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Alameda County  
Environmental Health

September 4, 2007

QUARTERLY GROUNDWATER MONITORING REPORT  
AUGUST 2007 GROUNDWATER SAMPLING  
ASE JOB NO. 3648

at  
1310 Central Avenue  
Alameda, California

Prepared for:  
Mr. Nissan Saidian  
5733 Medallion Court  
Castro Valley, CA 94522

Prepared by:  
AQUA SCIENCE ENGINEERS, INC.  
55 Oak Court, Suite 220  
Danville, CA 94526  
(925) 820-9391



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## 1.0 INTRODUCTION

### Site Location (Site), See Figure 1

1310 Central Avenue  
Alameda, CA

### Responsible Party

Mr. Nissan Saidian  
5733 Medallion Court  
Castro Valley, CA 94522

### Environmental Consulting Firm

Aqua Science Engineers, Inc. (ASE)  
55 Oak Court, Suite 220  
Danville, CA 94526  
Contact: Robert Kitay, Senior Geologist  
(925) 820-9391

### Agency Review

Mr. Barney Chan  
Alameda County Health Care Services Agency (ACHCSA)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Mr. Chuck Headlee  
California Regional Water Quality Control Board (RWQCB)  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

The following is a report detailing the methods and findings of the August 2007 quarterly groundwater sampling at the above-referenced site (*Figure 1*). This sampling was conducted as required by the ACHCSA and RWQCB. ASE has prepared this report on behalf of Mr. Nissan Saidian, owner of the property.



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## **2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT**

On August 8 2007, ASE measured the depth to water in each site groundwater monitoring well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. No free-floating hydrocarbons were observed in any of the monitoring wells this quarter. However, the water sampled from MW-1, MW-2 and MW-3 did have a slight sheen on the water surface. Groundwater elevation data is presented as *Table One*.

A groundwater potentiometric surface map is presented as *Figure 2*. Groundwater beneath the site was calculated as flowing to the northwest with a gradient of approximately 0.01 feet/foot. The groundwater flow direction beneath the site has varied from quarter to quarter. Additionally, monitoring wells MW-4 and MW-5 in particular, have consistently been noted to be under pressure.

## **3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS**

Prior to sampling, all five monitoring wells were purged of three well casing volumes of groundwater using disposable polyethylene bailers. The parameters pH, temperature, and conductivity were monitored during the well purging, and samples were not collected until the parameters stabilized. Petroleum hydrocarbon odors were present during the purging and sampling of monitoring wells MW-1, MW-2 and MW-3. Groundwater samples were collected from each well using disposable polyethylene bailers.

The samples were decanted from the bottom of the bailers using low flow emptying devices into 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and sealed without headspace. The samples were then labeled and placed in a cooler with wet ice for transport to Kiff Analytical, LLC (ELAP #2236) of Davis, California under appropriate chain-of-custody documentation. Well sampling field logs are presented in *Appendix A*.

The well purge water was placed in a 55-gallon steel drum and labeled for temporary storage.

The groundwater samples collected from all five site monitoring wells were analyzed for total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 8015, and total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, and total xylenes (collectively known as BTEX), and fuel oxygenates including methyl tertiary-butyl ether (MTBE) by EPA Method 8260B. The analytical results are presented in *Table Two*, and the certified analytical report and chain-of-custody documentation are included as *Appendix B*.



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#### **4.0 CONCLUSIONS**

- Concentrations of TPH-G, benzene, toluene, ethyl benzene and total xylenes increased in groundwater samples collected from monitoring well MW-1.
- The only hydrocarbon detected in groundwater samples collected from monitoring well MW-2 this quarter was 180 ppb TPH-D, which is very similar to last quarter's results.
- Concentrations of TPH-G, benzene, toluene, ethyl benzene, total xylenes, TBA and MTBE increased slightly in groundwater samples collected from monitoring well MW-3.
- MTBE was the only compound detected in groundwater samples collected from monitoring well MW-4 at 0.82 ppb, which is generally consistent with previous findings.
- Concentrations of TPH-G, MTBE, TAME and TBA were very similar to last quarter's results in groundwater samples collected from monitoring well MW-5.

Benzene and MTBE isoconcentration contour maps are presented as *Figure 3* and *Figure 4*. Concentrations exceeding Environmental Screening Levels (ESLs)<sup>1</sup> for sites where groundwater is not a current or potential source of drinking water:

- In MW-1, concentrations of TPH-G, ethyl benzene and total xylenes exceeded ESLs.
- In MW-3, concentrations of TPH-G and benzene exceeded ESLs.

#### **5.0 RECOMMENDATIONS**

ASE recommends that this site remain on a quarterly sampling schedule. The next sampling is scheduled for November 2007. In addition, ASE recommends that a corrective action plan be prepared for the site.

#### **6.0 REPORT LIMITATIONS**

The results presented in this report represent the conditions at the time of the groundwater sampling, at the specific locations where the groundwater samples were collected, and for the specific parameters analyzed by the laboratory. It does not fully characterize the site for contamination resulting from sources other than the former underground storage tanks and associated plumbing at the site, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of independent CAL-DHS certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

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<sup>1</sup> As presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region dated February 2005.



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Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project, and trust that this report meets your needs. Please feel free to call us at (925) 820-9391 if you have any questions or comments.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

Michael Rauser  
Staff Geologist



Robert E. Kitay, P.G., R.E.A.  
Senior Geologist

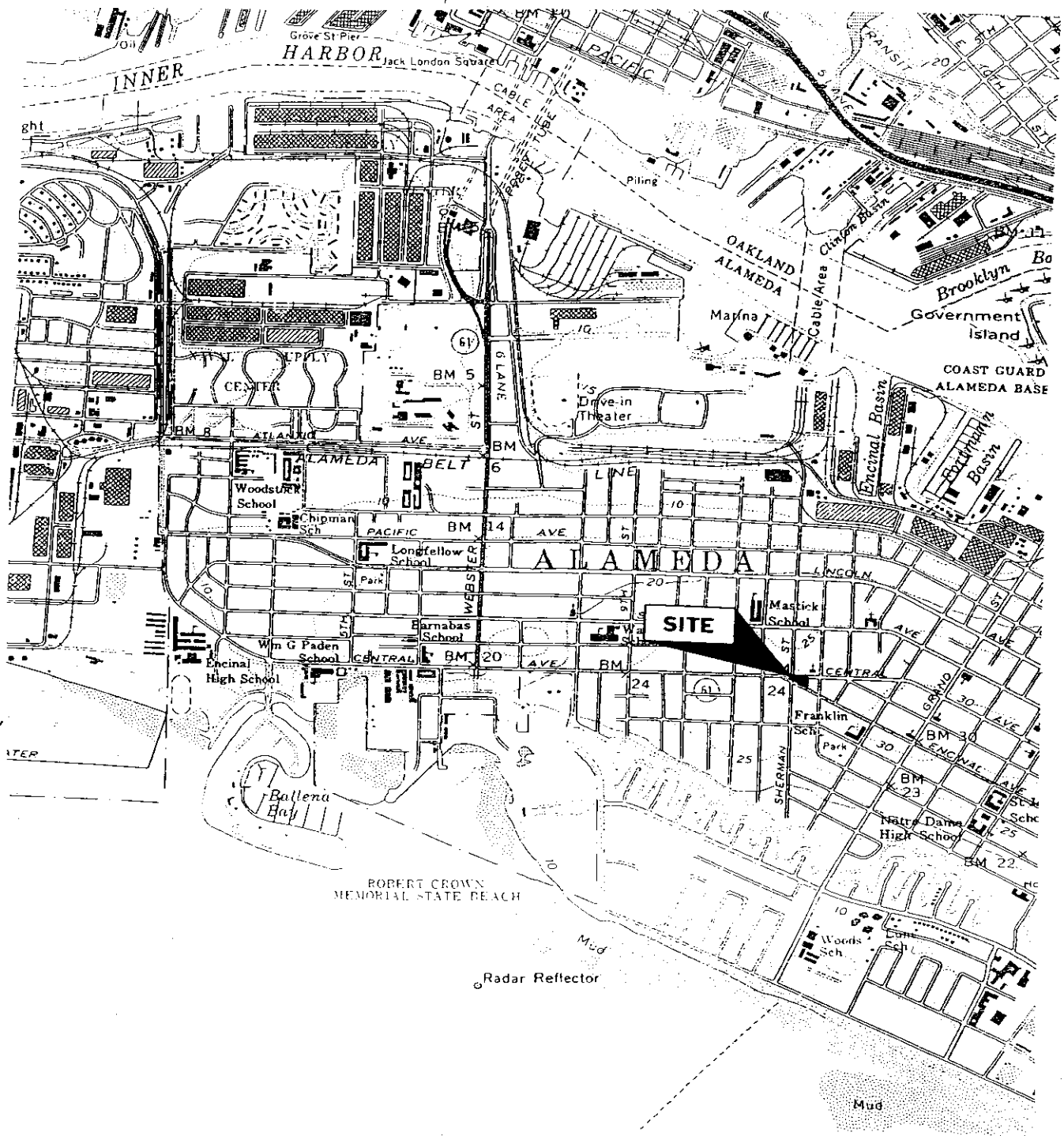
Attachments: Table One and Two  
Figures 1 through 4  
Appendices A and B

