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*By loprojectop at 2:22 pm, May 24, 2006*

May 23, 2006

Mr. Jerry Wickham  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

**Subject: Second Quarter 2006 Groundwater Monitoring Report for Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California**

Dear Mr. Wickham:

On behalf of Mr. Manwel Shuwayhat, Allterra Environmental, Inc. (Allterra) has prepared the enclosed Second Quarter 2006 Groundwater Monitoring Report. Should you have any questions or comments please contact Allterra at (831) 425-2608.

Sincerely,

Allterra Environmental, Inc.

A handwritten signature in blue ink, appearing to read "James Allen". The signature is fluid and cursive, written over the printed name.

James Allen

Project Manager

enclosures: Second Quarter 2006 Groundwater Monitoring Report

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By loprojectop at 2:22 pm, May 24, 2006



**Second Quarter 2006 Groundwater Monitoring Report  
for Fuel Leak Case No. RO000324  
160 Holmes Street, Livermore, California**

*Date:*

May 22, 2006

*Project No.:*

015-01-002

*Prepared For:*

Livermore Gas and Mini mart  
Attention: Manwel and Samira Shuwayhat  
54 Wolfe Canyon Road  
Kentfield, California 94904

**Allterra Environmental, Inc.**

849 Almar Avenue, Suite C, No. 281  
Santa Cruz, California 95060

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May 22, 2006  
Project No.: 015-01-002

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**Subject: Second Quarter 2006 Groundwater Monitoring Report for Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California**

Dear Mr. And Mrs. Shuwayhat:

On your behalf, Allterra Environmental, Inc. (Allterra) has prepared this second quarter 2006 groundwater monitoring report for the property located at 160 Holmes Street in Livermore, California (Site). This report describes the field and analytical methods, provides a summary of groundwater monitoring results, and presents conclusions and recommendations regarding groundwater conditions at the Site.

#### **Site Location and Description**

The Site is located on the southwest corner of Holmes Street and Second Street at 160 Holmes Street in Livermore, California (Figure 1). The Site currently operates as a service station and convenience store. Pertinent site features, such as monitoring well locations, are presented in Figure 2.

#### **Groundwater Monitoring**

On April 6 and 7, 2006, Allterra performed quarterly groundwater monitoring for thirteen wells (eleven monitoring wells and two extraction wells). During this quarter new wells MW-1B, MW-4A, MW-5A, MW-5B, MW-7A, MW-7B, MW-7C, EW-1, and EW-2 were incorporated into the quarterly groundwater monitoring program. Additionally, wells MW-1, MW-2, and MW-3 were renamed MW-1A, MW-2A, and MW-3A, respectively. A description of groundwater monitoring activities for this quarter is presented below.

#### Groundwater Monitoring Field Activities

Depth to groundwater measurements and an evaluation of groundwater for the presence of petroleum hydrocarbons were performed in monitoring wells MW-1 through MW-7C and extraction wells EW-1 and EW-2. The surveyed elevations of each well casing (measured in feet relative to mean sea level), depths to groundwater, and calculated groundwater elevations are presented in Table 1.

For second quarter 2006, eleven monitoring wells and two extraction wells were sampled for laboratory analysis. Each well was purged and sampled in accordance with Alameda County Environmental Health Services (ACEHS) and Regional Water Quality Control Board (RWQCB) guidelines and Allterra protocols presented in Appendix A. Groundwater Sampling Field Logs

are included in Appendix B. Groundwater samples were submitted under chain-of-custody documentation to McCampbell Analytical, Inc., of Pacheco, California, a state of California certified laboratory (ELAP #1644). Copies of the chain-of-custody documentation for the samples are included in Appendix C.

#### Laboratory Analysis of Groundwater Samples

Groundwater samples from each of the thirteen wells were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd) by EPA method 8015C, benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tert-butyl ether (MTBE) by EPA Method 8021B, and the fuel oxygenates MTBE, ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), diisopropyl ether (DIPE), tert-butyl alcohol (TBA), ethanol, methanol, 1,2-Dibromoethane (EDB), and 1,2-Dichloroethane (1,2-DCA) by EPA Method 8260B. Analytical results from groundwater samples are presented in Table 2. The certified analytical report, including quality assurance and quality control (QA/QC) data, for the samples is included in Appendix C.

#### **Groundwater Monitoring Results**

On April 6, 2006, Allterra personnel measured and recorded depths to groundwater from the tops of well casings (TOC) for monitoring wells MW-1 through MW-7C and extraction wells EW-1 and EW-2. Recorded depths to groundwater ranged from 15.47 to 17.44 feet. Groundwater elevation data are summarized in Table 1 and depicted in Figure 3 as groundwater elevation contours. For the April 2006 groundwater monitoring event, groundwater appeared to flow northwest at a gradient of approximately 0.007 feet per foot (ft/ft).

#### Analytical Results

Fuel-related compounds were detected in nine of thirteen wells sampled this quarter. Dissolved TPHg was detected in six wells at concentrations ranging from 81 micrograms per liter ( $\mu\text{g/L}$ ) in MW-7B to 18,000  $\mu\text{g/L}$  in MW-1A. Benzene was detected in six wells at concentrations ranging from 0.61  $\mu\text{g/L}$  to 1,200  $\mu\text{g/L}$  in wells MW-2A and MW-1A, respectively. Well samples indicated the presence of MTBE in nine wells at levels ranging from 0.98  $\mu\text{g/L}$  in well MW-5B to 110,000  $\mu\text{g/L}$  in well MW-1A. Besides MTBE, the only other fuel-oxygenate or lead scavenger detected in groundwater samples was TBA at 660  $\mu\text{g/L}$ , 7,500  $\mu\text{g/L}$ , and 9,200  $\mu\text{g/L}$  in wells MW-2A, MW-7A, and MW-7B, respectively. Groundwater analytical results from well samples are presented in Table 2. The distribution of TPHg, TPHd, benzene, and MTBE in groundwater is presented in Figure 4.

#### Purge water

Purge water generated during purging of the groundwater monitoring wells was stored on-site in Department of Transportation (DOT) approved 55-gallon drums pending disposal.

## Conclusions

Based on the current monitoring data, Allterra concludes the following:

- Groundwater appears to flow to the northwest with a gradient of 0.007 ft/ft and appears to be consistent with previous monitoring events;
- The highest concentrations of dissolved TPHg, TPHd, benzene, and MTBE were detected in on-site monitoring well MW-1A;
- MTBE was found in off-site wells MW-4A, MW-5B, MW-7A, and MW-7B.
- In general, hydrocarbon levels decrease with depth.
- Last quarter the fuel oxygenates ETBE, TAME, DIPE, TBA, ethanol, methanol, as well as the lead scavengers EDB and 1,2-DCA, were added to laboratory analysis for groundwater samples. With the exception of exception of TBA at 660 µg/L in MW-2, 7,500 µg/L in MW-7A, and 9,200 µg/L in MW-7B, these compounds were not detected at or above laboratory detection limits for the April 2006 groundwater monitoring event.
- Seven new groundwater monitoring wells and two new extraction wells were installed during first quarter 2006 and were incorporated into the quarterly groundwater monitoring program. Additionally, monitoring wells MW-1, MW-2, and MW-3 were renamed MW-1A, MW-2A, and MW-3A, respectively.

## Recommendations

Based on the conclusions presented above, Allterra recommends the following:

- Continue with the quarterly groundwater monitoring program at the Site.
- Proceed with plans to permit and install a dual-phase extraction and treatment system on-site.


## Limitations

Allterra prepared this report for the use of Livermore Gas and Mini Mart and ACEHS in evaluating groundwater quality at selected on-site locations at the time of this study. Statements, conclusions, and recommendations in this report are based solely on the field observations and analytical results related to work performed by Allterra and there is no warranty, expressed or implied. Site conditions and data can change over time; therefore, data presented in this report is only applicable to the timeframe of this study. Allterra's services have been performed in accordance with environmental principles generally accepted at this time and location.

Should you have any questions, please contact Allterra at (831) 425-2608.

Sincerely,  
Allterra Environmental, Inc.

