



R0321

August 27, 2002

AUG 29 2002

QUARTERLY GROUNDWATER MONITORING REPORT  
JULY 2002 GROUNDWATER SAMPLING  
ASE JOB NO. 3412

at  
Former Chan's Shell Station  
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

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

### Responsible Party

Kin Chan  
4328 Edgewood Avenue  
Oakland, CA 94602

### 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

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

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

The following is a report detailing the results of the July 2002 quarterly groundwater sampling at 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 Kin Chan, property owner. 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 July 8, 2002, ASE measured the depth to groundwater in five site monitoring wells and one site extraction 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 or sheen were observed in any site well. Groundwater elevation data is presented in Table One. A groundwater potentiometric surface map is presented as Figure 2. The groundwater flow direction is generally to the south/southwest with a gradient of approximately 0.0095-feet/foot.

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

Prior to sampling, monitoring wells MW-1, MW-3, MW-4, MW-5, and extraction well EW-1 were purged of four well casing volumes of groundwater using dedicated polyethylene bailers or a submersible pump. Groundwater monitoring well MW-2 is no longer being sampled at the site in accordance with ASE's recommendation in the April 2001 quarterly groundwater monitoring report and the May 14, 2001 letter from the ACHCSA. Petroleum hydrocarbon odors were noted during the purging and sampling of monitoring wells MW-1, MW-4, MW-5, and extraction well EW-1. 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 dedicated polyethylene bailers. The samples were decanted from the bailers 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 #1049) under appropriate chain-of-custody documentation. Well sampling field logs are presented in Appendix A.

The well purge water was placed into 55-gallon steel drums, labeled, and left 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 EPA Method 5030/8015M, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) by EPA Method 8021B and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. The analytical results for this and previous sampling

periods are presented in Table Two. The certified analytical report and chain-of-custody documentation are included as Appendix B.

#### **4.0 CONCLUSIONS**

The groundwater samples collected from monitoring well MW-1 contained 36,000 parts per billion (ppb) TPH-G, 2,800 ppb benzene, 140 ppb toluene, 360 ppb ethyl benzene, 300 ppb total xylenes, and 31,000 ppb MTBE. The groundwater samples collected from monitoring well MW-3 contained 2,800 ppb TPH-G and 3,800 ppb MTBE. The groundwater samples collected from monitoring well MW-4 contained 1,200 ppb TPH-G and 890 ppb MTBE. The groundwater samples collected from monitoring well MW-5 contained 19,000 ppb TPH-G, 3,300 ppb benzene, 25 ppb toluene, 360 ppb ethyl benzene, 1,100 ppb total xylenes, and 2,100 ppb MTBE. The groundwater samples collected from extraction well EW-1 contained 21,000 ppb TPH-G, 1,300 ppb benzene, 200 ppb total xylenes, and 12,000 ppb MTBE. The TPH-G concentration detected in monitoring well MW-4 did not match the laboratory gasoline standard.

In general, the groundwater samples had hydrocarbon concentrations consistent with previous findings. The TPH-G, MTBE, and/or benzene concentrations that were detected in groundwater samples collected from all the monitoring wells and extraction well EW-1 exceeded Risk Based Screening Levels (RBSLs) for those compounds as presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region dated August 2000.

#### **5.0 RECOMMENDATIONS**

ASE recommends continued groundwater monitoring on a quarterly basis. The next groundwater sampling is scheduled for October 2002. ASE will also prepare a Remedial Action Plan (RAP) to conduct a soil overexcavation project during the next quarter.


## 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-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

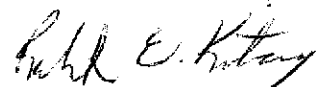
Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project, and trust that this report meets your needs. Please feel free to call us at (925) 820-9391 if you have any questions or comments.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



