ARCADIS
Infrastructure, environment, facilities

ARCADIS U.S., Inc.
100 Montgomery Street, Suite 300
San Francisco, California 94105
Tel 415.374.2744
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www.arcadis-us.com

Re: Fourth Quarter 2009 Ground-Water Monitoring Report
Former BP Service Station #11102
100 MacArthur Boulevard
Oakland, California
ACEH Case #RO0000456

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:
01/28/2010

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.C111

Fourth Quarter 2009 Ground-Water Monitoring Report
Former BP Service Station #11102
100 MacArthur Boulevard, Oakland, California
ACEH Case #RO0000456

Prepared for

Ms. Hollis Phillips, PG
Senior Geologist
ARCADIS-US, Inc.
100 Montgomery Street, Ste. 300
San Francisco, California 94104

On behalf of

Atlantic Richfield Company
PO Box 1257
San Ramon, California 94583

Prepared by

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

1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
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28 January 2010

Project No. 09-88-643

Broadbent & Associates, Inc.
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BROADBENT & ASSOCIATES, INC
ENVIRONMENTAL, WATER RESOURCES & ENGINEERING

28 January 2010

Project No. 09-88-643

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

Attn.: Ms. Hollis Phillips, PG

Re: Fourth Quarter 2009 Ground-Water Monitoring Report, Former BP Service Station #11102, 100 MacArthur Boulevard, Alameda County, Oakland, California; ACEH Case #RO0000456

Dear Ms. Phillips:

Attached is the *Fourth Quarter 2009 Ground-Water Monitoring Report* for Former BP Service Station #11102 located at 100 MacArthur Boulevard, Oakland, Alameda County, California. This report presents a summary of results from ground-water monitoring conducted at Station #11102 during the Fourth Quarter of 2009.

Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.

Jason Duda
Project Scientist

Thomas A. Venus, P.E.
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
THOMAS A. VENUS
No. 54698
Expires 12-31-11
CIVIL
STATE OF CALIFORNIA

Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health (Submitted via ACEH ftp site)
Ms. Shelby Lathrop, ConocoPhillips, 76 Broadway, Sacramento, California 95818
Electronic copy uploaded to GeoTracker

STATION #11102 QUARTERLY GROUND-WATER MONITORING REPORT

Facility: #11102 Address:	100 MacArthur Boulevard, Oakland, California
ARCADIS Project Manager:	Ms. Hollis Phillips, PG
Consulting Co./Contact Persons:	Broadbent & Associates, Inc.(BAI)/Jason Duda & Tom Venus (530) 566-1400
Consultant Project No.:	09-88-643
Primary Agency/Regulatory ID No.:	Alameda County Environmental Health (ACEH) ACEH Case #RO0000456

WORK PERFORMED THIS QUARTER (Fourth Quarter 2009):

1. Prepared and submitted *Third Quarter 2009 Ground-Water Monitoring Report* (BAI, 10/30/2009).
2. Conducted ground-water monitoring/sampling for Fourth Quarter 2009. Work performed by BAI on 29 October 2009.

WORK PROPOSED FOR NEXT QUARTER (First Quarter 2010):

1. Prepared and submitted *Fourth Quarter 2009 Ground-Water Monitoring Report* (contained herein).
2. Upon acquisition of permits, conduct soil and ground-water investigation as approved by ACEH in their letter dated 21 August 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	**Ground-Water Monitoring/Sampling/Characterization**
Frequency of ground-water monitoring:	**Semi-Annually (1Q & 3Q): Wells MW-1, MW-2, MW-3**
Frequency of ground-water sampling:	**Semi-Annually (1Q & 3Q): Wells MW-1, MW-2, MW-3**
Is free product (FP) present on-site:	**No**
Current remediation techniques:	**NA**
Depth to ground water (below TOC):	**12.54 (MW-1) to 13.88 (MW-2)**
General ground-water flow direction:	**West**
Approximate hydraulic gradient:	**0.04 ft/ft**

DISCUSSION:

Fourth Quarter 2009 ground-water monitoring and sampling was conducted at Station #11102 on 29 October 2009 by BAI. Water levels were gauged in the three wells at the Site. No irregularities were noted during water level gauging. Depths to water measurements ranged from 12.54 ft at well MW-1 to 13.88 ft at well MW-2. Resulting ground-water surface elevations ranged from 77.66 ft above datum in well MW-1 to 73.98 ft at well MW-3. Water level elevations yielded a potentiometric ground-water flow direction and gradient of 0.04 ft/ft to the west. Ground-water monitoring field data sheets are provided within Appendix A. Measured depths to ground-water and respective ground-water elevations are summarized in Table 1. Current and historic ground-water flow directions and gradients are provided in Table 3. A Site Location Map is provided as Drawing 1. Potentiometric ground-water elevation contours are presented in Drawing 2.

Consistent with the current ground-water sampling schedule, water samples were collected from each of the three wells on the Site. No irregularities were encountered during sampling. 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, and Total Xylenes (BTEX); Methyl Tert-Butyl Ether (MTBE), Ethyl Tert-Butyl Ether (ETBE), Tert-Amyl Methyl Ether (TAME), Di-Isopropyl Ether (DIPE), Tert-Butyl Alcohol (TBA), 1,2-Dibromomethane (EDB), 1,2-Dichloroethane (1,2-DCA), and Ethanol by EPA Method 8260B. Bio-degradation parameters including Dissolved Oxygen, pH, Temperature, Conductivity, Oxidation-Reduction Potential (ORP), Ferrous Iron, Nitrate, Sulfate, and Total Sulfide were also monitored during the sampling event this quarter. The laboratory noted that the GRO concentrations reported for wells MW-2 and MW-3 were "due to the presence of discrete peaks." No other significant irregularities were encountered during laboratory analysis of the samples. Ground-water sampling field data sheets and the laboratory analytical report, including chain-of-custody documentation, are provided in Appendix A.

Gasoline range organics (GRO) were detected above the laboratory reporting limits in two of the three wells sampled at concentrations of 530 micrograms per liter (µg/L) in well MW-2 and 1,000 µg/L in well MW-3. TAME was detected above the laboratory reporting limits in two of the three wells sampled at concentrations of 12 µg/L in well MW-2 and 17 µg/L in well MW-3. TBA was detected above the laboratory reporting limit in each of the three wells sampled at concentrations up to 3,900 µg/L in well MW-2. 1,2-DCA was detected above the laboratory reporting limit in well MW-2 at a concentration of 2.4 µg/L. MTBE was detected above the laboratory reporting limit in each of the wells sampled at concentrations up to 1,500 µg/L in well MW-3. The remaining fuel additives and oxygenates were not detected above their laboratory reporting limits in the three wells sampled this quarter. Historic laboratory analytical results are summarized in Table 1, and Table 2. The most recent GRO, Benzene, MTBE, and TBA concentrations are also presented in Drawing 2. A summary of bio-degradation parameters is provided in Table 4. Ground-water monitoring data (GEO_WELL) and laboratory analytical results (EDF) were uploaded to the GeoTracker AB2886 database. Upload confirmation receipts are provided in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS:

Water level elevations were between historic minimum and maximum ranges for each well. The potentiometric ground-water flow direction and gradient of 0.04 ft/ft to the west is generally consistent with historical data. Detected concentrations of petroleum hydrocarbons were within the historic minimum and maximum ranges recorded for each well sampled this quarter. Overall, hydrocarbon concentrations decreased when compared to concentrations observed during the Third Quarter 2009 sampling event. Concentrations of GRO, MTBE and TBA are significant, justifying the efforts to characterize the downgradient extents of the contaminated ground-water plume. The *Addendum to Soil & Ground-Water Investigation Work Plan* dated 1 June 2009 was approved by ACEH in their letter dated 21 August 2009. Soil and ground-water investigation activities should be implemented upon approval of the necessary permits and access agreements. Bio-degradation parameters will not be collected during the ground-water monitoring/sampling event scheduled to be conducted during the Second Quarter of 2010.

CLOSURE:

The findings presented in this report are based upon: observations of BAI field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by TestAmerica Laboratories, Inc. (Pleasanton, California). 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 Atlantic Richfield Company (a BP affiliated company). It is possible that variations in soil or ground-water

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, Former Station #11102, 100 MacArthur Boulevard, Oakland, California

Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, 29 October 2009, Former Station #11102, 100 MacArthur Boulevard, Oakland, California

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #11102, 100 MacArthur Blvd., Oakland, California

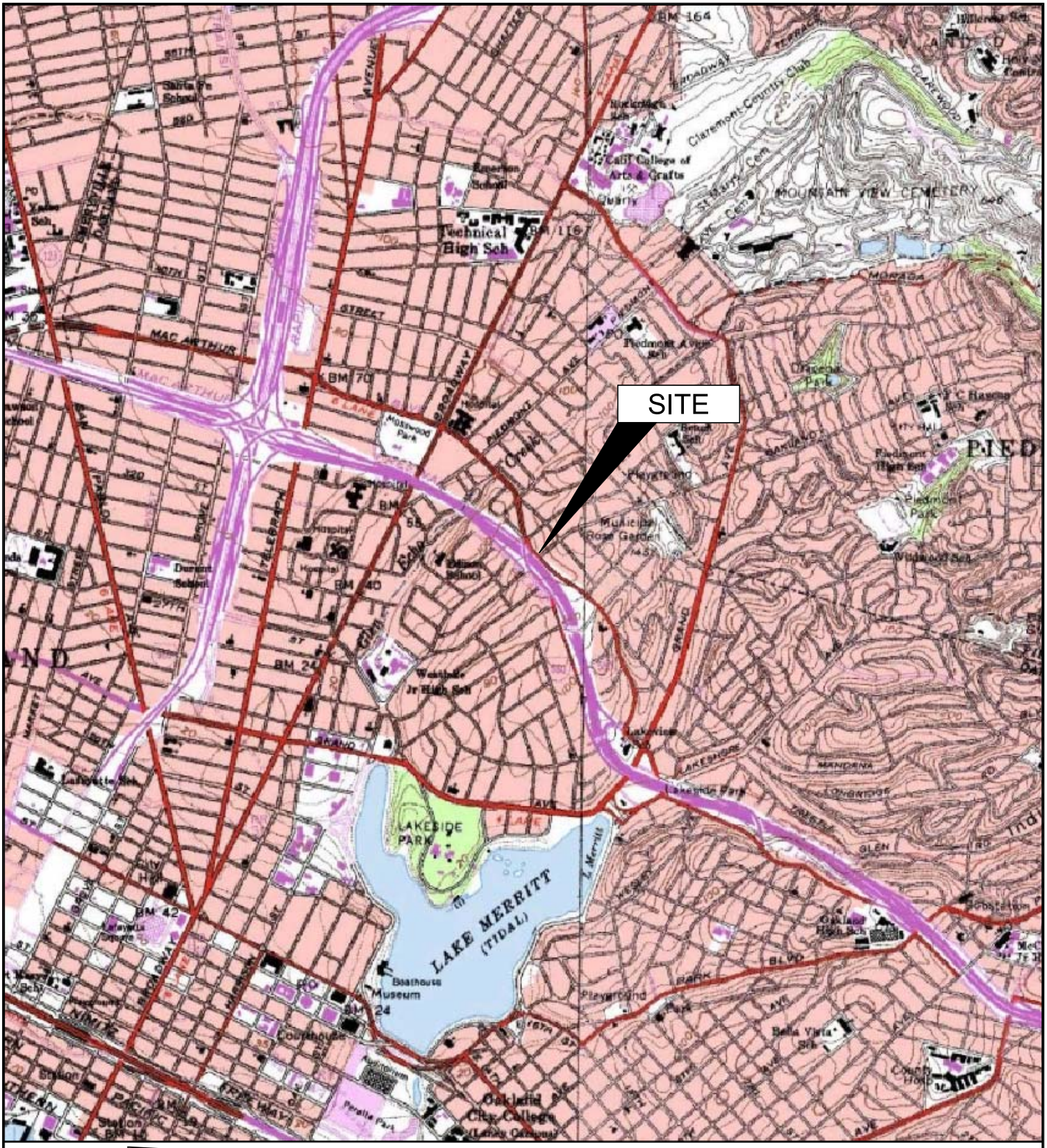
Table 2. Summary of Fuel Additives Analytical Data, Station #11102, 100 MacArthur Blvd., Oakland, California