cc: Mr. Nissan Saidian  
Mr. Barney Chan, ACHCSA  
Mr. Chuck Headlee, RWQCB, San Francisco Bay Region



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## **FIGURES**



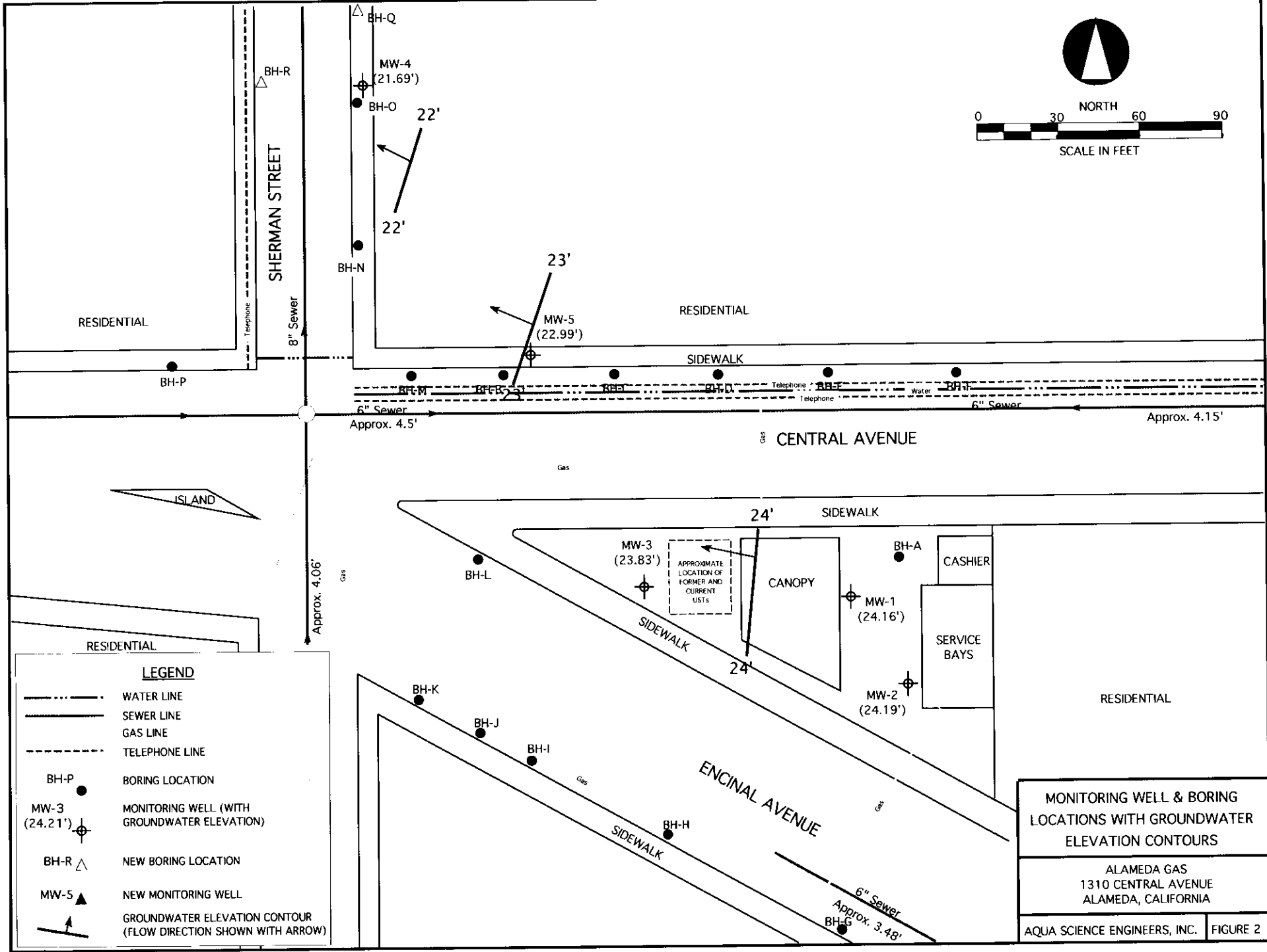
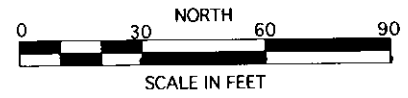
NORTH

# LOCATION MAP

SAIDIAN PROPERTY  
 1310 CENTRAL AVENUE  
 ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC.

