



May 31 2000

QUARTERLY GROUNDWATER MONITORING REPORT  
MAY 2000 GROUNDWATER SAMPLING  
ASE JOB NO. 3515

at

The Former California  
Brake and Clutch Property  
2221 Union Street  
Oakland, California

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

## 1.0 INTRODUCTION

The following is a report detailing the results of the May 2000 quarterly groundwater sampling at 2221 Union Street, Oakland, California (*Figures 1 and 2*).

## 2.0 GROUNDWATER ELEVATIONS

On May 16, 2000, ASE associate geologist Ian Reed measured the depth to water in all site groundwater monitoring wells using an electric water level sounder. The depth to water and groundwater elevations are presented in Table One, and a groundwater elevation (potentiometric surface) contour map is presented as Figure 2. The groundwater flow direction is to the northeast at a gradient of 0.01-feet/foot. The groundwater flow direction and gradient beneath the site has been highly variable and may be tidally influenced.

## 3.0 SAMPLE COLLECTION AND ANALYSIS

Prior to sampling, the monitoring wells were purged of four well casing volumes of groundwater using dedicated polyethylene bailers. The parameters pH, temperature and conductivity were monitored during the well purging. Samples were not collected until these parameters stabilized. The groundwater samples were collected using dedicated polyethylene bailers. The samples to be analyzed for volatile compounds were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid and capped without headspace. All of the samples were labeled and placed in a cooler with wet ice for transport to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under appropriate chain-of-custody documentation. Well sampling field logs are presented in Appendix A. The groundwater samples were analyzed for halogenated volatile organic compounds (HVOCs) by EPA Method 8010. The analytical results for this and previous sampling periods are presented in Table Two.

Well sampling purge water was contained in sealed and labeled 55-gallon steel drums and left on-site for temporary storage until off-site disposal can be arranged. The certified analytical report and chain-of-custody documentation are included as Appendix B.

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater samples collected from monitoring well MW-1 contained 7.8 parts per billion (ppb) vinyl chloride, 260 ppb tetrachloroethene (PCE), 73 ppb trichloroethene (TCE), and 10 ppb cis-1,2-dichloroethene (cis-1,2-DCE). Groundwater samples collected from monitoring well MW-2 contained 820 ppb PCE, 220 ppb TCE, and 74 ppb cis-1,2-DCE. The groundwater samples collected from monitoring well MW-3 contained 54 ppb PCE, 8.7 ppb TCE, 5.3 ppb 1,1-dichloroethane (1,1-DCA), and 11 ppb chloroform. The groundwater samples collected from monitoring well MW-4 contained 24 ppb PCE, 13 ppb TCE, 12 ppb cis-1,2-DCE, 19 ppb 1,1-DCA, 3.0 ppb 1,1,1-TCE, and 0.75 ppb vinyl chloride.

In general, there was an increase in HVOC concentrations detected in groundwater samples collected from monitoring wells MW-2 and MW-4. There was a decrease in HVOC concentrations detected in groundwater samples collected from monitoring well MW-1. HVOC concentrations detected in groundwater samples collected from monitoring well MW-3 were very similar to previous results. The HVOC concentrations in groundwater samples collected from all monitoring wells still remain well below the Oakland Risk Based Corrective Action (RBCA) levels for vapor intrusion from groundwater to an indoor air scenario.

ASE is currently preparing a sensitive receptor's survey consisting of an area well survey and water/conduit survey as requested by the Alameda County Health Care Services Agency (ACHCSA) in a letter dated March 7, 2000. This sensitive receptor survey will be completed within the next 45 days. It is ASE's understanding that the ACHCSA will assess the site for possible case closure at that time.

#### 5.0 REPORT LIMITATIONS

The results of this assessment represent conditions at the time of the groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

It does not fully characterize the site for contamination resulting from unknown sources, 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.