  
Erik N. Allen  
Environmental Scientist

  
Michael Killoran, P.G. 6670  
Senior Geologist



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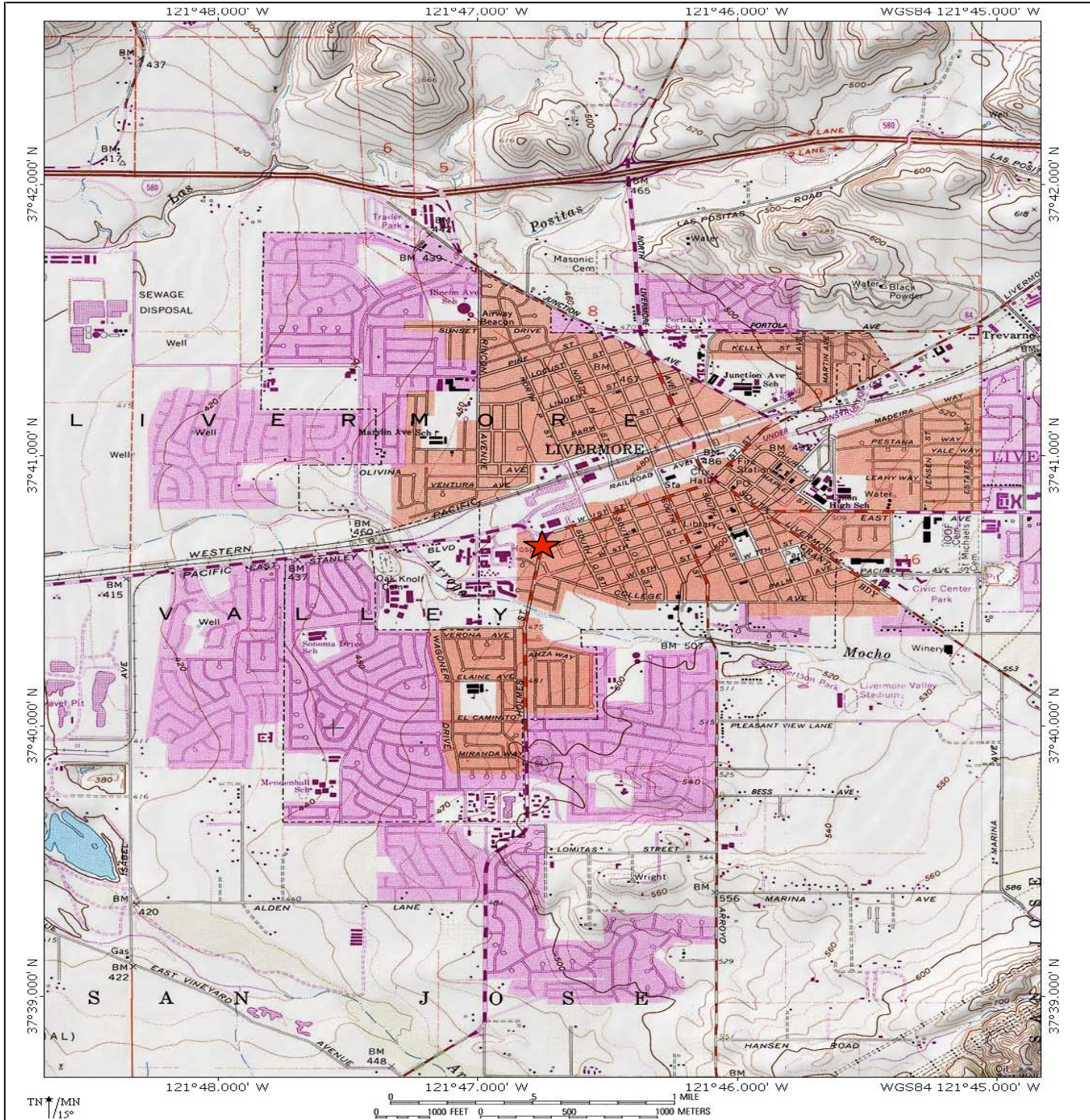
List of Appendices

- Appendix A, Groundwater Monitoring Field Protocol
- Appendix B, Groundwater Sampling Field Logs
- Appendix C, Certified Analytical Reports and Chain of Custody

cc: Jerry Wickham, ACEHS

FIGURES 1-4





**Vicinity Map**  
 Livermore Gas and Mini-mart  
 160 Holmes Street  
 Livermore, California

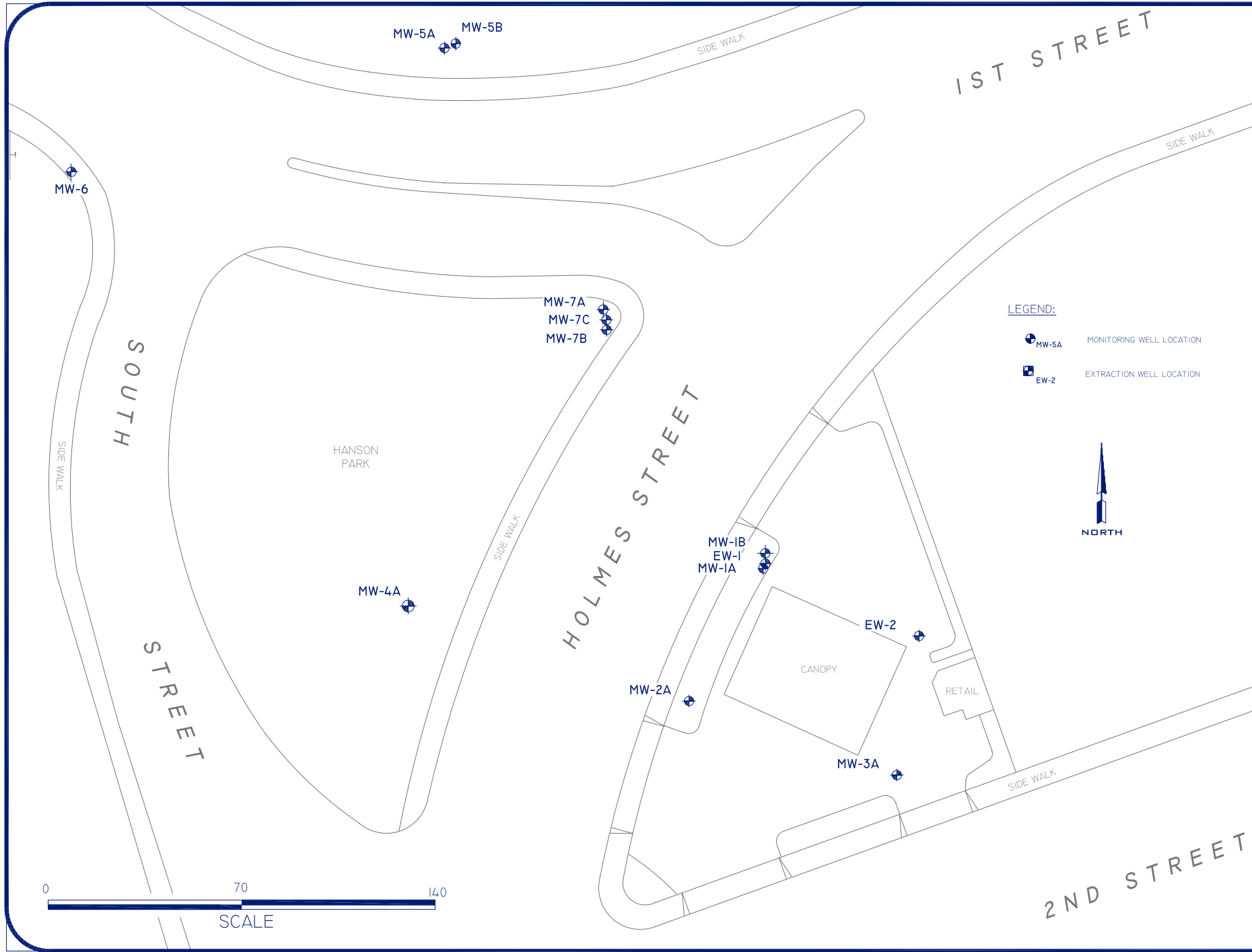
Figure 1

3/31/06

**ALLTERRA**  
 849 Almar Avenue, Suite C, No. 281  
 Santa Cruz, California  
<http://www.allterraenv.com>



USER REVDATE FNAME



General Notes

STAMP

160 HOLMES STREET  
SOIL AND GROUNDWATER INVESTIGATION  
AND REMEDIATION PROJECT

PREPARED BY:  
**ALLTERRA**

No.	Revision/Issue	Date
0	DRAFT/REVIEW	5/3

Firm Name and Address

**ALLTERRA ENVIRONMENTAL, INC.**  
849 ALMAR AVE., SUITE C, No. 281  
SANTA CRUZ, CALIFORNIA  
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Sheet Name and Address