Table 3. Historical Ground-Water Flow Direction and Gradient, Station #11102, 100 MacArthur Blvd., Oakland, California

Table 4. Bio-Degradation Parameters, Station #11102, 100 MacArthur Blvd., Oakland, California

Appendix A. BAI Ground-Water Sampling Data Package (Includes Field Data Sheets, Laboratory Analytical Report with Chain-of-Custody Documentation, and Field Procedures)

Appendix B. GeoTracker Upload Confirmation Receipts



N

0 2000 4000

APPROXIMATE SCALE (ft)

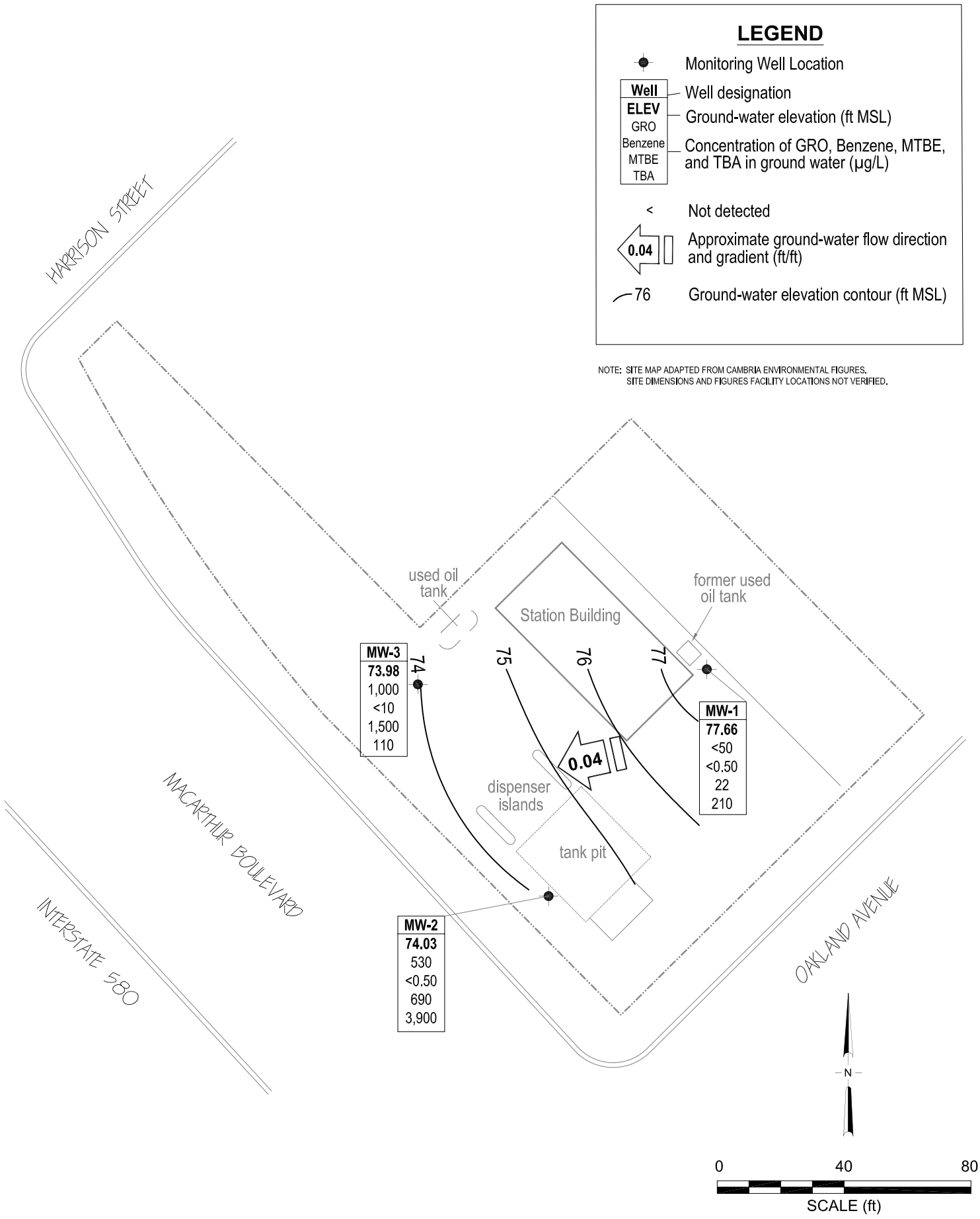
IMAGE SOURCE: USGS

BROADBENT & ASSOCIATES, INC.
ENGINEERING, WATER RESOURCES & ENVIRONMENTAL
1324 Mangrove Ave. Suite 212, Chico, CA 95926
Project No.: 06-88-643 Date: 10/1/09

Former Station #11102
100 MacArthur Boulevard
Oakland, California

Site Location Map

Drawing
1



BROADBENT & ASSOCIATES, INC. ENGINEERING, WATER RESOURCES & ENVIRONMENTAL 1324 Mangrove Ave. Suite 212, Chico, California Project No.: 09-88-643 Date: 1/6/09	Former Station #11102 100 MacArthur Boulevard Oakland, California	Ground-Water Elevation Contour and Analytical Summary Map 29 October 2009