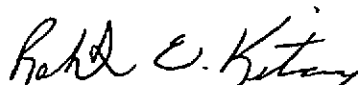
Aqua Science Engineers appreciates the opportunity to provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



Ian T. Reed  
Associate Geologist



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



Attachments: Figures 1 and 2  
Appendices A and B

**TABLE ONE**  
**Groundwater Elevation Data**  
**2221 Union Street, Oakland, California**

WELL ID	DATE OF MEASUREMENT	TOP OF CASING ELEVATION IN FEET (MSL)	DEPTH TO WATER (feet)	GROUNDWATER ELEVATION IN FEET (MSL)
MW-1	9/2/99	15.00	8.81	6.19
	11/2/99		5.94	9.06
	11/4/99		7.15	7.85
	11/9/99		4.72	10.28
	2/7/00		3.55	11.45
	5/16/00		3.88	11.12
MW-2	9/2/99	15.29	6.29	9.00
	11/2/99		6.01	9.23
	11/4/99		5.94	9.30
	11/9/99		5.28	9.96
	2/7/00		4.12	11.12
	5/16/00		4.24	11.00
MW-3	9/2/99	15.15	6.26	8.89
	11/2/99		5.74	9.43
	11/4/99		6.09	9.08
	11/9/99		5.64	9.53
	2/7/00		3.06	12.11
	5/16/00		3.80	11.37
MW-4	11/2/99	15.21	5.86	9.35
	11/4/99		5.85	9.36
	11/9/99		4.56	10.65
	2/7/00		3.66	11.55
	5/16/00		3.89	11.32
PCCMW-1	9/2/99	14.09	7.95	6.14

## TABLE TWO

### Summary of Chemical Analysis of Water Samples

#### Volatile Organic Compounds

All results are in parts per billion

SAMPLE NAME	DATE	PGE	TCE	CIS 1,2-DCE	TRANS 1,2-DCE	1,1-DCA	1,1-DCE	1,2-DCA	CHLORO- ETHANE	VC	REMAINING VOCs
MW-1	9/2/99	9.9	3.2	3.9	<1	58	<1	<1	<1	<1	<1-<10
MW-1	11/2/99	100	15	17	3.4	1.7	<1	<1	<1	<1	<1-<10
MW-1	2/7/00	510	160	8	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0-<20
MW-1	5/16/00	260	73	10	<5.0	<5.0	<5.0	<5.0	<5.0	7.8	<5.0-<20
MW-2	9/2/99	48	4.5	1.7	<1	<1	<1	<1	<1	<1	<1-<10
MW-2	11/2/99	110	9.5	1.4	<1	<1	<1	<1	<1	<1	<1-<10
MW-2	2/7/00	200	21	6.6	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5-<10
MW-2	5/16/00	820	220	74	<10	<10	<10	<10	<10	<10	<10-<40
MW-3	9/2/99	38	21	34	<0.5	22	<0.5	<0.5	<0.5	<0.5	<0.5-<5
MW-3	11/2/99	59	21	35	<0.5	22	<0.5	<0.5	<0.5	<0.5	<0.5-<5
MW-3	2/7/00	56	13	22	<0.5	8.5	<0.5	<0.5	<0.5	<0.5	<0.5-<5
MW-3	5/16/00	54	8.7	<1	<1	5.3	<1	<1	<1	<1	<1-<10
MW-4	11/2/99	0.68	0.74	21	<0.5	14	2.7	2.1	12	6.3	<0.5-<5
MW-4	2/7/00	14	4.1	18	<0.5	8.1	0.64	<0.5	0.71	6	<0.5-<5
MW-4	5/16/00	24	13	12	<0.5	19	<0.5	<0.5	<0.5	0.75	<0.5-<5
OAKLAND RBCA		200,000	460,000	2,100,000	3,000,000	940,000	16,000	170,000	NA	4,400	VARIABLES

**NOTES:**

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

The Oakland risk based corrective action (RBCA) number is the cleanup goal for vapor intrusion from groundwater to an INDOOR AIR Scenario modified for groundwater at depths of 6-feet below ground surface.