Erik H. Paddleford  
Associate Geologist

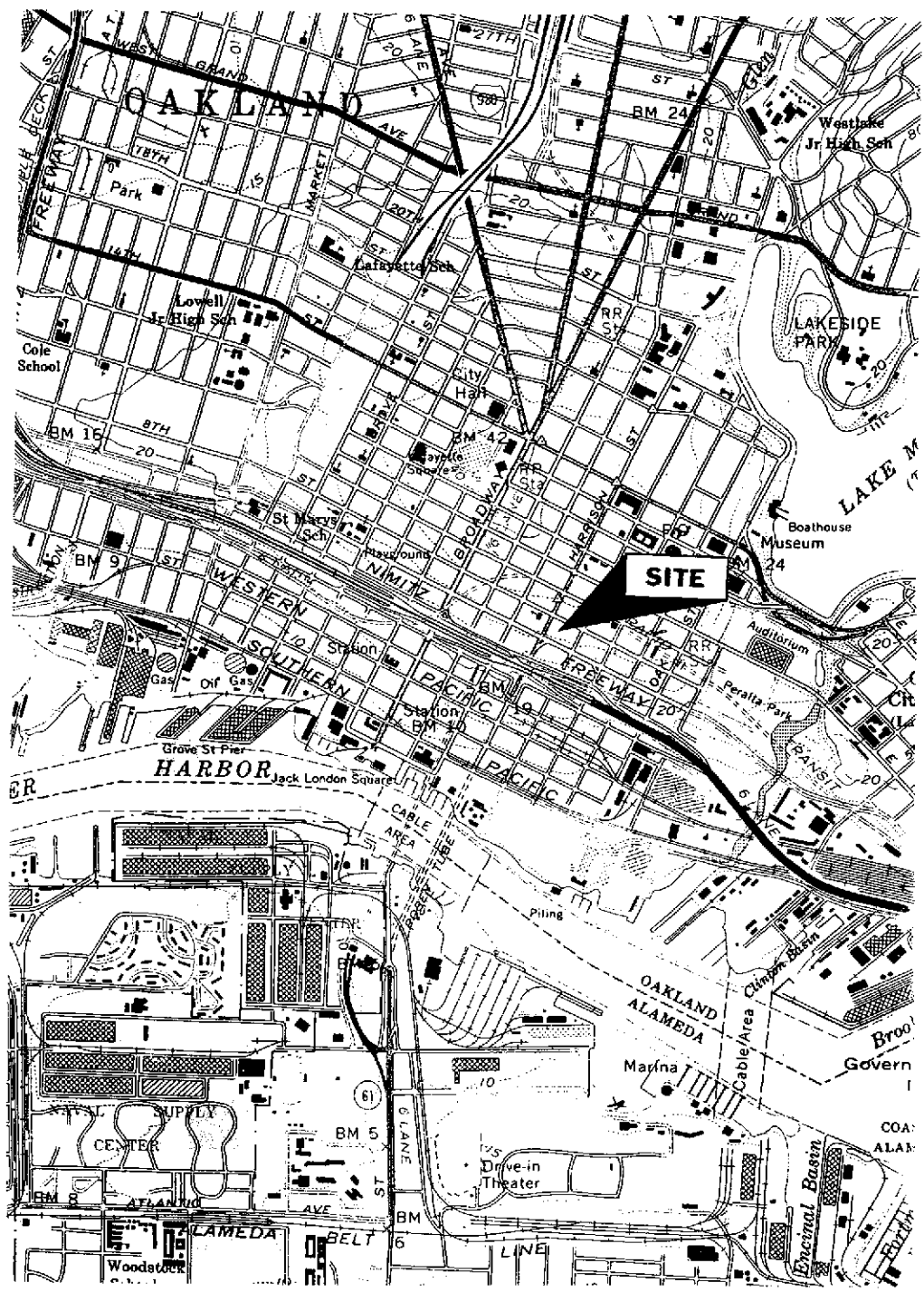


Robert E. Kitay, R.G., R.E.A.  
Senior Geologist



Attachments: Figures 1 and 2  
Appendices A and B

cc: Mr. Barney Chan, Alameda County Health Care Services  
Mr. Chuck Headlee, RWQCB, San Francisco Bay Region



SITE LOCATION MAP	
FORMER CHAN'S SHELL STATION 726 HARRISON STREET OAKLAND, CALIFORNIA	
Aqua Science Engineers	Figure 1



NORTH

SCALE

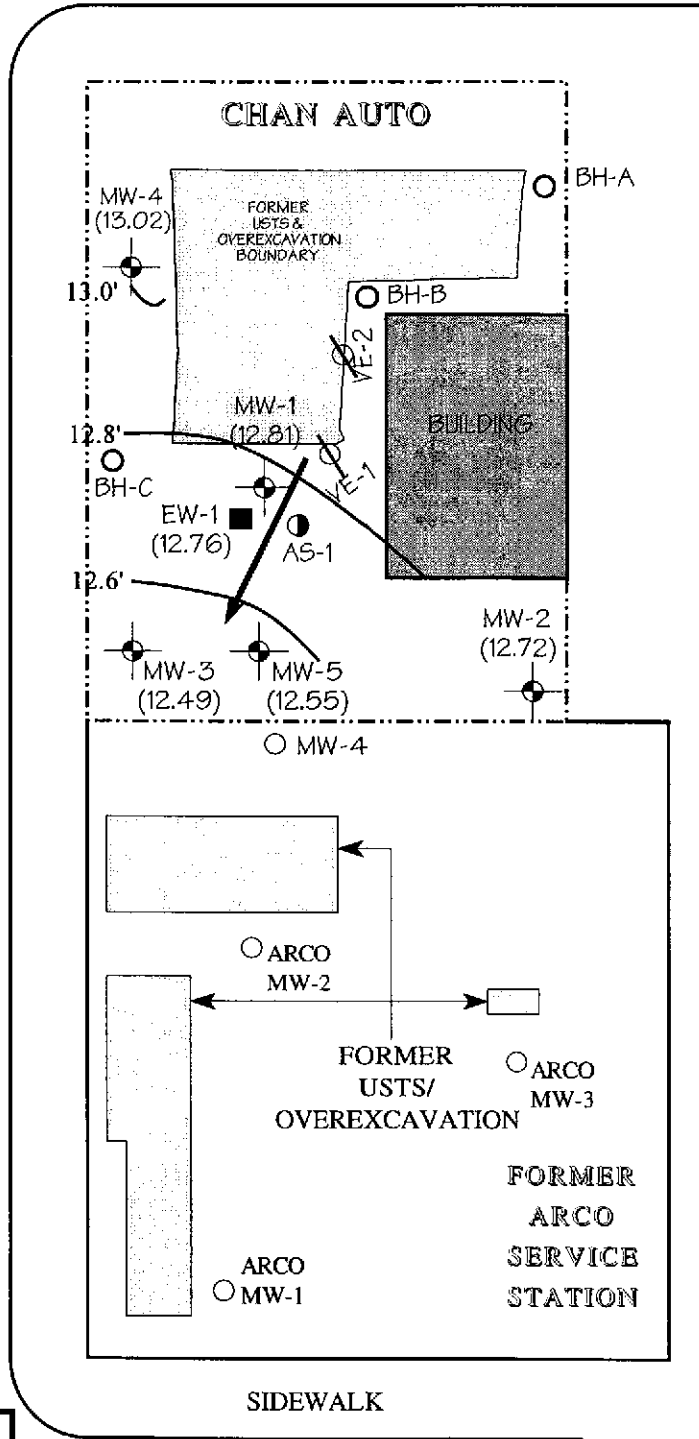
1" = 30'

