



20 321  
JW p

November 22, 2005

DEC 9 2 2005

QUARTERLY GROUNDWATER MONITORING REPORT  
OCTOBER 2005 GROUNDWATER SAMPLING  
ASE JOB NO. 3412

at  
Yee Property  
726 Harrison Street  
Oakland, CA 94602

Prepared by:  
AQUA SCIENCE ENGINEERS, INC.  
208 W. El Pintado  
Danville, CA 94526  
(925) 820-9391

## 1.0 INTRODUCTION

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

Yee Property  
(Previously Former Chan's Shell Station)  
726 Harrison Street  
Oakland, CA 94602  
(510) 444-6583

### Responsible Party

Peter Yee  
1000 San Antonio Avenue  
Alameda, CA 94501

### Environmental Consulting Firm

Aqua Science Engineers, Inc. (ASE)  
208 W. El Pintado  
Danville, CA 94526  
Contact: Robert Kitay, Senior Geologist  
(925) 820-9391

### Agency Review

Alameda County Health  
Care Services Agency (ACHCSA)  
1131 Harbor Bay Pkwy  
Suite 250  
Alameda, CA 94502  
Contact: Mr. Barney Chan  
(510) 567-6700

California Regional Water  
Quality Control Board (RWQCB)  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612  
Contact: Ms. Betty Graham  
(510) 622-2433

The following is a report detailing the results of the October 2005 quarterly groundwater sampling at the Yee Property, previously referred to as the former Chan's Shell Station. This sampling was conducted as required by the ACHCSA and RWQCB. ASE has prepared this report on behalf of Peter Yee, the current responsible party, who purchased the property from Kin Chan. This report is intended to supplement the ASE report: "Report of Soil and Groundwater Assessment" dated January 8, 1999.

## 2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On October 18, 2005, ASE measured the depth to groundwater in all five site monitoring wells 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 or sheen was observed in any site well. ASE coordinated this groundwater sampling with Cambria Environmental Technology, Inc., (Cambria), who is investigating the adjacent property, located at 706 Harrison Street, referred to in this report as the former ARCO station. Groundwater elevation data for both sites are presented in Tables One and Two. A groundwater potentiometric surface map illustrating groundwater elevation contours is presented as Figure 2. The groundwater flow direction below the site is generally to the south at a gradient of 0.0087 feet/foot.

## 3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

On October 18, 2005, ASE collected groundwater samples from monitoring wells MW-1, MW-3, MW-4 and MW-5. With ACHCSA approval, quarterly groundwater sampling of MW-2 and extraction well EW-1 has been suspended. Prior to sampling, each well was purged of three well casing volumes of groundwater using disposable polyethylene bailers. Petroleum hydrocarbon odors were noted during the purging and sampling of all sampled monitoring wells. The parameters pH, temperature, and conductivity were monitored during the well purging, and samples were not collected until these parameters stabilized. Groundwater samples were collected from each well using disposable polyethylene bailers and 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. The samples were capped without headspace, labeled, and placed in coolers with wet ice for transport to Severn Trent Laboratories (STL) San Francisco of Pleasanton, California (ELAP #2496) under appropriate chain-of-custody documentation. Well sampling field logs are presented in Appendix A.

The well purge water was placed into a 55-gallon steel drum, labeled, and staged on-site for temporary storage until proper off-site disposal could be arranged.

The groundwater samples were analyzed by STL San Francisco for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015, and benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The analytical results for this and previous sampling periods are presented in Table Three. The certified analytical report and chain-of-custody documentation are included as Appendix B. Previous analytical data for the former ARCO station is summarized in Table Four.

## 4.0 CONCLUSIONS

- The results for MW-1 showed a decrease in the concentration of benzene.
- The results for MW-3, MW-4, and MW-5 showed a very significant increase in TPH-G and an increase MTBE concentrations.
- The results for MW-1 and MW-5 showed a slight decrease in benzene concentrations.

- Unless otherwise noted all other concentrations of hydrocarbons remained relatively similar in relation to the previous quarters results.

The following groundwater sample concentrations remain in excess of Environmental Screening Levels (ESLs) 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

- Monitoring wells MW-1, MW-3, MW-4, and MW-5 contained concentrations of TPH-G and MTBE in excess of the ESLs.
- Monitoring well MW-1 contained concentrations of benzene in excess of the ESL.
- Monitoring well MW-5 contained concentrations of benzene, ethyl benzene, toluene and xylene in excess of the ESLs.

## **5.0 RECOMMENDATIONS**

ASE recommends continued groundwater monitoring on a quarterly basis. The next groundwater sampling is scheduled for January 2005.

Additionally, ASE has received approval from the ACHCSA for a workplan to conduct in-situ chemical oxidation of hydrocarbons in the soil and groundwater below the site. The property has recently been purchased, and the remediation work will begin upon authorization by the new owner.

## **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 an independent CAL-DHS certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

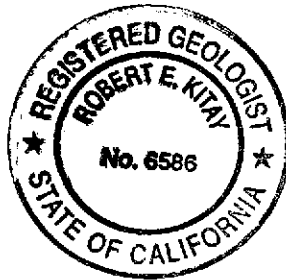
Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project, and trust that this report meets your needs. Please feel free to call us at (925) 820-9391 if you have any questions or comments.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



David Rains  
Project Geologist



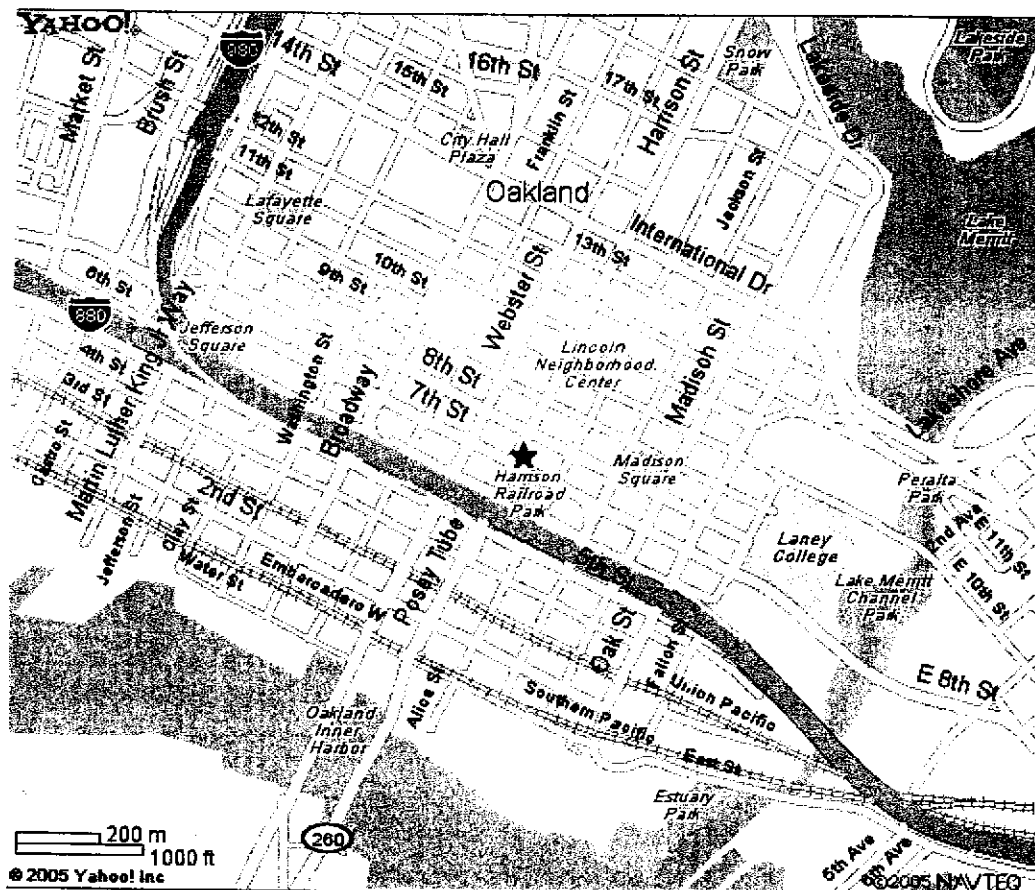
Robert E. Kitay, R.G., R.E.A.  
Senior Geologist

