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ENVIRONMENT

Ms. Dilan Roe, P.E.
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject:
Fourth Quarter 2013 and First Quarter 2014
Semi-Annual Groundwater Monitoring Report
Former Atlantic Richfield Company Station No. 4931
731 West MacArthur Boulevard
Oakland, California 94609

Date:
April 7, 2014

Contact:
Hollis Phillips

Phone:
415.432.6903

Email:
hollis.phillips@arcadis-us.com

Our ref:
GP09BPNA.C110.N0000

Dear Ms. Roe:

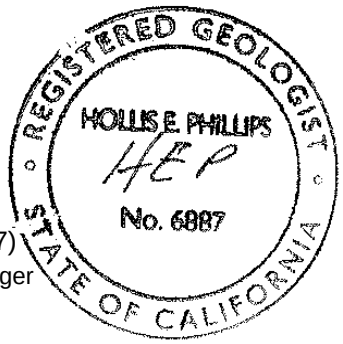
ARCADIS U.S., Inc (ARCADIS) has prepared this report on behalf of the Atlantic Richfield Company, a BP affiliated company (ARCO), for the former ARCO service station listed below.

ARCO Facility No.	ACEH Site No.	Location
4931	RO0000076	731 West MacArthur Blvd. Oakland, California

I declare, 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. If you have any questions or comments regarding the content of this report, please contact Hollis Phillips by telephone at 415.432.6903 or by e-mail at hollis.phillips@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.



Hollis E. Phillips, P.G. (No. 6887)
Principal Geologist/Project Manager

Copies:
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Subject:
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Former Atlantic Richfield Company Station No. 4931
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ACEH Case #RO0000076

Date:
April 7, 2014

Contact:
Hollis Phillips

Phone:
415.432.6903

Email:
hollis.phillips@arcadis-us.com

Our ref:
GP09BPNA.C110.N0000

Dear Ms. Roe:

ARCADIS U.S., Inc. (ARCADIS) has prepared this semi-annual groundwater monitoring report to document the results of groundwater monitoring and sampling at the former ARCO service station No. 4931, located at 731 West MacArthur Boulevard in Oakland, California (the Site; Figure 1).

1. Summary

A summary of the work performed at the Site during this reporting period and the proposed work for the next reporting period is provided below.

Work Performed – Reporting Period (October 2013 to March 2014)

- Submitted the *Second and Third Quarter 2013, Semi-Annual Groundwater Monitoring Report*, dated October 7, 2013, to Alameda County Environmental Health (ACEH).

- Performed semi-annual groundwater monitoring and sampling on February 13, 2014.

Work Proposed – Reporting Period (April 2014 to September 2014)

- Submit the *Fourth Quarter 2013 and First Quarter 2014, Semi-Annual Groundwater Monitoring Report*, contained herein.

2. Background

The Site is a former ARCO service station and is currently operated as a Beacon gasoline station (Figures 1 and 2). Improvements to the Site include four 10,000-gallon double-wall fiberglass gasoline underground storage tanks (USTs) installed on April 8, 1992. Product lines were excavated, removed, inspected, and replaced on October 2, 2002. Soil boring and well construction details are summarized in Table 1. Previous investigation information and site history are summarized in Appendix A.

3. Groundwater Monitoring/Sampling Activities and Results

Historical and current groundwater monitoring and sampling results are summarized in Table 2. Current groundwater monitoring and sampling data are graphically presented on Figures 3 and 4. A rose diagram illustrating historical groundwater flow directions and gradients is provided on Figure 5.

Before groundwater samples were collected, depth to groundwater was measured to within 0.01 foot below top of casing in wells A-2 through A-5, A-7 through A-10, AR-1, and AR-3 using a water level indicator. Monitoring wells A-11 and A-12 could not be gauged because ARCADIS failed to obtain an encroachment permit at the time of monitoring. Monitoring well AR-2 could not be gauged due to the monitoring well being paved over with a concrete pad. Monitoring well A-13 could not be gauged due to the well currently being paved over.

Monitoring wells A-3, A-4, A-5, and A-8 were sampled on February 13, 2014 by Broadbent & Associates, Inc. (BAI). Field activities conducted by BAI were reviewed and certified by a BAI California Professional Geologist. Groundwater sampling data packages and laboratory analytical reports for the current monitoring period are included in Appendices B and C, respectively.

Collected groundwater samples were submitted under chain-of-custody protocol to TestAmerica Laboratories, Inc. (TestAmerica), a California-certified laboratory located in Pleasanton, California.

Collected groundwater samples from A-3, A-4, A-5, and A-8 were analyzed for fuel additive methyl tert-butyl ether (MTBE) by USEPA Method 8260.

Collected groundwater samples from A-5 were analyzed for the following:

- Gasoline range organics (C6-C12) (GRO) using United States Environmental Protection Agency (USEPA) Method 8260B Modified.

Collected groundwater samples from A-4 and A-8 were analyzed for the following:

- GRO using USEPA Method 8260B Modified;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), ethylene dibromide (EDB), and 1,2-dichloroethane (1,2-DCA) using USEPA Method 8260B; and
- Tert-amyl-methyl ether (TAME), tert-butyl alcohol (TBA), diisopropyl ether (DIPE), ethanol, and ethyl t-butyl ether (ETBE) by USEPA Method 8260B.

4. Discussion

- As shown on Figure 3, groundwater flow direction during the reporting period was to the west-southwest at an approximate gradient of 0.04 foot per foot (ft/ft). Historical data indicate the groundwater flow direction is predominantly toward the west as shown on Figure 5.
- GRO was detected in one of three wells sampled at a concentration of 190 micrograms per liter (µg/L) (A-8). GRO was not detected above the laboratory reporting limit of 50 µg/L at the other two wells sampled (A-4 and A-5).
- Benzene was detected in one of two wells sampled at a concentration of 4.4 µg/L (A-8).
- MTBE was detected in 1 of 4 wells sampled at a concentration of 0.85 µg/L (A-8).
- Toluene, ethylbenzene, total xylenes, TBA, TAME, DIPE, ETBE, Ethanol, EDB, and 1,2-DCA were not detected in the two wells (A-4 and A-8) sampled and analyzed for these constituents.

5. Recommendations

As stated in previous site reports *ACEH Low Threat Closure Policy Checklist and Site Conceptual Model*, dated June 28, 2013, and *Second and Third Quarter 2013, Semi-Annual Groundwater Monitoring Report*, dated October 7, 2013, available data from the Site suggests that the Site appears to be a candidate for closure as a low-

risk fuel site as described in the State Water Resources Control Board (State Water Board) *Low-Threat Underground Storage Tank Case Closure Policy*.

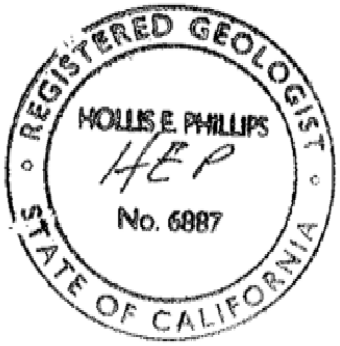
ARCADIS recommends that a status of no further action (NFA) be received, and the Site be granted regulatory closure. During case closure evaluation ARCADIS requests the following:

- Suspension of groundwater monitoring and reporting, which includes the August 2014 sampling event, pending approval of site closure by the State Water Board.

If you have any questions or comments regarding the contents of this report, please contact Hollis Phillips by telephone (415.432.6903) or by e-mail (hollis.phillips@arcadis-us.com).

Sincerely,

ARCADIS U.S., Inc.



Prepared by:

Jamey Peterson
Staff Geologist

Approved by:

Hollis E. Phillips, P.G. (CA 6887)
Principal Geologist/Project Manager

Enclosures:

Table 1	Soil Boring and Well Construction Details
Table 2	Historical and Current Groundwater Monitoring and Analytical Data
Figure 1	Site Location Map
Figure 2	Site Plan
Figure 3	Groundwater Elevation Contour Map – February 13, 2014
Figure 4	Analytical Summary Map – February 13, 2014
Figure 5	Groundwater Flow Direction Rose Diagram
Appendix A	Previous Investigations and Site History Summary
Appendix B	Groundwater Sampling Data Package
Appendix C	Certified Laboratory Analytical Report

Copies:
Ms. Dilan Roe, Alameda County Environmental Health (Submitted via ACEH ftp site)
Mr. Nick Goyal, Owner, electronic copy e-mailed (nick@vintnersdist.com)
Electronic copy uploaded to GeoTracker

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TABLES

Table 1
Soil Boring and Well Construction Details
Former Atlantic-Richfield Oil Company Station No. 4931
731 West MacArthur Boulevard, Oakland, California

Well I.D.	Drill Date	Well		Screen		Screen Length (feet)
		Depth (feet bgs)	Diameter (inches)	Top (feet bgs)	Bottom (feet bgs)	
Monitoring Wells						
A-2	--	--	--	--	--	--
A-3	--	--	--	--	--	--
A-4	--	--	--	--	--	--
A-5	--	--	--	--	--	--
A-6	--	--	--	--	--	--
A-7	--	--	--	--	--	--
A-8	--	--	--	--	--	--
A-9	12/15/87	40	6	5	40	35
A-10	12/15/87	30	3	5	30	25
A-11	12/16/87	30	3	5	30	25
A-12	12/16/87	30	3	5	30	25
A-13	06/15/92	30	3	10	30	20
AR-1	06/15/92	30	6	10	30	20
AR-2	06/15/92	30	6	8	28	20
AR-3	06/16/92	30	4	10	30	20
Soil Vapor Extraction Well						
AV-1	01/17/92	16	2	5	15	10

Notes

Wells are constructed of poly-vinyl-chloride (PVC).

bgs = Below ground surface

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
AR-1	12/26/2000		54.72	9.95	--	44.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	3/20/2001		54.72	8.34	--	46.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	6/12/2001		54.72	10.17	--	44.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	9/23/2001		54.72	10.72	--	44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	12/31/2001		54.72	5.91	--	48.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	3/21/2002		54.72	7	--	47.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	4/17/2002		54.72	8.33	--	46.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/12/2002		54.72	10.18	--	44.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	12/6/2002		54.72	10.21	--	44.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	1/30/2003		54.72	8.22	--	46.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/28/2003		54.72	9.62	--	45.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/6/2003		54.72	10.47	--	44.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/14/2003		54.72	10.4	--	44.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/2/2004		59.52	7.96	--	51.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/4/2004		59.52	10.17	--	49.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	9/2/2004		59.52	10.28	--	49.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/10/2004		59.52	9.15	--	50.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/2/2005		59.52	7.8	--	51.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/9/2005		59.52	7.03	--	52.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/11/2005		59.52	9.82	--	49.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/18/2005		59.52	9.83	--	49.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/15/2006		59.52	7.78	--	51.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/30/2006		59.52	8.65	--	50.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/11/2006		59.52	9.69	--	49.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/1/2006		59.52	10.07	--	49.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/7/2007		59.52	9.33	--	50.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/9/2007		59.52	8.45	--	51.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/7/2007		59.52	10.12	--	49.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/14/2007		59.52	9.31	--	50.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/28/2008		59.52	7.05	--	52.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/13/2008		59.52	10.2	--	49.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	11/19/2008		59.52	9.73	--	49.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/10/2009		59.52	8.61	--	50.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	5/7/2009		59.52	8.17	--	51.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	9/3/2009		59.52	10.19	--	49.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	8/24/2012		59.52	9.65	--	49.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-1	2/8/2013		59.52	8.44	--	51.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
AR-1	8/7/2013		59.52	10.08	--	49.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
AR-1	2/13/2014		59.52	7.39	--	52.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-2	6/21/2000		55.48	6.85	--	48.63	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	--	--	--	--	--	--	
A-2	9/20/2000		55.48	10.45	--	45.03	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	12/26/2000		55.48	6.27	--	49.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	3/20/2001		55.48	4.57	--	50.91	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	6/12/2001		55.48	9.27	--	46.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	9/23/2001		55.48	10.75	--	44.73	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	12/31/2001		55.48	4.13	--	51.35	<50	<0.5	<0.5	1	3.2	<2.5	--	--	--	--	--	--	--	--	
A-2	3/21/2002		55.48	3.26	--	52.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-2	4/17/2002		55.48	3.72	--	51.76	<50	<0.5	<0.5	<0.5	<0.5	3.1	--	--	--	--	--	--	--	--	
A-2	8/12/2002		55.48	9.95	--	45.53	<10	<0.10	<0.10	<0.10	<0.10	<0.50	--	--	--	--	--	--	--	3.1	
A-2	12/6/2002		55.48	10.01	--	45.47	<50	<0.50	<0.50	<0.50	<0.50	6	--	--	--	--	--	--	--	3.1	
A-2	1/30/2003		55.48	5.08	--	50.4	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<40	--	--	2.6	
A-2	5/28/2003		55.48	4.82	--	50.66	<50	<0.50	<0.50	<0.50	<0.50	1.1	<20	<0.50	<0.50	<0.50	<100	--	--	5.7	
A-2	8/6/2003		55.48	9.73	--	45.75	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	2.3	
A-2	11/14/2003		55.48	9.36	--	46.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/2/2004		60.65	4.45	--	56.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/4/2004		60.65	6.79	--	53.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	9/2/2004		60.65	10.51	--	50.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	3.1	
A-2	11/10/2004		60.65	6.1	--	54.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/2/2005		60.65	4	--	56.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/9/2005		60.65	4.35	--	56.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/11/2005		60.65	9.08	--	51.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	3.2	
A-2	11/18/2005		60.65	8.53	--	52.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/15/2006		60.65	3.89	--	56.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/30/2006		60.65	4.45	--	56.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/11/2006		60.65	9.03	--	51.62	160	<0.50	<0.50	<0.50	<0.50	3.6	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.16	
A-2	11/1/2006		60.65	9.98	--	50.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/7/2007		60.65	7.51	--	53.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/9/2007		60.65	4.57	--	56.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/7/2007		60.65	9.67	--	50.98	<50	<0.50	<0.50	<0.50	<0.50	3.4	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	2.18	
A-2	11/14/2007		60.65	7.84	--	52.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/28/2008		60.65	3.3	--	57.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/23/2008		60.65	8.8	--	51.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/13/2008		60.65	10.2	--	50.45	<50	<0.50	<0.50	<0.50	<0.50	19	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.87	
A-2	11/19/2008		60.65	9.2	--	51.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	2/10/2009		60.65	7.83	--	52.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	5/7/2009		60.65	4.4	--	56.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	9/3/2009		60.65	10.07	--	50.58	<50	<0.50	<0.50	<0.50	<0.50	12	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.03	
A-2	3/23/2010		60.65	3.67	--	56.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/16/2010		60.65	9.4	--	51.25	<50	<0.50	<0.50	<0.50	<1.0	6.1	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-2	3/18/2011		60.65	2.89	--	57.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/18/2011		60.65	7.63	--	53.02	--	--	--	--	--	0.74	--	--	--	--	--	--	--	--	
A-2	2/29/2012		60.65	8.42	--	52.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/24/2012		60.65	10.54	--	50.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-2	8/31/2012		60.65	10.7	--	49.95	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--	
A-2	2/8/2013		60.65	4.51	--	56.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
A-2	8/7/2013		60.65	10.07	--	50.58	--	--	--	--	--	12	--	--	--	--	--	--	--	1.50	
A-2	2/13/2014		60.65	5.34	--	55.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
AR-2	3/20/2001		54.77	3.13	--	51.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	6/12/2001		54.77	4.51	--	50.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	9/23/2001		54.77	6.05	--	48.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	12/31/2001		54.77	2.79	--	51.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	3/21/2002		54.77	7.75	--	47.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	4/17/2002		54.77	2.24	--	52.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/12/2002		54.77	4.93	--	49.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	12/6/2002		54.77	6.09	--	48.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	1/30/2003		54.77	3.89	--	50.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/28/2003		54.77	3.33	--	51.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/6/2003		54.77	5.05	--	49.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/14/2003		54.77	6.01	--	48.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/2/2004		59.18	3.88	--	55.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/4/2004		59.18	6.01	--	53.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	9/2/2004		59.18	5.65	--	53.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/10/2004		59.18	5.48	--	53.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/2/2005		59.18	2.62	--	56.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/9/2005		59.18	2.84	--	56.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/11/2005		59.18	4.33	--	54.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/18/2005		59.18	5.34	--	53.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/15/2006		59.18	2.49	--	56.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/30/2006		59.18	3.02	--	56.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/11/2006		59.18	4.32	--	54.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/1/2006		59.18	5.25	--	53.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/7/2007		59.18	4.64	--	54.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/9/2007		59.18	3.15	--	56.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/7/2007		59.18	4.55	--	54.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/14/2007		59.18	5.03	--	54.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/28/2008		59.18	1.82	--	57.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/13/2008		59.18	5.05	--	54.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	11/19/2008		59.18	5.49	--	53.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/10/2009		59.18	5.1	--	54.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	5/7/2009		59.18	2.9	--	56.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	9/3/2009		59.18	5.99	--	53.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	8/24/2012		59.18	4.55	--	54.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-2	2/8/2013		59.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
AR-2	8/7/2013		59.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
AR-2	2/13/2014		59.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