8TH STREET

Unocal  
MW-7

Unocal  
MW-8

HARRISON STREET



ARCO  
MW-7

**LEGEND**



Approx. Groundwater Flow  
Direction



ASE Monitoring Well

MW-1

(12.81') Groundwater elevation,  
relative to MSL



Groundwater elevation contour

7TH STREET

GROUNDWATER ELEVATION  
CONTOUR MAP - 7/8/02

726 HARRISON STREET  
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS

Figure 2

**TABLE ONE**  
**Groundwater Elevation Data**  
**Chan's Former Shell Station**

Well ID	Date of Measurement	Top of Casing Elevation (relative to Project Datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	12/15/1998	31.95	17.32	14.63
	3/4/1999		15.52	16.43
	6/17/1999		16.9	15.05
	8/27/1999		17.39	14.56
	12/9/1999		18.03	13.92
	3/7/2000		15.11	16.84
	6/7/2000		16.66	15.29
	10/11/2000		18.08	13.87
	1/18/2001		17.96	13.99
	4/5/2001		16.35	15.60
	7/17/2001	16.94	15.01	
	10/5/2001	28.98	17.35	11.63
	1/18/2002		15.40	13.58
	4/11/2002		15.76	13.22
	7/8/2002		16.17	12.81
MW-2	12/15/1998	32.40	18.03	14.37
	3/4/1999		16.11	16.29
	6/17/1999		17.72	14.68
	8/27/1999	Inaccessible		
	12/9/1999	Inaccessible		
	3/7/2000	Inaccessible		
	6/7/2000		17.67	14.73
	10/11/2000		18.91	13.49
	1/18/2001		18.66	13.74
	4/5/2001		16.97	15.43
	7/17/2001		17.54	14.86
	10/5/2001	29.44	17.98	11.46
	1/18/2002		15.87	13.57
	4/11/2002		16.36	13.08
	7/8/2002		16.72	12.72
MW-3	12/15/1998	31.61	17.26	14.35
	3/4/1999		15.47	16.14
	6/17/1999		16.92	14.69
	8/27/1999		17.40	14.21
	12/9/1999		18.01	13.60
	3/7/2000		16.15	15.46
	6/7/2000		16.85	14.76
	10/11/2000		18.07	13.54
	1/18/2001		17.89	13.72
	4/5/2001		16.21	15.40
	7/17/2001	16.90	14.71	
	10/5/2001	28.64	17.32	11.32
	1/18/2002		15.35	13.29
	4/11/2002		15.82	12.82
	7/8/2002		16.15	12.49



TABLE ONE  
Groundwater Elevation Data  
Chan's Former Shell Station

Well ID	Date of Measurement	Top of Casing Elevation (relative to Project Datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-4	12/15/1998	32.53	17.59	14.94
	3/4/1999		15.88	16.65
	6/17/1999		17.14	15.39
	8/27/1999		17.65	14.88
	12/9/1999		18.28	14.25
	3/7/2000		15.41	17.12
	6/7/2000		17.09	15.44
	10/11/2000	18.33	14.20	
	1/18/2001	18.23	14.30	
	4/5/2001	16.69	15.84	
	7/17/2001	17.32	15.21	
	10/5/2001	29.58	17.71	11.87
	1/18/2002		15.85	13.73
	4/11/2002		16.14	13.44
7/8/2002	16.56		13.02	
MW-5	8/29/2001	29.06	17.42	11.64
	1/18/2002		15.68	13.38
	4/11/2002		16.17	12.89
	7/8/2002		16.51	12.55
EW-1	1/18/2002	28.89	15.35	13.54
	4/11/2002		15.73	13.16
	7/8/2002		16.13	12.76

