

Atlantic Richfield Company

Chuck Carmel
Environmental Business Manager

RECEIVED

1:33 pm, Oct 07, 2009

**Alameda County
Environmental Health**

PO Box 1257
San Ramon, CA 94583
Phone: (925) 275-3803
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E-Mail: charles.carmel @bp.com

October 5, 2009

Re: Third Quarter 2009 Semi-Annual Ground-Water Monitoring Report
Atlantic Richfield Company Station #771
899 Rincon Avenue
Livermore, California
ACEH Case RO0000200

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

Submitted by,



Chuck Carmel
Environmental Business Manager

Attachment

**Third Quarter, 2009 Semi-Annual
Ground-Water Monitoring Report**
Atlantic Richfield Company Station #771
899 Rincon Avenue
Livermore, California

Prepared for

Mr. Chuck Carmel
Environmental Business Manager
Atlantic Richfield Company
P.O. Box 1257
San Ramon, California 94583

Prepared by



1324 Mangrove Avenue, Suite 212
Chico, California 95926
(530) 566-1400
www.broadbentinc.com

October 2009

Project No. 06-82-608

October 5, 2009

Project No. 06-82-608

Atlantic Richfield Company
P.O. Box 1257
San Ramon, CA 94583
Submitted via ENFOS

Attn.: Mr. Chuck Carmel

Re: Third Quarter, 2009 Semi-Annual Ground-Water Monitoring Report, Atlantic Richfield Company Station #771, 899 Rincon Avenue, Livermore, California. ACEH Case RO0000200.


Dear Mr. Carmel:


Attached is the *Third Quarter, 2009 Semi-Annual Ground-Water Monitoring Report* for Atlantic Richfield Company Station #771 (herein referred to as Station #771) located at 899 Rincon Avenue, Livermore, California (Property). This report presents a summary of Third Quarter, 2009 ground-water monitoring results.

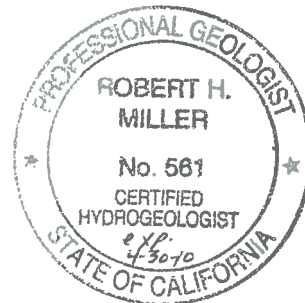
Should you have questions regarding the work performed or results obtained, please do not hesitate to contact us at (530) 566-1400.

Sincerely,

BROADBENT & ASSOCIATES, INC.


Matthew G. Herrick, P.G., C.HG.
Senior Hydrogeologist


Robert H. Miller, P.G., C.HG.
Principal Hydrogeologist



Enclosures

cc: Mr. Paresh Khatri, Alameda County Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA, 94502 (Submitted via ACEH ftp Site)
Mr. Paul M. Smith, Livermore-Pleasanton Fire Department, 3560 Nevada St., Pleasanton, CA 94566
Mr. Chuck Headlee, RWQCB, 1515 Clay St. Suite 1400, Oakland, CA 94612 (Submitted via GeoTracker)
GeoTracker

STATION #771 SEMI-ANNUAL GROUND-WATER MONITORING REPORT

Facility: #771 Address: 899 Rincon Avenue, Livermore, CA
Station #771 Environmental Business
Manager: Mr. Chuck Carmel
Consulting Co./Contact Persons: Broadbent & Associates, Inc. (BAI) / Rob Miller & Matt Herrick
Primary Agency/Regulatory ID No.: Alameda County Environmental Health (ACEH)/ ACEH Case RO0000200
Consultant Project No.: 06-82-608
Facility Permits/Permitting Agency.: NA

WORK PERFORMED THIS QUARTER (First Quarter, 2009):

1. Submitted Second Quarter, 2009 Status Report. Work performed by BAI.
2. Conducted ground-water monitoring/sampling for Third Quarter, 2009. Work performed by Stratus Environmental, Inc. (Stratus).
3. Continued access agreement negotiations with the Livermore Shopping Center property owner to facilitate implementation of soil and ground-water investigation work activities approved in the ACEH May 15, 2009 letter.

WORK PROPOSED FOR NEXT QUARTER (Fourth Quarter, 2009):

1. Submit Third Quarter, 2009 Semi-Annual Ground-Water Monitoring Report (contained herein).
2. No ground-water monitoring/sampling work activities are scheduled to be completed on the Property during the Fourth Quarter, 2009.

QUARTERLY RESULTS SUMMARY:

Current phase of project:	Monitoring
Frequency of ground-water sampling:	MW-4, MW-7, RW-1 = Semi-Annual (1Q and 3Q) MW-2, MW-5, MW-6, MW-11, VW-1, = Annual (3Q)
Frequency of ground-water monitoring:	Semi-annual (1Q and 3Q)
Is free product (FP) present on-site:	No
FP recovered this quarter:	NA (FP last recovered in 1992)
Cumulative FP recovered:	3.06 gallons, Wells MW-1, MW-2, and MW-5
Current remediation techniques:	Air Diffusion
Depth to ground water (below TOC):	23.95 (VW-1) to 40.38 (MW-8)
General ground-water flow direction:	North
Approximate hydraulic gradient:	0.04 feet per foot

DISCUSSION:

During Third Quarter, 2009 gasoline range organics (GRO) were detected in wells MW-4 and MW-5 at concentrations of 3,000 micrograms per liter ($\mu\text{g/L}$) and 100 $\mu\text{g/L}$, respectively. Benzene was detected in wells MW-4 and MW-5 at concentrations of 320 $\mu\text{g/L}$ and 3.0 $\mu\text{g/L}$, respectively. Toluene, ethylbenzene, and xylenes were detected in well MW-4 at concentrations of 7.8 $\mu\text{g/L}$, 5.3 $\mu\text{g/L}$, and 16 $\mu\text{g/L}$, respectively. Methyl tert-butyl ether (MTBE) was detected in wells MW-4, MW-5, MW-7 and RW-1 at concentrations ranging from 0.53 $\mu\text{g/L}$ (MW-7) to 63 $\mu\text{g/L}$ (MW-4). Tert-butyl alcohol (TBA) was detected in MW-4, MW-5, and RW-1 at concentrations of 580 $\mu\text{g/L}$, 11 $\mu\text{g/L}$, and 12 $\mu\text{g/L}$,

respectively. Di-isopropyl ether (DIPE) was detected in MW-4 at a concentration of 0.85 µg/L. No other analytes were detected in samples collected during Third Quarter, 2009.

Stratus reported that there was insufficient water in well MW-2 and therefore the well was not sampled. Well MW-10 was found to be dry and was not gauged for depth to water during the Third Quarter, 2009.

Analytes detected during Third Quarter, 2009 were all within the historic minimum and maximum concentration ranges recorded for each well. Ground-water elevations measured during Third Quarter, 2009 were within historic minimum and maximum ranges for each well, with the following exception: ground-water elevations in MW-3, MW-4, MW-5, MW-9, RW-1, and VW-1 are the lowest levels historically measured in the well.

Drawing 1 depicts a site location map. Drawing 2 depicts the ground-water elevation contour and an analytical summary map for the Third Quarter, 2009. Table 1 includes a summary of ground-water monitoring data including relative water elevations and laboratory analyses. Table 2 provides a summary of fuel additives analytical data. Table 3 lists historical ground-water flow direction and gradient data.

RECOMMENDATIONS:

It is recommended that the existing ground-water monitoring and sampling schedule outlined on page 1 continue to be followed. The next ground-water monitoring and sampling event is scheduled to be completed during the First Quarter, 2010.

The April 29, 2009 *Addendum Soil and Ground-Water Investigation Work Plan* was approved by the ACEH in their May 15, 2009 letter. Approved work activities include installation of two monitor wells and one angled soil boring with all work activities being completed off-site on the neighboring Livermore Shopping Center. Access agreement negotiations with the Livermore Shopping Center property owner were initiated in May 2009. As of the date of this report an executed access agreement has not been received from the Livermore Shopping Center. Moving forward, it is requested that the ACEH provide assistance with access agreement negotiations.

CLOSURE:

The findings presented in this report are based upon: observations of Stratus field personnel (see Appendix A), the points investigated, and results of laboratory tests performed by Calscience Environmental Laboratories, Inc. (Garden Grove, CA). 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 Atlantic Richfield 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, Station #771, Livermore, CA
- Drawing 2. Ground-Water Elevation Contour and Analytical Summary Map, Station #771, Livermore, CA

- Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses, Station #771, Livermore, CA

- Table 2. Summary of Fuel Additives Analytical Data, Station #771, Livermore, CA
- Table 3. Historical Ground-Water Flow Direction and Gradient, Station #771, Livermore, CA
- Appendix A. Stratus Environmental, Inc. Ground-Water Sampling Data Package (Includes Field Data Sheets, Certified Laboratory Analytical Results, Chain of Custody Documentation, and Field Procedures for Groundwater Sampling)
- Appendix B. GeoTracker Upload Confirmation

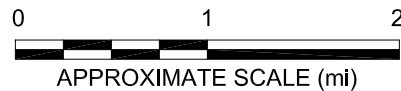
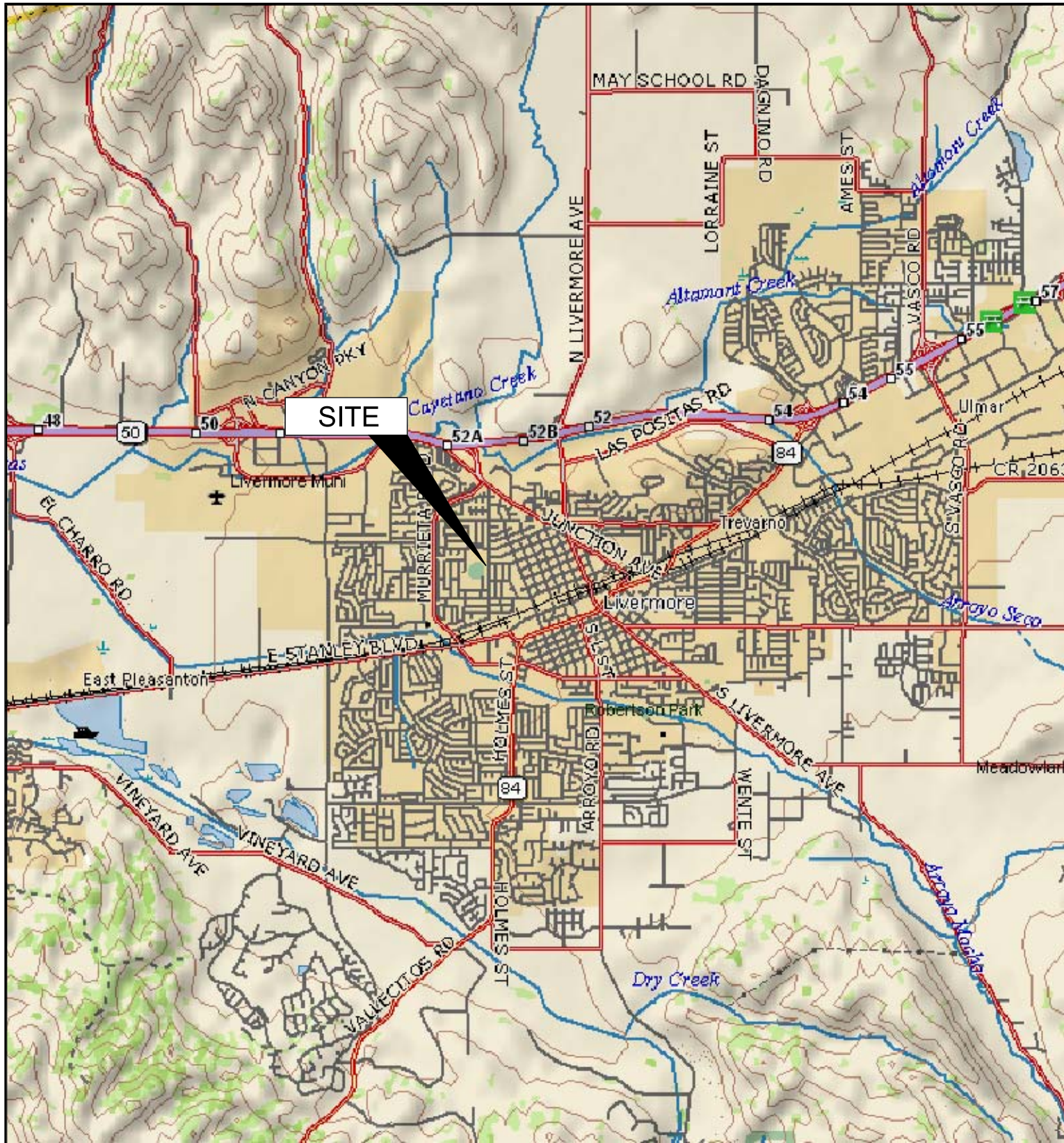
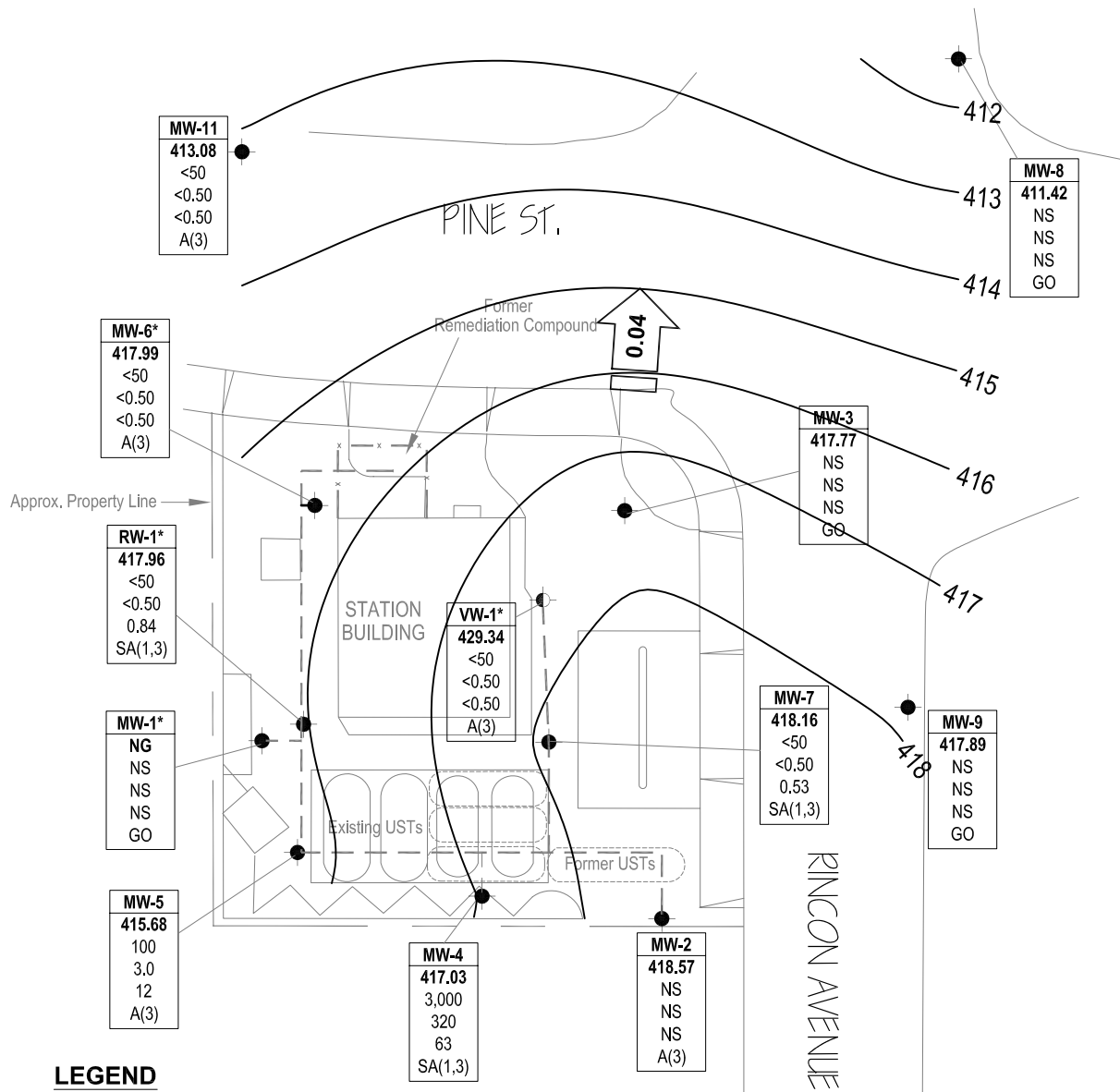