Figure 1

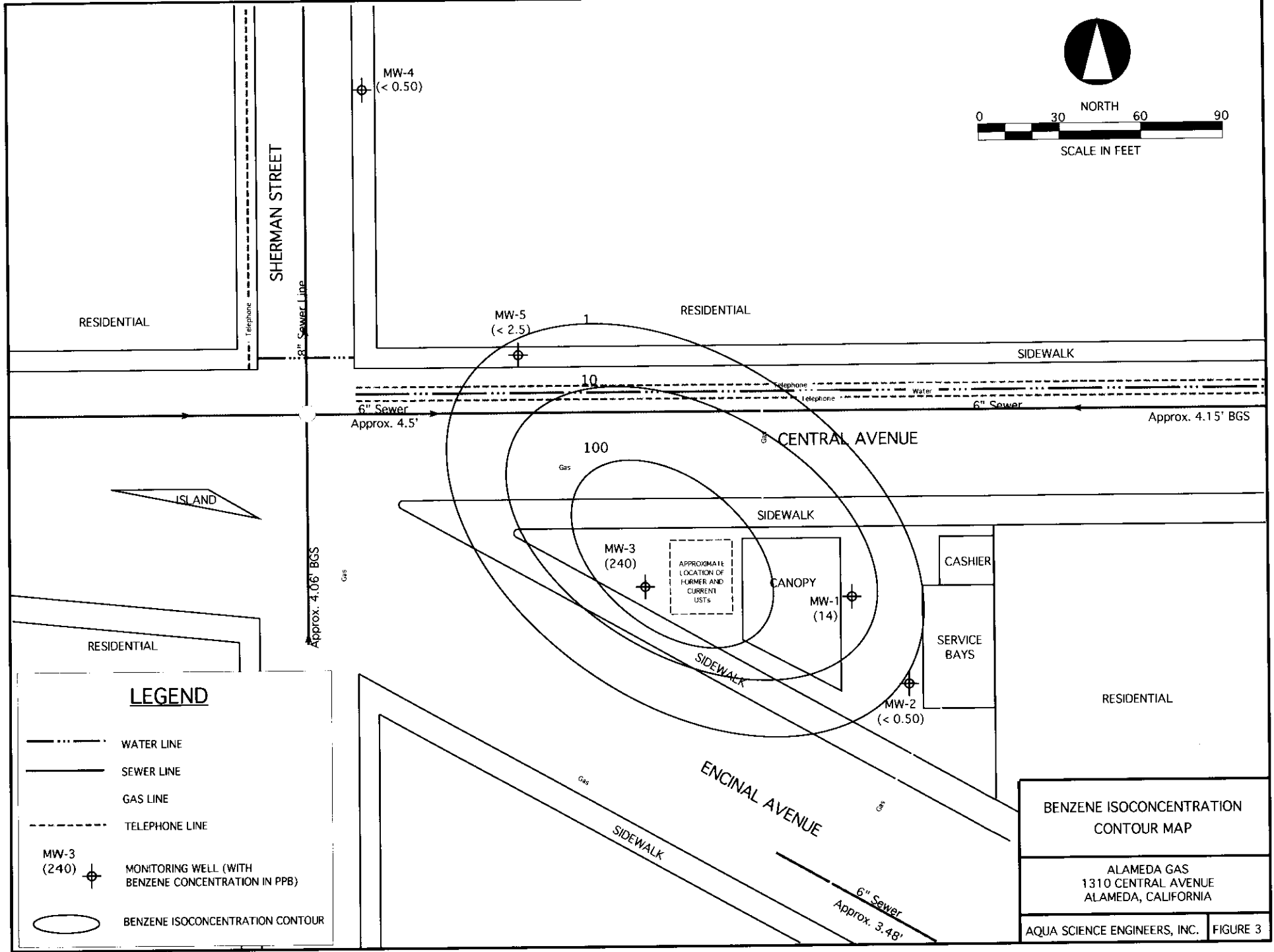
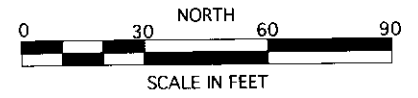


**LEGEND**

- WATER LINE
- SEWER LINE
- - - GAS LINE
- · - · TELEPHONE LINE
- BH-P ● BORING LOCATION
- MW-3 (24.21') ⊕ MONITORING WELL (WITH GROUNDWATER ELEVATION)
- BH-R △ NEW BORING LOCATION
- MW-5 ▲ NEW MONITORING WELL
- ↗ GROUNDWATER ELEVATION CONTOUR (FLOW DIRECTION SHOWN WITH ARROW)

MONITORING WELL & BORING LOCATIONS WITH GROUNDWATER ELEVATION CONTOURS	
ALAMEDA GAS 1310 CENTRAL AVENUE ALAMEDA, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	FIGURE 2





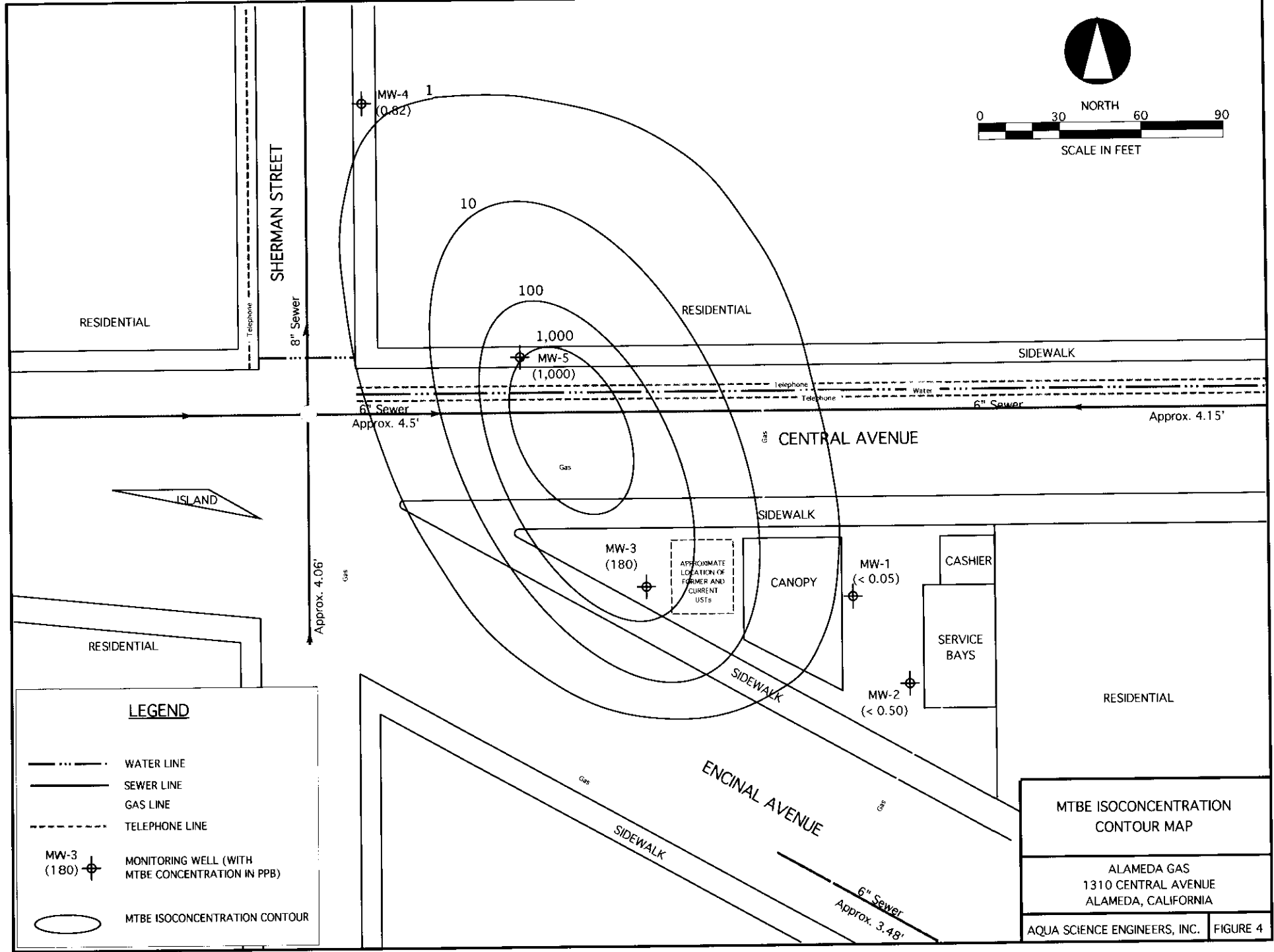
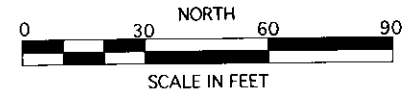
**LEGEND**

- WATER LINE
- SEWER LINE
- GAS LINE
- TELEPHONE LINE
- MONITORING WELL (WITH BENZENE CONCENTRATION IN PPB)
- BENZENE ISOCONCENTRATION CONTOUR





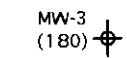

**BENZENE ISOCONCENTRATION CONTOUR MAP**

ALAMEDA GAS  
1310 CENTRAL AVENUE  
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. **FIGURE 3**



**LEGEND**

-  WATER LINE
-  SEWER LINE
-  GAS LINE
-  TELEPHONE LINE
-  MW-3 (180) MONITORING WELL (WITH MTBE CONCENTRATION IN PPB)
-  MTBE ISOCONCENTRATION CONTOUR