Attachments: Figures 1 and 2  
Appendices A and B

cc: Mr. Barney Chan, Alameda County Health Care Services  
Ms. Betty Graham, RWQCB, San Francisco Bay Region



NORTH



SITE LOCATION MAP	
726 HARRISON STREET OAKLAND, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	Figure 1

# 8TH STREET R0231

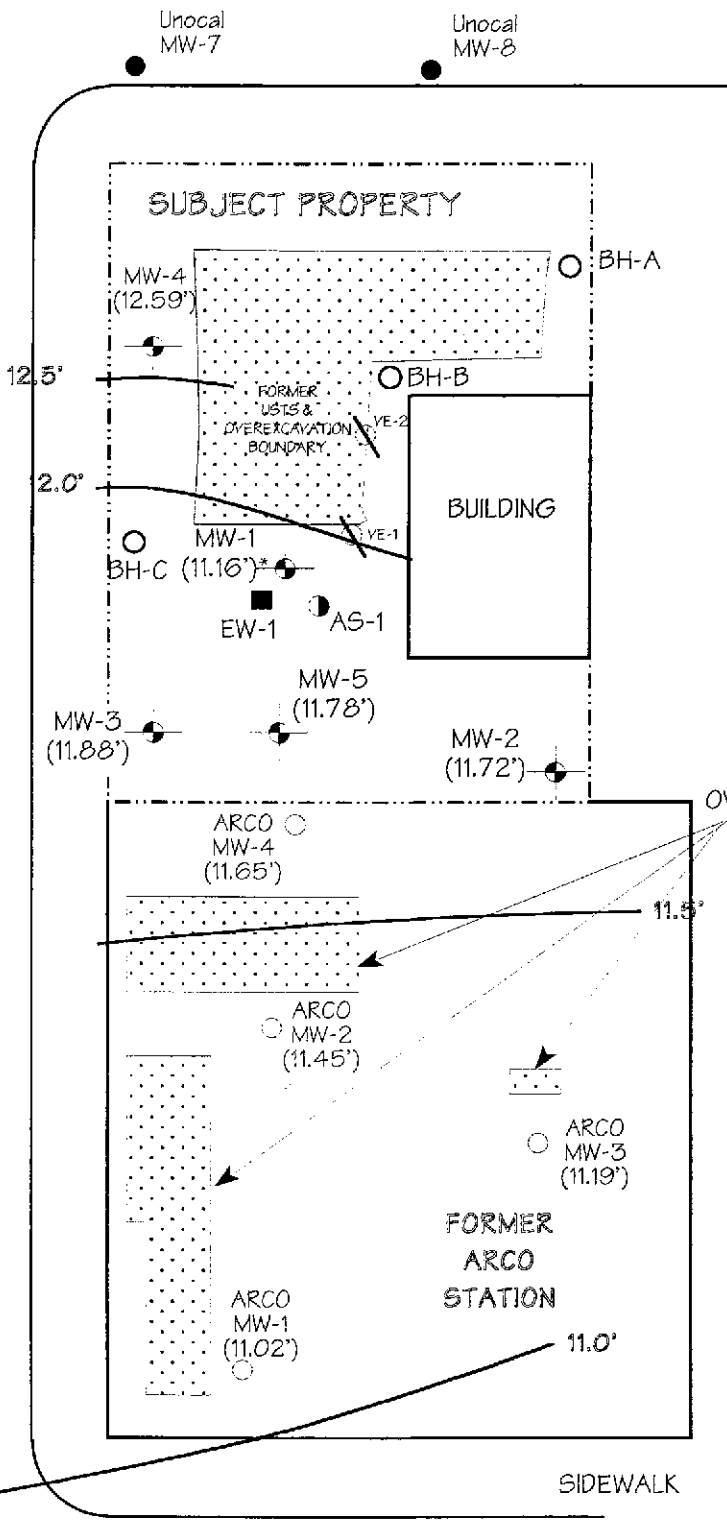


NORTH

SCALE  
1" = 30'

Approx. Groundwater Flow Direction

HARRISON STREET



**LEGEND**

- Approx. Groundwater Flow Direction
- MW-1 ASE Monitoring Well
- MW-1 Former ARCO Monitoring Well
- Groundwater elevation relative to MSL
- Groundwater elevation contour
- Anomalous data - Not used for contouring

GROUNDWATER ELEVATION  
CONTOUR MAP - 10/18/05

YEE PROPERTY  
726 HARRISON STREET  
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS | Figure 2

ARCO MW-7 (11.30')

ARCO MW-6 (10.48')

ARCO MW-5 (10.28')