**TABLE TWO**  
**Certified Analytical Results for GROUNDWATER Samples**  
**Chan's Former Shell Station**  
**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>						
7/3/1997	18,000	2,700	350	450	900	7,400
12/5/1998	18,000	1,500	270	260	560	14,000
3/4/1999	44,000	2,800	400	440	960	43,000
6/17/1999	33,000	2,200	250	460	660	25,000
8/27/1999	6,000	1,000	97	190	230	14,000/ 16,000*
12/9/1999	15,000	1,500	160	220	420	17,000
3/7/2000	9,300	1,500	210	66	530	12,000
6/7/2000	26,000**	1,700	< 250	360	580	30,000
10/11/2000	13,000**	1,600	< 100	140	160	19,000
1/18/2001	14,000**	450	< 100	110	230	9,600
4/5/2001	38,000	2,200	180	290	590	35,000
7/17/2001	35,000**	1,800	< 100	300	170	35,000
10/5/2001	17,000	1,500	210	420	790	27,000
1/18/2002	18,000	1,500	120	160	220	22,000
4/11/2002	41,000	2,700	210	340	380	30,000
7/8/2002	36,000	2,800	140	360	300	31,000
<b>MW-2</b>						
12/5/1998	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
3/4/1999		Inaccessible due to car parked over well				
6/17/1999	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5
8/27/1999		Inaccessible due to car parked over well				
12/9/1999		Inaccessible due to car parked over well				
3/7/2000		Inaccessible due to car parked over well				
6/7/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
10/11/2000	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
1/18/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
4/5/2001	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
7/17/2001		No Longer Sampled				
<b>MW-3</b>						
12/5/1998	6,500	< 50	50	60	50	3,900
3/4/1999	2,800	< 25	< 25	< 25	< 25	1,600
6/17/1999	1,000	< 10	< 10	< 10	< 10	1,400
8/27/1999	230	< 0.5	0.51	0.5	1	1,500/ 1,600*
12/9/1999	870**	< 0.5	< 0.5	< 0.5	< 0.5	2,100
3/7/2000	150**	4	< 0.5	< 0.5	< 0.5	830
6/7/2000	140**	< 0.5	< 0.5	< 0.5	< 0.5	1,100
10/11/2000	620**	< 5.0	< 5.0	< 5.0	< 5.0	1,500
1/18/2001	1,200**	< 5.0	< 5.0	< 5.0	< 5.0	1,000
4/5/2001	1,700**	< 5.0	< 5.0	< 5.0	< 5.0	1,900
7/17/2001	1,400**	< 10	< 10	< 10	< 10	1,700
10/5/2001	< 1,000	< 10	< 10	< 10	< 10	1,700
1/18/2002	1,600	26	20	16	54	2,100
4/11/2002	2,600	21	16	< 10	21	2,300
7/8/2002	2,800	< 10	< 10	< 10	< 10	3,800

**TABLE TWO**  
**Certified Analytical Results for GROUNDWATER Samples**  
**Chan's Former Shell Station**  
**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>						
12/5/1998	880	3	<0.5	<0.5	<0.5	950
3/4/1999	3,800	<25	<25	<25	<25	3,700
6/17/1999	2,700	<25	<25	<25	<25	2,700
8/27/1999	440	4.7	1.1	0.58	1.3	1,600/
						1,700*
12/9/1999	1,100**	<2.5	<2.5	<2.5	<2.5	1,700
3/7/2000	<250	<2.5	<2.5	<2.5	<2.5	1,700
6/7/2000	530**	8.8	<2.5	<2.5	<2.5	440
10/11/2000	700**	3.9	<2.5	<2.5	<2.5	680
1/18/2001	2,000**	<2.5	<2.5	<2.5	<2.5	780
4/5/2001	810**	<2.5	<2.5	<2.5	<2.5	620
7/17/2001	880**	<2.5	<2.5	<2.5	<2.5	570
10/5/2001	550**	<2.5	<2.5	<2.5	<2.5	710
1/18/2002	960**	<5.0	<5.0	<5.0	<5.0	1,300
4/11/2002	1,100**	<5.0	<5.0	<5.0	<5.0	550
7/8/2002	1,200**	<5.0	<5.0	<5.0	<5.0	890
<b>MW-5</b>						
8/29/2001	14,000	1,300	470	230	800	14,000
1/18/2002	24,000	3,200	1,300	390	1,500	5,700
4/11/2002	23,000	2,700	980	38	950	4,300
7/8/2002	19,000	3,300	25	360	1,100	2,100
<b>EW-1</b>						
1/18/2002	11,000	1,000	<100	220	350	6,700
4/11/2002	17,000	1,000	<100	120	140	9,700
7/8/2002	21,000	1,300	<100	<100	200	12,000
<b>RBSL</b>	<b>400</b>	<b>46</b>	<b>130</b>	<b>290</b>	<b>13</b>	<b>1,800</b>

**Notes:**

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

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

RBSL = Risk Based Screening Levels presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" 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 detection limit.