**MTBE ISOCONCENTRATION  
CONTOUR MAP**

ALAMEDA GAS  
1310 CENTRAL AVENUE  
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. **FIGURE 4**



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## **TABLES**

**TABLE ONE**  
**Groundwater Elevation Data**  
**Saidian Property-Alameda**  
1310 Central Avenue, Alameda, CA

Well	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-1	9/6/99	26.85	5.16	21.69
	5/16/00		3.24	23.61
	8/3/00		4.15	22.70
	12/5/00		4.90	21.95
	3/5/01		3.04	23.81
	6/4/01		4.01	22.84
	6/5/02		3.73	23.12
	9/9/02		5.06	21.79
	12/19/02		4.09	22.76
	3/10/03		3.50	23.35
	6/3/03		3.66	23.19
	9/18/03		4.91	21.94
	12/22/03		4.30	22.55
	3/12/04		2.93	23.92
	6/11/04		4.23	22.62
	9/13/04	5.02	21.83	
	12/16/04	3.76	23.09	
	3/21/05	2.81	24.04	
	6/23/05	3.66	23.19	
	9/30/05	4.55	22.30	
	12/8/05	4.21	22.64	
	3/1/06	2.90	23.95	
	5/25/06	29.18	2.84	26.34
	8/10/06		4.35	24.83
	11/21/06		4.22	24.96
	2/6/07		4.39	24.79
5/8/07	3.88		25.30	
<b>8/6/07</b>	<b>5.02</b>		<b>24.16</b>	

**TABLE ONE**  
**Groundwater Elevation Data**  
**Saidian Property-Alameda**  
1310 Central Avenue, Alameda, CA

Well	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-2	9/6/99	27.18	5.56	21.62
	5/16/00		3.52	23.66
	8/3/00		4.44	22.74
	12/5/00		5.24	21.94
	3/5/01		3.28	23.90
	6/4/01		4.33	22.85
	6/5/02		3.98	23.20
	9/9/02		5.34	21.84
	12/19/02		4.33	22.85
	3/10/03		3.58	23.60
	6/3/03		3.87	23.31
	9/18/03		5.24	21.94
	12/22/03		4.47	22.71
	3/12/04		3.10	24.08
	6/11/04		4.51	22.67
	9/13/04	5.35	21.83	
	12/16/04	4.09	23.09	
	3/21/05	3.01	24.17	
	6/23/05	3.91	23.27	
	9/30/05	4.86	22.32	
	12/8/05	4.49	22.69	
	3/1/06	3.09	24.09	
	5/25/06	29.55	3.16	26.39
	8/10/06		4.98	24.57
	11/21/06		4.81	24.74
	2/6/07		4.37	25.18
	5/8/07		4.12	25.43
<b>8/6/07</b>	<b>5.36</b>		<b>24.19</b>	

**TABLE ONE**  
**Groundwater Elevation Data**  
**Saidian Property-Alameda**  
1310 Central Avenue, Alameda, CA

Well	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-3	9/6/00	25.30	4.02	21.28
	5/16/00		2.06	23.24
	8/3/00		3.20	22.10
	12/5/00		3.71	21.59
	3/5/01		1.90	23.40
	6/4/01		2.72	22.58
	6/5/02		2.75	22.55
	9/9/02		3.88	21.42
	12/19/02		2.79	22.51
	3/10/03		2.36	22.94
	6/3/03		2.65	22.65
	9/19/03		3.15	22.15
	12/22/03		2.83	22.47
	3/12/04		2.00	23.30
	6/11/04		3.11	22.19
	9/13/04		3.90	21.40
	12/16/04		2.89	22.41
	3/21/05	1.93	23.37	
	6/23/05	2.69	22.61	
	9/30/05	4.54	20.76	
12/8/05	3.05	22.25		
3/1/06	1.95	23.35		
5/25/06	27.74	2.11	25.63	
8/10/06		3.25	24.49	
11/21/06		3.35	24.39	
2/6/07		3.34	24.40	
5/8/07		3.53	24.21	
			<b>3.91</b>	<b>23.83</b>
MW-4	5/25/06	26.23	2.54	23.69
	8/10/06		4.65	21.58
	11/21/06		4.63	21.60
	2/6/07		3.87	22.36
	5/8/07		4.21	22.02
			<b>4.54</b>	<b>21.69</b>

**TABLE ONE**  
**Groundwater Elevation Data**  
**Saidian Property-Alameda**  
 1310 Central Avenue, Alameda, CA

Well	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Groundwater Elevation (msl)
MW-5	5/25/06	26.78	2.60	24.18
	8/10/06		3.40	23.38
	11/21/06		3.27	23.51
	2/6/07		3.10	23.68
	5/8/07		3.00	23.78
	<b>8/6/07</b>		<b>3.79</b>	<b>22.99</b>

Notes:

Wells were resurveyed on April 27, 2006

**TABLE TWO**  
**Summary of Chemical Analysis of GROUNDWATER Samples**  
**Alameda Gas, 1310 Central Avenue, Alameda, California**  
All results are in parts per billion (ppb)

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
<b>MW-1</b>										
9/6/99	5,700	8,700	170	59	22	85	20,000	NA	NA	NA
5/16/00	20,000	< 7,500	38	6.3	740	1,600	< 5.0	< 5.0	< 50	< 5.0
8/3/00	20,000	< 6,000	56	9.7	920	1,600	< 0.5	< 0.5	< 50	< 0.5
12/5/00	31,000	< 4,000	64	27	820	2,200	< 10	< 5.0	< 50	< 5.0
3/5/01	20,000	<4,000	19	<5.0	480	870	<5.0	<5.0	<50	<5.0
6/4/01	23,000	<7,000	58	50	710	2,100	5.1	<5.0	<50	<5.0
6/5/02	7,400	<1,500	9.3	6.7	180	230	<1.0	<1.0	<10	<1.0
9/9/02	8,300	< 3,500	32	20	390	670	< 2.0	< 2.0	< 20	< 2.0
12/19/02	5,100	--	7.9	2.5	56	93	< 1.0	< 1.0	< 10	< 1.0
3/10/03	2,000	< 2,000	3.4	2.9	80	98	< 0.5	< 0.5	< 5.0	< 0.5
6/3/03	7,300	< 4,000	6.8	9.9	300	1,000	2.3	< 0.5	< 5.0	< 0.5
9/18/03	9,000	< 3,000	26	22	420	1,200	4.5	< 1.5	< 20	< 1.5
12/22/03	4,300	< 2,000	12	6.7	200	290	9.1	< 1.0	< 10	< 1.0
3/12/04	7,000	< 3,000	8.3	8.2	250	760	3.9	< 2.0	< 20	< 2.0
6/11/04	13,000	< 4,000	26	27	530	1,700	< 2.5	< 2.5	< 15	< 2.5
9/13/04	17,000	< 4,000	37	42	840	2,000	< 5.0	< 5.0	< 50	< 5.0
12/16/04	1,800	< 1,000	5.9	1.9	100	35	16	< 0.5	< 5.0	< 0.5
3/21/05	7,500	< 3,000	3.4	4.2	290	760	< 1.5	< 1.5	< 20	< 1.5
6/23/05	11,000	< 8,000	15	11	370	910	2.4	< 1.5	< 7	< 1.5
9/30/05	9,800	< 4000	32	25	540	680	1.6	< 1.5	< 7.0	< 1.5
12/8/05	9,200	< 4,000	27	21	500	490	2.2	< 1.5	< 7.0	< 1.5
3/1/06	6,500	< 4,000	8.1	9.4	370	660	1.8	< 1.5	< 6.0	< 1.5
5/25/06	10,000	< 3,000	19	14	900	620	< 1.5	< 1.5	< 7.0	< 1.5
8/10/06	9,800	< 1,500	16	8.1	640	180	< 1.5	< 1.5	< 7.0	< 1.5
11/21/06	2,900	< 1,000	7.8	2.5	160	12	2.5	< 0.5	< 5.0	< 0.5
2/6/07	4,600	< 1,500	9.4	6.0	380	220	1.0	< 0.50	< 5.0	< 0.50
5/8/07	3,700	< 800	10	4.6	320	86	1.5	< 0.50	< 5.0	< 0.50
<b>8/6/07</b>	<b>8,200</b>	<b>&lt; 2,000</b>	<b>14</b>	<b>8.8</b>	<b>730</b>	<b>180</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 5.0</b>	<b>&lt; 0.50</b>