**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation (project data)	
<b>MW-1</b>	12/15/98	31.95*	17.32	14.63	
	3/4/99		15.52	16.43	
	6/17/99		16.9	15.05	
	8/27/99		17.39	14.56	
	12/9/99		18.03	13.92	
	3/7/00		15.11	16.84	
	6/7/00		16.66	15.29	
	10/11/00		18.08	13.87	
	1/18/01		17.96	13.99	
	4/5/01		16.35	15.60	
	7/17/01	16.94	15.01		
	10/5/01	28.98	17.35	11.63	
	1/18/02		15.40	13.58	
	4/11/02		15.76	13.22	
	7/8/02		16.17	12.81	
	10/9/02		16.72	12.26	
	1/29/03		16.26	12.72	
	4/11/03		16.56	12.42	
	7/18/03		16.42	12.56	
	10/9/03		16.88	12.10	
	1/28/04		16.10	12.88	
	4/7/04		15.43	13.55	
	7/23/04		16.41	12.57	
	10/12/04		17.73	11.25	
	1/29/05		15.02	13.96	
4/28/05	14.99		13.99		
7/19/05	16.36	12.62			
<b>10/18/05</b>	<b>17.82</b>	<b>11.16</b>			
<b>MW-2</b>	12/15/98	32.40*	18.03	14.37	
	3/4/99		16.11	16.29	
	6/17/99		17.72	14.68	
	8/27/99		Inaccessible		
	12/9/99		Inaccessible		
	3/7/00		Inaccessible		
	6/7/00			17.67	14.73
	10/11/00			18.91	13.49
	1/18/01			18.66	13.74
	4/5/01			16.97	15.43
	7/17/01		17.54	14.86	
	10/5/01	29.44	17.98	11.46	
	1/18/02		15.87	13.57	
	4/11/02		16.36	13.08	
	7/8/02		16.72	12.72	
	10/9/02		17.33	12.11	
	1/29/03		16.82	12.62	
	4/11/03		17.15	12.29	
	7/18/03		17.05	12.39	
	10/9/03		17.52	11.92	
	1/28/04		16.70	12.74	
	4/7/04		16.02	13.42	
	7/23/04		Inaccessible		
	10/12/04			17.31	12.13
	1/29/05			15.46	13.98
4/28/05			15.79	13.65	
7/19/05		17.25	12.19		
<b>10/18/05</b>		<b>17.72</b>	<b>11.72</b>		



**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Lev)	Depth to Water (feet)	Groundwater Elevation (project data)
<b>MW-3</b>	12/15/98	31.61*	17.26	14.35
	3/4/99		15.47	16.14
	6/17/99		16.92	14.69
	8/27/99		17.40	14.21
	12/9/99		18.01	13.60
	3/7/00		16.15	15.46
	6/7/00		16.85	14.76
	10/11/00		18.07	13.54
	1/18/01		17.89	13.72
	4/5/01		16.21	15.40
	7/17/01		16.90	14.71
	10/5/01	28.64	17.32	11.32
	1/18/02		15.35	13.29
	4/11/02		15.82	12.82
	7/8/02		16.15	12.49
	10/9/02		16.67	11.97
	1/29/03		16.19	12.45
	4/11/03		16.49	12.15
	7/18/03		16.42	12.22
	10/9/03		16.80	11.84
	1/28/03		15.94	12.70
	4/7/04		15.28	13.36
	7/23/04		16.15	12.49
	10/12/04		16.63	12.01
	1/29/05		16.15	12.49
	4/28/05		14.94	13.70
	7/19/05		16.25	12.39
10/18/05		16.76	11.88	
<b>MW-4</b>	12/15/98	32.53*	17.59	14.94
	3/4/99		15.88	16.65
	6/17/99		17.14	15.39
	8/27/99		17.65	14.88
	12/9/99		18.28	14.25
	3/7/00		15.41	17.12
	6/7/00		17.09	15.44
	10/11/00		18.33	14.20
	1/18/01		18.23	14.30
	4/5/01		16.69	15.84
	7/17/01		17.32	15.21
	10/5/01	29.58	17.71	11.87
	1/18/02		15.85	13.73
	4/11/02		16.14	13.44
	7/8/02		16.56	13.02
	10/9/02		17.09	12.49
	1/29/03		16.65	12.93
	4/11/03		16.93	12.65
	7/18/03		16.78	12.80
	10/9/03		17.26	12.32
	1/28/04		16.38	13.20
	4/7/04		15.64	13.94
	7/23/04		16.58	13.00
	10/12/04	Inaccessible		
	1/29/05		14.90	14.68
	4/28/05		15.18	14.40
	7/19/05		16.48	13.10
10/18/05		16.99	12.59	

**TABLE ONE**  
**Groundwater Elevation Data**  
**Yee Property**  
**726 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation (Relative to Mean Sea Lev	Depth to Water (feet)	Groundwater Elevation (project data)
<b>MW-5</b>	8/29/01	29.06	17.42	11.64
	1/18/02		15.68	13.38
	4/11/02		16.17	12.89
	7/8/02		16.51	12.55
	10/9/02		17.10	11.96
	1/29/03		16.58	12.48
	4/11/03		16.87	12.19
	7/18/03		16.77	12.29
	10/9/03		17.21	11.85
	1/28/04		16.34	12.72
	4/7/04		15.38	13.68
	7/23/04		16.55	12.51
	10/12/04		17.02	12.04
	1/29/05		15.23	13.83
	4/28/05		15.41	13.65
	7/19/05		16.79	12.27
	10/18/05		17.28	11.78

\* Top of casing elevation relative to arbitrary project datum

**TABLE TWO**  
**Groundwater Elevation Data**  
**Former ARCO Station**  
**706 Harrison St., Oakland, CA**

Well ID	Date of Measurement	Top of Casing Elevation* (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	7/18/03	29.15	14.50	14.65
	10/9/03	26.17	13.81	12.36
	1/28/04		13.09	13.08
	4/7/04		14.97	11.20
	7/23/04		14.15	12.02
	10/12/04		16.30	9.87
	4/27/05		13.35	12.82
	7/19/05		14.68	11.49
	<b>10/18/05</b>		<b>15.15</b>	<b>11.02</b>
MW-2	7/18/03	30.51	16.84	13.67
	10/9/03	27.53	16.05	11.48
	1/28/04		15.39	12.14
	4/7/04		16.01	11.52
	7/23/04		15.30	12.23
	10/12/04		17.87	9.66
	4/27/05		14.63	12.90
	7/19/05		15.60	11.93
	<b>10/18/05</b>		<b>16.08</b>	<b>11.45</b>
MW-3	7/18/03	29.77	14.80	14.97
	10/9/03	26.79	14.13	12.66
	1/28/04		13.47	13.32
	4/7/04		15.41	11.38
	7/23/04		14.54	12.25
	10/12/04		16.58	10.21
	4/27/05		13.68	13.11
	7/19/05		15.15	11.64
	<b>10/18/05</b>		<b>15.60</b>	<b>11.19</b>
MW-4	7/18/03	31.18	17.08	14.10
	10/9/03	28.20	16.25	11.95
	1/28/04		15.65	12.55
	4/7/04		16.49	11.71
	7/23/04		15.86	12.34
	10/12/04		18.05	10.15
	4/27/05		14.20	14.00
	7/19/05		16.08	12.12
	<b>10/18/05</b>		<b>16.55</b>	<b>11.65</b>

TABLE TWO  
Groundwater Elevation Data  
Former ARCO Station  
706 Harrison St., Oakland, CA