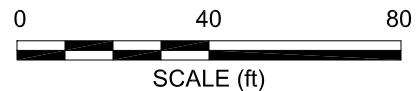
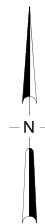
IMAGE SOURCE: DELORME



LEGEND

- Monitoring well location
- Vapor extraction well location
- Well ID** — Well designation
- ELEV** — Ground-water elevation (ft above MSL)
- GRO** — GRO, Benzene & MTBE concentrations (µg/L)
- Benzene**
- MTBE** — Sampling frequency
- SA or A**
- < — Not detected at or above laboratory reporting limits
- * — Not used in contouring
- NG — Not gauged
- NS — Not sampled
- A(3) — Sampled annually during 3rd quarter
- GO — Not sampled, gauged only
- SA(1,3) — Sampled semi-annually, 1st & 3rd quarters
- 420 — Ground-water elevation contour (ft above MSL)
- ← 0.04 — Approximate ground-water flow direction and gradient (ft/ft)
- Remediation piping

MW-10*
NG
NS
NS
NS
GO



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

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-1															
3/20/1995	--		451.73	32.00	41.00	24.50	427.23	90,000	1,800	1,100	1,000	5,600	--	--	--
6/2/1995	--		451.73	32.00	41.00	25.60	426.13	81,000	2,000	1,400	990	4,600	--	--	--
8/23/1995	--		451.73	32.00	41.00	29.04	422.69	44,000	2,400	1,900	670	3,800	<300	--	--
12/4/1995	--		451.73	32.00	41.00	31.31	420.42	22,000	870	660	390	2,200	--	--	--
2/20/1996	--		451.73	32.00	41.00	22.26	429.47	21,000	1,500	1,200	650	3,500	<300	--	--
5/15/1996	--		451.73	32.00	41.00	23.42	428.31	36,000	3,000	2,500	960	5,700	<250	--	--
8/13/1996	--		451.73	32.00	41.00	26.83	424.90	19,000	730	580	450	2,500	<200	--	--
11/13/1996	--		451.73	32.00	41.00	31.05	420.68	6,600	47	16	74	160	<30	--	--
3/26/1997	--		451.73	32.00	41.00	26.29	425.44	1,900	100	55	37	200	<30	--	--
5/15/1997	--		451.73	32.00	41.00	28.65	423.08	16,000	490	250	250	1,100	<120	--	--
8/26/1997	--		451.73	32.00	41.00	31.53	420.20	190	6.7	3	6.3	25	<3	--	--
11/5/1997	--		451.73	32.00	41.00	33.93	417.80	63	0.5	<0.5	0.8	2.4	29	--	--
2/18/1998	--		451.73	32.00	41.00	20.46	431.27	23,000	1,500	610	550	3,000	<120	--	--
5/20/1998	--		451.73	32.00	41.00	23.84	427.89	50,000	4,400	1,900	1,400	80,000	<300	--	--
7/30/1998	P		451.73	32.00	41.00	26.94	424.79	150	<0.5	<0.5	<0.5	1.6	<3	8.74	--
10/29/1998	NP		451.73	32.00	41.00	32.58	419.15	<50	<0.5	<0.5	<0.5	1.8	<3	2.0	--
3/16/1999	P		451.73	32.00	41.00	26.20	425.53	3,200	160	32	89	390	270	2.0	--
5/5/1999	P		451.73	32.00	41.00	27.57	424.16	3,600	140	46	76	290	170	11.65	--
8/26/1999	P		451.73	32.00	41.00	30.25	421.48	3,200	210	29	100	220	120	1.43	--
12/3/1999	NP		451.73	32.00	41.00	32.70	419.03	53	<0.5	<0.5	<0.5	1	<3	2.12	--
3/13/2000	P		451.73	32.00	41.00	24.45	427.28	<50	<0.5	<0.5	<0.5	<1	<3	5.81	--
6/20/2000	--	b	451.73	32.00	41.00	--	--	67.4	3.88	<0.500	1.78	1.48	<2.50	--	--
6/20/2000	P		451.73	32.00	41.00	27.79	423.94	356	40.1	7.17	11.9	22.7	<2.50	5.1	--
8/31/2000	--		451.73	32.00	41.00	30.35	421.38	--	--	--	--	--	--	--	--
2/9/2001	--		451.73	32.00	41.00	30.95	420.78	--	--	--	--	--	--	--	--
9/17/2001	--		451.73	32.00	41.00	30.85	420.88	--	--	--	--	--	--	--	--
1/21/2002	--		451.73	32.00	41.00	30.61	421.12	--	--	--	--	--	--	--	--
7/19/2002	--		451.73	32.00	41.00	31.55	420.18	--	--	--	--	--	--	--	--
1/15/2003	--		451.73	32.00	41.00	22.99	428.74	--	--	--	--	--	--	--	--
7/9/2003	--		451.73	32.00	41.00	30.35	421.38	--	--	--	--	--	--	--	--
02/19/2004	--		451.73	32.00	41.00	26.24	425.49	--	--	--	--	--	--	--	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)					DO (mg/L)	pH	
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes			MTBE
MW-1 Cont.															
08/04/2004	--		454.23	32.00	41.00	26.36	427.87	--	--	--	--	--	--	--	--
01/18/2005	--		454.23	32.00	41.00	24.47	429.76	--	--	--	--	--	--	--	--
07/15/2005	--		454.23	32.00	41.00	29.44	424.79	--	--	--	--	--	--	--	--
01/10/2006	--		454.23	32.00	41.00	22.58	431.65	--	--	--	--	--	--	--	--
7/21/2006	--		454.23	32.00	41.00	20.73	433.50	--	--	--	--	--	--	--	--
1/17/2007	--		454.23	32.00	41.00	31.88	422.35	--	--	--	--	--	--	--	--
7/18/2007	--		454.23	32.00	41.00	32.85	421.38	--	--	--	--	--	--	--	--
1/15/2008	--		454.23	32.00	41.00	28.76	425.47	--	--	--	--	--	--	--	--
7/7/2008	--		454.23	32.00	41.00	35.56	418.67	--	--	--	--	--	--	--	--
1/7/2009	--		454.23	32.00	41.00	34.07	420.16	--	--	--	--	--	--	--	--
7/22/2009	--	Dry	454.23	32.00	41.00	--	--	--	--	--	--	--	--	--	--
MW-2															
3/20/1995	--		449.49	30.00	38.00	20.27	429.22	54,000	2,600	1,600	1,200	7,600	--	--	--
6/2/1995	--		449.49	30.00	38.00	22.32	427.17	37,000	2,200	800	980	4,800	--	--	--
8/23/1995	--		449.49	30.00	38.00	25.69	423.80	65,000	1,100	310	840	3,000	<500	--	--
12/4/1995	--		449.49	30.00	38.00	28.52	420.97	19,000	680	150	410	1,600	--	--	--
2/20/1996	--		449.49	30.00	38.00	19.00	430.49	22,000	1,200	240	590	2,200	<300	--	--
5/15/1996	--		449.49	30.00	38.00	20.03	429.46	25,000	1,200	240	610	2,100	<300	--	--
8/13/1996	--		449.49	30.00	38.00	24.44	425.05	19,000	640	110	420	1,200	<300	--	--
11/13/1996	--		449.49	30.00	38.00	28.42	421.07	15,000	260	52	220	640	<200	--	--
3/26/1997	--		449.49	30.00	38.00	22.98	426.51	17,000	580	120	360	980	<120	--	--
5/15/1997	--		449.49	30.00	38.00	25.40	424.09	18,000	420	63	340	730	<120	--	--
8/26/1997	--		449.49	30.00	38.00	28.38	421.11	5,300	210	26	140	270	<120	--	--
11/5/1997	--		449.49	30.00	38.00	31.93	417.56	560	42	2.6	7	9	<40	--	--
2/18/1998	--		449.49	30.00	38.00	16.87	432.62	18,000	710	120	480	1,100	130	--	--
5/20/1998	--		449.49	30.00	38.00	20.29	429.20	16,000	480	72	440	1,100	<120	--	--
7/30/1998	P		449.49	30.00	38.00	23.51	425.98	9,700	240	33	210	490	<120	9.21	--
10/29/1998	NP		449.49	30.00	38.00	30.08	419.41	58	<0.5	<0.5	<0.5	1.2	<3	1.0	--
3/16/1999	P		449.49	30.00	38.00	23.22	426.27	4,700	120	13	90	220	60	2.0	--
5/5/1999	P		449.49	30.00	38.00	24.05	425.44	5,500	58	7.1	58	98	17	9.09	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-2 Cont.															
8/26/1999	P		449.49	30.00	38.00	26.44	423.05	3,700	55	11	60	64	26	1.9	--
12/3/1999	NP		449.49	30.00	38.00	30.15	419.34	130	<0.5	<0.5	0.7	1.8	<3	1.96	--
3/13/2000	P		449.49	30.00	38.00	20.68	428.81	<50	<0.5	<0.5	<0.5	<1	<3	--	--
6/20/2000	P		449.49	30.00	38.00	23.08	426.41	226	2.2	<0.500	4.83	7.88	<2.50	4.9	--
8/31/2000	P		449.49	30.00	38.00	26.71	422.78	87.1	1.78	<0.500	1.33	1.15	<2.50	1.59	--
2/9/2001	--		449.49	30.00	38.00	29.65	419.84	--	--	--	--	--	--	--	--
9/17/2001	P		449.49	30.00	38.00	27.62	421.87	3,100	300	12	8.8	18	120	1.7	--
1/21/2002	--		449.49	30.00	38.00	27.09	422.40	--	--	--	--	--	--	--	--
7/19/2002	P	a	449.49	30.00	38.00	27.82	421.67	4,700	280	13	120	19	16	0.8	7.4
1/15/2003	--		449.49	30.00	38.00	22.18	427.31	--	--	--	--	--	--	--	--
7/9/2003	--		449.49	30.00	38.00	26.40	423.09	3,900	170	<5.0	100	19	39	2.5	7.0
02/19/2004	--		449.49	30.00	38.00	23.85	425.64	--	--	--	--	--	--	--	--
08/04/2004	P		452.05	30.00	38.00	24.71	427.34	5,400	650	21	160	56	78	0.8	7.2
01/18/2005	--		452.05	30.00	38.00	20.86	431.19	--	--	--	--	--	--	--	--
07/15/2005	P		452.05	30.00	38.00	25.92	426.13	5,200	160	5.3	56	10	46	3.1	6.9
01/10/2006	--		452.05	30.00	38.00	19.25	432.80	--	--	--	--	--	--	--	--
7/21/2006	P		452.05	30.00	38.00	25.73	426.32	120	0.90	<0.50	<0.50	<0.50	<0.50	6.08	8.3
1/17/2007	--		452.05	30.00	38.00	28.70	423.35	--	--	--	--	--	--	--	--
7/18/2007	P		452.05	30.00	38.00	29.07	422.98	2,300	58	2.4	9.5	3.5	45	1.19	7.51
1/15/2008	--		452.05	30.00	38.00	24.65	427.40	--	--	--	--	--	--	--	--
7/7/2008	NP		452.05	30.00	38.00	32.41	419.64	3,600	28	<5.0	<5.0	<5.0	19	2.81	7.24
1/7/2009	--		452.05	30.00	38.00	31.67	420.38	--	--	--	--	--	--	--	--
7/22/2009	--		452.05	30.00	38.00	33.48	418.57	--	--	--	--	--	--	--	--
MW-3															
3/20/1995	--		450.28	32.00	40.00	22.19	428.09	94	<0.5	<0.5	<0.5	<0.5	--	--	--
6/2/1995	--		450.28	32.00	40.00	23.28	427.00	72	<0.5	<0.5	<0.5	<0.5	--	--	--
8/23/1995	--		450.28	32.00	40.00	26.55	423.73	98	<0.5	<0.5	<0.6	0.5	<3	--	--
12/4/1995	--		450.28	32.00	40.00	29.52	420.76	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
2/20/1996	--		450.28	32.00	40.00	19.83	430.45	130	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1996	--		450.28	32.00	40.00	21.03	429.25	120	<0.5	<0.5	<0.5	<0.5	<0.5	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3 Cont.															
8/13/1996	--		450.28	32.00	40.00	25.67	424.61	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/13/1996	--		450.28	32.00	40.00	21.57	428.71	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
3/26/1997	--		450.28	32.00	40.00	24.15	426.13	<50	1.1	<0.5	<0.5	<0.5	<3	--	--
5/15/1997	--		450.28	32.00	40.00	26.85	423.43	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
8/26/1997	--		450.28	32.00	40.00	30.07	420.21	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/5/1997	--		450.28	32.00	40.00	32.46	417.82	<50	<0.5	0.7	<0.5	<0.5	<3	--	--
2/18/1998	--		450.28	32.00	40.00	17.82	432.46	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/20/1998	--		450.28	32.00	40.00	21.41	428.87	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
7/30/1998	P		450.28	32.00	40.00	26.41	423.87	<50	<0.5	<0.5	<0.5	<0.5	<3	9.56	--
10/29/1998	P		450.28	32.00	40.00	31.33	418.95	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
3/16/1999	P		450.28	32.00	40.00	24.61	425.67	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
5/5/1999	P		450.28	32.00	40.00	25.75	424.53	140	<0.5	<0.5	0.6	<0.5	<3	4.43	--
8/26/1999	P		450.28	32.00	40.00	28.49	421.79	80	0.6	0.6	0.6	1	<3	1.69	--
12/3/1999	P		450.28	32.00	40.00	31.45	418.83	<50	<0.5	<0.5	<0.5	<1	<3	2.26	--
3/13/2000	P		450.28	32.00	40.00	22.18	428.10	<50	<0.5	<0.5	<0.5	<1	<3	4.41	--
6/20/2000	P		450.28	32.00	40.00	26.03	424.25	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	2.3	--
8/31/2000	--		450.28	32.00	40.00	28.75	421.53	--	--	--	--	--	--	--	--
2/9/2001	--		450.28	32.00	40.00	31.04	419.24	--	--	--	--	--	--	--	--
9/17/2001	--		450.28	32.00	40.00	29.04	421.24	--	--	--	--	--	--	--	--
1/21/2002	--		450.28	32.00	40.00	28.81	421.47	--	--	--	--	--	--	--	--
7/19/2002	--		450.28	32.00	40.00	28.92	421.36	--	--	--	--	--	--	--	--
1/15/2003	--		450.28	32.00	40.00	22.88	427.40	--	--	--	--	--	--	--	--
7/9/2003	--		450.28	32.00	40.00	28.00	422.28	--	--	--	--	--	--	--	--
02/19/2004	--		450.28	32.00	40.00	25.29	424.99	--	--	--	--	--	--	--	--
08/04/2004	--		452.75	32.00	40.00	27.40	425.35	--	--	--	--	--	--	--	--
01/18/2005	--		452.75	32.00	40.00	22.76	429.99	--	--	--	--	--	--	--	--
07/15/2005	--		452.75	32.00	40.00	25.95	426.80	--	--	--	--	--	--	--	--
01/10/2006	--		452.75	32.00	40.00	21.18	431.57	--	--	--	--	--	--	--	--
7/21/2006	--		452.75	32.00	40.00	25.73	427.02	--	--	--	--	--	--	--	--
1/17/2007	--		452.75	32.00	40.00	30.51	422.24	--	--	--	--	--	--	--	--
7/18/2007	--		452.75	32.00	40.00	29.53	423.22	--	--	--	--	--	--	--	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-3 Cont.															
1/15/2008	--		452.75	32.00	40.00	27.65	425.10	--	--	--	--	--	--	--	--
7/7/2008	--		452.75	32.00	40.00	33.38	419.37	--	--	--	--	--	--	--	--
1/7/2009	--		452.75	32.00	40.00	34.09	418.66	--	--	--	--	--	--	--	--
7/22/2009	--		452.75	32.00	40.00	34.98	417.77	--	--	--	--	--	--	--	--
MW-4															
3/20/1995	--		451.09	26.00	42.00	22.68	428.41	12,000	1,000	100	450	700	--	--	--
6/2/1995	--		451.09	26.00	42.00	24.41	426.68	9,000	850	56	380	430	--	--	--
8/23/1995	--		451.09	26.00	42.00	27.72	423.37	5,300	400	25	240	170	<100	--	--
12/4/1995	--		451.09	26.00	42.00	29.85	421.24	6,700	100	<10	90	38	--	--	--
2/20/1996	--		451.09	26.00	42.00	21.16	429.93	7,000	360	22	180	160	<70	--	--
5/15/1996	--		451.09	26.00	42.00	22.18	428.91	--	--	--	--	--	--	--	--
8/13/1996	--		451.09	26.00	42.00	26.20	424.89	--	--	--	--	--	--	--	--
11/13/1996	--		451.09	26.00	42.00	29.72	421.37	--	--	--	--	--	--	--	--
3/26/1997	--		451.09	26.00	42.00	21.86	429.23	8,900	390	33	200	250	<70	--	--
5/15/1997	--		451.09	26.00	42.00	26.92	424.17	--	--	--	--	--	--	--	--
8/26/1997	--		451.09	26.00	42.00	29.30	421.79	--	--	--	--	--	--	--	--
11/5/1997	--		451.09	26.00	42.00	32.14	418.95	--	--	--	--	--	--	--	--
2/18/1998	--		451.09	26.00	42.00	19.30	431.79	5,300	220	19	160	130	120	--	--
5/20/1998	--		451.09	26.00	42.00	22.40	428.69	--	--	--	--	--	--	--	--
7/30/1998	--		451.09	26.00	42.00	25.74	425.35	--	--	--	--	--	--	--	--
10/29/1998	--		451.09	26.00	42.00	31.26	419.83	--	--	--	--	--	--	--	--
3/16/1999	P		451.09	26.00	42.00	25.05	426.04	1,900	49	<5	43	<5	82	1.5	--
5/5/1999	--		451.09	26.00	42.00	26.15	424.94	--	--	--	--	--	--	--	--
8/26/1999	--		451.09	26.00	42.00	28.60	422.49	--	--	--	--	--	--	1.43	--
12/3/1999	--		451.09	26.00	42.00	31.53	419.56	--	--	--	--	--	--	--	--
3/13/2000	P		451.09	26.00	42.00	23.61	427.48	<50	<0.5	<0.5	<0.5	<1	<3	3.82	--
6/20/2000	--		451.09	26.00	42.00	26.38	424.71	--	--	--	--	--	--	0.4	--
8/31/2000	NP		451.09	26.00	42.00	29.55	421.54	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.04	--
2/9/2001	NP		451.09	26.00	42.00	30.30	420.79	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	1.39	--
9/17/2001	NP		451.09	26.00	42.00	29.90	421.19	3,400	51	<5.0	16	23	360	0.92	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-4 Cont.															
1/21/2002	NP		451.09	26.00	42.00	29.51	421.58	1,900	140	12	27	48	300	1.03	--
7/19/2002	NP	a	451.09	26.00	42.00	30.77	420.32	2,700	150	9.9	<5.0	<5.0	130	1.0	7.3
1/15/2003	--	a	451.09	26.00	42.00	23.56	427.53	4,800	150	5.3	28	46	150	1.3	7.0
7/9/2003	--		451.09	26.00	42.00	29.50	421.59	3,000	210	9.4	6	20	150	2.0	6.9
02/19/2004	P	c	451.09	26.00	42.00	26.35	424.74	4,800	270	11	25	19	180	1.8	6.2
08/04/2004	NP		453.80	26.00	42.00	26.48	427.32	4,200	410	13	49	59	300	0.7	6.7
01/18/2005	P		453.80	26.00	42.00	23.15	430.65	4,500	250	9.5	62	22	160	1.2	6.9
07/15/2005	NP		453.80	26.00	42.00	28.13	425.67	3,500	230	6.1	19	15	230	0.5	7.0
01/10/2006	P		453.80	26.00	42.00	21.49	432.31	5,500	250	7.6	37	25	190	1.3	7.1
7/21/2006	NP		453.80	26.00	42.00	28.88	424.92	66	0.60	<0.50	0.52	0.82	3.1	4.75	8.3
1/17/2007	NP		453.80	26.00	42.00	30.80	423.00	<50	<0.50	<0.50	<0.50	<0.50	11	6.19	8.03
7/18/2007	NP		453.80	26.00	42.00	32.00	421.80	2,400	140	6.8	1.3	4.1	74	5.03	7.12
1/15/2008	NP	f (MTBE)	453.80	26.00	42.00	27.30	426.50	220	1.2	<0.50	<0.50	0.50	61	3.29	6.94
7/7/2008	NP		453.80	26.00	42.00	34.78	419.02	<50	3.1	<0.50	<0.50	0.66	17	4.03	7.26
1/7/2009	NP		453.80	26.00	42.00	32.59	421.21	110	1.1	<0.50	<0.50	<0.50	37	2.79	7.26
7/22/2009	NP		453.80	26.00	42.00	36.77	417.03	3,000	320	7.8	5.3	16	63	10.82	7.45
MW-5															
3/20/1995	--		451.40	31.50	41.00	23.20	428.20	26,000	1,300	180	890	2,900	--	--	--
6/2/1995	--		451.40	31.50	41.00	24.80	426.60	39,000	940	160	740	1,900	--	--	--
8/23/1995	--		451.40	31.50	41.00	28.10	423.30	14,000	490	74	250	890	<300	--	--
12/4/1995	--		451.40	31.50	41.00	29.83	421.57	7,600	230	13	61	80	--	--	--
2/20/1996	--		451.40	31.50	41.00	21.63	429.77	4,300	220	12	45	130	<50	--	--
