ARCADIS

Infrastructure · Water · Environment · Buildings

ARCADIS U.S., Inc.
100 Montgomery Street, Suite 300
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Re: First Quarter 2012 Monitoring Report
Former BP Station #4931
731 West MacArthur Blvd
Oakland, California
ACEH Case #RO0000076

ENVIRONMENTAL

"I declare that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct."

Date:
April 13, 2012

Submitted by:

ARCADIS U.S., Inc.

Hollis E. Phillips, PG
Project Manager

Contact:
Hollis E. Phillips

Phone:
415.374.2744 ext 13

Email:
Hollis.phillips@arcadis-us.com

Our ref:
GP09BPNA.C110

BROADBENT
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April 13, 2012

Project No. 09-88-624

ARCADIS-US, Inc.
100 Montgomery Street, Ste. 300
San Francisco, California 94104

Attn.: Ms. Hollis Phillips, Principal Geologist

Re: First Quarter 2012 Monitoring Report, Former Atlantic Richfield Company Station #4931, 731 West MacArthur Blvd, Oakland, California; ACEH Case #RO0000076

Dear Ms. Phillips:

Attached is the *First Quarter 2012 Monitoring Report* for Former Atlantic Richfield Company Station #4931 located at 731 West MacArthur Boulevard, Oakland, Alameda County, California. Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (707) 455-7290.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Alexander J. Martinez
Senior Staff Geologist

Thomas Sparrowe, P.G. #5065
Senior Geologist

Enclosures

cc: 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

FIRST QUARTER 2012
MONITORING REPORT
STATION #4931, OAKLAND, CALIFORNIA

Broadbent & Associates, Inc. (Broadbent) is pleased to present this *First Quarter 2012 Monitoring Report* on behalf ARCADIS US., Inc. and of Atlantic Richfield Company (a BP affiliated company) for Station #4931 located in Oakland, Alameda County, California. Monitoring activities at the site were performed in accordance with the reporting requirements issued by the Alameda County Environmental Health Services Agency (ACEH). Details of work performed, discussion of results, and recommendations are provided below.

Facility Name / Address:	Station #4931 / 731 West MacArthur Blvd., Oakland
Client Project Manager / Title:	Ms. Hollis Phillips / Principal Geologist
Broadbent Contact:	Tom Sparrowe, (707) 455-7290
Broadbent Project No.:	09-88-624
Primary Regulatory Agency / ID No.:	ACEH / Case #RO0000076
Current phase of project:	Monitoring
List of Acronyms / Abbreviations:	See end of report text for list of acronyms/abbreviations used in report.

WORK PERFORMED THIS QUARTER (First Quarter 2012):

1. Conducted groundwater monitoring/sampling for First Quarter 2012 on February 29, 2012.

WORK SCHEDULED FOR NEXT QUARTER (Second Quarter 2012):

1. Submit *First Quarter 2012 Monitoring Report* (contained herein).
2. No environmental work is scheduled for Second Quarter 2012.

GROUNDWATER MONITORING PLAN SUMMARY:

Groundwater level gauging:	A-2 through A-5, A-7 through A-13, AR-1 through AR-3	(Semi-Annually: 1Q & 3Q)
Groundwater sample collection:	A-3, A-4, A-5 and A-8	(Semi-Annually: 1Q & 3Q)
	A-2, A-7, A-9, A-10 and A-12	(Annually: 3Q)
Biodegradation indicator parameter monitoring:	None	

QUARTERLY RESULTS SUMMARY:

LNAPL

LNAPL observed this quarter:	No	
LNAPL recovered this quarter:	None	(gal)
Cumulative LNAPL recovered:	None	(gal)

Groundwater Elevation and Gradient:

Depth to groundwater:	4.11 (AR-2) to 9.02 (A-10)	(ft below TOC)
Gradient direction:	West	(compass direction)
Gradient magnitude:	0.04	(ft/ft)
Average change in elevation:	0.43	(ft since last measurement)

Laboratory Analytical Data

Summary: GRO were detected in two wells sampled at concentrations up to 3,400 µg/L in well A-8. Benzene was detected in two wells sampled at concentrations up to 1,700 µg/L in well A-8. Ethylbenzene was detected in two wells sampled at concentrations up to 4.2 µg/L in well A-4. Toluene was detected in well A-8 at a concentration of 10 µg/L. MTBE was detected in two wells sampled at concentrations up to 160 µg/L in well A-8. TBA was detected in two wells sampled at concentrations up to 2,200 µg/L in well A-4. TAME detected in two wells sampled at concentrations up to 71 µg/L in well A-8.

ACTIVITIES CONDUCTED & RESULTS:

First Quarter 2012 groundwater monitoring was conducted on February 29, 2012 by Broadbent personnel in accordance with the monitoring plan summary above. Broadbent personnel noted during water level gauging that wells A-11, A-12, and A-13 were not monitored due to A-11 and A-12 needing traffic control and A-13 appears to have been paved over with asphalt during road repair. Depth to water measurements ranged from 4.11 ft below top of casing (TOC) at AR-2 to 9.02 ft below TOC at A-10. Resulting groundwater surface elevations ranged from 50.25 ft above datum at A-9 to 55.07 ft above datum at AR-2. Groundwater elevations are summarized in Table 1. Water level elevations yielded a potentiometric groundwater gradient to the west at approximately 0.04 ft/ft. Field methods used during groundwater monitoring are provided in Appendix A. Field data sheets are included in Appendix B. A Site Location Map is presented as Drawing 1. Potentiometric groundwater elevation contours are presented in Drawing 2.

Groundwater samples were collected on February 29, 2011, consistent with the current monitoring schedule. Samples were submitted under chain-of-custody protocol to TestAmerica Laboratories, Inc. (Pleasanton, California) for analysis of Gasoline-Range Organics (GRO, C6-C12), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Methyl Tertiary Butyl Ether (MTBE), Ethyl Tertiary Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), Tert-Butyl Alcohol (TBA) and Ethanol by EPA Method 8260B. No significant irregularities were encountered during analysis of the samples. The laboratory analytical report, including chain-of-custody documentation, is provided in Appendix C.

GRO were detected above the laboratory reporting limit in two wells sampled at concentrations up to 3,400 micrograms per liter (µg/L) in A-8. Benzene was detected above the laboratory reporting limit in two wells sampled at concentrations up to 1,700 µg/L in A-8. Toluene was detected above the laboratory reporting limit in well A-8 at a concentration of 10 µg/L. Ethylbenzene was detected above the laboratory reporting limit in two wells sampled at concentrations up to 4.2 µg/L in A-4. Total Xylenes were detected above the laboratory reporting limit in two wells sampled at concentrations up to 3.9 µg/L in A-8. MTBE was detected above the laboratory reporting limit in two wells sampled at concentrations up to 160 µg/L in A-8. TAME was detected above the laboratory reporting limit in two wells sampled at concentrations up to 71 µg/L in A-8. TBA was detected above the laboratory reporting limit in two wells sampled at concentration up to 2,200 µg/L in A-4. The remaining analytes were not detected above their laboratory reporting limits in the wells sampled this monitoring event. Groundwater monitoring laboratory analytical results are summarized in Table 1 and Table 2. The most recent GRO, Benzene and MTBE concentrations are also presented in Drawing 2. Groundwater monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix D.

SAMPLING PROTOCOL:

Going forward from the next sampling event, HydraSleeve™ groundwater sampling tools will be used to collect groundwater samples at the site. The HydraSleeve™ groundwater sampler collects a representative sample from a specific depth interval within the monitoring well screen. The HydraSleeve™ sampler is lowered into the well and remains closed until the desired sampling depth is reached. When the HydraSleeve™ is retrieved it opens to collect a sample from a 2.5-foot long interval within the well screen. HydraSleeves™ will be used to collect samples from the middle of the saturated screen interval without purging or mixing water from other intervals.

Sampling by HydraSleeves™ provides monitoring data of equivalent quality to purge and sample methods and is similar to sampling using passive diffusion bags (PDBs), which are also used to collect no-purge groundwater samples. Because HydraSleeves™ collect groundwater from the well, samples can be analyzed for any constituent, unlike samples collected with PDBs, which are limited to volatile organic compound (VOC) analyses. Analytical results for samples collected with HydraSleeves™ typically reveal concentrations of target constituents within the expected historical ranges for a given monitoring well. If target constituent concentrations are significantly different in samples collected with HydraSleeves™, this can reveal previously unknown contaminant stratification or sampling bias introduced by purging when groundwater with lower or higher concentrations of target constituents is drawn into the well via preferential pathways in the site geology during purging. If concentrations of target constituents are significantly different than historical monitoring results at a location, additional evaluation will be performed using a combination of methods during subsequent monitoring.

DISCUSSION:

Groundwater levels were between historic minimum and maximum elevations for each well. Groundwater elevations yielded a potentiometric groundwater gradient to the west at approximately 0.04 ft/ft, within the variable range of the historic gradient data presented in Table 3.

First Quarter 2012 detected analytical concentrations were within the historic minimum and maximum ranges recorded for each well. GRO, MTBE, Benzene, Ethylbenzene, Total Xylenes, TAME and TBA showed an increase in well A-4 at 1,300 µg/L, 140 µg/L, 12 µg/L, 4.2 µg/L and 1.1 µg/L, 38 µg/L and 2,200 µg/L respectively relative to the Third Quarter 2011. GRO, MTBE, Benzene, Total Xylenes, TAME and TBA showed an increase in well A-8 at 3,400 µg/L, 160 µg/L, 1,700 µg/L and 3.9 µg/L, 71 µg/L and 460 µg/L respectively relative to the Third Quarter 2011. Well A-8 also saw a decrease in Ethylbenzene and Toluene at 3.4 µg/L and 10 µg/L, respectively, during the First Quarter 2012. Recent and historic laboratory analytical results are summarized in Table 1 and Table 2.

RECOMMENDATIONS:

No environmental work is currently scheduled to occur for the Second Quarter of 2012. The next environmental work to be conducted is scheduled for the Third Quarter of 2012. As discussed in the Sampling Protocol section, it is recommended to utilize HydraSleeve™ samplers during the Third Quarter 2012 groundwater monitoring and sampling event, unless directed otherwise by the ACEH.

LIMITATIONS:

The findings presented in this report are based upon observations of field personnel, points investigated, results of laboratory tests performed by TestAmerica Laboratories, Inc. (Pleasanton, California), and our understanding of ACEH requirements. Our services were performed in accordance

with the generally accepted standard of practice at the time this report was written. No other warranty, expressed or implied was made. This report has been prepared for the exclusive use of ARCADIS US., Inc and the Atlantic Richfield Company. It is possible that variations in soil or groundwater conditions could exist beyond points explored in this investigation. Also, changes in site conditions could occur in the future due to variations in rainfall, temperature, regional water usage, or other factors.

ATTACHMENTS:

Drawing 1:	Site Location Map
Drawing 2:	Groundwater Elevation Contours and Analytical Summary Map February 29, 2012
Table 1:	Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses
Table 2:	Summary of Fuel Additives Analytical Data
Table 3:	Historical Groundwater Gradient - Direction and Magnitude
Appendix A:	Field Methods
Appendix B:	Field Data Sheets and Non-Hazardous Waste Data Form
Appendix C:	Laboratory Report and Chain-of-Custody Documentation
Appendix D:	GeoTracker Upload Confirmation Receipts

LIST OF COMMONLY USED ACCRONYMS/ABBREVIATIONS:

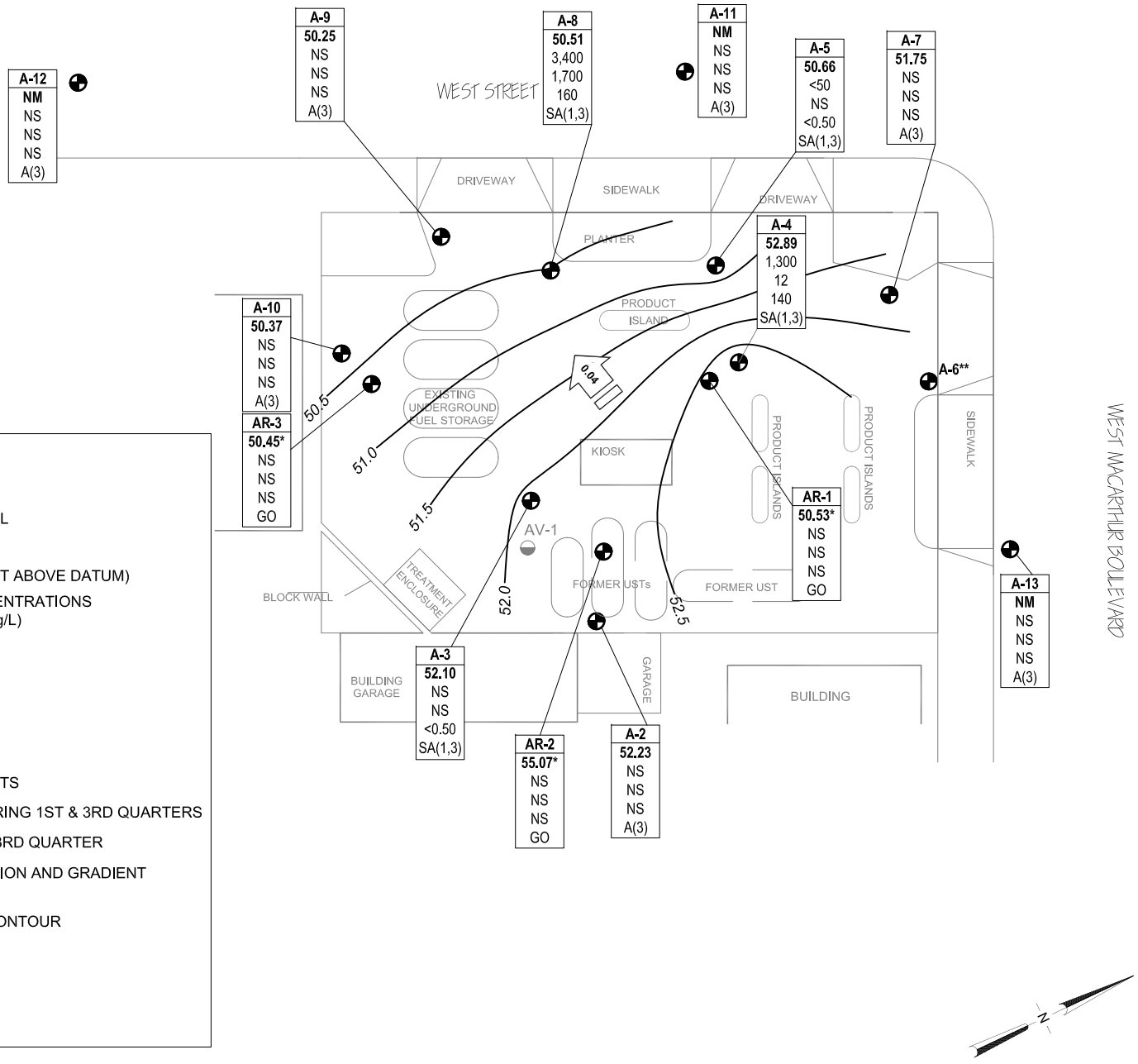
ACEH:	Alameda County Environmental Health	ft/ft:	feet per foot
BAI:	Broadbent & Associates, Inc.	gal:	Gallons
BTEX:	Benzene, Toluene, Ethylbenzene, Total Xylenes	GRO:	Gasoline-Range Organics
1,2-DCA:	1,2-Dichloroethane	LNAPL:	Light Non-Aqueous Phase Liquid
DIPE:	Di-Isopropyl Ether	MTBE:	Methyl Tertiary Butyl Ether
EDB:	1,2-Dibromomethane	NO_3:	Nitrate
Eh:	Oxidation Reduction Potential	TAME:	Tert-Amyl Methyl Ether
ETBE:	Ethyl Tertiary Butyl Ether	TBA:	Tertiary Butyl Ether
µg/L:	Micrograms per liter	TOC:	Top of Casing

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-624 Date: 10/1/09

Station #4931
731 West MacArthur Boulevard
Oakland, California

Site Location Map

Drawing
1



LEGEND

- MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- Well / ELEV / GRO / Benzene / MTBE / A/Q/SA — WELL DESIGNATION; GROUNDWATER ELEVATION (FT ABOVE DATUM); GRO, BENZENE & MTBE CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L); SAMPLING FREQUENCY
- GO — GAUGE ONLY
- NM — NOT MEASURED
- NS — NOT SAMPLED
- < — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- SA(1,3) — SAMPLED SEMI-ANNUALLY DURING 1ST & 3RD QUARTERS
- A(3) — SAMPLED ANNUALLY DURING 3RD QUARTER
- 0.04 — GROUNDWATER FLOW DIRECTION AND GRADIENT (FEET/FOOT)
- 52.5 — GROUNDWATER ELEVATION CONTOUR (FT ABOVE DATUM)
- * — NOT USED IN CONTOURING
- ** — PAVED OVER

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

0 40 80
SCALE (ft)

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, California 95926
Project No.: 09-88-624 Date: 03/22/12