Well ID	Date of Measurement	Top of Casing Elevation* (Relative to Mean Sea Level)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-5	7/18/03	28.04	14.28	13.76
	10/9/03	25.07	13.36	11.71
	1/28/04		12.68	12.39
	4/7/04		14.71	10.36
	7/23/04		13.49	11.58
	10/12/04		15.88	9.19
	4/27/05		13.40	11.67
	7/19/05		14.21	10.86
	<b>10/18/05</b>		<b>14.79</b>	<b>10.28</b>
MW-6	7/18/03	29.10	15.47	13.63
	10/9/03	26.13	14.73	11.40
	1/28/04		14.05	12.08
	4/7/04		14.41	11.72
	7/23/04		15.15	10.98
	10/12/04		17.27	8.86
	4/27/05		14.10	12.03
	7/19/05		15.18	10.95
	<b>10/18/05</b>		<b>15.65</b>	<b>10.48</b>
MW-7	7/18/03	29.67	15.19	14.48
	10/9/03	26.70	14.45	12.25
	1/28/04		13.88	12.82
	4/7/04		15.71	10.99
	7/23/04		14.85	11.85
	10/12/04		16.90	9.80
	4/27/05		13.75	12.95
	7/19/05		14.91	11.79
	<b>10/18/05</b>		<b>15.40</b>	<b>11.30</b>

\* Survey data updated on 10/27/2003

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-1</b>						
7/3/97	18,000	2,700	350	450	900	7,400
12/5/98	18,000	1,500	270	260	560	14,000
3/4/99	44,000	2,800	400	440	960	43,000
6/17/99	33,000	2,200	250	460	660	25,000
8/27/99	6,000	1,000	97	190	230	14,000/ 16,000*
12/9/99	15,000	1,500	160	220	420	17,000
3/7/00	9,300	1,500	210	66	530	12,000
6/7/00	26,000**	1,700	< 250	360	580	30,000
10/11/00	13,000**	1,600	< 100	140	160	19,000
1/18/01	14,000**	450	< 100	110	230	9,600
4/5/01	38,000	2,200	180	290	590	35,000
7/17/01	35,000**	1,800	< 100	300	170	35,000
10/5/01	17,000	1,500	210	420	790	27,000
1/18/02	18,000	1,500	120	160	220	22,000
4/11/02	41,000	2,700	210	340	380	30,000
7/8/02	36,000	2,800	140	360	300	31,000
10/9/02	30,000	1,700	310	< 100	< 100	19,000
1/29/03	26,000	2,400	< 100	310	520	20,000
4/11/03	22,000	1,700	< 100	270	580	16,000
7/18/03	40,000	3,200	290	480	830	39,000
10/9/03	54,000**	3,300	< 130	350	310	49,000
1/28/04	26,000***	3,000	310	420	800	31,000
4/7/04	33,000***	2,800	130	310	310	39,000
7/23/04	56,000***	4,500	< 250	390	< 500	53,000
10/12/04	25,000***	1,400	< 250	< 250	< 500	25,000
1/29/05	24,000	1,600	< 100	160	< 200	19,000
4/28/05	< 10,000	2,000	< 100	160	100	34,000
7/19/05	37,000	2,100	83	210	230	28,000
10/18/05	37,000	1,300	< 250	< 250	< 250	23,000

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-3</b>						
12/5/98	6,500***	< 50	50	60	50	3,900
3/4/99	2,800	< 25	< 25	< 25	< 25	1,600
6/17/99	1,000	< 10	< 10	< 10	< 10	1,400
8/27/99	230	< 0.5	0.51	0.5	1	1,500/ 1,600*
12/9/99	870**	< 0.5	< 0.5	< 0.5	< 0.5	2,100
3/7/00	150**	4	< 0.5	< 0.5	< 0.5	830
6/7/00	140**	< 0.5	< 0.5	< 0.5	< 0.5	1,100
10/11/00	620**	< 5.0	< 5.0	< 5.0	< 5.0	1,500
1/18/01	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	1,000
4/5/01	1,700**	< 5.0	< 5.0	< 5.0	< 5.0	1,900
7/17/01	1,400**	< 10	< 10	< 10	< 10	1,700
10/5/01	< 1,000	< 10	< 10	< 10	< 10	1,700
1/18/02	1,600	26	20	16	54	2,100
4/11/02	2,600	21	16	< 10	21	2,300
7/8/02	2,800	< 10	< 10	< 10	< 10	3,800
10/9/02	6,000	< 50	< 50	< 50	< 50	4,900
1/29/03	1,800	< 10	< 10	< 10	< 10	2,300
4/11/03	2,900	< 25	< 25	< 25	< 25	3,100
7/18/03	3,400	< 10	< 10	< 10	< 10	3,200
10/9/03	2,300	< 10	< 10	< 10	< 10	2,700
1/28/03	1,700**	< 10	< 10	< 10	< 10	2,900
4/7/04	2,700**	< 10	< 10	< 10	< 20	3,600
7/23/04	4,200**	< 25	< 25	< 25	< 50	4,900
10/12/04	5,000**	< 50	< 50	< 50	< 100	5,800
1/29/05	< 1,000	< 10	< 10	< 10	< 20	3,100
4/28/05	< 200	< 2.0	< 2.0	< 2.0	< 2.0	1,300
7/19/05	4,400	< 20	< 20	< 20	< 40	3,000
10/18/05	18,000	< 50	< 50	< 50	< 50	6,800

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-4</b>						
12/5/98	880	3	< 0.5	< 0.5	< 0.5	950
3/4/99	3,800	< 25	< 25	< 25	< 25	3,700
6/17/99	2,700	< 25	< 25	< 25	< 25	2,700
8/27/99	440	4.7	1.1	0.58	1.3	1,600/ 1,700*
12/9/99	1,100**	< 2.5	< 2.5	< 2.5	< 2.5	1,700
3/7/00	< 250	< 2.5	< 2.5	< 2.5	< 2.5	1,700
6/7/00	530**	8.8	< 2.5	< 2.5	< 2.5	440
10/11/00	700**	3.9	< 2.5	< 2.5	< 2.5	680
1/18/01	2,000**	< 2.5	< 2.5	< 2.5	< 2.5	780
4/5/01	810**	< 2.5	< 2.5	< 2.5	< 2.5	620
7/17/01	880**	< 2.5	< 2.5	< 2.5	< 2.5	570
10/5/01	550**	< 2.5	< 2.5	< 2.5	< 2.5	710
1/18/02	960**	< 5.0	< 5.0	< 5.0	< 5.0	1,300
4/11/02	1,100**	< 5.0	< 5.0	< 5.0	< 5.0	550
7/8/02	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	890
10/9/02	1,300**	< 5.0	< 5.0	< 5.0	< 5.0	880
1/29/03	530**	< 1.0	< 1.0	< 1.0	< 1.0	190
4/11/03	690**	< 2.5	< 2.5	< 2.5	< 2.5	310
7/18/03	1,600**	< 10	< 10	< 10	< 10	1,300
10/9/03	1500***	< 10	< 10	< 10	< 10	1,400
1/28/04	1,200**	< 10	< 10	< 10	< 10	1,900
4/7/04	1,900**	< 10	< 10	< 10	< 20	2,200
7/23/04	1,800**	< 10	< 10	< 10	< 20	1,600
10/12/04		Inaccessible due to car parked over well				
1/29/05	< 1,300	< 13	< 13	< 13	< 25	3,900
4/28/05	510	< 1.5	< 1.5	< 1.5	< 1.5	510
7/19/05	5,400	< 50	< 50	< 50	< 100	2,700
10/18/05	10,000	< 50	< 50	< 50	< 50	9,000