**SITE PLAN**  
160 HOLMES STREET  
LIVERMORE, CALIFORNIA

Project	Sheet
015-01-002	FIGURE 2
Date	5-3-06
Scale	SEE DRAWING





## TABLES 1-2



**Table 1**  
**Groundwater Elevation Data**  
 160 Holmes Street, Livermore

Monitoring Well ID	Date	Top of Casing Elevation*** (feet, msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet, msl)	Well Screen Interval (feet bgs)
MW-1A*	8/11/00	465.03	NM	NC	15 - 30
	10/19/00	465.03	21.94	443.09	
	2/22/01	465.03	22.91	442.12	
	5/30/01	465.03	Dry	NC	
	11/14/01	465.03	Dry	NC	
	5/7/02	465.03	Dry	NC	
	9/11/02	465.03	26.16	438.87	
	12/1/02	465.03	27.55	437.48	
	3/14/03	465.03	22.63	442.40	
	6/25/03	465.03	22.10	442.93	
	9/16/03	465.03	24.91	440.12	
	12/22/03	465.03	21.75	443.28	
	3/10/04	465.03	17.45	447.58	
	6/15/04	465.03	22.38	442.65	
	9/17/04	465.03	25.61	439.42	
	12/10/04	465.03	22.18	442.85	
	3/2/05	465.03	16.95	448.08	
	5/27/05	465.03	18.42	446.61	
	7/21/05	465.03	21.38	443.65	
	10/10/05	465.03	22.49	442.54	
1/9/06	465.03	18.05	446.98		
	<b>4/6/06</b>	<b>465.03</b>	<b>15.60</b>	<b>449.43</b>	
MW-1B	<b>4/6/06</b>	<b>465.02</b>	<b>15.59</b>	<b>449.43</b>	50 - 55
MW-2A*	8/11/00	464.94	NM	NC	15 - 30
	10/19/00	464.94	21.80	443.14	
	2/22/01	464.94	22.87	442.07	
	5/30/01	464.94	Dry	NC	
	11/14/01	464.94	Dry	NC	
	5/7/02	464.94	26.70	438.24	
	9/11/02	464.94	25.96	438.98	
	12/11/02	464.94	27.56	437.38	
	3/14/03	464.94	22.41	442.53	
	6/25/03	464.94	21.97	442.97	
	9/16/03	464.94	24.70	440.24	
	12/22/03	464.94	21.58	443.36	
	3/10/04	464.94	17.31	447.63	
	6/15/04	464.94	22.18	442.76	
	9/17/04	464.94	25.44	439.50	
	12/10/04	464.94	22.00	442.94	
	3/2/05	464.94	16.75	448.19	
	5/27/05	464.94	18.29	446.65	
	7/21/05	464.94	20.46	444.48	
	10/10/05	464.94	22.30	442.64	
1/9/06	464.94	17.67	447.27		
	<b>4/6/06</b>	<b>464.94</b>	<b>15.47</b>	<b>449.47</b>	

**Table 1**  
**Groundwater Elevation Data**  
 160 Holmes Street, Livermore

Monitoring Well ID	Date	Top of Casing Elevation*** (feet, msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet, msl)	Well Screen Interval (feet bgs)
MW-3A*	8/11/00	465.84	NM	NC	15 - 30
	10/19/00	465.84	22.45	443.39	
	2/22/01	465.84	23.51	442.33	
	5/30/01	465.84	Dry	NC	
	11/14/01	465.84	Dry	NC	
	5/7/02	465.84	Dry	NC	
	9/11/02	465.84	26.61	439.23	
	12/11/02	465.84	28.18	437.66	
	3/14/03	465.84	23.04	442.80	
	6/25/03	465.84	22.59	443.25	
	9/16/03	465.84	25.33	440.51	
	12/22/03	465.84	22.37	443.47	
	3/10/04	465.84	17.88	447.96	
	6/15/04	465.84	22.82	443.02	
	9/17/04	465.84	26.09	439.75	
	12/10/04	465.84	22.65	443.19	
	3/5/05	465.84	17.33	448.51	
	5/27/05	465.84	18.89	446.95	
	7/21/05	465.84	21.10	444.74	
	10/10/05	465.84	22.94	442.90	
1/9/06	465.84	18.24	447.60		
	<b>4/6/06</b>	<b>465.84</b>	<b>16.02</b>	<b>449.82</b>	
MW-4**	11/14/01	465.15	33.84	431.31	20 - 50
	5/7/02	465.15	26.75	438.40	
	9/11/02	465.15	26.66	438.49	
	12/11/02	465.15	28.39	436.76	
	3/14/03	465.15	23.14	442.01	
	6/25/03	465.15	22.72	442.43	
	9/16/03	465.15	25.39	439.76	
	12/22/03	465.15	22.42	442.73	
	3/4/04	465.15	18.20	446.95	
	6/15/04	465.15	22.95	442.20	
	9/17/04	465.15	26.12	439.03	
	12/10/04	465.15	22.73	442.42	
	3/2/05	465.15	17.60	447.55	
	5/27/05	465.15	19.14	446.01	
	7/21/05	465.15	21.25	443.90	
10/10/05	465.15	22.85	442.30		
1/9/06	465.15	18.54	446.61		
MW-4A	<b>4/6/06</b>	<b>464.96</b>	<b>16.19</b>	<b>448.77</b>	<b>15 - 30</b>

**Table 1**  
**Groundwater Elevation Data**  
 160 Holmes Street, Livermore

Monitoring Well ID	Date	Top of Casing Elevation*** (feet, msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet, msl)	Well Screen Interval (feet bgs)
MW-5**	11/14/01	464.65	34.94	429.71	20 - 50
	5/7/02	464.65	27.90	436.75	
	9/11/02	464.65	27.99	436.66	
	12/11/02	464.65	29.50	435.15	
	3/14/03	464.65	24.26	440.39	
	6/25/03	464.65	24.01	440.64	
	9/16/03	464.65	26.83	437.82	
	12/22/03	464.65	23.68	440.97	
	3/10/04	464.65	19.22	445.43	
	6/15/04	464.65	24.20	440.45	
	9/17/04	464.65	27.68	436.97	
	12/10/04	464.65	23.93	440.72	
	3/2/05	464.65	18.56	446.09	
	5/27/05	464.65	20.15	444.50	
	7/21/05	464.65	22.55	442.10	
	10/10/05	464.65	23.35	441.30	
1/9/06	464.65	19.53	445.12		
MW-5A	<b>4/6/06</b>	<b>464.64</b>	<b>17.35</b>	<b>447.29</b>	<b>20 - 35</b>
MW-5B	<b>4/6/06</b>	<b>464.59</b>	<b>17.44</b>	<b>447.15</b>	<b>50 - 55</b>
MW-6	11/14/01	464.13	33.88	430.25	20 - 50
	5/7/02	464.13	27.01	437.12	
	9/11/02	464.13	27.03	437.10	
	12/11/02	464.13	28.77	435.36	
	3/14/03	464.13	23.46	440.67	
	6/25/03	464.13	23.08	441.05	
	9/16/03	464.13	25.77	438.36	
	12/22/03	464.13	22.59	441.54	
	3/10/04	464.13	18.65	445.48	
	6/15/04	464.13	23.31	440.82	
	9/17/04	464.13	26.56	437.57	
	12/10/04	464.13	23.09	441.04	
	3/2/05	464.13	18.04	446.09	
	5/27/05	464.13	19.57	444.56	
	7/21/05	464.13	21.60	442.53	
	10/10/05	464.13	22.21	441.92	
1/9/06	464.13	18.99	445.14		
	<b>4/6/06</b>	<b>464.13</b>	<b>17.00</b>	<b>447.13</b>	
MW-7A	<b>4/6/06</b>	<b>465.32</b>	<b>16.61</b>	<b>448.71</b>	<b>15 - 30</b>
MW-7B	<b>4/6/06</b>	<b>465.39</b>	<b>16.85</b>	<b>448.54</b>	<b>45 - 50</b>
MW-7C	<b>4/6/06</b>	<b>465.39</b>	<b>17.18</b>	<b>448.21</b>	<b>65 - 70</b>
EW-1	<b>4/6/06</b>	<b>465.45</b>	<b>15.99</b>	<b>449.46</b>	<b>15 - 40</b>
EW-2	<b>4/6/06</b>	<b>465.99</b>	<b>16.20</b>	<b>449.79</b>	<b>15 - 40</b>

**Table 1**  
**Groundwater Elevation Data**  
 160 Holmes Street, Livermore

Monitoring Well ID	Date	Top of Casing Elevation*** (feet, msl)	Depth to Groundwater (feet)	Groundwater Elevation (feet, msl)	Well Screen Interval (feet bgs)
EX-1**	11/14/01	465.30	33.41	431.89	30 - 55
	5/7/02	465.30	27.58	437.72	
	9/11/02	465.30	NM	NC	
	12/11/02	465.30	27.98	437.32	
	3/14/03	465.30	23.02	442.28	
	6/25/03	465.30	22.41	442.89	
	9/16/03	465.30	24.65	440.65	
	3/10/04	465.30	17.99	447.31	
	6/15/04	465.30	22.48	442.82	
	9/17/04	465.30	25.91	439.39	
	12/10/04	465.30	NM	NC	
	3/2/05	465.30	NM	NC	
	5/27/05	465.30	18.68	446.62	
	7/21/05	465.30	21.55	443.75	
	10/10/05	465.30	22.73	442.57	
	1/9/06	465.30	18.05	447.25	

Notes:

MSL: Mean sea level                      NA: well not accessible                      NM: well not measured  
 bgs: Below ground surface                      NC: elevation not calculated  
 \* = Well MW-1 renamed MW-1A, MW-2 renamed MW-2A, MW-3 renamed MW-3A  
 \*\* = Well destroyed in February 2006  
 \*\*\* = Wells and property resurveyed on March 24, 2006