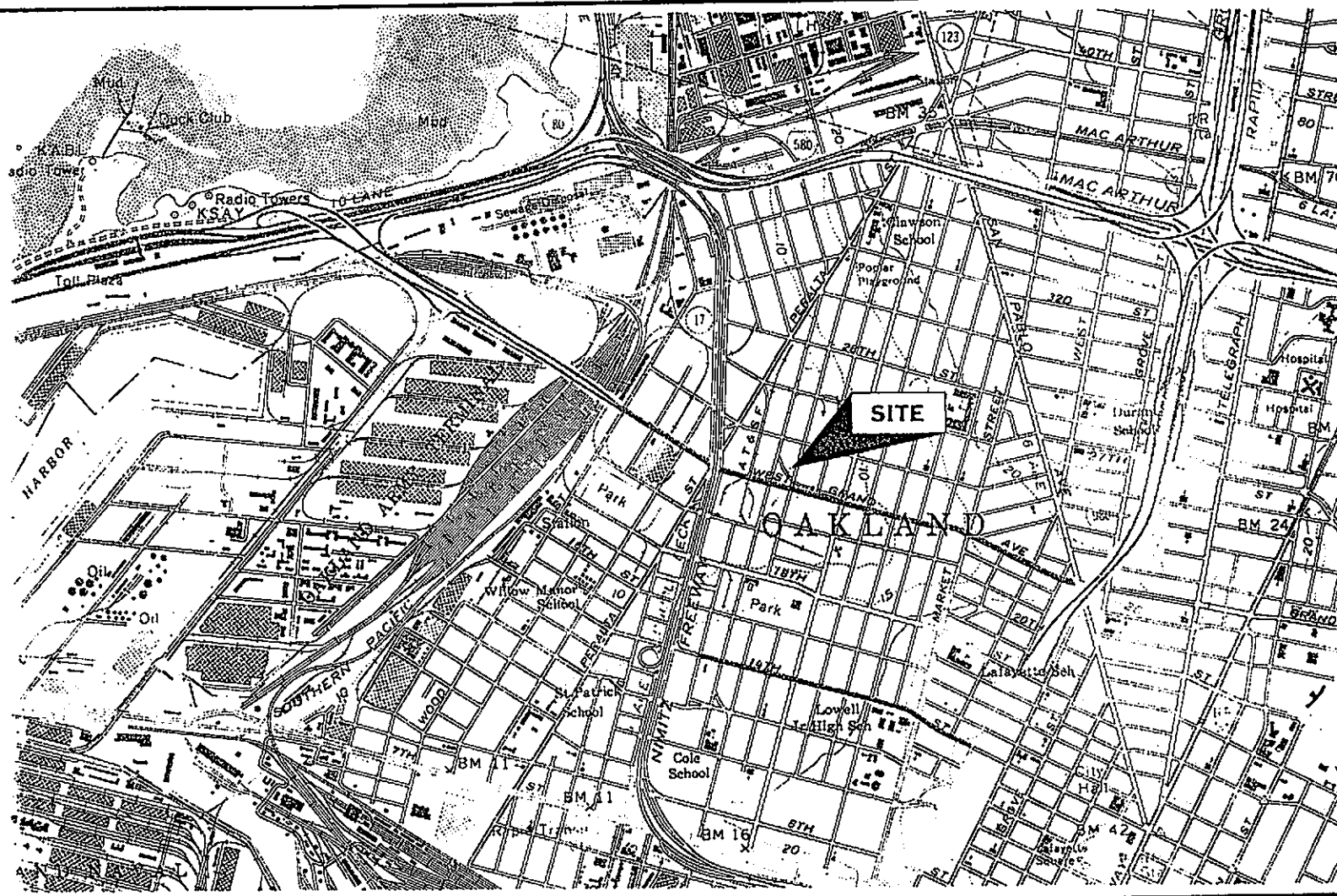
PCE is Tetrachloroethene

TCE is Trichloroethene

DCE is Dichloroethene

DCA is Dichloroethane

VC is Vinyl Chloride

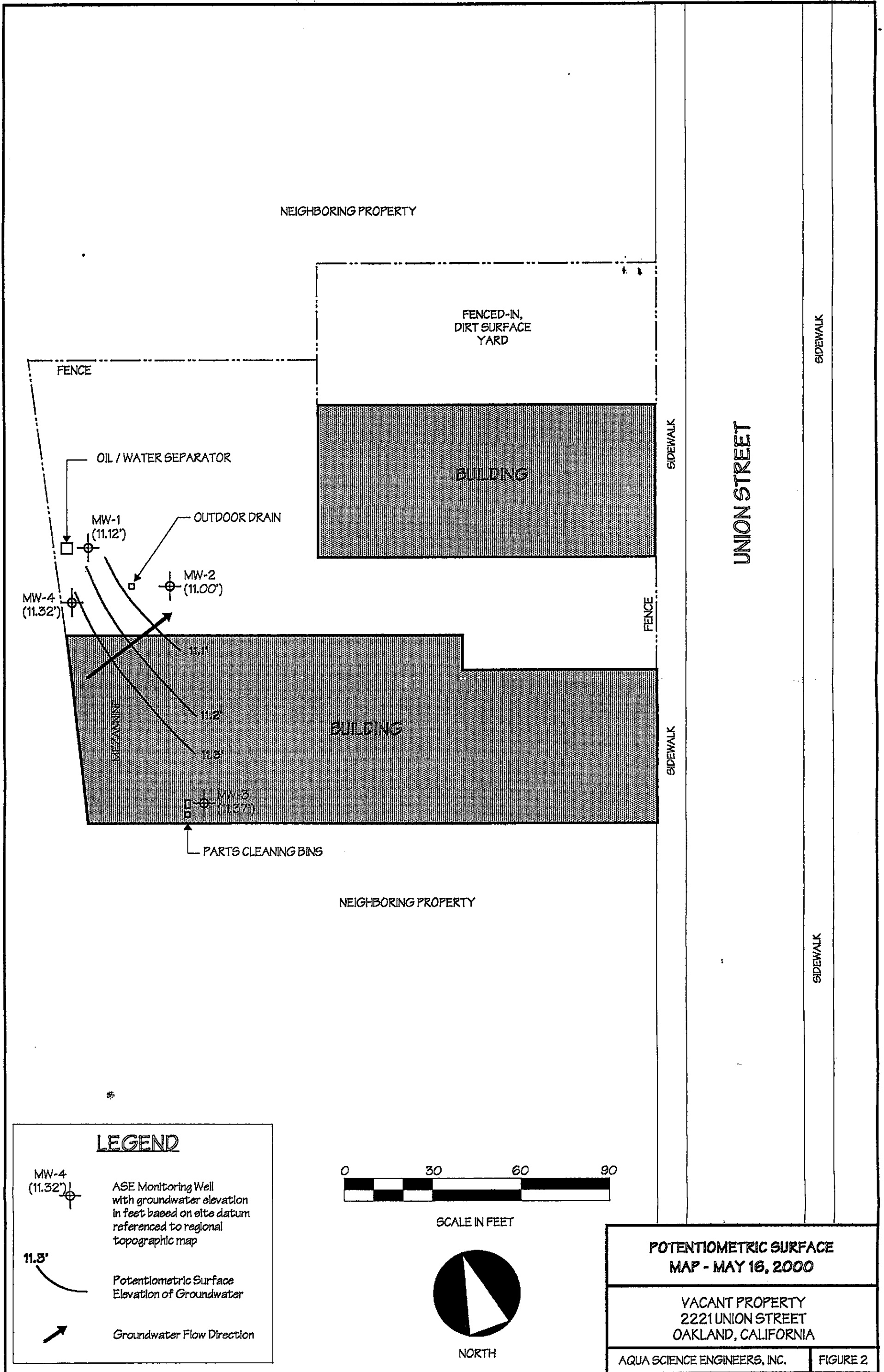


NORTH

# LOCATION MAP

2221 Union Street  
Oakland, California

AQUA SCIENCE ENGINEERS, INC. Figure 1





# APPENDIX A

Well Sampling Field Logs

①



# WELL SAMPLING FIELD LOG

Project Name and Address: Union St  
 Job #: 3515 Date of sampling: 5/16/00  
 Well Name: MW-1 Sampled by: MR  
 Total depth of well (feet): 20.0' Well diameter (inches): 2"  
 Depth to water before sampling (feet): 3.88'  
 Thickness of floating product if any: - None  
 Depth of well casing in water (feet): 16.12  
 Number of gallons per well casing volume (gallons): 2.7  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 11  
 Equipment used to purge the well: ded. bailer  
 Time Evacuation Began: 1450 Time Evacuation Finished: 1510  
 Approximate volume of groundwater purged: 11  
 Did the well go dry?: NO After how many gallons: -  
 Time samples were collected: 1515  
 Depth to water at time of sampling: 4.01  
 Percent recovery at time of sampling: 99%  
 Samples collected with: dedicated bailer  
 Sample color: clear/brown Odor: None  
 Description of sediment in sample: f. silt