5/15/1996	--		451.40	31.50	41.00	22.87	428.53	2,200	380	17	58	84	<40	--	--
8/13/1996	--		451.40	31.50	41.00	26.48	424.92	1,700	150	16	24	35	47	--	--
11/13/1996	--		451.40	31.50	41.00	29.68	421.72	850	150	11	19	37	66	--	--
3/26/1997	--		451.40	31.50	41.00	25.14	426.26	2,400	440	21	79	210	68	--	--
5/15/1997	--		451.40	31.50	41.00	27.38	424.02	3,900	510	19	140	240	48	--	--
8/26/1997	--		451.40	31.50	41.00	29.89	421.51	76	4.9	<0.5	1.5	2	9	--	--
11/5/1997	--		451.40	31.50	41.00	32.57	418.83	63	0.8	<0.5	<0.5	1.2	34	--	--
2/18/1998	--		451.40	31.50	41.00	19.99	431.41	6,200	630	70	320	640	320	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-5 Cont.															
5/20/1998	--		451.40	31.50	41.00	23.21	428.19	2,300	340	21	110	140	62	--	--
7/30/1998	P		451.40	31.50	41.00	26.19	425.21	<50	0.8	<0.5	0.6	0.9	<3	8.83	--
10/29/1998	NP		451.40	31.50	41.00	31.92	419.48	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	--
3/16/1999	P		451.40	31.50	41.00	25.80	425.60	1,300	170	8	59	65	120	2.0	--
5/5/1999	P		451.40	31.50	41.00	27.09	424.31	320	31	1.1	13	13	19	12.09	--
8/26/1999	P		451.40	31.50	41.00	29.67	421.73	260	13	1.7	4.2	6.3	150	1.31	--
12/3/1999	--	d	451.40	31.50	41.00	--	--	--	--	--	--	--	--	--	--
3/13/2000	P		451.40	31.50	41.00	24.51	426.89	<50	<0.5	<0.5	<0.5	<1	<3	4.41	--
6/20/2000	P		451.40	31.50	41.00	27.37	424.03	60.8	4.84	<0.500	1.9	1.59	<2.50	5.3	--
8/31/2000	P		451.40	31.50	41.00	30.21	421.19	<50.0	1.18	<0.500	<0.500	<0.500	3.83	0.97	--
2/9/2001	--		451.40	31.50	41.00	30.19	421.21	--	--	--	--	--	--	--	--
9/17/2001	P		451.40	31.50	41.00	30.71	420.69	2,700	120	10	90	77	330	0.81	--
1/21/2002	--		451.40	31.50	41.00	30.40	421.00	--	--	--	--	--	--	--	--
7/19/2002	P	a	451.40	31.50	41.00	31.93	419.47	1,600	170	7	120	<5.0	180	1.7	7.2
1/15/2003	--		451.40	31.50	41.00	23.12	428.28	--	--	--	--	--	--	--	--
7/9/2003	--		451.40	31.50	41.00	30.95	420.45	2,000	160	5.7	67	27	260	1.5	6.9
02/19/2004	--		451.40	31.50	41.00	26.73	424.67	--	--	--	--	--	--	--	--
08/04/2004	P		453.52	31.50	41.00	26.61	426.91	2,100	250	5.3	73	22	250	2.7	7.0
01/18/2005	--		453.52	31.50	41.00	24.10	429.42	--	--	--	--	--	--	--	--
07/15/2005	P		453.52	31.50	41.00	29.27	424.25	1,600	61	<5.0	8.7	<5.0	270	2.1	6.9
01/10/2006	--		453.52	31.50	41.00	22.19	431.33	--	--	--	--	--	--	--	--
7/21/2006	P		453.52	31.50	41.00	30.36	423.16	2,100	29	<5.0	7.5	11	14	2.98	7.1
1/17/2007	--		453.52	31.50	41.00	31.77	421.75	--	--	--	--	--	--	--	--
7/18/2007	NP		453.52	31.50	41.00	33.42	420.10	470	36	0.84	0.97	2.2	110	1.73	7.50
1/15/2008	--		453.52	31.50	41.00	28.60	424.92	--	--	--	--	--	--	--	--
7/7/2008	NP		453.52	31.50	41.00	35.80	417.72	<50	<0.50	<0.50	<0.50	<0.50	<0.50	7.55	7.79
1/7/2009	--		453.52	31.50	41.00	33.14	420.38	--	--	--	--	--	--	--	--
7/22/2009	NP		453.52	31.50	41.00	37.84	415.68	100	3.0	<0.50	<0.50	<0.50	12	12.34	7.24
MW-6															
3/20/1995	--		451.37	32.00	42.00	25.19	426.18	2,600	210	87	82	140	--	--	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-6 Cont.															
6/2/1995	--		451.37	32.00	42.00	25.75	425.62	1,600	55	7.9	40	26	--	--	--
8/23/1995	--		451.37	32.00	42.00	29.53	421.84	1,400	42	2.5	36	13	<20	--	--
12/4/1995	--		451.37	32.00	42.00	32.28	419.09	2,500	52	5.8	59	13	--	--	--
2/20/1996	--		451.37	32.00	42.00	22.27	429.10	2,500	120	16	73	12	<30	--	--
5/15/1996	--		451.37	32.00	42.00	23.86	427.51	2,000	71	6.4	47	25	<15	--	--
8/13/1996	--		451.37	32.00	42.00	28.55	422.82	3,800	91	8.2	69	25	<20	--	--
11/13/1996	--		451.37	32.00	42.00	32.04	419.33	1,900	55	3.3	55	8.5	16	--	--
3/26/1997	--		451.37	32.00	42.00	26.84	424.53	1,800	51	5	32	15	<30	--	--
5/15/1997	--		451.37	32.00	42.00	29.58	421.79	2,400	46	3	29	9	<12	--	--
8/26/1997	--		451.37	32.00	42.00	32.67	418.70	1,400	61	6	33	10	<12	--	--
11/5/1997	--		451.37	32.00	42.00	34.62	416.75	690	29	2.7	18	3.4	9	--	--
2/18/1998	--		451.37	32.00	42.00	20.09	431.28	1,800	74	5	24	12	19	--	--
5/20/1998	--		451.37	32.00	42.00	24.05	427.32	1,900	280	4	31	16	9	--	--
7/30/1998	P		451.37	32.00	42.00	28.72	422.65	2,300	110	7	36	20	<15	--	--
10/29/1998	P		451.37	32.00	42.00	32.77	418.60	2,500	14	13	17	12	<12	1.0	--
3/16/1999	P		451.37	32.00	42.00	26.45	424.92	1,200	65	4	27	13	18	0.5	--
5/5/1999	P		451.37	32.00	42.00	27.86	423.51	2,200	53	4	26	6	25	5.59	--
8/26/1999	P		451.37	32.00	42.00	30.49	420.88	1,100	11	6	10	4	13	2.35	--
12/3/1999	P		451.37	32.00	42.00	32.35	419.02	370	<0.5	<0.5	0.8	<1	4	2.36	--
3/13/2000	P		451.37	32.00	42.00	28.36	423.01	54	2.1	0.5	0.9	1.4	<3	4.22	--
6/20/2000	P		451.37	32.00	42.00	28.35	423.02	195	1.83	<0.500	0.528	<0.500	<2.50	3.5	--
8/31/2000	P		451.37	32.00	42.00	30.20	421.17	276	3.52	0.788	1.15	0.621	8.73	7.0	--
2/9/2001	--	b	451.37	32.00	42.00	--	--	222	4.49	2.73	0.579	0.523	57.1	--	--
2/9/2001	P		451.37	32.00	42.00	30.70	420.67	253	5.44	2.93	0.924	0.977	48.9	0.59	--
9/17/2001	--	b	451.37	32.00	42.00	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--	--
9/17/2001	P		451.37	32.00	42.00	30.94	420.43	<50	<0.50	<0.50	<0.50	<0.50	<2.5	2.79	--
1/21/2002	P		451.37	32.00	42.00	30.55	420.82	<50	<0.50	<0.50	<0.50	<0.50	<5.0	1.9	--
7/19/2002	P	a	451.37	32.00	42.00	30.27	421.10	60	2	<0.50	<0.50	<0.50	<0.50	3.5	7.9
1/15/2003	--	a	451.37	32.00	42.00	22.86	428.51	83	9.1	<0.50	3.4	4.6	1	2.5	7.2
7/9/2003	P		451.37	32.00	42.00	29.41	421.96	110	<0.50	<0.50	<0.50	<0.50	0.98	2.6	7.1
02/19/2004	--		451.37	32.00	42.00	43.25	408.12	--	--	--	--	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-6 Cont.															
08/04/2004	P		453.83	32.00	42.00	27.71	426.12	540	36	3.8	17	24	5.2	3.5	7.1
01/18/2005	--		453.83	32.00	42.00	24.56	429.27	--	--	--	--	--	--	--	--
07/15/2005	P		453.83	32.00	42.00	27.61	426.22	4,600	210	44	150	670	32	3.5	7.1
01/10/2006	--		453.83	32.00	42.00	23.75	430.08	--	--	--	--	--	--	--	--
7/21/2006	P		453.83	32.00	42.00	27.96	425.87	260	<0.50	<0.50	<0.50	0.86	5.1	2.60	7.2
1/17/2007	--		453.83	32.00	42.00	30.57	423.26	--	--	--	--	--	--	--	--
7/18/2007	P		453.83	32.00	42.00	30.96	422.87	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.95	7.57
1/15/2008	--		453.83	32.00	42.00	28.89	424.94	--	--	--	--	--	--	--	--
7/7/2008	NP		453.83	32.00	42.00	34.57	419.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.00	7.19
1/7/2009	--		453.83	32.00	42.00	34.75	419.08	--	--	--	--	--	--	--	--
7/22/2009	NP		453.83	32.00	42.00	35.84	417.99	<50	<0.50	<0.50	<0.50	<0.50	<0.50	16.67	7.68
MW-7															
3/20/1995	--		450.33	30.00	40.00	22.07	428.26	31,000	2,300	400	620	2,900	--	--	--
6/2/1995	--		450.33	30.00	40.00	23.42	426.91	40,000	1,400	280	610	2,400	--	--	--
8/23/1995	--		450.33	30.00	40.00	27.13	423.20	25,000	1,400	200	600	1,600	350	--	--
12/4/1995	--		450.33	30.00	40.00	29.45	420.88	23,000	1,100	74	490	720	--	--	--
2/20/1996	--		450.33	30.00	40.00	20.25	430.08	39,000	1,200	140	640	1,800	<400	--	--
5/15/1996	--		450.33	30.00	40.00	21.38	428.95	--	--	--	--	--	--	--	--
8/13/1996	--		450.33	30.00	40.00	25.52	424.81	--	--	--	--	--	--	--	--
11/13/1996	--		450.33	30.00	40.00	29.38	420.95	--	--	--	--	--	--	--	--
3/26/1997	--		450.33	30.00	40.00	24.36	425.97	35,000	1,100	180	460	1,700	<300	--	--
5/15/1997	--		450.33	30.00	40.00	26.90	423.43	--	--	--	--	--	--	--	--
8/26/1997	--		450.33	30.00	40.00	30.21	420.12	--	--	--	--	--	--	--	--
11/5/1997	--		450.33	30.00	40.00	32.49	417.84	--	--	--	--	--	--	--	--
2/18/1998	--		450.33	30.00	40.00	18.10	432.23	19,000	1,100	120	460	1,700	240	--	--
5/20/1998	--		450.33	30.00	40.00	21.68	428.65	--	--	--	--	--	--	--	--
7/30/1998	--		450.33	30.00	40.00	26.07	424.26	--	--	--	--	--	--	--	--
10/29/1998	--		450.33	30.00	40.00	31.13	419.20	--	--	--	--	--	--	--	--
3/16/1999	P		450.33	30.00	40.00	24.45	425.88	8,600	430	51	200	680	<120	1.5	--
5/5/1999	--		450.33	30.00	40.00	25.84	424.49	--	--	--	--	--	--	--	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-7 Cont.															
8/26/1999	--		450.33	30.00	40.00	28.28	422.05	--	--	--	--	--	--	1.51	--
12/3/1999	--		450.33	30.00	40.00	31.57	418.76	--	--	--	--	--	--	--	--
3/13/2000	--	d	450.33	30.00	40.00	--	--	--	--	--	--	--	--	--	--
6/20/2000	--		450.33	30.00	40.00	25.91	424.42	--	--	--	--	--	--	5.4	--
8/31/2000	--		450.33	30.00	40.00	28.40	421.93	8,410	344	58.9	276	581	202	0.09	--
2/9/2001	--		450.33	30.00	40.00	30.04	420.29	2,030	203	12	17.9	49.4	128	1.55	--
9/17/2001	P		450.33	30.00	40.00	29.03	421.30	4,800	200	14	9.9	27	160	0.29	--
1/21/2002	--	b	450.33	30.00	40.00	--	--	2,600	280	17	41	50	97	--	--
1/21/2002	P		450.33	30.00	40.00	28.98	421.35	4,200	350	20	52	63	99	0.81	--
7/19/2002	P	a	450.33	30.00	40.00	28.70	421.63	5,700	630	31	330	160	64	0.7	7.3
1/15/2003	--	a	450.33	30.00	40.00	21.91	428.42	12,000	470	19	340	310	91	1.5	7.0
7/9/2003	P		450.33	30.00	40.00	27.88	422.45	6,700	590	23	280	92	110	1.0	6.9
02/19/2004	P	c	450.33	30.00	40.00	25.12	425.21	8,900	670	24	470	120	100	0.8	6.6
08/04/2004	P		452.70	30.00	40.00	25.92	426.78	9,100	930	29	460	130	140	0.6	7.2
01/18/2005	P		452.70	30.00	40.00	22.31	430.39	16,000	770	33	590	220	87	1.0	6.9
07/15/2005	P		452.70	30.00	40.00	27.20	425.50	12,000	1,000	38	490	220	150	1.5	6.9
01/10/2006	P		452.70	30.00	40.00	20.61	432.09	13,000	1,200	50	760	330	120	0.8	7.1
7/21/2006	P		452.70	30.00	40.00	28.10	424.60	8,000	110	<50	380	180	54	3.20	7.8
1/17/2007	P		452.70	30.00	40.00	29.70	423.00	5,600	16	<2.5	26	12	3.1	1.08	7.83
7/18/2007	P		452.70	30.00	40.00	29.73	422.97	2,400	140	2.8	9.1	7.3	67	4.86	7.67
1/15/2008	P		452.70	30.00	40.00	26.18	426.52	3,500	120	3.6	9.0	29	26	3.16	7.07
7/7/2008	NP		452.70	30.00	40.00	33.10	419.60	70	0.76	<0.50	<0.50	<0.50	0.69	7.81	8.24
1/7/2009	NP		452.70	30.00	40.00	33.21	419.49	<50	1.5	<0.50	<0.50	<0.50	<0.50	3.00	7.73
7/22/2009	NP		452.70	30.00	40.00	34.54	418.16	<50	<0.50	<0.50	<0.50	<0.50	0.53	11.95	7.65
MW-8															
3/20/1995	--		449.43	27.50	42.50	24.75	424.68	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
6/2/1995	--		449.43	27.50	42.50	24.95	424.48	--	--	--	--	--	--	--	--
8/23/1995	--		449.43	27.50	42.50	30.94	418.49	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
12/4/1995	--		449.43	27.50	42.50	31.99	417.44	--	--	--	--	--	--	--	--
2/20/1996	--		449.43	27.50	42.50	21.13	428.30	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-8 Cont.															
5/15/1996	--		449.43	27.50	42.50	21.96	427.47	--	--	--	--	--	--	--	--
8/13/1996	--		449.43	27.50	42.50	30.20	419.23	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/13/1996	--		449.43	27.50	42.50	33.24	416.19	--	--	--	--	--	--	--	--
3/26/1997	--		449.43	27.50	42.50	26.85	422.58	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1997	--		449.43	27.50	42.50	29.69	419.74	--	--	--	--	--	--	--	--
8/26/1997	--		449.43	27.50	42.50	34.00	415.43	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/5/1997	--		449.43	27.50	42.50	35.94	413.49	--	--	--	--	--	--	--	--
2/18/1998	--		449.43	27.50	42.50	18.18	431.25	<50	0.6	0.6	<0.5	1.1	<3	--	--
5/20/1998	--		449.43	27.50	42.50	22.85	426.58	--	--	--	--	--	--	--	--
7/30/1998	NP		449.43	27.50	42.50	30.31	419.12	<50	<0.5	<0.5	<0.5	<0.5	<3	8.21	--
10/29/1998	--		449.43	27.50	42.50	35.88	413.55	--	--	--	--	--	--	--	--
3/16/1999	NP		449.43	27.50	42.50	28.50	420.93	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
5/5/1999	--		449.43	27.50	42.50	29.76	419.67	--	--	--	--	--	--	--	--
8/26/1999	P		449.43	27.50	42.50	33.51	415.92	<50	<0.5	<0.5	<0.5	<0.5	<3	4.93	--
12/3/1999	--		449.43	27.50	42.50	35.83	413.60	--	--	--	--	--	--	--	--
3/13/2000	P		449.43	27.50	42.50	26.12	423.31	<50	<0.5	<0.5	<0.5	<1	<3	2.81	--
6/20/2000	--		449.43	27.50	42.50	30.91	418.52	--	--	--	--	--	--	5.8	--
8/31/2000	--		449.43	27.50	42.50	33.70	415.73	--	--	--	--	--	--	--	--
2/9/2001	--		449.43	27.50	42.50	30.90	418.53	--	--	--	--	--	--	--	--
9/17/2001	--		449.43	27.50	42.50	33.95	415.48	--	--	--	--	--	--	--	--
1/21/2002	--		449.43	27.50	42.50	33.71	415.72	--	--	--	--	--	--	--	--
7/19/2002	--		449.43	27.50	42.50	35.30	414.13	--	--	--	--	--	--	--	--
1/15/2003	--		449.43	27.50	42.50	27.10	422.33	--	--	--	--	--	--	--	--
7/9/2003	--		449.43	27.50	42.50	33.10	416.33	--	--	--	--	--	--	--	--
02/19/2004	--		449.43	27.50	42.50	28.92	420.51	--	--	--	--	--	--	--	--
08/04/2004	--		451.80	27.50	42.50	34.28	417.52	--	--	--	--	--	--	--	--
01/18/2005	--		451.80	27.50	42.50	26.76	425.04	--	--	--	--	--	--	--	--
07/15/2005	--		451.80	27.50	42.50	31.14	420.66	--	--	--	--	--	--	--	--
01/10/2006	--		451.80	27.50	42.50	22.88	428.92	--	--	--	--	--	--	--	--
7/21/2006	--		451.80	27.50	42.50	30.84	420.96	--	--	--	--	--	--	--	--
1/17/2007	--		451.80	27.50	42.50	33.20	418.60	--	--	--	--	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-8 Cont.															
7/18/2007	--		451.80	27.50	42.50	31.92	419.88	--	--	--	--	--	--	--	--
1/15/2008	--		451.80	27.50	42.50	31.52	420.28	--	--	--	--	--	--	--	--
7/7/2008	--		451.80	27.50	42.50	36.32	415.48	--	--	--	--	--	--	--	--
1/7/2009	--		451.80	27.50	42.50	40.52	411.28	--	--	--	--	--	--	--	--
7/22/2009	--		451.80	27.50	42.50	40.38	411.42	--	--	--	--	--	--	--	--
MW-9															
3/20/1995	--		449.21	29.50	39.50	19.11	430.10	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
6/2/1995	--		449.21	29.50	39.50	21.23	427.98	--	--	--	--	--	--	--	--
8/23/1995	--		449.21	29.50	39.50	24.33	424.88	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
12/4/1995	--		449.21	29.50	39.50	27.90	421.31	--	--	--	--	--	--	--	--
2/20/1996	--		449.21	29.50	39.50	17.86	431.35	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1996	--		449.21	29.50	39.50	18.69	430.52	--	--	--	--	--	--	--	--
8/13/1996	--		449.21	29.50	39.50	24.17	425.04	--	--	--	--	--	--	--	--
11/13/1996	--		449.21	29.50	39.50	28.01	421.20	--	--	--	--	--	--	--	--
3/26/1997	--		449.21	29.50	39.50	22.58	426.63	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1997	--		449.21	29.50	39.50	25.12	424.09	--	--	--	--	--	--	--	--
8/26/1997	--		449.21	29.50	39.50	28.28	420.93	--	--	--	--	--	--	--	--
11/5/1997	--		449.21	29.50	39.50	31.18	418.03	--	--	--	--	--	--	--	--
2/18/1998	--		449.21	29.50	39.50	16.03	433.18	<50	0.6	0.5	<0.5	1	<3	--	--
5/20/1998	--		449.21	29.50	39.50	19.31	429.90	--	--	--	--	--	--	--	--
7/30/1998	--		449.21	29.50	39.50	24.90	424.31	--	--	--	--	--	--	--	--
10/29/1998	--		449.21	29.50	39.50	30.08	419.13	--	--	--	--	--	--	--	--
3/16/1999	P		449.21	29.50	39.50	22.68	426.53	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
5/5/1999	--		449.21	29.50	39.50	23.82	425.39	--	--	--	--	--	--	--	--
8/26/1999	--		449.21	29.50	39.50	26.57	422.64	--	--	--	--	--	--	5.08	--
12/3/1999	--	d	449.21	29.50	39.50	--	--	--	--	--	--	--	--	--	--
3/13/2000	P		449.21	29.50	39.50	25.62	423.59	<50	<0.5	<0.5	<0.5	<1	<3	5.43	--
6/20/2000	--		449.21	29.50	39.50	23.55	425.66	--	--	--	--	--	--	6.2	--
8/31/2000	--		449.21	29.50	39.50	27.39	421.82	--	--	--	--	--	--	--	--
2/9/2001	--		449.21	29.50	39.50	28.65	420.56	--	--	--	--	--	--	--	--