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Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-3	6/21/2000		54.66	9.48	--	45.18	<50	<0.5	<0.5	<0.5	<1.0	46	--	--	--	--	--	--	--	--	
A-3	9/20/2000		54.66	10.24	--	44.42	<50	<0.5	<0.5	<0.5	<0.5	89.6	--	--	--	--	--	--	--	--	
A-3	12/26/2000		54.66	9.58	--	45.08	<50	<0.5	<0.5	<0.5	<0.5	7.11	--	--	--	--	--	--	--	--	
A-3	3/20/2001		54.66	6.34	--	48.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	6/12/2001		54.66	9.76	--	44.9	<50	<0.5	<0.5	<0.5	<0.5	86	--	--	--	--	--	--	--	--	
A-3	9/23/2001		54.66	10.55	--	44.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	12/31/2001		54.66	3.7	--	50.96	<50	<0.5	<0.5	<0.5	1	60	--	--	--	--	--	--	--	--	
A-3	3/21/2002		54.66	5.75	--	48.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	4/17/2002		54.66	7.27	--	47.39	<50	<0.5	<0.5	<0.5	<0.5	45	--	--	--	--	--	--	--	--	
A-3	8/12/2002		54.66	9.71	--	44.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	12/6/2002		54.66	9.55	--	45.11	<500	<5.0	<5.0	<5.0	<5.0	150	--	--	--	--	--	--	--	2.4	
A-3	1/30/2003		54.66	6.05	--	48.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	5/28/2003		54.66	8.06	--	46.6	74	<0.50	<0.50	<0.50	<0.50	43	<20	<0.50	<0.50	24	<100	--	--	1.5	
A-3	8/6/2003		54.66	9.91	--	44.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	11/14/2003		54.66	9.52	--	45.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/2/2004		59.32	5.63	--	53.69	<50	<0.50	<0.50	<0.50	<0.50	13	<20	<0.50	<0.50	4.6	<100	<0.50	<0.50	1.2	
A-3	5/4/2004		59.32	8.14	--	51.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	9/2/2004		59.32	10.1	--	49.22	<250	<2.5	<2.5	<2.5	<2.5	62	<100	<2.5	<2.5	15	<500	<2.5	<2.5	1.3	
A-3	11/10/2004		59.32	7.89	--	51.43	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/2/2005		59.32	5	--	54.32	<50	<0.50	<0.50	<0.50	<0.50	6.8	<20	<0.50	<0.50	2.4	<100	<0.50	<0.50	1.9	
A-3	5/9/2005		59.32	5.96	--	53.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	8/11/2005		59.32	9.28	--	50.04	<50	<0.50	<0.50	<0.50	<0.50	39	<20	<0.50	<0.50	4.2	<100	<0.50	<0.50	1.8	
A-3	11/18/2005		59.32	8.61	--	50.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/15/2006		59.32	4.36	--	54.96	<50	<0.50	<0.50	<0.50	<0.50	2.2	<20	<0.50	<0.50	0.58	<300	<0.50	<0.50	3.6	
A-3	5/30/2006		59.32	6.28	--	53.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	8/11/2006		59.32	9.27	--	50.05	<50	<0.50	<0.50	<0.50	<0.50	4.1	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	2.10	
A-3	11/1/2006		59.32	9.52	--	49.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/7/2007		59.32	7.9	--	51.42	<50	<0.50	<0.50	<0.50	<0.50	0.58	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.74	
A-3	5/9/2007		59.32	6.55	--	52.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	8/7/2007		59.32	9.57	--	49.75	<50	<0.50	<0.50	<0.50	<0.50	3.9	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.95	
A-3	11/14/2007		59.32	8	--	51.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/28/2008		59.32	3.75	--	55.57	<50	<0.50	<0.50	<0.50	<0.50	0.58	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	6.16	
A-3	5/23/2008		59.32	9.1	--	50.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	8/13/2008		59.32	9.8	--	49.52	<50	<0.50	<0.50	<0.50	<0.50	0.55	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.69	
A-3	11/19/2008		59.32	8.31	--	51.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	2/10/2009		59.32	7.3	--	52.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.90	
A-3	5/7/2009		59.32	6.1	--	53.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	9/3/2009		59.32	9.5	--	49.82	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.01	
A-3	3/23/2010		59.32	4.45	--	54.87	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-3	8/16/2010		59.32	9.45	--	49.87	<50	<0.50	<0.50	<0.50	<1.0	0.72	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-3	3/18/2011		59.32	4	--	55.32	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-3	8/18/2011		59.32	8.62	--	50.7	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-3	2/29/2012		59.32	7.22	--	52.1	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-3	8/24/2012		59.32	9.31	--	50.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-3	8/31/2012		59.32	9.41	--	49.91	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-3	2/8/2013		59.32	6.33	--	52.99	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-3	8/7/2013		59.32	9.45	--	49.87	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	2.25	
A-3	2/13/2014		59.32	5.89	--	53.43	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	7.72	

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731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
AR-3	12/26/2000		54.19	9.7	--	44.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	9/23/2001		54.19	10.43	--	43.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	12/31/2001		54.19	5.18	--	49.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	3/21/2002		54.19	6.78	--	47.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	4/17/2002		54.19	8.06	--	46.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/12/2002		54.19	9.94	--	44.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	12/6/2002		54.19	9.99	--	44.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	1/30/2003		54.19	7.96	--	46.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/28/2003		54.19	8.94	--	45.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/6/2003		54.19	9.94	--	44.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/14/2003		54.19	10.03	--	44.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/2/2004		59.10	6.9	--	52.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/4/2004		59.10	9.12	--	49.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	9/2/2004		59.10	10.15	--	48.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/10/2004		59.10	8.79	--	50.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/2/2005		59.10	7.3	--	51.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/9/2005		59.10	7.71	--	51.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/11/2005		59.10	9.54	--	49.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/18/2005		59.10	9.43	--	49.67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/15/2006		59.10	7.5	--	51.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/30/2006		59.10	8.82	--	50.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/11/2006		59.10	9.38	--	49.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/1/2006		59.10	9.75	--	49.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/7/2007		59.10	9	--	50.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/9/2007		59.10	8.12	--	50.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/7/2007		59.10	9.75	--	49.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/14/2007		59.10	8.91	--	50.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/28/2008		59.10	6.73	--	52.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/13/2008		59.10	9.85	--	49.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	11/19/2008		59.10	9.35	--	49.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/10/2009		59.10	8.29	--	50.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	5/7/2009		59.10	7.83	--	51.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	9/3/2009		59.10	9.8	--	49.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	8/24/2012		59.10	9.1	--	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
AR-3	2/8/2013		59.10	7.62	--	51.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
AR-3	8/7/2013		59.10	9.47	--	49.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
AR-3	2/13/2014		59.10	7.00	--	52.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-4	6/21/2000		54.73	9.49	--	45.24	2,100	110	2.1	11	5.9	2,000	--	--	--	--	--	--	--	--	
A-4	9/20/2000		54.73	10.33	--	44.4	1,540	127	<5.0	9.07	7.42	1,940	--	--	--	--	--	--	--	--	
A-4	12/26/2000		54.73	9.34	--	45.39	1,550	42.7	<5.0	11	10.9	1,210	--	--	--	--	--	--	--	--	
A-4	3/20/2001		54.73	7.56	--	47.17	913	40.9	<5.0	15.5	14.6	<25	--	--	--	--	--	--	--	--	
A-4	6/12/2001		54.73	9.83	--	44.9	2,000	230	<20	21	<20	4,700	--	--	--	--	--	--	--	--	
A-4	9/23/2001		54.73	10.54	--	44.19	1,600	35	<10	<10	<10	3,000	--	--	--	--	--	--	--	--	
A-4	12/31/2001		54.73	5.42	--	49.31	<500	<5.0	<5.0	<5.0	<5.0	880	--	--	--	--	--	--	--	--	
A-4	3/21/2002		54.73	6.18	--	48.55	<5,000	<50	<50	<50	<50	1,400	--	--	--	--	--	--	--	--	
A-4	4/17/2002		54.73	7.34	--	47.39	1,300	79	31	17	55	2,200	--	--	--	--	--	--	--	--	
A-4	8/12/2002		54.73	9.56	--	45.17	2,400	120	<5.0	<5.0	<5.0	2,100	--	--	--	--	--	--	--	2	
A-4	12/6/2002		54.73	10.02	--	44.71	2,200	110	10	42	56	2,000	--	--	--	--	--	--	--	--	
A-4	1/30/2003		54.73	7.55	--	47.18	6,000	180	<50	85	<50	2,100	<2,000	<50	<50	530	<4,000	--	--	1.8	
A-4	5/28/2003		54.73	8.94	--	45.79	6,000	120	<50	<50	<50	2,500	<2,000	<50	<50	590	<10,000	--	--	1.5	
A-4	8/6/2003		54.73	10.03	--	44.7	5,800	100	<25	<25	33	2,500	<1,000	<25	<25	560	<5,000	<25	<25	1.5	
A-4	11/14/2003		54.73	10.37	--	44.36	1,000	17	<5.0	<5.0	<5.0	310	320	<5.0	<5.0	76	<1,000	--	--	1.6	
A-4	2/2/2004		59.59	6.7	--	52.89	3,600	46	<25	<25	<25	1,500	<1,000	<25	<25	350	<5,000	<25	<25	1.0	
A-4	5/4/2004		59.59	9.12	--	50.47	<5,000	<50	<50	<50	<50	2,300	<2,000	<50	<50	510	<10,000	<50	<50	6.4	
A-4	9/2/2004		59.59	9.95	--	49.64	3,000	<25	<25	<25	<25	1,200	1,200	<25	<25	280	<5,000	<25	<25	9.1	
A-4	11/10/2004		59.59	8.68	--	50.91	1,800	16	<10	<10	<10	1,100	910	<10	<10	270	<2,000	<10	<10	2.0	
A-4	2/2/2005		59.59	6.92	--	52.67	3,300	120	<10	66	11	1,700	2,100	<10	<10	430	<2,000	<10	<10	1.5	
A-4	5/9/2005		59.59	7.21	--	52.38	<5,000	140	<50	62	<50	1,800	2,000	<50	<50	460	<10,000	<50	<50	1.64	
A-4	8/11/2005		59.59	9.71	--	49.88	1,700	51	<10	<10	<10	1,200	2,400	<10	<10	310	<2,000	<10	<10	--	
A-4	11/18/2005		59.59	9.45	--	50.14	1,300	23	<2.5	7.2	11	310	1,400	<2.5	<2.5	98	<500	<2.5	<2.5	1.4	
A-4	2/15/2006		59.59	7.12	--	52.47	2,200	46	<2.5	29	7.0	910	2,700	<2.5	<2.5	270	<1,500	<2.5	<2.5	0.9	
A-4	5/30/2006		59.59	7.95	--	51.64	3,300	95	<10	55	<10	1,200	3,000	<10	<10	340	<6,000	<10	<10	1.76	
A-4	8/11/2006		59.59	9.5	--	50.09	350	93	<10	<10	<10	1,200	3,200	<10	<10	350	<6,000	<10	<10	1.4	
A-4	11/1/2006		59.59	9.93	--	49.66	1,300	<10	<10	<10	<10	360	1,700	<10	<10	95	<6,000	--	<10	4.56	
A-4	2/7/2007		59.59	8.82	--	50.77	4,900	85	<10	40	<10	1,500	3,000	<10	<10	460	<6,000	<10	<10	0.72	
A-4	5/9/2007		59.59	7.56	--	52.03	1,700	19	<10	<10	<10	340	2,200	<10	<10	91	<6,000	<10	<10	3.00	
A-4	8/7/2007		59.59	9.8	--	49.79	2,700	69	<5.0	<5.0	<5.0	510	1,800	<5.0	<5.0	140	<3,000	<5.0	<5.0	1.04	
A-4	11/14/2007		59.59	8.65	--	50.94	500	4.9	<0.50	<0.50	<0.50	280	600	<0.50	<0.50	90	<300	<0.50	<0.50	1.27	
A-4	2/28/2008		59.59	6.15	--	53.44	850	17	<0.50	4.4	1.4	350	1,600	<0.50	<0.50	73	<300	<0.50	<0.50	1.76	
A-4	5/23/2008		59.59	9.4	--	50.19	1,900	75	<20	<20	<20	1,000	2,500	<20	<20	270	<12,000	<20	<20	1.28	
A-4	8/13/2008		59.59	9.92	--	49.67	3,100	47	<10	<10	<10	530	3,200	<10	<10	190	<6,000	<10	<10	0.89	
A-4	11/19/2008		59.59	9.19	--	50.4	1,800	70	<10	21	<10	430	2,000	<10	<10	140	<6,000	<10	<10	0.83	
A-4	2/10/2009		59.59	7.68	--	51.91	1,900	33	<10	14	<10	400	2,300	<10	<10	120	<6,000	<10	<10	0.87	
A-4	5/7/2009		59.59	7.31	--	52.28	<50	<0.50	<0.50	<0.50	<0.50	9.9	11	<0.50	<0.50	2.0	<300	<0.50	<0.50	2.40	
A-4	9/3/2009		59.59	10.02	--	49.57	3,800	49	<10	<10	<10	360	3,200	<10	<10	120	<6,000	<10	<10	0.79	
A-4	3/23/2010		59.59	6.62	--	52.97	1,000	17	<0.50	5.0	1.3	150	1,600	<0.50	<0.50	45	<100	<0.50	<0.50	--	
A-4	8/16/2010		59.59	9.85	--	49.74	1,600	18	0.50	0.56	<1.0	160	3,400	<0.50	<0.50	47	<100	<0.50	<0.50	--	
A-4	3/18/2011		59.59	5.34	--	54.25	490	9.9	<0.50	1.9	<1.0	66	1,400	<0.50	<0.50	18	<250	<0.50	<0.50	--	
A-4	8/18/2011		59.59	9.08	--	50.51	650	1.9	<0.50	<0.50	<1.0	53	1,400	<0.50	<0.50	15	<250	<0.50	<0.50	--	
A-4	2/29/2012		59.59	6.7	--	52.89	1,300	12	<0.50	4.2	1.1	140	2,200	<0.50	<0.50	38	<250	<0.50	<0.50	--	
A-4	8/24/2012		59.59	9.95	--	49.64	720	<0.50	<0.50	<0.50	<1.0	5.7	370	<0.50	<0.50	<0.50	<250	<0.50	<0.50	--	
A-4	2/8/2013		59.59	7.05	--	52.54	890	5.0	<0.50	1.6	<1.0	--	1,600	<0.50	<0.50	19	<250	<0.50	<0.50	--	
A-4	8/7/2013		59.59	9.26	--	50.33	1,500	2.7	<0.50	<0.50	<1.0	56	1,600	<0.50	<0.50	16	<250	<0.50	<0.50	1.53	
A-4	2/13/2014		59.59	6.86	--	52.73	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	3.77	

