU/GEM CO Portfolio: Atlantic Richfield Co.
BP Laboratory Contract Number: 461000
Requested Due Date (mm/dd/yy) Standard

On-site Time: 1330	Temp: 75°
Off-site Time: 1615	Temp: 70°
Sky Conditions: clear	
Meteorological Events: none	
Wind Speed:	Direction:

Send To:	BP/GEM Facility No.: ARCO 4936	Consultant/Contractor: URS
Lab Name: Sequoia Petaluma	BP/GEM Facility Address: 1010 FOURTH ST, SANTA ROSA, CA	Address: 1550 Humbolt Rd., Ste 2
Lab Address: 1455 N. McDowell Blvd. Suite D	Site ID No. ARCO 4936	Chico, CA 95928
Petaluma, CA 94954	Site Lat/Long:	e-mail EDD: denise_yee@urscorp.com
	California Global ID #: T0609700609	Consultant/Contractor Project No.:
Lab PM: Mike Giles	BP/GEM PM Contact: Chuck Carmel	Consultant Tele/Fax: 916-679-2000 / 916-679-2900
Tele/Fax: 707-792-1865 / 707-792-0342	Address: PO Box 1452	Consultant/Contractor PM: SCOTT DRESSLER
Report Type & QC Level: Level 1 Report & EDF	Alamo, CA 94507-1023	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:	Tele/Fax: 925-946-1085/925-946-1084	BP/GEM Work Release No: INTRIM -50457

Lab Bottle Order No:

Item No.	Sample Description	Time	Date	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	Preservatives: H_2SO_4	Preservatives: HNO_3	Preservatives: HCl	Requested Analysis: GRO / BTEX (8260)	Requested Analysis: DRO (8015)	Requested Analysis: Ethanol (8260)	Requested Analysis: MTBE, TAME, ETBE DIPE, TBA (8260)	Requested Analysis: 1,2-DCA (8260)	Requested Analysis: EDB (8260)	Sample Point Lat/Long and Comments
1	MW-2	1440	12/2/04		X			6				1	1		1	1			
2	MW-3A	1520			1			6				1	1		1	1			
3	MW-4	1540			1			6				1	1		1	1			
4	MW-5A	1555			1			6				1	1		1	1			
5	MW-6	1418			1			6				1	1		1	1			
6	MW-7	1504			1			6				1	1		1	1			
7	TB-443611292004				1			2				1							on hold
8																			
9																			
10																			

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: R Grenwich						
Sampler's Company: Blaine Tech	Pat Cui	12/4/04	1250	[illegible]	12/4/04	1250
Shipment Date:						
Shipment Method:						
Shipment Tracking No:						

Special Instructions: Address Invoice to BP/GEM but send to URS for approval
RUN 8260 ANALYTES IN ONE BATCH ANALYSIS

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

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

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 4936

Station #

1010 4th St, Santa Rosa

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

82.2

added equip. rinse water 12.8

any other adjustments

TOTAL GALS. RECOVERED 95

loaded onto BTS vehicle # 52

BTS event # 041129-RC3

time 1400

date 11/29 04

signature [illegible]

* *

REC'D AT BTS SJ

time 1

date 12/1 04

unloaded by

signature

WELLHEAD INSPECTION CHECKLIST

Client URS Date 11/29/04

Site Address 1010 4th st., Santa Rosa

Job Number 04U29-PCS Technician P. Cornish

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
MW-2	X							
MW-3A	X							
MW-4	X							
MW-5A	X							
MW-6	X							
MW-7	X							
MW-8	X							
MW-9A	X							
MW-10	X							

NOTES:

APPENDIX C

GeoTracker Upload Confirmation

Electronic Submittal Information

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

Your EDF file has been succcessfully uploaded!

Confirmation Number: **4037882804**
Date/Time of Submittal: **1/21/2005 12:44:03 PM**
Facility Global ID: **T0609700609**
Facility Name: **ARCO #4936**
Submittal Title: **Groundwater Monitoring Report 4th Quarter 2004**
Submittal Type: **GW Monitoring Report**

Click here to view the detections report for this upload.