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Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-9 Cont.															
9/17/2001	--		449.21	29.50	39.50	27.51	421.70	--	--	--	--	--	--	--	--
1/21/2002	--		449.21	29.50	39.50	27.09	422.12	--	--	--	--	--	--	--	--
7/19/2002	--		449.21	29.50	39.50	27.06	422.15	--	--	--	--	--	--	--	--
1/15/2003	--		449.21	29.50	39.50	21.78	427.43	--	--	--	--	--	--	--	--
7/9/2003	--		449.21	29.50	39.50	26.18	423.03	--	--	--	--	--	--	--	--
02/19/2004	--		449.21	29.50	39.50	23.45	425.76	--	--	--	--	--	--	--	--
08/04/2004	--		451.63	29.50	39.50	29.24	422.39	--	--	--	--	--	--	--	--
01/18/2005	--		451.63	29.50	39.50	20.64	430.99	--	--	--	--	--	--	--	--
07/15/2005	--		451.63	29.50	39.50	25.72	425.91	--	--	--	--	--	--	--	--
01/10/2006	--		451.63	29.50	39.50	18.86	432.77	--	--	--	--	--	--	--	--
7/21/2006	--		451.63	29.50	39.50	25.58	426.05	--	--	--	--	--	--	--	--
1/17/2007	--		451.63	29.50	39.50	29.11	422.52	--	--	--	--	--	--	--	--
7/18/2007	--	d	451.63	29.50	39.50	--	--	--	--	--	--	--	--	--	--
1/15/2008	--		451.63	29.50	39.50	24.89	426.74	--	--	--	--	--	--	--	--
7/7/2008	--		451.63	29.50	39.50	32.06	419.57	--	--	--	--	--	--	--	--
1/7/2009	--		451.63	29.50	39.50	32.65	418.98	--	--	--	--	--	--	--	--
7/22/2009	--		451.63	29.50	39.50	33.74	417.89	--	--	--	--	--	--	--	--
MW-10															
3/20/1995	--		449.22	29.00	37.00	20.96	428.26	--	--	--	--	--	--	--	--
6/2/1995	--		449.22	29.00	37.00	22.15	427.07	--	--	--	--	--	--	--	--
8/23/1995	--		449.22	29.00	37.00	24.47	424.75	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
12/4/1995	--		449.22	29.00	37.00	26.97	422.25	--	--	--	--	--	--	--	--
2/20/1996	--		449.22	29.00	37.00	18.40	430.82	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1996	--	d	449.22	29.00	37.00	--	--	--	--	--	--	--	--	--	--
8/13/1996	--		449.22	29.00	37.00	23.70	425.52	--	--	--	--	--	--	--	--
11/13/1996	--		449.22	29.00	37.00	27.15	422.07	--	--	--	--	--	--	--	--
3/26/1997	--		449.22	29.00	37.00	22.23	426.99	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1997	--		449.22	29.00	37.00	24.57	424.65	--	--	--	--	--	--	--	--
8/26/1997	--		449.22	29.00	37.00	27.62	421.60	--	--	--	--	--	--	--	--
11/5/1997	--		449.22	29.00	37.00	30.79	418.43	--	--	--	--	--	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-10 Cont.															
2/18/1998	--	d	449.22	29.00	37.00	--	--	--	--	--	--	--	--	--	--
5/20/1998	--		449.22	29.00	37.00	--	--	--	--	--	--	--	--	--	--
7/30/1998	--		449.22	29.00	37.00	23.90	425.32	--	--	--	--	--	--	--	--
10/29/1998	--		449.22	29.00	37.00	30.55	418.67	--	--	--	--	--	--	--	--
3/16/1999	P		449.22	29.00	37.00	23.05	426.17	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
5/5/1999	--		449.22	29.00	37.00	24.00	425.22	--	--	--	--	--	--	--	--
8/26/1999	--		449.22	29.00	37.00	26.50	422.72	--	--	--	--	--	--	5.15	--
12/3/1999	--		449.22	29.00	37.00	30.80	418.42	--	--	--	--	--	--	--	--
3/13/2000	--	d	449.22	29.00	37.00	26.21	423.01	--	--	--	--	--	--	--	--
6/20/2000	--		449.22	29.00	37.00	23.52	425.70	--	--	--	--	--	--	5.5	--
8/31/2000	--		449.22	29.00	37.00	27.52	421.70	--	--	--	--	--	--	--	--
2/9/2001	--		449.22	29.00	37.00	28.71	420.51	--	--	--	--	--	--	--	--
9/17/2001	--		449.22	29.00	37.00	27.94	421.28	--	--	--	--	--	--	--	--
1/21/2002	--		449.22	29.00	37.00	27.44	421.78	--	--	--	--	--	--	--	--
7/19/2002	--		449.22	29.00	37.00	27.80	421.42	--	--	--	--	--	--	--	--
1/15/2003	--		449.22	29.00	37.00	23.09	426.13	--	--	--	--	--	--	--	--
7/9/2003	--		449.22	29.00	37.00	26.87	422.35	--	--	--	--	--	--	--	--
02/19/2004	--		449.22	29.00	37.00	23.39	425.83	--	--	--	--	--	--	--	--
01/18/2005	--		451.65	29.00	37.00	21.40	430.25	--	--	--	--	--	--	--	--
07/15/2005	--		451.65	29.00	37.00	25.37	426.28	--	--	--	--	--	--	--	--
01/10/2006	--		451.65	29.00	37.00	19.81	431.84	--	--	--	--	--	--	--	--
7/21/2006	--		451.65	29.00	37.00	25.16	426.49	--	--	--	--	--	--	--	--
1/17/2007	--		451.65	29.00	37.00	28.95	422.70	--	--	--	--	--	--	--	--
7/18/2007	--	d	451.65	29.00	37.00	--	--	--	--	--	--	--	--	--	--
1/15/2008	--		451.65	29.00	37.00	24.62	427.03	--	--	--	--	--	--	--	--
7/7/2008	--	d	451.65	29.00	37.00	--	--	--	--	--	--	--	--	--	--
1/7/2009	--	d	451.65	29.00	37.00	--	--	--	--	--	--	--	--	--	--
7/22/2009	--	Dry	451.65	29.00	37.00	--	--	--	--	--	--	--	--	--	--
MW-11															
3/20/1995	--		448.02	29.00	39.00	25.02	423.00	<50	<0.5	<0.5	<0.5	<0.5	--	--	--