**TABLE THREE**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Yee Property**  
**726 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-5</b>						
8/29/01	14,000	1,300	470	230	800	14,000
1/18/02	24,000	3,200	1,300	390	1,500	5,700
4/11/02	23,000	2,700	980	38	950	4,300
7/8/02	19,000	3,300	25	360	1,100	2,100
10/9/02	24,000	2,800	990	360	820	2,400
1/29/03	17,000	2,100	1,400	380	1,400	< 250
4/11/03	26,000	2,900	2,200	590	2,200	630
7/18/03	26,000	3,500	1,700	480	1,300	1,300
10/9/03	27,000	3,800	1,900	510	1,700	1,200
1/28/04	29,000	4,800	2,900	770	2,300	3,300
4/7/04	23,000	4,400	2,700	720	2,200	1,700
7/23/04	29,000	5,200	2,200	810	1,400	2,200
10/12/04	26,000	4,300	2,000	670	1,300	2,200
1/29/05	29,000	4,600	2,500	750	1,400	2,200
4/28/05	32,000	3,300	2,300	530	2,100	4,100
7/19/05	39,000	4,300	2,300	690	1,500	5,400
10/18/05	110,000	3,400	1,900	540	1,600	13,000
ESL	400	46	130	290	13	1,800

Notes:

\* EPA Method 8020/EPA Method 8260 (MTBE confirmation)

\*\* Hydrocarbon reported in the gasoline range does not match the laboratory gasoline standard

\*\*\* Sample contains a discrete peak in addition to gasoline

ESL = Environmental screening levels presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (July 2003)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

Most current data is in **Bold**

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory method reporting limit.



**TABLE FOUR**  
**Summary of Analytical Results for GROUNDWATER Samples**  
**Former ARCO Station**  
**706 Harrison St., Oakland, CA**  
**All results are in parts per billion (ppb)**

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-1</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
10/9/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/7/04	180	60	0.56	1.9	< 0.5	< 5.0
7/23/04	130	36	< 0.5	0.65	< 0.5	< 5.0
10/12/04	< 50	2.5	1.5	< 0.5	0.86	< 5.0
4/27/05	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/19/05	4,500	1400	6.5	160	58	630
10/18/05	1,700	3400	< 5.0	28	< 5.0	8,000/17,200
<b>MW-2</b>						
7/18/03	57,000	2,100	8,700	2,200	10,000	< 50*
10/9/03	49,000	1,800	7,000	1,700	7,600	< 1,500/26
1/28/04	550	21	33	3	61	< 100
4/7/04	41,000	2,500	11,000	1,900	8,000	< 2,000
7/23/04	81,000	2,000	12,000	2,500	12,000	< 2,000
10/12/04	75,000	2,600	13,000	2,300	11,000	< 1,300
4/27/05	61,000	2,800	11,000	1,600	7,000	< 2,700
7/19/05	90,000	3,700	14,000	2,600	10,000	< 7,000
10/18/05	77,000	3,300	14,000	2,400	11,000	7,900/16,400
<b>MW-3</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/23/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
<b>MW-4</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.74*
10/9/03	210	5	0.57	1.6	1.1	< 10/10
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/12/04	770	56	3.2	7.0	6.5	120/160
7/23/04	1100	130	11	17.0	17	790/800
10/12/04	150	0.86	< 0.5	< 0.5	0.97	< 10
4/27/05	3,000	520	100	27	86	600/480
7/19/05	1,800	310	16	36	25	1,000/1,100
7/19/05	2,500	450	28	47	51	3,800/4,500

TABLE FOUR  
 Summary of Analytical Results for GROUNDWATER Samples  
 Former ARCO Station  
 706 Harrison St., Oakland, CA  
 All results are in parts per billion (ppb)

Well ID & Dates Sampled	TPH-G	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<b>MW-5</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/23/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
<b>MW-6</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/23/04	3,300	1,300	< 5.0	52	9.7	< 50
4/27/05	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0/< 0.5
7/19/05	110	15	< 0.5	0.62	< 0.5	< 5.0
<b>10/18/05</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; 5.0/0.87</b>
<b>MW-7</b>						
7/18/03	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/28/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/23/04	< 50	< 0.5	< 0.5	< 0.5	< 0.5	130/120
4/27/05	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0/1.3
7/19/05	< 50	< 0.5	< 0.5	< 0.5	< 0.5	65/66
<b>10/18/05</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>12/15</b>
ESL	400	46	130	290	13	1,800

Notes:

\* Indicates EPA Method 8260

Concentrations separated by a "/" indicate results by both EPA Methods 8020/8260

ESL = Environmental screening levels presented in the "Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater (July 2003)" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region.

Most current data is in **Bold**

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory method reporting limit.

# APPENDIX A

## Well Sampling Field Logs

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME	Yee		
JOB NUMBER	3412	DATE OF SAMPLING	10/18/05
WELL ID.	MW-1	SAMPLER	dwr
TOTAL DEPTH OF WELL	27.2	WELL DIAMETER	2
DEPTH TO WATER PRIOR TO PURGING	17.82		
PRODUCT THICKNESS	0		
DEPTH OF WELL CASING IN WATER	9.4		
NUMBER OF GALLONS PER WELL CASING VOLUME	1.6		
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	3		
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING	4.8		
EQUIPMENT USED TO PURGE WELL	disposable bailer		
TIME EVACUATION STARTED	0838	TIME EVACUATION COMPLETED	0845
TIME SAMPLES WERE COLLECTED	0848		
DID WELL GO DRY	no	AFTER HOW MANY GALLONS	—
VOLUME OF GROUNDWATER PURGED	4.8		
SAMPLING DEVICE	disposable bailer		
SAMPLE COLOR	clear	ODOR/SEDIMENT	h/k no

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1	64.8	6.89	498
2	65.8	6.85	567
3	65.9	6.82	573