ARCO #4936
1010 FOURTH STREET
SANTA ROSA, CA 95404

Regional Board (lead agency) - Case #: 1TSR098
NORTH COAST RWQCB (REGION 1) - (JAT)
Local Agency
SANTA ROSA, CITY OF

CONF #	TITLE	QUARTER
4037882804	Groundwater Monitoring Report 4th Quarter 2004	Q4 2004

SUBMITTED BY	SUBMIT DATE	STATUS
Denise Yee	1/21/2005	PENDING REVIEW

SAMPLE DETECTIONS REPORT

# FIELD POINTS SAMPLED	6
# FIELD POINTS WITH DETECTIONS	3
# FIELD POINTS WITH WATER SAMPLE DETECTIONS ABOVE MCL	1
SAMPLE MATRIX TYPES	WATER

METHOD QA/QC REPORT

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

QA/QC FOR 8021/8260 SERIES SAMPLES

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

DO ALL BATCHES WITH THE 8021/8260 SERIES INCLUDE THE FOLLOWING?	
- LAB METHOD BLANK	Y
- MATRIX SPIKE	Y
- MATRIX SPIKE DUPLICATE	Y
- BLANK SPIKE	Y
- SURROGATE SPIKE	Y

WATER SAMPLES FOR 8021/8260 SERIES

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

SOIL SAMPLES FOR 8021/8260 SERIES

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

FIELD QC SAMPLES

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

Electronic Submittal Information

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UPLOADING A GEO_WELL FILE

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Your file has been successfully submitted!

Submittal Title:	Arco 4936 Geo Well 4th Quarter 2004
Submittal Date/Time:	1/21/2005 11:16:39 AM
Confirmation Number:	5091099381

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Logged in as URS-SAC (CONTRACTOR) CONTACT SITE ADMINISTRATOR.

APPENDIX D

RWQCB Correspondence

California Regional Water Quality Control Board
North Coast Region
William R. Massey, Chairman

Tamminen
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ronmental
otection

http://www.swrcb.ca.gov/rwqcb1/
5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403
Phone 1-877-721-9203 Office (707) 576-2220 FAX (707) 523-0135

Arnold
Schwarzenegger
Governor

November 29, 2004

Mr. Charles Carmel
Atlantic Richfield Company
PO Box 977
Alamo, CA 94507-7977

Dear Mr. Carmel:

Subject: Comments on November 2004 Work Plan
File: Arco #4936, 1010 Fourth Street, Santa Rosa; Case No. 1TSR098

Regional Water Board staff has reviewed the November 12, 2004 Monitoring Well Installation Work Plan prepared for the subject site by URS Corporation (URS). The work plan proposes advancement of four exploratory borings to depths of approximately 80 feet below ground surface (bgs) to vertically delineate the extent of petroleum-impacted groundwater at the site. The work plan also proposes the installation of lower-zone monitoring wells in each of the four borings, to be screened at depths below approximately 40 feet bgs.

The work plan specifies the placement of a 5-foot bentonite plug within each boring at a depth consistent with a laterally continuous clay layer previously encountered at the site prior to advancing the boring deeper. Smaller diameter augers would then be used to drill through the bentonite plug to deeper levels. Regional Water Board staff discussed this proposal with Project Manager Scott Dressler of URS on November 19, 2004. In that discussion, Mr. Dressler agreed to submit a work plan addendum that would either provide additional information to support the use and regulatory acceptance of the bentonite plug drilling technique, or alternatively, to specify the use of conductor casings for preventing cross-contamination of the lower water-bearing zones. Accordingly, please submit a work plan addendum containing the above-noted information within two weeks of the date of this letter.

Regional Water Board staff concurs with the locations and targeted depths of the four proposed exploratory borings and lower-zone monitoring wells. Following our review and concurrence with the work plan addendum specifying an acceptable technique to prevent cross-contamination of the lower-zone water bearing zone, we will notify your consultant and the Sonoma County Environmental Health Division by telephone of Regional Water Board staff's concurrence with the plan.

Please inform our staff of the field schedule for the drilling activities at least ten days prior to commencing with the work, but no later than December 21, 2004. Please contact me at (707) 576 2469 if you have any questions or comments.

Sincerely,

Jim Tischler

Jim Tischler
Environmental Scientist

JAT:clh\112904_JAT_ ARCO#4936letter05

Cc: Mr. John Anderson, Sonoma County Environmental Health Department,
Ms. Andrea Jensen, Santa Rosa Fire Department, 955 Sonoma Avenue, Santa Rosa, CA 95404
Mr. Scott Dressler, R.G., URS Corporation, 1550 Humboldt Road, Ste. 2, Chico, California 95928
Mr. Eric Jensen, Global Alliance, 9310 64th Avenue Court East, Puyallup, WA 98371