Drawing
2

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MtBE						
MW-1																		
11/4/1989	--		90.20	13.21	--	76.99	<500	3.4	0.6	<0.3	<0.3	--	--	SAL	--	<50	<5000	--
11/11/1989	--		90.20	13.32	--	76.88	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		90.20	12.46	--	77.74	820	64	1.9	23	34	--	--	ANA	--	--	--	--
7/30/1990	--		90.20	12.92	--	77.28	190	11	<5.0	<5.0	<5.0	--	--	ANA	--	<50	<5000	--
11/20/1990	--		90.20	14.08	--	76.12	50	2.4	<0.3	<0.3	<0.3	--	--	SAL	--	79	<5000	--
3/1/1991	--		90.20	13.61	--	76.59	<100	0.9	<0.3	<0.3	0.3	--	--	SAL	--	<1000	14,000	--
8/19/1991	--		90.20	15.74	--	74.46	370	35	0.73	6.4	5.6	--	--	SEQ	--	<50	<5000	--
11/13/1991	--		90.20	14.08	--	76.12	60	0.68	<0.3	<0.3	<0.3	--	--	SEQ	--	<50	<5000	--
2/24/1992	--		90.20	12.52	--	77.68	140	3.9	0.66	1.2	3.8	--	--	SEQ	--	100	<5000	--
5/19/1992	--		90.20	11.80	--	78.40	4,200	440	21	250	37	--	--	SEQ	--	910	<5000	--
6/17/1992	--		90.20	12.01	--	78.19	4,000	350	14	150	17	--	--	SEQ	--	560	<5000	--
7/22/1992	--		90.20	12.42	--	77.78	4,000	<5.0	19	210	61	--	--	ANA	--	--	--	--
8/14/1992	--		90.20	12.75	--	77.45	2,400	330	20	150	47	--	--	SEQ	--	1,700	<5000	--
11/11/1992	--		90.20	13.69	--	76.51	260	30	3.4	7.6	6.8	--	--	ANA	--	92	<5000	--
6/7/1993	--		90.20	10.93	--	79.27	3,400	98	11	21	7.6	--	--	PACE	--	440	--	--
6/7/1993	--	c	90.20	--	--	--	3,700	120	12	26	9.5	--	--	PACE	--	--	--	--
12/2/1993	--		90.20	12.72	--	77.48	1,100	8.3	3.6	0.6	1.5	--	--	PACE	--	120	<5000	--
6/22/1994	--	d	90.20	11.81	--	78.39	2,100	32	3.8	2.2	17	4,000	3.2	PACE	--	<50	<5000	--
6/22/1994	--	c, d	90.20	--	--	--	2,100	30	3.2	2	15	2,000	--	PACE	--	--	--	--
1/10/1995	--	c	90.20	--	--	--	<500	120	<5	5	<10	--	--	ATI	--	--	--	--
1/10/1995	--		90.20	10.97	--	79.23	<500	120	<5	<5	<10	--	3.9	ATI	--	420	--	--
6/21/1995	--	c, e	90.20	--	--	--	3,600	<13	<5.0	<5.0	<10	--	--	ATI	--	--	--	--
6/21/1995	--		90.20	9.38	--	80.82	4,700	16	<5.0	<5.0	<10	--	6.7	ATI	--	1,300	2,900	0.6
12/27/1995	--		90.20	11.55	--	78.65	430	<2.5	<2.5	<2.5	<5.0	1,200	6.3	ATI	--	2,100	640	--
6/13/1996	--		90.20	9.28	--	80.92	3,200	51	<12	<12	<12	4,000	6.3	SPL	--	920	2,000	--
12/4/1996	--	f	90.20	11.91	--	78.29	1,400	6.2	<5	<5	<5	2,600	6.7	SPL	--	280	2,000	6
6/10/1997	--	c	90.20	--	--	--	7,700	14	<25	<25	<25	13,000	--	SPL	--	--	--	--
6/10/1997	--		90.20	8.97	--	81.23	7,900	12	<10	<10	<10	15,000	6	SPL	--	1,700	<5	--
12/12/1997	--		90.20	11.37	--	78.83	440	8.8	<1.0	2.6	9.4	6,700	5.5	SPL	--	760	1,200	--
6/18/1998	--		90.20	8.02	--	82.18	7,500	<2.5	<5.0	<5.0	<5.0	5,600	4.9	SPL	--	2,900	<5	--
3/9/1999	--		90.20	9.80	--	80.40	32,000	100	16	72	110	49,000	--	SPL	--	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1 Cont.																		
9/28/1999	--		90.20	10.78	--	79.42	1,000	<5.0	<5.0	<5.0	<5.0	730	--	SPL	--	--	--	<1.0
10/14/1999	--		90.20	10.84	--	79.36	--	--	--	--	--	--	--	SPL	--	660	--	--
3/27/2000	--		90.20	9.83	--	80.37	4,300	160	19	37	43	28,000	--	PACE	--	--	--	--
9/28/2000	--		90.20	11.33	--	78.87	2,700	10	2.6	1.1	2.7	28,000	--	PACE	--	--	--	--
3/8/2001	--		90.20	10.96	--	79.24	8,200	23.5	6.09	5.23	8.97	11,600	--	PACE	--	--	--	--
9/21/2001	--		90.20	12.07	--	78.13	6,000	37.9	<0.5	<0.5	<1.5	7,370	--	PACE	--	--	--	--
2/28/2002	--		90.20	10.48	--	79.72	6,400	60.8	<5.0	6.43	<10	7,750	--	PACE	--	--	--	--
9/6/2002	--		90.20	11.20	--	79.00	1,400	<5.0	<5.0	<5.0	<5.0	6,000	--	SEQ	--	--	--	--
2/19/2003	--	h	90.20	11.29	--	78.91	<10000	<100	110	<100	<100	4,500	--	SEQ	--	--	--	--
7/14/2003	--		90.20	11.18	--	79.02	710	11	<10	<10	<10	940	--	SEQ	--	--	--	--
01/14/2004	--		90.20	11.74	--	78.46	<500	<5.0	<5.0	<5.0	<5.0	220	--	SEQM	6.6	--	--	--
04/23/2004	P	l	90.20	11.95	--	78.25	470	3.4	<2.5	<2.5	<2.5	150	--	SEQM	6.7	--	--	--
07/01/2004	P		90.20	11.52	--	78.68	360	<2.5	<2.5	<2.5	<2.5	96	--	SEQM	6.0	--	--	--
10/28/2004	P		90.20	12.56	--	77.64	390	0.94	<0.50	<0.50	<0.50	43	--	SEQM	6.2	--	--	--
01/10/2005	P		90.20	11.85	--	78.35	490	17	<2.5	5.8	5.4	85	--	SEQM	7.6	--	--	--
04/13/2005	P		90.20	10.00	--	80.20	1,000	27	<2.5	<2.5	25	48	--	SEQM	6.6	--	--	--
07/11/2005	P		90.20	9.27	--	80.93	180	<0.50	<0.50	<0.50	<0.50	36	--	SEQM	7.7	--	--	--
10/17/2005	P		90.20	10.96	--	79.24	140	<0.50	<0.50	<0.50	<0.50	20	--	SEQM	8.0	--	--	--
01/17/2006	P		90.20	10.81	--	79.39	120	0.64	<0.50	<0.50	0.56	38	--	SEQM	6.5	--	--	--
04/21/2006	P	m	90.20	9.28	--	80.92	410	1.4	1.0	<0.50	<0.50	17	--	SEQM	6.5	--	--	--
7/17/2006	--		90.20	9.25	--	80.95	<50	<0.50	<0.50	<0.50	<0.50	5.5	--	TAMC	7.7	--	--	--
7/26/2006	--		90.20	8.57	--	81.63	<50	<0.50	<0.50	<0.50	<0.50	4.4	--	TAMC	6.6	--	--	--
10/31/2006	P		90.20	9.80	--	80.40	<50	<0.50	<0.50	<0.50	<0.50	2.8	2.81	TAMC	6.99	--	--	--
1/8/2007	P		90.20	10.36	--	79.84	<50	2.2	<0.50	<0.50	<0.50	6.2	2.51	TAMC	6.97	--	--	--
4/10/2007	P		90.20	10.65	--	79.55	160	1.4	<0.50	<0.50	<0.50	9.0	1.75	TAMC	7.00	--	--	--
7/10/2007	P	p	90.20	10.52	--	79.68	120	<0.50	<0.50	<0.50	<0.50	4.9	2.01	TAMC	6.60	160	--	--
10/24/2007	P		90.20	11.23	--	78.97	100	<0.50	<0.50	<0.50	<0.50	4.9	1.89	TAMC	6.57	--	--	--
1/22/2008	P		90.20	11.22	--	78.98	240	<0.50	<0.50	0.83	1.7	7.2	3.18	TAMC	6.49	--	--	--
4/15/2008	P		90.20	10.26	--	79.94	240	<0.50	<0.50	<0.50	0.73	5.5	3.32	CEL	6.45	--	--	--
7/8/2008	P		90.20	11.10	--	79.10	78	<0.50	<0.50	<0.50	<0.50	5.8	1.65	CEL	6.78	--	--	--
11/19/2008	P		90.20	12.51	--	77.69	150	<0.50	<0.50	<0.50	<0.50	3.4	1.59	CEL	6.84	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-1 Cont.																		
2/10/2009	P		90.20	12.71	--	77.49	<50	<0.50	<0.50	<0.50	<0.50	5.3	1.63	CEL	7.00	--	--	--
5/7/2009	P		90.20	10.90	--	79.30	<50	1.6	<0.50	<0.50	<0.50	13	1.41	CEL	6.82	--	--	--
9/3/2009	P		90.20	11.91	--	78.29	120	<0.50	<0.50	<0.50	0.89	3.8	1.45	CEL	6.82	--	--	--
10/29/2009	**P**		**90.20**	**12.54**	**--**	**77.66**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**22**	**1.53**	**TAMC**	**6.73**	**--**	**--**	**--**
MW-2																		
11/4/1989	--		87.91	15.84	--	72.07	<500	6.5	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.91	14.75	--	73.16	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.91	15.25	--	72.66	<500	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.91	15.59	--	72.32	61	6.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
11/20/1990	--		87.91	17.81	--	70.10	<50	0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
3/1/1991	--		87.91	17.11	--	70.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.91	17.97	--	69.94	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.91	16.76	--	71.15	38	0.32	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.91	15.07	--	72.84	<50	<0.5	<0.5	<0.5	0.58	--	--	SEQ	--	--	--	--
5/19/1992	--		87.91	14.70	--	73.21	<50	0.55	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.91	15.60	--	72.31	90	1.3	0.6	0.9	1.9	--	--	ANA	--	--	--	--
8/14/1992	--		87.91	15.88	--	72.03	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--	c	87.91	--	--	--	65	3.2	<0.5	<0.5	1	--	--	ANA	--	--	--	--
11/11/1992	--		87.91	16.19	--	71.72	52	2.8	<0.5	<0.5	0.9	--	--	ANA	--	--	--	--
6/7/1993	--		87.91	14.42	--	73.49	1,200	14	2.8	1.9	1.71	--	--	PACE	--	--	--	--
12/2/1993	--	d	87.91	14.94	--	72.97	790	3.4	0.5	10	<0.5	3,700	--	PACE	--	--	--	--
12/2/1993	--	c, d	87.91	--	--	--	2,100	32	3.8	2.2	17	3,700	--	PACE	--	--	--	--
6/22/1994	--	d	87.91	14.25	--	73.66	110	<0.5	<0.5	<0.5	<0.5	120	3.9	PACE	--	--	--	--
1/10/1995	--		87.91	13.64	--	74.27	<50	<0.5	<0.5	0.6	1	--	4.3	ATI	--	--	--	--
6/21/1995	--		87.91	11.66	--	76.25	4,700	<10	<10	<10	<20	--	7.8	ATI	--	--	--	--
12/27/1995	--		87.91	13.11	--	74.80	6,100	<25	<25	<25	<50	20,000	6.7	ATI	--	--	--	--
12/27/1995	--	c	87.91	--	--	--	6,300	<25	<25	<25	<50	19,000	--	ATI	--	--	--	--
6/13/1996	--		87.91	10.86	--	77.05	8,300	<2.5	<2.5	<2.5	<2.5	13,000	6.5	SPL	--	--	--	--
6/13/1996	--	c	87.91	--	--	--	8,700	<5	<5	<5	<5	13,000	--	SPL	--	--	--	--
12/4/1996	--		87.91	13.03	--	74.88	5,900	<2.5	<5	<5	<5	11,000	6.3	SPL	--	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-2 Cont.																		
12/4/1996	--	c	87.91	--	--	--	5,900	<2.5	<5	<5	<5	11,000	--	SPL	--	--	--	--
6/10/1997	--		87.91	10.04	--	77.87	<50	<0.5	<1.0	<1.0	<1.0	<10	5.8	SPL	--	--	--	--
12/12/1997	--		87.91	12.44	--	75.47	<50	<0.5	<1.0	<1.0	<1.0	<10	5.7	SPL	--	--	--	--
6/18/1998	--		87.91	8.89	--	79.02	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--
6/18/1998	--	c	87.91	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
3/9/1999	--		87.91	10.20	--	77.71	15,000	<5.0	<5.0	<5.0	<5.0	23,000	--	SPL	--	--	--	--
9/28/1999	--		87.91	11.81	--	76.10	36,000	<5.0	12	7	26	35,000	--	SPL	--	--	--	<5.0
10/14/1999	--		87.91	10.27	--	77.64	--	--	--	--	--	--	--	SPL	--	100	--	--
3/27/2000	--		87.91	9.98	--	77.93	1,300	<0.5	<0.5	0.51	<0.5	5,800	--	PACE	--	--	--	--
9/28/2000	--		87.91	11.40	--	76.51	1,600	1.8	1.7	0.54	2.2	15,000	--	PACE	--	--	--	--
3/8/2001	--		87.91	11.16	--	76.75	20,000	<0.5	<0.5	<0.5	<0.5	29,100	--	PACE	--	--	--	--
9/21/2001	--		87.91	11.65	--	76.26	5,000	<0.5	<0.5	<0.5	<1.5	6,110	--	PACE	--	--	--	--
2/28/2002	--		87.91	9.86	--	78.05	3,200	35.1	<0.5	<0.5	<1.0	4,620	--	PACE	--	--	--	--
9/6/2002	--		87.91	12.32	--	75.59	1,900	<10	<10	<10	<10	15,000	--	SEQ	--	--	--	--
2/19/2003	--	h	87.91	11.63	--	76.28	45,000	<250	<250	<250	<250	32,000	--	SEQ	--	--	--	--
7/14/2003	--		87.91	12.07	--	75.84	9,300	<500	<500	<500	<500	24,000	--	SEQ	--	--	--	--
01/14/2004	P		87.91	11.45	--	76.46	<50,000	<500	<500	<500	<500	21,000	--	SEQM	6.9	--	--	--
04/23/2004	P	l	87.91	11.45	--	76.46	5,100	<250	<250	<250	<250	22,000	--	SEQM	6.8	--	--	--
07/01/2004	P		87.91	12.32	--	75.59	<5,000	<50	<50	<50	<50	5,200	--	SEQM	5.6	--	--	--
10/28/2004	P		87.91	13.02	--	74.89	8,500	<50	<50	<50	<50	6,800	--	SEQM	6.2	--	--	--
01/10/2005	P		87.91	14.38	--	73.53	<25,000	<250	<250	<250	<250	7,100	--	SEQM	7.6	--	--	--
04/13/2005	P		87.91	14.03	--	73.88	<5,000	<50	<50	<50	<50	5,300	--	SEQM	6.6	--	--	--
07/11/2005	P		87.91	11.25	--	76.66	<5,000	<50	<50	<50	<50	5,300	--	SEQM	7.5	--	--	--
10/17/2005	P		87.91	12.48	--	75.43	<5,000	<50	<50	<50	<50	2,500	--	SEQM	8.2	--	--	--
01/17/2006	P		87.91	10.70	--	77.21	<5,000	<50	<50	<50	<50	2,200	--	SEQM	7.0	--	--	--
04/21/2006	--	n	87.91	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/26/2006	--	k	87.91	10.47	--	77.44	2,700	<50	<50	<50	<50	2,900	--	TAMC	6.69	--	--	--
10/31/2006	P		87.91	12.02	--	75.89	2,300	<25	<25	<25	<25	2,300	2.02	TAMC	6.71	--	--	--
1/8/2007	P		87.91	11.68	--	76.23	1500	<12	<12	<12	<12	1700	1.37	TAMC	6.54	--	--	--
4/10/2007	P	k	87.91	11.45	--	76.46	1,300	<50	<50	<50	<50	1,500	1.60	TAMC	6.89	--	--	--
7/10/2007	P	k, p	87.91	11.97	--	75.94	2,300	<25	<25	<25	<25	2,600	1.82	TAMC	6.69	120	--	--