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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-5	6/21/2000		54.17	9.29	--	44.88	980	<0.5	<0.5	<0.5	<1.0	2,000	--	--	--	--	--	--	--	--	
A-5	9/20/2000		54.17	10.23	--	43.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	12/26/2000		54.17	9.65	--	44.52	525	<0.5	<0.5	<0.5	<0.5	1,200	--	--	--	--	--	--	--	--	
A-5	3/20/2001		54.17	8.05	--	46.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	6/12/2001		54.17	9.81	--	44.36	830	<5.0	<5.0	<5.0	<5.0	3,200	--	--	--	--	--	--	--	--	
A-5	9/23/2001		54.17	10.42	--	43.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	12/31/2001		54.17	6.03	--	48.14	320	<0.5	<0.5	<0.5	<0.5	60	--	--	--	--	--	--	--	--	
A-5	3/21/2002		54.17	6.71	--	47.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	4/17/2002		54.17	8.01	--	46.16	1,600	<10	<10	<10	<10	3,200	--	--	--	--	--	--	--	--	
A-5	8/12/2002		54.17	9.87	--	44.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	12/6/2002		54.17	9.66	--	44.51	310	<0.50	<0.50	<0.50	<0.50	330	--	--	--	--	--	--	--	1.9	
A-5	1/30/2003		54.17	7.67	--	46.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	5/28/2003		54.17	8.56	--	45.61	<5,000	<50	<50	<50	<50	1,500	<2,000	<50	<50	620	<10,000	--	--	1.6	
A-5	8/6/2003		54.17	9.58	--	44.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	11/14/2003		54.17	9.81	--	44.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/2/2004		58.78	7.43	--	51.35	390	<2.5	9.2	<2.5	2.6	140	170	<2.5	<2.5	54	<500	<2.5	<2.5	1.0	
A-5	5/4/2004		58.78	9.98	--	48.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	9/2/2004		58.78	9.65	--	49.13	<250	<2.5	<2.5	<2.5	<2.5	66	150	<2.5	<2.5	29	<500	<2.5	<2.5	1.1	
A-5	11/10/2004		58.78	8.48	--	50.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/2/2005		58.78	7.1	--	51.68	68	<0.50	<0.50	<0.50	<0.50	17	840	<0.50	<0.50	7.6	<100	<0.50	<0.50	1.0	
A-5	5/9/2005		58.78	7.2	--	51.58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	8/11/2005		58.78	9.21	--	49.57	<50	<0.50	<0.50	<0.50	<0.50	6.8	530	<0.50	<0.50	7.1	<100	<0.50	<0.50	1.3	
A-5	11/18/2005		58.78	9.1	--	49.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/15/2006		58.78	7.16	--	51.62	<50	<0.50	<0.50	<0.50	<0.50	5.1	460	<0.50	<0.50	4.2	<300	<0.50	<0.50	1.2	
A-5	5/30/2006		58.78	7.87	--	50.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	8/11/2006		58.78	8.9	--	49.88	920	<0.50	<0.50	<0.50	<0.50	12	1,100	<0.50	<0.50	5.0	<300	<0.50	<0.50	1.4	
A-5	11/1/2006		58.78	9.3	--	49.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/7/2007		58.78	8.5	--	50.28	60	<0.50	<0.50	<0.50	<0.50	1.5	600	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.73	
A-5	5/9/2007		58.78	7.6	--	51.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	8/7/2007		58.78	9.3	--	49.48	<50	<0.50	<0.50	<0.50	<0.50	0.81	79	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.41	
A-5	11/14/2007		58.78	8.48	--	50.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/28/2008		58.78	6.21	--	52.57	<50	<0.50	<0.50	<0.50	<0.50	0.97	230	<0.50	<0.50	<0.50	<300	<0.50	<0.50	2.24	
A-5	5/23/2008		58.78	8.97	--	49.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	8/13/2008		58.78	9.42	--	49.36	<50	<0.50	<0.50	<0.50	<0.50	0.69	33	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.62	
A-5	11/19/2008		58.78	8.91	--	49.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/10/2009		58.78	7.8	--	50.98	<50	<0.50	<0.50	<0.50	<0.50	1.6	18	<0.50	<0.50	0.59	<300	<0.50	<0.50	0.85	
A-5	5/7/2009		58.78	7.37	--	51.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	9/3/2009		58.78	9.33	--	49.45	<50	<0.50	<0.50	<0.50	<0.50	20	<10	<0.50	<0.50	9.1	<300	<0.50	<0.50	0.91	
A-5	3/23/2010		58.78	6.84	--	51.94	<50	<0.50	<0.50	<0.50	<1.0	<0.50	33	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-5	8/16/2010		58.78	8.85	--	49.93	<50	<0.50	<0.50	<0.50	<1.0	7.9	35	<0.50	<0.50	3.1	<100	<0.50	<0.50	--	
A-5	3/18/2011		58.78	5.45	--	53.33	<50	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-5	8/18/2011		58.78	8.37	--	50.41	<50	--	--	--	--	0.81	--	--	--	--	--	--	--	--	
A-5	2/29/2012		58.78	8.12	--	50.66	<50	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-5	8/24/2012		58.78	9.15	--	49.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-5	2/8/2013		58.78	7.65	--	51.13	<2,500	--	--	--	--	240	--	--	--	--	--	--	--	--	
A-5	8/7/2013		58.78	9.02	--	49.76	<50	--	--	--	--	13	--	--	--	--	--	--	--	2.16	
A-5	2/13/2014		58.78	6.55	--	52.23	<50	--	--	--	--	<0.50	--	--	--	--	--	--	--	1.34	

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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-6	6/21/2000		55.17	8.67	--	46.5	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	--	--	--	--	--	--	
A-6	9/20/2000		55.17	9.34	--	45.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-6	12/26/2000		55.17	8.65	--	46.52	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-6	3/20/2001		55.17	6.84	--	48.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-6	6/12/2001		55.17	8.93	--	46.24	<50	<0.5	<0.5	<0.5	<0.5	7	--	--	--	--	--	--	--	--	
A-6	9/23/2001		55.17	9.74	--	45.43	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-6	12/31/2001		55.17	4.81	--	50.36	<50	<0.5	<0.5	<0.5	<0.5	3.2	--	--	--	--	--	--	--	--	
A-6	3/21/2002		55.17	5.44	--	49.73	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-6	4/17/2002		55.17	6.95	--	48.22	<50	<0.5	<0.5	<0.5	<0.5	3.1	--	--	--	--	--	--	--	--	
A-6	8/12/2002		55.17	8.9	--	46.27	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	4.3	
A-7	6/21/2000		54.71	8.58	--	46.13	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	--	--	--	--	--	--	
A-7	9/20/2000		54.71	9.19	--	45.52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	12/26/2000		54.71	8.5	--	46.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	3/20/2001		54.71	6.75	--	47.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	6/12/2001		54.71	8.8	--	45.91	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-7	9/23/2001		54.71	9.59	--	45.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	12/31/2001		54.71	4.78	--	49.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	3/21/2002		54.71	5.35	--	49.36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	4/17/2002		54.71	6.88	--	47.83	<50	<0.5	<0.5	<0.5	<0.5	2.5	--	--	--	--	--	--	--	--	
A-7	8/12/2002		54.71	8.77	--	45.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	12/6/2002		54.71	9.07	--	45.64	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	1/30/2003		54.71	6.65	--	48.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/28/2003		54.71	7.63	--	47.08	<50	<0.50	<0.50	<0.50	<0.50	3.8	<20	<0.50	<0.50	0.94	<100	--	--	2.3	
A-7	8/6/2003		54.71	8.9	--	45.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	11/14/2003		54.71	9.08	--	45.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	2/2/2004		59.75	5.96	--	53.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/4/2004		59.75	8.21	--	51.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	9/2/2004		59.75	9.02	--	50.73	<50	<0.50	<0.50	<0.50	<0.50	8.9	<20	<0.50	<0.50	3.0	<100	<0.50	<0.50	3.0	
A-7	11/10/2004		59.75	7.5	--	52.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-7	2/2/2005		59.75	6.1	--	53.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/9/2005		59.75	6.48	--	53.27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/11/2005		59.75	8.45	--	51.3	<50	<0.50	<0.50	<0.50	<0.50	18	<20	<0.50	<0.50	4.4	<100	<0.50	<0.50	1.6	
A-7	11/18/2005		59.75	8.65	--	51.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	2/15/2006		59.75	6.51	--	53.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/30/2006		59.75	7.13	--	52.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/11/2006		59.75	8.46	--	51.29	<50	<0.50	<0.50	<0.50	<0.50	3.6	<20	<0.50	<0.50	0.91	<300	<0.50	0.54	1.7	
A-7	11/1/2006		59.75	8.99	--	50.76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	2/7/2007		59.75	8.12	--	51.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/9/2007		59.75	7.04	--	52.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/7/2007		59.75	9.1	--	50.65	<50	<0.50	<0.50	<0.50	<0.50	2.7	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.34	
A-7	11/14/2007		59.75	8	--	51.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	2/28/2008		59.75	5.81	--	53.94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/23/2008		59.75	8.74	--	51.01	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/13/2008		59.75	9.27	--	50.48	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.05	
A-7	11/19/2008		59.75	8.67	--	51.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	2/10/2009		59.75	7.47	--	52.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	5/7/2009		59.75	6.88	--	52.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	9/3/2009		59.75	9.25	--	50.5	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.93	
A-7	3/23/2010		59.75	6.33	--	53.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/16/2010		59.75	9.13	--	50.62	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-7	3/18/2011		59.75	5.2	--	54.55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/18/2011		59.75	8.54	--	51.21	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-7	2/29/2012		59.75	8	--	51.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/24/2012		59.75	9.06	--	50.69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-7	8/31/2012		59.75	9.04	--	50.71	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-7	2/8/2013		59.75	7.44	--	52.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
A-7	8/7/2013		59.75	8.96	--	50.79	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	2.07	
A-7	2/13/2014		59.75	6.58	--	53.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

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Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-8	6/21/2000		53.77	9.07	--	44.7	810	<0.5	<0.5	<0.5	810	1,500	--	--	--	--	--	--	--	--	
A-8	9/20/2000		53.77	9.72	--	44.05	10,800	2,680	46	439	370	4,410	--	--	--	--	--	--	--	--	
A-8	12/26/2000		53.77	9.2	--	44.57	7,700	1,440	<50	202	106	2,230	--	--	--	--	--	--	--	--	
A-8	3/20/2001		53.77	7.51	--	46.26	<5,000	1,280	<50	53.9	<50	2,880	--	--	--	--	--	--	--	--	
A-8	6/12/2001		53.77	9.53	--	44.24	5,600	1,700	<50	61	54	2,900	--	--	--	--	--	--	--	--	
A-8	9/23/2001		53.77	10.08	--	43.69	10,000	3,500	<50	110	64	6,500	--	--	--	--	--	--	--	--	
A-8	12/31/2001		53.77	4.34	--	49.43	4,300	610	<10	60	24	520	--	--	--	--	--	--	--	--	
A-8	3/21/2002		53.77	6.67	--	47.1	6,600	1,400	<50	130	<50	2,700	--	--	--	--	--	--	--	--	
A-8	4/17/2002		53.77	7.72	--	46.05	3,800	540	<10	<10	12	3,100	--	--	--	--	--	--	--	--	
A-8	8/12/2002		53.77	9.64	--	44.13	9,400	1,800	<20	35	28	4,200	--	--	--	--	--	--	--	1	
A-8	12/6/2002		53.77	9.62	--	44.15	5,300	1,100	11	11	<10	2,200	--	--	--	--	--	--	--	1.4	
A-8	1/30/2003		53.77	7.49	--	46.28	<10,000	1,100	<100	<100	<100	2,200	<4,000	<100	<100	900	<8,000	--	--	1.5	
A-8	5/28/2003		53.77	9.17	--	44.6	7,700	1,700	<50	<50	<50	2,100	<2,000	<50	<50	1,100	<10,000	--	--	1	
A-8	8/6/2003		53.77	9.67	--	44.1	13,000	2,400	<50	<50	<50	3,000	<2,000	<50	<50	1,200	<10,000	<50	<50	0.9	
A-8	11/14/2003		53.77	9.8	--	43.97	3,100	570	<5.0	<5.0	<5.0	850	<200	<5.0	<5.0	320	<1,000	--	--	2.3	
A-8	2/2/2004		58.70	7.1	--	51.6	3,900	300	<25	<25	<25	1,100	<1,000	<25	<25	380	<5,000	<25	<25	1.1	
A-8	5/4/2004		58.70	9.44	--	49.26	<5,000	490	<50	<50	<50	1,600	<2,000	<50	<50	440	<10,000	<50	<50	1.0	
A-8	9/2/2004		58.70	9.67	--	49.03	<2,500	30	<25	<25	<25	680	<1,000	<25	<25	170	<5,000	<25	<25	1.0	
A-8	11/10/2004		58.70	8.15	--	50.55	580	61	<2.5	<2.5	<2.5	290	<100	<2.5	<2.5	66	<500	<2.5	<2.5	1.5	
A-8	2/2/2005		58.70	6.53	--	52.17	5,000	890	<25	<25	<25	1,900	<1,000	<25	<25	510	<5,000	<25	<25	1.0	
A-8	5/9/2005		58.70	6.31	--	52.39	69	0.90	<0.50	<0.50	<0.50	66	<20	<0.50	<0.50	2.9	<100	<0.50	<0.50	4.1	
A-8	8/11/2005		58.70	9.15	--	49.55	1,400	1,300	<12	<12	<12	1,100	<500	<12	<12	310	<2,500	<12	<12	0.7	
A-8	11/18/2005		58.70	8.89	--	49.81	1,200	420	<5.0	<5.0	<5.0	340	<200	<5.0	<5.0	120	<1,000	<5.0	<5.0	0.7	
A-8	2/15/2006		58.70	6.34	--	52.36	3,200	970	<10	<10	<10	1,100	880	<10	<10	330	<6,000	<10	<10	0.9	
A-8	5/30/2006		58.70	7.53	--	51.17	510	210	<2.5	<2.5	<2.5	140	<100	<2.5	<2.5	43	<1,500	<2.5	<2.5	2.6	
A-8	8/11/2006		58.70	8.9	--	49.8	1,300	500	<5.0	<5.0	<5.0	290	<200	<5.0	<5.0	92	<3,000	<5.0	<5.0	0.7	
A-8	11/1/2006		58.70	9.15	--	49.55	4,800	790	6.6	<5.0	<5.0	910	1,200	<5.0	<5.0	250	<3,000	<5.0	<5.0	1.72	
A-8	2/7/2007		58.70	8.48	--	50.22	7,600	2,300	<25	<25	<25	1,200	<1,000	<25	<25	330	<15,000	<25	<25	1.25	
A-8	5/9/2007		58.70	7.25	--	51.45	750	180	<2.5	<2.5	<2.5	55	<100	<2.5	<2.5	16	<1,500	<2.5	<2.5	1.75	
A-8	8/7/2007		58.70	9.17	--	49.53	2,100	700	4.0	<2.5	<2.5	430	140	<2.5	<2.5	160	<1,500	<2.5	<2.5	0.77	
A-8	11/14/2007		58.70	7.77	--	50.93	990	300	2.5	0.68	0.96	100	28	<0.50	<0.50	44	<300	<0.50	<0.50	1.01	
A-8	2/28/2008		58.70	5.14	--	53.56	2,100	670	<5.0	<5.0	<5.0	220	230	<5.0	<5.0	72	<3,000	<5.0	<5.0	1.67	
A-8	8/13/2008		58.70	9.48	--	49.22	3,100	970	<25	<25	<25	250	<500	<25	<25	86	<15,000	<25	<25	0.84	
A-8	11/19/2008		58.70	8.87	--	49.83	3,800	1,000	<20	<20	<20	230	<400	<20	<20	100	<12,000	<20	<20	0.89	
A-8	2/10/2009		58.70	7.11	--	51.59	3,600	1,300	<25	<25	<25	320	<500	<25	<25	120	<15,000	<25	<25	0.89	
A-8	5/7/2009		58.70	6.47	--	52.23	270	65	<1.0	<1.0	<1.0	12	20	<1.0	<1.0	3.3	<600	<1.0	<1.0	0.97	
A-8	9/3/2009		58.70	9.47	--	49.23	3,200	1,400	<25	<25	<25	100	<500	<25	<25	52	<15,000	<25	<25	0.87	
A-8	3/23/2010		58.70	6.12	--	52.58	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-8	8/16/2010		58.70	9.27	--	49.43	4,300	1,600	12	5.3	6.1	110	<4.0	<0.50	<0.50	41	<100	<0.50	<0.50	--	
A-8	3/18/2011		58.70	5.01	--	53.69	2,000	620	4.7	0.96	1.4	87	220	<0.50	<0.50	43	<250	<0.50	<0.50	--	
A-8	8/18/2011		58.70	8.76	--	49.94	3,300	1,500	13	5.4	<10	120	<40	<5.0	<5.0	57	<2,500	<5.0	<5.0	--	
A-8	2/29/2012		58.70	8.19	--	50.51	3,400	1,700	10	3.4	3.9	160	460	<0.50	<0.50	71	<250	<0.50	<0.50	--	
A-8	8/24/2012		58.70	9.44	--	49.26	3,700	1,800	<25	<25	<50	64	220	<25	<25	33	<13,000	<25	<25	--	
A-8	2/8/2013		58.70	7.35	--	51.35	<50	6.0	<0.50	<0.50	<1.0	--	<4.0	<0.50	<0.50	0.92	<250	<0.50	<0.50	--	
A-8	8/7/2013		58.70	9.2	--	49.5	1,400	940	5.5	1.6	1.5	27	67	<0.50	<0.50	14	<250	<0.50	<0.50	2.20	
A-8	2/13/2014		58.70	6.51	--	52.19	190	4.4	<0.50	<0.50	<1.0	0.85	<10	<0.50	<0.50	<0.50	<250	<0.50	<0.50	1.33	