**Table 2**  
**Groundwater Analytical Results**  
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbons (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)						Lead Scavengers (µg/L)		
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-1A*	8/11/00	--	170,000	57,000	6,400	7,600	4,200	9,700	320,000	--	--	--	--	--	--	--	--	--
	10/19/00	443.09	170,000	17,000	8,400	3,200	2,700	10,000	200,000	--	--	--	--	--	--	--	--	--
	2/22/01	442.12	82,000	11,000	5,100	1,000	13,000	8,700	190,000	--	--	--	--	--	--	--	--	--
	5/30/01	--	not sampled - well dry							--	--	--	--	--	--	--	--	--
	11/14/01	--	not sampled - well dry							--	--	--	--	--	--	--	--	--
	5/7/02	--	not sampled - well dry							--	--	--	--	--	--	--	--	--
	9/11/02	438.87	130,000	--	7,700	1,100	4,500	1,500	<5000	--	--	--	--	--	--	--	--	--
	12/1/02	437.48	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/14/03	442.40	180,000	3,800	7,100	3,200	4,300	6,000	220,000	--	--	--	--	--	--	--	--	--
	6/25/03	442.93	71,000	3,100	7,500	4,700	4,800	8,900	210,000	--	--	--	--	--	--	--	--	--
	9/16/03	440.12	37,000	3,600	4,600	220	3,600	930	150,000	--	--	--	--	--	--	--	--	--
	12/22/03	443.28	44,000	4,000	6,800	1,500	4,000	3,800	180,000	--	--	--	--	--	--	--	--	--
	3/10/04	447.58	72,000	3,100	6,000	11,000	3,900	10,000	260,000	--	--	--	--	--	--	--	--	--
	6/15/04	442.65	42,000	4,300	5,000	1,800	3,700	6,000	210,000	--	--	--	--	--	--	--	--	--
	9/17/04	439.42	24,000	2,900	2,800	<33	2,900	500	83,000	--	--	--	--	--	--	--	--	--
	12/10/04	442.85	31,000	2,700	4,600	190	4,400	2,800	200,000	--	--	--	--	--	--	--	--	--
	3/2/05	448.08	58,000	2,800	4,000	2,500	4,500	7,800	230,000	--	--	--	--	--	--	--	--	--
	5/27/05	446.61	79,000	4,600	4,300	6,200	5,100	13,000	240,000	--	--	--	--	--	--	--	--	--
	7/21/05	443.65	80,000	--	4,300	5,300	5,400	14,000	300,000	--	--	--	--	--	--	--	--	--
	10/10/05	442.54	58,000	--	4,300	240	5,600	8,300	170,000	--	--	--	--	--	--	--	--	--
1/9/06	446.98	47,000	3,700	3,100	1,100	4,400	5,900	180,000	<2,500	<25,000	<2,500	<2,500	240,000	<250,000	<2,500,000	<2,500	<2,500	
4/6/06	<b>449.43</b>	<b>18,000</b>	<b>1,900</b>	<b>1,200</b>	<b>280</b>	<b>2,400</b>	<b>2,200</b>	<b>110,000</b>	<b>&lt;2,500</b>	<b>&lt;25,000</b>	<b>&lt;2,500</b>	<b>&lt;2,500</b>	<b>87,000</b>	<b>&lt;250,000</b>	<b>&lt;2,500,000</b>	<b>&lt;2,500</b>	<b>&lt;2,500</b>	
MW-1B	3/13/06	446.44	<50	<50	<0.5	<0.5	<0.5	<0.5	8.2	<0.5	<5.0	<0.5	<0.5	7.9	<50	<500	<0.5	<0.5
	4/6/06	<b>449.43</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>1.0</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-2A*	8/11/00	--	4,500	1,900	220	52	160	170	3,000	--	--	--	--	--	--	--	--	--
	10/19/00	443.14	3,400	1,300	150	21	100	70	1,900	--	--	--	--	--	--	--	--	--
	2/22/01	442.07	7,600	880	25	<10	69	25	2,200	--	--	--	--	--	--	--	--	--
	5/30/01	--	not sampled - well dry							--	--	--	--	--	--	--	--	--
	11/14/01	--	not sampled - well dry							--	--	--	--	--	--	--	--	--
	5/7/02	438.24	400	86	5.4	<0.5	1.9	2.3	230	--	--	--	--	--	--	--	--	--
	9/11/02	438.98	260	--	1.3	<0.5	0.57	0.77	200	--	--	--	--	--	--	--	--	--
	12/1/02	437.38	250	120	7.9	1.6	13	9.9	180	--	--	--	--	--	--	--	--	--
	3/14/03	442.53	830	110	56	<0.5	<0.5	<1.0	1,200	--	--	--	--	--	--	--	--	--
	6/25/03	442.97	260	180	0.92	2.9	3.1	8.1	2,000	--	--	--	--	--	--	--	--	--
	9/16/03	440.24	420	260	3.6	3.4	5.2	2.4	1,300	--	--	--	--	--	--	--	--	--
	12/22/03	443.36	240	120	0.82	3.1	7.8	3.9	1,400	--	--	--	--	--	--	--	--	--
	3/10/04	447.63	280	210	9.4	4.2	14	11	1,400	--	--	--	--	--	--	--	--	--
6/15/04	442.76	150	150	2.1	2.4	2.2	1.3	1,500	--	--	--	--	--	--	--	--	--	
9/17/04	439.50	61	70	<0.5	1.0	<0.5	<0.5	730	--	--	--	--	--	--	--	--	--	
12/10/04	442.94	84	110	<0.5	1.2	<0.5	1.5	1,300	--	--	--	--	--	--	--	--	--	

**Table 2**  
**Groundwater Analytical Results**  
 160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbons (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)						Lead Scavengers (µg/L)		
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-2A* (cont.)	3/2/05	448.19	63	91	0.55	<0.5	0.63	0.51	1,000	--	--	--	--	--	--	--	--	--
	5/27/05	446.65	270	59	14	3.9	19	6.8	1,100	--	--	--	--	--	--	--	--	--
	7/21/05	444.48	280	--	8.6	2.5	17	2.5	1,500	--	--	--	--	--	--	--	--	--
	10/10/05	442.64	<50	--	<.5	<.5	<.5	<.5	680	--	--	--	--	--	--	--	--	--
	1/9/06	447.27	1,700	890	4.4	1.3	120	18	530	<10	330	<10	<10	590	<1000	<10,000	<10	<10
	<b>4/7/06</b>	<b>449.47</b>	<b>110</b>	<b>160</b>	<b>0.61</b>	<b>0.80</b>	<b>4.1</b>	<b>&lt;0.5</b>	<b>270</b>	<b>&lt;5.0</b>	<b>660</b>	<b>&lt;5.0</b>	<b>&lt;5.0</b>	<b>240</b>	<b>&lt;500</b>	<b>&lt;5,000</b>	<b>&lt;5.0</b>	<b>&lt;5.0</b>
MW-3A*	8/11/00	NC	59	260	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/19/00	443.39	<50	<65	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	2/22/01	442.33	<50	100	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/30/01	--	not sampled - well dry		--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/14/01	--	not sampled - well dry		--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/7/02	--	not sampled - well dry		--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/11/02	439.23	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/1/02	437.66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/14/03	442.80	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	6/25/03	443.25	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/16/03	440.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	443.47	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/10/04	447.96	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	6/15/04	443.02	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/17/04	439.75	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	443.19	<50	<50	<0.5	<0.5	<0.5	<0.5	7.6	--	--	--	--	--	--	--	--	--
	3/2/05	448.51	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/27/05	446.95	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	7/21/05	444.74	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	442.90	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
1/9/06	447.60	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<50	<500	<0.5	<0.5	
<b>4/7/06</b>	<b>449.82</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	
MW-4**	11/14/01	431.31	510	90	4.0	<0.5	<0.5	<0.5	14	--	--	--	--	--	--	--	--	--
	5/7/02	438.40	150	<50	3.5	0.5	<0.5	<0.5	48	--	--	--	--	--	--	--	--	--
	9/11/02	438.49	<50	--	<0.5	<0.5	<0.5	<0.5	15	--	--	--	--	--	--	--	--	--
	12/1/02	436.76	<50	<50	<0.5	<0.5	<0.5	<0.5	24	--	--	--	--	--	--	--	--	--
	3/14/03	442.01	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	6/25/03	442.43	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	9/16/03	439.76	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	442.73	<50	69	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/10/04	446.95	<50	<50	<0.5	<0.5	<0.5	<0.5	37	--	--	--	--	--	--	--	--	--
	6/15/04	442.20	<50	<50	<0.5	<0.5	<0.5	<0.5	7.4	--	--	--	--	--	--	--	--	--
	9/17/04	439.03	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	442.42	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--