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-1	3	40ml VOA		Y

~ 10 gal Transpare Remain

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME	Yee		
JOB NUMBER	3412	DATE OF SAMPLING	10/18/05
WELL ID.	MW-2	SAMPLER	dwr
TOTAL DEPTH OF WELL		WELL DIAMETER	2
DEPTH TO WATER PRIOR TO PURGING	7.72		
PRODUCT THICKNESS	<i>0</i>		
DEPTH OF WELL CASING IN WATER			
NUMBER OF GALLONS PER WELL CASING VOLUME			
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	3		
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING			
EQUIPMENT USED TO PURGE WELL	disposable bailer		
TIME EVACUATION STARTED	TIME EVACUATION COMPLETED		
TIME SAMPLES WERE COLLECTED			
DID WELL GO DRY	AFTER HOW MANY GALLONS		
VOLUME OF GROUNDWATER PURGED			
SAMPLING DEVICE	disposable bailer		
SAMPLE COLOR	ODOR/SEDIMENT		

**CHEMICAL DATA** *NOT SAMPLED*

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1			
2			
3			

**SAMPLES COLLECTED**

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-2	3	40ml VOA		Y

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME	Yee		
JOB NUMBER	3412	DATE OF SAMPLING	10/18/05
WELL ID.	MW-3	SAMPLER	dwr
TOTAL DEPTH OF WELL	21.2	WELL DIAMETER	2
DEPTH TO WATER PRIOR TO PURGING	14.76		
PRODUCT THICKNESS	0		
DEPTH OF WELL CASING IN WATER	12.44		
NUMBER OF GALLONS PER WELL CASING VOLUME	2.1		
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	3		
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING	4.3		
EQUIPMENT USED TO PURGE WELL	disposable bailer		
TIME EVACUATION STARTED	TIME EVACUATION COMPLETED		
TIME SAMPLES WERE COLLECTED	0828		
DID WELL GO DRY	no	AFTER HOW MANY GALLONS	n/a
VOLUME OF GROUNDWATER PURGED	4.3		
SAMPLING DEVICE	disposable bailer		
SAMPLE COLOR	yellow	ODOR/SEDIMENT	h.c./s.l.t

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1	63.8	7.61	403
2	65.7	7.03	443
3	65.0	7.03	480

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-3	3	40ml VOA		Y

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME	Yee		
JOB NUMBER	3412	DATE OF SAMPLING	10/18/05
WELL ID.	MW-4	SAMPLER	dwr
TOTAL DEPTH OF WELL	29.7	WELL DIAMETER	2
DEPTH TO WATER PRIOR TO PURGING	16.99		
PRODUCT THICKNESS	0		
DEPTH OF WELL CASING IN WATER	12.71		
NUMBER OF GALLONS PER WELL CASING VOLUME	2.16		
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	3		
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING	4.48		
EQUIPMENT USED TO PURGE WELL	disposable bailer		
TIME EVACUATION STARTED	7:50	TIME EVACUATION COMPLETED	8:05
TIME SAMPLES WERE COLLECTED	8:08		
DID WELL GO DRY	no	AFTER HOW MANY GALLONS	2/2
VOLUME OF GROUNDWATER PURGED	6.5		
SAMPLING DEVICE	disposable bailer		
SAMPLE COLOR	clear	ODOR/SEDIMENT	hc / no

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1	66.3	7.57	723
2	65.1	7.23	601
3	64.9	7.17	597

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-4	3	40ml VOA		Y

# AQUA SCIENCE ENGINEERS

## WELL SAMPLING FIELD LOG

PROJECT NAME	Yee		
JOB NUMBER	3412	DATE OF SAMPLING	10/18/05
WELL ID.	MW-5	SAMPLER	dwr
TOTAL DEPTH OF WELL	98.5	WELL DIAMETER	2
DEPTH TO WATER PRIOR TO PURGING	17.28		
PRODUCT THICKNESS	—		
DEPTH OF WELL CASING IN WATER	11.22		
NUMBER OF GALLONS PER WELL CASING VOLUME	1.9		
NUMBER OF WELL CASING VOLUMES TO BE REMOVE	3		
REQUIRED VOLUME OF GROUNDWATER TO BE PURGED PRIOR TO SAMPLING	5.72		
EQUIPMENT USED TO PURGE WELL	disposable bailer		
TIME EVACUATION STARTED	8:51	TIME EVACUATION COMPLETED	9:15
TIME SAMPLES WERE COLLECTED	9:18		
DID WELL GO DRY	no	AFTER HOW MANY GALLONS	n/a
VOLUME OF GROUNDWATER PURGED	5.75		
SAMPLING DEVICE	disposable bailer		
SAMPLE COLOR	clear	ODOR/SEDIMENT	hc / clear

### CHEMICAL DATA

VOLUME PURGED	TEMPERATURE	PH	CONDUCTIVITY
1	64.7	6.83	892
2	65.0	6.65	915
3	64.8	6.61	920

### SAMPLES COLLECTED

SAMPLE	# OF CONTAINERS	SIZE AND TYPE OF CONTAINER	ANALYSIS	PRESERVED
MW-5	3	40ml VOA		Y



# APPENDIX B

Certified Analytical Report  
and  
Chain of Custody Documentation

## ANALYTICAL REPORT

Job Number: 720-197-1

Job Description: Yee Oakland

For:

Aqua Science Engineers Inc  
208 West El Pintado Road  
Danville, CA 94526

Attention: Dave Allen

*Surinder Sidhu*

---

Surinder Sidhu  
Project Manager I  
ssidhu@stl-inc.com  
10/27/2005

**Severn Trent Laboratories, Inc.**

STL San Francisco 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925-484-1919 Fax 925-484-1096 [www.stl-inc.com](http://www.stl-inc.com)

## METHOD SUMMARY

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	STL-SF	SW846 8015B	
Purge-and-Trap	STL-SF		SW846 5030B
Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD	STL-SF	SW846 8021B	
Purge-and-Trap	STL-SF		SW846 5030B

### LAB REFERENCES:

STL-SF = STL-San Francisco

### METHOD REFERENCES:

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

## SAMPLE SUMMARY

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Client Matrix</b>	<b>Date/Time Sampled</b>	<b>Date/Time Received</b>
720-197-1	MW 1	Water	10/18/2005 0848	10/19/2005 1500
720-197-2	MW 3	Water	10/18/2005 0828	10/19/2005 1500
720-197-3	MW 4	Water	10/18/2005 0808	10/19/2005 1500
720-197-4	MW 5	Water	10/18/2005 0918	10/19/2005 1500

**Analytical Data**

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 1

Lab Sample ID: 720-197-1

Date Sampled: 10/18/2005 0848

Client Matrix: Water

Date Received: 10/19/2005 1500

---

**8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)**

Method:	8015B	Analysis Batch: 720-1228	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B		Lab File ID:	N/A
Dilution:	500		Initial Weight/Volume:	10 mL
Date Analyzed:	10/26/2005 1203		Final Weight/Volume:	10 mL
Date Prepared:	10/26/2005 1203		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12	37000		25000
Surrogate	%Rec		Acceptance Limits
4-Bromofluorobenzene	98		50 - 150