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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-9	6/21/2000		53.04	8.56	--	44.48	<50	<0.5	<0.5	<0.5	<1.0	5	--	--	--	--	--	--	--	--	
A-9	9/20/2000		53.04	9.05	--	43.99	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	12/26/2000		53.04	8.49	--	44.55	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	3/20/2001		53.04	6.95	--	46.09	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	6/12/2001		53.04	8.67	--	44.37	<50	<0.5	<0.5	<0.5	<0.5	4.8	--	--	--	--	--	--	--	--	
A-9	9/23/2001		53.04	9.21	--	43.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	12/31/2001		53.04	4.57	--	48.47	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	3/21/2002		53.04	5.6	--	47.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	4/17/2002		53.04	6.89	--	46.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-9	8/12/2002		53.04	8.71	--	44.33	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--	--	--	--	--	--	4	
A-9	12/6/2002		53.04	8.77	--	44.27	<50	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	1.1	
A-9	1/30/2003		53.04	6.88	--	46.16	<50	<0.50	<0.50	<0.50	<0.50	1.1	<20	<0.50	<0.50	<0.50	<40	--	--	0.9	
A-9	5/28/2003		53.04	9.75	--	43.29	<50	<0.50	<0.50	<0.50	<0.50	0.74	<20	<0.50	<0.50	<0.50	<100	--	--	1.9	
A-9	8/6/2003		53.04	9	--	44.04	<50	<0.50	<0.50	<0.50	<0.50	1.8	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	2.2	
A-9	11/14/2003		53.04	8.82	--	44.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/2/2004		57.73	7.1	--	50.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	5/4/2004		57.73	8.12	--	49.61	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	9/2/2004		57.73	8.78	--	48.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	6.6	
A-9	11/10/2004		57.73	7.88	--	49.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/2/2005		57.73	6.4	--	51.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	5/9/2005		57.73	6.82	--	50.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/11/2005		57.73	8.37	--	49.36	<50	<0.50	<0.50	<0.50	<0.50	1.5	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	1.8	
A-9	11/18/2005		57.73	8.24	--	49.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/15/2006		57.73	6.38	--	51.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	5/30/2006		57.73	7.17	--	50.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/11/2006		57.73	8.2	--	49.53	<50	<0.50	<0.50	<0.50	<0.50	1.6	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.02	
A-9	11/1/2006		57.73	8.9	--	48.83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/7/2007		57.73	7.83	--	49.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	5/9/2007		57.73	6.92	--	50.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/7/2007		57.73	8.58	--	49.15	<50	<0.50	<0.50	<0.50	<0.50	0.64	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.81	
A-9	11/14/2007		57.73	7.77	--	49.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/28/2008		57.73	5.61	--	52.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/13/2008		57.73	8.65	--	49.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.55	
A-9	11/19/2008		57.73	8.49	--	49.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	2/10/2009		57.73	7.07	--	50.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	5/7/2009		57.73	6.65	--	51.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	9/3/2009		57.73	8.56	--	49.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.89	
A-9	3/23/2010		57.73	5.98	--	51.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/16/2010		57.73	8.32	--	49.41	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-9	3/18/2011		57.73	4.4	--	53.33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/18/2011		57.73	7.94	--	49.79	--	--	--	--	--	<0.50	--	--	--	--	--	--	--	--	
A-9	2/29/2012		57.73	7.48	--	50.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-9	8/24/2012		57.73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(Dry)
A-9	2/8/2013		57.73	6.63	--	51.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
A-9	8/7/2013		57.73	8.08	--	49.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NS - Obstruction in well)
A-9	2/13/2014		57.73	5.62	--	52.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

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Historical and Current Groundwater Monitoring and Analytical Data
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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-10	6/21/2000		54.26	10.47	--	43.79	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	9/20/2000		54.26	10.76	--	43.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	11/14/2003		54.26	10.37	--	43.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/2/2004		59.39	7.97	--	51.42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/4/2004		59.39	8.69	--	50.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	9/2/2004		59.39	10.55	--	48.84	<500	<5.0	<5.0	<5.0	<5.0	270	<200	<5.0	<5.0	44	<1,000	<5.0	<5.0	0.8	
A-10	11/10/2004		59.39	9.16	--	50.23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/2/2005		59.39	7.9	--	51.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/9/2005		59.39	8.21	--	51.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/11/2005		59.39	10.02	--	49.37	69	<0.50	<0.50	<0.50	<0.50	97	<20	<0.50	<0.50	14	<100	<0.50	<0.50	0.9	
A-10	11/18/2005		59.39	9.86	--	49.53	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/15/2006		59.39	7.53	--	51.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/30/2006		59.39	8.82	--	50.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/11/2006		59.39	9.88	--	49.51	<50	<0.50	<0.50	<0.50	<0.50	46	<20	<0.50	<0.50	7.3	<300	<0.50	<0.50	1.3	
A-10	11/1/2006		59.39	10.28	--	49.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/7/2007		59.39	9.5	--	49.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/9/2007		59.39	8.67	--	50.72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/7/2007		59.39	10.25	--	49.14	<50	<0.50	<0.50	<0.50	<0.50	8.9	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.59	
A-10	11/14/2007		59.39	9.48	--	49.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/28/2008		59.39	7.23	--	52.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/23/2008		59.39	9.94	--	49.45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/13/2008		59.39	10.3	--	49.09	<50	<0.50	<0.50	<0.50	<0.50	28	<10	<0.50	<0.50	6.9	<300	<0.50	<0.50	0.74	
A-10	11/19/2008		59.39	9.9	--	49.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	2/10/2009		59.39	8.74	--	50.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	5/7/2009		59.39	8.23	--	51.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	3/23/2010		59.39	7.65	--	51.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/16/2010		59.39	10.05	--	49.34	<50	<0.50	<0.50	<0.50	<1.0	3.9	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-10	3/18/2011		59.39	6.52	--	52.87	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/18/2011		59.39	9.58	--	49.81	--	--	--	--	--	2.1	--	--	--	--	--	--	--	--	
A-10	2/29/2012		59.39	9.02	--	50.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-10	8/24/2012		59.39	10.03	--	49.36	--	--	--	--	--	1.8	--	--	--	--	--	--	--	--	
A-10	2/8/2013		59.39	8.30	--	51.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
A-10	8/7/2013		59.39	9.95	--	49.44	--	--	--	--	--	20	--	--	--	--	--	--	--	1.63	
A-10	2/13/2014		59.39	7.40	--	51.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

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Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-11	6/21/2000		53.74	9.54	--	44.2	<50	<0.5	<0.5	<0.5	<1.0	4	--	--	--	--	--	--	--	--	
A-11	9/20/2000		53.74	10.62	--	43.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	12/26/2000		53.74	10.03	--	43.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-11	3/20/2001		53.74	8.49	--	45.25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	6/12/2001		53.74	10.21	--	43.53	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-11	9/23/2001		53.74	10.77	--	42.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	12/31/2001		53.74	6.06	--	47.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-11	3/21/2002		53.74	7.14	--	46.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	4/17/2002		53.74	8.41	--	45.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-11	8/12/2002		53.74	10.25	--	43.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	12/6/2002		53.74	10.43	--	43.31	<50	<0.50	<0.50	<0.50	<0.50	<2.0	--	--	--	--	--	--	--	2.4	
A-11	1/30/2003		53.74	8.42	--	45.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/28/2003		53.74	9.3	--	44.44	<50	<0.50	<0.50	<0.50	<0.50	0.53	<20	<0.50	<0.50	<0.50	<100	--	--	1.8	
A-11	8/6/2003		53.74	10.28	--	43.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	11/14/2003		53.74	10.4	--	43.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/2/2004		59.16	7.95	--	51.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/4/2004		59.16	8.72	--	50.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	9/2/2004		59.16	10.44	--	48.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	2.6	
A-11	11/10/2004		59.16	9.2	--	49.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/2/2005		59.16	7.95	--	51.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/9/2005		59.16	8.07	--	51.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	8/11/2005		59.16	9.87	--	49.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	3.8	
A-11	11/18/2005		59.16	8.88	--	50.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/15/2006		59.16	7.9	--	51.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/30/2006		59.16	8.78	--	50.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	8/11/2006		59.16	10.33	--	48.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	3.8	
A-11	11/1/2006		59.16	10.1	--	49.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/7/2007		59.16	9.35	--	49.81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/9/2007		59.16	8.48	--	50.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	8/7/2007		59.16	10.1	--	49.06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	2.67	
A-11	11/14/2007		59.16	9.31	--	49.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/28/2008		59.16	7.12	--	52.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/23/2008		59.16	9.77	--	49.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	8/13/2008		59.16	10.08	--	49.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.89	
A-11	11/19/2008		59.16	9.75	--	49.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	2/10/2009		59.16	8.67	--	50.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	5/7/2009		59.16	8.2	--	50.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	9/3/2009		59.16	10.15	--	49.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	0.98	
A-11	3/23/2010		59.16	7.7	--	51.46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-11	8/16/2010		59.16	9.9	--	49.26	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<100	<0.50	<0.50	--	
A-11	8/24/2012		59.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
A-11	2/8/2013		59.16	8.47	--	50.69	<50	<0.50	<0.50	<0.50	<1.0	<0.50	<4.0	<0.50	<0.50	<0.50	<250	<0.50	<0.50	--	
A-11	8/7/2013		59.16	9.66	--	49.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)
A-11	2/13/2014		59.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

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Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-12	6/21/2000		52.05	9.28	--	42.77	<50	<0.5	<0.5	<0.5	<1.0	18	--	--	--	--	--	--	--	--	
A-12	9/20/2000		52.05	9.55	--	42.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	12/26/2000		52.05	9.05	--	43	<50	<0.5	<0.5	<0.5	<0.5	17.3	--	--	--	--	--	--	--	--	
A-12	3/20/2001		52.05	7.92	--	44.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	6/12/2001		52.05	9.26	--	42.79	<50	<0.5	<0.5	<0.5	<0.5	25	--	--	--	--	--	--	--	--	
A-12	9/23/2001		52.05	9.68	--	42.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	12/31/2001		52.05	5.74	--	46.31	<50	<0.5	<0.5	<0.5	<0.5	9.5	--	--	--	--	--	--	--	--	
A-12	3/21/2002		52.05	6.64	--	45.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	4/17/2002		52.05	7.68	--	44.37	<50	<0.5	<0.5	<0.5	<0.5	29	--	--	--	--	--	--	--	--	
A-12	8/12/2002		52.05	9.3	--	42.75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	12/6/2002		52.05	9.38	--	42.67	<50	<0.50	<0.50	<0.50	<0.50	13	--	--	--	--	--	--	--	2.3	
A-12	1/30/2003		52.05	7.87	--	44.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	5/28/2003		52.05	8.51	--	43.54	50	<0.50	<0.50	<0.50	<0.50	10	<20	<0.50	<0.50	2.5	<100	--	--	1.4	
A-12	8/6/2003		52.05	9.28	--	42.77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	11/14/2003		52.05	9.37	--	42.68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/2/2004		57.06	7.9	--	49.16	<50	<0.50	<0.50	<0.50	<0.50	0.91	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	1.0	
A-12	5/4/2004		57.06	8.74	--	48.32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	9/2/2004		57.06	9.41	--	47.65	<50	<0.50	<0.50	<0.50	<0.50	6.2	<20	<0.50	<0.50	1.7	<100	<0.50	<0.50	1.1	
A-12	11/10/2004		57.06	8.32	--	48.74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/2/2005		57.06	7.45	--	49.61	<50	<0.50	<0.50	<0.50	<0.50	8.3	<20	<0.50	<0.50	2.2	<100	<0.50	<0.50	1.4	
A-12	5/9/2005		57.06	7.57	--	49.49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	8/11/2005		57.06	9.05	--	48.01	<50	<0.50	<0.50	<0.50	<0.50	5.4	<20	<0.50	<0.50	1.1	<100	<0.50	<0.50	0.9	
A-12	11/18/2005		57.06	8.9	--	48.16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/15/2006		57.06	7.47	--	49.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	5/30/2006		57.06	8.21	--	48.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	8/11/2006		57.06	8.85	--	48.21	<50	<0.50	<0.50	<0.50	<0.50	7.4	<20	<0.50	<0.50	2.5	<300	<0.50	<0.50	1.8	
A-12	11/1/2006		57.06	9.17	--	47.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/7/2007		57.06	8.58	--	48.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	5/9/2007		57.06	7.93	--	49.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	8/7/2007		57.06	9.2	--	47.86	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.49	
A-12	11/14/2007		57.06	8.52	--	48.54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/28/2008		57.06	7.04	--	50.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	5/23/2008		57.06	9	--	48.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	8/13/2008		57.06	9.38	--	47.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<0.50	<0.50	<0.50	<300	<0.50	<0.50	1.03	
A-12	11/19/2008		57.06	9.01	--	48.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	2/10/2009		57.06	8.1	--	48.96	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	5/7/2009		57.06	7.8	--	49.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	9/3/2009		57.06	9.4	--	47.66	<50	<0.50	<0.50	<0.50	<0.50	3.6	<10	<0.50	<0.50	1.0	<300	<0.50	<0.50	0.98	
A-12	3/23/2010		57.06	7.68	--	49.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-12	8/16/2010		57.06	9.3	--	47.76	<50	<0.50	<0.50	<0.50	<1.0	3.6	<4.0	<0.50	<0.50	0.85	<100	<0.50	<0.50	--	
A-12	8/24/2012		57.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
A-12	2/8/2013		57.06	8.38	--	48.68	<50	<0.50	<0.50	<0.50	<1.0	3.3	<4.0	<0.50	<0.50	1.2	<250	<0.50	<0.50	--	
A-12	8/7/2013		57.06	9.37	--	47.69	--	--	--	--	--	2.0	--	--	--	--	--	--	--	1.85	
A-12	2/13/2014		57.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes
A-13	3/21/2002		55.11	6.7	--	48.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	4/17/2002		55.11	7.95	--	47.16	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	--	--	--	--	--	--	
A-13	8/12/2002		55.11	10.11	--	45	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	12/6/2002		55.11	10.26	--	44.85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	1/30/2003		55.11	7.81	--	47.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/28/2003		55.11	9.06	--	46.05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	--	--	1.9	
A-13	8/6/2003		55.11	10.22	--	44.89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	11/14/2003		55.11	10.27	--	44.84	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/2/2004		60.26	7.92	--	52.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/4/2004		60.26	10.06	--	50.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	9/2/2004		60.26	10.34	--	49.92	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<100	<0.50	<0.50	2.0	
A-13	11/10/2004		60.26	8.95	--	51.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/2/2005		60.26	7.28	--	52.98	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/9/2005		60.26	7.85	--	52.41	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/11/2005		60.26	9.7	--	50.56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	11/18/2005		60.26	9.27	--	50.99	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/15/2006		60.26	7.24	--	53.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/30/2006		60.26	8.38	--	51.88	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/11/2006		60.26	9.55	--	50.71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	11/1/2006		60.26	9.98	--	50.28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/7/2007		60.26	9.07	--	51.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/9/2007		60.26	8.15	--	52.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/7/2007		60.26	10.05	--	50.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	11/14/2007		60.26	9.2	--	51.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/28/2008		60.26	6.82	--	53.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/23/2008		60.26	9.67	--	50.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/13/2008		60.26	10.17	--	50.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	11/19/2008		60.26	9.63	--	50.63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	2/10/2009		60.26	8.48	--	51.78	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	5/7/2009		60.26	7.97	--	52.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	9/3/2009		60.26	10.14	--	50.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	3/23/2010		60.26	7.29	--	52.97	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/16/2010		60.26	9.92	--	50.34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	3/18/2011		60.26	6.33	--	53.93	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
A-13	8/24/2012		60.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(Well has been paved over)
A-13	2/8/2013		60.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
A-13	8/7/2013		60.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(INA)
A-13	2/13/2014		60.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	(NSP)