**Table 2**  
**Groundwater Analytical Results**  
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbons (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)						Lead Scavengers (µg/L)		
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-4** (cont.)	3/2/05	447.55	<50	<50	<0.5	<0.5	<0.5	<0.5	14	--	--	--	--	--	--	--	--	--
	5/27/05	446.01	<50	<50	<0.5	<0.5	<0.5	<0.5	9.6	--	--	--	--	--	--	--	--	--
	7/21/05	443.90	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	442.30	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	1/9/06	446.61	<50	<50	<0.5	<0.5	<0.5	<0.5	0.86	<0.5	<5.0	<0.5	<5.0	0.86	<50	<500	<5.0	<5.0
MW-4A	3/13/06	445.87	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.70	<50	<500	<0.5	<0.5
	4/7/06	<b>448.77</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>1.1</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-5**	11/14/01	429.71	<50	<66	<0.5	<0.5	<0.5	<0.5	8.2	--	--	--	--	--	--	--	--	--
	5/7/02	436.75	140	<50	<0.5	<0.5	<0.5	<0.5	110	--	--	--	--	--	--	--	--	--
	9/11/02	436.66	<50	--	<0.5	<0.5	<0.5	<0.5	6.3	--	--	--	--	--	--	--	--	--
	12/1/02	435.15	73	<50	<0.5	<0.5	<0.5	<0.5	160	--	--	--	--	--	--	--	--	--
	3/14/03	440.39	110	<50	<0.5	<0.5	<0.5	<0.5	170	--	--	--	--	--	--	--	--	--
	6/25/03	440.64	<50	<50	<0.5	<0.5	<0.5	<0.5	89	--	--	--	--	--	--	--	--	--
	9/16/03	437.82	630	<50	<0.5	3.5	<0.5	2.6	1500	--	--	--	--	--	--	--	--	--
	12/22/03	440.97	<0.5	<50	<0.5	<0.5	<0.5	<0.5	630	--	--	--	--	--	--	--	--	--
	3/10/04	445.43	57	<50	<0.5	<0.5	<0.5	<0.5	1100	--	--	--	--	--	--	--	--	--
	6/15/04	440.45	<50	<50	<0.5	<0.5	<0.5	<0.5	750	--	--	--	--	--	--	--	--	--
	9/17/04	436.97	<50	<50	<0.5	<0.5	<0.5	<0.5	780	--	--	--	--	--	--	--	--	--
	12/10/04	440.72	<50	<50	<0.5	<0.5	<0.5	<0.5	120	--	--	--	--	--	--	--	--	--
	3/2/05	446.09	<50	<50	<0.5	<0.5	<0.5	<0.5	320	--	--	--	--	--	--	--	--	--
	5/27/05	444.50	<50	<50	<0.5	<0.5	<0.5	<0.5	120	--	--	--	--	--	--	--	--	--
	7/21/05	442.10	<50	--	<0.5	<0.5	<0.5	<0.5	97	--	--	--	--	--	--	--	--	--
10/10/05	441.30	<50	--	<0.5	<0.5	<0.5	<0.5	41	--	--	--	--	--	--	--	--	--	
1/9/06	445.12	<50	<50	<0.5	<0.5	<0.5	<0.5	37	<0.5	<5.0	<0.5	<5.0	<5.0	<50	<500	<0.5	<0.5	
MW-5A	3/13/06	444.48	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
	4/7/06	<b>447.29</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-5B	3/13/06	444.46	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.69	<50	<500	<0.5	<0.5
	4/7/06	<b>447.15</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;5.0</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>0.98</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
MW-6	11/14/01	430.25	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/7/02	437.12	<50	<67	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/11/02	437.10	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/1/02	435.36	<50	<50	<0.5	<0.5	<0.5	<0.5	<1.0	--	--	--	--	--	--	--	--	--
	3/14/03	440.67	<50	<50	<0.5	<0.5	<0.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--
	6/25/03	441.05	<50	<50	<0.5	<0.5	<0.5	<1.0	<1.0	--	--	--	--	--	--	--	--	--
	9/16/03	438.36	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/22/03	441.54	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/10/04	445.48	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--

**Table 2**  
**Groundwater Analytical Results**  
160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbons (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)						Lead Scavengers (µg/L)		
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
MW-6 (cont.)	6/15/04	440.82	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	9/17/04	437.57	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	12/10/04	441.04	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	3/2/05	446.09	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	5/27/05	444.56	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	7/21/05	442.53	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	10/10/05	441.92	<50	--	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	--	--
	1/9/06	445.14	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	0.86	<50	<500	<0.5	<0.5
	4/7/06	447.13	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<50	<500	<0.5	<0.5
MW-7A	3/13/06	445.85	6,200	1,800	140	21	200	560	6,900	<100	4400	<100	<100	6,300	<10,000	<100,000	<100	<100
	4/7/06	448.71	5,300	1,700	130	26	330	420	5,900	<100	7,500	<100	<100	6,600	<10,000	<100,000	<100	<100
MW-7B	3/13/06	445.64	230	<50	1.8	4.7	<0.5	2.2	1,500	<50	7300	<50	<50	1,300	<5,000	<50,000	<50	<50
	4/7/06	448.54	81	<50	1.9	1.6	1.1	0.58	1,000	<50	9,200	<50	<50	930	<5,000	<50,000	<50	<50
MW-7C	3/13/06	445.34	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	0.60	<50	<500	<0.5	<0.5
	4/7/06	448.21	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<500	<0.5	<0.5
EX-1**	11/14/01	431.89	13,000	2,000	180	1,000	330	3,200	2,200	--	--	--	--	--	--	--	--	--
	5/7/02	437.72	7,700	560	320	<25	66	150	6,200	--	--	--	--	--	--	--	--	--
	9/11/02	--	2,800	--	32	<13	14	<13	2,500	--	--	--	--	--	--	--	--	--
	12/11/02	437.32	3,000	100	81	<0.5	44	<1.0	4,800	--	--	--	--	--	--	--	--	--
	3/14/03	442.28	750	50	<0.5	<0.5	7.7	13	1,200	--	--	--	--	--	--	--	--	--
	6/25/03	442.89	120	<50	3.2	3.7	4.2	7.6	260	--	--	--	--	--	--	--	--	--
	9/16/03	440.65	170	<50	0.5	1.5	<0.5	0.9	1,600	--	--	--	--	--	--	--	--	--
	3/10/04	447.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/15/04	442.82	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9/17/04	439.39	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12/10/04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3/2/05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	5/27/05	446.62	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/21/05	443.75	<50	--	<0.5	<0.5	<0.5	<0.5	610	--	--	--	--	--	--	--	--	--
10/10/05	442.57	<50	--	<0.5	<0.5	<0.5	<0.5	31	--	--	--	--	--	--	--	--	--	
1/9/06	447.25	580	55	40	25	45	43	4,200	<170	<1,700	<170	<170	5,200	<170,000	<17,000	<170	<170	



**Table 2**  
**Groundwater Analytical Results**  
 160 Holmes Street, Livermore, California

Well ID	Date Collected	Groundwater Elevation (feet above MSL)	Total Petroleum Hydrocarbonss (µg/L)		Aromatic Volatile Organic Compounds (µg/L)					Oxygenated Volatile Organics (µg/L)						Lead Scavengers (µg/L)		
			Gasoline	Diesel	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8021B)	TAME	TBA	DIPE	ETBE	MTBE	ethanol	methanol	EDB	1,2-DCA
EW-1	3/12/02	446.47	210	120	5.0	4.1	7.5	12	3,400	<50	<100	<50	<50	2,300	<5,000	<50,000	<50	<50
	4/6/02	<b>449.46</b>	<b>1,900</b>	<b>190</b>	<b>66</b>	<b>170</b>	<b>110</b>	<b>380</b>	<b>7,900</b>	<b>&lt;100</b>	<b>&lt;1000</b>	<b>&lt;100</b>	<b>&lt;100</b>	<b>6,400</b>	<b>&lt;10,000</b>	<b>&lt;100,000</b>	<b>&lt;100</b>	<b>&lt;100</b>
EW-2	3/12/02	446.81	<250	69	<2.5	<2.5	<2.5	<2.5	5,400	<100	<1,000	<100	<100	5,100	<10,000	<100,000	<100	<100
	4/6/02	<b>449.79</b>	<b>470</b>	<b>160</b>	<b>15</b>	<b>2.5</b>	<b>24</b>	<b>13</b>	<b>2,000</b>	<b>&lt;50</b>	<b>&lt;500</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>1,800</b>	<b>&lt;5,000</b>	<b>&lt;50,000</b>	<b>&lt;50</b>	<b>&lt;50</b>

**Notes:**

Samples analyzed for TPHg and TPHd by EPA Method 8015Cm, BTEX by EPA Method 8021B, MTBE by EPA Method 8021B and/or 8260B, and the fuel oxygenates DIPE, ETBE, TAME, EDB, 1,2-DCA, ethanol, methanol, and TBA by EPA Method 8260B.