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Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MtBE						
MW-2 Cont.																		
10/24/2007	P	k	87.91	12.91	--	75.00	2,800	<25	<25	<25	<25	2,800	1.55	TAMC	6.77	--	--	--
1/22/2008	P		87.91	12.00	--	75.91	<2,500	<25	<25	<25	<25	1,400	2.08	TAMC	6.55	--	--	--
4/15/2008	P		87.91	11.77	--	76.14	73	<2.5	<2.5	<2.5	<2.5	2,400	3.12	CEL	6.72	--	--	--
7/8/2008	P		87.91	12.65	--	75.26	93	<50	<50	<50	<50	2,800	1.78	CEL	7.05	--	--	--
11/19/2008	P		87.91	13.98	--	73.93	130	<50	<50	<50	<50	1,900	1.75	CEL	6.72	--	--	--
2/10/2009	P		87.91	13.64	--	74.27	<50	<50	<50	<50	<50	940	1.71	CEL	7.04	--	--	--
5/7/2009	P		87.91	12.00	--	75.91	350	<20	<20	<20	<20	1,900	1.62	CEL	6.94	--	--	--
9/3/2009	P	q	87.91	13.68	--	74.23	890	<40	<40	<40	<40	1,300	1.56	CEL	7.02	--	--	--
10/29/2009	**P**	**k**	**87.91**	**13.88**	**--**	**74.03**	**530**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**690**	**1.60**	**TAMC**	**6.7**	**--**	**--**	**--**
MW-3																		
11/4/1989	--		87.02	15.40	--	71.62	<500	<0.3	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
11/11/1989	--		87.02	14.10	--	72.92	--	--	--	--	--	--	--	--	--	--	--	--
4/3/1990	--		87.02	13.90	--	73.12	<100	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
7/30/1990	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	<5000	--
11/20/1990	--		87.02	14.67	--	72.35	<50	0.3	0.8	0.4	1.5	--	--	SAL	--	--	--	--
3/1/1991	--		87.02	15.22	--	71.80	<100	0.4	<0.3	<0.3	<0.3	--	--	SAL	--	--	--	--
8/19/1991	--		87.02	13.15	--	73.87	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
11/13/1991	--		87.02	15.66	--	71.36	<30	<0.3	<0.3	<0.3	<0.3	--	--	SEQ	--	--	--	--
2/24/1992	--		87.02	15.01	--	72.01	<50	0.65	1.4	0.66	4.4	--	--	SEQ	--	--	--	--
5/19/1992	--		87.02	15.52	--	71.50	<50	<0.5	<0.5	<0.5	<0.5	--	--	SEQ	--	--	--	--
7/22/1992	--		87.02	15.63	--	71.39	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	<50	<5000	--
8/14/1992	--		87.02	13.57	--	73.45	--	--	--	--	--	--	--	--	--	--	--	--
11/11/1992	--		87.02	14.13	--	72.89	<50	<0.5	0.7	<0.5	1.3	--	--	ANA	--	--	--	--
6/7/1993	--		87.02	12.13	--	74.89	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
12/2/1993	--		87.02	13.29	--	73.73	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
6/22/1994	--		87.02	12.78	--	74.24	<50	<0.5	<0.5	<0.5	<0.5	--	2.9	PACE	--	--	--	--
1/10/1995	--		87.02	12.01	--	75.01	<50	<0.5	<0.5	<0.5	<1	--	3.8	ATI	--	--	--	--
6/21/1995	--		87.02	11.57	--	75.45	<50	<0.50	<0.50	<0.50	<1.0	--	7.4	ATI	--	--	--	--
12/27/1995	--		87.02	13.47	--	73.55	<50	<0.50	<0.50	<0.50	<1.0	5.7	7.3	ATI	--	--	--	--
6/13/1996	--		87.02	11.22	--	75.80	60	<0.5	<0.5	<0.5	<0.5	<10	6.8	SPL	--	--	--	--

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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MtBE						
MW-3 Cont.																		
12/4/1996	--		87.02	13.28	--	73.74	<50	<0.5	<1	<1	<1	<10	6.7	SPL	--	--	--	--
6/10/1997	--		87.02	10.22	--	76.80	<50	<0.5	<1.0	<1.0	<1.0	<10	6.1	SPL	--	--	--	--
12/12/1997	--	c	87.02	--	--	--	<50	<0.5	<1.0	<1.0	<1.0	<10	--	SPL	--	--	--	--
12/12/1997	--		87.02	12.61	--	74.41	<50	<0.5	<1.0	<1.0	<1.0	<10	5.6	SPL	--	--	--	--
6/18/1998	--		87.02	9.07	--	77.95	50	<0.5	<1.0	<1.0	<1.0	<10	5.3	SPL	--	--	--	--
6/18/1998	--		87.02	12.80	--	74.22	--	--	--	--	--	--	--	--	--	--	--	--
9/28/1999	--		87.02	13.76	--	73.26	--	--	--	--	--	--	--	--	--	--	--	--
3/27/2000	--		87.02	13.77	--	73.25	<50	<0.5	<0.5	<0.5	<0.5	1.6	--	PACE	--	--	--	--
9/28/2000	--		87.02	11.28	--	75.74	<50	<0.5	7.4	<0.5	1.3	2	--	PACE	--	--	--	--
3/8/2001	--		87.02	11.75	--	75.27	<50	<0.5	<0.5	<0.5	<0.5	60.4	--	PACE	--	--	--	--
9/21/2001	--		87.02	11.33	--	75.69	<50	<0.5	<0.5	<0.5	<1.5	8.18	--	PACE	--	--	--	--
2/28/2002	--		87.02	10.86	--	76.16	<50	<0.5	<0.5	<0.5	<1.0	25.5	--	PACE	--	--	--	--
9/6/2002	--		87.02	12.73	--	74.29	<50	1.2	<0.5	<0.5	1	16	--	SEQ	--	--	--	--
2/19/2003	--	h	87.02	11.72	--	75.30	<500	<5.0	<5.0	<5.0	<5.0	110	--	SEQ	--	--	--	--
7/14/2003	--		87.02	13.76	--	73.26	<50	<0.50	<0.50	<0.50	0.67	28	--	SEQ	--	--	--	--
01/14/2004	P		87.02	14.83	--	72.19	550	<5.0	<5.0	<5.0	<5.0	380	--	SEQM	8.1	--	--	--
04/23/2004	P	l	87.02	13.17	--	73.85	<200	<25	<25	<25	<25	560	--	SEQM	6.8	--	--	--
07/01/2004	P		87.02	15.19	--	71.83	<50	<0.50	<0.50	<0.50	0.50	48	--	SEQM	6.4	--	--	--
10/28/2004	P		87.02	15.50	--	71.52	<500	<5.0	<5.0	<5.0	<5.0	290	--	SEQM	6.3	--	--	--
01/10/2005	P		87.02	15.00	--	72.02	<50	<0.50	<0.50	<0.50	<0.50	18	--	SEQM	7.6	--	--	--
04/13/2005	P		87.02	14.34	--	72.68	<50	<0.50	<0.50	<0.50	<0.50	9.0	--	SEQM	7.1	--	--	--
07/11/2005	P	k	87.02	10.82	--	76.20	130	<1.0	<1.0	<1.0	<1.0	120	--	SEQM	7.8	--	--	--
10/17/2005	P		87.02	11.84	--	75.18	<250	<2.5	<2.5	<2.5	<2.5	260	--	SEQM	8.5	--	--	--
01/17/2006	P		87.02	11.59	--	75.43	800	<5.0	<5.0	<5.0	<5.0	980	--	SEQM	7.2	--	--	--
04/21/2006	P		87.02	10.00	--	77.02	<500	<5.0	<5.0	<5.0	<5.0	48	--	SEQM	6.7	--	--	--
7/17/2006	P	k	87.02	10.80	--	76.22	910	<5.0	<5.0	<5.0	<5.0	1,400	--	TAMC	7.7	--	--	--
7/26/2006	P		87.02	9.67	--	77.35	810	<10	<10	<10	<10	1,300	--	TAMC	6.56	--	--	--
10/31/2006	P		87.02	10.85	--	76.17	1,600	<10	<10	<10	<10	2,300	2.50	TAMC	6.84	--	--	--
1/8/2007	P		87.02	12.73	--	74.29	520	<5.0	<5.0	<5.0	<5.0	760	3.61	TAMC	7.12	--	--	--
4/10/2007	P	k	87.02	11.93	--	75.09	630	<5.0	<5.0	<5.0	<5.0	750	2.31	TAMC	7.15	--	--	--
7/10/2007	P	k, p	87.02	11.30	--	75.72	1,800	<5.0	<5.0	<5.0	<5.0	2,400	1.56	TAMC	6.72	66	--	--