**TABLE TWO**  
**Summary of Chemical Analysis of GROUNDWATER Samples**  
**Alameda Gas, 1310 Central Avenue, Alameda, California**  
All results are in parts per billion (ppb)

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
<b>MW-2</b>										
9/6/99	6,000	70	1,300	92	50	400	6,800	NA	NA	NA
5/16/00	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 5.0
8/3/00	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
12/5/00	< 50	1,400	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
3/5/01	<50	<50	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
6/4/01	<50	<50	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
6/5/02	< 50	2,300	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
9/9/02	< 50	1,300	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 0.5	< 5.0	< 0.5
12/19/02	< 50	--	< 0.5	< 0.5	< 0.5	< 0.5	16	< 0.5	< 5.0	< 0.5
3/10/03	< 50	3,000	< 0.5	< 0.5	< 0.5	< 0.5	1.0	< 0.5	< 5.0	< 0.5
6/3/03	< 50	700	< 0.5	< 0.5	< 0.5	< 0.5	2.0	< 0.5	< 5.0	< 0.5
9/18/03	< 50	1,400	< 0.5	< 0.5	< 0.5	< 0.5	4.7	< 0.5	< 5.0	< 0.5
12/22/03	< 50	1,000	< 0.5	< 0.5	< 0.5	< 0.5	39	< 0.5	< 5.0	< 0.5
3/12/04	< 50	250	< 0.5	< 0.5	< 0.5	< 0.5	2.1	< 0.5	< 5.0	< 0.5
6/11/04	< 50	920	< 0.5	< 0.5	< 0.5	< 0.5	0.75	< 0.5	< 5.0	< 0.5
9/13/04	< 50	140	< 0.5	< 0.5	< 0.5	< 0.5	1.5	< 0.5	< 5.0	< 0.5
12/16/04	< 50	150	< 0.5	< 0.5	< 0.5	< 0.5	12	< 0.5	< 5.0	< 0.5
3/21/05	< 50	130	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
6/23/05	< 50	1,100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
9/30/05	< 50	300	< 0.5	< 0.5	< 0.5	< 0.5	1.6	< 0.5	< 5.0	< 0.5
12/8/05	< 50	600	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 0.5	< 5.0	< 0.5
3/1/06	< 50	920	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
5/25/06	< 50	160	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
8/10/06	< 50	870	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50
11/21/06	< 50	130	< 0.50	< 0.50	< 0.50	< 0.50	1.8	< 0.50	< 5.0	< 0.50
2/6/07	< 50	450	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50
5/8/07	< 50	160	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50
<b>8/6/07</b>	<b>&lt; 50</b>	<b>180</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 5.0</b>	<b>&lt; 0.50</b>

**TABLE TWO**  
**Summary of Chemical Analysis of GROUNDWATER Samples**  
**Alameda Gas, 1310 Central Avenue, Alameda, California**  
All results are in parts per billion (ppb)

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
<b>MW-3</b>										
9/6/99	43,000	870	860	70	< 0.5	65	120,000	NA	NA	NA
5/16/00	17,000	< 5,000	2,800	60	380	190	990	9.1	350	< 5.0
8/3/00	16,000	< 2,000	1,600	29	210	53	1,200	21	260	< 2.0
12/5/00	17,000	5,800	1,700	45	460	240	1,100	21	230	< 5.0
3/5/01	29,000	<1300	2,100	68	280	100	180	<8.0	<80	<8.0
6/4/01	17,000	<6,000	2,000	56	340	230	300	<10	130	<10
6/5/02	11,000	<2,000	1,600	46	210	47	790	<10	220	<10
9/9/02	12,000	< 800	1,400	44	130	27	760	< 10	160	< 10
12/19/02	10,000	--	740	32	180	38	86	< 5.0	< 50	< 5.0
3/10/03	13,000	< 6,000	1,200	42	240	35	470	5.3	140	< 5.0
6/3/03	6,500	< 3,000	750	21	46	15	1,300	< 50	280	< 2.5
9/18/03	9,800	< 3,000	1,500	38	170	32	420	< 10	150	< 10
12/22/03	8,800	< 2,000	1,100	32	82	20	330	5.8	52	< 5.0
3/12/04	7,600	< 3,000	590	23	69	17	470	9.2	63	< 2.5
6/11/04	7,800	< 2,000	840	19	58	15	710	12	140	< 1.5
9/13/04	7,500	< 1,500	840	17	23	7.8	730	15	93	< 2.5
12/16/04	9,300	< 2,000	1,100	26	76	13	600	12	130	< 2.5
3/21/05	11,000	< 3,000	1,200	37	190	24	460	9.3	100	< 2.5
6/23/05	9,600	< 4,000	1,100	28	93	23	370	8.2	67	< 2.5
9/30/05	9,000	< 3,000	690	18	32	14	380	8.4	72	< 1.5
12/8/05	8,700	< 3,000	560	23	38	12	350	6.9	82	< 1.5
3/1/06	8,400	< 2,000	410	24	42	13	360	8.0	58	< 1.5
5/25/06	9,900	< 2,000	630	25	13	13	190	5.3	59	< 1.5
8/10/06	14,000	< 3,000	690	43	130	26	200	5.4	70	< 1.5
11/21/06	10,000	< 3,000	580	37	96	25	240	6.3	72	< 1.5
2/6/07	7,700	< 1,000	520	36	90	23	260	7.4	54	< 1.5
5/8/07	4,700	< 800	150	0.86	< 0.50	< 0.50	170	5.0	52	< 0.50
<b>8/6/07</b>	<b>6,000</b>	<b>&lt; 1,000</b>	<b>240</b>	<b>26</b>	<b>34</b>	<b>17</b>	<b>180</b>	<b>5.0</b>	<b>55</b>	<b>&lt; 0.50</b>

**TABLE TWO**  
**Summary of Chemical Analysis of GROUNDWATER Samples**  
**Alameda Gas, 1310 Central Avenue, Alameda, California**  
All results are in parts per billion (ppb)

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
<b>MW-4</b>										
5/25/06	< 50	86	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 5.0	< 0.5
8/10/06	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1.2	< 0.50	< 5.0	< 0.50
11/21/06	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	0.59	< 0.50	< 5.0	< 0.50
2/6/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50
5/8/07	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0	< 0.50
<b>8/6/07</b>	<b>&lt; 50</b>	<b>&lt; 50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>&lt; 0.50</b>	<b>0.82</b>	<b>&lt; 0.50</b>	<b>&lt; 5.0</b>	<b>&lt; 0.50</b>
<b>MW-5</b>										
5/25/06	410	< 80	< 2.5	< 2.5	< 2.5	< 2.5	1,800	28	44	< 2.5
8/10/06	55	< 50	< 0.50	< 0.50	< 0.50	< 0.50	1,100	19	9.1	< 0.50
11/21/06	< 250	< 50	< 2.5	< 2.5	< 2.5	< 2.5	1,500	25	28	< 2.5
2/6/07	430	< 50	6.9	< 2.5	< 2.5	< 2.5	1,600	26	34	< 2.5
5/8/07	< 250	< 50	< 2.5	< 2.5	< 2.5	< 2.5	1,200	20	38	< 2.5
<b>8/6/07</b>	<b>330</b>	<b>&lt; 80</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>&lt; 2.5</b>	<b>1,000</b>	<b>20</b>	<b>39</b>	<b>&lt; 2.5</b>

**Notes:**

MTBE = Methyl-t-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-Butanol

ESL = Environmental screening levels for sites where groundwater is not a current or potential source of drinking water as presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (February 2005)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

NA = Samples Not Analyzed for this compound.