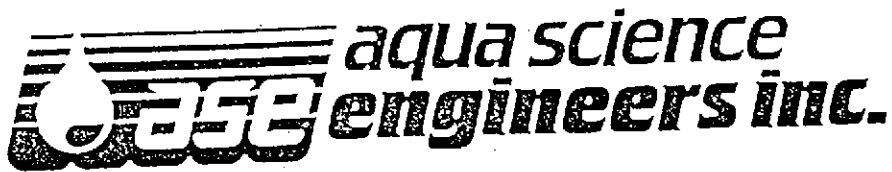
## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>71.0</u>	<u>6.43</u>	<u>761</u>
<u>2</u>	<u>71.0</u>	<u>6.41</u>	<u>780</u>
<u>3</u>	<u>71.4</u>	<u>6.42</u>	<u>792</u>
<u>4</u>	<u>71.3</u>	<u>6.43</u>	<u>787</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-1</u>	<u>3</u>	<u>4oz UCA</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

3



# WELL SAMPLING FIELD LOG

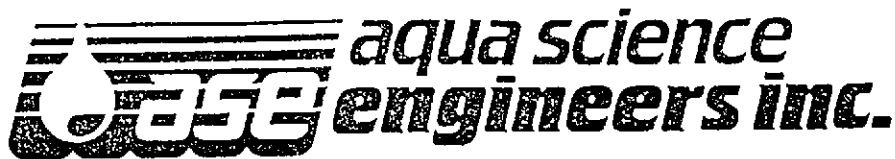
Project Name and Address: Union St  
 Job #: 3515 Date of sampling: 5/16/00  
 Well Name: MW-2 Sampled by: ITR  
 Total depth of well (feet): 20.0' Well diameter (inches): 2"  
 Depth to water before sampling (feet): 4.24'  
 Thickness of floating product if any: None  
 Depth of well casing in water (feet): 15.76  
 Number of gallons per well casing volume (gallons): 2.7  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 11  
 Equipment used to purge the well: ded. boiler  
 Time Evacuation Began: 1415 Time Evacuation Finished: 1435  
 Approximate volume of groundwater purged: 11  
 Did the well go dry?: No After how many gallons: -  
 Time samples were collected: 1440  
 Depth to water at time of sampling: 4.29  
 Percent recovery at time of sampling: 99%  
 Samples collected with: dedicated boiler  
 Sample color: clear/l.brown Odor: None  
 Description of sediment in sample: f. silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	69.9	6.41	810
2	71.0	6.37	857
3	71.1	6.39	971
4	71.3	6.39	908