Table 2
Historical and Current Groundwater Monitoring and Analytical Data
Former ARCO No. 4931
731 W Macarthur Blvd, Oakland, CA 94609

Well ID	Date	Type	TOC (ft msl)	DTW (ft)	Measured LNAPL Thickness (ft)	GW Elev (ft msl)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	EDB (µg/L)	1,2-DCA (µg/L)	DO (mg/L)	Notes

Notes:

-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
DO = Dissolved oxygen
DTW = Depth to water in ft btoc
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
ft btoc = feet below top of casing
ft msl = feet above mean sea level
GRO = Gasoline range organics
GW Elev = Groundwater elevation measured in ft
INA = Well was inaccessible
LNAPL = Light non-aqueous phase liquid
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Not purged prior to sampling
NSP = Well not sampled this event in accordance with groundwater sampling schedule.
P = Purged prior to sampling
TAME = Tert-amyl methyl ether
TBA = Tert-butyl alcohol
TOC = Top of casing measured in ft
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
BTEX = Benzene, toluene, ethylbenzene and xylenes
Top and bottom of screen measurements for wells A-2 through A-5 were estimated from the EMCON sampling sheet.
Beginning in the first quarter 2003 (1/30/2003), groundwater samples were analyzed by EPA method 8260B for TPH-g, BTEX, and fuel oxygenates. Prior to 1/30/03, TPH-g was analyzed using EPA Method 8015B modified and MTBE by 8021B unless otherwise noted.

Beginning in the fourth quarter 2003, the laboratory modified the reported analyte list. TPH-g was changed to GRO. The resulting data may be impacted by the potential of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

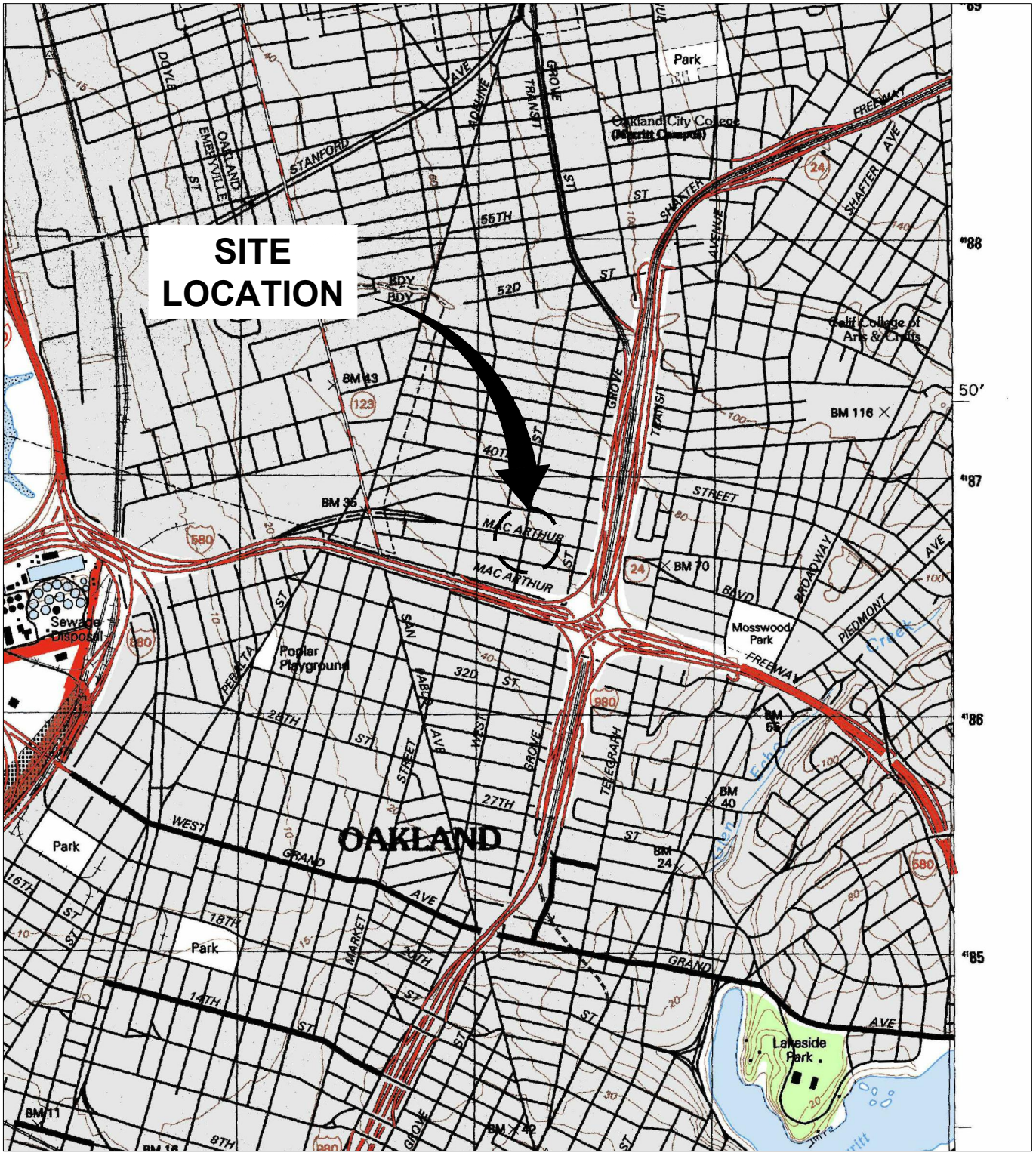
Beginning in the second quarter 2004, the carbon range for GRO was changed from C6-C10 to C4-C12.

Values for DO and pH were obtained through field measurements.
GRO analysis was completed by EPA method 8260B (C4-C12) for samples collected from the time period April 2006 through February 4, 2008. The analysis for GRO was changed to EPA method 8015B (C6-C12) for samples collected from the time period February 5, 2008 through the present.

Note: The data within this table collected prior to August 2009 was provided to ARCADIS, U.S., Inc. by Atlantic Richfield Company and their previous consultants. ARCADIS, U.S., Inc. has not verified the accuracy of this information.

ARCADIS

FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND WEST, CALIFORNIA, 1993.

0 2000 4000

Approximate Scale: 1 in. = 2000 ft.

AREA LOCATION

CALIFORNIA

FORMER ARCO STATION 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE 1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS
C:\Users\...arris\Desktop\ENVCAD\RETURN-TO\EMERYVILLE, CA\GP09BPNAIC110N000003Q12\DWG\GP09BPNAC110-N01.dwg LAYOUT: 1 SAVED: 10/1/2012 11:40 AM ACADVER: 18.1S (LMS TECH) PAGESETUP: SETUP1 PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 10/1/2012 11:59 AM BY: HARRIS, JESSICA

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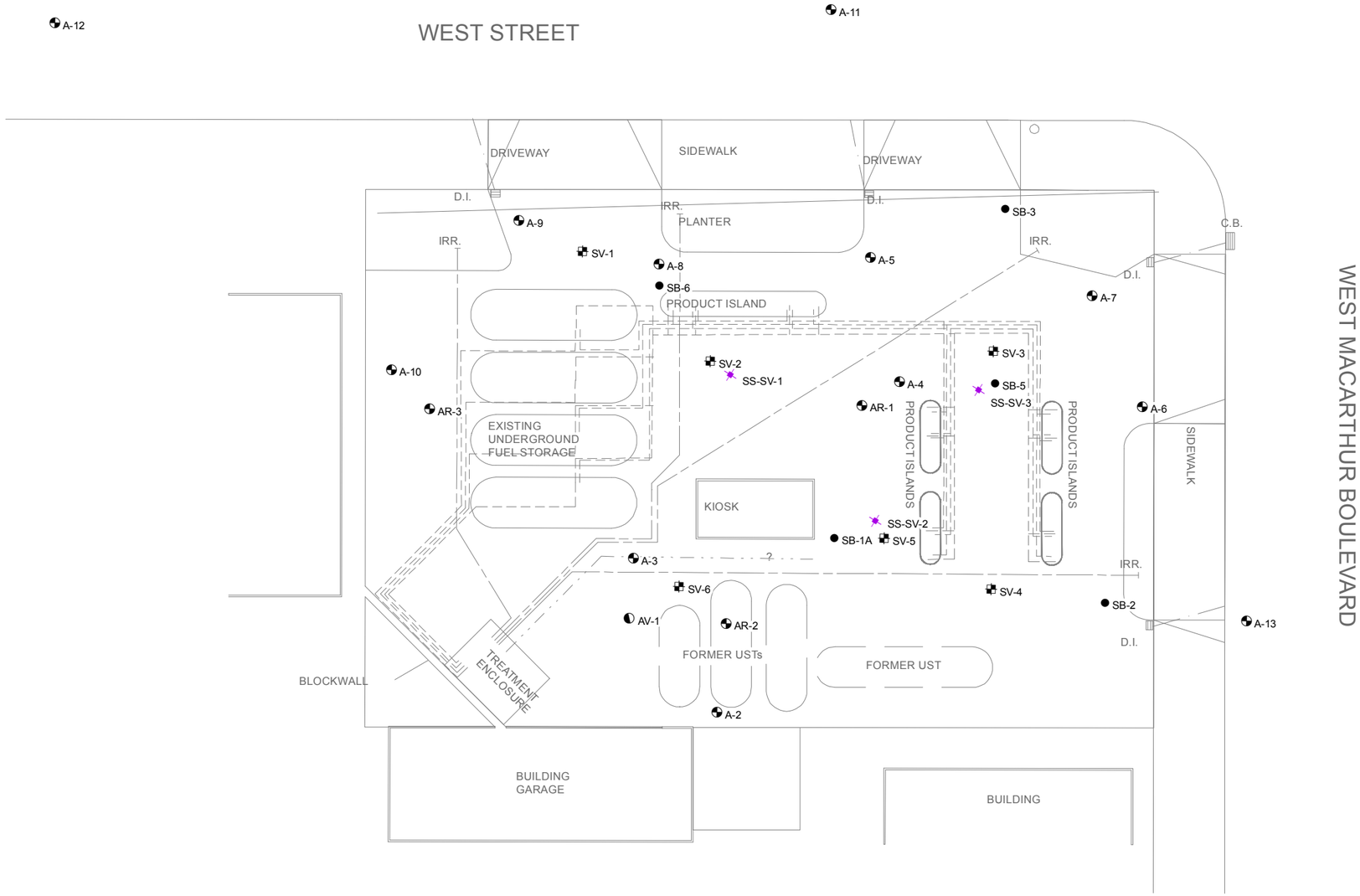
Oa la d West. pg



LEGEND:

- SUB-SLAB SOIL VAPOR SAMPLING LOCATION
- SOIL VAPOR SAMPLE LOCATION
- SOIL BORING
- GROUNDWATER MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- PRODUCT/VENT LINE
- WATER
- SANITARY SEWER
- STORM DRAIN

0 30 60

SCALE IN FEET

NOTE:
SITE MAP ADOPTED FROM FIGURES BY OTHERS.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

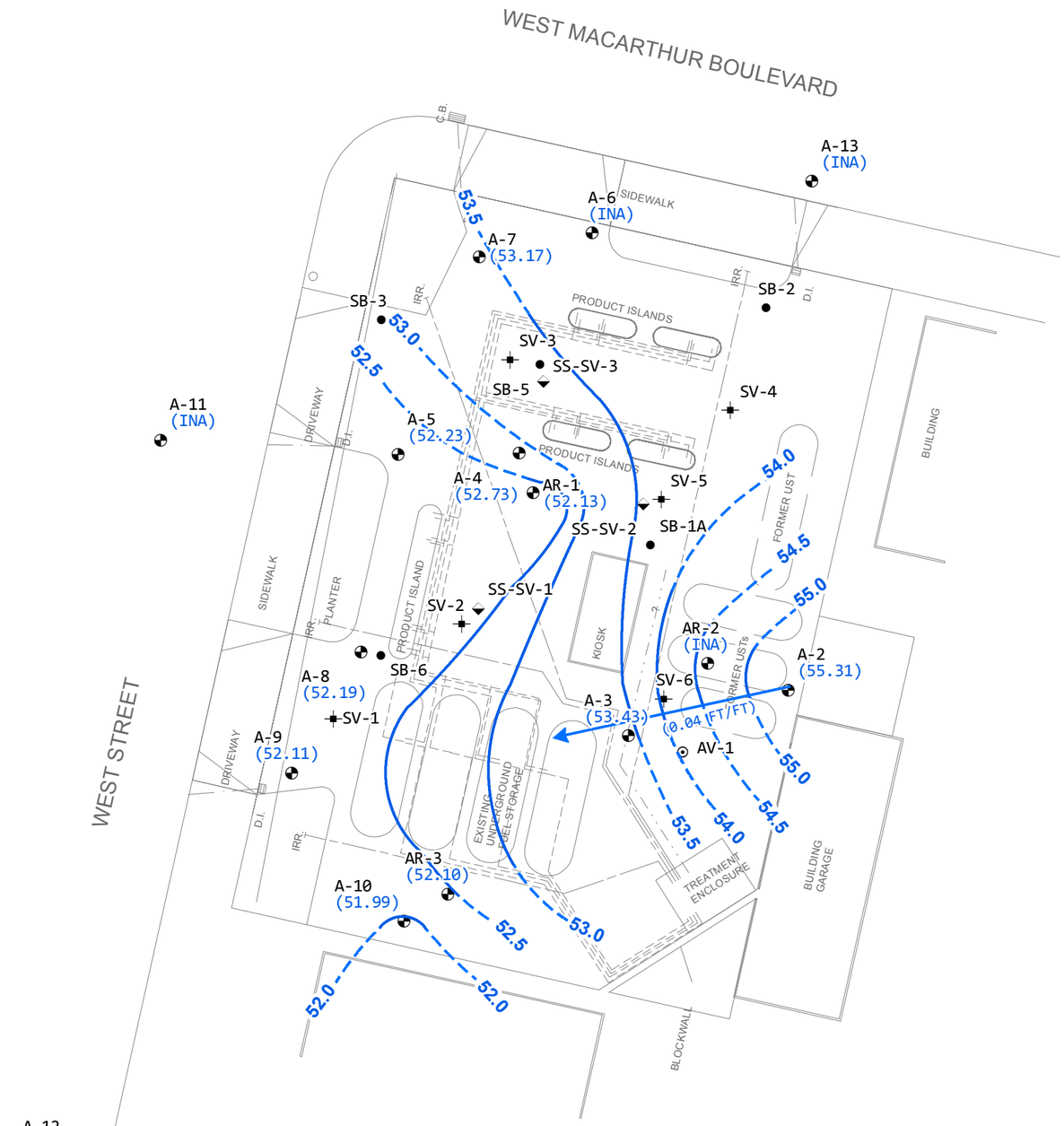
FORMER ARCO No. 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE
2

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: msmiller LD: PIC: PM: TM:
PROJECT: PATH: Z:\GISPROJECTS_ENV\BP_FOXGLOVE\CA\CA04931\GIS\MXD\1Q2014\CA-04931-Fig2_Sitemap.mxd DATE: 3/17/2014 10:09:56 AM



LEGEND:

- GROUNDWATER MONITORING WELL
- SOIL BORING
- SOIL VAPOR EXTRACTION WELL
- SOIL VAPOR SAMPLE LOCATION
- SUB-SLAB SOIL VAPOR SAMPLING LOCATION
- (52.17) GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)
- 52.0 GROUNDWATER ELEVATION CONTOUR LINE (DASHED WHERE INFERRED)
- 0.04 FT/FT GROUNDWATER FLOW DIRECTION (FOOT PER FOOT)
- (INA) WELL INACCESSIBLE

0 30 60

SCALE IN FEET

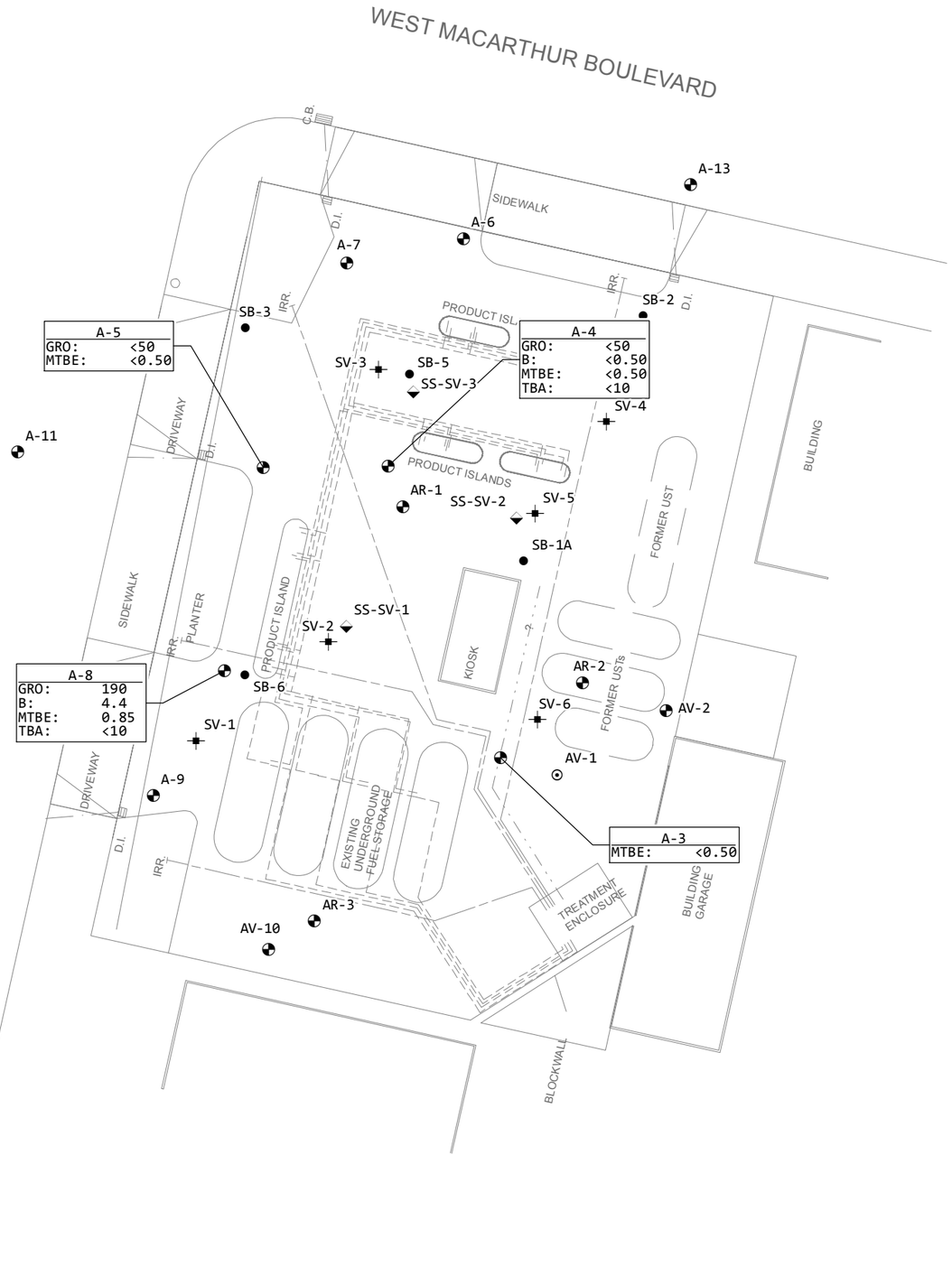
FORMER ARCO No. 4931
731 WEST MACARTHUR BOULEVARD,
OAKLAND, CALIFORNIA
FOURTH QUARTER 2013 AND FIRST QUARTER 2014 SEMI-ANNUAL MONITORING REPORT

GROUNDWATER ELEVATION CONTOUR MAP FEBRUARY 13, 2014

ARCADIS

FIGURE 3

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: msmiller LD: PIC: PM: TM:
PROJECT: PATH: Z:\GISPROJECTS_ENV\BP_FOXGLOVE\CA\CA0493\1\GIS\MXD\1Q2014\CA-04931-Fig3_GWE.mxd DATE: 3/17/2014 3:39:28 PM



LEGEND:

- GROUNDWATER MONITORING WELL
- SOIL BORING
- SOIL VAPOR EXTRACTION WELL
- SOIL VAPOR SAMPLE LOCATION
- SUB-SLAB SOIL VAPOR SAMPLING LOCATION

XX-1	
GRO:	<XX
B:	<X.X
MTBE:	<X.X
TBA:	<XX

SAMPLE LOCATION ID

CONCENTRATION IN MICROGRAMS PER LITER (µg/L)

ANALYTE

GRO	GASOLINE RANGE ORGANICS
B	BENZENE
MTBE	METHYL TERTIARY-BUTYL ETHER
TBA	TERTIARY-BUTYL ALCOHOL
<	NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMIT

0 30 60

SCALE IN FEET

FORMER ARCO No. 4931
731 WEST MACARTHUR BOULEVARD,
OAKLAND, CALIFORNIA

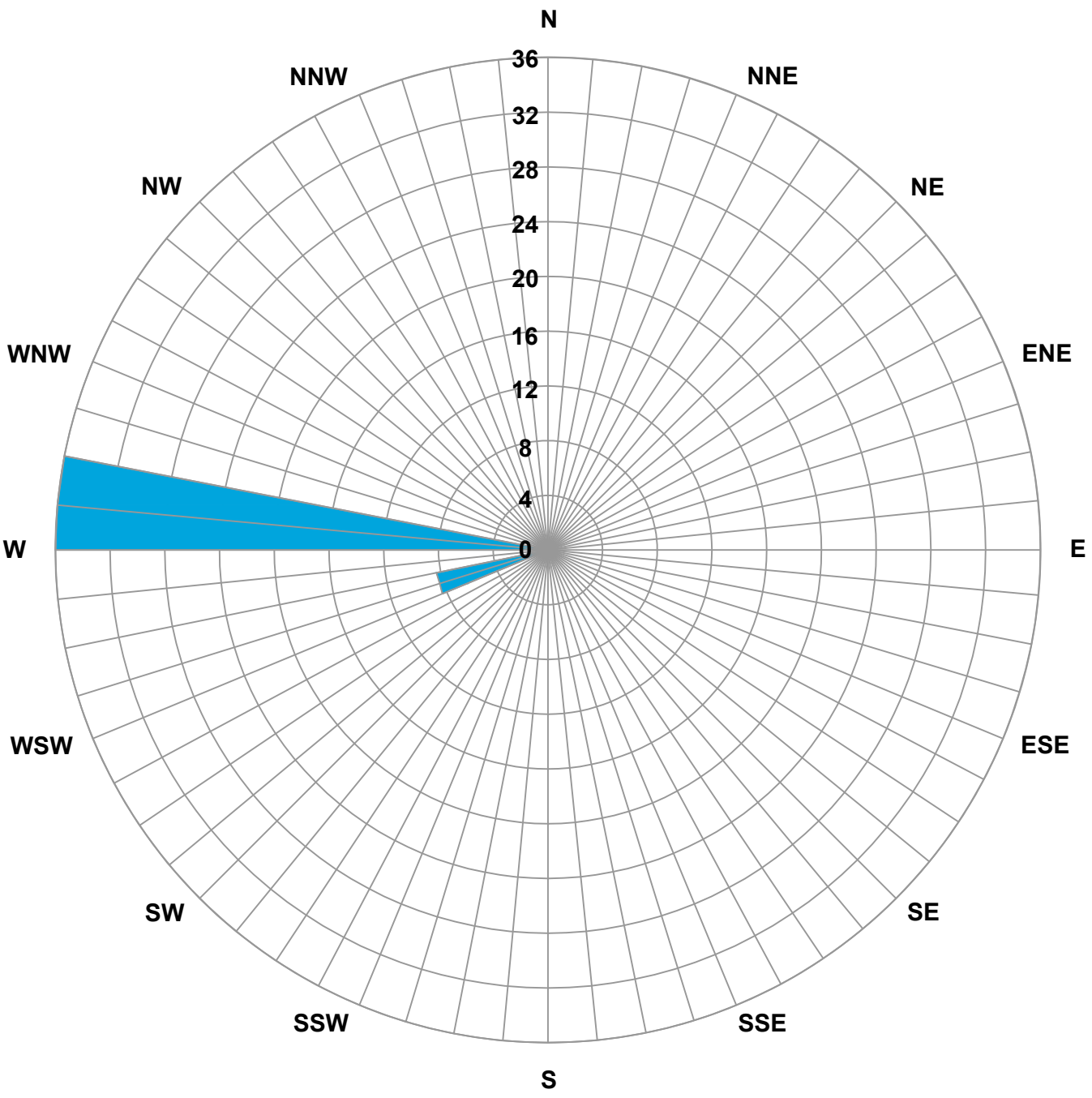
FOURTH QUARTER 2013 AND FIRST QUARTER 2014 SEMI-ANNUAL MONITORING REPORT

ANALYTICAL SUMMARY MAP FEBRUARY 13, 2014

ARCADIS

FIGURE 4

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: msmiller LD: PIC: PM: TM:
PROJECT: PATH: Z:\GIS\PROJECTS_ENV\BP_FOXGLOVE\CA\CA04931\GIS\MXD\1Q2014\CA-04931-Fig4_GWE_Analytical.mxd DATE: 3/13/2014 10:44:03 AM



LEGEND

CONCENTRIC CIRCLES REPRESENT **47** MONITORING EVENTS CONDUCTED BETWEEN THE SECOND QUARTER 2000 THROUGH THE FIRST QUARTER 2014.

GROUNDWATER FLOW DIRECTION

FORMER ARCO No. 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

FOURTH QUARTER 2013 AND FIRST QUARTER 2014 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

GROUNDWATER FLOW DIRECTION ROSE DIAGRAM

ARCADIS

FIGURE **5**

Appendix A

Previous Investigations and Site History Summary

ARCADIS

Appendix A
Previous Investigation and Site History Summary

Former Atlantic-Richfield Oil Co. Station No. 4931

The Site is located at 731 West MacArthur Boulevard in Oakland, California. It is an active Beacon-branded gasoline station. Improvements to the Site include four 10,000 gallon double-wall fiberglass gasoline underground storage tanks (USTs) installed on April 8, 1992. Product lines were excavated, removed, inspected, and replaced October 2, 2002. The majority of the Site surface is paved with concrete and asphalt.

The Site is bound by West MacArthur Boulevard to the north-northeast, West Street to the west-northwest and single-family residential dwellings to the south-southwest and east-southeast. Interstate 580 is located approximately 620 feet south-southwest of the Site.

A super unleaded product leak was reported to have occurred in November 1982 at the Site, however the quantity of product released is unknown (Gettler-Ryan, 4/3/1989). Wells A-1 through A-4 are known to have been installed prior to December 1982; however exact dates and consultants responsible are unknown. Wells A-5 through A-8 were installed by Groundwater Technology, Inc. (GTI) in March 1983. Wells A-9 through A-12 were installed by Pacific Environmental Group, Inc. (PEG) in December 1987. Soil samples were reportedly collected from borings A-9 through A-12 at five-foot intervals for logging purposes, but were not analyzed. Well A-9 was advanced to 45 ft below ground surface (bgs) and constructed with six-inch diameter PVC casing. Wells A-10 through A-12 were advanced to 30.5 ft bgs and constructed with three-inch diameter PVC casing and 0.020 inch slotted screen (PEG, 1/20/1988). GeoStrategies, Inc. (GSI) reported in their 15 May 1991 *Remedial Action Plan* that well A-1 was destroyed during underground storage tank (UST) replacement activities in August 1983. Additional information pertaining to the 1983 UST replacement activities was not available.

In late 1987, PEG conducted a water-supply well search within a 0.5 mile radius of the Site, as reported in their 20 January 1988 *Soil and Groundwater Investigation Report*. The Department of Water Resources (DWR) reported three historical wells within 0.5 miles of the Site. Two wells were identified approximately 1,300 feet northwest of the site. One was of an unknown depth and use, drilled in 1928. The second was drilled in 1926 to a depth of either 575 of 420 feet. The well was abandoned in 1956. The third well was identified approximately 2,400 feet west (downgradient) of the Site. It was drilled in 1927 to 97 ft bgs for industrial use.

In April 1991, GSI performed a hybrid step-drawdown/constant-rate aquifer test utilizing well A-9. The test consisted of four pumping steps followed by a recovery step. Transmissivity was calculated as 1,092 to 2,668 gallons per day per foot (gpd/ft) using Jacob's method, and 996 to 2,502 gpd/ft using the Neuman method. Storativity was calculated to be 1.18 · 10-2 to 4.24 · 10-3, which was reportedly indicative of a heterogeneous environment. According to GSI, "Specific yield [sic – capacity?] values ranged from 1.74 · 10-2 to 9.65 · 10-3," suggesting unconfined to semi-confined subsurface conditions (GSI, 7/10/1991). In GSI's *Remedial Action Plan*, dated 15 May 1991, approximately 30 years of pumping on well A-9 was modeled, which suggested that hydrodynamic control of the hydrocarbon plume within the groundwater was achievable at the Site. A groundwater extraction treatment system was proposed within the same report, designed to pump from well A-9 and treat groundwater onsite using carbon vessels.

In January 1992, GSI observed the advancement of one vapor extraction well (AV-1). AV-1 was installed to a depth of 15 ft bgs and screened from 5 ft bgs to total depth. Three Vapor Extraction Monitoring Points (VEMPs) were also installed at this time. The VEMPs were 0.75- inch diameter metal pipe driven to a depth of eight ft bgs, then withdrawn six to eight inches. The VEMPs were located at approximately four foot intervals linearly east of well AV-1. GSI conducted a four-hour vapor extraction test on 20 January 1992 on well AV-1, utilizing an internal combustion engine to create vacuum and combust vapors. Vacuum pressure in well AV-1 was sustained between 158.0 to 169.3 inches of water, while manometers were used to measure pressure changes at the VEMPs. No measurable influence was recorded at the three VEMPs, indicating less than a four-foot radius of influence for well AV-1. GSI subsequently concluded that vapor extraction was not likely to be a feasible remedial option at the Site (GSI, 5/21/1992).

Between 18 November 1991 and 8 April 1992, Roux Associates (RA) observed the UST removal and replacement installation activities. Paradiso Construction Company (Paradiso) removed one 12,000 gallon single-walled fiberglass tank, two 8,000 gallon single-walled steel tanks, and one 6,000 single-walled steel tank on 19 November 1991. It was reported that according to the ACEH and RA personnel, the former tanks appeared to be in good condition, with no holes or obvious leaks. Two preexisting four-inch tank observation wells near tank T1 were also removed at this time. Black oil staining was observed on the inside of the tank observation well casing, as well as on the surface of the exposed groundwater near where the wells were located. A vacuum truck was utilized on 21 November 1991 to remove approximately 2,800 gallons of oil/groundwater mixture from the tank cavity. Due to

reported soil staining and hydrocarbon odors, the tank cavity was over-excavated on 21 November 1991. The south end of the tank cavity (former tanks T2, T3, and T4) was excavated to approximately 14 ft bgs, while the north end (former tank T1) was excavated to approximately 12 ft bgs. Further over-excavation along the north and west side-walls of the tank cavity occurred between 20 December 1991 and 13 February 1992. The former tank cavity was backfilled on 27 February 1992 with two to four feet of pea gravel and road base aggregate to near the surface. Product lines associated with the former UST complex were excavated and removed on 1 and 2 December 1991. Select locations along the former product line trenches were overexcavated on 20 December 1991. The current UST pit excavation was initiated on 9 March 1992. Four double-walled 10,000 gallon fiberglass tanks were installed at 14 ft bgs on 8 April 1992. One 12-inch diameter slotted PVC conductor casing was installed to 13 ft bgs in the new UST cavity (RA, 7/20/1992).