Station #4931
731 West MacArthur Boulevard
Oakland, California

Groundwater Elevation Contour and Analytical Summary Map
February 29, 2012

Drawing
2

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-2															
6/21/2000	--	55.48	5.00	20.00	6.85	48.63	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	
9/20/2000	--		5.00	20.00	10.45	45.03	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/26/2000	--		5.00	20.00	6.27	49.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		5.00	20.00	4.57	50.91	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/12/2001	--		5.00	20.00	9.27	46.21	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/23/2001	--		5.00	20.00	10.75	44.73	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/31/2001	--		5.00	20.00	4.13	51.35	<50	<0.5	<0.5	1	3.2	<2.5	--	--	
3/21/2002	--		5.00	20.00	3.26	52.22	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
4/17/2002	--		5.00	20.00	3.72	51.76	<50	<0.5	<0.5	<0.5	<0.5	3.1	--	--	
8/12/2002	NP		5.00	20.00	9.95	45.53	<10	<0.10	<0.10	<0.10	<0.10	<0.50	3.1	7.7	
12/6/2002	NP		5.00	20.00	10.01	45.47	<50	<0.50	<0.50	<0.50	<0.50	6	3.1	6.1	
1/30/2003	NP		5.00	20.00	5.08	50.40	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	6.7	
5/28/2003	--		5.00	20.00	4.82	50.66	<50	<0.50	<0.50	<0.50	<0.50	1.1	5.7	6.8	
8/6/2003	--		5.00	20.00	9.73	45.75	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.3	7.7	
11/14/2003	--		5.00	20.00	9.36	46.12	--	--	--	--	--	--	--	--	
02/02/2004	--	60.65	5.00	20.00	4.45	56.20	--	--	--	--	--	--	--	--	g
05/04/2004	--		5.00	20.00	6.79	53.86	--	--	--	--	--	--	--	--	
09/02/2004	NP		5.00	20.00	10.51	50.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.1	--	
11/10/2004	--		5.00	20.00	6.10	54.55	--	--	--	--	--	--	--	--	
02/02/2005	--		5.00	20.00	4.00	56.65	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	20.00	4.35	56.30	--	--	--	--	--	--	--	--	
08/11/2005	NP		5.00	20.00	9.08	51.57	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.2	6.9	h
11/18/2005	--		5.00	20.00	8.53	52.12	--	--	--	--	--	--	--	--	
02/15/2006	--		5.00	20.00	3.89	56.76	--	--	--	--	--	--	--	--	
5/30/2006	--		5.00	20.00	4.45	56.20	--	--	--	--	--	--	--	--	
8/11/2006	NP		5.00	20.00	9.03	51.62	160	<0.50	<0.50	<0.50	<0.50	3.6	0.16	5.9	
11/1/2006	--		5.00	20.00	9.98	50.67	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	20.00	7.51	53.14	--	--	--	--	--	--	--	--	
5/9/2007	--		5.00	20.00	4.57	56.08	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	20.00	9.67	50.98	<50	<0.50	<0.50	<0.50	<0.50	3.4	2.18	7.17	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-2 Cont.															
11/14/2007	--	60.65	5.00	20.00	7.84	52.81	--	--	--	--	--	--	--	--	
2/28/2008	--		5.00	20.00	3.30	57.35	--	--	--	--	--	--	--	--	
5/23/2008	--		5.00	20.00	8.80	51.85	--	--	--	--	--	--	--	--	
8/13/2008	NP		5.00	20.00	10.20	50.45	<50	<0.50	<0.50	<0.50	<0.50	19	0.87	9.29	
11/19/2008	--		5.00	20.00	9.20	51.45	--	--	--	--	--	--	--	--	
2/10/2009	--		5.00	20.00	7.83	52.82	--	--	--	--	--	--	--	--	
5/7/2009	--		5.00	20.00	4.40	56.25	--	--	--	--	--	--	--	--	
9/3/2009	NP		5.00	20.00	10.07	50.58	<50	<0.50	<0.50	<0.50	<0.50	12	1.03	6.86	k
3/23/2010	--		5.00	20.00	3.67	56.98	--	--	--	--	--	--	--	--	
8/16/2010	NP		5.00	20.00	9.40	51.25	<50	<0.50	<0.50	<0.50	<1.0	6.1	0.89	6.94	
3/18/2011	--		5.00	20.00	2.89	57.76	--	--	--	--	--	--	--	--	
8/18/2011	NP		5.00	20.00	7.63	53.02	--	--	--	--	--	0.74	1.13	6.81	f
2/29/2012	**--**		**5.00**	**20.00**	**8.42**	**52.23**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
A-3															
6/21/2000	--	54.66	5.00	20.00	9.48	45.18	<50	<0.5	<0.5	<0.5	<1.0	46	--	--	
9/20/2000	--		5.00	20.00	10.24	44.42	<50	<0.5	<0.5	<0.5	<0.5	89.6	--	--	
12/26/2000	--		5.00	20.00	9.58	45.08	<50	<0.5	<0.5	<0.5	<0.5	7.11	--	--	
3/20/2001	--		5.00	20.00	6.34	48.32	--	--	--	--	--	--	--	--	
6/12/2001	--		5.00	20.00	9.76	44.90	<50	<0.5	<0.5	<0.5	<0.5	86	--	--	
9/23/2001	--		5.00	20.00	10.55	44.11	--	--	--	--	--	--	--	--	
12/31/2001	--		5.00	20.00	3.70	50.96	<50	<0.5	<0.5	<0.5	1	60	--	--	
3/21/2002	--		5.00	20.00	5.75	48.91	--	--	--	--	--	--	--	--	
4/17/2002	--		5.00	20.00	7.27	47.39	<50	<0.5	<0.5	<0.5	<0.5	45	--	--	
8/12/2002	--		5.00	20.00	9.71	44.95	--	--	--	--	--	--	--	--	
12/6/2002	P		5.00	20.00	9.55	45.11	<500	<5.0	<5.0	<5.0	<5.0	150	2.4	6.6	
1/30/2003	--		5.00	20.00	6.05	48.61	--	--	--	--	--	--	--	--	
1/30/2003	--		5.00	20.00	6.05	48.61	--	--	--	--	--	--	--	--	
5/28/2003	--		5.00	20.00	8.06	46.60	74	<0.50	<0.50	<0.50	<0.50	43	1.5	6.9	
8/6/2003	--		5.00	20.00	9.91	44.75	--	--	--	--	--	--	--	--	
11/14/2003	--		5.00	20.00	9.52	45.14	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-3 Cont.															
02/02/2004	P	59.32	5.00	20.00	5.63	53.69	<50	<0.50	<0.50	<0.50	<0.50	13	1.2	7.1	g
05/04/2004	--		5.00	20.00	8.14	51.18	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	20.00	10.10	49.22	<250	<2.5	<2.5	<2.5	<2.5	62	1.3	6.6	
11/10/2004	--		5.00	20.00	7.89	51.43	--	--	--	--	--	--	--	--	
02/02/2005	P		5.00	20.00	5.00	54.32	<50	<0.50	<0.50	<0.50	<0.50	6.8	1.9	6.9	
05/09/2005	--		5.00	20.00	5.96	53.36	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	20.00	9.28	50.04	<50	<0.50	<0.50	<0.50	<0.50	39	1.8	5.5	h
11/18/2005	--		5.00	20.00	8.61	50.71	--	--	--	--	--	--	--	--	
02/15/2006	P		5.00	20.00	4.36	54.96	<50	<0.50	<0.50	<0.50	<0.50	2.2	3.6	7.2	
5/30/2006	--		5.00	20.00	6.28	53.04	--	--	--	--	--	--	--	--	
8/11/2006	P		5.00	20.00	9.27	50.05	<50	<0.50	<0.50	<0.50	<0.50	4.1	2.10	6.4	
11/1/2006	--		5.00	20.00	9.52	49.80	--	--	--	--	--	--	--	--	
2/7/2007	NP		5.00	20.00	7.90	51.42	<50	<0.50	<0.50	<0.50	<0.50	0.58	1.74	7.70	
5/9/2007	--		5.00	20.00	6.55	52.77	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	20.00	9.57	49.75	<50	<0.50	<0.50	<0.50	<0.50	3.9	0.95	6.82	
11/14/2007	--		5.00	20.00	8.00	51.32	--	--	--	--	--	--	--	--	
2/28/2008	P		5.00	20.00	3.75	55.57	<50	<0.50	<0.50	<0.50	<0.50	0.58	6.16	6.92	
5/23/2008	--		5.00	20.00	9.10	50.22	--	--	--	--	--	--	--	--	
8/13/2008	NP		5.00	20.00	9.80	49.52	<50	<0.50	<0.50	<0.50	<0.50	0.55	0.69	8.63	
11/19/2008	--		5.00	20.00	8.31	51.01	--	--	--	--	--	--	--	--	
2/10/2009	NP		5.00	20.00	7.30	52.02	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.90	7.14	
5/7/2009	--		5.00	20.00	6.10	53.22	--	--	--	--	--	--	--	--	
9/3/2009	NP		5.00	20.00	9.50	49.82	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.01	6.95	
3/23/2010	NP		5.00	20.00	4.45	54.87	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.58	6.71	
8/16/2010	NP		5.00	20.00	9.45	49.87	<50	<0.50	<0.50	<0.50	<1.0	0.72	1.05	7.45	
3/18/2011	NP		5.00	20.00	4.00	55.32	--	--	--	--	--	<0.50	1.15	7.7	
8/18/2011	NP		5.00	20.00	8.62	50.70	--	--	--	--	--	<0.50	1.26	6.95	
2/29/2012	**NP**		**5.00**	**20.00**	**7.22**	**52.10**	**--**	**--**	**--**	**--**	**--**	**<0.50**	**2.84**	**7.52**	
A-4															
6/21/2000	--	54.73	5.00	20.00	9.49	45.24	2,100	110	2.1	11	5.9	2,000	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-4 Cont.															
9/20/2000	--	54.73	5.00	20.00	10.33	44.40	1,540	127	<5.0	9.07	7.42	1,940	--	--	
12/26/2000	--		5.00	20.00	9.34	45.39	1,550	42.7	<5.0	11	10.9	1,210	--	--	
3/20/2001	--		5.00	20.00	7.56	47.17	913	40.9	<5.0	15.5	14.6	<25	--	--	
6/12/2001	--		5.00	20.00	9.83	44.90	2,000	230	<20	21	<20	4,700	--	--	
9/23/2001	--		5.00	20.00	10.54	44.19	1,600	35	<10	<10	<10	3,000	--	--	
12/31/2001	--		5.00	20.00	5.42	49.31	<500	<5.0	<5.0	<5.0	<5.0	880	--	--	
3/21/2002	--		5.00	20.00	6.18	48.55	<5,000	<50	<50	<50	<50	1,400	--	--	
4/17/2002	--		5.00	20.00	7.34	47.39	1,300	79	31	17	55	2,200	--	--	
8/12/2002	P		5.00	20.00	9.56	45.17	2,400	120	<5.0	<5.0	<5.0	2,100	2	7.2	a
12/6/2002	P		5.00	20.00	10.02	44.71	2,200	110	10	42	56	2,000	--	6.7	
1/30/2003	P		5.00	20.00	7.55	47.18	6,000	180	<50	85	<50	2,100	1.8	6.8	
5/28/2003	--		5.00	20.00	8.94	45.79	6,000	120	<50	<50	<50	2,500	1.5	6.7	
8/6/2003	--		5.00	20.00	10.03	44.70	5,800	100	<25	<25	33	2,500	1.5	6.7	
11/14/2003	P		5.00	20.00	10.37	44.36	1,000	17	<5.0	<5.0	<5.0	310	1.6	6.8	d, f
02/02/2004	P	59.59	5.00	20.00	6.70	52.89	3,600	46	<25	<25	<25	1,500	1.0	7.1	d, g
05/04/2004	P		5.00	20.00	9.12	50.47	<5,000	<50	<50	<50	<50	2,300	6.4	6.8	d
09/02/2004	P		5.00	20.00	9.95	49.64	3,000	<25	<25	<25	<25	1,200	9.1	6.8	
11/10/2004	P		5.00	20.00	8.68	50.91	1,800	16	<10	<10	<10	1,100	2.0	7.2	
02/02/2005	P		5.00	20.00	6.92	52.67	3,300	120	<10	66	11	1,700	1.5	6.5	
05/09/2005	P		5.00	20.00	7.21	52.38	<5,000	140	<50	62	<50	1,800	1.64	6.6	
08/11/2005	P		5.00	20.00	9.71	49.88	1,700	51	<10	<10	<10	1,200	--	6.9	f, h
11/18/2005	P		5.00	20.00	9.45	50.14	1,300	23	<2.5	7.2	11	310	1.4	6.7	
02/15/2006	P		5.00	20.00	7.12	52.47	2,200	46	<2.5	29	7.0	910	0.9	6.8	
5/30/2006	P		5.00	20.00	7.95	51.64	3,300	95	<10	55	<10	1,200	1.76	6.5	
8/11/2006	P		5.00	20.00	9.50	50.09	350	93	<10	<10	<10	1,200	1.4	6.6	
11/1/2006	P		5.00	20.00	9.93	49.66	1,300	<10	<10	<10	<10	360	4.56	6.94	
2/7/2007	NP		5.00	20.00	8.82	50.77	4,900	85	<10	40	<10	1,500	0.72	6.86	
5/9/2007	NP		5.00	20.00	7.56	52.03	1,700	19	<10	<10	<10	340	3.00	7.03	
8/7/2007	NP		5.00	20.00	9.80	49.79	2,700	69	<5.0	<5.0	<5.0	510	1.04	6.95	
11/14/2007	NP		5.00	20.00	8.65	50.94	500	4.9	<0.50	<0.50	<0.50	280	1.27	6.94	

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ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-4 Cont.															
2/28/2008	NP	59.59	5.00	20.00	6.15	53.44	850	17	<0.50	4.4	1.4	350	1.76	7.03	
5/23/2008	NP		5.00	20.00	9.40	50.19	1,900	75	<20	<20	<20	1,000	1.28	6.58	
8/13/2008	NP		5.00	20.00	9.92	49.67	3,100	47	<10	<10	<10	530	0.89	8.97	
11/19/2008	NP		5.00	20.00	9.19	50.40	1,800	70	<10	21	<10	430	0.83	6.50	
2/10/2009	NP		5.00	20.00	7.68	51.91	1,900	33	<10	14	<10	400	0.87	7.31	
5/7/2009	NP		5.00	20.00	7.31	52.28	<50	<0.50	<0.50	<0.50	<0.50	9.9	2.40	7.10	
9/3/2009	NP		5.00	20.00	10.02	49.57	3,800	49	<10	<10	<10	360	0.79	6.75	
3/23/2010	NP		5.00	20.00	6.62	52.97	820	17	<0.50	5.0	1.3	150	1.37	6.54	
8/16/2010	NP		5.00	20.00	9.85	49.74	1,600	18	0.50	0.56	<1.0	160	0.10	6.64	
3/18/2011	NP		5.00	20.00	5.34	54.25	490	9.9	<0.50	1.9	<1.0	66	3.39	6.7	
8/18/2011	NP		5.00	20.00	9.08	50.51	650	1.9	<0.50	<0.50	<1.0	53	1.64	7.00	
2/29/2012	**NP**		**5.00**	**20.00**	**6.70**	**52.89**	**1,300**	**12**	**<0.50**	**4.2**	**1.1**	**140**	**6.91**	**7.15**	
A-5															
6/21/2000	--	54.17	3.00	24.00	9.29	44.88	980	<0.5	<0.5	<0.5	<1.0	2,000	--	--	
9/20/2000	--		3.00	24.00	10.23	43.94	--	--	--	--	--	--	--	--	
12/26/2000	--		3.00	24.00	9.65	44.52	525	<0.5	<0.5	<0.5	<0.5	1,200	--	--	
3/20/2001	--		3.00	24.00	8.05	46.12	--	--	--	--	--	--	--	--	
6/12/2001	--		3.00	24.00	9.81	44.36	830	<5.0	<5.0	<5.0	<5.0	3,200	--	--	
9/23/2001	--		3.00	24.00	10.42	43.75	--	--	--	--	--	--	--	--	
12/31/2001	--		3.00	24.00	6.03	48.14	320	<0.5	<0.5	<0.5	<0.5	60	--	--	
3/21/2002	--		3.00	24.00	6.71	47.46	--	--	--	--	--	--	--	--	
4/17/2002	--		3.00	24.00	8.01	46.16	1,600	<10	<10	<10	<10	3,200	--	--	
8/12/2002	--		3.00	24.00	9.87	44.30	--	--	--	--	--	--	--	--	
12/6/2002	P		3.00	24.00	9.66	44.51	310	<0.50	<0.50	<0.50	<0.50	330	1.9	6.6	
1/30/2003	--		3.00	24.00	7.67	46.50	--	--	--	--	--	--	--	--	
5/28/2003	--		3.00	24.00	8.56	45.61	<5,000	<50	<50	<50	<50	1,500	1.6	6.6	
8/6/2003	--		3.00	24.00	9.58	44.59	--	--	--	--	--	--	--	--	
11/14/2003	--		3.00	24.00	9.81	44.36	--	--	--	--	--	--	--	--	
02/02/2004	P	58.78	3.00	24.00	7.43	51.35	390	<2.5	9.2	<2.5	2.6	140	1.0	6.8	g
05/04/2004	--		3.00	24.00	9.98	48.80	--	--	--	--	--	--	--	--	