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-2	2	40ml VOA	✓	✓	



# WELL SAMPLING FIELD LOG

4

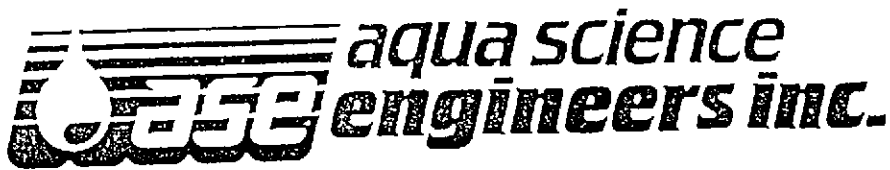
Project Name and Address: Union St -  
 Job #: 3515 Date of sampling: 5/16/00  
 Well Name: MD-3 Sampled by: ITS  
 Total depth of well (feet): 20.0' Well diameter (inches): 2"  
 Depth to water before sampling (feet): 3.80  
 Thickness of floating product if any: None  
 Depth of well casing in water (feet): 16.2  
 Number of gallons per well casing volume (gallons): 2.75  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 11  
 Equipment used to purge the well: elec. bailer  
 Time Evacuation Began: 1530 Time Evacuation Finished: 1545  
 Approximate volume of groundwater purged: 11  
 Did the well go dry?: NO After how many gallons: -  
 Time samples were collected: 1530  
 Depth to water at time of sampling: 4.02  
 Percent recovery at time of sampling: 93%  
 Samples collected with: electrical bailer  
 Sample color: clear/brn Odor: None  
 Description of sediment in sample: f. silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>76.1</u>	<u>6.76</u>	<u>641</u>
<u>2</u>	<u>71.7</u>	<u>6.81</u>	<u>652</u>
<u>3</u>	<u>71.3</u>	<u>6.74</u>	<u>674</u>
<u>4</u>	<u>70.9</u>	<u>6.79</u>	<u>687</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MD-3</u>	<u>3</u>	<u>410ml vial</u>	<u>✓</u>	<u>✓</u>	



# WELL SAMPLING FIELD LOG

Project Name and Address: Union St. —  
 Job #: 2515 Date of sampling: 5/16/00  
 Well Name: MW-4 Sampled by: ITZ  
 Total depth of well (feet): 19.51 Well diameter (inches): 2"  
 Depth to water before sampling (feet): 3.89'  
 Thickness of floating product if any: — None  
 Depth of well casing in water (feet): 15.61  
 Number of gallons per well casing volume (gallons): 2.65  
 Number of well casing volumes to be removed: 4  
 Req'd volume of groundwater to be purged before sampling (gallons): 10.6  
 Equipment used to purge the well: dedicated bailer  
 Time Evacuation Began: 1345 Time Evacuation Finished: 1400  
 Approximate volume of groundwater purged: 11  
 Did the well go dry?: NO After how many gallons: —  
 Time samples were collected: 1405  
 Depth to water at time of sampling: 3.94  
 Percent recovery at time of sampling: 99%  
 Samples collected with: dedicated bailer  
 Sample color: l. brown Odor: None  
 Description of sediment in sample: fine silt

## CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>71.4</u>	<u>7.13</u>	<u>631</u>
<u>2</u>	<u>71.3</u>	<u>7.21</u>	<u>674</u>
<u>3</u>	<u>71.2</u>	<u>7.20</u>	<u>770</u>
<u>4</u>	<u>71.0</u>	<u>7.21</u>	<u>694</u>

## SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>3</u>	<u>400ml VOA</u>	<u>✓</u>	<u>✓</u>	

## **APPENDIX B**

Certified Analytical Report  
and  
Chain of Custody Documentation

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

Attn.: Mr. Ian T. Reed

Project: 3515  
Kendall - Union St.

Site: 2221 Union St.  
Oakland, CA

Dear Mr. Reed,

Attached is our report for your samples received on Thursday May 18, 2000  
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 June 17, 2000  
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

## Halogenated Volatile Organic Compounds

Aqua Science Engineers, Inc.

✉ 208 West El Pintado Road  
Danville, CA 94526

Attn: Ian T. Reed

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

Project #: 3515

Project: Kendall - Union St.

Site: 2221 Union St.  
Oakland, CA

### Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW-1	Water	05/16/2000 15:15	1
MW-2	Water	05/16/2000 14:40	2
MW-3	Water	05/16/2000 15:50	3
MW-4	Water	05/16/2000 14:05	4



# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.