# **APPENDIX A**

Well Sampling Field Logs



# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: MV-1 Sampled by: EP  
 Total depth of well (feet): 27.21 Well diameter (inches): 2  
 Depth to water before sampling (feet): 16.17  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 11.04  
 Number of gallons per well casing volume (gallons): 1.76  
 Number of well casing volumes to be removed: 3  
 Req'd volume of groundwater to be purged before sampling (gallons): 5.3  
 Equipment used to purge the well: bailer  
 Time Evacuation Began: 900 Time Evacuation Finished: 915  
 Approximate volume of groundwater purged: 3  
 Did the well go dry?: No After how many gallons: -  
 Time samples were collected: 925  
 Depth to water at time of sampling: -  
 Percent recovery at time of sampling: -  
 Samples collected with: bailer  
 Sample color: gray/clear Odor: Strong HC odor  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>68.7</u>	<u>6.83</u>	<u>947</u>
<u>2</u>	<u>66.9</u>	<u>6.71</u>	<u>898</u>
<u>3</u>	<u>66.7</u>	<u>6.60</u>	<u>884</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MV-1</u>	<u>3</u>	<u>40 ml VOA</u>	<u>x</u>	<u>s</u>	



# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: NW-2 Sampled by: EP  
 Total depth of well (feet): 27.0 Well diameter (inches): 2  
 Depth to water before sampling (feet): 14.72  
 Thickness of floating product if any: \_\_\_\_\_  
 Depth of well casing in water (feet): \_\_\_\_\_  
 Number of gallons per well casing volume (gallons): \_\_\_\_\_  
 Number of well casing volumes to be removed: \_\_\_\_\_  
 Req'd volume of groundwater to be purged before sampling (gallons): \_\_\_\_\_  
 Equipment used to purge the well: \_\_\_\_\_  
 Time Evacuation Began: \_\_\_\_\_ Time Evacuation Finished: \_\_\_\_\_  
 Approximate volume of groundwater purged: \_\_\_\_\_  
 Did the well go dry?: \_\_\_\_\_ After how many gallons: \_\_\_\_\_  
 Time samples were collected: \_\_\_\_\_  
 Depth to water at time of sampling: \_\_\_\_\_  
 Percent recovery at time of sampling: \_\_\_\_\_  
 Samples collected with: \_\_\_\_\_  
 Sample color: \_\_\_\_\_ Odor: \_\_\_\_\_  
 Description of sediment in sample: \_\_\_\_\_

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: MW-3 Sampled by: EP  
 Total depth of well (feet): 29.66 Well diameter (inches): 2  
 Depth to water before sampling (feet): 16.15  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 13.51  
 Number of gallons per well casing volume (gallons): 2.16  
 Number of well casing volumes to be removed: 3  
 Req'd volume of groundwater to be purged before sampling (gallons): 6.5  
 Equipment used to purge the well: bailer  
 Time Evacuation Began: 1140 Time Evacuation Finished: 1200  
 Approximate volume of groundwater purged: \_\_\_\_\_  
 Did the well go dry?: no After how many gallons: -  
 Time samples were collected: 1205  
 Depth to water at time of sampling: -  
 Percent recovery at time of sampling: -  
 Samples collected with: bailer  
 Sample color: clear/brown Odor: none  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>70.9</u>	<u>6.22</u>	<u>629</u>
<u>2</u>	<u>70.1</u>	<u>6.28</u>	<u>628</u>
<u>3</u>	<u>69.6</u>	<u>6.31</u>	<u>632</u>
_____	_____	_____	_____
_____	_____	_____	_____

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-3</u>	<u>3</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: MW-4 Sampled by: EL  
 Total depth of well (feet): 29.97 Well diameter (inches): 2  
 Depth to water before sampling (feet): 16.56  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 13.41  
 Number of gallons per well casing volume (gallons): 2.14  
 Number of well casing volumes to be removed: 3  
 Req'd volume of groundwater to be purged before sampling (gallons): 6.4  
 Equipment used to purge the well: bailer  
 Time Evacuation Began: 1100 Time Evacuation Finished: 1120  
 Approximate volume of groundwater purged: 6.4  
 Did the well go dry?: NO After how many gallons: -  
 Time samples were collected: 1130  
 Depth to water at time of sampling: -  
 Percent recovery at time of sampling: -  
 Samples collected with: bailer  
 Sample color: clear/brown Odor: slight  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>69.7</u>	<u>5.98</u>	<u>864</u>
<u>2</u>	<u>69.5</u>	<u>6.31</u>	<u>842</u>
<u>3</u>	<u>69.2</u>	<u>6.44</u>	<u>839</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>3</u>	<u>40 ml VIA</u>	<u>x</u>	<u>x</u>	





# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: MW-5 Sampled by: EP  
 Total depth of well (feet): 28.50 Well diameter (inches): 2  
 Depth to water before sampling (feet): 16.51  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 11.99  
 Number of gallons per well casing volume (gallons): 1.9  
 Number of well casing volumes to be removed: 3  
 Req'd volume of groundwater to be purged before sampling (gallons): 5.2  
 Equipment used to purge the well: bailer  
 Time Evacuation Began: 1020 Time Evacuation Finished: 1040  
 Approximate volume of groundwater purged: 6  
 Did the well go dry?: no After how many gallons: -  
 Time samples were collected: 1050  
 Depth to water at time of sampling: -  
 Percent recovery at time of sampling: -  
 Samples collected with: bailer  
 Sample color: clear/gray Odor: moderate  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>66.7</u>	<u>6.26</u>	<u>1073</u>
<u>2</u>			
<u>3</u>			