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ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-5 Cont.															
09/02/2004	P	58.78	3.00	24.00	9.65	49.13	<250	<2.5	<2.5	<2.5	<2.5	66	1.1	6.4	
11/10/2004	--		3.00	24.00	8.48	50.30	--	--	--	--	--	--	--	--	
02/02/2005	P		3.00	24.00	7.10	51.68	68	<0.50	<0.50	<0.50	<0.50	17	1.0	7.2	
05/09/2005	--		3.00	24.00	7.20	51.58	--	--	--	--	--	--	--	--	
08/11/2005	P		3.00	24.00	9.21	49.57	<50	<0.50	<0.50	<0.50	<0.50	6.8	1.3	6.2	h
11/18/2005	--		3.00	24.00	9.10	49.68	--	--	--	--	--	--	--	--	
02/15/2006	P		3.00	24.00	7.16	51.62	<50	<0.50	<0.50	<0.50	<0.50	5.1	1.2	6.9	
5/30/2006	--		3.00	24.00	7.87	50.91	--	--	--	--	--	--	--	--	
8/11/2006	P		3.00	24.00	8.90	49.88	920	<0.50	<0.50	<0.50	<0.50	12	1.4	6.7	
11/1/2006	--		3.00	24.00	9.30	49.48	--	--	--	--	--	--	--	--	
2/7/2007	NP		3.00	24.00	8.50	50.28	60	<0.50	<0.50	<0.50	<0.50	1.5	0.73	7.14	i
5/9/2007	--		3.00	24.00	7.60	51.18	--	--	--	--	--	--	--	--	
8/7/2007	NP		3.00	24.00	9.30	49.48	<50	<0.50	<0.50	<0.50	<0.50	0.81	0.41	7.18	
11/14/2007	--		3.00	24.00	8.48	50.30	--	--	--	--	--	--	--	--	
2/28/2008	NP		3.00	24.00	6.21	52.57	<50	<0.50	<0.50	<0.50	<0.50	0.97	2.24	7.40	
5/23/2008	--		3.00	24.00	8.97	49.81	--	--	--	--	--	--	--	--	
8/13/2008	NP		3.00	24.00	9.42	49.36	<50	<0.50	<0.50	<0.50	<0.50	0.69	0.62	8.96	
11/19/2008	--		3.00	24.00	8.91	49.87	--	--	--	--	--	--	--	--	
2/10/2009	NP		3.00	24.00	7.80	50.98	<50	<0.50	<0.50	<0.50	<0.50	1.6	0.85	7.52	
5/7/2009	--		3.00	24.00	7.37	51.41	--	--	--	--	--	--	--	--	
9/3/2009	NP		3.00	24.00	9.33	49.45	<50	<0.50	<0.50	<0.50	<0.50	20	0.91	6.68	
3/23/2010	NP		3.00	24.00	6.84	51.94	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.20	6.67	
8/16/2010	NP		3.00	24.00	8.85	49.93	<50	<0.50	<0.50	<0.50	<1.0	7.9	0.97	6.84	
3/18/2011	NP		3.00	24.00	5.45	53.33	<50	--	--	--	--	<0.50	2.72	6.6	
8/18/2011	NP		3.00	24.00	8.37	50.41	<50	--	--	--	--	0.81	1.42	7.70	
2/29/2012	**NP**		**3.00**	**24.00**	**8.12**	**50.66**	**<50**	**--**	**--**	**--**	**--**	**<0.50**	**5.60**	**7.31**	
A-6															
6/21/2000	--	55.17	3.00	25.00	8.67	46.50	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	
9/20/2000	--		3.00	25.00	9.34	45.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/26/2000	--		3.00	25.00	8.65	46.52	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	

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Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-6 Cont.															
3/20/2001	--	55.17	3.00	25.00	6.84	48.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/12/2001	--		3.00	25.00	8.93	46.24	<50	<0.5	<0.5	<0.5	<0.5	7	--	--	
9/23/2001	--		3.00	25.00	9.74	45.43	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/31/2001	--		3.00	25.00	4.81	50.36	<50	<0.5	<0.5	<0.5	<0.5	3.2	--	--	
3/21/2002	--		3.00	25.00	5.44	49.73	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
4/17/2002	--		3.00	25.00	6.95	48.22	<50	<0.5	<0.5	<0.5	<0.5	3.1	--	--	
8/12/2002	NP		3.00	25.00	8.90	46.27	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.3	7.9	
12/6/2002	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
1/30/2003	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
5/28/2003	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
8/6/2003	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
11/14/2003	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible e
02/02/2004	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible e
05/04/2004	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible e
09/02/2004	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible e
11/10/2004	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	Well inaccessible e
02/02/2005	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
05/09/2005	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
08/11/2005	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
11/18/2005	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
2/15/2006	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
5/30/2006	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
8/11/2006	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
11/1/2006	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	e
A-7															
6/21/2000	--	54.71	3.00	22.00	8.58	46.13	<50	<0.5	<0.5	<0.5	<1.0	<3.0	--	--	
9/20/2000	--		3.00	22.00	9.19	45.52	--	--	--	--	--	--	--	--	
12/26/2000	--		3.00	22.00	8.50	46.21	--	--	--	--	--	--	--	--	
3/20/2001	--		3.00	22.00	6.75	47.96	--	--	--	--	--	--	--	--	
6/12/2001	--		3.00	22.00	8.80	45.91	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-7 Cont.															
9/23/2001	--	54.71	3.00	22.00	9.59	45.12	--	--	--	--	--	--	--	--	
12/31/2001	--		3.00	22.00	4.78	49.93	--	--	--	--	--	--	--	--	
3/21/2002	--		3.00	22.00	5.35	49.36	--	--	--	--	--	--	--	--	
4/17/2002	--		3.00	22.00	6.88	47.83	<50	<0.5	<0.5	<0.5	<0.5	2.5	--	--	
8/12/2002	--		3.00	22.00	8.77	45.94	--	--	--	--	--	--	--	--	
12/6/2002	--		3.00	22.00	9.07	45.64	--	--	--	--	--	--	--	--	
1/30/2003	--		3.00	22.00	6.65	48.06	--	--	--	--	--	--	--	--	
5/28/2003	--		3.00	22.00	7.63	47.08	<50	<0.50	<0.50	<0.50	<0.50	3.8	2.3	6.7	
8/6/2003	--		3.00	22.00	8.90	45.81	--	--	--	--	--	--	--	--	
11/14/2003	--		3.00	22.00	9.08	45.63	--	--	--	--	--	--	--	--	
02/02/2004	--	59.75	3.00	22.00	5.96	53.79	--	--	--	--	--	--	--	--	g
05/04/2004	--		3.00	22.00	8.21	51.54	--	--	--	--	--	--	--	--	
09/02/2004	P		3.00	22.00	9.02	50.73	<50	<0.50	<0.50	<0.50	<0.50	8.9	3.0	6.7	
11/10/2004	--		3.00	22.00	7.50	52.25	--	--	--	--	--	--	--	--	
02/02/2005	--		3.00	22.00	6.10	53.65	--	--	--	--	--	--	--	--	
05/09/2005	--		3.00	22.00	6.48	53.27	--	--	--	--	--	--	--	--	
08/11/2005	P		3.00	22.00	8.45	51.30	<50	<0.50	<0.50	<0.50	<0.50	18	1.6	6.6	h
11/18/2005	--		3.00	22.00	8.65	51.10	--	--	--	--	--	--	--	--	
02/15/2006	--		3.00	22.00	6.51	53.24	--	--	--	--	--	--	--	--	
5/30/2006	--		3.00	22.00	7.13	52.62	--	--	--	--	--	--	--	--	
8/11/2006	P		3.00	22.00	8.46	51.29	<50	<0.50	<0.50	<0.50	<0.50	3.6	1.7	6.7	
11/1/2006	--		3.00	22.00	8.99	50.76	--	--	--	--	--	--	--	--	
2/7/2007	--		3.00	22.00	8.12	51.63	--	--	--	--	--	--	--	--	
5/9/2007	--		3.00	22.00	7.04	52.71	--	--	--	--	--	--	--	--	
8/7/2007	NP		3.00	22.00	9.10	50.65	<50	<0.50	<0.50	<0.50	<0.50	2.7	1.34	7.09	
11/14/2007	--		3.00	22.00	8.00	51.75	--	--	--	--	--	--	--	--	
2/28/2008	--		3.00	22.00	5.81	53.94	--	--	--	--	--	--	--	--	
5/23/2008	--		3.00	22.00	8.74	51.01	--	--	--	--	--	--	--	--	
8/13/2008	NP		3.00	22.00	9.27	50.48	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.05	8.45	
11/19/2008	--		3.00	22.00	8.67	51.08	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-7 Cont.															
2/10/2009	--	59.75	3.00	22.00	7.47	52.28	--	--	--	--	--	--	--	--	
5/7/2009	--		3.00	22.00	6.88	52.87	--	--	--	--	--	--	--	--	
9/3/2009	NP		3.00	22.00	9.25	50.50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.93	6.78	
3/23/2010	--		3.00	22.00	6.33	53.42	--	--	--	--	--	--	--	--	
8/16/2010	NP		3.00	22.00	9.13	50.62	<50	<0.50	<0.50	<0.50	<1.0	<0.50	0.73	6.72	
3/18/2011	--		3.00	22.00	5.20	54.55	--	--	--	--	--	--	--	--	
8/18/2011	NP		3.00	22.00	8.54	51.21	--	--	--	--	--	<0.50	0.98	7.11	
2/29/2012	--		**3.00**	**22.00**	**8.00**	**51.75**	--	--	--	--	--	--	--	--	
A-8															
6/21/2000	--	53.77	3.00	25.00	9.07	44.70	810	<0.5	<0.5	<0.5	810	1,500	--	--	
9/20/2000	--		3.00	25.00	9.72	44.05	10,800	2,680	46	439	370	4,410	--	--	
12/26/2000	--		3.00	25.00	9.20	44.57	7,700	1,440	<50	202	106	2,230	--	--	
3/20/2001	--		3.00	25.00	7.51	46.26	<5,000	1,280	<50	53.9	<50	2,880	--	--	
6/12/2001	--		3.00	25.00	9.53	44.24	5,600	1,700	<50	61	54	2,900	--	--	
9/23/2001	--		3.00	25.00	10.08	43.69	10,000	3,500	<50	110	64	6,500	--	--	
12/31/2001	--		3.00	25.00	4.34	49.43	4,300	610	<10	60	24	520	--	--	
3/21/2002	--		3.00	25.00	6.67	47.10	6,600	1,400	<50	130	<50	2,700	--	--	
4/17/2002	--		3.00	25.00	7.72	46.05	3,800	540	<10	<10	12	3,100	--	--	
8/12/2002	NP		3.00	25.00	9.64	44.13	9,400	1,800	<20	35	28	4,200	1	6.7	
12/6/2002	NP		3.00	25.00	9.62	44.15	5,300	1,100	11	11	<10	2,200	1.4	6.7	b
1/30/2003	NP		3.00	25.00	7.49	46.28	<10,000	1,100	<100	<100	<100	2,200	1.5	6.9	
5/28/2003	--		3.00	25.00	9.17	44.60	7,700	1,700	<50	<50	<50	2,100	1	6.8	
8/6/2003	--		3.00	25.00	9.67	44.10	13,000	2,400	<50	<50	<50	3,000	0.9	6.5	
11/14/2003	NP		3.00	25.00	9.80	43.97	3,100	570	<5.0	<5.0	<5.0	850	2.3	6.2	d
02/02/2004	NP	58.70	3.00	25.00	7.10	51.60	3,900	300	<25	<25	<25	1,100	1.1	6.8	d, g
05/04/2004	NP		3.00	25.00	9.44	49.26	<5,000	490	<50	<50	<50	1,600	1.0	6.9	
09/02/2004	NP		3.00	25.00	9.67	49.03	<2,500	30	<25	<25	<25	680	1.0	6.2	
11/10/2004	NP		3.00	25.00	8.15	50.55	580	61	<2.5	<2.5	<2.5	290	1.5	6.4	
02/02/2005	NP		3.00	25.00	6.53	52.17	5,000	890	<25	<25	<25	1,900	1.0	7.4	
05/09/2005	NP		3.00	25.00	6.31	52.39	69	0.90	<0.50	<0.50	<0.50	66	4.1	7.2	

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ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-8 Cont.															
08/11/2005	NP	58.70	3.00	25.00	9.15	49.55	1,400	1,300	<12	<12	<12	1,100	0.7	6.4	h
11/18/2005	NP		3.00	25.00	8.89	49.81	1,200	420	<5.0	<5.0	<5.0	340	0.7	7.0	
02/15/2006	NP		3.00	25.00	6.34	52.36	3,200	970	<10	<10	<10	1,100	0.9	6.1	
5/30/2006	NP		3.00	25.00	7.53	51.17	510	210	<2.5	<2.5	<2.5	140	2.6	6.7	
8/11/2006	P		3.00	25.00	8.90	49.80	1,300	500	<5.0	<5.0	<5.0	290	0.7	7.0	i
11/1/2006	P		3.00	25.00	9.15	49.55	4,800	790	6.6	<5.0	<5.0	910	1.72	7.11	
2/7/2007	NP		3.00	25.00	8.48	50.22	7,600	2,300	<25	<25	<25	1,200	1.25	7.11	
5/9/2007	NP		3.00	25.00	7.25	51.45	750	180	<2.5	<2.5	<2.5	55	1.75	7.14	
8/7/2007	NP		3.00	25.00	9.17	49.53	2,100	700	4.0	<2.5	<2.5	430	0.77	6.95	
11/14/2007	NP		3.00	25.00	7.77	50.93	990	300	2.5	0.68	0.96	100	1.01	6.73	
2/28/2008	NP		3.00	25.00	5.14	53.56	2,100	670	<5.0	<5.0	<5.0	220	1.67	7.09	
5/23/2008	--		3.00	25.00	--	--	--	--	--	--	--	--	--	--	j
8/13/2008	NP		3.00	25.00	9.48	49.22	3,100	970	<25	<25	<25	250	0.84	8.73	
11/19/2008	NP		3.00	25.00	8.87	49.83	3,800	1,000	<20	<20	<20	230	0.89	6.87	
2/10/2009	NP		3.00	25.00	7.11	51.59	3,600	1,300	<25	<25	<25	320	0.89	6.87	
5/7/2009	NP		3.00	25.00	6.47	52.23	270	65	<1.0	<1.0	<1.0	12	0.97	6.56	
9/3/2009	NP		3.00	25.00	9.47	49.23	3,200	1,400	<25	<25	<25	100	0.87	6.51	
3/23/2010	NP		3.00	25.00	6.12	52.58	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.69	6.75	
8/16/2010	NP		3.00	25.00	9.27	49.43	4,300	1,600	12	5.3	6.1	110	1.05	6.70	
3/18/2011	NP		3.00	25.00	5.01	53.69	2,000	620	4.7	0.96	1.4	87	4.36	6.8	
8/18/2011	NP		3.00	25.00	8.76	49.94	3,300	1,500	13	5.4	<10	120	1.38	6.84	f
2/29/2012	**NP**		**3.00**	**25.00**	**8.19**	**50.51**	**3,400**	**1,700**	**10**	**3.4**	**3.9**	**160**	**1.36**	**6.79**	
A-9															
6/21/2000	--	53.04	5.00	40.00	8.56	44.48	<50	<0.5	<0.5	<0.5	<1.0	5	--	--	
9/20/2000	--		5.00	40.00	9.05	43.99	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/26/2000	--		5.00	40.00	8.49	44.55	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		5.00	40.00	6.95	46.09	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
6/12/2001	--		5.00	40.00	8.67	44.37	<50	<0.5	<0.5	<0.5	<0.5	4.8	--	--	
9/23/2001	--		5.00	40.00	9.21	43.83	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
12/31/2001	--		5.00	40.00	4.57	48.47	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	