\* = Well MW-1 renamed MW-1A, well MW-2 renamed MW-2A, Well MW-3 renamed MW-3A in February 2006

\*\* = Well destroyed in February 2006

µg/L = micrograms per liter

-- = Not sampled or not analyzed

EDB = 1,2-Dibromoether

NS = Not Sampled

1,2-DCA = 1,2-Dichloroethane

MTBE = methyl tertiary butyl ether

DIPE =Di-isoprpyl Ether

ETBE = Ethyl tert-Butyl Ether

TAME - tert-Amyl Methyl Ether

TBA = tert-Butanol

**APPENDIX A**  
**Groundwater Monitoring Field Protocol**

## **Appendix A**

### Groundwater Monitoring Protocol

#### Well Monitoring and Sample Collection

A Teflon bailer or submersible pump was used to purge a minimum of three well volumes of groundwater from each well. After each well volume is purged, field parameters such as pH, temperature, and conductivity are recorded. Wells are purged until field parameters have stabilized or a maximum of ten (10) well volumes of groundwater have been removed. When possible, purge rates will not exceed the recharge rate for the well. However, if the well yield is low and the well was dewatered, the well is allowed to recharge to 80% of its original volume prior to sample collection. Field parameter measurements and pertinent qualitative observations, such as groundwater color and odor, are recorded in Groundwater Sampling Field Logs. Groundwater samples are collected in appropriate bottles and stored on ice for delivery, under chain-of-custody documentation, to a state-certified laboratory for analysis.

#### Equipment Decontamination

All drilling, sampling, and well development equipment was cleaned in a solution of laboratory grade detergent and distilled water or steam cleaned before use at each sampling point.

#### Field Personnel

During groundwater sampling activities, sampling personnel will wear pertinent attire to minimize risks to health and safety. Field personnel will also use a pair of clean, powderless, surgical gloves for each successive sampling point. Used surgical gloves will be placed into waste barrels for future disposal.

#### Waste Disposal

Water generated during well purging and sampling activities will be placed into DOT-approved 55-gallon waste drums. Waste drums will be temporarily stored on-site pending proper disposal of wastewater to an approved transport, storage, and disposal (TSD) facility.

**APPENDIX B**  
**Groundwater Sampling Field Logs**

Site Address 160 Date 4-6-06

Project Number Field Personnel David

Monitoring Well ID MW-1a Monitoring Well Diameter (inches) 2.0

Depth to Water (feet) 15.60 Water Column (feet) 9.40

Total Depth (feet) 25 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons) 1.60

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
2:25	15.60	1.60	0	0	0	moderate	grey	moderate
1	1	1	1	1	1	1	1	1

Total Purge Volume 4.79 Comments

Groundwater Sampling Information

Sample ID MW-1a Sample Time 2:20

Sample Containers (Number/Type) 4 voas 1 amber

Comments

Groundwater Sampling Field Log

Site Address 160 Holmes Date 4-6-06

Project Number Field Personnel David

Monitoring Well Information

Monitoring Well ID MW-1b Monitoring Well Diameter (inches) 2.0

Depth to Water (feet) 15.59 Water Column (feet) 39.41

Total Depth (feet) 55 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons) 6.70

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor

Total Purge Volume 20.1 Comments

Groundwater Sampling Information

Sample ID MW-1b Sample Time

Sample Containers (Number/Type) 4 voas 1 amber

Comments

Site Address 160 Holmes Date 4-6-06

Project Number \_\_\_\_\_ Field Personnel David

Monitoring Well ID MW-2 Monitoring Well Diameter (inches) 2.0

Depth to Water (feet) 15.47 Water Column (feet) 9.53

Total Depth (feet) 25 80% Recharge Depth (feet) \_\_\_\_\_

Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) 1.62

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	<u>15.47</u>	<u>1.62</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>High</u>	<u>brown</u>	<u>none</u>
	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

Total Purge Volume 4.86 Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID MW-2 Sample Time 11:30

Sample Containers (Number/Type) 1 Vac 1 amber

Comments \_\_\_\_\_

**Groundwater Sampling Field Log**

Site Address 160 Holmes Date 4-6-06

Project Number \_\_\_\_\_ Field Personnel David

**Monitoring Well Information**

Monitoring Well ID MW-3 Monitoring Well Diameter (inches) 2.0

Depth to Water (feet) 16.02 Water Column (feet) 8.98

Total Depth (feet) 25 80% Recharge Depth (feet) \_\_\_\_\_

Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) 1.53

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	<u>16.02</u>	<u>1.53</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>High</u>	<u>brown</u>	<u>none</u>
	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

Total Purge Volume 4.58 Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID MW-3 Sample Time 12:44

Sample Containers (Number/Type) 1 Vac 1 amber

Comments \_\_\_\_\_

Site Address **160 Holmes** Date **4-6-06**  
 Project Number \_\_\_\_\_ Field Personnel **David**

Monitoring Well ID **MW-4a** Monitoring Well Diameter (inches) **2.0**  
 Depth to Water (feet) **16.19** Water Column (feet) **8.81**  
 Total Depth (feet) **25** 80% Recharge Depth (feet) \_\_\_\_\_  
 Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) **1.50**

Comments \_\_\_\_\_

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
<del>0</del>	<b>16.19</b>	<b>1.50</b>	<b>8</b>	<del>8</del>	<del>8</del>	<del>moderate</del>	<b>brown</b>	<b>n/a</b>
<b>1</b>			<b>1</b>	<b>1</b>	<b>1</b>	<b>moderate</b>	<b>1</b>	<b>1</b>

Total Purge Volume **4.49** Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID **MW-4a** Sample Time \_\_\_\_\_  
 Sample Containers (Number/Type) **4 vials 1 amber**  
 Comments \_\_\_\_\_

**Groundwater Sampling Field Log**

Site Address **160 Holmes** Date **4-6-06**  
 Project Number \_\_\_\_\_ Field Personnel **David**

**Monitoring Well Information**

Monitoring Well ID **MW-5a** Monitoring Well Diameter (inches) **2.0**  
 Depth to Water (feet) **17.35** Water Column (feet) **7.65**  
 Total Depth (feet) **25** 80% Recharge Depth (feet) \_\_\_\_\_  
 Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) **1.30**

Comments \_\_\_\_\_

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	<b>17.35</b>	<b>1.30</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>Low</b>	<b>clear</b>	<b>none</b>
<b>1</b>			<b>1</b>	<b>1</b>	<b>1</b>			

Total Purge Volume **3.90** Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID **MW-5a** Sample Time **2:22**  
 Sample Containers (Number/Type) **4 vials 1 amber**  
 Comments \_\_\_\_\_



Site Address	160 Holmes	Date	4-6-06
Project Number		Field Personnel	
Monitoring Well ID	MW-5b	Monitoring Well Diameter (inches)	2.0
Depth to Water (feet)	17.44	Water Column (feet)	37.56
Total Depth (feet)	55	80% Recharge Depth (feet)	
Depth to Product (feet)		1 Well Volume (gallons)	6.39
Comments			

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
Total Purge Volume				Comments				

**Groundwater Sampling Information**

Sample ID	MW-5b	Sample Time	
Sample Containers (Number/Type)			
Comments			

**Groundwater Sampling Field Log**

Site Address	160 Holmes	Date	4-6-06
Project Number		Field Personnel	David
Monitoring Well ID	MW-6	Monitoring Well Diameter (inches)	2.0
Depth to Water (feet)	17.0	Water Column (feet)	8.00
Total Depth (feet)	25	80% Recharge Depth (feet)	
Depth to Product (feet)		1 Well Volume (gallons)	1.36
Comments			

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	17.0	1.36	Ø	Ø	Ø	clear	n/a	n/a
	)	)	)	)	)	)	)	)
Total Purge Volume				Comments				

**Groundwater Sampling Information**

Sample ID	MW-6	Sample Time	
Sample Containers (Number/Type)			
Comments			

Site Address 160 Holmes Date 4-6-06  
 Project Number \_\_\_\_\_ Field Personnel David

Monitoring Well ID MW-7a Monitoring Well Diameter (inches) 2.0  
 Depth to Water (feet) 16.61 Water Column (feet) 8.39  
 Total Depth (feet) 25 80% Recharge Depth (feet) \_\_\_\_\_  
 Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) 1.43  
 Comments \_\_\_\_\_

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	<u>16.61</u>	<u>1.43</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>High</u>	<u>brown</u>	<u>slight</u>
	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>1</u>	<u>1</u>

Total Purge Volume 4.28 Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID MW-7a Sample Time 1:10  
 Sample Containers (Number/Type) 4 1/2 liter amber  
 Comments \_\_\_\_\_

**Groundwater Sampling Field Log**

Site Address 160 Holmes Date 4-6-06  
 Project Number \_\_\_\_\_ Field Personnel David