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-5</u>	<u>3</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	



# WELL SAMPLING FIELD LOG

Project Name and Address: Chan Auto  
 Job #: 3412 Date of sampling: 7/8/02  
 Well Name: EW-1 Sampled by: EL  
 Total depth of well (feet): 28.45 Well diameter (inches): 4  
 Depth to water before sampling (feet): 16.13  
 Thickness of floating product if any: -  
 Depth of well casing in water (feet): 12.32  
 Number of gallons per well casing volume (gallons): 8  
 Number of well casing volumes to be removed: 3  
 Req'd volume of groundwater to be purged before sampling (gallons): 24  
 Equipment used to purge the well: bailer  
 Time Evacuation Began: 930 Time Evacuation Finished: 1005  
 Approximate volume of groundwater purged: 24  
 Did the well go dry?: NO After how many gallons: -  
 Time samples were collected: 1010  
 Depth to water at time of sampling: -  
 Percent recovery at time of sampling: -  
 Samples collected with: bailer  
 Sample color: clear Odor: strong  
 Description of sediment in sample: silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>6.5</u>	<u>6.57</u>	<u>716</u>
<u>2</u>	<u>6.57</u>	<u>6.57</u>	<u>710</u>
<u>3</u>	<u>6.5</u>	<u>6.56</u>	<u>702</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>EW-1</u>	<u>3</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	

## **APPENDIX B**

Certified Analytical Report  
and  
Chain of Custody Documentation

Submission#: 2002-07-0210

July 16, 2002

SEVERN

TRENT

LABORATORY

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

Attn.: Erik Paddleford  
Project#: 3412  
Project: Chan Automotive  
Site: 726 Harrison St., Oakland, CA

STL San Francisco  
1220 Quarry Ln  
Pleasanton CA 94566

Tel.: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

CA DHS ELAP#:2496

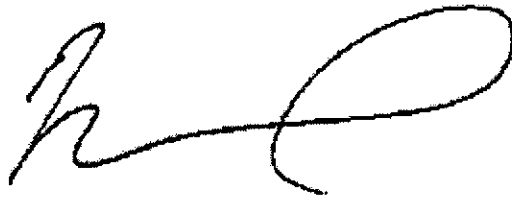
Attached is our report for your samples received on 07/11/2002 16:32  
This report has been reviewed and approved for release. Reproduction of this report  
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after  
08/25/2002 unless you have requested otherwise.

We appreciate the opportunity to be of service to you. If you have any questions,  
please call me at (925) 484-1919.

You can also contact me via email. My email address is: [vvancil@chromalab.com](mailto:vvancil@chromalab.com)

Sincerely,



Vincent Vancil  
Project Manager

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford

208 West El Pintado

Danville, CA 94526

Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412

Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

SEVERN

TRENT

LABORATORY

STL San Francisco  
1220 Quarry Lane  
Pleasanton, CA 94566

Tel: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

### Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	07/08/2002 09:25	Water	1
MW-3	07/08/2002 12:05	Water	2
MW-4	07/08/2002 11:30	Water	3
MW-5	07/08/2002 10:50	Water	4
EW-1	07/08/2002 10:10	Water	5

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddelford  
208 West El Pintado  
Danville, CA 94526  
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412  
Chan Automotive

SEVERN

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Pleasanton, CA 94566

Tel: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

Prep(s): 5030  
5030  
Sample ID: MW-1  
Sampled: 07/08/2002 09:25  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-07-0210 - 1  
Extracted: 7/12/2002 21:12  
QC Batch#: 2002/07/12-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	36000	10000	ug/L	200.00	07/12/2002 21:12	g
Benzene	2800	100	ug/L	200.00	07/12/2002 21:12	
Toluene	140	100	ug/L	200.00	07/12/2002 21:12	
Ethyl benzene	360	100	ug/L	200.00	07/12/2002 21:12	
Xylene(s)	300	100	ug/L	200.00	07/12/2002 21:12	
MTBE	31000	1000	ug/L	200.00	07/12/2002 21:12	
<b>Surrogates(s)</b>						
Trifluorotoluene	74.1	58-124	%	200.00	07/12/2002 21:12	
4-Bromofluorobenzene-FID	76.9	50-150	%	200.00	07/12/2002 21:12	

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford  
208 West El Pintado  
Danville, CA 94526  
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412  
Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

SEVERN

TRENT

LABORATORY

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Pleasanton, CA 94566

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Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

Prep(s): 5030  
5030  
Sample ID: MW-3  
Sampled: 07/08/2002 12:05  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-07-0210 - 2  
Extracted: 7/12/2002 21:45  
QC Batch#: 2002/07/12-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	2800	1000	ug/L	20.00	07/12/2002 21:45	g
Benzene	ND	10	ug/L	20.00	07/12/2002 21:45	
Toluene	ND	10	ug/L	20.00	07/12/2002 21:45	
Ethyl benzene	ND	10	ug/L	20.00	07/12/2002 21:45	
Xylene(s)	ND	10	ug/L	20.00	07/12/2002 21:45	
MTBE	3800	100	ug/L	20.00	07/12/2002 21:45	
<b>Surrogates(s)</b>						
Trifluorotoluene	96.2	58-124	%	20.00	07/12/2002 21:45	
4-Bromofluorobenzene-FID	92.8	50-150	%	20.00	07/12/2002 21:45	