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Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-9 Cont.															
3/21/2002	--	53.04	5.00	40.00	5.60	47.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
4/17/2002	--		5.00	40.00	6.89	46.15	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/12/2002	P		5.00	40.00	8.71	44.33	<50	<0.50	<0.50	<0.50	<0.50	<2.5	4	7.6	
12/6/2002	P		5.00	40.00	8.77	44.27	<50	<0.50	<0.50	<0.50	<0.50	<2.0	1.1	6.7	
1/30/2003	P		5.00	40.00	6.88	46.16	<50	<0.50	<0.50	<0.50	<0.50	1.1	0.9	6.8	
5/28/2003	--		5.00	40.00	9.75	43.29	<50	<0.50	<0.50	<0.50	<0.50	0.74	1.9	6.8	
8/6/2003	--		5.00	40.00	9.00	44.04	<50	<0.50	<0.50	<0.50	<0.50	1.8	2.2	6.7	
11/14/2003	--		5.00	40.00	8.82	44.22	--	--	--	--	--	--	--	--	d
02/02/2004	--	57.73	5.00	40.00	7.10	50.63	--	--	--	--	--	--	--	--	d, g
05/04/2004	--		5.00	40.00	8.12	49.61	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	40.00	8.78	48.95	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.6	6.5	
11/10/2004	--		5.00	40.00	7.88	49.85	--	--	--	--	--	--	--	--	
02/02/2005	--		5.00	40.00	6.40	51.33	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	40.00	6.82	50.91	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	40.00	8.37	49.36	<50	<0.50	<0.50	<0.50	<0.50	1.5	1.8	6.7	
11/18/2005	--		5.00	40.00	8.24	49.49	--	--	--	--	--	--	--	--	
02/15/2006	--		5.00	40.00	6.38	51.35	--	--	--	--	--	--	--	--	
5/30/2006	--		5.00	40.00	7.17	50.56	--	--	--	--	--	--	--	--	
8/11/2006	P		5.00	40.00	8.20	49.53	<50	<0.50	<0.50	<0.50	<0.50	1.6	1.02	6.6	
11/1/2006	--		5.00	40.00	8.90	48.83	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	40.00	7.83	49.90	--	--	--	--	--	--	--	--	
5/9/2007	--		5.00	40.00	6.92	50.81	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	40.00	8.58	49.15	<50	<0.50	<0.50	<0.50	<0.50	0.64	1.81	6.90	
11/14/2007	--		5.00	40.00	7.77	49.96	--	--	--	--	--	--	--	--	
2/28/2008	--		5.00	40.00	5.61	52.12	--	--	--	--	--	--	--	--	
5/23/2008	--		5.00	40.00	--	--	--	--	--	--	--	--	--	--	j
8/13/2008	NP		5.00	40.00	8.65	49.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.55	9.04	
11/19/2008	--		5.00	40.00	8.49	49.24	--	--	--	--	--	--	--	--	
2/10/2009	--		5.00	40.00	7.07	50.66	--	--	--	--	--	--	--	--	
5/7/2009	--		5.00	40.00	6.65	51.08	--	--	--	--	--	--	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-9 Cont.															
9/3/2009	NP	57.73	5.00	40.00	8.56	49.17	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.89	6.86	
3/23/2010	--		5.00	40.00	5.98	51.75	--	--	--	--	--	--	--	--	
8/16/2010	NP		5.00	40.00	8.32	49.41	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.06	6.82	
3/18/2011	--		5.00	40.00	4.40	53.33	--	--	--	--	--	--	--	--	
8/18/2011	NP		5.00	40.00	7.94	49.79	--	--	--	--	--	<0.50	0.85	7.28	
2/29/2012	**--**		**5.00**	**40.00**	**7.48**	**50.25**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
A-10															
6/21/2000	--	54.26	5.00	30.00	10.47	43.79	--	--	--	--	--	--	--	--	
9/20/2000	--		5.00	30.00	10.76	43.50	--	--	--	--	--	--	--	--	
12/26/2000	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
3/20/2001	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
9/23/2001	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
12/31/2001	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
3/21/2002	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
4/17/2002	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
8/12/2002	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
12/6/2002	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
1/30/2003	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
5/28/2003	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
8/6/2003	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	
11/14/2003	--		5.00	30.00	10.37	43.89	--	--	--	--	--	--	--	--	
02/02/2004	--	59.39	5.00	30.00	7.97	51.42	--	--	--	--	--	--	--	--	g
05/04/2004	--		5.00	30.00	8.69	50.70	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	30.00	10.55	48.84	<500	<5.0	<5.0	<5.0	<5.0	270	0.8	6.6	
11/10/2004	--		5.00	30.00	9.16	50.23	--	--	--	--	--	--	--	--	
02/02/2005	--		5.00	30.00	7.90	51.49	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	30.00	8.21	51.18	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	30.00	10.02	49.37	69	<0.50	<0.50	<0.50	<0.50	97	0.9	6.6	h, i
11/18/2005	--		5.00	30.00	9.86	49.53	--	--	--	--	--	--	--	--	
02/15/2006	--		5.00	30.00	7.53	51.86	--	--	--	--	--	--	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-10 Cont.															
5/30/2006	--	59.39	5.00	30.00	8.82	50.57	--	--	--	--	--	--	--	--	
8/11/2006	P		5.00	30.00	9.88	49.51	<50	<0.50	<0.50	<0.50	<0.50	46	1.3	6.8	
11/1/2006	--		5.00	30.00	10.28	49.11	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	30.00	9.50	49.89	--	--	--	--	--	--	--	--	
5/9/2007	--		5.00	30.00	8.67	50.72	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	30.00	10.25	49.14	<50	<0.50	<0.50	<0.50	<0.50	8.9	0.59	6.89	
11/14/2007	--		5.00	30.00	9.48	49.91	--	--	--	--	--	--	--	--	
2/28/2008	--		5.00	30.00	7.23	52.16	--	--	--	--	--	--	--	--	
5/23/2008	--		5.00	30.00	9.94	49.45	--	--	--	--	--	--	--	--	
8/13/2008	NP		5.00	30.00	10.30	49.09	<50	<0.50	<0.50	<0.50	<0.50	28	0.74	9.16	
11/19/2008	--		5.00	30.00	9.90	49.49	--	--	--	--	--	--	--	--	
2/10/2009	--		5.00	30.00	8.74	50.65	--	--	--	--	--	--	--	--	
5/7/2009	--		5.00	30.00	8.23	51.16	--	--	--	--	--	--	--	--	l
9/3/2009	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	j, l
3/23/2010	--		5.00	30.00	7.65	51.74	--	--	--	--	--	--	--	--	
8/16/2010	NP		5.00	30.00	10.05	49.34	<50	<0.50	<0.50	<0.50	<1.0	3.9	1.02	7.03	
3/18/2011	--		5.00	30.00	6.52	52.87	--	--	--	--	--	--	--	--	
8/18/2011	NP		5.00	30.00	9.58	49.81	--	--	--	--	--	2.1	0.79	6.94	
2/29/2012	**--**		**5.00**	**30.00**	**9.02**	**50.37**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
A-11															
6/21/2000	--	53.74	5.00	30.00	9.54	44.20	<50	<0.5	<0.5	<0.5	<1.0	4	--	--	
9/20/2000	--		5.00	30.00	10.62	43.12	--	--	--	--	--	--	--	--	
12/26/2000	--		5.00	30.00	10.03	43.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/20/2001	--		5.00	30.00	8.49	45.25	--	--	--	--	--	--	--	--	
6/12/2001	--		5.00	30.00	10.21	43.53	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
9/23/2001	--		5.00	30.00	10.77	42.97	--	--	--	--	--	--	--	--	
12/31/2001	--		5.00	30.00	6.06	47.68	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
3/21/2002	--		5.00	30.00	7.14	46.60	--	--	--	--	--	--	--	--	
4/17/2002	--		5.00	30.00	8.41	45.33	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/12/2002	--		5.00	30.00	10.25	43.49	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-11 Cont.															
12/6/2002	P	53.74	5.00	30.00	10.43	43.31	<50	<0.50	<0.50	<0.50	<0.50	<2.0	2.4	6.7	
1/30/2003	--		5.00	30.00	8.42	45.32	--	--	--	--	--	--	--	--	
5/28/2003	--		5.00	30.00	9.30	44.44	<50	<0.50	<0.50	<0.50	<0.50	0.53	1.8	7	
8/6/2003	--		5.00	30.00	10.28	43.46	--	--	--	--	--	--	--	--	
11/14/2003	--		5.00	30.00	10.40	43.34	--	--	--	--	--	--	--	--	
02/02/2004	--	59.16	5.00	30.00	7.95	51.21	--	--	--	--	--	--	--	--	g
05/04/2004	--		5.00	30.00	8.72	50.44	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	30.00	10.44	48.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.6	6.6	
11/10/2004	--		5.00	30.00	9.20	49.96	--	--	--	--	--	--	--	--	
02/02/2005	--		5.00	30.00	7.95	51.21	--	--	--	--	--	--	--	--	
05/09/2005	--		5.00	30.00	8.07	51.09	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	30.00	9.87	49.29	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	6.7	h
11/18/2005	--		5.00	30.00	8.88	50.28	--	--	--	--	--	--	--	--	
02/15/2006	--		5.00	30.00	7.90	51.26	--	--	--	--	--	--	--	--	
5/30/2006	--		5.00	30.00	8.78	50.38	--	--	--	--	--	--	--	--	
8/11/2006	P		5.00	30.00	10.33	48.83	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.8	6.8	
11/1/2006	--		5.00	30.00	10.10	49.06	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	30.00	9.35	49.81	--	--	--	--	--	--	--	--	
5/9/2007	--		5.00	30.00	8.48	50.68	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	30.00	10.10	49.06	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.67	7.07	
11/14/2007	--		5.00	30.00	9.31	49.85	--	--	--	--	--	--	--	--	
2/28/2008	--		5.00	30.00	7.12	52.04	--	--	--	--	--	--	--	--	
5/23/2008	--		5.00	30.00	9.77	49.39	--	--	--	--	--	--	--	--	
8/13/2008	NP		5.00	30.00	10.08	49.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.89	8.94	
11/19/2008	--		5.00	30.00	9.75	49.41	--	--	--	--	--	--	--	--	
2/10/2009	--		5.00	30.00	8.67	50.49	--	--	--	--	--	--	--	--	
5/7/2009	--		5.00	30.00	8.20	50.96	--	--	--	--	--	--	--	--	
9/3/2009	NP		5.00	30.00	10.15	49.01	<50	<0.50	<0.50	<0.50	<0.50	<0.50	0.98	6.78	
3/23/2010	--		5.00	30.00	7.70	51.46	--	--	--	--	--	--	--	--	
8/16/2010	NP		5.00	30.00	9.90	49.26	<50	<0.50	<0.50	<0.50	<1.0	<0.50	1.60	6.86	

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ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-11 Cont.															
3/18/2011	--	59.16	5.00	30.00	--	--	--	--	--	--	--	--	--	--	m
8/18/2011	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	m
2/29/2012	--		**5.00**	**30.00**	--	--	--	--	--	--	--	--	--	--	**m**
A-12															
6/21/2000	--	52.05	5.00	30.00	9.28	42.77	<50	<0.5	<0.5	<0.5	<1.0	18	--	--	
9/20/2000	--		5.00	30.00	9.55	42.50	--	--	--	--	--	--	--	--	
12/26/2000	--		5.00	30.00	9.05	43.00	<50	<0.5	<0.5	<0.5	<0.5	17.3	--	--	
3/20/2001	--		5.00	30.00	7.92	44.13	--	--	--	--	--	--	--	--	
6/12/2001	--		5.00	30.00	9.26	42.79	<50	<0.5	<0.5	<0.5	<0.5	25	--	--	
9/23/2001	--		5.00	30.00	9.68	42.37	--	--	--	--	--	--	--	--	
12/31/2001	--		5.00	30.00	5.74	46.31	<50	<0.5	<0.5	<0.5	<0.5	9.5	--	--	
3/21/2002	--		5.00	30.00	6.64	45.41	--	--	--	--	--	--	--	--	
4/17/2002	--		5.00	30.00	7.68	44.37	<50	<0.5	<0.5	<0.5	<0.5	29	--	--	
8/12/2002	--		5.00	30.00	9.30	42.75	--	--	--	--	--	--	--	--	
12/06/02	P		5.00	30.00	9.38	42.67	<50	<0.50	<0.50	<0.50	<0.50	13	2.3	6.5	c
1/30/2003	--		5.00	30.00	7.87	44.18	--	--	--	--	--	--	--	--	
5/28/2003	--		5.00	30.00	8.51	43.54	50	<0.50	<0.50	<0.50	<0.50	10	1.4	7	
8/6/2003	--		5.00	30.00	9.28	42.77	--	--	--	--	--	--	--	--	
11/14/2003	--		5.00	30.00	9.37	42.68	--	--	--	--	--	--	--	--	
02/02/2004	P	57.06	5.00	30.00	7.90	49.16	<50	<0.50	<0.50	<0.50	<0.50	0.91	1.0	6.9	g
05/04/2004	--		5.00	30.00	8.74	48.32	--	--	--	--	--	--	--	--	
09/02/2004	P		5.00	30.00	9.41	47.65	<50	<0.50	<0.50	<0.50	<0.50	6.2	1.1	6.5	
11/10/2004	--		5.00	30.00	8.32	48.74	--	--	--	--	--	--	--	--	
02/02/2005	P		5.00	30.00	7.45	49.61	<50	<0.50	<0.50	<0.50	<0.50	8.3	1.4	7.1	
05/09/2005	--		5.00	30.00	7.57	49.49	--	--	--	--	--	--	--	--	
08/11/2005	P		5.00	30.00	9.05	48.01	<50	<0.50	<0.50	<0.50	<0.50	5.4	0.9	6.4	h
11/18/2005	--		5.00	30.00	8.90	48.16	--	--	--	--	--	--	--	--	
02/15/2006	--		5.00	30.00	7.47	49.59	--	--	--	--	--	--	--	--	
5/30/2006	--		5.00	30.00	8.21	48.85	--	--	--	--	--	--	--	--	
8/11/2006	P		5.00	30.00	8.85	48.21	<50	<0.50	<0.50	<0.50	<0.50	7.4	1.8	6.9	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-12 Cont.															
11/1/2006	--	57.06	5.00	30.00	9.17	47.89	--	--	--	--	--	--	--	--	
2/7/2007	--		5.00	30.00	8.58	48.48	--	--	--	--	--	--	--	--	
5/9/2007	--		5.00	30.00	7.93	49.13	--	--	--	--	--	--	--	--	
8/7/2007	NP		5.00	30.00	9.20	47.86	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.49	7.34	
11/14/2007	--		5.00	30.00	8.52	48.54	--	--	--	--	--	--	--	--	
2/28/2008	--		5.00	30.00	7.04	50.02	--	--	--	--	--	--	--	--	
5/23/2008	--		5.00	30.00	9.00	48.06	--	--	--	--	--	--	--	--	
8/13/2008	NP		5.00	30.00	9.38	47.68	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.03	8.39	
11/19/2008	--		5.00	30.00	9.01	48.05	--	--	--	--	--	--	--	--	
2/10/2009	--		5.00	30.00	8.10	48.96	--	--	--	--	--	--	--	--	
5/7/2009	--		5.00	30.00	7.80	49.26	--	--	--	--	--	--	--	--	
9/3/2009	NP		5.00	30.00	9.40	47.66	<50	<0.50	<0.50	<0.50	<0.50	3.6	0.98	7.14	
3/23/2010	--		5.00	30.00	7.68	49.38	--	--	--	--	--	--	--	--	
8/16/2010	NP		5.00	30.00	9.30	47.76	<50	<0.50	<0.50	<0.50	<1.0	3.6	--	6.72	
3/18/2011	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	m
8/18/2011	--		5.00	30.00	--	--	--	--	--	--	--	--	--	--	m
2/29/2012	**--**		**5.00**	**30.00**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**m**
A-13															
6/21/2000	--	55.11	10.00	10.00	--	--	--	--	--	--	--	--	--	--	
9/20/2000	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
12/26/2000	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
3/20/2001	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
6/12/2001	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
9/23/2001	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
12/31/2001	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	
3/21/2002	--		10.00	10.00	6.70	48.41	--	--	--	--	--	--	--	--	
4/17/2002	--		10.00	10.00	7.95	47.16	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--	--	
8/12/2002	--		10.00	10.00	10.11	45.00	--	--	--	--	--	--	--	--	
12/6/2002	--		10.00	10.00	10.26	44.85	--	--	--	--	--	--	--	--	
1/30/2003	--		10.00	10.00	7.81	47.30	--	--	--	--	--	--	--	--	

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							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
A-13 Cont.															
5/28/2003	--	55.11	10.00	10.00	9.06	46.05	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.9	6.5	
8/6/2003	--		10.00	10.00	10.22	44.89	--	--	--	--	--	--	--	--	
11/14/2003	--		10.00	10.00	10.27	44.84	--	--	--	--	--	--	--	--	
02/02/2004	--	60.26	10.00	10.00	7.92	52.34	--	--	--	--	--	--	--	--	g
05/04/2004	--		10.00	10.00	10.06	50.20	--	--	--	--	--	--	--	--	
09/02/2004	P		10.00	10.00	10.34	49.92	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.0	6.6	
11/10/2004	--		10.00	10.00	8.95	51.31	--	--	--	--	--	--	--	--	
02/02/2005	--		10.00	10.00	7.28	52.98	--	--	--	--	--	--	--	--	
05/09/2005	--		10.00	10.00	7.85	52.41	--	--	--	--	--	--	--	--	
08/11/2005	--		10.00	10.00	9.70	50.56	--	--	--	--	--	--	--	--	
11/18/2005	--		10.00	10.00	9.27	50.99	--	--	--	--	--	--	--	--	
02/15/2006	--		10.00	10.00	7.24	53.02	--	--	--	--	--	--	--	--	
5/30/2006	--		10.00	10.00	8.38	51.88	--	--	--	--	--	--	--	--	
8/11/2006	--		10.00	10.00	9.55	50.71	--	--	--	--	--	--	--	--	
11/1/2006	--		10.00	10.00	9.98	50.28	--	--	--	--	--	--	--	--	
2/7/2007	--		10.00	10.00	9.07	51.19	--	--	--	--	--	--	--	--	
5/9/2007	--		10.00	10.00	8.15	52.11	--	--	--	--	--	--	--	--	
8/7/2007	--		10.00	10.00	10.05	50.21	--	--	--	--	--	--	--	--	
11/14/2007	--		10.00	10.00	9.20	51.06	--	--	--	--	--	--	--	--	
2/28/2008	--		10.00	10.00	6.82	53.44	--	--	--	--	--	--	--	--	
5/23/2008	--		10.00	10.00	9.67	50.59	--	--	--	--	--	--	--	--	
8/13/2008	--		10.00	10.00	10.17	50.09	--	--	--	--	--	--	--	--	
11/19/2008	--		10.00	10.00	9.63	50.63	--	--	--	--	--	--	--	--	
2/10/2009	--		10.00	10.00	8.48	51.78	--	--	--	--	--	--	--	--	
5/7/2009	--		10.00	10.00	7.97	52.29	--	--	--	--	--	--	--	--	
9/3/2009	--		10.00	10.00	10.14	50.12	--	--	--	--	--	--	--	--	
3/23/2010	--		10.00	10.00	7.29	52.97	--	--	--	--	--	--	--	--	
8/16/2010	--		10.00	10.00	9.92	50.34	--	--	--	--	--	--	--	--	
3/18/2011	--		10.00	10.00	6.33	53.93	--	--	--	--	--	--	--	--	
8/18/2011	--		10.00	10.00	--	--	--	--	--	--	--	--	--	--	e