**Analytical Data**

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 3

Lab Sample ID: 720-197-2

Date Sampled: 10/18/2005 0828

Client Matrix: Water

Date Received: 10/19/2005 1500

---

**8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)**

Method: 8015B Analysis Batch: 720-1228 Instrument ID: PID/FID Gas/Btex  
Preparation: 5030B Lab File ID: N/A  
Dilution: 100 Initial Weight/Volume: 10 mL  
Date Analyzed: 10/26/2005 1748 Final Weight/Volume: 10 mL  
Date Prepared: 10/26/2005 1748 Injection Volume:  
Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12	18000		5000
Surrogate	%Rec		Acceptance Limits
4-Bromofluorobenzene	98		50 - 150

**Analytical Data**

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 4

Lab Sample ID: 720-197-3

Date Sampled: 10/18/2005 0808

Client Matrix: Water

Date Received: 10/19/2005 1500

---

**8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)**

Method:	8015B	Analysis Batch: 720-1228	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B		Lab File ID:	N/A
Dilution:	100		Initial Weight/Volume:	10 mL
Date Analyzed:	10/26/2005 1822		Final Weight/Volume:	10 mL
Date Prepared:	10/26/2005 1822		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12	10000		5000
Surrogate	%Rec		Acceptance Limits
4-Bromofluorobenzene	97		50 - 150

Analytical Data

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 5

Lab Sample ID: 720-197-4

Date Sampled: 10/18/2005 0918

Client Matrix: Water

Date Received: 10/19/2005 1500

8015B Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Method:	8015B	Analysis Batch: 720-1228	Instrument ID: PID/FID Gas/Btex
Preparation:	5030B		Lab File ID: N/A
Dilution:	500		Initial Weight/Volume: 10 mL
Date Analyzed:	10/26/2005 1344		Final Weight/Volume: 10 mL
Date Prepared:	10/26/2005 1344		Injection Volume:
			Column ID: PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Gasoline Range Organics (GRO)-C5-C12	110000		25000
Surrogate	%Rec		Acceptance Limits
4-Bromofluorobenzene	99		50 - 150



# Analytical Data

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 1

Lab Sample ID: 720-197-1

Date Sampled: 10/18/2005 0848

Client Matrix: Water

Date Received: 10/19/2005 1500

## 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:	8021B	Analysis Batch: 720-1193	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B		Lab File ID:	N/A
Dilution:	500		Initial Weight/Volume:	10 mL
Date Analyzed:	10/24/2005 1203		Final Weight/Volume:	10 mL
Date Prepared:	10/24/2005 1203		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Benzene	1300		250
Toluene	ND		250
Ethylbenzene	ND		250
MTBE	23000		2500
Xylenes, Total	ND		250
Surrogate	%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)	101		58 - 124
4-Bromofluorobenzene	94		50 - 150

## Analytical Data

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 3

Lab Sample ID: 720-197-2

Date Sampled: 10/18/2005 0828

Client Matrix: Water

Date Received: 10/19/2005 1500

### 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:	8021B	Analysis Batch: 720-1193	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B		Lab File ID:	N/A
Dilution:	100		Initial Weight/Volume:	10 mL
Date Analyzed:	10/24/2005 1748		Final Weight/Volume:	10 mL
Date Prepared:	10/24/2005 1748		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		50
Toluene	ND		50
Ethylbenzene	ND		50
MTBE	6800		500
Xylenes, Total	ND		50
Surrogate	%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)	97		58 - 124
4-Bromofluorobenzene	92		50 - 150

# Analytical Data

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 4

Lab Sample ID: 720-197-3

Client Matrix: Water

Date Sampled: 10/18/2005 0808

Date Received: 10/19/2005 1500

## 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:	8021B	Analysis Batch:	720-1193	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B			Lab File ID:	N/A
Dilution:	100			Initial Weight/Volume:	10 mL
Date Analyzed:	10/24/2005 1822			Final Weight/Volume:	10 mL
Date Prepared:	10/24/2005 1822			Injection Volume:	
				Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Benzene	ND		50
Toluene	ND		50
Ethylbenzene	ND		50
MTBE	9000		500
Xylenes, Total	ND		50
Surrogate	%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)	96		58 - 124
4-Bromofluorobenzene	92		50 - 150

# Analytical Data

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Client Sample ID: MW 5

Lab Sample ID: 720-197-4

Date Sampled: 10/18/2005 0918

Client Matrix: Water

Date Received: 10/19/2005 1500

## 8021B Aromatic and Halogenated VOCs by Gas Chromatography using PID or ECD

Method:	8021B	Analysis Batch: 720-1193	Instrument ID:	PID/FID Gas/Btex
Preparation:	5030B		Lab File ID:	N/A
Dilution:	500		Initial Weight/Volume:	10 mL
Date Analyzed:	10/24/2005 1344		Final Weight/Volume:	10 mL
Date Prepared:	10/24/2005 1344		Injection Volume:	
			Column ID:	PRIMARY

Analyte	Result (ug/L)	Qualifier	RL
Benzene	3400		250
Toluene	1900		250
Ethylbenzene	540		250
MTBE	13000		2500
Xylenes, Total	1600		250
Surrogate	%Rec		Acceptance Limits
a,a,a-Trifluorotoluene (pid)	100		58 - 124
4-Bromofluorobenzene	93		50 - 150

## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Client Matrix	Method	Prep Batch
<b>GC VOA</b>				
<b>Analysis Batch:720-1186</b>				
LCS 720-1186/2	Lab Control Spike	Water	8015B	
MB 720-1186/1	Method Blank	Water	8015B	
<b>Analysis Batch:720-1193</b>				
LCS 720-1193/2	Lab Control Spike	Water	8021B	
MB 720-1193/1	Method Blank	Water	8021B	
720-197-1	MW 1	Water	8021B	
720-197-2	MW 3	Water	8021B	
720-197-3	MW 4	Water	8021B	
720-197-3MS	Matrix Spike	Water	8021B	
720-197-3MSD	Matrix Spike Duplicate	Water	8021B	
720-197-4	MW 5	Water	8021B	
<b>Analysis Batch:720-1228</b>				
LCS 720-1228/5	Lab Control Spike	Water	8015B	
MB 720-1228/4	Method Blank	Water	8015B	
720-197-1	MW 1	Water	8015B	
720-197-2	MW 3	Water	8015B	
720-197-2MS	Matrix Spike	Water	8015B	
720-197-2MSD	Matrix Spike Duplicate	Water	8015B	
720-197-3	MW 4	Water	8015B	
720-197-4	MW 5	Water	8015B	

## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

**Method Blank - Batch: 720-1186**

**Method: 8015B  
Preparation: 5030B**

Lab Sample ID: MB 720-1186/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/21/2005 1006  
Date Prepared: 10/21/2005 1006