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Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	P/NP	Footnote	TOC Elevation (feet)	DTW (feet bgs)	Product Thickness (feet)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	Lab	pH	DRO/ TPHd (µg/L)	TOG (µg/L)	HVOC (µg/L)
							GRO/ TPHg	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MtBE						
MW-3 Cont.																		
10/24/2007	P	k	87.02	13.77	--	73.25	2,000	<25	<25	<25	<25	3,500	1.62	TAMC	6.41	--	--	--
1/22/2008	P	k	87.02	12.92	--	74.10	1,600	<12	<12	<12	<12	2,800	2.17	TAMC	6.32	--	--	--
4/15/2008	P		87.02	15.25	--	71.77	<50	<2.5	<2.5	<2.5	<2.5	960	3.44	CEL	6.71	--	--	--
7/8/2008	P		87.02	12.27	--	74.75	<50	<50	<50	<50	<50	2,200	1.52	CEL	7.01	--	--	--
11/19/2008	P		87.02	15.27	--	71.75	<50	<50	<50	<50	<50	2,700	1.60	CEL	6.83	--	--	--
2/10/2009	P		87.02	13.61	--	73.41	<50	<50	<50	<50	<50	1,800	1.66	CEL	6.98	--	--	--
5/7/2009	P		87.02	11.75	--	75.27	140	<10	<10	<10	<10	780	1.28	CEL	6.86	--	--	--
9/3/2009	P	q	87.02	13.47	--	73.55	1,100	<10	<10	<10	<10	2,400	1.33	CEL	6.87	--	--	--
10/29/2009	**P**	**k**	**87.02**	**13.04**	**--**	**73.98**	**1,000**	**<10**	**<10**	**<10**	**<20**	**1,500**	**0.97**	**TAMC**	**7.09**	**--**	**--**	**--**
QC-2																		
11/11/1992	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	ANA	--	--	--	--
6/7/1993	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
12/2/1993	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
6/22/1994	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	PACE	--	--	--	--
1/10/1995	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<1	--	--	ATI	--	--	--	--
6/21/1995	--	g	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	--	--	ATI	--	--	--	--
12/27/1995	--	g	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.0	<5.0	--	ATI	--	--	--	--
6/13/1996	--	g	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<10	--	SPL	--	--	--	--

ABBREVIATIONS & SYMBOLS:
--/--- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DRO = Diesel range organics
DTW = Depth to water in ft bgs
ft bgs = feet below ground surface
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation measured in ft
HVOC = Halogenated volatile organic compounds
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Well not purged prior to sampling
P = Well purged prior to sampling
TOC = Top of casing measured in ft
TOG = Total oil and grease
TPH-d = Total petroleum hydrocarbons as diesel
TPH-g = Total petroleum hydrocarbons as gasoline
µg/L = Micrograms per liter
ANA = Anametrix, Inc.
PACE = Pace, Inc.
ATI = Analytical Technologies, Inc.
SAL = Superior Analytical Laboratory
SPL = Southern Petroleum Laboratories
SEQ/SEQM = Sequoia Analytical/Sequoia Analytical - Morgan Hill (Laboratories)
CEL = CalScience Environmental Laboratories, Inc.

FOOTNOTES:
c = Blind duplicate.
d = A copy of the documentation for this data is included in Appendix C of Alisto report 10-076-06-002.
e = Tetrachloroethene
f = trans-1,2-Dichloroethene
g = Travel blank.
h = TPH-g, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and MTBE analyzed by EPA Method 8260B beginning on 1st quarter sampling event (2/19/03).
k = The hydrocarbon result was partly due to individual peaks in the quantification range (GRO).
l = GRO analyzed by EPA Method 8015B.
m = Confirmatory analysis for total xylenes was past holding time.
n = Well inaccessible.
p = Hydrocarbon in req. fuel range, but doesn't resemble req. fuel (DRO).
q = Quantitaion of unknown hydrocarbon(s) in sample based on gasoline (GRO).

NOTES:
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-TPH-g 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 pH and DO 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 September 30, 2009. GRO analysis was changed to EPA method 8260B (C6-C12) for the time period October 1, 2009 through the present.

Note: 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

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-1									
7/14/2003	<2000	2,700	940	<20	<20	<20	--	--	
01/14/2004	<1,000	2,500	220	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<500	2,500	150	<2.5	<2.5	<2.5	<2.5	<2.5	
07/01/2004	<500	2,000	96	<2.5	<2.5	<2.5	<2.5	<2.5	
10/28/2004	<5.0	1,500	43	<0.50	<0.50	0.58	<0.50	<0.50	
01/10/2005	<500	1,900	85	<2.5	<2.5	<2.5	<2.5	<2.5	
04/13/2005	<500	1,400	48	<2.5	<2.5	<2.5	<2.5	<2.5	
07/11/2005	<100	550	36	<0.50	<0.50	<0.50	<0.50	<0.50	
10/17/2005	<100	450	20	<0.50	<0.50	<0.50	<0.50	<0.50	a
01/17/2006	<300	260	38	<0.50	<0.50	0.54	<0.50	<0.50	
04/21/2006	<300	320	17	<0.50	<0.50	<0.50	<0.50	<0.50	
7/17/2006	<300	32	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/26/2006	<300	22	4.4	<0.50	<0.50	<0.50	<0.50	<0.50	
10/31/2006	<300	<20	2.8	<0.50	<0.50	<0.50	<0.50	<0.50	a
1/8/2007	<300	110	6.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/10/2007	<300	210	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
7/10/2007	<300	110	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
10/24/2007	<300	94	4.9	<0.50	<0.50	<0.50	<0.50	<0.50	
1/22/2008	<300	110	7.2	<0.50	<0.50	<0.50	<0.50	<0.50	
4/15/2008	<300	84	5.5	<0.50	<0.50	<0.50	<0.50	<0.50	
7/8/2008	<300	64	5.8	<0.50	<0.50	<0.50	<0.50	<0.50	
11/19/2008	<300	110	3.4	<0.50	<0.50	<0.50	<0.50	<0.50	
2/10/2009	<300	110	5.3	<0.50	<0.50	<0.50	<0.50	<0.50	
5/7/2009	<300	17	13	<0.50	<0.50	<0.50	<0.50	<0.50	
9/3/2009	<300	260	3.8	<0.50	<0.50	<0.50	<0.50	<0.50	
10/29/2009	**<100**	**210**	**22**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	
MW-2									
7/14/2003	<100000	<20000	24,000	<1000	<1000	<1000	--	--	
01/14/2004	<100,000	<20,000	21,000	<500	<500	<500	<500	<500	
04/23/2004	<50,000	11,000	22,000	<250	<250	420	<250	<250	
07/01/2004	<10,000	2,900	5,200	<50	<50	110	<50	<50	

Table 2. Summary of Fuel Additives Analytical Data

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-2 Cont.									
10/28/2004	<5.0	6,700	6,800	<50	<50	120	<50	<50	
01/10/2005	<50,000	<10,000	7,100	<250	<250	<250	<250	<250	
04/13/2005	<10,000	5,300	5,300	<50	<50	95	<50	<50	
07/11/2005	<10,000	9,000	5,300	<50	<50	99	<50	<50	
10/17/2005	<10,000	5,200	2,500	<50	<50	<50	<50	<50	a
01/17/2006	<30,000	8,400	2,200	<50	<50	<50	<50	<50	
04/21/2006	--	--	--	--	--	--	--	--	Well inaccessible
7/26/2006	<30,000	4,500	2,900	<50	<50	<50	<50	<50	
10/31/2006	<15,000	9,300	2,300	<25	<25	41	<25	<25	a
1/8/2007	<7,500	7700	1700	<12	<12	38	<12	<12	
4/10/2007	<30,000	6,400	1,500	<50	<50	<50	<50	<50	
7/10/2007	<15,000	8,700	2,600	<25	<25	42	<25	<25	
10/24/2007	<15,000	9,500	2,800	<25	<25	52	<25	<25	
1/22/2008	<15,000	6,000	1,400	<25	<25	<25	<25	<25	
4/15/2008	<1,500	6,800	2,400	<2.5	<2.5	30	2.8	<2.5	
7/8/2008	<30,000	7,600	2,800	<50	<50	<50	<50	<50	
11/19/2008	<30,000	7,100	1,900	<50	<50	<50	<50	<50	
2/10/2009	<30,000	2,700	940	<50	<50	<50	<50	<50	
5/7/2009	<12,000	3,900	1,900	<20	<20	30	<20	<20	
9/3/2009	<24,000	7,500	1,300	<40	<40	<40	<40	<40	
10/29/2009	**<100**	**3,900**	**690**	**<0.50**	**<0.50**	**12**	**2.4**	**<0.50**	
MW-3									
7/14/2003	<100	<20	28	<1.0	<1.0	<1.0	--	--	
01/14/2004	<1,000	<200	380	<5.0	<5.0	<5.0	<5.0	<5.0	
04/23/2004	<5,000	<1,000	560	<25	<25	<25	<25	<25	
07/01/2004	<100	<20	48	<0.50	<0.50	0.52	<0.50	<0.50	
10/28/2004	<5.0	<200	290	<5.0	<5.0	<5.0	<5.0	<5.0	
01/10/2005	<100	<20	18	<0.50	<0.50	<0.50	<0.50	<0.50	
04/13/2005	<100	<20	9.0	<0.50	<0.50	<0.50	<0.50	<0.50	
07/11/2005	<200	<40	120	<1.0	<1.0	1.4	<1.0	<1.0	a
10/17/2005	<500	<100	260	<2.5	<2.5	4.2	<2.5	<2.5	a

Table 2. Summary of Fuel Additives Analytical Data

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-3 Cont.									
01/17/2006	<3,000	200	980	<5.0	<5.0	13	<5.0	<5.0	
04/21/2006	<3,000	<200	48	<5.0	<5.0	<5.0	<5.0	<5.0	
7/17/2006	<3,000	<200	1,400	<5.0	<5.0	15	<5.0	<5.0	
7/26/2006	<6,000	<400	1,300	<10	<10	18	<10	<10	
10/31/2006	<6,000	<400	2,300	<10	<10	39	<10	<10	a
1/8/2007	<3000	<200	760	<5.0	<5.0	9.7	<5.0	<5.0	
4/10/2007	<3,000	<200	750	<5.0	<5.0	<5.0	<5.0	<5.0	
7/10/2007	<3,000	<200	2,400	<5.0	<5.0	39	<5.0	--	
10/24/2007	<15,000	<1,000	3,500	<25	<25	58	<25	<25	
1/22/2008	<7,500	<500	2,800	<12	<12	34	<12	<12	
4/15/2008	<1,500	<50	960	<2.5	<2.5	9.2	<2.5	<2.5	
7/8/2008	<30,000	<1,000	2,200	<50	<50	<50	<50	<50	
11/19/2008	<30,000	<1,000	2,700	<50	<50	<50	<50	<50	
2/10/2009	<30,000	<1,000	1,800	<50	<50	<50	<50	<50	
5/7/2009	<6,000	<200	780	<10	<10	11	<10	<10	
9/3/2009	<6,000	<200	2,400	<10	<10	39	<10	<10	
10/29/2009	**<2,000**	**110**	**1,500**	**<10**	**<10**	**17**	**<10**	**<10**	

ABBREVIATIONS & SYMBOLS:
-- = Not analyzed/applicable/measured/available
< = Not detected at or above specified laboratory reporting limit
1,2-DCA = 1,2-Dichloroethane
DIPE = Di-isopropyl 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 calibration verification for ethanol was within the method limits but outside the contract limits.