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford  
208 West El Pintado  
Danville, CA 94526  
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412  
Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

**SEVERN**  
**TRENT**  
**LABORATORY**

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1220 Quarry Lane  
Pleasanton, CA 94566

Tel: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

Prep(s): 5030  
5030  
Sample ID: **MW-4**  
Sampled: 07/08/2002 11:30  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-07-0210 - 3  
Extracted: 7/12/2002 22:18  
QC Batch#: 2002/07/12-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1200	500	ug/L	10.00	07/12/2002 22:18	g
Benzene	ND	5.0	ug/L	10.00	07/12/2002 22:18	
Toluene	ND	5.0	ug/L	10.00	07/12/2002 22:18	
Ethyl benzene	ND	5.0	ug/L	10.00	07/12/2002 22:18	
Xylene(s)	ND	5.0	ug/L	10.00	07/12/2002 22:18	
MTBE	890	50	ug/L	10.00	07/12/2002 22:18	
<b>Surrogates(s)</b>						
Trifluorotoluene	89.8	58-124	%	10.00	07/12/2002 22:18	
4-Bromofluorobenzene-FID	91.5	50-150	%	10.00	07/12/2002 22:18	



Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford

208 West El Pintado

Danville, CA 94526

Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412

Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

SEVERN

TRENT

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Pleasanton, CA 94566

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Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

Prep(s): 5030  
5030  
Sample ID: MW-5  
Sampled: 07/08/2002 10:50  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-07-0210 - 4  
Extracted: 7/12/2002 22:51  
QC Batch#: 2002/07/12-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	19000	2500	ug/L	50.00	07/12/2002 22:51	
Benzene	3300	25	ug/L	50.00	07/12/2002 22:51	
Toluene	25	25	ug/L	50.00	07/12/2002 22:51	
Ethyl benzene	360	25	ug/L	50.00	07/12/2002 22:51	
Xylene(s)	1100	25	ug/L	50.00	07/12/2002 22:51	
MTBE	2100	250	ug/L	50.00	07/12/2002 22:51	
<b>Surrogates(s)</b>						
Trifluorotoluene	75.4	58-124	%	50.00	07/12/2002 22:51	
4-Bromofluorobenzene-FID	85.1	50-150	%	50.00	07/12/2002 22:51	

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford

208 West El Pintado

Darville, CA 94526

Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412

Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA

SEVERN

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Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

CA DHS ELAP# 2496

Prep(s): 5030  
5030  
Sample ID: EW-1  
Sampled: 07/08/2002 10:10  
Matrix: Water  
Test(s): 8015M  
8021B  
Lab ID: 2002-07-0210 - 5  
Extracted: 7/12/2002 23:24  
QC Batch#: 2002/07/12-01.02

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	21000	10000	ug/L	200.00	07/12/2002 23:24	g
Benzene	1300	100	ug/L	200.00	07/12/2002 23:24	
Toluene	ND	100	ug/L	200.00	07/12/2002 23:24	
Ethyl benzene	ND	100	ug/L	200.00	07/12/2002 23:24	
Xylene(s)	200	100	ug/L	200.00	07/12/2002 23:24	
MTBE	12000	1000	ug/L	200.00	07/12/2002 23:24	
<b>Surrogates(s)</b>						
Trifluorotoluene	94.6	58-124	%	200.00	07/12/2002 23:24	
4-Bromofluorobenzene-FID	87.9	50-150	%	200.00	07/12/2002 23:24	

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford

208 West El Pintado

Danville, CA 94526

Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412

Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

**SEVERN**  
**TRENT**  
**LABORATORY**

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Pleasanton, CA 94566

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www.stl-inc.com  
www.chromalab.com

**Batch QC Report**

Prep(s): 5030

Method Blank

MB: 2002/07/12-01.02-005

Water

Test(s): 8015M

QC Batch # 2002/07/12-01.02

Date Extracted: 07/12/2002 10:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	07/12/2002 10:00	
Benzene	ND	0.5	ug/L	07/12/2002 10:00	
Toluene	ND	0.5	ug/L	07/12/2002 10:00	
Ethyl benzene	ND	0.5	ug/L	07/12/2002 10:00	
Xylene(s)	ND	0.5	ug/L	07/12/2002 10:00	
MTBE	ND	5.0	ug/L	07/12/2002 10:00	
<b>Surrogates(s)</b>					
Trifluorotoluene	97.5	58-124	%	07/12/2002 10:00	
4-Bromofluorobenzene-FID	100.0	50-150	%	07/12/2002 10:00	

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford  
208 West El Pintado  
Danville, CA 94526  
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412  
Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