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							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE			
A-13 Cont.															
2/29/2012	--	**60.26**	**10.00**	**10.00**	--	--	--	--	--	--	--	--	--	--	**e**
AR-1															
6/21/2000	--	54.72	10.00	30.00	--	--	--	--	--	--	--	--	--	--	
9/20/2000	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	
12/26/2000	--		10.00	30.00	9.95	44.77	--	--	--	--	--	--	--	--	
3/20/2001	--		10.00	30.00	8.34	46.38	--	--	--	--	--	--	--	--	
6/12/2001	--		10.00	30.00	10.17	44.55	--	--	--	--	--	--	--	--	
9/23/2001	--		10.00	30.00	10.72	44.00	--	--	--	--	--	--	--	--	
12/31/2001	--		10.00	30.00	5.91	48.81	--	--	--	--	--	--	--	--	
3/21/2002	--		10.00	30.00	7.00	47.72	--	--	--	--	--	--	--	--	
4/17/2002	--		10.00	30.00	8.33	46.39	--	--	--	--	--	--	--	--	
8/12/2002	--		10.00	30.00	10.18	44.54	--	--	--	--	--	--	--	--	
12/6/2002	--		10.00	30.00	10.21	44.51	--	--	--	--	--	--	--	--	
1/30/2003	--		10.00	30.00	8.22	46.50	--	--	--	--	--	--	--	--	
5/28/2003	--		10.00	30.00	9.62	45.10	--	--	--	--	--	--	--	--	
8/6/2003	--		10.00	30.00	10.47	44.25	--	--	--	--	--	--	--	--	
11/14/2003	--		10.00	30.00	10.40	44.32	--	--	--	--	--	--	--	--	d
02/02/2004	--	59.52	10.00	30.00	7.96	51.56	--	--	--	--	--	--	--	--	d, g
05/04/2004	--		10.00	30.00	10.17	49.35	--	--	--	--	--	--	--	--	d
09/02/2004	--		10.00	30.00	10.28	49.24	--	--	--	--	--	--	--	--	
11/10/2004	--		10.00	30.00	9.15	50.37	--	--	--	--	--	--	--	--	
02/02/2005	--		10.00	30.00	7.80	51.72	--	--	--	--	--	--	--	--	
05/09/2005	--		10.00	30.00	7.03	52.49	--	--	--	--	--	--	--	--	
08/11/2005	--		10.00	30.00	9.82	49.70	--	--	--	--	--	--	--	--	
11/18/2005	--		10.00	30.00	9.83	49.69	--	--	--	--	--	--	--	--	
02/15/2006	--		10.00	30.00	7.78	51.74	--	--	--	--	--	--	--	--	
5/30/2006	--		10.00	30.00	8.65	50.87	--	--	--	--	--	--	--	--	
8/11/2006	--		10.00	30.00	9.69	49.83	--	--	--	--	--	--	--	--	
11/1/2006	--		10.00	30.00	10.07	49.45	--	--	--	--	--	--	--	--	
2/7/2007	--		10.00	30.00	9.33	50.19	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-1 Cont.															
5/9/2007	--	59.52	10.00	30.00	8.45	51.07	--	--	--	--	--	--	--	--	
8/7/2007	--		10.00	30.00	10.12	49.40	--	--	--	--	--	--	--	--	
11/14/2007	--		10.00	30.00	9.31	50.21	--	--	--	--	--	--	--	--	
2/28/2008	--		10.00	30.00	7.05	52.47	--	--	--	--	--	--	--	--	
5/23/2008	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	j
8/13/2008	--		10.00	30.00	10.20	49.32	--	--	--	--	--	--	--	--	
11/19/2008	--		10.00	30.00	9.73	49.79	--	--	--	--	--	--	--	--	
2/10/2009	--		10.00	30.00	8.61	50.91	--	--	--	--	--	--	--	--	
5/7/2009	--		10.00	30.00	8.17	51.35	--	--	--	--	--	--	--	--	
9/3/2009	--		10.00	30.00	10.19	49.33	--	--	--	--	--	--	--	--	
3/23/2010	--		10.00	30.00	7.61	51.91	--	--	--	--	--	--	--	--	
8/16/2010	--		10.00	30.00	9.88	49.64	--	--	--	--	--	--	--	--	
3/18/2011	--		10.00	30.00	6.26	53.26	--	--	--	--	--	--	--	--	
8/18/2011	--		10.00	30.00	9.45	50.07	--	--	--	--	--	--	--	--	
2/29/2012	--		**10.00**	**30.00**	**8.99**	**50.53**	--	--	--	--	--	--	--	--	
AR-2															
6/21/2000	--	54.77	8.00	28.00	--	--	--	--	--	--	--	--	--	--	
9/20/2000	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	
12/26/2000	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	
3/20/2001	--		8.00	28.00	3.13	51.64	--	--	--	--	--	--	--	--	
6/12/2001	--		8.00	28.00	4.51	50.26	--	--	--	--	--	--	--	--	
9/23/2001	--		8.00	28.00	6.05	48.72	--	--	--	--	--	--	--	--	
12/31/2001	--		8.00	28.00	2.79	51.98	--	--	--	--	--	--	--	--	
3/21/2002	--		8.00	28.00	7.75	47.02	--	--	--	--	--	--	--	--	
4/17/2002	--		8.00	28.00	2.24	52.53	--	--	--	--	--	--	--	--	
8/12/2002	--		8.00	28.00	4.93	49.84	--	--	--	--	--	--	--	--	
12/6/2002	--		8.00	28.00	6.09	48.68	--	--	--	--	--	--	--	--	
1/30/2003	--		8.00	28.00	3.89	50.88	--	--	--	--	--	--	--	--	
5/28/2003	--		8.00	28.00	3.33	51.44	--	--	--	--	--	--	--	--	
8/6/2003	--		8.00	28.00	5.05	49.72	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-2 Cont.															
11/14/2003	--	54.77	8.00	28.00	6.01	48.76	--	--	--	--	--	--	--	--	
02/02/2004	--	59.18	8.00	28.00	3.88	55.30	--	--	--	--	--	--	--	--	g
05/04/2004	--		8.00	28.00	6.01	53.17	--	--	--	--	--	--	--	--	
09/02/2004	--		8.00	28.00	5.65	53.53	--	--	--	--	--	--	--	--	
11/10/2004	--		8.00	28.00	5.48	53.70	--	--	--	--	--	--	--	--	
02/02/2005	--		8.00	28.00	2.62	56.56	--	--	--	--	--	--	--	--	
05/09/2005	--		8.00	28.00	2.84	56.34	--	--	--	--	--	--	--	--	
08/11/2005	--		8.00	28.00	4.33	54.85	--	--	--	--	--	--	--	--	
11/18/2005	--		8.00	28.00	5.34	53.84	--	--	--	--	--	--	--	--	
02/15/2006	--		8.00	28.00	2.49	56.69	--	--	--	--	--	--	--	--	
5/30/2006	--		8.00	28.00	3.02	56.16	--	--	--	--	--	--	--	--	
8/11/2006	--		8.00	28.00	4.32	54.86	--	--	--	--	--	--	--	--	
11/1/2006	--		8.00	28.00	5.25	53.93	--	--	--	--	--	--	--	--	
2/7/2007	--		8.00	28.00	4.64	54.54	--	--	--	--	--	--	--	--	
5/9/2007	--		8.00	28.00	3.15	56.03	--	--	--	--	--	--	--	--	
8/7/2007	--		8.00	28.00	4.55	54.63	--	--	--	--	--	--	--	--	
11/14/2007	--		8.00	28.00	5.03	54.15	--	--	--	--	--	--	--	--	
2/28/2008	--		8.00	28.00	1.82	57.36	--	--	--	--	--	--	--	--	
5/23/2008	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	j
8/13/2008	--		8.00	28.00	5.05	54.13	--	--	--	--	--	--	--	--	
11/19/2008	--		8.00	28.00	5.49	53.69	--	--	--	--	--	--	--	--	
2/10/2009	--		8.00	28.00	5.10	54.08	--	--	--	--	--	--	--	--	
5/7/2009	--		8.00	28.00	2.90	56.28	--	--	--	--	--	--	--	--	
9/3/2009	--		8.00	28.00	5.99	53.19	--	--	--	--	--	--	--	--	
3/23/2010	--		8.00	28.00	1.94	57.24	--	--	--	--	--	--	--	--	
8/16/2010	--		8.00	28.00	4.37	54.81	--	--	--	--	--	--	--	--	
3/18/2011	--		8.00	28.00	--	--	--	--	--	--	--	--	--	--	j
8/18/2011	--		8.00	28.00	3.79	55.39	--	--	--	--	--	--	--	--	
2/29/2012	--		**8.00**	**28.00**	**4.11**	**55.07**	--	--	--	--	--	--	--	--	
AR-3															

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-3 Cont.															
6/21/2000	--	54.19	10.00	30.00	--	--	--	--	--	--	--	--	--	--	
9/20/2000	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	
12/26/2000	--		10.00	30.00	9.70	44.49	--	--	--	--	--	--	--	--	
3/20/2001	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	
6/12/2001	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	
9/23/2001	--		10.00	30.00	10.43	43.76	--	--	--	--	--	--	--	--	
12/31/2001	--		10.00	30.00	5.18	49.01	--	--	--	--	--	--	--	--	
3/21/2002	--		10.00	30.00	6.78	47.41	--	--	--	--	--	--	--	--	
4/17/2002	--		10.00	30.00	8.06	46.13	--	--	--	--	--	--	--	--	
8/12/2002	--		10.00	30.00	9.94	44.25	--	--	--	--	--	--	--	--	
12/6/2002	--		10.00	30.00	9.99	44.20	--	--	--	--	--	--	--	--	
1/30/2003	--		10.00	30.00	7.96	46.23	--	--	--	--	--	--	--	--	
5/28/2003	--		10.00	30.00	8.94	45.25	--	--	--	--	--	--	--	--	
8/6/2003	--		10.00	30.00	9.94	44.25	--	--	--	--	--	--	--	--	
11/14/2003	--		10.00	30.00	10.03	44.16	--	--	--	--	--	--	--	--	
02/02/2004	--	59.10	10.00	30.00	6.90	52.20	--	--	--	--	--	--	--	--	g
05/04/2004	--		10.00	30.00	9.12	49.98	--	--	--	--	--	--	--	--	
09/02/2004	--		10.00	30.00	10.15	48.95	--	--	--	--	--	--	--	--	
11/10/2004	--		10.00	30.00	8.79	50.31	--	--	--	--	--	--	--	--	
02/02/2005	--		10.00	30.00	7.30	51.80	--	--	--	--	--	--	--	--	
05/09/2005	--		10.00	30.00	7.71	51.39	--	--	--	--	--	--	--	--	
08/11/2005	--		10.00	30.00	9.54	49.56	--	--	--	--	--	--	--	--	
11/18/2005	--		10.00	30.00	9.43	49.67	--	--	--	--	--	--	--	--	
02/15/2006	--		10.00	30.00	7.50	51.60	--	--	--	--	--	--	--	--	
5/30/2006	--		10.00	30.00	8.82	50.28	--	--	--	--	--	--	--	--	
8/11/2006	--		10.00	30.00	9.38	49.72	--	--	--	--	--	--	--	--	
11/1/2006	--		10.00	30.00	9.75	49.35	--	--	--	--	--	--	--	--	
2/7/2007	--		10.00	30.00	9.00	50.10	--	--	--	--	--	--	--	--	
5/9/2007	--		10.00	30.00	8.12	50.98	--	--	--	--	--	--	--	--	
8/7/2007	--		10.00	30.00	9.75	49.35	--	--	--	--	--	--	--	--	

Table 1. Summary of Groundwater Monitoring Data: Relative Water Elevations and Laboratory Analyses

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	P/NP	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet)	Water Level Elevation (feet)	Concentrations in µg/L						DO (mg/L)	pH	Footnote
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE			
AR-3 Cont.															
11/14/2007	--	59.10	10.00	30.00	8.91	50.19	--	--	--	--	--	--	--	--	
2/28/2008	--		10.00	30.00	6.73	52.37	--	--	--	--	--	--	--	--	
5/23/2008	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	j
8/13/2008	--		10.00	30.00	9.85	49.25	--	--	--	--	--	--	--	--	
11/19/2008	--		10.00	30.00	9.35	49.75	--	--	--	--	--	--	--	--	
2/10/2009	--		10.00	30.00	8.29	50.81	--	--	--	--	--	--	--	--	
5/7/2009	--		10.00	30.00	7.83	51.27	--	--	--	--	--	--	--	--	
9/3/2009	--		10.00	30.00	9.80	49.30	--	--	--	--	--	--	--	--	
3/23/2010	--		10.00	30.00	7.34	51.76	--	--	--	--	--	--	--	--	
8/16/2010	--		10.00	30.00	--	--	--	--	--	--	--	--	--	--	Unable to open
3/18/2011	--		10.00	30.00	6.00	53.10	--	--	--	--	--	--	--	--	
8/18/2011	--		10.00	30.00	9.11	49.99	--	--	--	--	--	--	--	--	
2/29/2012	**--**		**10.00**	**30.00**	**8.65**	**50.45**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = feet below ground surface
GRO = Gasoline range organics
GWE = Groundwater elevation measured in ft
mg/L = Milligrams per liter
MTBE = Methyl tert butyl ether
NP = Not purged prior to sampling
P = Purged prior to sampling
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

Footnotes:
a = Hydrocarbon pattern is present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel for GRO/TPH-g
b = The concentration indicated for this analyte (MTBE) was an estimated value above the calibration range of the instrument
c = This sample was analyzed beyond the EPA recommended holding time. The results may still be useful for their intended purpose
d = ORC sock in well
e = Well inaccessible; well paved over
f = Sheen in well
g = Well surveyed to NAVD '88 datum on January 28, 2004
h = Possible low bias due to CCV falling outside acceptance criteria for GRO
i = Hydrocarbon result partly due to individual peak(s) in quantitative range for GRO
j = Well inaccessible
k = Sample taken from VOA vial with air bubble > 6mm diameter
l = Incorrect TOC utilized in 2nd and 3rd Quarter 2009 Groundwater Monitoring Report
m = Well inaccessible; need traffic control