NOTES:
All volatile organic compounds were analyzed using EPA Method 8260B.

Note: 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 Ground-Water Flow Direction and Gradient

Station #11102, 100 MacArthur Blvd., Oakland, CA

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
4/21/2006	--	--
7/17/2006	Southwest	0.05
10/31/2006	Southwest	0.04
1/8/2007	West	0.06
4/10/2007	West	0.05
7/10/2007	Southwest	0.04
10/24/2007	West-Southwest	0.06
1/22/2008	West	0.05
4/15/2008	West-Southwest	0.09
7/8/2008	West-Southwest	0.05
11/19/2008	West	0.06
2/10/2009	West	0.04
5/7/2009	West	0.05
9/3/2009	West	0.05
10/29/2009	**West**	**0.04**

Note: 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 4. Bio-Degradation Parameters

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)			Ferrous Iron (mg/L)	ORP (mV)	DO (mg/L)	Conductivity (µS/cm)	Hydrogen Sulfide (mg/L)	Methane (µg/L)	pH	Comments
	Total Alkalinity	Nitrate NO3	Sulfate SO4								
MW-1											
7/10/2007	--	1,500	21,000	0.11	71.1	2.01	--	<1.0	--	6.60	
10/24/2007	--	--	--	--	--	1.89	639	--	--	6.57	
1/22/2008	--	760	11,000	0.42	108	3.18	811	<1.0	--	6.49	
4/15/2008	--	240	9,900	0.26	--	3.32	758	<0.100	--	6.45	
7/8/2008	--	860	19,000	0.23	--	1.65	628	--	--	6.78	
11/19/2008	--	540	16,000	0.5	--	1.59	853	--	--	6.84	
2/10/2009	--	830	35,000	0.0	63	1.63	899	<100	--	7.00	
5/7/2009	--	9,300	40,000	0.5	59	1.41	851	<100	--	6.82	
9/3/2009	--	<440	15,000	0.0	62	1.45	676	<100	--	6.82	
10/29/2009	--	**<1,000**	**19,000**	**<0.10**	**20**	**1.53**	**142.8**	**2.9**	--	**6.73**	**a**
MW-2											
7/10/2007	--	<500	26,000	0.16	9.7	1.82	--	<1.0	--	6.69	
10/24/2007	--	--	--	--	--	1.55	863	--	--	6.77	
1/22/2008	--	8,500	26,000	0.15	167	2.08	672	<1.0	--	6.55	
4/15/2008	--	<100	28,000	<0.100	--	3.12	799	<0.100	--	6.72	
7/8/2008	--	<440	25,000	0.15	--	1.78	753	--	--	7.05	
11/19/2008	--	3,300	20,000	0.0	--	1.75	581	--	--	6.72	
2/10/2009	--	22,000	42,000	0.0	87	1.71	591	100	--	7.04	CL (NO3)
5/7/2009	--	<440	33,000	0.03	90	1.62	1,108	<100	--	6.94	
9/3/2009	--	<440	16,000	0.5	93	1.56	525	<100	--	7.02	
10/29/2009	--	**<1,000**	**14,000**	**0.64**	--	**1.60**	**514.4**	**3.1**	--	**6.7**	**a**
MW-3											
7/10/2007	--	8,500	19,000	<0.100	182.9	1.56	--	<1.0	--	6.72	
10/24/2007	--	--	--	--	--	1.62	639	--	--	6.41	
1/22/2008	--	5,600	17,000	<0.100	144	2.17	636	<1.0	--	6.32	
4/15/2008	--	1,600	21,000	<0.100	--	3.44	638	<0.100	--	6.71	
7/8/2008	--	6,700	18,000	<0.100	--	1.52	651	--	--	7.01	
11/19/2008	--	6,100	15,000	0.5	--	1.60	651	--	--	6.83	
2/10/2009	--	5,400	22,000	0.0	91	1.66	659	<100	--	6.98	
5/7/2009	--	11,300	19,000	0.0	87	1.28	643	<100	--	6.86	

Table 4. Bio-Degradation Parameters

Station #11102, 100 MacArthur Blvd., Oakland, CA

Well and Sample Date	Concentrations in (µg/L)			Ferrous Iron (mg/L)	ORP (mV)	DO (mg/L)	Conductivity (µS/cm)	Hydrogen Sulfide (mg/L)	Methane (µg/L)	pH	Comments
	Total Alkalinity	Nitrate NO3	Sulfate SO4								
MW-3 Cont.											
9/3/2009	--	8,100	15,000	0.0	85	1.33	557	<100	--	6.87	
10/29/2009	--	**12,000**	**17,000**	**<0.10**	**-21**	**0.97**	**630**	**2.4**	--	**7.09**	**a**

ABBREVIATIONS AND SYMBOLS:

< = Not detected at or above specified laboratory reporting limit
ORP = Oxygen reduction potential
DO = Dissolved oxygen
CO2 = Carbon dioxide
mV = Millivolts
µg/L = Micrograms per liter
mg/L = Milligrams per liter

a = Sample analyzed for total sulfide instead of hydrogen sulfide due to holding time requirements

CL = Initial analysis within holding time but required dilution

APPENDIX A

BAI GROUND-WATER SAMPLING DATA PACKAGE
(INCLUDES FIELD DATA SHEETS, LABORATORY ANALYTICAL REPORT WITH CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD PROCEDURES)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 720-23756-1

Job Description: BP #11102, Oakland

For:
ARCADIS U.S., Inc.
155 Montgomery Street
Suite 1500
San Francisco, CA 94104

Attention: Hollis Phillips

Approved for release.
Dimple Sharma
Project Manager I
11/12/2009 3:01 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com
11/12/2009

cc: Mr. Jason Duda
Mr. Ben McKenna

CA ELAP Certification # 2496
The Chain(s) of Custody are included and are an integral part of this report.

A trip blank is required to be provided for volatile analyses. If trip blank results are not included in the report, either the trip blank was not submitted or requested to be analyzed.

Comments
No additional comments.

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

GC/MS VOA
Method 8260B: The Gasoline Range Organics (GRO) concentration reported for the following sample(s) is due to the presence of discrete peaks: MW-2 (720-23756-2), MW-3 (720-23756-3).

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

EXECUTIVE SUMMARY - Detections

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Sample ID / Analyte	Client Sample ID	Result / Qualifier	Reporting Limit	Units	Method
720-23756-1	**MW-1**				
Methyl tert-butyl ether		22	0.50	ug/L	8260B/CA_LUFTMS
TBA		210	4.0	ug/L	8260B/CA_LUFTMS
Sulfate		19	1.0	mg/L	300.0
Sulfide		2.9	1.0	mg/L	376.1
720-23756-2	**MW-2**				
Methyl tert-butyl ether		690	10	ug/L	8260B/CA_LUFTMS
1,2-DCA		2.4	0.50	ug/L	8260B/CA_LUFTMS
TBA		3900	80	ug/L	8260B/CA_LUFTMS
TAME		12	0.50	ug/L	8260B/CA_LUFTMS
Gasoline Range Organics (GRO)-C6-C12		530	50	ug/L	8260B/CA_LUFTMS
Sulfate		14	1.0	mg/L	300.0
Sulfide		3.1	1.0	mg/L	376.1
Ferrous Iron		0.64	0.10	mg/L	SM 3500 FE D
720-23756-3	**MW-3**				
Methyl tert-butyl ether		1500	10	ug/L	8260B/CA_LUFTMS
TBA		110	80	ug/L	8260B/CA_LUFTMS
TAME		17	10	ug/L	8260B/CA_LUFTMS
Gasoline Range Organics (GRO)-C6-C12		1000	1000	ug/L	8260B/CA_LUFTMS
Sulfate		17	1.0	mg/L	300.0
Nitrate as NO3		12	1.0	mg/L	300.0
Sulfide		2.4	1.0	mg/L	376.1

METHOD SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
8260B / CA LUFT MS	TAL SF	SW846 8260B/CA_LUFTMS	
Purge and Trap	TAL SF		SW846 5030B
Anions, Ion Chromatography	TAL SF	MCAWW 300.0	
Sulfide	TAL CHI	MCAWW 376.1	
Iron, Ferrous and Ferric	TAL SF	SM SM 3500 FE D	

Lab References:

TAL CHI = TestAmerica Chicago

TAL SF = TestAmerica San Francisco

Method References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

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

SAMPLE SUMMARY

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
720-23756-1	MW-1	Water	10/29/2009 1145	10/29/2009 1400
720-23756-2	MW-2	Water	10/29/2009 1135	10/29/2009 1400
720-23756-3	MW-3	Water	10/29/2009 1125	10/29/2009 1400

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Client Sample ID: **MW-1**

Lab Sample ID: 720-23756-1 Date Sampled: 10/29/2009 1145
Client Matrix: Water Date Received: 10/29/2009 1400

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-60617		Instrument ID:	HP4
Preparation:	5030B			Lab File ID:	103109018.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 2020			Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 2020				

Analyte	Result (ug/L)	Qualifier	RL
Methyl tert-butyl ether	22		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
TBA	210		4.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50
Gasoline Range Organics (GRO)-C6-C12	ND		50

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		67 - 130
1,2-Dichloroethane-d4 (Surr)	107		67 - 130
Toluene-d8 (Surr)	98		70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Client Sample ID: **MW-2**

Lab Sample ID: 720-23756-2 Date Sampled: 10/29/2009 1135
Client Matrix: Water Date Received: 10/29/2009 1400

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-60617	Instrument ID:	HP4
Preparation:	5030B		Lab File ID:	103109019.D
Dilution:	1.0		Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 2053		Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 2053			

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	2.4		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	12		0.50
Ethyl t-butyl ether	ND		0.50
Gasoline Range Organics (GRO)-C6-C12	530		50

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	96		67 - 130
1,2-Dichloroethane-d4 (Surr)	104		67 - 130
Toluene-d8 (Surr)	98		70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Client Sample ID: **MW-2**

Lab Sample ID: 720-23756-2 Date Sampled: 10/29/2009 1135
Client Matrix: Water Date Received: 10/29/2009 1400

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-60704		Instrument ID:	HP4
Preparation:	5030B			Lab File ID:	11020934.D
Dilution:	20			Initial Weight/Volume:	10 mL
Date Analyzed:	11/03/2009 0327			Final Weight/Volume:	10 mL
Date Prepared:	11/03/2009 0327				