NE = ESLs are not established.

Non-detectable concentrations are noted by the less than symbol (<) followed by the detection limit.

Most recent data in bold.



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX A**

### **Well Sampling Field Logs**

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME Alameda

JOB NUMBER \_\_\_\_\_ DATE OF SAMPLING 8-6-07

WELL ID. Mw-1 SAMPLER MLK

TOTAL DEPTH OF WELL 16.0 WELL DIAMETER 2

DEPTH TO WATER PRIOR TO PURGING 5.02

PRODUCT THICKNESS 0

DEPTH OF WELL CASING IN WATER 10.98

NUMBER OF GALLONS PER WELL CASING VOLUME 1.75

NUMBER OF WELL CASING VOLUMES TO BE REMOVED 3

REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING 5.2

EQUIPMENT USED TO PURGE WELL Bailer

TIME EVACUATION STARTED 1110 TIME EVACUATION COMPLETED 1120

TIME SAMPLES WERE COLLECTED 1130

DID WELL GO DRY \_\_\_\_\_ AFTER HOW MANY GALLONS \_\_\_\_\_

VOLUME OF GROUNDWATER PURGED 5.5

SAMPLING DEVICE Bailer

SAMPLE COLOR clear ODOR/SEDIMENT Strong 0 / ~~100~~ Sed  
Shenan

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
<u>1</u>	<u>69.9</u>	<u>6.73</u>	<u>321</u>
<u>2</u>	<u>71.0</u>	<u>6.68</u>	<u>340</u>
<u>3</u>	<u>70.9</u>	<u>6.64</u>	<u>344</u>

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME Alameda

JOB NUMBER \_\_\_\_\_ DATE OF SAMPLING 8-6-07

WELL ID. MW-2 SAMPLER MLR

TOTAL DEPTH OF WELL. 12.20 WELL DIAMETER 2

DEPTH TO WATER PRIOR TO PURGING 5.36

PRODUCT THICKNESS 0

DEPTH OF WELL CASING IN WATER 6.84

NUMBER OF GALLONS PER WELL CASING VOLUME 1.09

NUMBER OF WELL CASING VOLUMES TO BE REMOVED 3

REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING 3.28

EQUIPMENT USED TO PURGE WELL \_\_\_\_\_

TIME EVACUATION STARTED 1130 TIME EVACUATION COMPLETED 1140

TIME SAMPLES WERE COLLECTED 1150

DID WELL GO DRY HSO AFTER HOW MANY GALLONS \_\_\_\_\_

VOLUME OF GROUNDWATER PURGED 3.5

SAMPLING DEVICE Bail or

SAMPLE COLOR Clear ODOR/SEDIMENT slight sheen & odor / No Sed

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
<u>1</u>	<u>20.2</u>	<u>6.71</u>	<u>218</u>
<u>2</u>	<u>20.7</u>	<u>6.64</u>	<u>209</u>
<u>3</u>	<u>20.8</u>	<u>6.62</u>	<u>201</u>

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME Alameda

JOB NUMBER \_\_\_\_\_ DATE OF SAMPLING 8-6-07

WELL ID. MW-3 SAMPLER MLR

TOTAL DEPTH OF WELL 16.0 ~~3.91~~ WELL DIAMETER 2

DEPTH TO WATER PRIOR TO PURGING 3.91

PRODUCT THICKNESS 0

DEPTH OF WELL CASING IN WATER 12.09

NUMBER OF GALLONS PER WELL CASING VOLUME 1.9

NUMBER OF WELL CASING VOLUMES TO BE REMOVED 3

REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING 5.8

EQUIPMENT USED TO PURGE WELL \_\_\_\_\_

TIME EVACUATION STARTED 1210 TIME EVACUATION COMPLETED 1220

TIME SAMPLES WERE COLLECTED 1230

DID WELL GO DRY No AFTER HOW MANY GALLONS \_\_\_\_\_

VOLUME OF GROUNDWATER PURGED 6.0

SAMPLING DEVICE Bailer

SAMPLE COLOR Clear ODOR/SEDIMENT strong Oe Shreen / No S

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
<u>1</u>	<u>70.8</u>	<u>6.35</u>	<u>479</u>
<u>2</u>	<u>71.2</u>	<u>6.47</u>	<u>484</u>
<u>3</u>	<u>71.3</u>	<u>6.53</u>	<u>497</u>

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME Alameda

JOB NUMBER \_\_\_\_\_ DATE OF SAMPLING 8-6-07

WELL ID. MW-41 SAMPLER MLR

TOTAL DEPTH OF WELL 14.0 WELL DIAMETER 2

DEPTH TO WATER PRIOR TO PURGING 4.54

PRODUCT THICKNESS 0

DEPTH OF WELL CASING IN WATER 9.46

NUMBER OF GALLONS PER WELL CASING VOLUME 1.5

NUMBER OF WELL CASING VOLUMES TO BE REMOVED 3

REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING 4.5

EQUIPMENT USED TO PURGE WELL Bailer

TIME EVACUATION STARTED 1000 TIME EVACUATION COMPLETED 1010

TIME SAMPLES WERE COLLECTED 1020

DID WELL GO DRY Yes AFTER HOW MANY GALLONS 2-0

VOLUME OF GROUNDWATER PURGED \_\_\_\_\_

SAMPLING DEVICE Bailer

SAMPLE COLOR clear ODOR/SEDIMENT No odor / brown sand under pres

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
<u>1</u>	<u>67.0</u>	<u>7.15</u>	<u>413</u>
<u>2</u>	<u>66.4</u>	<u>7.11</u>	<u>405</u>
<u>3</u>			

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED



# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME Alameda

JOB NUMBER \_\_\_\_\_ DATE OF SAMPLING 8-6-07

WELL ID. MW-5 SAMPLER MLR

TOTAL DEPTH OF WELL 14.8 WELL DIAMETER 2

DEPTH TO WATER PRIOR TO PURGING 3.79

PRODUCT THICKNESS 0

DEPTH OF WELL CASING IN WATER 11.01

NUMBER OF GALLONS PER WELL CASING VOLUME 1.76

NUMBER OF WELL CASING VOLUMES TO BE REMOVED 3

REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING 5.2

EQUIPMENT USED TO PURGE WELL \_\_\_\_\_

TIME EVACUATION STARTED 1030 TIME EVACUATION COMPLETED 1040

TIME SAMPLES WERE COLLECTED 1050

DID WELL GO DRY \_\_\_\_\_ AFTER HOW MANY GALLONS \_\_\_\_\_

VOLUME OF GROUNDWATER PURGED \_\_\_\_\_

SAMPLING DEVICE Dailer

SAMPLE COLOR clear ODOR/SEDIMENT No O / No S

Under pressure

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
<u>1</u>	<u>68.0</u>	<u>7.00</u>	<u>480</u>
<u>2</u>	<u>67.4</u>	<u>6.90</u>	<u>510</u>
<u>3</u>	<u>67.2</u>	<u>6.88</u>	<u>528</u>

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED



Aqua Science Engineers, Inc. 55 Oak Court, Suite 220, Danville, CA 94526  
(925) 820-9391 - Fax (925) 837-4853 - [www.aquascienceengineers.com](http://www.aquascienceengineers.com)

## **APPENDIX B**

Certified Analytical Report  
and  
Chain of Custody Documentation



Report Number : 57884

Date : 8/14/2007

Mike Rauser  
Aqua Science Engineers, Inc.  
55 Oak Court, Suite 220  
Danville, CA 94526

Subject : 5 Water Samples  
Project Name : Alameda Gas  
Project Number : 3648

Dear Mr. Rauser,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

A handwritten signature in black ink that reads "Joel Kiff". The signature is stylized and cursive.