Test Method: 8010

Attn.: Ian T. Reed

Prep Method: 5030

## Halogenated Volatile Organic Compounds

Sample ID: MW-1	Lab Sample ID: 2000-05-0411-001
Project: 3515 Kendall - Union St.	Received: 05/18/2000 15:04
Site: 2221 Union St. Oakland, CA	Extracted: 05/26/2000 03:01
Sampled: 05/16/2000 15:15	QC-Batch: 2000/05/25-01.26
Matrix: Water	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Dichlorodifluoromethane	ND	10	ug/L	10.00	05/26/2000 03:01	
Vinyl chloride	7.8	5.0	ug/L	10.00	05/26/2000 03:01	
Chloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Trichlorofluoromethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,1-Dichloroethene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Methylene chloride	ND	50	ug/L	10.00	05/26/2000 03:01	
trans-1,2-Dichloroethene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
cis-1,2-Dichloroethene	10	5.0	ug/L	10.00	05/26/2000 03:01	
1,1-Dichloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Chloroform	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,1,1-Trichloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Carbon tetrachloride	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,2-Dichloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Trichloroethene	73	5.0	ug/L	10.00	05/26/2000 03:01	
1,2-Dichloropropane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Bromodichloromethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
2-Chloroethylvinyl ether	ND	5.0	ug/L	10.00	05/26/2000 03:01	
trans-1,3-Dichloropropene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
cis-1,3-Dichloropropene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,1,2-Trichloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Tetrachloroethene	260	5.0	ug/L	10.00	05/26/2000 03:01	
Dibromochloromethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Chlorobenzene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Bromoform	ND	20	ug/L	10.00	05/26/2000 03:01	
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,3-Dichlorobenzene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,4-Dichlorobenzene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
1,2-Dichlorobenzene	ND	5.0	ug/L	10.00	05/26/2000 03:01	
Trichlorotrifluoroethane	ND	20	ug/L	10.00	05/26/2000 03:01	
Chloromethane	ND	10	ug/L	10.00	05/26/2000 03:01	
Bromomethane	ND	10	ug/L	10.00	05/26/2000 03:01	
<b>Surrogate(s)</b>						
1-Chloro-2-fluorobenzene	92.8	50-150	%	1.00	05/26/2000 03:01	

1220 Quarry Lane \* Pleasanton, CA 94566-4756  
Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn.: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Halogenated Volatile Organic Compounds

Sample ID: MW-2	Lab Sample ID: 2000-05-0411-002
Project: 3515 Kendall - Union St.	Received: 05/18/2000 15:04
Site: 2221 Union St. Oakland, CA	Extracted: 05/24/2000 23:44
Sampled: 05/16/2000 14:40	QC-Batch: 2000/05/24-01.26
Matrix: Water	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Dichlorodifluoromethane	ND	20	ug/L	20.00	05/24/2000 23:44	
Vinyl chloride	ND	10	ug/L	20.00	05/24/2000 23:44	
Chloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Trichlorofluoromethane	ND	10	ug/L	20.00	05/24/2000 23:44	
1,1-Dichloroethene	ND	10	ug/L	20.00	05/24/2000 23:44	
Methylene chloride	ND	100	ug/L	20.00	05/24/2000 23:44	
trans-1,2-Dichloroethene	ND	10	ug/L	20.00	05/24/2000 23:44	
cis-1,2-Dichloroethene	74	10	ug/L	20.00	05/24/2000 23:44	
1,1-Dichloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Chloroform	ND	10	ug/L	20.00	05/24/2000 23:44	
1,1,1-Trichloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Carbon tetrachloride	ND	10	ug/L	20.00	05/24/2000 23:44	
1,2-Dichloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Trichloroethene	220	10	ug/L	20.00	05/24/2000 23:44	
1,2-Dichloropropane	ND	10	ug/L	20.00	05/24/2000 23:44	
Bromodichloromethane	ND	10	ug/L	20.00	05/24/2000 23:44	
2-Chloroethylvinyl ether	ND	10	ug/L	20.00	05/24/2000 23:44	
trans-1,3-Dichloropropene	ND	10	ug/L	20.00	05/24/2000 23:44	
cis-1,3-Dichloropropene	ND	10	ug/L	20.00	05/24/2000 23:44	
1,1,2-Trichloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Tetrachloroethene	820	10	ug/L	20.00	05/24/2000 23:44	
Dibromochloromethane	ND	10	ug/L	20.00	05/24/2000 23:44	
Chlorobenzene	ND	10	ug/L	20.00	05/24/2000 23:44	
Bromoform	ND	40	ug/L	20.00	05/24/2000 23:44	
1,1,2,2-Tetrachloroethane	ND	10	ug/L	20.00	05/24/2000 23:44	
1,3-Dichlorobenzene	ND	10	ug/L	20.00	05/24/2000 23:44	
1,4-Dichlorobenzene	ND	10	ug/L	20.00	05/24/2000 23:44	
1,2-Dichlorobenzene	ND	10	ug/L	20.00	05/24/2000 23:44	
Trichlorotrifluoroethane	ND	40	ug/L	20.00	05/24/2000 23:44	
Chloromethane	ND	20	ug/L	20.00	05/24/2000 23:44	
Bromomethane	ND	20	ug/L	20.00	05/24/2000 23:44	
<b>Surrogate(s)</b>						
1-Chloro-2-fluorobenzene	102.7	50-150	%	1.00	05/24/2000 23:44	