**SEVERN**  
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Pleasanton, CA 94566

Tel: (925) 484-1919  
Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

**Batch QC Report**

Prep(s): 5030

Test(s): 8021B

**Laboratory Control Spike**

**Water**

**QC Batch # 2002/07/12-01.02**

LCS 2002/07/12-01.02-006

Extracted: 07/12/2002

Analyzed: 07/12/2002 10:33

LCSD 2002/07/12-01.02-007

Extracted: 07/12/2002

Analyzed: 07/12/2002 11:06

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	103	97.1	100.0	103.0	97.1	5.9	77-123	20		
Toluene	104	96.5	100.0	104.0	96.5	7.5	78-122	20		
Ethyl benzene	112	104	100.0	112.0	104.0	7.4	70-130	20		
Xylene(s)	299	275	300	99.7	91.7	8.4	75-125	20		
<b>Surrogates(s)</b>										
Trifluorotoluene	519	477	500	103.8	95.4		58-124			

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford  
208 West El Pintado  
Danville, CA 94526  
Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412  
Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA

**SEVERN**  
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Pleasanton, CA 94566

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Fax: (925) 484-1096  
www.stl-inc.com  
www.chromalab.com

CA DHS ELAP# 2496

**Batch QC Report**

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/07/12-01.02

LCS 2002/07/12-01.02-008

Extracted: 07/12/2002

Analyzed: 07/12/2002 11:39

LCSD 2002/07/12-01.02-009

Extracted: 07/12/2002

Analyzed: 07/12/2002 12:12

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	504	524	500	100.8	104.8	3.9	75-125	20		
<b>Surrogates(s)</b> 4-Bromofluorobenzene-FID	517	526	500	103.4	105.2		50-150			

Submission #: 2002-07-0210

Gas/BTEX Compounds by 8015M/8021

Aqua Science Engineers, Inc.

Attn.: Erik Paddleford

208 West El Pintado

Danville, CA 94526

Phone: (925) 820-9391 Fax: (925) 837-4853

Project: 3412

Chan Automotive

Received: 07/11/2002 16:32

Site: 726 Harrison St., Oakland, CA CA DHS ELAP# 2496

SEVERN

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www.stl-inc.com  
www.chromalab.com

---

### Legend and Notes

---

#### Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

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

# Chain of Custody

SAMPLER (SIGNATURE)

*E. Raddelhoff*

PROJECT NAME

Chan Automotive

JOB NO.

3412

ADDRESS

726 Harrison Street, Oakland, CA

## ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LUFT METALS (5) (EPA 6010+7000)	CADMIUM METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/7 OXY'S / LEAD SCAYANGERS/ 1,2-DCP (EPA 8260)
					MW-1	7/8/02	925	water	3	X									
MW-2		1205	↓	↓	X														
MW-4		1130	↓	↓	X														
MW-5		1050	↓	↓	X														
EW-1		1010	↓	↓	X														

RELINQUISHED BY:

*E. Raddelhoff*  
(signature)

(time)

RECEIVED BY:

*B. Morrow*  
(signature)

(time) 0950

RELINQUISHED BY:

*B. Morrow*  
(signature)

(time) 1632

RECEIVED BY LABORATORY:

*D. Harrington*  
(signature)

(time)

COMMENTS:

1,2-DCP = 1,2-dichloropropane

4.2°C

TURN AROUND TIME

STANDARD 24hr 48hr 72hr

OTHER:

Company-

ASE

Company-

STL-SF

Company-

STL-SF

Company-

STL-SF

7/11/02 @1632



STL San Francisco

### Sample Receipt Checklist

Submission #: 2002- 07 - 0210

Checklist completed by: (initials) DSH Date: 07 / 11 / 02

Courier name:  STL San Francisco  Client \_\_\_\_\_

- Custody seals intact on shipping container/samples Yes \_\_\_ No \_\_\_ Not Present
- Chain of custody present? Yes  No \_\_\_
- Chain of custody signed when relinquished and received? Yes  No \_\_\_
- Chain of custody agrees with sample labels? Yes  No \_\_\_
- Samples in proper container/bottle? Yes  No \_\_\_
- Sample containers intact? Yes  No \_\_\_
- Sufficient sample volume for indicated test? Yes  No \_\_\_
- All samples received within holding time? Yes  No \_\_\_
- Container/Temp Blank temperature in compliance (4° C ± 2)? Yes  No \_\_\_
- Water - VOA vials have zero headspace? Yes  No \_\_\_
- No VOA vials submitted \_\_\_ Yes  No \_\_\_

Temp: 4.2 °C

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small - O), M (medium - O) or L (large - O))

Water - pH acceptable upon receipt?  Yes  No  
 pH adjusted- Preservative used:  HNO<sub>3</sub>  HCl  H<sub>2</sub>SO<sub>4</sub>  NaOH  ZnOAc

For any item check-listed "No", provided detail of discrepancy in comment section below:

**Comments:**  
\_\_\_\_\_  
\_\_\_\_\_

#### Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) \_\_\_\_\_ Date: \_\_\_\_\_ / \_\_\_\_\_ / 02

Client contacted:  Yes  No

Summary of discussion:  
\_\_\_\_\_  
\_\_\_\_\_

Corrective Action (per PM/Client):  
\_\_\_\_\_  
\_\_\_\_\_