Notes:
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

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-2									
6/21/2000	--	--	<3.0	--	--	--	--	--	
9/20/2000	--	--	<2.5	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
3/20/2001	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	<2.5	--	--	--	--	--	
9/23/2001	--	--	<2.5	--	--	--	--	--	
12/31/2001	--	--	<2.5	--	--	--	--	--	
3/21/2002	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	3.1	--	--	--	--	--	
8/12/2002	--	--	<0.50	--	--	--	--	--	
12/6/2002	--	--	6	--	--	--	--	--	
1/30/2003	<40	<20	<0.50	<0.50	<0.50	<0.50	--	--	a
5/28/2003	<100	<20	1.1	<0.50	<0.50	<0.50	--	--	
8/6/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/11/2006	<300	<20	3.6	<0.50	<0.50	<0.50	<0.50	<0.50	
8/7/2007	<300	<20	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	19	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	12	<0.50	<0.50	<0.50	<0.50	<0.50	d
8/16/2010	<100	<4.0	6.1	<0.50	<0.50	<0.50	<0.50	<0.50	
8/18/2011	--	--	0.74	--	--	--	--	--	
A-3									
6/21/2000	--	--	46	--	--	--	--	--	
9/20/2000	--	--	89.6	--	--	--	--	--	
12/26/2000	--	--	7.11	--	--	--	--	--	
6/12/2001	--	--	86	--	--	--	--	--	
12/31/2001	--	--	60	--	--	--	--	--	
4/17/2002	--	--	45	--	--	--	--	--	
12/6/2002	--	--	150	--	--	--	--	--	
5/28/2003	<100	<20	43	<0.50	<0.50	24	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-3 Cont.									
02/02/2004	<100	<20	13	<0.50	<0.50	4.6	<0.50	<0.50	
09/02/2004	<500	<100	62	<2.5	<2.5	15	<2.5	<2.5	
02/02/2005	<100	<20	6.8	<0.50	<0.50	2.4	<0.50	<0.50	b
08/11/2005	<100	<20	39	<0.50	<0.50	4.2	<0.50	<0.50	
02/15/2006	<300	<20	2.2	<0.50	<0.50	0.58	<0.50	<0.50	
8/11/2006	<300	<20	4.1	<0.50	<0.50	<0.50	<0.50	<0.50	
2/7/2007	<300	<20	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	
8/7/2007	<300	<20	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	b
2/28/2008	<300	<10	0.58	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2008	<300	<10	0.55	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
3/23/2010	<100	<4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	<4.0	0.72	<0.50	<0.50	<0.50	<0.50	<0.50	
3/18/2011	--	--	<0.50	--	--	--	--	--	
8/18/2011	--	--	<0.50	--	--	--	--	--	
2/29/2012	**--**	**--**	**<0.50**	**--**	**--**	**--**	**--**	**--**	
A-4									
6/21/2000	--	--	2,000	--	--	--	--	--	
9/20/2000	--	--	1,940	--	--	--	--	--	
12/26/2000	--	--	1,210	--	--	--	--	--	
3/20/2001	--	--	<25	--	--	--	--	--	
6/12/2001	--	--	4,700	--	--	--	--	--	
9/23/2001	--	--	3,000	--	--	--	--	--	
12/31/2001	--	--	880	--	--	--	--	--	
3/21/2002	--	--	1,400	--	--	--	--	--	
4/17/2002	--	--	2,200	--	--	--	--	--	
8/12/2002	--	--	2,100	--	--	--	--	--	
12/6/2002	--	--	2,000	--	--	--	--	--	
1/30/2003	<4,000	<2,000	2,100	<50	<50	530	--	--	a
5/28/2003	<10,000	<2,000	2,500	<50	<50	590	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-4 Cont.									
8/6/2003	<5,000	<1,000	2,500	<25	<25	560	<25	<25	
11/14/2003	<1,000	320	310	<5.0	<5.0	76	--	--	
02/02/2004	<5,000	<1,000	1,500	<25	<25	350	<25	<25	
05/04/2004	<10,000	<2,000	2,300	<50	<50	510	<50	<50	
09/02/2004	<5,000	1,200	1,200	<25	<25	280	<25	<25	
11/10/2004	<2,000	910	1,100	<10	<10	270	<10	<10	
02/02/2005	<2,000	2,100	1,700	<10	<10	430	<10	<10	b
05/09/2005	<10,000	2,000	1,800	<50	<50	460	<50	<50	
08/11/2005	<2,000	2,400	1,200	<10	<10	310	<10	<10	
11/18/2005	<500	1,400	310	<2.5	<2.5	98	<2.5	<2.5	b
02/15/2006	<1,500	2,700	910	<2.5	<2.5	270	<2.5	<2.5	
5/30/2006	<6,000	3,000	1,200	<10	<10	340	<10	<10	
8/11/2006	<6,000	3,200	1,200	<10	<10	350	<10	<10	
11/1/2006	<6,000	1,700	360	<10	<10	95	<10	--	b
2/7/2007	<6,000	3,000	1,500	<10	<10	460	<10	<10	
5/9/2007	<6,000	2,200	340	<10	<10	91	<10	<10	
8/7/2007	<3,000	1,800	510	<5.0	<5.0	140	<5.0	<5.0	b
11/14/2007	<300	600	280	<0.50	<0.50	90	<0.50	<0.50	
2/28/2008	<300	1,600	350	<0.50	<0.50	73	<0.50	<0.50	
5/23/2008	<12,000	2,500	1,000	<20	<20	270	<20	<20	
8/13/2008	<6,000	3,200	530	<10	<10	190	<10	<10	
11/19/2008	<6,000	2,000	430	<10	<10	140	<10	<10	
2/10/2009	<6,000	2,300	400	<10	<10	120	<10	<10	
5/7/2009	<300	11	9.9	<0.50	<0.50	2.0	<0.50	<0.50	
9/3/2009	<6,000	3,200	360	<10	<10	120	<10	<10	
3/23/2010	<100	1,600	150	<0.50	<0.50	45	<0.50	<0.50	
8/16/2010	<100	3,400	160	<0.50	<0.50	47	<0.50	<0.50	
3/18/2011	<250	1,400	66	<0.50	<0.50	18	<0.50	<0.50	
8/18/2011	<250	1,400	53	<0.50	<0.50	15	<0.50	<0.50	
2/29/2012	**<250**	**2,200**	**140**	**<0.50**	**<0.50**	**38**	**<0.50**	**<0.50**	
A-5									

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-5 Cont.									
6/21/2000	--	--	2,000	--	--	--	--	--	
12/26/2000	--	--	1,200	--	--	--	--	--	
6/12/2001	--	--	3,200	--	--	--	--	--	
12/31/2001	--	--	60	--	--	--	--	--	
4/17/2002	--	--	3,200	--	--	--	--	--	
12/6/2002	--	--	330	--	--	--	--	--	
5/28/2003	<10,000	<2,000	1,500	<50	<50	620	--	--	
02/02/2004	<500	170	140	<2.5	<2.5	54	<2.5	<2.5	
09/02/2004	<500	150	66	<2.5	<2.5	29	<2.5	<2.5	
02/02/2005	<100	840	17	<0.50	<0.50	7.6	<0.50	<0.50	
08/11/2005	<100	530	6.8	<0.50	<0.50	7.1	<0.50	<0.50	
02/15/2006	<300	460	5.1	<0.50	<0.50	4.2	<0.50	<0.50	
8/11/2006	<300	1,100	12	<0.50	<0.50	5.0	<0.50	<0.50	
2/7/2007	<300	600	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/7/2007	<300	79	0.81	<0.50	<0.50	<0.50	<0.50	<0.50	b
2/28/2008	<300	230	0.97	<0.50	<0.50	<0.50	<0.50	<0.50	
8/13/2008	<300	33	0.69	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2009	<300	18	1.6	<0.50	<0.50	0.59	<0.50	<0.50	
9/3/2009	<300	<10	20	<0.50	<0.50	9.1	<0.50	<0.50	
3/23/2010	<100	33	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	35	7.9	<0.50	<0.50	3.1	<0.50	<0.50	
3/18/2011	--	--	<0.50	--	--	--	--	--	
8/18/2011	--	--	0.81	--	--	--	--	--	
2/29/2012	**--**	**--**	**<0.50**	**--**	**--**	**--**	**--**	**--**	
A-6									
6/21/2000	--	--	<3.0	--	--	--	--	--	
9/20/2000	--	--	<2.5	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
3/20/2001	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	7	--	--	--	--	--	
9/23/2001	--	--	<2.5	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-6 Cont.									
12/31/2001	--	--	3.2	--	--	--	--	--	
3/21/2002	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	3.1	--	--	--	--	--	
8/12/2002	--	--	<2.5	--	--	--	--	--	
11/14/2003	--	--	--	--	--	--	--	--	Well inaccessible
02/02/2004	--	--	--	--	--	--	--	--	Well inaccessible
05/04/2004	--	--	--	--	--	--	--	--	Well inaccessible
09/02/2004	--	--	--	--	--	--	--	--	Well inaccessible
11/10/2004	--	--	--	--	--	--	--	--	Well inaccessible
08/11/2005	--	--	--	--	--	--	--	--	Well inaccessible
8/11/2006	--	--	--	--	--	--	--	--	Well inaccessible
A-7									
6/21/2000	--	--	<3.0	--	--	--	--	--	
6/12/2001	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	2.5	--	--	--	--	--	
5/28/2003	<100	<20	3.8	<0.50	<0.50	0.94	--	--	
09/02/2004	<100	<20	8.9	<0.50	<0.50	3.0	<0.50	<0.50	
08/11/2005	<100	<20	18	<0.50	<0.50	4.4	<0.50	<0.50	
8/11/2006	<300	<20	3.6	<0.50	<0.50	0.91	0.54	<0.50	
8/7/2007	<300	<20	2.7	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	<4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/18/2011	--	--	<0.50	--	--	--	--	--	
A-8									
6/21/2000	--	--	1,500	--	--	--	--	--	
9/20/2000	--	--	4,410	--	--	--	--	--	
12/26/2000	--	--	2,230	--	--	--	--	--	
3/20/2001	--	--	2,880	--	--	--	--	--	
6/12/2001	--	--	2,900	--	--	--	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-8 Cont.									
9/23/2001	--	--	6,500	--	--	--	--	--	
12/31/2001	--	--	520	--	--	--	--	--	
3/21/2002	--	--	2,700	--	--	--	--	--	
4/17/2002	--	--	3,100	--	--	--	--	--	
8/12/2002	--	--	4,200	--	--	--	--	--	
12/6/2002	--	--	2,200	--	--	--	--	--	
1/30/2003	<8,000	<4,000	2,200	<100	<100	900	--	--	a
5/28/2003	<10,000	<2,000	2,100	<50	<50	1,100	--	--	
8/6/2003	<10,000	<2,000	3,000	<50	<50	1,200	<50	<50	
11/14/2003	<1,000	<200	850	<5.0	<5.0	320	--	--	
02/02/2004	<5,000	<1,000	1,100	<25	<25	380	<25	<25	
05/04/2004	<10,000	<2,000	1,600	<50	<50	440	<50	<50	
09/02/2004	<5,000	<1,000	680	<25	<25	170	<25	<25	
11/10/2004	<500	<100	290	<2.5	<2.5	66	<2.5	<2.5	
02/02/2005	<5,000	<1,000	1,900	<25	<25	510	<25	<25	b
05/09/2005	<100	<20	66	<0.50	<0.50	2.9	<0.50	<0.50	
08/11/2005	<2,500	<500	1,100	<12	<12	310	<12	<12	
11/18/2005	<1,000	<200	340	<5.0	<5.0	120	<5.0	<5.0	b
02/15/2006	<6,000	880	1,100	<10	<10	330	<10	<10	
5/30/2006	<1,500	<100	140	<2.5	<2.5	43	<2.5	<2.5	
8/11/2006	<3,000	<200	290	<5.0	<5.0	92	<5.0	<5.0	
11/1/2006	<3,000	1,200	910	<5.0	<5.0	250	<5.0	<5.0	
2/7/2007	<15,000	<1,000	1,200	<25	<25	330	<25	<25	
5/9/2007	<1,500	<100	55	<2.5	<2.5	16	<2.5	<2.5	
8/7/2007	<1,500	140	430	<2.5	<2.5	160	<2.5	<2.5	b
11/14/2007	<300	28	100	<0.50	<0.50	44	<0.50	<0.50	
2/28/2008	<3,000	230	220	<5.0	<5.0	72	<5.0	<5.0	
5/23/2008	--	--	--	--	--	--	--	--	c
8/13/2008	<15,000	<500	250	<25	<25	86	<25	<25	
11/19/2008	<12,000	<400	230	<20	<20	100	<20	<20	
2/10/2009	<15,000	<500	320	<25	<25	120	<25	<25	
5/7/2009	<600	20	12	<1.0	<1.0	3.3	<1.0	<1.0	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-8 Cont.									
9/3/2009	<15,000	<500	100	<25	<25	52	<25	<25	
3/23/2010	<100	<4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	<4.0	110	<0.50	<0.50	41	<0.50	<0.50	
3/18/2011	<250	220	87	<0.50	<0.50	43	<0.50	<0.50	
8/18/2011	<2,500	<40	120	<5.0	<5.0	57	<5.0	<5.0	
2/29/2012	--	**460**	**160**	--	--	**71**	--	--	
A-9									
6/21/2000	--	--	5	--	--	--	--	--	
9/20/2000	--	--	<2.5	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
3/20/2001	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	4.8	--	--	--	--	--	
9/23/2001	--	--	<2.5	--	--	--	--	--	
12/31/2001	--	--	<2.5	--	--	--	--	--	
3/21/2002	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
8/12/2002	--	--	<2.5	--	--	--	--	--	
12/6/2002	--	--	<2.0	--	--	--	--	--	
1/30/2003	<40	<20	1.1	<0.50	<0.50	<0.50	--	--	
5/28/2003	<100	<20	0.74	<0.50	<0.50	<0.50	--	--	
8/6/2003	<100	<20	1.8	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	1.5	<0.50	<0.50	<0.50	<0.50	<0.50	
8/11/2006	<300	<20	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
8/7/2007	<300	<20	0.64	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	<4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/18/2011	--	--	<0.50	--	--	--	--	--	
A-10									

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-10 Cont.									
09/02/2004	<1,000	<200	270	<5.0	<5.0	44	<5.0	<5.0	
08/11/2005	<100	<20	97	<0.50	<0.50	14	<0.50	<0.50	
8/11/2006	<300	<20	46	<0.50	<0.50	7.3	<0.50	<0.50	
8/7/2007	<300	<20	8.9	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	28	<0.50	<0.50	6.9	<0.50	<0.50	
8/16/2010	<100	<4.0	3.9	<0.50	<0.50	<0.50	<0.50	<0.50	
8/18/2011	--	--	2.1	--	--	--	--	--	
A-11									
6/21/2000	--	--	4	--	--	--	--	--	
12/26/2000	--	--	<2.5	--	--	--	--	--	
6/12/2001	--	--	<2.5	--	--	--	--	--	
12/31/2001	--	--	<2.5	--	--	--	--	--	
4/17/2002	--	--	<2.5	--	--	--	--	--	
12/6/2002	--	--	<2.0	--	--	--	--	--	
5/28/2003	<100	<20	0.53	<0.50	<0.50	<0.50	--	--	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
08/11/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/11/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/7/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
8/16/2010	<100	<4.0	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
A-12									
6/21/2000	--	--	18	--	--	--	--	--	
12/26/2000	--	--	17.3	--	--	--	--	--	
6/12/2001	--	--	25	--	--	--	--	--	
12/31/2001	--	--	9.5	--	--	--	--	--	
4/17/2002	--	--	29	--	--	--	--	--	
12/06/02	--	--	13	--	--	--	--	--	
5/28/2003	<100	<20	10	<0.50	<0.50	2.5	--	--	

Table 2. Summary of Fuel Additives Analytical Data

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Well ID and Date Monitored	Concentrations in µg/L								Footnote
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
A-12 Cont.									
02/02/2004	<100	<20	0.91	<0.50	<0.50	<0.50	<0.50	<0.50	
09/02/2004	<100	<20	6.2	<0.50	<0.50	1.7	<0.50	<0.50	
02/02/2005	<100	<20	8.3	<0.50	<0.50	2.2	<0.50	<0.50	b
08/11/2005	<100	<20	5.4	<0.50	<0.50	1.1	<0.50	<0.50	
8/11/2006	<300	<20	7.4	<0.50	<0.50	2.5	<0.50	<0.50	
8/7/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	b
8/13/2008	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	<10	3.6	<0.50	<0.50	1.0	<0.50	<0.50	
8/16/2010	<100	<4.0	3.6	<0.50	<0.50	0.85	<0.50	<0.50	
A-13									
4/17/2002	--	--	<2.5	--	--	--	--	--	
5/28/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	--	--	
09/02/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
AR-1									
AR-2									
AR-3									

Symbols & Abbreviations:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above the laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Diisopropyl ether
EDB = 1,2-Dibromoethane
ETBE = Ethyl tert-butyl ether
MTBE = Methyl tert-butyl ether
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = Micrograms per Liter

Footnotes:
a = The result for TBA was reported with a possible high bias due to the continuing calibration verification falling outside acceptance criteria
b = The calibration verification for ethanol was within the method limits but outside the contract limits
c = Well Inaccessible
d = Sample taken from VOA vial with air bubble > 6mm diameter

Notes:
All volatile organic compounds analyzed using EPA Method 8260B

The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

Table 3. Historical Groundwater Gradient - Direction and Magnitude

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
6/21/2000	West-Southwest	0.031
9/20/2000	Southwest	0.013
12/26/2000	West	0.028
3/20/2001	West	0.046
6/12/2001	West	0.014
9/23/2001	West	0.012
12/31/2001	West	0.024
3/21/2002	West	0.047
4/17/2002	West	0.03
8/12/2002	West	0.016
12/6/2002	West	0.015
1/30/2003	West	Variable
5/28/2003	West	0.022 a
8/6/2003	West-Southwest	0.018
11/14/2003	West	0.02
2/2/2004	West	0.04
5/4/2004	West to North	0.025 to 0.033
9/2/2004	West	0.033
11/10/2004	West	0.031
2/2/2005	West-Southwest	0.04
5/9/2005	Northwest-Southwest	0.04
8/11/2005	West	0.02
11/18/2005	West	0.03
2/15/2006	Southwest	0.04
5/30/2006	West	0.05
8/11/2006	West	0.01
11/1/2006	West	0.01
2/7/2007	West	0.02
5/9/2007	West	0.05
8/7/2007	West	0.02
11/14/2007	West	0.02
2/28/2008	West	0.05
5/23/2008	West	0.03
8/13/2008	West	0.01
11/19/2008	West-Southwest	0.02
2/10/2009	West	0.02
5/7/2009	West	0.03
9/3/2009	West	0.01
3/23/2010	West	0.03
8/16/2010	West-Southwest	0.01
3/18/2011	West-Northwest	0.04
8/18/2011	West	0.03

Table 3. Historical Groundwater Gradient - Direction and Magnitude

ARCO Service Station #4931, 731 West MacArthur Blvd., Oakland, CA

Date Measured	Approximate Gradient Direction	Approximate Gradient Magnitude (ft/ft)
2/29/2012	**West**	**0.04**

Footnotes:
a = Using wells AR-1 and A-9

Notes:
The data within this table collected prior to April 2006 was provided to Broadbent & Associates, Inc. by Atlantic Richfield Company and their previous consultants. Broadbent & Associates, Inc. has not verified the accuracy of this information

APPENDIX A

FIELD METHODS

QUALITY ASSURANCE/QUALITY CONTROL
FIELD METHODS

Field methods discussed herein were implemented to provide for accuracy and reliability of field activities, data collection, sample collection, and handling. Discussion of these methods is provided below.