On 15 and 16 June 1992 GSI observed the advancement of one soil boring offsite (A-13) and three soil borings onsite (AR-1, AR-2, and AR-3). Monitoring well A-13 was installed to a depth of 30 ft bgs and constructed with three-inch diameter Schedule 40 PVC casing and screened from 10 to 30 ft bgs with 0.020-inch machine slotted casing. Recovery wells AR-1 and AR-3 were installed to a depth of 30 ft bgs and constructed with six-inch diameter Schedule 40 PVC casing and screened from 10 to 30 ft bgs with 0.020-inch slotted carbon steel casing. Recovery well AR-2 was installed to a depth of 28 ft bgs and constructed with six-inch diameter Schedule 40 PVC casing and screened from 8 to 28 ft bgs with 0.020-inch slotted carbon steel casing. Also during second quarter 1992, a passive product skimmer was installed in well A-8 (GSI, 11/13/1992).

In late 1992, GSI oversaw the installation of an interim groundwater extraction remediation system (GWETS). The system began operation on 10 November 1992, utilizing two pumps in each of wells A-9, AR-1, AR-2, and AR-3, removing hydrocarbon impacted groundwater and free product (FP) from the subsurface. Collected FP was contained in 55-gallon drums. Groundwater was passed through a centrifugal separator, particulate filter, three in-series 1,500 pound activated carbon vessels, and ultimately discharged into the sanitary sewer system (GSI, 2/22/1994). In their *Recovery System Evaluation Report, First Quarter 1994*, dated 27 June 1994, GSI reports that the GWETS wells A-9, AR-1, AR-2, and AR-3 contain only one pump each for groundwater, and a product pump has been installed in well A-8. The GWETS was shutdown on 5 July 1995 for the following reasons cited by Pacific Environment Group, Inc. (PEG) in their *Quarterly Report – Second Quarter 1995, Remedial System Performance Evaluation*, dated 29 September 1995: 1). Since

system startup only 2.74 pounds (0.45 gallons) total petroleum hydrocarbons in the gasoline range (TPHg) and 0.46 pounds (0.06 gallons) of benzene had been removed; and 2). Downgradient wells A-11 and A-12 had remained non-detect for TPHg and benzene since groundwater monitoring began in 1988, indicating that the plume had stabilized and downgradient migration was minimal. At shutdown, the system had removed and treated approximately 4,643,696 gallons of groundwater. As of 31 December 1995, 23 pounds (3.75 gallons) of FP have been removed from the Site (PEG, 3/15/1996).

After the GWETS had been shutdown and pumps removed from the remediation wells, PEG initiated an in-situ bioremediation enhancement program. On 17 November 1995, eight oxygen releasing compound (ORC) socks were installed in well A-9. ORC is a magnesium peroxide powder, which slowly releases oxygen when hydrated (PEG, 3/15/1996).

On 2 October 2002, URS Corporation (URS) observed product line upgrade activities at the Site. The product lines were excavated, removed, inspected, and replaced. URS reported no observable cracks or deterioration of the former product lines. Soil samples were collected and analyzed from the product line trenches as well as from beneath the former dispenser islands. Two locations required minor over-excavation due to observed soil staining and hydrocarbon odors. The new product lines were replaced within the same trenches (URS, 1/21/2003).

Quarterly groundwater monitoring at the Site was initiated in the First Quarter 1989 by Gettler- Ryan, Inc. The site is currently monitored on a semiannual basis by Broadbent & Associates, Inc. (BAI) during the first and third calendar quarters.

Appendix B

Groundwater Sampling Data Package

BROADBENT

DAILY REPORT

Page 1 of 1

Project: Arcadis 4931 Project No.: 09-88-624

Field Representative(s): Alex Martinez Day: Thursday Date: 2/13/14

Time Onsite: From: 0705 To: 1015 ; From: _____ To: _____ ; From: _____ To: _____

X Signed HASP X Safety Glasses X Hard Hat X Steel Toe Boots X Safety Vest

X UST Emergency System Shut-off Switches Located X Proper Gloves

X Proper Level of Barricading ___ Other PPE (describe) _____

Weather: Cloudy

Equipment In Use: HydraSleeves, interface probe, VSI meter, peristaltic pump

Visitors: None

TIME:	WORK DESCRIPTION:
0705	Arrived onsite / conducted tailgate
0715	Set up for sampling @ A-3
0825	Set up @ A-8
0855	Set up @ A-5
0940	Set up @ A-4
1015	Completed fieldwork & offsite

Signature: Alex Martinez

Revision: 1/24/2012

BROADBENT

GROUNDWATER MONITORING SITE SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/13/14

Field Representative: AM Elevation: —

Formation recharge rate is historically: High Low *(circle one)*

W. L. Indicator ID #: — Oil/Water Interface ID #: — *(List #s of all equip used.)*

WELL ID RECORD					WELL GAUGING RECORD					NOTES
Well ID	Well Sampling Order	As-Built Well Diameter (inches)	As-Built Well Screen Interval (ft)	Previous Depth to Water (ft)	Time (24:00)	Depth to LNAPL (ft)	Apparent LNAPL Thickness (ft)*	Depth to Water (ft)	Well Total Depth (ft)	
A-2					0808	—	—	5.34	19.50	
A-3					0738	—	—	5.89	16.30	
A-4					0941	—	—	6.86	28.90	
A-5					0858	—	—	6.55	23.85	
A-7					0925	—	—	6.58	26.37	
A-8					0831	—	—	6.51	16.35	
A-9					0826	—	—	5.62	*7.75	*Obstruction still present
A-10					0814	—	—	7.40	29.66	
A-11					Well Not Gauged				29.78	Encroachment permit needed
A-12					Well Not Gauged				29.83	
A-13					Well Paved Over					
AR-1					0934	—	—	7.39	19.45	
AR-2					Inaccessible					
AR-3					0817	—	—	7.00	28.42	

* Device used to measure LNAPL thickness: Bailer Oil/Water Interface Meter *(circle one)*

If bailer used, note bailer dimensions (inches): Entry Diameter _____ Chamber Diameter _____

Signature: Alex Mosko

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/13/14

Field Representative: AM

Well ID: A-3 Start Time: - End Time: - Total Time (minutes): -

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:

(Good) Improvement Needed *(circle one)*

PURGING/SAMPLING METHOD Predetermined Well Volume (Low-Flow) Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:

4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ____" | (____)

Total Well Depth (a): _____(ft)

Initial Depth to Water (b): _____(ft)

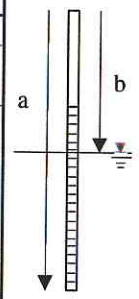
Water Column Height (WCH) = (a - b): _____(ft)

Water Column Volume (WCV) = WCH x Unit Volume: _____(gal)

Three Casing Volumes = WCV x 3: _____(gal)

Five Casing Volumes = WCV x 5: _____(gal)

Pump Depth (if pump used): _____(ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____(lpm)

Total Well Depth (a): 16.30 (ft)

Initial Depth to Water (b): 5.89 (ft)

Pump In-take Depth = b + (a-b)/2: 11.09 (ft)

Maximum Allowable Drawdown = (a-b)/8: 1.30 (ft)

Low-Flow Purge Rate: 0.25 (Lpm)*

Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or (L)	Temperature °C	pH	Conductivity µS or (mS)	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0743	0.0	16.30	7.75	0.278	8.88	126	0.0	
0745	0.5	17.17	6.93	0.271	7.97	159	0.0	
0747	1.0	17.54	6.51	0.269	7.81	176	0.0	
0749	1.5	17.71	6.28	0.268	7.75	187	0.0	
0751	2.0	17.86	6.12	0.267	7.74	195	0.0	
0753	2.5	17.86	5.99	0.266	7.72	204	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes ___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 5.53 (ft)

Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing X Disp. Pump Tubing Other:

Sample ID: A-3 Sample Collection Time: 0755 (24:00)

Containers (#): 3 VOA (X preserved or ___ unpreserved) ___ Liter Amber

___ Other: ___ Other:

___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: Alex Martin

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/13/14

Field Representative: AM

Well ID: A-4 Start Time: - End Time: - Total Time (minutes): -

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
(Good) Improvement Needed *(circle one)*

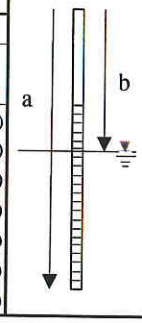
PURGING/SAMPLING METHOD Predetermined Well Volume (Low-Flow) Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:
4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ___" | (___)

Total Well Depth (a): ___(ft)
Initial Depth to Water (b): ___(ft)
Water Column Height (WCH) = (a - b): ___(ft)
Water Column Volume (WCV) = WCH x Unit Volume: ___(gal)
Three Casing Volumes = WCV x 3: ___(gal)
Five Casing Volumes = WCV x 5: ___(gal)
Pump Depth (if pump used): ___(ft)



LOW-FLOW

Previous Low-Flow Purge Rate: ___(lpm)
Total Well Depth (a): 28.90 (ft)
Initial Depth to Water (b): 6.86 (ft)
Pump In-take Depth = b + (a-b)/2: 17.88 (ft)
Maximum Allowable Drawdown = (a-b)/8: 2.75 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or (L)	Temperature °C	pH	Conductivity µS or (mS)	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0947	0.0	18.46	6.33	0.249	5.00	159	0.0	
0949	0.5	18.81	6.30	0.246	3.96	163	0.0	
0951	1.0	18.98	6.36	0.244	3.73	161	0.0	
0953	1.5	19.07	6.39	0.243	3.70	160	0.0	
0955	2.0	19.10	6.39	0.242	3.77	159	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 7.21 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: A-4 Sample Collection Time: 1000 (24:00)
Containers (#): 3 VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature:

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/13/14

Field Representative: AM

Well ID: A-5 Start Time: - End Time: - Total Time (minutes): -

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
(Good) Improvement Needed *(circle one)*

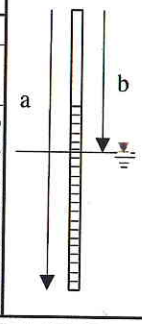
PURGING/SAMPLING METHOD Predetermined Well Volume (Low-Flow) Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04)	1.25" | (0.08)	2" | (0.17)	3" | (0.38)	Other:
4" | (0.66)	6" | (1.50)	8" | (2.60)	12" | (5.81)	___" | (___)

Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Water Column Height (WCH) = (a - b): _____ (ft)
Water Column Volume (WCV) = WCH x Unit Volume: _____ (gal)
Three Casing Volumes = WCV x 3: _____ (gal)
Five Casing Volumes = WCV x 5: _____ (gal)
Pump Depth (if pump used): _____ (ft)



LOW-FLOW

Previous Low-Flow Purge Rate: _____ (lpm)
Total Well Depth (a): 23.85 (ft)
Initial Depth to Water (b): 6.55 (ft)
Pump In-take Depth = b + (a-b)/2: 15.50 (ft)
Maximum Allowable Drawdown = (a-b)/8: 2.16 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0906	0.0	18.53	6.51	0.335	2.46	113	0.0	
0908	0.5	18.82	6.34	0.332	1.63	113	0.0	
0910	1.0	19.01	6.25	0.330	1.45	110	0.0	
0912	1.5	19.13	6.19	0.329	1.37	107	0.0	
0914	2.0	19.18	6.16	0.328	1.34	104	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 6.71 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: A-5 Sample Collection Time: 0915 (24:00)
Containers (#): 3 VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature: Alex Mackie

Revision: 3/15/2013

BROADBENT

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/13/14

Field Representative: AM

Well ID: A-8 Start Time: — End Time: — Total Time (minutes): —

PURGE EQUIPMENT ___ Disp. Bailer ___ 120V Pump X Flow Cell
X Disp. Tubing ___ 12V Pump X Peristaltic Pump Other/ID#:

WELL HEAD INTEGRITY (cap, lock, vault, etc.) Comments:
(Good) Improvement Needed *(circle one)*

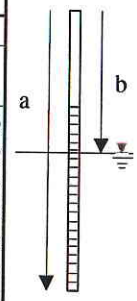
PURGING/SAMPLING METHOD Predetermined Well Volume (Low-Flow) Other: *(circle one)*

PREDETERMINED WELL VOLUME

Casing Diameter | Unit Volume (gal/ft) *(circle one)*

1" | (0.04) 1.25" | (0.08) 2" | (0.17) 3" | (0.38) Other:
4" | (0.66) 6" | (1.50) 8" | (2.60) 12" | (5.81) ____" | (____)

Total Well Depth (a): ____(ft)
Initial Depth to Water (b): ____(ft)
Water Column Height (WCH) = (a - b): ____(ft)
Water Column Volume (WCV) = WCH x Unit Volume: ____(gal)
Three Casing Volumes = WCV x 3: ____(gal)
Five Casing Volumes = WCV x 5: ____(gal)
Pump Depth (if pump used): ____(ft)



LOW-FLOW

Previous Low-Flow Purge Rate: ____(lpm)
Total Well Depth (a): 16.35 (ft)
Initial Depth to Water (b): 6.51 (ft)
Pump In-take Depth = b + (a-b)/2: 11.43 (ft)
Maximum Allowable Drawdown = (a-b)/8: 1.23 (ft)
Low-Flow Purge Rate: 0.25 (Lpm)*
Comments:

**Low-flow purge rate should be within range of instruments used but should not exceed 0.25 gpm. Drawdown should not exceed Maximum Allowable Drawdown.*

GROUNDWATER STABILIZATION PARAMETER RECORD

Time (24:00)	Cumulative Vol. gal or L	Temperature °C	pH	Conductivity µS or mS	DO mg/L	ORP mV	Turbidity NTU	NOTES Odor, color, sheen or other
0837	0.0	17.48	6.32	0.686	4.31	167	0.0	
0839	0.5	18.28	6.36	0.680	2.39	125	0.0	
0841	1.0	18.65	6.42	0.677	1.89	89	0.0	
0843	1.5	18.73	6.46	0.675	1.61	58	0.0	
0845	2.0	18.88	6.49	0.674	1.41	31	0.0	
0847	2.5	18.98	6.51	0.672	1.33	9	0.0	
Previous Stabilized Parameters								

PURGE COMPLETION RECORD X Low Flow & Parameters Stable ___ 3 Casing Volumes & Parameters Stable ___ 5 Casing Volumes
___ Other:

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: 7.31 (ft)
Sample Collected Via: ___ Disp. Bailer ___ Dedicated Pump Tubing
X Disp. Pump Tubing Other:
Sample ID: A-8 Sample Collection Time: 0850 (24:00)
Containers (#): 3 VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)		
Ferrous Iron (mg/L)		
Redox Potential (mV)		
Alkalinity (mg/L)		
Other:		
Other:		

Signature:

Revision: 3/15/2013

San Francisco
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Kristene Tidwell	Site Contact/Sampler: Alex Martinez	Date:	COC No:
Broadbent & Associates, Inc.	Tel/Fax: 707-455-7290 / 707-455-7295	Lab Contact: Dimple Sharma	Carrier:	____ of ____ COCs
875 Cotting Lane, Suite G	Analysis Turnaround Time			Job No.
Vacaville, CA 95688	Calendar (C) or Work Days (W) ____			
Phone: 707-455-7290	TAT if different from Below STD			
Fax: 707-455-7295	☐ 2 weeks			SDG No.
Project Name: Arcadis 4931	☐ 1 week			
731 West MacArthur Blvd, Oakland, CA	☐ 2 days			
P O # GP09BPNA.C110	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by 8260B	DRO with Silica Gel Cleanup by 8015M	BTEX/5 Fuel Oxys by 8260B	EDB & 1,2-DCA by 8260B	Ethanol by 8260B	MTBE by 8260B	Sample Specific Notes:
A-3	2/13/2014	0755	GRAB	AQ	3							X	
A-4	2/13/2014	1000	GRAB	AQ	3		X		X	X	X	X	
A-5	2/13/2014	0915	GRAB	AQ	3		X					X	
A-8	2/13/2014	0850	GRAB	AQ	3		X		X	X	X	X	
TB-4931-02132014	--	--	--	AQ	2								On Hold

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* *Archive for* ____ *Months*

Special Instructions:

1.5°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Alex Martinez	Broadbent & Associates	2/13/14 1245		TAP	2/13/14 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Appendix C

Certified Laboratory Analytical Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-55525-1
Client Project/Site: BP #4931, Oakland

For:
ARCADIS U.S., Inc
2000 Powell Street 7th Floor
Emeryville, California 94608-1827

Attn: Drew Feucht

Authorized for release by:
2/19/2014 2:53:58 PM

Dimple Sharma, Senior Project Manager
(925)484-1919
dimple.sharma@testamericainc.com

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-55525-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-55525-1

Comments
No additional comments.