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-11 Cont.															
6/2/1995	--		448.02	29.00	39.00	23.82	424.20	--	--	--	--	--	--	--	--
8/23/1995	--		448.02	29.00	39.00	30.15	417.87	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
12/4/1995	--		448.02	29.00	39.00	31.63	416.39	--	--	--	--	--	--	--	--
2/20/1996	--		448.02	29.00	39.00	20.94	427.08	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1996	--		448.02	29.00	39.00	23.03	424.99	--	--	--	--	--	--	--	--
8/13/1996	--		448.02	29.00	39.00	29.19	418.83	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/13/1996	--		448.02	29.00	39.00	31.96	416.06	--	--	--	--	--	--	--	--
3/26/1997	--		448.02	29.00	39.00	26.61	421.41	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
5/15/1997	--		448.02	29.00	39.00	29.39	418.63	--	--	--	--	--	--	--	--
8/26/1997	--		448.02	29.00	39.00	33.47	414.55	<50	<0.5	<0.5	<0.5	<0.5	<3	--	--
11/5/1997	--		448.02	29.00	39.00	35.12	412.90	--	--	--	--	--	--	--	--
2/18/1998	--		448.02	29.00	39.00	18.03	429.99	<50	<0.5	<0.5	<0.5	1	<3	--	--
5/20/1998	--		448.02	29.00	39.00	23.00	425.02	--	--	--	--	--	--	--	--
7/30/1998	P		448.02	29.00	39.00	29.30	418.72	<50	<0.5	<0.5	<0.5	<0.5	<3	5.59	--
10/29/1998	--		448.02	29.00	39.00	34.47	413.55	--	--	--	--	--	--	--	--
3/16/1999	P		448.02	29.00	39.00	27.88	420.14	<50	<0.5	<0.5	<0.5	<0.5	<3	1.0	--
5/5/1999	--		448.02	29.00	39.00	26.85	421.17	--	--	--	--	--	--	--	--
8/26/1999	P		448.02	29.00	39.00	32.74	415.28	<50	<0.5	<0.5	<0.5	<0.5	<3	4.59	--
12/3/1999	--		448.02	29.00	39.00	34.70	413.32	--	--	--	--	--	--	--	--
3/13/2000	P		448.02	29.00	39.00	25.94	422.08	<50	<0.5	<0.5	<0.5	<1	<3	3.21	--
6/20/2000	--		448.02	29.00	39.00	30.40	417.62	--	--	--	--	--	--	3.3	--
8/31/2000	NP		448.02	29.00	39.00	32.68	415.34	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.4	--
8/31/2000	--	b	448.02	29.00	39.00	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--	--
2/9/2001	--		448.02	29.00	39.00	31.17	416.85	--	--	--	--	--	--	--	--
9/17/2001	NP		448.02	29.00	39.00	32.98	415.04	<50	<0.50	<0.50	<0.50	<0.50	<2.5	0.62	--
1/21/2002	--		448.02	29.00	39.00	31.05	416.97	--	--	--	--	--	--	--	--
7/19/2002	P		448.02	29.00	39.00	31.67	416.35	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.7	7.7
1/15/2003	--		448.02	29.00	39.00	23.75	424.27	--	--	--	--	--	--	--	--
7/9/2003	P		448.02	29.00	39.00	31.06	416.96	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	6.6
02/19/2004	--		448.02	29.00	39.00	27.21	420.81	--	--	--	--	--	--	--	--
08/04/2004	P		450.41	29.00	39.00	31.71	418.70	<50	<0.50	<0.50	<0.50	<0.50	<0.50	3.3	7.1

Table 1. Summary of Ground-Water Monitoring Data: Relative Water Elevations and Laboratory Analyses
Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
MW-11 Cont.															
01/18/2005	--		450.41	29.00	39.00	24.80	425.61	--	--	--	--	--	--	--	--
07/15/2005	P		450.41	29.00	39.00	29.15	421.26	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	7.1
01/10/2006	--		450.41	29.00	39.00	20.87	429.54	--	--	--	--	--	--	--	--
7/21/2006	P		450.41	29.00	39.00	29.30	421.11	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.7	7.2
1/17/2007	--		450.41	29.00	39.00	31.59	418.82	--	--	--	--	--	--	--	--
7/18/2007	NP		450.41	29.00	39.00	29.22	421.19	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.35	7.12
1/15/2008	--		450.41	29.00	39.00	29.12	421.29	--	--	--	--	--	--	--	--
7/7/2008	NP		450.41	29.00	39.00	34.21	416.20	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.08	7.94
1/7/2009	--		450.41	29.00	39.00	37.45	412.96	--	--	--	--	--	--	--	--
7/22/2009	NP		450.41	29.00	39.00	37.33	413.08	<50	<0.50	<0.50	<0.50	<0.50	<0.50	15.97	7.81
RW-1															
3/20/1995	--		451.67	25.50	40.50	23.76	427.91	15,000	1,000	140	310	950	--	--	--
6/2/1995	--		451.67	25.50	40.50	25.12	426.55	12,000	1,300	280	420	1,100	--	--	--
8/23/1995	--		451.67	25.50	40.50	28.80	422.87	8,200	520	190	240	610	<50	--	--
12/4/1995	--		451.67	25.50	40.50	31.15	420.52	2,600	140	59	83	210	--	--	--
2/20/1996	--		451.67	25.50	40.50	21.45	430.22	6,300	410	160	180	650	<40	--	--
5/15/1996	--		451.67	25.50	40.50	22.97	428.70	--	--	--	--	--	--	--	--
8/13/1996	--		451.67	25.50	40.50	24.74	426.93	--	--	--	--	--	--	--	--
11/13/1996	--		451.67	25.50	40.50	30.69	420.98	--	--	--	--	--	--	--	--
3/26/1997	--		451.67	25.50	40.50	25.69	425.98	500	57	3	6.4	18	54	--	--
5/15/1997	--		451.67	25.50	40.50	28.19	423.48	--	--	--	--	--	--	--	--
8/26/1997	--		451.67	25.50	40.50	31.21	420.46	--	--	--	--	--	--	--	--
11/5/1997	--		451.67	25.50	40.50	33.67	418.00	--	--	--	--	--	--	--	--
2/18/1998	--		451.67	25.50	40.50	20.14	431.53	9,400	200	70	190	710	<60	--	--
5/20/1998	--		451.67	25.50	40.50	23.43	428.24	--	--	--	--	--	--	--	--
7/30/1998	--		451.67	25.50	40.50	27.42	424.25	--	--	--	--	--	--	--	--
10/29/1998	--		451.67	25.50	40.50	32.47	419.20	--	--	--	--	--	--	--	--
3/16/1999	NP		451.67	25.50	40.50	25.45	426.22	1,100	140	19	45	83	530	1.0	--
5/5/1999	--		451.67	25.50	40.50	27.23	424.44	--	--	--	--	--	--	--	--
8/26/1999	--		451.67	25.50	40.50	29.98	421.69	--	--	--	--	--	--	1.39	--

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
RW-1 Cont.															
12/3/1999	--		451.67	25.50	40.50	32.38	419.29	--	--	--	--	--	--	--	--
3/13/2000	NP		451.67	25.50	40.50	25.53	426.14	1,100	130	3.5	0.7	95	230	4.43	--
6/20/2000	--		451.67	25.50	40.50	28.31	423.36	--	--	--	--	--	--	1.9	--
8/31/2000	NP		451.67	25.50	40.50	30.61	421.06	<50.0	<0.500	<0.500	<0.500	<0.500	82.5	3.21	--
2/9/2001	NP		451.67	25.50	40.50	31.14	420.53	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.84	--
9/17/2001	NP		451.67	25.50	40.50	31.70	419.97	<50	<0.50	<0.50	<0.50	<0.50	<2.5	1.51	--
1/21/2002	NP		451.67	25.50	40.50	30.15	421.52	<50	7.7	<0.50	<0.50	1.5	18	0.63	--
7/19/2002	NP		451.67	25.50	40.50	31.15	420.52	<50	<0.50	<0.50	<0.50	<0.50	13	1.4	6.6
1/15/2003	--	a	451.67	25.50	40.50	22.20	429.47	860	9	1.6	17	42	1.5	2.8	7.2
7/9/2003	--		451.67	25.50	40.50	29.56	422.11	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.8	7.1
02/19/2004	NP	c	451.67	25.50	40.50	23.53	428.14	<50	<0.50	<0.50	<0.50	<0.50	<0.50	2.4	6.7
08/04/2004	P		454.11	25.50	40.50	22.45	431.66	600	<0.50	<0.50	3.3	3.4	<0.50	4.4	7.2
01/18/2005	P		454.11	25.50	40.50	23.57	430.54	1,400	8.0	1.9	22	68	<0.50	3.6	6.9
07/15/2005	NP		454.11	25.50	40.50	29.02	425.09	<50	<0.50	<0.50	<0.50	<0.50	2.0	1.1	7.8
01/10/2006	P		454.11	25.50	40.50	21.88	432.23	480	4.3	0.67	8.3	18	0.54	4.4	7.1
7/21/2006	--	d	454.11	25.50	40.50	--	--	--	--	--	--	--	--	--	--
1/17/2007	P		454.11	25.50	40.50	31.48	422.63	6,900	17	2.8	22	31	2.6	4.08	7.74
7/18/2007	NP		454.11	25.50	40.50	32.45	421.66	<50	<0.50	<0.50	<0.50	<0.50	<0.50	1.33	7.48
1/15/2008	NP		454.11	25.50	40.50	28.39	425.72	<50	<0.50	<0.50	<0.50	<0.50	8.3	2.73	6.87
7/7/2008	NP		454.11	25.50	40.50	35.19	418.92	<50	<0.50	<0.50	<0.50	<0.50	0.53	2.51	7.05
1/7/2009	NP		454.11	25.50	40.50	33.31	420.80	120	0.96	<0.50	<0.50	<0.50	1.6	2.13	6.84
7/22/2009	NP		454.11	25.50	40.50	36.15	417.96	<50	<0.50	<0.50	<0.50	<0.50	0.84	10.39	7.40
VW-1															
8/31/2000	P		--	18.50	28.50	20.61	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	10.08	--
2/9/2001	P		--	18.50	28.50	22.10	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	0.53	--
9/17/2001	P		--	18.50	28.50	21.99	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	6.59	--
1/21/2002	P		--	18.50	28.50	21.50	--	<50	<0.50	<0.50	<0.50	<0.50	<5.0	0.7	--
7/19/2002	P		--	18.50	28.50	22.42	--	<50	<0.50	<0.50	<0.50	<0.50	<0.50	4.9	7.1
1/15/2003	--		--	18.50	28.50	22.59	--	<50	<0.50	<0.50	0.63	1.7	<0.50	5.4	7.2
7/9/2003	--		--	18.50	28.50	22.50	--	<50	<0.50	<0.50	<0.50	0.61	<0.50	2.0	7.0

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

Station #771, 899 Rincon Ave., Livermore, CA

Well and Sample Date	P/NP	Comments	TOC (feet)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	DTW (feet bgs)	Water Level Elevation (feet)	Concentrations in (µg/L)						DO (mg/L)	pH
								GRO/TPHg	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE		
VW-1 Cont.															
02/19/2004	--		--	18.50	28.50	21.04	--	--	--	--	--	--	--	--	--
08/04/2004	P		453.29	18.50	28.50	20.48	432.81	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.7	7.0
01/18/2005	--		453.29	18.50	28.50	21.72	431.57	--	--	--	--	--	--	--	--
07/15/2005	P		453.29	18.50	28.50	22.50	430.79	<50	<0.50	<0.50	<0.50	<0.50	<0.50	5.1	7.4
01/10/2006	--		453.29	18.50	28.50	20.17	433.12	--	--	--	--	--	--	--	--
7/21/2006	P	e	453.29	18.50	28.50	22.50	430.79	220	<0.50	<0.50	<0.50	<0.50	<0.50	5.91	7.3
1/17/2007	--		453.29	18.50	28.50	21.67	431.62	--	--	--	--	--	--	--	--
7/18/2007	NP		453.29	18.50	28.50	23.58	429.71	<50	<0.50	<0.50	<0.50	<0.50	<0.50	6.45	8.52
1/15/2008	--		453.29	18.50	28.50	21.87	431.42	--	--	--	--	--	--	--	--
7/7/2008	NP		453.29	18.50	28.50	23.70	429.59	<50	<0.50	<0.50	<0.50	<0.50	<0.50	7.54	8.46
1/7/2009	--		453.29	18.50	28.50	22.00	431.29	--	--	--	--	--	--	--	--
7/22/2009	NP		453.29	18.50	28.50	23.95	429.34	<50	<0.50	<0.50	<0.50	<0.50	<0.50	10.12	7.66

SYMBOLS AND ABBREVIATIONS:

--/- - = Not analyzed/applicable/sampled/measured
< = Not detected at or above specified laboratory reporting limit
DO = Dissolved oxygen
DTW = Depth to water in ft bgs
ft bgs = Feet below ground surface
ft MSL = Feet above mean sea level
GRO = Gasoline range organics, range C4-C12
GWE = Groundwater elevation in ft MSL
g/L = Micrograms per liter
mg/L = Milligrams per liter
MTBE = Methyl tert-butyl ether
NP = Not purged before sampling
P = Purged before sampling
TPH-g = Total petroleum hydrocarbons as gasoline
TOC = Top of casing elevation in ft MSL

FOOTNOTES:

a = Chromatogram Pattern: Gasoline C6-C10
b = Duplicate sample
c = GRO analyzed by EPA Method 8015B modified
d = Well inaccessible
e = Hydrocarbon result partly due to individ. peak(s) in quant. range.
f = Sample > 4x spike concentration.