Analysis Batch: 720-1186  
Prep Batch: N/A  
Units: ug/L

Instrument ID: GC 5  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	RL
Gasoline Range Organics (GRO)-C5-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	93	50 - 150

**Laboratory Control Sample - Batch: 720-1186**

**Method: 8015B  
Preparation: 5030B**

Lab Sample ID: LCS 720-1186/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/21/2005 1114  
Date Prepared: 10/21/2005 1114

Analysis Batch: 720-1186  
Prep Batch: N/A  
Units: ug/L

Instrument ID: GC 5  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Gasoline Range Organics (GRO)-C5-C12	250	220	89	75 - 125	

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	91	50 - 150

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

## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

**Method Blank - Batch: 720-1228**

**Method: 8015B  
Preparation: 5030B**

Lab Sample ID: MB 720-1228/4  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/26/2005 1006  
Date Prepared: 10/26/2005 1006

Analysis Batch: 720-1228  
Prep Batch: N/A  
Units: ug/L

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	RL
Gasoline Range Organics (GRO)-C5-C12	ND		50

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	100	50 - 150

**Laboratory Control Sample - Batch: 720-1228**

**Method: 8015B  
Preparation: 5030B**

Lab Sample ID: LCS 720-1228/5  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/26/2005 1114  
Date Prepared: 10/26/2005 1114

Analysis Batch: 720-1228  
Prep Batch: N/A  
Units: ug/L

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Gasoline Range Organics (GRO)-C5-C12	250	230	92	75 - 125	

Surrogate	% Rec	Acceptance Limits
4-Bromofluorobenzene	97	50 - 150

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

## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-1228**

**Method: 8015B  
Preparation: 5030B**

MS Lab Sample ID: 720-197-2  
Client Matrix: Water  
Dilution: 100  
Date Analyzed: 10/26/2005 2004  
Date Prepared: 10/26/2005 2004

Analysis Batch: 720-1228  
Prep Batch: N/A

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

MSD Lab Sample ID: 720-197-2  
Client Matrix: Water  
Dilution: 100  
Date Analyzed: 10/26/2005 2038  
Date Prepared: 10/26/2005 2038

Analysis Batch: 720-1228  
Prep Batch: N/A

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Gasoline Range Organics (GRO)-C5-C12	39	25	65 - 135	13	20	*	*
Surrogate	MS % Rec		MSD % Rec	Acceptance Limits			
4-Bromofluorobenzene	94		86	50 - 150			

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



## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

### Method Blank - Batch: 720-1193

**Method: 8021B**  
**Preparation: 5030B**

Lab Sample ID: MB 720-1193/1  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/24/2005 0000  
Date Prepared: 10/24/2005 0000

Analysis Batch: 720-1193  
Prep Batch: N/A  
Units: ug/L

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Result	Qual	RL
Benzene	ND		0.50
Toluene	ND		0.50
Ethylbenzene	ND		0.50
MTBE	ND		5.0
Xylenes, Total	ND		0.50

Surrogate	% Rec	Acceptance Limits
a,a,a-Trifluorotoluene (pid)	99	58 - 124
4-Bromofluorobenzene	96	50 - 150

### Laboratory Control Sample - Batch: 720-1193

**Method: 8021B**  
**Preparation: 5030B**

Lab Sample ID: LCS 720-1193/2  
Client Matrix: Water  
Dilution: 1.0  
Date Analyzed: 10/25/2005 1040  
Date Prepared: 10/25/2005 1040

Analysis Batch: 720-1193  
Prep Batch: N/A  
Units: ug/L

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	50.5	49	98	77 - 123	
Toluene	50.4	49	97	78 - 122	
Ethylbenzene	50.3	50	100	70 - 130	
MTBE	49.4	49	100	60 - 130	
Xylenes, Total	152	150	99	75 - 125	

Surrogate	% Rec	Acceptance Limits
a,a,a-Trifluorotoluene (pid)	99	58 - 124
4-Bromofluorobenzene	93	50 - 150

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

## Quality Control Results

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

**Matrix Spike/  
Matrix Spike Duplicate Recovery Report - Batch: 720-1193**

**Method: 8021B  
Preparation: 5030B**

MS Lab Sample ID: 720-197-3  
Client Matrix: Water  
Dilution: 100  
Date Analyzed: 10/25/2005 1856  
Date Prepared: 10/25/2005 1856

Analysis Batch: 720-1193  
Prep Batch: N/A

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

MSD Lab Sample ID: 720-197-3  
Client Matrix: Water  
Dilution: 100  
Date Analyzed: 10/25/2005 1930  
Date Prepared: 10/25/2005 1930

Analysis Batch: 720-1193  
Prep Batch: N/A

Instrument ID: PID/FID Gas/Btex  
Lab File ID: N/A  
Initial Weight/Volume: 10 mL  
Final Weight/Volume: 10 mL  
Injection Volume:  
Column ID: PRIMARY

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	96	96	65 - 135	0	20		
Toluene	95	95	65 - 135	0	20		
Ethylbenzene	97	98	65 - 135	1	20		
MTBE	39	29	60 - 130	5	20	*	*
Xylenes, Total	95	97	65 - 135	1	20		
Surrogate	MS % Rec		MSD % Rec		Acceptance Limits		
a,a,a-Trifluorotoluene (pid)	96		98		58 - 124		
4-Bromofluorobenzene	91		93		50 - 150		

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

98454



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

# Chain of Custody

720-197

Analytical Laboratory Name: STL										Type of Analysis to be Performed				Other		Turnaround Time			
Project Name: Yee					Sample Location: Oakland, CA														
Sampled by: David Rains					Sampler Signature: 														
Sample ID	Sample Type		Matrix				Method Preserved				Sampling		TPH-G/MTBE & BETX (EPA 5030/8015/8020)	Standard	1 day	2 day	5 day	Other	
	Grab	Composite	Water	Soil	concrete	Other	Cold (4° C)	HCL	HNO3	Other	Number of Containers	Date							Time
MW 1	X		X				X				3	18-Oct	0848	X	X				
<del>MW 2</del>	<del>X</del>		<del>X</del>				<del>X</del>				<del>3</del>	<del>18-Oct</del>	<del>0848</del>	<del>X</del>	<del>X</del>				
MW 3													8:20						
MW 4													8:08						
MW 5	↓		↓				↓						9:18	↓					
Total # of containers: 18 / 12										Comments:									
Relinquished by:		Date	Time	Received by:		Date	Time												
		10/14/05	1250			10/19	1250												
		10/19	1500			10-19-05	1500	REC'D HCL VIALS TEMP 3°C											

Page 18 of 19

## LOGIN SAMPLE RECEIPT CHECK LIST

Client: Aqua Science Engineers Inc

Job Number: 720-197-1

Login Number: 197

Question	T/F/NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	NA	
The cooler's custody seal, if present.	NA	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Received 40ML Hcl vials
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present	True	
Samples do not require splitting or compositing	True	