Analyte	Result (ug/L)	Qualifier	RL
Methyl tert-butyl ether	690		10
TBA	3900		80

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	94		67 - 130
1,2-Dichloroethane-d4 (Surr)	100		67 - 130
Toluene-d8 (Surr)	99		70 - 130

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Client Sample ID: **MW-3**

Lab Sample ID: 720-23756-3 Date Sampled: 10/29/2009 1125
Client Matrix: Water Date Received: 10/29/2009 1400

8260B/CA_LUFTMS 8260B / CA LUFT MS

Method:	8260B/CA_LUFTMS	Analysis Batch: 720-60704		Instrument ID:	HP4
Preparation:	5030B			Lab File ID:	11020935.D
Dilution:	20			Initial Weight/Volume:	10 mL
Date Analyzed:	11/03/2009 0400			Final Weight/Volume:	10 mL
Date Prepared:	11/03/2009 0400				

Analyte	Result (ug/L)	Qualifier	RL
Methyl tert-butyl ether	1500		10
Benzene	ND		10
EDB	ND		10
1,2-DCA	ND		10
Ethylbenzene	ND		10
Toluene	ND		10
Xylenes, Total	ND		20
TBA	110		80
Ethanol	ND		2000
DIPE	ND		10
TAME	17		10
Ethyl t-butyl ether	ND		10
Gasoline Range Organics (GRO)-C6-C12	1000		1000

Surrogate	%Rec	Qualifier	Acceptance Limits
4-Bromofluorobenzene	91		67 - 130
1,2-Dichloroethane-d4 (Surr)	100		67 - 130
Toluene-d8 (Surr)	96		70 - 130

General Chemistry

Client Sample ID: **MW-1**

Lab Sample ID: 720-23756-1 Date Sampled: 10/29/2009 1145
Client Matrix: Water Date Received: 10/29/2009 1400

Analyte	Result	Qual	Units	RL	Dil	Method
Sulfate	19		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1642					
Ferrous Iron	ND		mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 720-61202	Date Analyzed: 10/29/2009 1715					
Sulfide	2.9		mg/L	1.0	1.0	376.1
Analysis Batch: 500-74795	Date Analyzed (Start): 11/02/2009 1442 (End) 11/02/2009 1443					
Nitrate as NO3	ND		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1642					

General Chemistry

Client Sample ID: **MW-2**

Lab Sample ID: 720-23756-2 Date Sampled: 10/29/2009 1135
Client Matrix: Water Date Received: 10/29/2009 1400

Analyte	Result	Qual	Units	RL	Dil	Method
Sulfate	14		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1717					
Ferrous Iron	0.64		mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 720-61202	Date Analyzed: 10/29/2009 1715					
Sulfide	3.1		mg/L	1.0	1.0	376.1
Analysis Batch: 500-74795	Date Analyzed (Start): 11/02/2009 1443 (End) 11/02/2009 1444					
Nitrate as NO3	ND		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1717					

General Chemistry

Client Sample ID: **MW-3**

Lab Sample ID: 720-23756-3 Date Sampled: 10/29/2009 1125
Client Matrix: Water Date Received: 10/29/2009 1400

Analyte	Result	Qual	Units	RL	Dil	Method
Sulfate	17		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1751					
Ferrous Iron	ND		mg/L	0.10	1.0	SM 3500 FE D
Analysis Batch: 720-61202	Date Analyzed: 10/29/2009 1715					
Sulfide	2.4		mg/L	1.0	1.0	376.1
Analysis Batch: 500-74795	Date Analyzed (Start): 11/02/2009 1444 (End) 11/02/2009 1445					
Nitrate as NO3	12		mg/L	1.0	1.0	300.0
Analysis Batch: 720-60484	Date Analyzed: 10/29/2009 1751					

DATA REPORTING QUALIFIERS

Lab Section	Qualifier	Description

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:720-60617					
LCS 720-60617/4	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCS 720-60617/6	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-60617/5	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
LCSD 720-60617/7	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-60617/8	Method Blank	T	Water	8260B/CA_LUFT	
720-23756-1	MW-1	T	Water	8260B/CA_LUFT	
720-23756-2	MW-2	T	Water	8260B/CA_LUFT	
Analysis Batch:720-60704					
LCS 720-60704/4	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCS 720-60704/6	Lab Control Sample	T	Water	8260B/CA_LUFT	
LCSD 720-60704/5	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
LCSD 720-60704/7	Lab Control Sample Duplicate	T	Water	8260B/CA_LUFT	
MB 720-60704/8	Method Blank	T	Water	8260B/CA_LUFT	
720-23756-2	MW-2	T	Water	8260B/CA_LUFT	
720-23756-3	MW-3	T	Water	8260B/CA_LUFT	

Report Basis
T = Total

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:720-60484					
LCS 720-60484/14	Lab Control Sample	T	Water	300.0	
LCSD 720-60484/15	Lab Control Sample Duplicate	T	Water	300.0	
MB 720-60484/11	Method Blank	T	Water	300.0	
720-23756-1	MW-1	T	Water	300.0	
720-23756-2	MW-2	T	Water	300.0	
720-23756-3	MW-3	T	Water	300.0	
Analysis Batch:720-61202					
LCS 720-61202/2	Lab Control Sample	T	Water	SM 3500 FE D	
LCSD 720-61202/3	Lab Control Sample Duplicate	T	Water	SM 3500 FE D	
MB 720-61202/1	Method Blank	T	Water	SM 3500 FE D	
720-23756-1	MW-1	T	Water	SM 3500 FE D	
720-23756-1MS	Matrix Spike	T	Water	SM 3500 FE D	
720-23756-1MSD	Matrix Spike Duplicate	T	Water	SM 3500 FE D	
720-23756-2	MW-2	T	Water	SM 3500 FE D	
720-23756-3	MW-3	T	Water	SM 3500 FE D	
Analysis Batch:500-74795					
LCS 500-74795/2	Lab Control Sample	T	Water	376.1	
MB 500-74795/1	Method Blank	T	Water	376.1	
720-23756-1	MW-1	T	Water	376.1	
720-23756-2	MW-2	T	Water	376.1	
720-23756-3	MW-3	T	Water	376.1	

Report Basis
T = Total

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Method Blank - Batch: 720-60617

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-60617/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/31/2009 1432
Date Prepared: 10/31/2009 1432

Analysis Batch: 720-60617
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 75MSD
Lab File ID: 103109008.D
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
TBA	ND		4.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50
Gasoline Range Organics (GRO)-C6-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	93	67 - 130
1,2-Dichloroethane-d4 (Surr)	101	67 - 130
Toluene-d8 (Surr)	98	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-60617

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-60617/4	Analysis Batch:	720-60617	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	103109004.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 1219			Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 1219				

LCSD Lab Sample ID:	LCSD 720-60617/5	Analysis Batch:	720-60617	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	103109005.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 1252			Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 1252				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methyl tert-butyl ether	105	102	66 - 138	2	20		
Benzene	101	110	80 - 130	8	20		
EDB	110	110	70 - 143	0	20		
1,2-DCA	105	108	70 - 133	3	20		
Ethylbenzene	107	117	80 - 139	9	20		
Toluene	103	112	80 - 126	8	20		
TBA	98	117	70 - 130	18	20		
Ethanol	103	125	66 - 160	20	20		
DIPE	104	109	80 - 139	5	20		
TAME	101	102	80 - 131	1	20		
Ethyl t-butyl ether	99	103	70 - 141	4	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	103	101	67 - 130
1,2-Dichloroethane-d4 (Surr)	99	97	67 - 130
Toluene-d8 (Surr)	100	101	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-60617

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-60617/6	Analysis Batch:	720-60617	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	103109006.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 1326			Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 1326				

LCSD Lab Sample ID:	LCSD 720-60617/7	Analysis Batch:	720-60617	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	103109007.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	10/31/2009 1359			Final Weight/Volume:	10 mL
Date Prepared:	10/31/2009 1359				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Gasoline Range Organics (GRO)-C6-C12	88	89	30 - 130	1			

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	101	101	67 - 130
1,2-Dichloroethane-d4 (Surr)	101	100	67 - 130
Toluene-d8 (Surr)	100	100	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Method Blank - Batch: 720-60704

Method: 8260B/CA_LUFTMS
Preparation: 5030B

Lab Sample ID: MB 720-60704/8
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/02/2009 2303
Date Prepared: 11/02/2009 2303

Analysis Batch: 720-60704
Prep Batch: N/A
Units: ug/L

Instrument ID: Agilent 75MSD
Lab File ID: 11020926.D
Initial Weight/Volume: 10 mL
Final Weight/Volume: 10 mL

Analyte	Result	Qual	RL
Methyl tert-butyl ether	ND		0.50
Benzene	ND		0.50
EDB	ND		0.50
1,2-DCA	ND		0.50
Ethylbenzene	ND		0.50
Toluene	ND		0.50
Xylenes, Total	ND		1.0
TBA	ND		4.0
Ethanol	ND		100
DIPE	ND		0.50
TAME	ND		0.50
Ethyl t-butyl ether	ND		0.50
Gasoline Range Organics (GRO)-C6-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	96	67 - 130
1,2-Dichloroethane-d4 (Surr)	97	67 - 130
Toluene-d8 (Surr)	99	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-60704

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-60704/4	Analysis Batch:	720-60704	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11020922.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/02/2009 2051			Final Weight/Volume:	10 mL
Date Prepared:	11/02/2009 2051				

LCSD Lab Sample ID:	LCSD 720-60704/5	Analysis Batch:	720-60704	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11020923.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/02/2009 2126			Final Weight/Volume:	10 mL
Date Prepared:	11/02/2009 2126				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Methyl tert-butyl ether	95	92	66 - 138	3	20		
Benzene	104	105	80 - 130	1	20		
EDB	105	103	70 - 143	2	20		
1,2-DCA	102	101	70 - 133	2	20		
Ethylbenzene	112	114	80 - 139	2	20		
Toluene	106	107	80 - 126	1	20		
TBA	102	104	70 - 130	2	20		
Ethanol	111	116	66 - 160	5	20		
DIPE	102	104	80 - 139	2	20		
TAME	93	91	80 - 131	2	20		
Ethyl t-butyl ether	96	96	70 - 141	0	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	103	102	67 - 130
1,2-Dichloroethane-d4 (Surr)	98	97	67 - 130
Toluene-d8 (Surr)	102	102	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-60704

Method: 8260B/CA_LUFTMS
Preparation: 5030B

LCS Lab Sample ID:	LCS 720-60704/6	Analysis Batch:	720-60704	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11020924.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/02/2009 2158			Final Weight/Volume:	10 mL
Date Prepared:	11/02/2009 2158				