NOTES:

For previous historical GWE and analytical data please refer to Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, ARCO Service Station 771, Livermore, California, (EMCON, March 1, 1996).

Please note that 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 inclusion of non-TPH-g analytes within the requested fuel range resulting in a higher concentration being reported.

All analytes unless otherwise notes utilized EPA Method 8260B, EPA method 8015B modified prior to 1/15/03, and EPA method 8020 prior to 12/03/99.

Site wells were resurveyed to NAVD '88 datum on March 8, 2004.

Top of screen and bottom of screen depths for MW-3 and MW-6 are estimated from cross-sections.

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

Note: The data within this table collected prior to 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 #771, 899 Rincon Ave., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments	
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB		
MW-1										
02/19/2004	--	--	--	--	--	--	--	--	--	
08/04/2004	--	--	--	--	--	--	--	--	--	
01/18/2005	--	--	--	--	--	--	--	--	--	
07/15/2005	--	--	--	--	--	--	--	--	--	
01/10/2006	--	--	--	--	--	--	--	--	--	
MW-2										
7/9/2003	<1,000	<200	39	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
02/19/2004	--	--	--	--	--	--	--	--	--	
08/04/2004	<2,000	<400	78	<10	<10	<10	<10	<10	<10	
01/18/2005	--	--	--	--	--	--	--	--	--	
07/15/2005	<500	120	46	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
01/10/2006	--	--	--	--	--	--	--	--	--	
7/21/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/18/2007	<600	89	45	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
7/7/2008	--	<100	19	<5.0	<5.0	<5.0	<5.0	<5.0	--	
MW-3										
02/19/2004	--	--	--	--	--	--	--	--	--	
08/04/2004	--	--	--	--	--	--	--	--	--	
01/18/2005	--	--	--	--	--	--	--	--	--	
07/15/2005	--	--	--	--	--	--	--	--	--	
01/10/2006	--	--	--	--	--	--	--	--	--	
MW-4										
7/9/2003	<1,000	750	150	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
02/19/2004	<1,000	630	180	<10	<10	<10	<5.0	<5.0	<5.0	
08/04/2004	<2,000	1,300	300	<10	<10	<10	<10	<10	<10	
01/18/2005	<1,000	630	160	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	a
07/15/2005	<1,000	850	230	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
01/10/2006	<1,500	810	190	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	
7/21/2006	<300	35	3.1	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1/17/2007	<300	<20	11	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

**Table 2. Summary of Fuel Additives Analytical Data
Station #771, 899 Rincon Ave., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-4 Cont.									
7/18/2007	<300	830	74	<0.50	<0.50	<0.50	0.76	<0.50	
1/15/2008	<300	280	61	<0.50	<0.50	<0.50	<0.50	<0.50	b (MTBE)
7/7/2008	--	19	17	<0.50	<0.50	<0.50	<0.50	--	
1/7/2009	--	74	37	<0.50	<0.50	<0.50	<0.50	<0.50	
7/22/2009	<300	580	63	0.85	<0.50	<0.50	<0.50	<0.50	
MW-5									
7/9/2003	<1,000	1,100	260	<5.0	<5.0	<5.0	<5.0	<5.0	
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	<1,000	850	250	<5.0	<5.0	<5.0	<5.0	<5.0	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	<1,000	720	270	<5.0	<5.0	<5.0	<5.0	<5.0	
01/10/2006	--	--	--	--	--	--	--	--	
7/21/2006	<3,000	<200	14	<5.0	<5.0	<5.0	<5.0	<5.0	
7/18/2007	<300	260	110	<0.50	<0.50	<0.50	<0.50	<0.50	
7/7/2008	--	<10	<0.50	<0.50	<0.50	<0.50	<0.50	--	
7/22/2009	<300	11	12	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-6									
7/9/2003	<100	<20	0.98	<0.50	<0.50	<0.50	<0.50	<0.50	
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	<100	<20	5.2	<0.50	<0.50	<0.50	<0.50	<0.50	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	<500	110	32	<2.5	<2.5	<2.5	<2.5	<2.5	
01/10/2006	--	--	--	--	--	--	--	--	
7/21/2006	<300	<20	5.1	<0.50	<0.50	<0.50	<0.50	<0.50	
7/18/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/7/2008	--	<10	<0.50	<0.50	<0.50	<0.50	<0.50	--	
7/22/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-7									
7/9/2003	<1,000	350	110	<5.0	<5.0	<5.0	<5.0	<5.0	
02/19/2004	<1,000	420	100	<10	<10	<10	<5.0	<5.0	

**Table 2. Summary of Fuel Additives Analytical Data
Station #771, 899 Rincon Ave., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-7 Cont.									
08/04/2004	<5,000	<1,000	140	<25	<25	<25	<25	<25	
01/18/2005	<1,000	260	87	<5.0	<5.0	<5.0	<5.0	<5.0	a
07/15/2005	<5,000	<1,000	150	<25	<25	<25	<25	<25	
01/10/2006	<30,000	<2,000	120	<50	<50	<50	<50	<50	
7/21/2006	<30,000	<2,000	54	<50	<50	<50	<50	<50	
1/17/2007	<1,500	<100	3.1	<2.5	<2.5	<2.5	<2.5	<2.5	
7/18/2007	<600	220	67	<1.0	<1.0	<1.0	<1.0	<1.0	
1/15/2008	<1,500	<100	26	<2.5	<2.5	<2.5	<2.5	<2.5	
7/7/2008	--	<10	0.69	<0.50	<0.50	<0.50	<0.50	--	
1/7/2009	--	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/22/2009	<300	<10	0.53	<0.50	<0.50	<0.50	<0.50	<0.50	
MW-8									
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	--	--	--	--	--	--	--	--	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	--	--	--	--	--	--	--	--	
01/10/2006	--	--	--	--	--	--	--	--	
MW-9									
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	--	--	--	--	--	--	--	--	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	--	--	--	--	--	--	--	--	
01/10/2006	--	--	--	--	--	--	--	--	
MW-10									
02/19/2004	--	--	--	--	--	--	--	--	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	--	--	--	--	--	--	--	--	
01/10/2006	--	--	--	--	--	--	--	--	
MW-11									

**Table 2. Summary of Fuel Additives Analytical Data
Station #771, 899 Rincon Ave., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
MW-11 Cont.									
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/10/2006	--	--	--	--	--	--	--	--	
7/21/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/18/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/7/2008	--	<10	<0.50	<0.50	<0.50	<0.50	<0.50	--	
7/22/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
RW-1									
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/19/2004	<100	<20	<0.50	<1.0	<1.0	<1.0	<0.50	<0.50	
08/04/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/18/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	a
07/15/2005	<100	<20	2.0	<0.50	<0.50	<0.50	<0.50	<0.50	
01/10/2006	<300	<20	0.54	<0.50	<0.50	<0.50	<0.50	<0.50	
1/17/2007	<1,500	<100	2.6	<2.5	<2.5	<2.5	<2.5	<2.5	
7/18/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
1/15/2008	<300	<20	8.3	<0.50	<0.50	<0.50	<0.50	<0.50	
7/7/2008	--	<10	0.53	<0.50	<0.50	<0.50	<0.50	--	
1/7/2009	--	<10	1.6	<0.50	<0.50	<0.50	<0.50	<0.50	
7/22/2009	<300	12	0.84	<0.50	<0.50	<0.50	<0.50	<0.50	
VW-1									
7/9/2003	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
02/19/2004	--	--	--	--	--	--	--	--	
08/04/2004	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/18/2005	--	--	--	--	--	--	--	--	
07/15/2005	<100	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
01/10/2006	--	--	--	--	--	--	--	--	

**Table 2. Summary of Fuel Additives Analytical Data
Station #771, 899 Rincon Ave., Livermore, CA**

Well and Sample Date	Concentrations in (µg/L)								Comments
	Ethanol	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	
VW-1 Cont.									
7/21/2006	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/18/2007	<300	<20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
7/7/2008	--	<10	<0.50	<0.50	<0.50	<0.50	<0.50	--	
7/22/2009	<300	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	

SYMBOLS AND ABBREVIATIONS:

-- = Not analyzed/sampled

< = 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

µg/L = Micrograms per liter

TAME = tert-Amyl methyl ether

TBA = tert-Butyl alcohol

FOOTNOTES:

a = Calibration verification was within the method limits but outside the contract limits for ethanol.

b = Sample >4x spike concentration.

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 #771, 899 Rincon Ave., Livermore, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
3/20/1995	Northwest	0.030
6/2/1995	North-Northwest	0.014
8/23/1995	North-Northwest	0.030
12/4/1995	North-Northwest	0.030
2/20/1996	Northwest	0.016
5/15/1996	Northwest	0.024
8/13/1996	North-Northwest	0.030
11/13/1996	North-Northwest	0.031
3/26/1997	North-Northwest	0.044
5/15/1997	North-Northwest	0.031
8/26/1997	North-Northwest	0.042
11/5/1997	North-Northwest	0.030
2/18/1998	Northwest	0.010
5/20/1998	Northwest	0.030
7/30/1998	North	0.040
10/29/1998	North	0.005
3/16/1999	North-Northwest	0.030
5/5/1999	North	0.040
8/26/1999	North-Northwest	0.050
12/3/1999	North-Northeast	0.060
3/13/2000	North-Northwest	0.066
6/20/2000	North-Northwest	0.050
8/31/2000	North-Northwest	0.062
2/9/2001	North-Northeast	0.014
9/17/2001	North-Northwest	0.061
1/21/2002	North-Northwest	0.050
7/19/2002	North-Northwest	0.044
1/15/2003	Northeast to Southeast	0.038 - 0.016
7/9/2003	Northwest to North-Northwest	0.009 - 0.063
2/19/2004	North	0.044
8/4/2004	Northeast	0.071
1/18/2005	North-Northeast	0.04
7/15/2005	Northeast and Southwest	0.05 and 0.02
1/10/2006	North	0.02
7/21/2006	North and Southwest	0.05 and 0.02
1/17/2007	North-Northeast and Southwest	0.03 and 0.02
7/18/2007	North-Northeast to Southwest	0.03 and 0.04
1/15/2008	North	0.04
7/7/2008	North	0.03
1/7/2009	North	0.06
7/22/2009	North	0.04

**Table 3. Historical Ground-Water Flow Direction and Gradient
Station #771, 899 Rincon Ave., Livermore, CA**

Date Sampled	Approximate Flow Direction	Approximate Hydraulic Gradient
---------------------	-----------------------------------	---------------------------------------

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.

APPENDIX A

**STRATUS ENVIRONMENTAL, INC. GROUND-WATER SAMPLING DATA PACKAGE
(INCLUDES FIELD DATA SHEETS, CERTIFIED LABORATORY ANALYTICAL
RESULTS, CHAIN OF CUSTODY DOCUMENTATION, AND FIELD
PROCEDURES FOR GROUNDWATER SAMPLING)**



3330 Cameron Park Drive, Ste 550
Cameron Park, California 95682
(530) 676-6004 ~ Fax: (530) 676-6005

August 5, 2009

Mr. Rob Miller
Broadbent & Associates
2000 Kirman Ave.
Reno, NV 89502

Re: Groundwater Sampling Data Package, BP Service Station No. 771, located at
899 Rincon Avenue, Livermore, California

General Information

Data Submittal Prepared / Reviewed by: Carol Huff / Jay Johnson

Phone Number: (530) 676-6000

On-Site Supplier Representatives: Tony Hill

Sampling Date: July 22, 2009

Unusual Field Conditions: None

Scope of Work Performed: Quarterly monitoring and sampling.


Variations from Work Scope: None noted.


This submittal presents the data collected in association with routine groundwater monitoring. The attachments include field data sheets, chain of custody documentation, certified analytical results, and field procedures for groundwater sampling documentation. The information is being provided to BP-ARCO's Scoping Supplier for use in preparing a report for regulatory submittal. This submittal is limited to presentation of collected data and does not include data interpretation or conclusions or recommendations.

August 5, 2009

Any questions concerning this submittal should be addressed to the Preparer/Reviewer identified above.

Sincerely,


STRATUS ENVIRONMENTAL
Jay R. Johnson, P.G.
Project Manager



The seal is circular with a double border. The outer border contains the text "PROFESSIONAL GEOLOGIST" at the top and "STATE OF CALIFORNIA" at the bottom, separated by two stars. The inner circle contains the name "Jay R. Johnson" and the number "No. 5867".