**Monitoring Well Information**

Monitoring Well ID MW-7b Monitoring Well Diameter (inches) 2.0  
 Depth to Water (feet) 16.85 Water Column (feet) 38.15  
 Total Depth (feet) 55 80% Recharge Depth (feet) \_\_\_\_\_  
 Depth to Product (feet) \_\_\_\_\_ 1 Well Volume (gallons) 6.49  
 Comments \_\_\_\_\_

**Field Measurements and Observations**

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	<u>16.85</u>	<u>6.49</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>Low</u>	<u>light tan</u>	<u>none</u>
	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>

Total Purge Volume 19.47 Comments \_\_\_\_\_

**Groundwater Sampling Information**

Sample ID MW-7b Sample Time 1:59  
 Sample Containers (Number/Type) 4 1/2 liter amber  
 Comments \_\_\_\_\_

Site Address 160 Holmes Date 4-6-06

Project Number Field Personnel David

Monitoring Well ID MW-7c Monitoring Well Diameter (inches) 2.0

Depth to Water (feet) 17.18 Water Column (feet) 52.82

Total Depth (feet) 70 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons) 8.98

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
0	17.18	8.98	0	0	0	clear	l. grey	n/a
1	1	1	1	1	1	low	1	1
						moderate		

Total Purge Volume 26.94 Comments

Groundwater Sampling Information

Sample ID MW-7c Sample Time 2:20

Sample Containers (Number/Type) 4 vials 1 amber

Comments

Groundwater Sampling Field Log

Site Address 160 Holmes Date 4-6-06

Project Number Field Personnel David

Monitoring Well Information

Monitoring Well ID ew-1 Monitoring Well Diameter (inches) 4.0

Depth to Water (feet) 15.99 Water Column (feet) 24.01

Total Depth (feet) 40 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons) 15.85

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
1	15.99	15.85	0	0	0	High	yellow/brown	0
	1	1	1	1	1	1	1	1

Total Purge Volume 47.54 Comments

Groundwater Sampling Information

Sample ID ew-1 Sample Time 11:15

Sample Containers (Number/Type) 4 vials 1 amber

Comments

Site Address 160 Holmes Date 1-6-06

Project Number Field Personnel David

Monitoring Well ID ew-2 Monitoring Well Diameter (inches) 2.40

Depth to Water (feet) 16.20 Water Column (feet) 23.80

Total Depth (feet) 40 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons) 15.7

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor
	1620	15.7	—	—	—	High	brown	none
	1	1	1	1	1			

Total Purge Volume 47.1 Comments

Groundwater Sampling Information

Sample ID ew-2 Sample Time 11:07

Sample Containers (Number/Type) 4 1/2 gal 1 amber

Comments

Groundwater Sampling Field Log

Site Address Date

Project Number Field Personnel

Monitoring Well Information

Monitoring Well ID Monitoring Well Diameter (inches)

Depth to Water (feet) Water Column (feet)

Total Depth (feet) 80% Recharge Depth (feet)

Depth to Product (feet) 1 Well Volume (gallons)

Comments

Field Measurements and Observations

Time	Depth to Water	Purge Volume	Conductivity	Temperature	pH	Turbidity	Color	Odor

Total Purge Volume Comments

Groundwater Sampling Information

Sample ID Sample Time

Sample Containers (Number/Type)

Comments

**APPENDIX C**  
**Certified Analytical Reports and Chain of Custody**





# McC Campbell Analytical, Inc.



110 Second Avenue South, #D7  
 Pacheco, CA 94553-5560  
 (925) 798-1620

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0604184

ClientID: ATRS

EDF: YES

Report to:

James Allen  
 Allterra Environmental, Inc  
 849 Almar Ave, Ste. C #281  
 Santa Cruz, CA 95060

TEL: 831-425-2608  
 FAX: 831-425-2609  
 ProjectNo: #015-01-002; 160 Holmes QM 2006  
 PO:

Bill to:

Accounts Payable  
 Allterra Environmental  
 849 Almar Ave, Ste. C #281  
 Santa Cruz, CA 95060

Requested TAT:

5 days

Date Received: 04/12/2006

Date Printed: 04/12/2006

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0604184-001	MW-1A	Water	4/6/06	<input type="checkbox"/>	C	A	A	B									
0604184-002	MW-1B	Water	4/6/06	<input type="checkbox"/>	C	A		B									
0604184-003	MW-2	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-004	MW-3	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-005	MW-4A	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-006	MW-5A	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-007	MW-5B	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-008	MW-6	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-009	MW-7A	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-010	MW-7B	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-011	MW-7C	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-012	EW-1	Water	4/7/06	<input type="checkbox"/>	C	A		B									
0604184-013	EW-2	Water	4/7/06	<input type="checkbox"/>	C	A		B									

Test Legend:

1	9-OXYS_W	2	G-MBTEX_W	3	PREDF REPORT	4	TPH(D)_W	5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.





# McC Campbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560  
 Telephone : 925-798-1620 Fax : 925-798-1622  
 Website: www.mcccampbell.com E-mail: main@mcccampbell.com

Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; 160 Holmes QM 2006	Date Sampled: 04/06/06-04/07/06
	Client Contact: James Allen	Date Received: 04/12/06
	Client P.O.:	Date Extracted: 04/12/06-04/14/06
		Date Analyzed: 04/12/06-04/14/06

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0604184

Lab ID	0604184-001C	0604184-002C	0604184-003C	0604184-004C	Reporting Limit for DF =1	
Client ID	MW-1A	MW-1B	MW-2	MW-3		
Matrix	W	W	W	W		
DF	5000	1	10	1		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<2500	ND	ND<5.0	ND	NA	0.5
t-Butyl alcohol (TBA)	ND<25,000	ND	660	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND<2500	ND	ND<5.0	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<2500	ND	ND<5.0	ND	NA	0.5
Diisopropyl ether (DIPE)	ND<2500	ND	ND<5.0	ND	NA	0.5
Ethanol	ND<250,000	ND	ND<500	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND<2500	ND	ND<5.0	ND	NA	0.5
Methanol	ND<2,500,000	ND	ND<5000	ND	NA	500
Methyl-t-butyl ether (MTBE)	87,000	1.0	240	ND	NA	0.5

### Surrogate Recoveries (%)

%SS1:	105	108	106	108	
Comments	i				

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



# McC Campbell Analytical, Inc.

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Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; 160 Holmes QM 2006	Date Sampled: 04/06/06-04/07/06
	Client Contact: James Allen	Date Received: 04/12/06
	Client P.O.:	Date Extracted: 04/12/06-04/14/06
		Date Analyzed: 04/12/06-04/14/06

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0604184

Lab ID	0604184-005C	0604184-006C	0604184-007C	0604184-008C	Reporting Limit for DF =1	
Client ID	MW-4A	MW-5A	MW-5B	MW-6		
Matrix	W	W	W	W		
DF	1	1	1	1		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND	ND	ND	ND	NA	0.5
t-Butyl alcohol (TBA)	ND	ND	ND	ND	NA	5.0
1,2-Dibromoethane (EDB)	ND	ND	ND	ND	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND	ND	ND	ND	NA	0.5
Diisopropyl ether (DIPE)	ND	ND	ND	ND	NA	0.5
Ethanol	ND	ND	ND	ND	NA	50
Ethyl tert-butyl ether (ETBE)	ND	ND	ND	ND	NA	0.5
Methanol	ND	ND	ND	ND	NA	500
Methyl-t-butyl ether (MTBE)	1.1	ND	0.98	ND	NA	0.5

### Surrogate Recoveries (%)

%SS1:	106	107	108	106	
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Comments				i	
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\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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		Date Analyzed: 04/12/06-04/14/06

### Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0604184

Lab ID	0604184-009C	0604184-010C	0604184-011C	0604184-012C	Reporting Limit for DF =1	
Client ID	MW-7A	MW-7B	MW-7C	EW-1		
Matrix	W	W	W	W		
DF	200	100	1	200		

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<100	ND<50	ND	ND<100	NA	0.5
t-Butyl alcohol (TBA)	7500	9200	ND	ND<1000	NA	5.0
1,2-Dibromoethane (EDB)	ND<100	ND<50	ND	ND<100	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<100	ND<50	ND	ND<100	NA	0.5
Diisopropyl ether (DIPE)	ND<100	ND<50	ND	ND<100	NA	0.5
Ethanol	ND<10,000	ND<5000	ND	ND<10,000	NA	50
Ethyl tert-butyl ether (ETBE)	ND<100	ND<50	ND	ND<100	NA	0.5
Methanol	ND<100,000	ND<50,000	ND	ND<100,000	NA	500
Methyl-t-butyl ether (MTBE)	6600	930	ND	6400	NA	0.5

### Surrogate Recoveries (%)

%SS1:	102	101	104	99	
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Comments	i				
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\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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	Client Contact: James Allen	Date Received: 04/12/06
	Client P.O.:	Date Extracted: 04/12/06-04/14/06
		Date Analyzed: 04/12/06-04/14/06

## Oxygenated Volatile Organics + EDB and 1,2-DCA by P&T and GC/MS\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0604184