LCSD Lab Sample ID:	LCSD 720-60704/7	Analysis Batch:	720-60704	Instrument ID:	Agilent 75MSD
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	11020925.D
Dilution:	1.0	Units:	ug/L	Initial Weight/Volume:	10 mL
Date Analyzed:	11/02/2009 2230			Final Weight/Volume:	10 mL
Date Prepared:	11/02/2009 2230				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Gasoline Range Organics (GRO)-C6-C12	91	90	30 - 130	0			

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
4-Bromofluorobenzene	103	102	67 - 130
1,2-Dichloroethane-d4 (Surr)	100	100	67 - 130
Toluene-d8 (Surr)	102	102	70 - 130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Method Blank - Batch: 720-60484

Method: 300.0
Preparation: N/A

Lab Sample ID: MB 720-60484/11
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 0932
Date Prepared: N/A

Analysis Batch: 720-60484
Prep Batch: N/A
Units: mg/L

Instrument ID: DionexIC
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

Analyte	Result	Qual	RL
Sulfate	ND		1.0
Nitrate as NO3	ND		1.0

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-60484

Method: 300.0
Preparation: N/A

LCS Lab Sample ID: LCS 720-60484/14
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 0949
Date Prepared: N/A

Analysis Batch: 720-60484
Prep Batch: N/A
Units: mg/L

Instrument ID: DionexIC
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

LCSD Lab Sample ID: LCSD 720-60484/15
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 1006
Date Prepared: N/A

Analysis Batch: 720-60484
Prep Batch: N/A
Units: mg/L

Instrument ID: DionexIC
Lab File ID: N/A
Initial Weight/Volume:
Final Weight/Volume: 5 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Sulfate	107	107	90 - 110	0	20		
Nitrate as NO3	103	102	90 - 110	1	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc.

Job Number: 720-23756-1

Method Blank - Batch: 500-74795

Method: 376.1
Preparation: N/A

Lab Sample ID: MB 500-74795/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/02/2009 1435
Date Prepared: N/A

Analysis Batch: 500-74795
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 250 mL
Final Weight/Volume: 250 mL

Analyte	Result	Qual	RL
Sulfide	ND		1.0

Lab Control Sample - Batch: 500-74795

Method: 376.1
Preparation: N/A

Lab Sample ID: LCS 500-74795/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 11/02/2009 1435
Date Prepared: N/A

Analysis Batch: 500-74795
Prep Batch: N/A
Units: mg/L

Instrument ID: No Equipment Assigned
Lab File ID: N/A
Initial Weight/Volume: 250 mL
Final Weight/Volume: 250 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfide	3.84	4.03	105	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Method Blank - Batch: 720-61202

Method: SM 3500 FE D
Preparation: N/A

Lab Sample ID: MB 720-61202/1
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 1715
Date Prepared: N/A

Analysis Batch: 720-61202
Prep Batch: N/A
Units: mg/L

Instrument ID: UV-VIS
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

Analyte	Result	Qual	RL
Ferrous Iron	ND		0.10

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 720-61202

Method: SM 3500 FE D
Preparation: N/A

LCS Lab Sample ID: LCS 720-61202/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 1715
Date Prepared: N/A

Analysis Batch: 720-61202
Prep Batch: N/A
Units: mg/L

Instrument ID: UV-VIS
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

LCSD Lab Sample ID: LCSD 720-61202/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 10/29/2009 1715
Date Prepared: N/A

Analysis Batch: 720-61202
Prep Batch: N/A
Units: mg/L

Instrument ID: UV-VIS
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 25 mL

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Ferrous Iron	94	94	80 - 120	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: ARCADIS U.S., Inc. Job Number: 720-23756-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 720-61202

Method: SM 3500 FE D
Preparation: N/A

MS Lab Sample ID:	720-23756-1	Analysis Batch:	720-61202	Instrument ID:	UV-VIS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	25 mL
Date Analyzed:	10/29/2009 1715			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

MSD Lab Sample ID:	720-23756-1	Analysis Batch:	720-61202	Instrument ID:	UV-VIS
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	25 mL
Date Analyzed:	10/29/2009 1715			Final Weight/Volume:	25 mL
Date Prepared:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Ferrous Iron	112	112	80 - 120	0	20		

Calculations are performed before rounding to avoid round-off errors in calculated results.

San Francisco
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

720-23756

Chain of Custody Record

12017.2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Jason Duda	Site Contact: Eric Farrar	Date: 10/29/09	COC No:
Broadbent & Associates	Tel/Fax: (530) 566-1400/ (530) 566-1401	Lab Contact: Dimple Sharma	Carrier: self	1 of 1 COCs
1324 Mangrove Ave Suite 212	Analysis Turnaround Time			Job No.
Chico, CA 95926	Calendar (C) or Work Days (W) STD			
(530) 566-1400	TAT if different from Below			SDG No.
(530) 566-1401	☐ 2 weeks			
Project Name: BP 11102	☐ 1 week			
Site: 100 MacArthur Blvd, Oakland, CA	☐ 2 days			
P O # GP09BPNA.C111	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	GRO by 8015	BTEX	5 oxygenates	1,2 DCA and EDB	Ethanol	Ferrous Iron	Nitrate and Sulfate	Hydrogen Sulfide	Sample Specific Notes:
MW-1	10/29/09	1145		AQ	9/VOA		X	X	X	X	X	X	X	X	
MW-2		1135					X	X	X	X	X	X	X	X	
MW-3		1125					X	X	X	X	X	X	X	X	
Trip Blank															Hold Trip Blank

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

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

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

Special Instructions/QC Requirements & Comments:

5.2°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
R. Gill	Broadbent & Assoc.	10/29/09 1400	Allee H.	TAST	10/29/09 - 1400
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-23756-1

Login Number: 23756

List Source: TestAmerica San Francisco

Creator: Hoang, Julie

List Number: 1

Question	T / F/ NA	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	
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	
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	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

Login Sample Receipt Check List

Client: ARCADIS U.S., Inc.

Job Number: 720-23756-1

Login Number: 23756
Creator: Lunt, Jeff T
List Number: 1

List Source: TestAmerica Chicago
List Creation: 10/31/09 11:02 AM

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
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	
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	
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	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Is the Field Sampler's name present on COC?	True	
Sample Preservation Verified	True	

FIELD PROCEDURES

A.1 QUALITY ASSURANCE/QUALITY CONTROL FIELD PROTOCOLS

Field protocols have been implemented to maximize the accuracy and reliability of data collection, ground-water sample collection, transportation and laboratory analysis. Discussion of these protocols is provided below.

A.1.1 Water Level & Free-Phase Product Measurement

Prior to ground-water sample collection from each monitor well, the presence of free-phase product and depth to ground water shall be measured. Depth to ground water will be measured with a standard M-Scope water level indicator (or equivalent) that has been decontaminated prior to its use in accordance with procedures discussed below. Depth to ground water will be gauged from a saw cut notch at the top of the well casing on each well head. Once depth to water has been measured, a new disposable bailer will be utilized to monitor for the presence and thickness of free-phase product.

A.1.2 Monitor Well Purging

Subsequent to measuring depth to ground water, a minimum of three casing volumes of water will be purged from each monitor well using a Geosquirt submersible pump (or equivalent) and disposable plastic tubing dedicated to each individual well. The well will be purged at a low flow rate to minimize the possibility of purging the well dry. To assure that the sample collected is representative of formation water, several field parameters will be monitored during the purging process and the sample will not be collected until these parameters have stabilized to within 10% of a measured value. These parameters will include temperature, pH, and conductivity. If a well is purged dry, the sample will not be collected until the well has recovered to a minimum 50% of its initial volume.

Ground-water sampling equipment (e.g., M-scope and the Geosquirt purge pump) will be thoroughly cleansed with a solution of Liquinox, rinsed with tap water, and finally rinsed with control water prior to use in each well. Pre-cleaned disposable bailers and disposable plastic tubing will be dedicated to each individual well.

A.1.3 Ground-Water Sample Collection

Once the wells are satisfactorily purged, water samples will be collected from each well. Water samples for organic analyses will be collected using a clean disposable bailer and transferred to laboratory-prepared 40 ml vials, in duplicate; such that no head space or air bubbles are present in the sample. The samples will be properly labeled (sample identification, sampler initials, date and time of collection, site location, and requested analyses), placed in an ice chest with blue ice, and delivered to an analytical laboratory.

A.1.4 Surface Water Sample Collection

Surface water samples will be collected from mid-depth in the central area of the associated stream. Water samples will be collected in laboratory-prepared 40 ml vials by dipping the vial into the stream water. Each vial will be inverted to check that no head space or bubbles are present. The samples will be properly labeled and transported as described above.

A.1.5 Chain of Custody Procedure

Sample identification documents will be carefully prepared so identification and chain of custody can be maintained and sample disposition can be controlled. The sample identification documents include Chain-of-Custody (COC) records and Daily Field Report forms. Chain of custody procedures are outlined below.

Field Custody Procedures

The field sampler is personally responsible for the care and custody of the samples collected until they are properly transferred.

Samples will have individual labels. The information on these labels will correspond to the COC which shows the identification of individual samples and the contents of the shipping container. The original COC will accompany the shipment and a copy will be retained by the sampler for the client.

The staff person conducting the sampling will determine whether proper custody procedures were followed during the field work.

Transfer of Custody and Shipment

A COC will accompany samples during transfer and shipment. When transferring samples, the individual's relinquishing and receiving the samples will sign, date, and note the time on the COC. This COC documents the sample custody transfer.

Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis, with a separate COC accompanying each shipment. Shipments will be accompanied by the original COC. Samples will be delivered by BAI personnel to the laboratory, or shipped by courier.

A.1.6 Field Records

In addition to sample identification numbers and Chain-of Custody records, Daily Field Report records will be maintained by staff personnel to provide daily records of significant events, observations, and measurements during field investigations. These documents will contain information such as: personnel present, site conditions, sampling procedures, measurement procedures, calibration records, etc. Field measurements will be recorded on the appropriate forms. Entries on the data forms will be signed and dated. The data forms will be kept as permanent records.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION RECEIPTS

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:	**4Q09 GEO_WELL 11102**
Facility Global ID:	**T0600100908**
Facility Name:	**BP #11102**
File Name:	**GEO_WELL.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**1/8/2010 11:03:36 AM**
Confirmation Number:	**9251425504**

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 - Quarterly**
Submittal Title:	**4Q09 GW Monitoring**
Facility Global ID:	**T0600100908**
Facility Name:	**BP #11102**
File Name:	**11102-720-23756-1.zip**
Organization Name:	**Broadbent & Associates, Inc.**
Username:	**BROADBENT-C**
IP Address:	**67.118.40.90**
Submittal Date/Time:	**1/5/2010 11:15:50 AM**
Confirmation Number:	**8505395352**

VIEW QC REPORT

VIEW DETECTIONS REPORT