Receipt
The samples were received on 2/13/2014 12:45 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.5º C.

GC/MS VOA
No analytical or quality issues were noted.

Detection Summary

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-3 — Lab Sample ID: 720-55525-1

No Detections.

Client Sample ID: A-4 — Lab Sample ID: 720-55525-2

No Detections.

Client Sample ID: A-5 — Lab Sample ID: 720-55525-3

No Detections.

Client Sample ID: A-8 — Lab Sample ID: 720-55525-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	0.85		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Benzene	4.4		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C6-C12	190		50		ug/L	1		8260B/CA_LUFT MS	Total/NA

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-3
Date Collected: 02/13/14 07:55
Date Received: 02/13/14 12:45

Lab Sample ID: 720-55525-1
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			02/17/14 22:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*89*		*67 - 130*		*02/17/14 22:51*	*1*
1,2-Dichloroethane-d4 (Surr)	*80*		*72 - 130*		*02/17/14 22:51*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*02/17/14 22:51*	*1*

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-4
Date Collected: 02/13/14 10:00
Date Received: 02/13/14 12:45

Lab Sample ID: 720-55525-2
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	ND		0.50		ug/L			02/15/14 05:29	1
Benzene	ND		0.50		ug/L			02/15/14 05:29	1
EDB	ND		0.50		ug/L			02/15/14 05:29	1
1,2-DCA	ND		0.50		ug/L			02/15/14 05:29	1
Ethylbenzene	ND		0.50		ug/L			02/15/14 05:29	1
Toluene	ND		0.50		ug/L			02/15/14 05:29	1
Xylenes, Total	ND		1.0		ug/L			02/15/14 05:29	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			02/15/14 05:29	1
TBA	ND		10		ug/L			02/15/14 05:29	1
Ethanol	ND		250		ug/L			02/15/14 05:29	1
DIPE	ND		0.50		ug/L			02/15/14 05:29	1
TAME	ND		0.50		ug/L			02/15/14 05:29	1
Ethyl t-butyl ether	ND		0.50		ug/L			02/15/14 05:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*67 - 130*		*02/15/14 05:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*72 - 130*		*02/15/14 05:29*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*02/15/14 05:29*	*1*

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-5
Date Collected: 02/13/14 09:15
Date Received: 02/13/14 12:45

Lab Sample ID: 720-55525-3
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			02/15/14 05:58	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			02/15/14 05:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*67 - 130*		*02/15/14 05:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*81*		*72 - 130*		*02/15/14 05:58*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*02/15/14 05:58*	*1*

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-8
Date Collected: 02/13/14 08:50
Date Received: 02/13/14 12:45

Lab Sample ID: 720-55525-4
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	**0.85**		0.50		ug/L			02/18/14 13:46	1
Benzene	**4.4**		0.50		ug/L			02/18/14 13:46	1
EDB	ND		0.50		ug/L			02/18/14 13:46	1
1,2-DCA	ND		0.50		ug/L			02/18/14 13:46	1
Ethylbenzene	ND		0.50		ug/L			02/18/14 13:46	1
Toluene	ND		0.50		ug/L			02/18/14 13:46	1
Xylenes, Total	ND		1.0		ug/L			02/18/14 13:46	1
Gasoline Range Organics (GRO) -C6-C12	**190**		50		ug/L			02/18/14 13:46	1
TBA	ND		10		ug/L			02/18/14 13:46	1
Ethanol	ND		250		ug/L			02/18/14 13:46	1
DIPE	ND		0.50		ug/L			02/18/14 13:46	1
TAME	ND		0.50		ug/L			02/18/14 13:46	1
Ethyl t-butyl ether	ND		0.50		ug/L			02/18/14 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*67 - 130*		*02/18/14 13:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*72 - 130*		*02/18/14 13:46*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*02/18/14 13:46*	*1*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-153588/4
Matrix: Water
Analysis Batch: 153588

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			02/14/14 20:53	1
MTBE	ND		0.50		ug/L			02/14/14 20:53	1
Benzene	ND		0.50		ug/L			02/14/14 20:53	1
EDB	ND		0.50		ug/L			02/14/14 20:53	1
1,2-DCA	ND		0.50		ug/L			02/14/14 20:53	1
Ethylbenzene	ND		0.50		ug/L			02/14/14 20:53	1
Toluene	ND		0.50		ug/L			02/14/14 20:53	1
Xylenes, Total	ND		1.0		ug/L			02/14/14 20:53	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			02/14/14 20:53	1
TBA	ND		10		ug/L			02/14/14 20:53	1
Ethanol	ND		250		ug/L			02/14/14 20:53	1
DIPE	ND		0.50		ug/L			02/14/14 20:53	1
TAME	ND		0.50		ug/L			02/14/14 20:53	1
Ethyl t-butyl ether	ND		0.50		ug/L			02/14/14 20:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*67 - 130*		*02/14/14 20:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*79*		*72 - 130*		*02/14/14 20:53*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*02/14/14 20:53*	*1*

Lab Sample ID: LCS 720-153588/5
Matrix: Water
Analysis Batch: 153588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	23.8		ug/L		95	62 - 130
MTBE	25.0	23.8		ug/L		95	62 - 130
Benzene	25.0	23.1		ug/L		92	79 - 130
EDB	25.0	25.4		ug/L		102	70 - 130
1,2-DCA	25.0	20.4		ug/L		82	61 - 132
Ethylbenzene	25.0	25.2		ug/L		101	80 - 120
Toluene	25.0	23.9		ug/L		96	78 - 120
TBA	500	471		ug/L		94	70 - 130
Ethanol	500	413		ug/L		83	31 - 216
DIPE	25.0	21.3		ug/L		85	69 - 134
TAME	25.0	23.8		ug/L		95	79 - 130
Ethyl t-butyl ether	25.0	22.2		ug/L		89	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*92*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*80*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-153588/7
Matrix: Water
Analysis Batch: 153588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C12			500	445		ug/L		89	58 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*90*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*77*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-153588/6
Matrix: Water
Analysis Batch: 153588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	22.8		ug/L		91	62 - 130	4	20
MTBE			25.0	22.8		ug/L		91	62 - 130	4	20
Benzene			25.0	22.9		ug/L		92	79 - 130	1	20
EDB			25.0	24.2		ug/L		97	70 - 130	5	20
1,2-DCA			25.0	19.7		ug/L		79	61 - 132	4	20
Ethylbenzene			25.0	25.8		ug/L		103	80 - 120	2	20
Toluene			25.0	24.8		ug/L		99	78 - 120	3	20
TBA			500	467		ug/L		93	70 - 130	1	20
Ethanol			500	439		ug/L		88	31 - 216	6	30
DIPE			25.0	21.0		ug/L		84	69 - 134	2	20
TAME			25.0	23.0		ug/L		92	79 - 130	3	20
Ethyl t-butyl ether			25.0	21.7		ug/L		87	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*78*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-153588/8
Matrix: Water
Analysis Batch: 153588

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12			500	455		ug/L		91	58 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*92*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*76*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-153682/5
Matrix: Water
Analysis Batch: 153682

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			02/17/14 19:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*67 - 130*		*02/17/14 19:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*79*		*72 - 130*		*02/17/14 19:30*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*02/17/14 19:30*	*1*

Lab Sample ID: LCS 720-153682/6
Matrix: Water
Analysis Batch: 153682

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether			25.0	21.4		ug/L		85	62 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*77*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-153682/7
Matrix: Water
Analysis Batch: 153682

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	21.9		ug/L		88	62 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*77*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: 720-55525-1 MS
Matrix: Water
Analysis Batch: 153682

Client Sample ID: A-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Methyl tert-butyl ether	ND		25.0	22.3		ug/L		89	60 - 138		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*78*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: 720-55525-1 MSD
Matrix: Water
Analysis Batch: 153682

Client Sample ID: A-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	ND		25.0	22.0		ug/L		88	60 - 138	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*76*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 720-153721/4
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	ND		0.50		ug/L			02/18/14 08:52	1
Benzene	ND		0.50		ug/L			02/18/14 08:52	1
EDB	ND		0.50		ug/L			02/18/14 08:52	1
1,2-DCA	ND		0.50		ug/L			02/18/14 08:52	1
Ethylbenzene	ND		0.50		ug/L			02/18/14 08:52	1
Toluene	ND		0.50		ug/L			02/18/14 08:52	1
Xylenes, Total	ND		1.0		ug/L			02/18/14 08:52	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			02/18/14 08:52	1
TBA	ND		10		ug/L			02/18/14 08:52	1
Ethanol	ND		250		ug/L			02/18/14 08:52	1
DIPE	ND		0.50		ug/L			02/18/14 08:52	1
TAME	ND		0.50		ug/L			02/18/14 08:52	1
Ethyl t-butyl ether	ND		0.50		ug/L			02/18/14 08:52	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*67 - 130*		*02/18/14 08:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*79*		*72 - 130*		*02/18/14 08:52*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*02/18/14 08:52*	*1*

Lab Sample ID: LCS 720-153721/5
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
MTBE	25.0	21.3		ug/L		85	62 - 130
Benzene	25.0	23.1		ug/L		92	79 - 130
EDB	25.0	23.8		ug/L		95	70 - 130
1,2-DCA	25.0	18.8		ug/L		75	61 - 132
Ethylbenzene	25.0	25.9		ug/L		104	80 - 120
Toluene	25.0	24.5		ug/L		98	78 - 120
TBA	500	480		ug/L		96	70 - 130
Ethanol	500	407		ug/L		81	31 - 216
DIPE	25.0	19.5		ug/L		78	69 - 134
TAME	25.0	21.9		ug/L		88	79 - 130
Ethyl t-butyl ether	25.0	20.4		ug/L		82	70 - 130

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-153721/5
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*74*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCS 720-153721/7
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C6-C12			500	485		ug/L		97	58 - 120		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*78*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-153721/6
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
MTBE			25.0	21.9		ug/L		87	62 - 130	3	20
Benzene			25.0	22.5		ug/L		90	79 - 130	3	20
EDB			25.0	24.0		ug/L		96	70 - 130	1	20
1,2-DCA			25.0	18.8		ug/L		75	61 - 132	0	20
Ethylbenzene			25.0	25.8		ug/L		103	80 - 120	0	20
Toluene			25.0	24.6		ug/L		98	78 - 120	0	20
TBA			500	492		ug/L		98	70 - 130	3	20
Ethanol			500	426		ug/L		85	31 - 216	4	30
DIPE			25.0	19.8		ug/L		79	69 - 134	1	20
TAME			25.0	22.8		ug/L		91	79 - 130	4	20
Ethyl t-butyl ether			25.0	20.8		ug/L		83	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*95*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*75*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-153721/8
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12			500	478		ug/L		96	58 - 120	2	20

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-153721/8
Matrix: Water
Analysis Batch: 153721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*76*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

GC/MS VOA

Analysis Batch: 153588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-55525-2	A-4	Total/NA	Water	8260B/CA_LUFT MS	
720-55525-3	A-5	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-153588/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-153588/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-153588/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-153588/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-153588/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 153682

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-55525-1	A-3	Total/NA	Water	8260B/CA_LUFT MS	
720-55525-1 MS	A-3	Total/NA	Water	8260B/CA_LUFT MS	
720-55525-1 MSD	A-3	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-153682/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-153682/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-153682/5	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 153721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-55525-4	A-8	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-153721/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-153721/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-153721/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-153721/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-153721/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Lab Chronicle

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Client Sample ID: A-3

Lab Sample ID: 720-55525-1

Date Collected: 02/13/14 07:55

Matrix: Water

Date Received: 02/13/14 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	153682	02/17/14 22:51	ASC	TAL PLS

Client Sample ID: A-4

Lab Sample ID: 720-55525-2

Date Collected: 02/13/14 10:00

Matrix: Water

Date Received: 02/13/14 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	153588	02/15/14 05:29	LPL	TAL PLS

Client Sample ID: A-5

Lab Sample ID: 720-55525-3

Date Collected: 02/13/14 09:15

Matrix: Water

Date Received: 02/13/14 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	153588	02/15/14 05:58	LPL	TAL PLS

Client Sample ID: A-8

Lab Sample ID: 720-55525-4

Date Collected: 02/13/14 08:50

Matrix: Water

Date Received: 02/13/14 12:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	153721	02/18/14 13:46	PDR	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

Method Summary

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTMS	8260B / CA LUFT MS	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: ARCADIS U.S., Inc
Project/Site: BP #4931, Oakland

TestAmerica Job ID: 720-55525-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-55525-1	A-3	Water	02/13/14 07:55	02/13/14 12:45
720-55525-2	A-4	Water	02/13/14 10:00	02/13/14 12:45
720-55525-3	A-5	Water	02/13/14 09:15	02/13/14 12:45
720-55525-4	A-8	Water	02/13/14 08:50	02/13/14 12:45

San Francisco
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

720-55525

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
151845
TestAmerica Laboratories, Inc.

2/19/2014

Client Contact	Project Manager: Kristene Tidwell	Site Contact/Sampler: Alex Martinez	Date:	COC No:
Broadbent & Associates, Inc.	Tel/Fax: 707-455-7290 / 707-455-7295	Lab Contact: Dimple Sharma	Carrier:	____ of ____ COCs
875 Cotting Lane, Suite G	Analysis Turnaround Time			Job No.
Vacaville, CA 95688	Calendar (C) or Work Days (W) ____			
Phone: 707-455-7290	TAT if different from Below STD			SDG No.
Fax: 707-455-7295	☐ 2 weeks			
Project Name: Arcadis 4931	☐ 1 week			
731 West MacArthur Blvd, Oakland, CA	☐ 2 days			
P O # GP09BPNA.C110	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by 8260B	DRO with Silica Gel Cleanup by 8015M	BTEX/5 Fuel Oxys by 8260B	EDB & 1,2-DCA by 8260B	Ethanol by 8260B	MTBE by 8260B	Sample Specific Notes:
A-3	2/13/2014	0755	GRAB	AQ	3							X	
A-4	2/13/2014	1000	GRAB	AQ	3		X		X	X	X	X	
A-5	2/13/2014	0915	GRAB	AQ	3		X					X	
A-8	2/13/2014	0850	GRAB	AQ	3		X		X	X	X	X	
TB-4931-02132014	--	--	--	AQ	2								On Hold

720-55525 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* *Poison B* ☐ *Unknown* ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* *Archive For* ____ *Months*

Special Instructions:

1.5°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Alex Martinez	Broadbent & Associates	2/13/14 1245		TAO	2/13/14 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc

Job Number: 720-55525-1

Login Number: 55525

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Gonzales, Justinn

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	GEO_REPORT
Report Title:	Fourth Quarter 2013 and First Quarter 2014 - Semi Annual Groundwater Monitoring Report 040714
Report Type:	Monitoring Report - Semi-Annually
Report Date:	4/7/2014
Facility Global ID:	T0600100110
Facility Name:	ARCO #04931
File Name:	CA 4931 140407 - 4Q13 - 1Q14 SAGWMR.pdf
Organization Name:	ARCADIS
Username:	ARCADISBP
IP Address:	70.39.231.108
Submittal Date/Time:	4/7/2014 12:06:14 PM
Confirmation Number:	8157830417