Joel Kiff

Subject : 5 Water Samples  
Project Name : Alameda Gas  
Project Number : 3648

## Case Narrative

Tert-Butanol results for sample MW-5 may be biased slightly high and are flagged with a 'J'. A fraction of MtBE (typically less than 1%) converts to Tert-Butanol during the analysis of water samples. We consider this conversion effect to be mathematically significant in samples that contain MtBE/Tert-Butanol in ratios of over 20:1.

Matrix Spike/Matrix Spike Duplicate Results associated with samples MW-2 and MW-4 for the analyte Tert-Butanol were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: \_\_\_\_\_

  
Joel Kiff



Report Number : 57884

Date : 8/14/2007

Project Name : **Alameda Gas**

Project Number : **3648**

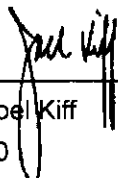
Sample : **MW-1**

Matrix : Water

Lab Number : 57884-01

Sample Date :8/6/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>14</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Toluene</b>	<b>8.8</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Ethylbenzene</b>	<b>730</b>	1.5	ug/L	EPA 8260B	8/10/2007
<b>Total Xylenes</b>	<b>180</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Methyl-t-butyl ether (MTBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Tert-amyl methyl ether (TAME)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Tert-Butanol</b>	<b>&lt; 5.0</b>	5.0	ug/L	EPA 8260B	8/9/2007
<b>TPH as Gasoline</b>	<b>8200</b>	150	ug/L	EPA 8260B	8/10/2007
Toluene - d8 (Surr)	95.5		% Recovery	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	8/9/2007
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 2000</b>	2000	ug/L	M EPA 8015	8/13/2007
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	101		% Recovery	M EPA 8015	8/13/2007

Approved By:  Joel Kiff



Report Number : 57884

Date : 8/14/2007

Project Name : **Alameda Gas**

Project Number : **3648**

Sample : **MW-2**

Matrix : Water

Lab Number : 57884-02

Sample Date :8/6/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Methyl-t-butyl ether (MTBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	8/10/2007
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	8/10/2007
Toluene - d8 (Surr)	93.7		% Recovery	EPA 8260B	8/10/2007
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	8/10/2007
<b>TPH as Diesel (Silica Gel)</b>	<b>180</b>	50	ug/L	M EPA 8015	8/14/2007
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
Octacosane (Diesel Silica Gel Surr)	116		% Recovery	M EPA 8015	8/14/2007

Approved By:

Joel Kiff



Report Number : 57884

Date : 8/14/2007

Project Name : **Alameda Gas**

Project Number : **3648**

Sample : **MW-3**

Matrix : Water

Lab Number : 57884-03

Sample Date :8/6/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	<b>240</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Toluene</b>	<b>26</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Ethylbenzene</b>	<b>34</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Total Xylenes</b>	<b>17</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Methyl-t-butyl ether (MTBE)</b>	<b>180</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Diisopropyl ether (DIPE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Ethyl-t-butyl ether (ETBE)</b>	<b>&lt; 0.50</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Tert-amyl methyl ether (TAME)</b>	<b>5.0</b>	0.50	ug/L	EPA 8260B	8/9/2007
<b>Tert-Butanol</b>	<b>55</b>	5.0	ug/L	EPA 8260B	8/9/2007
<b>TPH as Gasoline</b>	<b>6000</b>	150	ug/L	EPA 8260B	8/10/2007
Toluene - d8 (Surr)	95.8		% Recovery	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	97.6		% Recovery	EPA 8260B	8/9/2007
<b>TPH as Diesel (Silica Gel)</b>	<b>&lt; 1000</b>	1000	ug/L	M EPA 8015	8/13/2007
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	102		% Recovery	M EPA 8015	8/13/2007

Approved By:

Joel Kiff

Project Name : **Alameda Gas**

Project Number : **3648**


Sample : **MW-4**

Matrix : Water

Lab Number : 57884-04

Sample Date :8/6/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Toluene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Ethylbenzene</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Total Xylenes</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Methyl-t-butyl ether (MTBE)</b>	<b>0.82</b>	0.50	ug/L	EPA 8260B	8/10/2007
<b>Diisopropyl ether (DIPE)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Ethyl-t-butyl ether (ETBE)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Tert-amyl methyl ether (TAME)</b>	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
<b>Tert-Butanol</b>	< 5.0	5.0	ug/L	EPA 8260B	8/10/2007
<b>TPH as Gasoline</b>	< 50	50	ug/L	EPA 8260B	8/10/2007
Toluene - d8 (Surr)	93.6		% Recovery	EPA 8260B	8/10/2007
4-Bromofluorobenzene (Surr)	98.7		% Recovery	EPA 8260B	8/10/2007
<b>TPH as Diesel (Silica Gel)</b>	< 50	50	ug/L	M EPA 8015	8/13/2007
Octacosane (Diesel Silica Gel Surr)	104		% Recovery	M EPA 8015	8/13/2007

Approved By:  Joel Kiff



Project Name : **Alameda Gas**

Project Number : **3648**


Sample : **MW-5**

Matrix : Water

Lab Number : 57884-05

Sample Date :8/6/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
<b>Benzene</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Toluene</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Ethylbenzene</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Total Xylenes</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Methyl-t-butyl ether (MTBE)</b>	<b>1000</b>	2.5	ug/L	EPA 8260B	8/10/2007
<b>Diisopropyl ether (DIPE)</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Ethyl-t-butyl ether (ETBE)</b>	< 2.5	2.5	ug/L	EPA 8260B	8/10/2007
<b>Tert-amyl methyl ether (TAME)</b>	<b>20</b>	2.5	ug/L	EPA 8260B	8/10/2007
<b>Tert-Butanol</b>	<b>39 J</b>	15	ug/L	EPA 8260B	8/10/2007
<b>TPH as Gasoline</b>	<b>330</b>	250	ug/L	EPA 8260B	8/10/2007
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	8/10/2007
4-Bromofluorobenzene (Surr)	96.2		% Recovery	EPA 8260B	8/10/2007
<b>TPH as Diesel (Silica Gel)</b>	< <b>80</b>	80	ug/L	M EPA 8015	8/13/2007
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
Octacosane (Diesel Silica Gel Surr)	96.8		% Recovery	M EPA 8015	8/13/2007

Approved By:  Joe Kiff

**QC Report : Method Blank Data**Project Name : **Alameda Gas**Project Number : **3648**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	8/10/2007
Octacosane (Diesel Silica Gel Surr)	120		%	M EPA 8015	8/10/2007
TPH as Diesel (Silica Gel)	< 50	50	ug/L	M EPA 8015	8/14/2007
Octacosane (Diesel Silica Gel Surr)	120		%	M EPA 8015	8/14/2007
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	8/9/2007
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/9/2007
Toluene - d8 (Surr)	99.2		%	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	8/9/2007
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	8/9/2007
Toluene - d8 (Surr)	99.0		%	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	96.6		%	EPA 8260B	8/9/2007

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/10/2007
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/10/2007
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	8/9/2007
Toluene - d8 (Surr)	96.8		%	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	99.3		%	EPA 8260B	8/9/2007
Benzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Toluene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	8/9/2007
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	8/9/2007
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	8/9/2007
Toluene - d8 (Surr)	98.9		%	EPA 8260B	8/9/2007
4-Bromofluorobenzene (Surr)	96.1		%	EPA 8260B	8/9/2007