Lab ID	0604184-013C			Reporting Limit for DF =1	
Client ID	EW-2				
Matrix	W				
DF	100				S

Compound	Concentration				ug/kg	µg/L
tert-Amyl methyl ether (TAME)	ND<50				NA	0.5
t-Butyl alcohol (TBA)	ND<500				NA	5.0
1,2-Dibromoethane (EDB)	ND<50				NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<50				NA	0.5
Diisopropyl ether (DIPE)	ND<50				NA	0.5
Ethanol	ND<5000				NA	50
Ethyl tert-butyl ether (ETBE)	ND<50				NA	0.5
Methanol	ND<50,000				NA	500
Methyl-t-butyl ether (MTBE)	1800				NA	0.5

### Surrogate Recoveries (%)

%SS1:	106			
Comments	i			

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or coelutes with another peak; &) low surrogate due to matrix interference.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



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	Client Contact: James Allen	Date Received: 04/12/06
	Client P.O.:	Date Extracted: 04/13/06-04/14/06
		Date Analyzed: 04/13/06-04/14/06

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE\*

Extraction method: SW5030B

Analytical methods: SW8021B/8015Cm

Work Order: 0604184

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1A	W	18,000,a,i	110,000	1200	280	2400	2200	100	117
002A	MW-1B	W	ND	ND	ND	ND	ND	ND	1	115
003A	MW-2	W	110,a	270	0.61	0.80	4.1	ND	1	111
004A	MW-3	W	ND	ND	ND	ND	ND	ND	1	117
005A	MW-4A	W	ND	ND	ND	ND	ND	ND	1	108
006A	MW-5A	W	ND	ND	ND	ND	ND	ND	1	109
007A	MW-5B	W	ND	ND	ND	ND	ND	ND	1	111
008A	MW-6	W	ND,i	ND	ND	ND	ND	ND	1	109
009A	MW-7A	W	5300,a,i	5900	130	26	330	420	10	113
010A	MW-7B	W	81,a	1000	1.9	1.6	1.1	0.58	1	105
011A	MW-7C	W	ND	ND	ND	ND	ND	ND	1	101
012A	EW-1	W	1900,a	7900	66	170	110	380	5	107
013A	EW-2	W	470,a,i	2000	15	2.5	24	13	2	104

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	NA	1	mg/Kg

\* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.



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Allterra Environmental, Inc 849 Almar Ave, Ste. C #281 Santa Cruz, CA 95060	Client Project ID: #015-01-002; 160 Holmes QM 2006	Date Sampled: 04/06/06-04/07/06
	Client Contact: James Allen	Date Received: 04/12/06
	Client P.O.:	Date Analyzed: 04/12/06
		Date Extracted: 04/12/06

### Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel\*

Extraction method: SW3510C

Analytical methods: SW8015C

Work Order: 0604184

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0604184-001B	MW-1A	W	1900,d,i	1	100
0604184-002B	MW-1B	W	ND	1	102
0604184-003B	MW-2	W	160,d	1	101
0604184-004B	MW-3	W	ND	1	89
0604184-005B	MW-4A	W	ND	1	90
0604184-006B	MW-5A	W	ND	1	90
0604184-007B	MW-5B	W	ND	1	89
0604184-008B	MW-6	W	ND,i	1	90
0604184-009B	MW-7A	W	1700,d,i	1	114
0604184-010B	MW-7B	W	ND	1	97
0604184-011B	MW-7C	W	ND	1	101
0604184-012B	EW-1	W	190,d	1	98
0604184-013B	EW-2	W	160,d,i	1	102

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

\* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0604184

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 21226			Spiked Sample ID: 0604176-012A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) £	ND	60	105	103	2.18	99.2	106	6.69	70 - 130	70 - 130
MTBE	ND	10	89.1	86.8	2.62	105	92.5	12.5	70 - 130	70 - 130
Benzene	ND	10	92.1	90.4	1.88	100	96.3	3.89	70 - 130	70 - 130
Toluene	ND	10	91.8	92.9	1.21	102	97.8	3.73	70 - 130	70 - 130
Ethylbenzene	ND	10	104	101	3.13	110	108	1.71	70 - 130	70 - 130
Xylenes	ND	30	96.3	95.3	1.04	100	100	0	70 - 130	70 - 130
%SS:	110	10	100	104	3.56	111	102	8.82	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 21226 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0604184-001A	4/06/06	4/13/06	4/13/06 6:17 AM	0604184-001A	4/06/06	4/14/06	4/14/06 3:06 AM
0604184-002A	4/06/06	4/13/06	4/13/06 6:49 AM	0604184-003A	4/07/06	4/13/06	4/13/06 7:21 AM
0604184-004A	4/07/06	4/13/06	4/13/06 7:54 AM	0604184-005A	4/07/06	4/13/06	4/13/06 8:27 AM
0604184-006A	4/07/06	4/13/06	4/13/06 9:00 AM	0604184-007A	4/07/06	4/13/06	4/13/06 9:33 AM
0604184-008A	4/07/06	4/13/06	4/13/06 10:06 AM	0604184-009A	4/07/06	4/13/06	4/13/06 12:15 AM
0604184-009A	4/07/06	4/13/06	4/13/06 9:22 PM	0604184-010A	4/07/06	4/13/06	4/13/06 5:08 PM
0604184-010A	4/07/06	4/13/06	4/13/06 5:38 PM	0604184-011A	4/07/06	4/13/06	4/13/06 1:15 AM
0604184-012A	4/07/06	4/13/06	4/13/06 6:37 PM	0604184-012A	4/07/06	4/13/06	4/13/06 7:07 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.





QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0604184

Table with columns: EPA Method: SW8260B, Extraction: SW5030B, BatchID: 21228, Spiked Sample ID: 0604179-004A. Rows include analytes like tert-Amyl methyl ether (TAME), t-Butyl alcohol (TBA), 1,2-Dibromoethane (EDB), etc., with columns for Sample, Spiked, MS, MSD, MS-MSD, LCS, LCSD, LCS-LCSD, and Acceptance Criteria (%).

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE

BATCH 21228 SUMMARY

Summary table with columns: Sample ID, Date Sampled, Date Extracted, Date Analyzed. It lists multiple sample IDs and their corresponding dates and times.

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.
% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).
MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.
N/A = not enough sample to perform matrix spike and matrix spike duplicate.
NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.
Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0604184

EPA Method: SW8021B/8015Cm		Extraction: SW5030B			BatchID: 21229			Spiked Sample ID: 0604196-001A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex) £	ND	60	107	108	1.08	109	109	0	70 - 130	70 - 130
MTBE	ND	10	89.4	90.8	1.55	87.1	97.7	11.4	70 - 130	70 - 130
Benzene	ND	10	90.1	91.6	1.60	94.9	103	8.09	70 - 130	70 - 130
Toluene	ND	10	92.5	92.4	0.111	96.5	105	8.14	70 - 130	70 - 130
Ethylbenzene	ND	10	102	104	1.58	107	117	8.83	70 - 130	70 - 130
Xylenes	ND	30	95.7	96.7	1.04	100	110	9.52	70 - 130	70 - 130
%SS:	103	10	100	100	0	103	104	0.618	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 21229 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0604184-013A	4/07/06	4/13/06	4/13/06 2:14 AM	0604184-013A	4/07/06	4/13/06	4/13/06 7:37 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.  
 % Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).  
 MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.  
 £ TPH(btex) = sum of BTEX areas from the FID.  
 # cluttered chromatogram; sample peak coelutes with surrogate peak.  
 N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.  
 NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR SW8015C**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0604184

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 21183			Spiked Sample ID N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	94	92.2	1.88	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	96	93	3.23	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 21183 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0604184-001B	4/06/06	4/12/06	4/12/06 2:42 PM	0604184-002B	4/06/06	4/12/06	4/12/06 5:02 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



**QC SUMMARY REPORT FOR SW8015C**

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0604184

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 21230			Spiked Sample ID N/A		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	1000	N/A	N/A	N/A	116	100	14.6	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	100	98	2.71	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

BATCH 21230 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0604184-003B	4/07/06	4/12/06	4/12/06 8:33 PM	0604184-004B	4/07/06	4/12/06	4/12/06 7:20 PM
0604184-005B	4/07/06	4/12/06	4/12/06 8:28 PM	0604184-006B	4/07/06	4/12/06	4/12/06 9:37 PM
0604184-007B	4/07/06	4/12/06	4/12/06 10:45 PM	0604184-008B	4/07/06	4/12/06	4/12/06 11:53 PM
0604184-009B	4/07/06	4/12/06	4/12/06 8:28 PM	0604184-010B	4/07/06	4/12/06	4/12/06 9:37 PM
0604184-011B	4/07/06	4/12/06	4/12/06 10:45 PM	0604184-012B	4/07/06	4/12/06	4/12/06 11:53 PM
0604184-013B	4/07/06	4/12/06	4/12/06 2:41 PM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.