Attachments:

- Field Data Sheets
- Chain of Custody Documentation
- Certified Analytical Results
- Field Procedures for Groundwater Sampling

cc: Mr. Paul Supple, BP/ARCO



Site Address 84 Kinson Ave
 City Livermore, CA
 Sampled by: TH
 Signature [Signature]

Site Number A110 771
 Project Number E771
 Project PM Jay Johnson
 DATE 7/22/09

Water Level Data					Purge Volume Calculations					Purge Method				Sample Record			Field Data
Well ID	Time	Depth to Product (feet)	Depth to Water (feet)	Total Depth (feet)	Water column (feet)	Diameter (inches)	Multiplier	3 casing volumes (gallons)	Actual water purged (gallons)	No Purge	Bailer	Pump	other	DTW at sample time (feet)	Sample I.D	Sample Time	DO (mg/L)
MW-1	1050		DRY	36.60	-	4	2	-	-	X							
2	1046		33.48	34.00	DRY	4	2	-	-	X					MW-1	-	-
3	1204		34.98	39.47	-	4	2	-	-	X					2	-	-
26	4	1046	36.77	41.55	-	4	2	-	-	X					3	-	-
31.8	5	1100	37.84	40.05	-	4	2	-	-	X	X			36.77	4	1200	10.82
32	6	1057	35.84	43.10	-	4	2	-	-	X	X			37.84	5	1135	12.34
30	7	1022	34.54	39.51	-	4	2	-	-	X	X			35.84	6	1145	10.67
	8	1032	40.38	41.39	-	2	5	-	-	X	X			34.54	7	1240	11.95
	9	1036	33.74	38.90	DRY	2	5	-	-	X				-	8	-	-
	10	1040	DRY	33.98	-	2	5	-	-	X				-	9	-	-
29	MW-11	1010	37.33	38.46	-	2	5	-	-	X	X			-	10	-	-
25.5	RW-1	1103	36.15	39.60	-	6	4.4	-	-	X	X			37.33	MW-11	1300	15.97
18.5	VW-1	1054	23.95	28.05	-	4	2	-	-	X	X			36.15	RW-1	1120	10.39
														23.95	VW-1	1220	10.12

Multiplier
 2" = 0.5 3" = 1.0 4" = 2.0 6" = 4.4

Please refer to groundwater sampling field procedures
 pH/Conductivity/temperature Meter - Oakton Model PC-10
 DO Meter - Oakton 300 Series (DO is always measured before purge)

CALIBRATION DATE
 pH 7/22/09
 Conductivity ✓
 DO ✓

Well ID <u>RW-1</u> <u>1120</u>					Well ID <u>MW-5</u> <u>1135</u>				
purge start time <u>barley</u> <u>No odor</u>					purge start time <u>barley</u> <u>No odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>20.9</u>	<u>7.40</u>	<u>761</u>	<u>Ø</u>	time	<u>21.3</u>	<u>7.27</u>	<u>1039</u>	<u>Ø</u>
time					time				
time					time				
time					time				
purge stop time					purge stop time				
Well ID <u>MW-6</u> <u>1145</u>					Well ID <u>MW-4</u> <u>1200</u>				
purge start time <u>barley</u> <u>No odor</u>					purge start time <u>barley</u> <u>No odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>20.7</u>	<u>7.68</u>	<u>666</u>	<u>Ø</u>	time	<u>21.3</u>	<u>7.45</u>	<u>974</u>	<u>Ø</u>
time					time				
time					time				
time					time				
purge stop time					purge stop time				
Well ID <u>VW-1</u> <u>1220</u>					Well ID <u>MW-7</u> <u>1240</u>				
purge start time <u>barley</u> <u>No odor</u>					purge start time <u>barley</u> <u>No odor</u>				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>21.6</u>	<u>7.66</u>	<u>670</u>	<u>Ø</u>	time	<u>21.4</u>	<u>7.65</u>	<u>867</u>	<u>Ø</u>
time					time				
time					time				
time					time				
purge stop time					purge stop time				
Well ID <u>MW-11</u> <u>1300</u>					Well ID				
purge start time <u>barley</u> <u>No odor</u>					purge start time				
	Temp C	pH	cond	gallons		Temp C	pH	cond	gallons
time	<u>22.1</u>	<u>7.81</u>	<u>861</u>	<u>Ø</u>	time				
time					time				
time					time				
time					time				
purge stop time					purge stop time				

WELLHEAD OBSERVATION FORM



Site Name/Number: A-10 771

Date: 7/22/09 Technician: A Hill

Well I.D.	Box in Good Condition? <small>X = Yes Blank = No</small>	Lock Missing? <small>X = Yes (replaced) Blank = No</small>	Water in Wellbox? <small>X = Yes Blank = No</small>	Water Level Relative to Cap? <small>A = Above cap B = Below cap L = Level w/ cap</small>	Well Cap? <small>I = Intact M = Missing or Compromised (replaced)</small>	Bolts Missing? <small>X = Yes Blank = No</small>	Bolts Stripped? <small>X = Yes Blank = No</small>	Bolt Holes Stripped? <small>X = Yes Blank = No</small>	Cracked or Broken Lid? <small>X = Yes Blank = No</small>	Cracked or Broken Box? <small>X = Yes Blank = No</small>	Grout Level more than 1ft below TOC? <small>X = Yes Blank = No</small>	Additional Comments <small>(such as missing lid, concrete needs replacement, or other - explain)</small>
MW-1	X											
2	X											
3	X											
4	X											
5	X											
6	X											
7	X											
8	X											
9	X											
10	X											
MW-11									X			Lid broke around one of the bolt holes
RW-1	X											1/1 side Secare
VW-1	X											

DRUM INVENTORY

Drums on site? Yes No (circle)
 Type and # Steel: _____ Plastic: _____

Note whether drums are full or empty, solids or liquids:

Drum label info (description, date, contact info):

GENERAL SITE CONDITIONS

Make notes on housekeeping conditions (such as trash around remediation system enclosure/compound, bent or missing bollards, signs missing from compound fences, graffiti on compound, etc.)

(updated 3-28-08, SS)



Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 771
 BP/ARC Facility No: 771

Req Due Date (mm/dd/yy): STP - JAT Rush TAT: Yes No
 Lab Work Order Number: _____

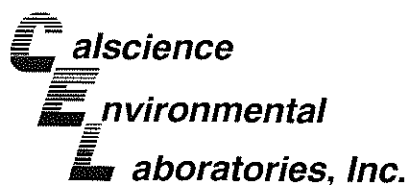
Lab Name: Cal Science	BP/ARC Facility Address: 899 Rincon Avenue	Consultant/Contractor: Stratus Environmental
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Livermore, CA	Consultant/Contractor Project No: E771-QM/O&M
Lab PM: Richard Villafania	Lead Regulatory Agency:	Address: 3330 Cameron Park Dr., Cameron Park, CA 95682
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0600100113	Consultant/Contractor PM: Jay Johnson
Lab Shipping Acct:	Enfos Proposal No: 000VQ-0003	Phone: 530-676-6000 / 530-676-6005 (fax)
Lab Bottle Order No:	Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: chuff@stratusinc.net
Other Info:	Stage: Operate Activity: Monitor	Invoice To: BP/ARC _____ Contractor _____

BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative							Requested Analyses				Report Type & QC Level		
EBM Phone: 925-275-3506				Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GR6 by 805 M	BTEX / 5 OXY'S	EDB / Ethanol	12 DCA	Standard <input checked="" type="checkbox"/>		
EBM Email: paul.supple@bp.com																	Full Data Package <input type="checkbox"/>		
Lab No.	Sample Description	Date	Time																Comments
	MW-4	7/22/09	1200		X		6												
	5		1135																
	6		1145																
	7		1240																
	MW-11		1300																
	RW-1		1120																
	VW-1		1220																
	TS-0771-07222009						2											ON Hold	

Sampler's Name: <u>A. Hill</u>	Relinquished By / Affiliation: <u>[Signature]</u>	Date: <u>7/22/09</u>	Time: <u>1530</u>	Accepted By / Affiliation: _____	Date: _____	Time: _____
Sampler's Company: <u>Stratus</u>	Shipment Method: <u>FTO</u> Ship Date: <u>7/22/09</u>		Shipment Tracking No: _____			

Special Instructions: Please cc results to bpedf@broadbentinc.com

THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No	Temp Blank: Yes / No	Cooler Temp on Receipt: _____ °F/C	Trip Blank: Yes / No	MS/MSD Sample Submitted: Yes / No
------------------------------------------------------------	----------------------	------------------------------------	----------------------	-----------------------------------



August 04, 2009

Jay Johnson
Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Subject: **Calscience Work Order No.: 09-07-1864**
Client Reference: **ARCO 771**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 7/23/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

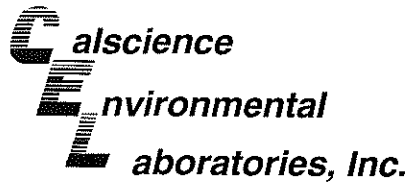
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in black ink, which appears to read "Richard Villafania".

Calscience Environmental
Laboratories, Inc.
Richard Villafania
Project Manager

A handwritten signature or scribble in black ink, located at the bottom left of the page.



Analytical Report

net: c

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 771

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	09-07-1864-1-D	07/22/09 12:00	Aqueous	GC 29	07/28/09	07/28/09 13:36	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	3000	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	114	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	09-07-1864-2-D	07/22/09 11:35	Aqueous	GC 29	07/28/09	07/28/09 14:09	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	100	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	96	38-134			

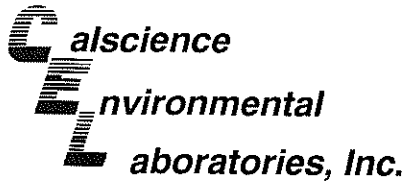
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	09-07-1864-3-D	07/22/09 11:45	Aqueous	GC 29	07/28/09	07/28/09 14:43	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	85	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	09-07-1864-4-D	07/22/09 12:40	Aqueous	GC 29	07/28/09	07/28/09 15:16	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	89	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

09-07-1864-5-D
09-07-1864-6-D
09-07-1864-7-D

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 771

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11	09-07-1864-5-D	07/22/09 13:00	Aqueous	GC 29	07/28/09	07/28/09 15:49	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	91	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
RW-1	09-07-1864-6-D	07/22/09 11:20	Aqueous	GC 29	07/28/09	07/28/09 16:23	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	96	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW-1	09-07-1864-7-D	07/22/09 12:20	Aqueous	GC 29	07/28/09	07/28/09 16:56	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	94	38-134			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-695-616	N/A	Aqueous	GC 29	07/28/09	07/28/09 10:16	090728B01

Parameter	Result	RL	DF	Qual	Units
Gasoline Range Organics (C6-C12)	ND	50	1		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	
1,4-Bromofluorobenzene	97	38-134			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Analytical Report



Stratus Environmental, inc.
 3330 Cameron Park Drive, Suite 550
 Cameron Park, CA 95682-8861

Date Received: 07/23/09
 Work Order No: 09-07-1864
 Preparation: EPA 5030B
 Method: EPA 8260B
 Units: ug/L

Project: ARCO 771

Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-4	09-07-1864-1-A	07/22/09 12:00	Aqueous	GC/MS BB	07/31/09	08/01/09 02:56	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	320	5.0	10		Methyl-t-Butyl Ether (MTBE)	63	5.0	10	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	580	100	10	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	0.85	0.50	1	
Ethylbenzene	5.3	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	7.8	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	16	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	110	80-128			Dibromofluoromethane	113	80-127		
Toluene-d8	104	80-120			1,4-Bromofluorobenzene	94	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-5	09-07-1864-2-A	07/22/09 11:35	Aqueous	GC/MS BB	07/31/09	08/01/09 05:02	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	3.0	0.50	1		Methyl-t-Butyl Ether (MTBE)	12	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	11	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	113	80-128			Dibromofluoromethane	111	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	98	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-6	09-07-1864-3-A	07/22/09 11:45	Aqueous	GC/MS BB	07/31/09	08/01/09 05:33	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	112	80-128			Dibromofluoromethane	107	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	96	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



Analytical Report

09-07-1864
net c

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 771

Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-7	09-07-1864-4-A	07/22/09 12:40	Aqueous	GC/MS BB	07/31/09	08/01/09 06:05	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.53	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	114	80-128			Dibromofluoromethane	109	80-127		
Toluene-d8	101	80-120			1,4-Bromofluorobenzene	96	68-120		

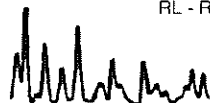
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-11	09-07-1864-5-A	07/22/09 13:00	Aqueous	GC/MS BB	07/31/09	08/01/09 06:36	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	118	80-128			Dibromofluoromethane	108	80-127		
Toluene-d8	102	80-120			1,4-Bromofluorobenzene	96	68-120		

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
RW-1	09-07-1864-6-A	07/22/09 11:20	Aqueous	GC/MS BB	07/31/09	08/01/09 07:08	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	0.84	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	12	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>
1,2-Dichloroethane-d4	118	80-128			Dibromofluoromethane	112	80-127		
Toluene-d8	100	80-120			1,4-Bromofluorobenzene	95	68-120		

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers



Analytical Report



Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B
Units: ug/L

Project: ARCO 771

Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
VW-1	09-07-1864-7-A	07/22/09 12:20	Aqueous	GC/MS BB	07/31/09	08/01/09 07:39	090731L02

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	116	80-128			Dibromofluoromethane	114	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	93	68-120		

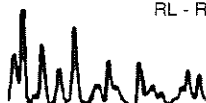
Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
	099-12-703-1,008	N/A	Aqueous	GC/MS BB	07/31/09	08/01/09 01:52	090731L02

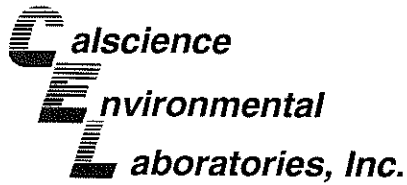
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	113	80-128			Dibromofluoromethane	102	80-127		
Toluene-d8	99	80-120			1,4-Bromofluorobenzene	95	68-120		

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
	099-12-703-1,009	N/A	Aqueous	GC/MS BB	08/01/09	08/01/09 15:47	090801L01

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1		Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	
1,2-Dibromoethane	ND	0.50	1		Tert-Butyl Alcohol (TBA)	ND	10	1	
1,2-Dichloroethane	ND	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	
Ethylbenzene	ND	0.50	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	
Toluene	ND	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	
Xylenes (total)	ND	0.50	1		Ethanol	ND	300	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,2-Dichloroethane-d4	107	80-128			Dibromofluoromethane	104	80-127		
Toluene-d8	98	80-120			1,4-Bromofluorobenzene	94	68-120		

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers





Quality Control - Spike/Spike Duplicate

090728501

Stratus Environmental, inc.
 3330 Cameron Park Drive, Suite 550
 Cameron Park, CA 95682-8861

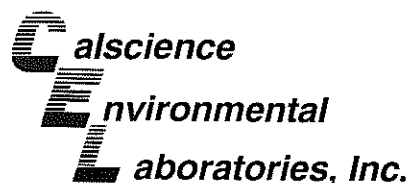
Date Received: 07/23/09
 Work Order No: 09-07-1864
 Preparation: EPA 5030B
 Method: EPA 8015B (M)

Project ARCO 771

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4	Aqueous	GC 29	07/28/09	07/28/09	090728501

<u>Parameter</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>%REC CL</u>	<u>RPD</u>	<u>RPD CL</u>	<u>Qualifiers</u>
Gasoline Range Organics (C6-C12)	93	86	38-134	3	0-25	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - Spike/Spike Duplicate



Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

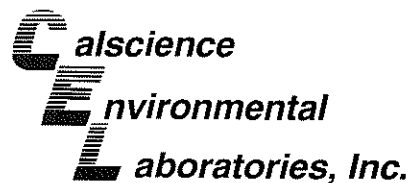
Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 771

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW-4	Aqueous	GC/MS BB	07/31/09	08/01/09	090731S02

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	36	0	76-124	3	0-20	BB, LN, AY
Carbon Tetrachloride	92	90	74-134	2	0-20	
Chlorobenzene	95	95	80-120	0	0-20	
1,2-Dibromoethane	86	89	80-120	3	0-20	
1,2-Dichlorobenzene	93	92	80-120	1	0-20	
1,1-Dichloroethene	107	108	73-127	1	0-20	
Ethylbenzene	91	88	78-126	2	0-20	
Toluene	92	88	80-120	2	0-20	
Trichloroethene	91	93	77-120	2	0-20	
Vinyl Chloride	100	100	72-126	0	0-20	
Methyl-t-Butyl Ether (MTBE)	101	102	67-121	0	0-49	
Tert-Butyl Alcohol (TBA)	107	127	36-162	3	0-30	
Diisopropyl Ether (DIPE)	109	109	60-138	0	0-45	
Ethyl-t-Butyl Ether (ETBE)	89	89	69-123	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	81	83	65-120	3	0-20	
Ethanol	40	56	30-180	33	0-72	

RPD - Relative Percent Difference, CL - Control Limit



Quality Control - Spike/Spike Duplicate

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

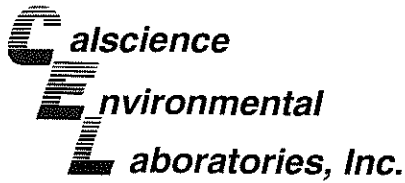
Date Received: 07/23/09
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B