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

## QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : Alameda Gas

Project Number : 3648

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH-D (Si Gel)	Blank	<50	1000	1000	748	753	ug/L	M EPA 8015	8/10/07	74.8	75.3	0.559	70-130	25
Benzene	57887-06	0.95	40.0	40.0	36.0	35.0	ug/L	EPA 8260B	8/9/07	87.7	85.1	3.00	70-130	25
Toluene	57887-06	<0.50	40.0	40.0	32.6	31.7	ug/L	EPA 8260B	8/9/07	81.5	79.3	2.79	70-130	25
Tert-Butanol	57887-06	610	200	200	838	752	ug/L	EPA 8260B	8/9/07	112	69.0	47.4	70-130	25
Methyl-t-Butyl Ether	57887-06	32	40.0	40.0	62.9	62.4	ug/L	EPA 8260B	8/9/07	78.5	77.2	1.66	70-130	25
Benzene	57884-03	240	40.0	40.0	278	276	ug/L	EPA 8260B	8/9/07	84.6	80.8	4.61	70-130	25
Toluene	57884-03	26	40.0	40.0	60.5	60.2	ug/L	EPA 8260B	8/9/07	87.3	86.4	1.02	70-130	25
Tert-Butanol	57884-03	55	200	200	260	262	ug/L	EPA 8260B	8/9/07	102	104	1.29	70-130	25
Methyl-t-Butyl Ether	57884-03	180	40.0	40.0	206	209	ug/L	EPA 8260B	8/9/07	75.3	84.7	11.7	70-130	25
Benzene	57896-10	<0.50	40.0	40.0	31.6	30.3	ug/L	EPA 8260B	8/10/07	78.9	75.8	4.03	70-130	25
Toluene	57896-10	<0.50	40.0	40.0	31.3	30.5	ug/L	EPA 8260B	8/10/07	78.2	76.2	2.70	70-130	25
Tert-Butanol	57896-10	<5.0	200	200	177	168	ug/L	EPA 8260B	8/10/07	88.3	83.9	5.09	70-130	25
Methyl-t-Butyl Ether	57896-10	<0.50	40.0	40.0	28.5	28.3	ug/L	EPA 8260B	8/10/07	71.2	70.7	0.749	70-130	25
Benzene	57884-01	14	40.0	40.0	52.6	51.0	ug/L	EPA 8260B	8/9/07	96.5	92.3	4.45	70-130	25
Toluene	57884-01	8.8	40.0	40.0	46.9	45.9	ug/L	EPA 8260B	8/9/07	95.4	92.8	2.70	70-130	25
Tert-Butanol	57884-01	<5.0	200	200	202	203	ug/L	EPA 8260B	8/9/07	101	101	0.0656	70-130	25
Methyl-t-Butyl Ether	57884-01	<0.50	40.0	40.0	36.0	35.6	ug/L	EPA 8260B	8/9/07	90.0	88.9	1.20	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC


2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

**QC Report : Matrix Spike/ Matrix Spike Duplicate**

Project Name : **Alameda Gas**

Project Number : **3648**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	57887-05	<0.50	40.0	40.0	35.4	34.4	ug/L	EPA 8260B	8/9/07	88.4	86.0	2.78	70-130	25
Toluene	57887-05	<0.50	40.0	40.0	35.0	34.2	ug/L	EPA 8260B	8/9/07	87.6	85.5	2.35	70-130	25
Tert-Butanol	57887-05	<5.0	200	200	183	182	ug/L	EPA 8260B	8/9/07	91.7	91.1	0.707	70-130	25
Methyl-t-Butyl Ether	57887-05	1.0	40.0	40.0	33.8	33.6	ug/L	EPA 8260B	8/9/07	81.7	81.4	0.428	70-130	25
TPH-D (Si Gel)	Blank	<50	1000	1000	801	844	ug/L	M EPA 8015	8/14/07	80.1	84.4	5.26	70-130	25

Approved By:  \_\_\_\_\_  
 Joe Kiff

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

## QC Report : Laboratory Control Sample (LCS)

Project Name : **Alameda Gas**Project Number : **3648**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	8/9/07	96.7	70-130
Toluene	40.0	ug/L	EPA 8260B	8/9/07	99.0	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/9/07	84.1	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/9/07	94.9	70-130
Benzene	40.0	ug/L	EPA 8260B	8/9/07	92.0	70-130
Toluene	40.0	ug/L	EPA 8260B	8/9/07	96.9	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/9/07	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/9/07	100	70-130
Benzene	40.0	ug/L	EPA 8260B	8/10/07	91.3	70-130
Toluene	40.0	ug/L	EPA 8260B	8/10/07	94.1	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/10/07	106	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/10/07	90.5	70-130
Benzene	40.0	ug/L	EPA 8260B	8/9/07	97.8	70-130
Toluene	40.0	ug/L	EPA 8260B	8/9/07	96.5	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/9/07	97.6	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/9/07	89.6	70-130
Benzene	40.0	ug/L	EPA 8260B	8/9/07	96.8	70-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Approved By:


  
 Joel Kiff

Report Number : 57884

Date : 8/14/2007

**QC Report : Laboratory Control Sample (LCS)**

Project Name : **Alameda Gas**

Project Number : **3648**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Toluene	40.0	ug/L	EPA 8260B	8/9/07	97.7	70-130
Tert-Butanol	200	ug/L	EPA 8260B	8/9/07	99.4	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	8/9/07	93.2	70-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Approved By:

  
Joe Kiff

57884

Aqua Science Engineers, Inc.  
 208 W. El Pintado Road  
 Danville, CA 94526  
 (925) 820-9391  
 FAX (925) 837-4853

# Chain of Custody

SAMPLER (SIGNATURE) M. Rauer PROJECT NAME Alameda Gas PAGE 1 OF 1  
 ADDRESS 1310 Control Ave, Alameda, CA JOB NO. 3648

ANALYSIS REQUEST

SPECIAL INSTRUMENTATION: 0-8  
 Temp °C 0-8 Therm. ID# 12-5  
 Initial RR Date 080807  
 Time 1531 Coolant present  Yes / No

SAMPLE ID.	DATE	TIME	MATRIX	QUANTITY	TPH-GAS / MTBE & BTEX (EPA 5030/5015-6020)	TPH-DIESEL w/silica (EPA 3510/8015) <u>gel</u>	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5530)	LEAD (EPA 5010+7000)	CADMIUM METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES - S (EPA 8260) <u>STEX/TIN-6</u>	Pb (TOTAL or DISSOLVED) (EPA 6010)	PERFLUORINATED HALOGENATED COMPOUNDS (EPA 801/8010)	MULTI-RANGE HYDROCARBONS	SILICA-GEL CLEANUP	HOLD	
					MW - 1	8-6-07	1130	W	4		X									X	
MW - 2		1150				X									X						X
MW - 3		1230				X									X						X
MW - 4		1020				X									X						X
MW - 5		1050				X									X						X

RELINQUISHED BY: <u>M. Rauer</u> (signature) (time)	RECEIVED BY: <del>_____</del> (signature) (time)	RELINQUISHED BY: <del>_____</del> (signature) (time)	RECEIVED BY LABORATORY: <u>Jan Tooke</u> 1307 (signature) (time)	COMMENTS: <u>HU - VOA</u>
M. Rauer 8-6-07 (printed name) (date)	<del>_____</del> (printed name) (date)	<del>_____</del> (printed name) (date)	Jan Tooke 080807 (printed name) (date)	
Company: AGE, INC.	Company: <del>_____</del>	Company: <del>_____</del>	Company: <u>kitt Analytical</u>	TURN AROUND TIME STANDARD 24Hr 48Hr 72Hr OTHER: _____