1.0 Equipment Calibration

Equipment calibration was performed per equipment manufacturer specifications before use.

2.0 Depth to Groundwater and Light Non-Aqueous Phase Liquid Measurement

Depth to groundwater was measured in wells identified for gauging in the scope of work using a decontaminated water level indicator. The depth to water measurement was taken from a cut notch or permanent mark at the top of the well casing to which the well head elevation was originally surveyed.

Once depth to water was measured, an oil/water interface meter or a new disposable bailer was utilized to evaluate the presence and, if present, to measure the "apparent" thickness of light non-aqueous phase liquid (LNAPL) in the well. If LNAPL was present in the well, groundwater purging and sampling were not performed, unless sampling procedures in the scope of work specified collection of samples in the presence of LNAPL. Otherwise, time allowing, LNAPL was bailed from the well using either a new disposable bailer, or the disposal bailer previously used for initial LNAPL assessment. Bailing of LNAPL continued until the thickness of LNAPL (or volume) stabilized in each bailer pulled from the well, or LNAPL was no longer present. After LNAPL thickness either stabilized or was eliminated, periodic depth to water and depth to LNAPL measurements were collected as product came back into the well to evaluate product recovery rate and to aid in further assessment of LNAPL in the subsurface. LNAPL thickness measurements were recorded as "apparent." If a bailer was used for LNAPL thickness measurement, the field sampler noted the bailer entry diameter and chamber diameter to enable correction of thickness measurements. Recovered LNAPL was stored on-site in a labeled steel drum(s) or other appropriate container(s) prior to disposal.

3.0 Well Purging and Groundwater Sample Collection

Well purging and groundwater sampling were performed in wells specified in the scope of work after measuring depth to groundwater and evaluating the presence of LNAPL. Purging and sampling were performed using one of the methods detailed below. The method used was noted in the field records. Purge water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal or on-site treatment (in cases where treatment using an on-site system is authorized).

3.1 Purging a Predetermined Well Volume

Purging a predetermined well volume is performed per ASTM International (ASTM) D4448-01. This purging method has the objective of removing a predetermined volume of stagnant water from the well prior to sampling. The volume of stagnant water

is defined as either the volume of water contained within the well casing, or the volume within the well casing and sand/gravel in the annulus if natural flow through these is deemed insufficient to keep them flushed out.

This purging method involves removal of a minimum of three stagnant water volumes from the well using a decontaminated pump with new disposable plastic discharge or suction tubing, dedicated well tubing, or using a new disposable or decontaminated reusable bailer. If a new disposable bailer was used for assessment of LNAPL, that bailer may be used for purging. The withdrawal rate used is one that minimizes drawdown while satisfying time constraints.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. Parameters are considered stable when two (2) consecutive readings recorded three (3) minutes apart fall within ranges provided below in Table 1. In the event that the parameters have not stabilized and five (5) well casing volumes have been removed, purging activities will cease and be considered complete. Once the well is purged, a groundwater sample(s) is collected from the well using a new disposable bailer. If a new disposable bailer was used for purging, that bailer may be used to collect the sample(s). A sample is not collected if the well is inadvertently purged dry.

Table 1. Criteria for Defining Stabilization of Water-Quality Indicator Parameters

Parameter	Stabilization Criterion
Temperature	± 0.2ºC (± 0.36ºF)
pH	± 0.1 standard units
Conductivity	± 3%
Dissolved oxygen	± 10%
Oxidation reduction potential	± 10 mV
Turbidity[1]	± 10% or 1.0 NTU (whichever is greater)

3.2 Low-Flow Purging and Sampling

“Low-Flow”, “Minimal Drawdown”, or "Low-Stress” purging is performed per ASTM D6771-02. It is a method of groundwater removal from within a well’s screened interval that is intended to minimize drawdown and mixing of the water column in the well casing. This is accomplished by pumping the well using a decontaminated pump with new disposable plastic discharge or suction tubing or dedicated well tubing at a low flow rate while evaluating the groundwater elevation during pumping.

[1] As stated in ASTM D6771-02, turbidity is not a chemical parameter and not indicative of when formation-quality water is being purged; however, turbidity may be helpful in evaluating stress on the formation during purging. Turbidity measurements are taken at the same time that stabilization parameter measurements are made, or, at a minimum, once when purging is initiated and again just prior to sample collection, after stabilization parameters have stabilized. To avoid artifacts in sample analysis, turbidity should be as low as possible when samples are collected. If turbidity values are persistently high, the withdrawal rate is lowered until turbidity decreases. If high turbidity persists even after lowering the withdrawal rate, the purging is stopped for a period of time until turbidity settles, and the purging process is then restarted. If this fails to solve the problem, the purging/sampling process for the well is ceased, and well maintenance or redevelopment is considered.

The low flow pumping rate is well specific and is generally established at a volume that is less than or equal to the natural recovery rate of the well. A pump with adjustable flow rate control is positioned with the intake at or near the mid-point of the submerged well screen. The pumping rate used during low-flow purging is low enough to minimize mobilization of particulate matter and drawdown (stress) of the water column. Low-flow purging rates will vary based on the individual well characteristics; however, the purge rate should not exceed 1.0 Liter per minute (L/min) or 0.25 gallon per minute (gal/min). Low-flow purging should begin at a rate of approximately 0.1 L/min (0.03 gal/min)[2], or the lowest rate possible, and be adjusted based on an evaluation of drawdown. Water level measurements should be recorded at approximate one (1) to two (2) minute intervals until the low-flow rate has been established, and drawdown is minimized. As a general rule, drawdown should not exceed 25% of the distance between the top of the water column and the pump in-take.

To evaluate when purging is complete, one or more groundwater stabilization parameters are monitored and recorded during purging activities until stabilization is achieved. Most commonly, stabilization parameters include temperature, conductivity, and pH, but field procedures detailed in the scope of work may also include monitoring of dissolved oxygen concentrations, oxidation reduction potential, and/or turbidity[1]. The frequency between measurements will be at an interval of one (1) to three (3) minutes; however, if a flow cell is used, the frequency will be determined based on the time required to evacuate one cell volume. Stabilization is defined as three (3) consecutive readings recorded several minutes apart falling within ranges provided in Table 1. Samples will be collected by filling appropriate containers from the pump discharge tubing at a rate not to exceed the established pumping rate.

3.3 Minimal Purge, Discrete Depth, and Passive Sampling

Per ASTM D4448-01, sampling techniques that do not rely on purging, or require only minimal purging, may be used if a particular zone within a screened interval is to be sampled or if a well is not capable of yielding sufficient groundwater for purging. To properly use these sampling techniques, a water sample is collected within the screened interval with little or no mixing of the water column within the casing. These techniques include minimal purge sampling which uses a dedicated sampling pump capable of pumping rates of less than 0.1 L/min (0.03 gal/min)[2], discrete depth sampling using a bailer that allows groundwater entry at a controlled depth (e.g. differential pressure bailer), or passive (diffusion) sampling. These techniques are based on certain studies referenced in ASTM D4448-01 that indicate that under certain conditions, natural groundwater flow is laminar and horizontal with little or no mixing within the well screen.

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[2] According to ASTM D4448-01, studies have indicated that at flow rates of 0.1 L/min, low-density polyethylene (LDPE) and plasticized polypropylene tubing materials are prone to sorption. Therefore, TFE-fluorocarbon or other appropriate tubing material is used, particularly when tubing lengths of 50 feet or longer are used.

4.0 Decontamination

Reusable groundwater sampling equipment were cleaned using a solution of Alconox or other acceptable detergent, rinsed with tap water, and finally rinsed with distilled water prior to use in each well. Decontamination water was stored on-site in labeled steel drum(s) or other appropriate container(s) prior to disposal.

5.0 Sample Containers, Labeling, and Storage

Samples were collected in laboratory prepared containers with appropriate preservative (if preservative was required). Samples were properly labeled (site name, sample I.D., sampler initials, date, and time of collection) and stored chilled (refrigerator or ice chest with ice) until delivery to a certified laboratory, under chain of custody procedures.

6.0 Chain of Custody Record and Procedure

The field sampler was personally responsible for care and custody of the samples collected until they were properly transferred to another party. To document custody and transfer of samples, a Chain of Custody Record was prepared. The Chain of Custody Record provided identification of the samples corresponding to sample labels and specified analyses to be performed by the laboratory. The original Chain of Custody Record accompanied the shipment, and a copy of the record was stored in the project file. When the samples were transferred, the individuals relinquishing and receiving them signed, dated, and noted the time of transfer on the record.

7.0 Field Records

Daily Report and data forms were completed by staff personnel to provide daily record of significant events, observations, and measurements. Field records were signed, dated, and stored in the project file.

APPENDIX B

FIELD DATA SHEETS
AND
NON-HAZARDOUS WASTE DATA FORM

BROADBENT & ASSOCIATES, INC.
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

GROUNDWATER MONITORING SITE SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/29/12

Field Representative: JR 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					LAB ANALYSES						
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					1024			8.42	19.41							
A-3					1010			7.22	16.18							
A-4					1106			6.70	19.40							
A-5					0900			8.12	24.31							
A-7					1057			8.00	29							
A-8					0925			8.19	22.43							
A-9					0947			7.40	17.76							
A-10					0955			9.02	37.55							
A-11					NEED TRAFFIC CONTROL											
A-12					NEED TRAFFIC CONTROL											
A-13					PAVED OVER											
AR-1					1120			8.99	29.02							
AR-2					1030			4.11	29.38							
AR-3					0956			8.65	29.07							

* 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: _____

Revision: 8/19/11

BROADBENT & ASSOCIATES, INC.
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/29/12

Field Representative: JR

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

PURGE EQUIPMENT — X Disp. Bailer ___ 120V Pump ___ Flow Cell ___ Disp. Tubing ___ 12V Pump ___ 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: NPGS) *(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)

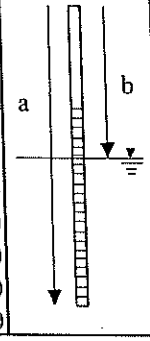
Water Column Height (WCH) = (a - b): _____(ft)

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: _____(gpm)

Total Well Depth (a): _____(ft)

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

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

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

Low-Flow Purge Rate: _____(gpm)*

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 Volume (gal)	Temperature (°C)	pH	Conductivity (MS)	Other	NOTES Odor, color, sheen, turbidity, or other
0910	0	13.7	7.31	4468.9		
Previous Stabilized Parameters						

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

X Other: Monitor NPGS

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: _____(ft)

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

Sample ID: A-5 (2/29/12) Sample Collection Time: 0910 (24:00)

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

___ Other: _____ ___ Other: _____

___ Other: _____ ___ Other: _____

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)	0910	5.60
Ferrous Iron (mg/L)		
Redox Potential (mV)	0910	209
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

BROADBENT & ASSOCIATES, INC.
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/29/12

Field Representative: JR

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

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

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

Good / Improvement Needed *(circle one)*

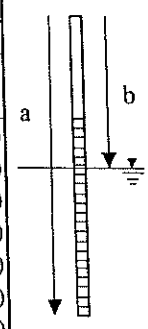
PURGING/SAMPLING METHOD — Predetermined Well Volume / Low-Flow / Other: NPE 3 *(circle one)*

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: _____ (gpm)
Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Pump In-take Depth = b + (a-b)/2: _____ (ft)
Maximum Allowable Drawdown = (a-b)/8: _____ (ft)
Low-Flow Purge Rate: _____ (gpm)*
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 Volume (gal)	Temperature (°C)	pH	Conductivity (µS)	Other	NOTES Odor, color, sheen, turbidity, or other
0930	0	16.5	6.79	1108		
Previous Stabilized Parameters						

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

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: _____ (ft)

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

Sample ID: A-8 (2/29/12) Sample Collection Time: 0930 (24:00)

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

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)	0930	1.36
Ferrous Iron (mg/L)		
Redox Potential (mV)	0930	172
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

BROADBENT & ASSOCIATES, INC.
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/24/12

Field Representative: JR

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

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

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

Good / Improvement Needed *(circle one)*

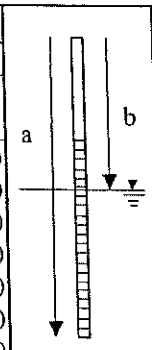
PURGING/SAMPLING METHOD — Predetermined Well Volume / Low-Flow / Other: NPGS *(circle one)*

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: _____ (gpm)
Total Well Depth (a): _____ (ft)
Initial Depth to Water (b): _____ (ft)
Pump In-take Depth = b + (a-b)/2: _____ (ft)
Maximum Allowable Drawdown = (a-b)/8: _____ (ft)
Low-Flow Purge Rate: _____ (gpm)*
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 Volume (gal)	Temperature (°C)	pH	Conductivity (µS)	Other	NOTES Odor, color, sheen, turbidity, or other
1015	0	15.8	7.52	405.6		
Previous Stabilized Parameters						

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

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: _____ (ft)
Sample Collected Via: X Disp. Bailer ___ Dedicated Pump Tubing ___ Disp. Pump Tubing Other:
Sample ID: A-3(2/24/12) Sample Collection Time: 1015 (24:00)
Containers (#): 3 VOA (X preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ Other:
___ Other: ___ Other:

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)	1015	2.84
Ferrous Iron (mg/L)		
Redox Potential (mV)	1015	121
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

BROADBENT & ASSOCIATES, INC.
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

GROUNDWATER SAMPLING DATA SHEET

Project: Arcadis 4931 Project No.: 09-88-624 Date: 2/29/12

Field Representative: JR

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

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

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

Good / Improvement Needed *(circle one)*

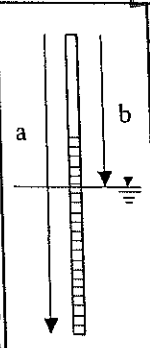
PURGING/SAMPLING METHOD Predetermined Well Volume Low-Flow Other: NPGS *(circle one)*

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: _____(gpm)
Total Well Depth (a): _____(ft)
Initial Depth to Water (b): _____(ft)
Pump In-take Depth = b + (a-b)/2: _____(ft)
Maximum Allowable Drawdown = (a-b)/8: _____(ft)
Low-Flow Purge Rate: _____(gpm)*
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 Volume (gal)	Temperature (° C)	pH	Conductivity (µS)	Other	NOTES Odor, color, sheen, turbidity, or other
1115	0	15.6	7.15	650.7		Orange/yellow particulates in water
Previous Stabilized Parameters						

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

SAMPLE COLLECTION RECORD

Depth to Water at Sampling: _____(ft)
Sample Collected Via: X Disp. Bailer ___ Dedicated Pump Tubing ___ Disp. Pump Tubing Other:
Sample ID: A-4 (2/29/12) Sample Collection Time: 1115 (24:00)
Containers (#): 3 VOA (4 preserved or ___ unpreserved) ___ Liter Amber
___ Other: ___ ___ Other: ___
___ Other: ___ ___ Other: ___

GEOCHEMICAL PARAMETERS

Parameter	Time	Measurement
DO (mg/L)	1115	6.91
Ferrous Iron (mg/L)		
Redox Potential (mV)	1115	170
Alkalinity (mg/L)		
Other:		
Other:		

Signature: _____

NO. 684573

NON-HAZARDOUS WASTE DATA FORM

BESI #

GENERATOR

Generator's Name and Mailing Address

BP WEST COAST PRODUCTS, LLC
P.O. BOX 80249
RANCHO SANTA MARGARITA, CA 92688

Generator's Site Address (if different than mailing address)

04931
731 W MACARTHUR BOULEVARD
OAKLAND, CA 94609

Generator's Phone: 949-460-5200

Container type removed from site:

☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity _____

Container type transported to receiving facility:

☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity _____ Volume _____

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS WELL PURGING / DECON WATER

COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%
2. TPH		<1%
3.		
4.		

Waste Profile _____ PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT.

Generator Printed/Typed Name: Emily Cosmos
On behalf of BP West Coast Products, LLC

Signature

Month Day Year

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: Broadbent & Associates, Inc.