Project ARCO 771

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-07-1990-8	Aqueous	GC/MS BB	08/01/09	08/01/09	090801S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	104	104	76-124	0	0-20	
Carbon Tetrachloride	95	95	74-134	1	0-20	
Chlorobenzene	100	101	80-120	1	0-20	
1,2-Dibromoethane	96	96	80-120	0	0-20	
1,2-Dichlorobenzene	100	101	80-120	0	0-20	
1,1-Dichloroethene	87	89	73-127	2	0-20	
Ethylbenzene	93	92	78-126	0	0-20	
Toluene	103	102	80-120	0	0-20	
Trichloroethene	101	99	77-120	2	0-20	
Vinyl Chloride	91	97	72-126	6	0-20	
Methyl-t-Butyl Ether (MTBE)	81	81	67-121	1	0-49	
Tert-Butyl Alcohol (TBA)	100	103	36-162	3	0-30	
Diisopropyl Ether (DIPE)	105	103	60-138	2	0-45	
Ethyl-t-Butyl Ether (ETBE)	97	99	69-123	2	0-30	
Tert-Amyl-Methyl Ether (TAME)	90	90	65-120	0	0-20	
Ethanol	96	90	30-180	7	0-72	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate

net

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

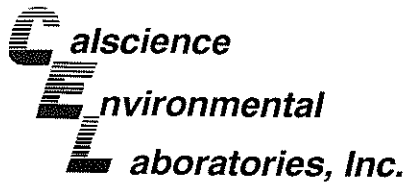
Date Received: N/A
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8015B (M)

Project: ARCO 771

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-695-616	Aqueous	GC 29	07/28/09	07/28/09	090728B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Gasoline Range Organics (C6-C12)	93	92	78-120	1	0-20	

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

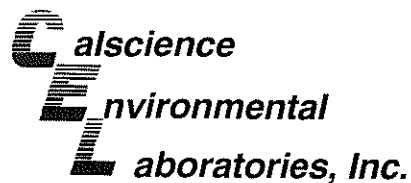
Date Received: N/A
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 771

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,008	Aqueous	GC/MS BB	07/31/09	08/01/09	090731L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	103	106	80-120	73-127	3	0-20	
Carbon Tetrachloride	96	98	74-134	64-144	2	0-20	
Chlorobenzene	99	100	80-120	73-127	1	0-20	
1,2-Dibromoethane	100	96	79-121	72-128	4	0-20	
1,2-Dichlorobenzene	102	102	80-120	73-127	0	0-20	
1,1-Dichloroethene	105	107	78-126	70-134	2	0-28	
Ethylbenzene	93	94	80-120	73-127	1	0-20	
Toluene	100	104	80-120	73-127	3	0-20	
Trichloroethene	112	117	79-127	71-135	4	0-20	
Vinyl Chloride	109	114	72-132	62-142	4	0-20	
Methyl-t-Butyl Ether (MTBE)	98	99	69-123	60-132	1	0-20	
Tert-Butyl Alcohol (TBA)	95	101	63-123	53-133	6	0-20	
Diisopropyl Ether (DIPE)	111	76	59-137	46-150	38	0-37	RB
Ethyl-t-Butyl Ether (ETBE)	109	110	69-123	60-132	0	0-20	
Tert-Amyl-Methyl Ether (TAME)	92	95	70-120	62-128	3	0-20	
Ethanol	82	94	28-160	6-182	14	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Quality Control - LCS/LCS Duplicate

09-07-1864
EPA 5030B
EPA 8260B

Stratus Environmental, inc.
3330 Cameron Park Drive, Suite 550
Cameron Park, CA 95682-8861

Date Received: N/A
Work Order No: 09-07-1864
Preparation: EPA 5030B
Method: EPA 8260B

Project: ARCO 771

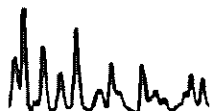
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-12-703-1,009	Aqueous	GC/MS BB	08/01/09	08/01/09	090801L01		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	107	101	80-120	73-127	6	0-20	
Carbon Tetrachloride	102	97	74-134	64-144	5	0-20	
Chlorobenzene	103	98	80-120	73-127	5	0-20	
1,2-Dibromoethane	99	99	79-121	72-128	0	0-20	
1,2-Dichlorobenzene	105	102	80-120	73-127	3	0-20	
1,1-Dichloroethene	92	90	78-126	70-134	2	0-28	
Ethylbenzene	97	92	80-120	73-127	6	0-20	
Toluene	105	100	80-120	73-127	5	0-20	
Trichloroethene	104	103	79-127	71-135	1	0-20	
Vinyl Chloride	106	97	72-132	62-142	8	0-20	
Methyl-t-Butyl Ether (MTBE)	84	83	69-123	60-132	1	0-20	
Tert-Butyl Alcohol (TBA)	91	98	63-123	53-133	7	0-20	
Diisopropyl Ether (DIPE)	105	99	59-137	46-150	6	0-37	
Ethyl-t-Butyl Ether (ETBE)	103	100	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	94	90	70-120	62-128	5	0-20	
Ethanol	72	75	28-160	6-182	4	0-57	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

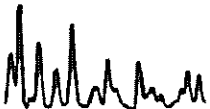
RPD - Relative Percent Difference , CL - Control Limit


 Work Order Number: 09-07-1864

<u>Qualifier</u>	<u>Definition</u>
AX	Sample too dilute to quantify surrogate.
BA	Relative percent difference out of control.
BA,AY	BA = Relative percent difference out of control. AY = Matrix interference suspected.
BB	Sample > 4x spike concentration.
BF	Reporting limits raised due to high hydrocarbon background.
BH	Reporting limits raised due to high level of non-target analytes.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
BY	Sample received at improper temperature.
BZ	Sample preserved improperly.
CL	Initial analysis within holding time but required dilution.
CQ	Analyte concentration greater than 10 times the blank concentration.
CU	Surrogate concentration diluted to not detectable during analysis.
DF	Reporting limits elevated due to matrix interferences.
DU	Insufficient sample quantity for matrix spike/dup matrix spike.
ET	Sample was extracted past end of recommended max. holding time.
EY	Result exceeds normal dynamic range; reported as a min est.
GR	Internal standard recovery is outside method recovery limit.
IB	CCV recovery above limit; analyte not detected.
IH	Calibrtn. verif. recov. below method CL for this analyte.
IJ	Calibrtn. verif. recov. above method CL for this analyte.
J,DX	J=EPA Flag -Estimated value; DX= Value < lowest standard (MQL), but > than MDL.
LA	Confirmatory analysis was past holding time.
LG,AY	LG= Surrogate recovery below the acceptance limit. AY= Matrix interference suspected.
LH,AY	LH= Surrogate recovery above the acceptance limit. AY= Matrix interference suspected.
LM,AY	LM= MS and/or MSD above acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LN,AY	LN= MS and/or MSD below acceptance limits. See Blank Spike (LCS). AY= Matrix interference suspected.
LQ	LCS recovery above method control limits.



<u>Qualifier</u>	<u>Definition</u>
LR	LCS recovery below method control limits.
LW	Quantitation of unknown hydrocarbon(s) in sample based on gasoline.
LX	Quantitation of unknown hydrocarbon(s) in sample based on diesel.
MB	Analyte present in the method blank.
PC	Sample taken from VOA vial with air bubble > 6mm diameter.
PI	Primary and confirm results varied by > than 40% RPD.
RB	RPD exceeded method control limit; % recoveries within limits.
SG	A silica gel cleanup procedure was performed. Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.





Laboratory Management Program LaMP Chain of Custody Record

BP/ARC Project Name: ARCO 771
 BP/ARC Facility No.: 771

Req Due Date (mm/dd/yy): STD-TAT
 Rush TAT: Yes No
 Lab Work Order Number: 09-07-1864

Lab Name: Cal Science	BP/ARC Facility Address: 899 Rincon Avenue	Consultant/Contractor: Stratus Environmental
Lab Address: 7440 Lincoln Way	City, State, ZIP Code: Livermore, CA	Consultant/Contractor Project No: E771-QM/O&M
Lab PM: Richard Villafania	Lead Regulatory Agency:	Address: 3330 Cameron Park Dr., Cameron Park, CA 95682
Lab Phone: 714-895-5494 / 714-895-7501 (fax)	California Global ID No.: T0600100113	Consultant/Contractor PM: Jay Johnson
Lab Shipping Accont:	Enfos Proposal No: 000VQ-0003	Phone: 530-676-6000 / 530-676-6005 (fax)
Lab Bottle Order No:	Accounting Mode: Provision <input checked="" type="checkbox"/> OOC-BU <input type="checkbox"/> OOC-RM <input type="checkbox"/>	Email EDD To: chuff@stratusinc.net
Other Info:	Stage: Operate Activity: Monitor	Invoice To: BP/ARC <input type="checkbox"/> Contractor <input type="checkbox"/>

BP/ARC EBM: Paul Supple				Matrix		No. Containers / Preservative							Requested Analyses				Report Type & QC Level	
EBM Phone: 925-275-3506																	Standard <input checked="" type="checkbox"/>	
EBM Email: paul.supple@bp.com																	Full Data Package <input type="checkbox"/>	
Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol					Comments Note: If sample not collected, indicate "No Sample" in comments and single-strike out and initial any preprinted sample description.	
1	MW-4	7/22/09	1200	X			6						X	X	X	X		
2	5		1135	X														
3	6		1145															
4	7		1240															
5	MW-11		1300															
6	RW-1		1120															
7	VW-1		1220															
8	TS-0771-07222009						2											ON Hold

Sampler's Name: <u>A. Hill</u>	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company: <u>Stratus</u>	<u>[Signature]</u>		<u>7/22/09</u>	<u>1530</u>	<u>[Signature]</u>			
Shipment Method: <u>FTO</u>	Ship Date: <u>7/22/09</u>							
Shipment Tracking No: <u>9522042274</u>							<u>7/23/09</u>	<u>1000</u>

Special Instructions: Please cc results to bpedf@broadbentinc.com

THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: _____ °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Stratus

DATE: 07/23/09

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen)

Temperature 2.9 °C - 0.2°C (CF) = 2.7 °C Blank Sample

Sample(s) outside temperature criteria (PM/APM contacted by: _____).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: Air Filter Metals Only PCBs Only Initial: JF

CUSTODY SEALS INTACT:

Cooler _____ No (Not Intact) Not Present N/A Initial: JF

Sample _____ No (Not Intact) Not Present Initial: WSC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> COC not relinquished. <input type="checkbox"/> No date relinquished. <input type="checkbox"/> No time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE:

Solid: 4ozCGJ 8ozCGJ 16ozCGJ Sleeve EnCores® TerraCores® _____

Water: VOA VOA^h VOAna₂ 125AGB 125AGBh 125AGBp 1AGB 1AGBna₂ 1AGBs

500AGB 500AGJ 500AGJs 250AGB 250CGB 250CGBs 1PB 500PB 500PBna

250PB 250PBn 125PB 125PBz_{na} 100PJ 100PJna₂ _____ _____ _____

Air: Tedlar® Summa® _____ **Other:** _____ **Checked/Labeled by:** WSC

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelop **Reviewed by:** SO

Preservative: h: HCL n: HNO3 na₂:Na₂S₂O₃ Na: NaOH p: H₃PO₄ s: H₂SO₄ z_{na}: ZnAc₂+NaOH f: Field-filtered **Scanned by:** WSC

ATTACHMENT

FIELD PROCEDURES FOR GROUNDWATER SAMPLING

The sampling procedures for groundwater monitoring events are contained in this appendix.

Groundwater and Liquid-Phase Petroleum Hydrocarbon Depth Assessment

Prior to measuring the depth to liquid in the well, the well caps are removed and the liquid level allowed to stabilize. A water/hydrocarbon interface probe is used to assess the liquid-phase petroleum hydrocarbon (LPH) thickness, if present, and a water level indicator is used to measure the groundwater depth in monitoring wells that do not contain LPH. Depth to groundwater or LPH is measured from a datum point at the top of each monitoring well casing. The datum point is typically a notch cut in the north side of the casing edge. If a water level indicator is used, the tip is subjectively analyzed for hydrocarbon sheen.

Subjective Analysis of Groundwater

Prior to purging, a water sample is collected from the monitoring well for subjective assessment. The sample is retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer is then retrieved, and the sample contained within the bailer is examined for floating LPH and the appearance of a LPH sheen.

Monitoring Well Sampling

In many cases, determining whether to purge or not to purge wells prior to sample collection is made in the field and is often based on depth to water relative to the screen interval of the well. Site-specific field data sheets present details associated with the purge method and equipment used.

Monitoring wells, when purged, use a pump or bailer until pH, temperature, and conductivity of the purge water has stabilized and a minimum of three well volumes of water has been removed. Field measuring equipment is calibrated and maintained according to the manufacturer's instructions. If three well volumes cannot be removed in one half hour's time the well is allowed to recharge to 80% of original level. After recharging, a groundwater sample is then collected from each of the wells using disposable bailers.

A Teflon bailer, electric submersible or bladder pump will be the only equipment used for well sampling. When samples for volatile organic analysis are being collected, the pump flow will be regulated at approximately 100 milliliters per minute to minimize pump effluent turbulence and aeration. Glass bottles of at least 40-milliliters volume and fitted with Teflon-lined septa will be used in sampling for volatile organics. These

bottles will be filled completely to prevent air accumulation in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum will be placed over the positive meniscus to eliminate air. After the bottle is capped, it is inverted and tapped to verify that it contains no air bubbles. The sample containers for other parameters will be filled, filtered as required, and capped. Glass and plastic bottles used by Stratus to collect groundwater samples are supplied by the laboratory.

Groundwater Sample Labeling and Preservation

Samples are collected in appropriate containers supplied by the laboratory. All required chemical preservation is added to the bottles prior to delivery to Stratus. Sample label information includes a unique sample identification number, job identification number, date, and time. After labeling, all groundwater samples are placed in a Ziploc® type bag and placed in an ice chest cooled to approximately 4° Celsius. Upon arriving at Stratus' office the samples are transferred to a locked refrigerator cooled to approximately 4° Celsius. Chemical preservation is controlled by the required analysis and is noted on the chain-of-custody form. Trip and temperature blanks supplied by the laboratory accompany the groundwater sample containers and groundwater samples.

Sample Identification and Chain-of-Custody Procedures

Sample identification and chain-of-custody procedures document sample possession from the time of collection to ultimate disposal. Each sample container submitted for analysis has a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, is recorded in the field records. The samples are analyzed by a California-certified laboratory.

A chain-of-custody form is used to record possession of the sample from time of collection to its arrival at the laboratory. When the samples are shipped, the person in custody of them relinquishes the samples by signing the chain-of-custody form and noting the time. The sample-control officer at the laboratory verifies sample integrity and confirms that the samples are collected in the proper containers, preserved correctly, and contain adequate volumes for analysis. These conditions are noted on a Laboratory Sample Receipt Checklist that becomes part of the laboratory report upon request.

If these conditions are met, each sample is assigned a unique log number for identification throughout analysis and reporting. The log number is recorded on the chain-of-custody form and in the legally-required log book maintained by the laboratory. The sample description, date received, client's name, and other relevant information is also recorded.

Equipment Cleaning

All reusable sampling equipments are cleaned using phosphate-free detergents and rinsed with de-ionized water.

APPENDIX B

GEOTRACKER UPLOAD CONFIRMATION

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!

<u>Submittal Type:</u>	EDF - Monitoring Report - Quarterly
<u>Submittal Title:</u>	3Q09 GW Monitoring
<u>Facility Global ID:</u>	T0600100113
<u>Facility Name:</u>	ARCO #00771
<u>File Name:</u>	09071864.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	9/1/2009 11:14:40 AM
<u>Confirmation Number:</u>	7679470241

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[VIEW DETECTIONS REPORT](#)

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UPLOADING A GEO_WELL FILE

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<u>Submittal Type:</u>	GEO_WELL
<u>Submittal Title:</u>	3Q09 GEO_WELL 771
<u>Facility Global ID:</u>	T0600100113
<u>Facility Name:</u>	ARCO #00771
<u>File Name:</u>	GEO_WELL.zip
<u>Organization Name:</u>	Broadbent & Associates, Inc.
<u>Username:</u>	BROADBENT-C
<u>IP Address:</u>	67.118.40.90
<u>Submittal Date/Time:</u>	9/1/2009 9:44:56 AM
<u>Confirmation Number:</u>	5824593961

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