Phone#: 707-455-7290

Transporter 1 Printed/Typed Name: Alex Martinez

Signature

Month Day Year: 4 4 12

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name

Phone#

Transporter 2 Printed/Typed Name

Signature

Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address

INSTRAT, INC.
1105 AIRPORT RD.
RIO VISTA, CA 94571

Phone#: 530-758-1829

Printed/Typed Name

Signature

Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

APPENDIX C

LABORATORY REPORT
AND CHAIN-OF-CUSTODY DOCUMENTATION

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 720-40660-1
Client Project/Site: BP #4931, Oakland

For:
ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco, California 94104

Attn: Hollis Phillips

Authorized for release by:
3/13/2012 1:41:09 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com

Table of Contents

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

TestAmerica Job ID: 720-40660-1

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
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

TestAmerica Job ID: 720-40660-1

Job ID: 720-40660-1

Laboratory: TestAmerica San Francisco

Narrative

Job Narrative
720-40660-1

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

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: 720-40660-1

Client Sample ID: A-3 (2/29/12) — Lab Sample ID: 720-40660-1

No Detections

Client Sample ID: A-4 (2/29/12) — Lab Sample ID: 720-40660-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	140		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	12		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Ethylbenzene	4.2		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	1.1		1.0		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C6-C12	1300		50		ug/L	1		8260B/CA_LUFTM	Total/NA
TBA	2200		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA
TAME	38		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

Client Sample ID: A-5 (2/29/12) — Lab Sample ID: 720-40660-3

No Detections

Client Sample ID: A-8 (2/29/12) — Lab Sample ID: 720-40660-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	160		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Benzene	1700		25		ug/L	50		8260B/CA_LUFTM	Total/NA
Ethylbenzene	3.4		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Toluene	10		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA
Xylenes, Total	3.9		1.0		ug/L	1		8260B/CA_LUFTM	Total/NA
Gasoline Range Organics (GRO) -C6-C12	3400		2500		ug/L	50		8260B/CA_LUFTM	Total/NA
TBA	460		4.0		ug/L	1		8260B/CA_LUFTM	Total/NA
TAME	71		0.50		ug/L	1		8260B/CA_LUFTM	Total/NA

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

TestAmerica Job ID: 720-40660-1

Client Sample ID: A-3 (2/29/12)
Date Collected: 02/29/12 10:15
Date Received: 02/29/12 18:22

Lab Sample ID: 720-40660-1
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			03/02/12 15:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/02/12 15:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*75 - 138*		*03/02/12 15:25*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/02/12 15:25*	*1*

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

TestAmerica Job ID: 720-40660-1

Client Sample ID: A-4 (2/29/12)
Date Collected: 02/29/12 11:15
Date Received: 02/29/12 18:22

Lab Sample ID: 720-40660-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	**140**		0.50		ug/L			03/02/12 15:54	1
Benzene	**12**		0.50		ug/L			03/02/12 15:54	1
EDB	ND		0.50		ug/L			03/02/12 15:54	1
1,2-DCA	ND		0.50		ug/L			03/02/12 15:54	1
Ethylbenzene	**4.2**		0.50		ug/L			03/02/12 15:54	1
Toluene	ND		0.50		ug/L			03/02/12 15:54	1
Xylenes, Total	**1.1**		1.0		ug/L			03/02/12 15:54	1
Gasoline Range Organics (GRO) -C6-C12	**1300**		50		ug/L			03/02/12 15:54	1
TBA	**2200**		4.0		ug/L			03/02/12 15:54	1
Ethanol	ND		250		ug/L			03/02/12 15:54	1
DIPE	ND		0.50		ug/L			03/02/12 15:54	1
TAME	**38**		0.50		ug/L			03/02/12 15:54	1
Ethyl t-butyl ether	ND		0.50		ug/L			03/02/12 15:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*67 - 130*		*03/02/12 15:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 138*		*03/02/12 15:54*	*1*
Toluene-d8 (Surr)	*101*		*70 - 130*		*03/02/12 15:54*	*1*

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

TestAmerica Job ID: 720-40660-1

Client Sample ID: A-5 (2/29/12)
Date Collected: 02/29/12 09:10
Date Received: 02/29/12 18:22

Lab Sample ID: 720-40660-3
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			03/02/12 16:24	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			03/02/12 16:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*103*		*67 - 130*		*03/02/12 16:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 138*		*03/02/12 16:24*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/02/12 16:24*	*1*

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

TestAmerica Job ID: 720-40660-1

Client Sample ID: A-8 (2/29/12)
Date Collected: 02/29/12 09:30
Date Received: 02/29/12 18:22

Lab Sample ID: 720-40660-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	**160**		0.50		ug/L			03/02/12 16:53	1
Benzene	**1700**		25		ug/L			03/03/12 20:21	50
EDB	ND		0.50		ug/L			03/02/12 16:53	1
1,2-DCA	ND		0.50		ug/L			03/02/12 16:53	1
Ethylbenzene	**3.4**		0.50		ug/L			03/02/12 16:53	1
Toluene	**10**		0.50		ug/L			03/02/12 16:53	1
Xylenes, Total	**3.9**		1.0		ug/L			03/02/12 16:53	1
Gasoline Range Organics (GRO) -C6-C12	**3400**		2500		ug/L			03/03/12 20:21	50
TBA	**460**		4.0		ug/L			03/02/12 16:53	1
Ethanol	ND		250		ug/L			03/02/12 16:53	1
DIPE	ND		0.50		ug/L			03/02/12 16:53	1
TAME	**71**		0.50		ug/L			03/02/12 16:53	1
Ethyl t-butyl ether	ND		0.50		ug/L			03/02/12 16:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*67 - 130*		*03/02/12 16:53*	*1*
4-Bromofluorobenzene	*104*		*67 - 130*		*03/03/12 20:21*	*50*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 138*		*03/02/12 16:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*75 - 138*		*03/03/12 20:21*	*50*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/02/12 16:53*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*03/03/12 20:21*	*50*

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

Lab Sample ID: MB 720-109012/5
Matrix: Water
Analysis Batch: 109012

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			03/02/12 09:31	1
MTBE	ND		0.50		ug/L			03/02/12 09:31	1
Benzene	ND		0.50		ug/L			03/02/12 09:31	1
EDB	ND		0.50		ug/L			03/02/12 09:31	1
1,2-DCA	ND		0.50		ug/L			03/02/12 09:31	1
Ethylbenzene	ND		0.50		ug/L			03/02/12 09:31	1
Toluene	ND		0.50		ug/L			03/02/12 09:31	1
Xylenes, Total	ND		1.0		ug/L			03/02/12 09:31	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			03/02/12 09:31	1
TBA	ND		4.0		ug/L			03/02/12 09:31	1
Ethanol	ND		250		ug/L			03/02/12 09:31	1
DIPE	ND		0.50		ug/L			03/02/12 09:31	1
TAME	ND		0.50		ug/L			03/02/12 09:31	1
Ethyl t-butyl ether	ND		0.50		ug/L			03/02/12 09:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*03/02/12 09:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 138*		*03/02/12 09:31*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*03/02/12 09:31*	*1*

Lab Sample ID: LCS 720-109012/6
Matrix: Water
Analysis Batch: 109012

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	27.0		ug/L		108	62 - 130
MTBE	25.0	27.0		ug/L		108	62 - 130
Benzene	25.0	24.8		ug/L		99	79 - 130
EDB	25.0	26.4		ug/L		106	70 - 130
1,2-DCA	25.0	25.2		ug/L		101	61 - 132
Ethylbenzene	25.0	24.6		ug/L		98	80 - 120
Toluene	25.0	23.8		ug/L		95	78 - 120
TBA	500	534		ug/L		107	70 - 130
Ethanol	500	532		ug/L		106	31 - 216
DIPE	25.0	26.2		ug/L		105	69 - 134
TAME	25.0	26.1		ug/L		104	79 - 130
Ethyl t-butyl ether	25.0	27.2		ug/L		109	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 138*
Toluene-d8 (Surr)	*100*		*70 - 130*

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

Lab Sample ID: LCS 720-109012/8
Matrix: Water
Analysis Batch: 109012

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	470		ug/L		94	58 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 138*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-109012/7
Matrix: Water
Analysis Batch: 109012

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	26.6		ug/L		106	62 - 130	1	20
MTBE			25.0	26.6		ug/L		106	62 - 130	1	20
Benzene			25.0	24.3		ug/L		97	79 - 130	2	20
EDB			25.0	25.6		ug/L		102	70 - 130	3	20
1,2-DCA			25.0	24.6		ug/L		98	61 - 132	2	20
Ethylbenzene			25.0	23.7		ug/L		95	80 - 120	4	20
Toluene			25.0	23.0		ug/L		92	78 - 120	3	20
TBA			500	478		ug/L		96	70 - 130	11	20
Ethanol			500	478		ug/L		96	31 - 216	11	30
DIPE			25.0	26.1		ug/L		104	69 - 134	0	20
TAME			25.0	25.8		ug/L		103	79 - 130	1	20
Ethyl t-butyl ether			25.0	27.4		ug/L		110	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*99*		*75 - 138*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 720-109012/9
Matrix: Water
Analysis Batch: 109012

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	421		ug/L		84	58 - 120	11	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*103*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 138*
Toluene-d8 (Surr)	*101*		*70 - 130*

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

Lab Sample ID: MB 720-109085/4
Matrix: Water
Analysis Batch: 109085

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			03/03/12 12:43	1
Benzene	ND		0.50		ug/L			03/03/12 12:43	1
EDB	ND		0.50		ug/L			03/03/12 12:43	1
1,2-DCA	ND		0.50		ug/L			03/03/12 12:43	1
Ethylbenzene	ND		0.50		ug/L			03/03/12 12:43	1
Toluene	ND		0.50		ug/L			03/03/12 12:43	1
Xylenes, Total	ND		1.0		ug/L			03/03/12 12:43	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			03/03/12 12:43	1
TBA	ND		4.0		ug/L			03/03/12 12:43	1
Ethanol	ND		250		ug/L			03/03/12 12:43	1
DIPE	ND		0.50		ug/L			03/03/12 12:43	1
TAME	ND		0.50		ug/L			03/03/12 12:43	1
Ethyl t-butyl ether	ND		0.50		ug/L			03/03/12 12:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*03/03/12 12:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 138*		*03/03/12 12:43*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*03/03/12 12:43*	*1*

Lab Sample ID: LCS 720-109085/5
Matrix: Water
Analysis Batch: 109085

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	26.0		ug/L		104	62 - 130
Benzene	25.0	23.9		ug/L		96	79 - 130
EDB	25.0	24.8		ug/L		99	70 - 130
1,2-DCA	25.0	24.7		ug/L		99	61 - 132
Ethylbenzene	25.0	24.4		ug/L		98	80 - 120
Toluene	25.0	23.4		ug/L		94	78 - 120
TBA	500	482		ug/L		96	70 - 130
Ethanol	500	526		ug/L		105	31 - 216
DIPE	25.0	26.7		ug/L		107	69 - 134
TAME	25.0	24.8		ug/L		99	79 - 130
Ethyl t-butyl ether	25.0	26.2		ug/L		105	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 138*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCS 720-109085/7
Matrix: Water
Analysis Batch: 109085

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	443		ug/L		89	58 - 120

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

Lab Sample ID: LCS 720-109085/7
Matrix: Water
Analysis Batch: 109085

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	*100*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 138*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-109085/6
Matrix: Water
Analysis Batch: 109085

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	26.2		ug/L		105	62 - 130	1	20
Benzene			25.0	23.8		ug/L		95	79 - 130	0	20
EDB			25.0	24.7		ug/L		99	70 - 130	0	20
1,2-DCA			25.0	24.6		ug/L		98	61 - 132	0	20
Ethylbenzene			25.0	24.1		ug/L		96	80 - 120	1	20
Toluene			25.0	23.4		ug/L		94	78 - 120	0	20
TBA			500	479		ug/L		96	70 - 130	1	20
Ethanol			500	530		ug/L		106	31 - 216	1	30
DIPE			25.0	26.8		ug/L		107	69 - 134	0	20
TAME			25.0	25.0		ug/L		100	79 - 130	1	20
Ethyl t-butyl ether			25.0	26.7		ug/L		107	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*101*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*103*		*75 - 138*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 720-109085/8
Matrix: Water
Analysis Batch: 109085

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	437		ug/L		87	58 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	*103*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*75 - 138*
Toluene-d8 (Surr)	*99*		*70 - 130*

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

TestAmerica Job ID: 720-40660-1

GC/MS VOA

Analysis Batch: 109012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-40660-1	A-3 (2/29/12)	Total/NA	Water	8260B/CA_LUFT MS	
720-40660-2	A-4 (2/29/12)	Total/NA	Water	8260B/CA_LUFT MS	
720-40660-3	A-5 (2/29/12)	Total/NA	Water	8260B/CA_LUFT MS	
720-40660-4	A-8 (2/29/12)	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-109012/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-109012/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-109012/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-109012/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-109012/5	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 109085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-40660-4	A-8 (2/29/12)	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-109085/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-109085/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-109085/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-109085/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-109085/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Lab Chronicle

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

TestAmerica Job ID: 720-40660-1

Client Sample ID: A-3 (2/29/12)

Lab Sample ID: 720-40660-1

Date Collected: 02/29/12 10:15

Matrix: Water

Date Received: 02/29/12 18:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	109012	03/02/12 15:25	AC	TAL SF

Client Sample ID: A-4 (2/29/12)

Lab Sample ID: 720-40660-2

Date Collected: 02/29/12 11:15

Matrix: Water

Date Received: 02/29/12 18:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	109012	03/02/12 15:54	AC	TAL SF

Client Sample ID: A-5 (2/29/12)

Lab Sample ID: 720-40660-3

Date Collected: 02/29/12 09:10

Matrix: Water

Date Received: 02/29/12 18:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	109012	03/02/12 16:24	AC	TAL SF

Client Sample ID: A-8 (2/29/12)

Lab Sample ID: 720-40660-4

Date Collected: 02/29/12 09:30

Matrix: Water

Date Received: 02/29/12 18:22

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	109012	03/02/12 16:53	AC	TAL SF
Total/NA	Analysis	8260B/CA_LUFTMS		50	109085	03/03/12 20:21	AC	TAL SF

Laboratory References:

TAL SF = TestAmerica San Francisco, 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: 720-40660-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica San Francisco	California	State Program	9	2496

Accreditation may not be offered or required for all methods and analytes reported in this package . Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method Summary

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

TestAmerica Job ID: 720-40660-1

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

Protocol References:

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

Laboratory References:

TAL SF = TestAmerica San Francisco, 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: 720-40660-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-40660-1	A-3 (2/29/12)	Water	02/29/12 10:15	02/29/12 18:22
720-40660-2	A-4 (2/29/12)	Water	02/29/12 11:15	02/29/12 18:22
720-40660-3	A-5 (2/29/12)	Water	02/29/12 09:10	02/29/12 18:22
720-40660-4	A-8 (2/29/12)	Water	02/29/12 09:30	02/29/12 18:22

720.40660

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

136830

TestAmerica Laboratories, Inc.

3/13/2012

Client Contact	Project Manager: Sam Barkley	Site Contact:	Date:	COC No:
Broadbent and Associates, Inc.	Tel/Fax: 707-455-7290 / 707-455-7295	Lab Contact: Dimple Sharma	Carrier:	____ of ____ COCs
Address: 875 Cotting Lane, Suite G	Analysis Turnaround Time			Job No.
City/State/Zip: Vacaville, CA 95688	Calendar (C) or Work Days (W) ____			
(707) 455-7290 Phone	TAT if different from Below ____Standard_x_			SDG No.
(707) 455-7295 FAX	☐ 2 weeks			
Project Name: BP 4931	☐ 1 week			
Site: 731 W. MacArthur Boulevard, Oakland	☐ 2 days			
P O # GP09BPNA.C110	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by 8260B	BTEX and 5 Oxys by 8260B	EDB, 1,2-DCA and Ethanol by 8260B	MTBE by 8260B	Sample Specific Notes:
A-3 (2/29/12)	2-29-12	1015	GRAB	AQ	3					X	
A-4 (2/29/12)		1115	GRAB	AQ	3		X	X	X		
A-5 (2/29/12)		0910	GRAB	AQ	3		X			X	
A-8 (2/29/12)		0930	GRAB	AQ	3		X	X	X		
TB-4931-02292012	2-29-12	1120		AQ	1						ON HOLD

Page 19 of 20

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/QC Requirements & Comments:

5.4°c

	Company	Date/Time		Company	Date/Time
Relinquished by:	Broadbent	2-29-12 1140	Received by:	TASF	2-29-12 1146
Relinquished by:	TASF	2-29-12	Received by:	TASF	2/29/12 1324
Relinquished by:	TASF	2/29/12 1330	Received by:	TASF	2/29/12 1330

0.2°C

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 720-40660-1

Login Number: 40660

List Source: TestAmerica San Francisco

List Number: 1

Creator: Apostol, Anita

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is 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 sample IDs on the containers 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	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

APPENDIX D

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A EDF FILE

SUCCESS

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

Submittal Type:	**EDF - Monitoring Report - Semi-Annually**
Submittal Title:	**1Q12 GW Monitoring**
Facility Global ID:	**T0600100110**
Facility Name:	**ARCO #04931**
File Name:	**720-40660-1.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**4/10/2012 9:15:52 AM**
Confirmation Number:	**9440541088**

VIEW QC REPORT

VIEW DETECTIONS REPORT

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_WELL FILE

SUCCESS

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

Submittal Type:	**GEO_WELL**
Submittal Title:	**1Q12 GEO_WELL 4931**
Facility Global ID:	**T0600100110**
Facility Name:	**ARCO #04931**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**4/10/2012 9:18:07 AM**
Confirmation Number:	**8788404345**