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Telephone: (925) 484-1919 \* Facsimile: (925) 484-1096

# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.

Test Method: 8010

Attn.: Ian T. Reed

Prep Method: 5030

## Halogenated Volatile Organic Compounds

Sample ID: MW-3	Lab Sample ID: 2000-05-0411-003
Project: 3515 Kendall - Union St.	Received: 05/18/2000 15:04
Site: 2221 Union St. Oakland, CA	Extracted: 05/26/2000 02:18
Sampled: 05/16/2000 15:50	QC-Batch: 2000/05/25-01.26
Matrix: Water	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Dichlorodifluoromethane	ND	2.0	ug/L	2.00	05/26/2000 02:18	
Vinyl chloride	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Chloroethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Trichlorofluoromethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,1-Dichloroethene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Methylene chloride	ND	10	ug/L	2.00	05/26/2000 02:18	
trans-1,2-Dichloroethene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
cis-1,2-Dichloroethene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,1-Dichloroethane	5.3	1.0	ug/L	2.00	05/26/2000 02:18	
Chloroform	11	1.0	ug/L	2.00	05/26/2000 02:18	
1,1,1-Trichloroethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Carbon tetrachloride	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,2-Dichloroethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Trichloroethene	8.7	1.0	ug/L	2.00	05/26/2000 02:18	
1,2-Dichloropropane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Bromodichloromethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
2-Chloroethylvinyl ether	ND	1.0	ug/L	2.00	05/26/2000 02:18	
trans-1,3-Dichloropropene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
cis-1,3-Dichloropropene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,1,2-Trichloroethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Tetrachloroethene	54	1.0	ug/L	2.00	05/26/2000 02:18	
Dibromochloromethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Chlorobenzene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Bromoform	ND	4.0	ug/L	2.00	05/26/2000 02:18	
1,1,2,2-Tetrachloroethane	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,3-Dichlorobenzene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,4-Dichlorobenzene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
1,2-Dichlorobenzene	ND	1.0	ug/L	2.00	05/26/2000 02:18	
Trichlorotrifluoroethane	ND	4.0	ug/L	2.00	05/26/2000 02:18	
Chloromethane	ND	2.0	ug/L	2.00	05/26/2000 02:18	
Bromomethane	ND	2.0	ug/L	2.00	05/26/2000 02:18	
<b>Surrogate(s)</b>						
1-Chloro-2-fluorobenzene	83.0	50-150	%	1.00	05/26/2000 02:18	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn.: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Halogenated Volatile Organic Compounds

Sample ID: MW-4	Lab Sample ID: 2000-05-0411-004
Project: 3515 Kendall - Union St.	Received: 05/18/2000 15:04
Site: 2221 Union St. Oakland, CA	Extracted: 05/26/2000 01:34
Sampled: 05/16/2000 14:05	QC-Batch: 2000/05/25-01.26
Matrix: Water	

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Dichlorodifluoromethane	ND	1.0	ug/L	1.00	05/26/2000 01:34	
Vinyl chloride	0.75	0.50	ug/L	1.00	05/26/2000 01:34	
Chloroethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Trichlorofluoromethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,1-Dichloroethene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Methylene chloride	ND	5.0	ug/L	1.00	05/26/2000 01:34	
trans-1,2-Dichloroethene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
cis-1,2-Dichloroethene	12	0.50	ug/L	1.00	05/26/2000 01:34	
1,1-Dichloroethane	19	0.50	ug/L	1.00	05/26/2000 01:34	
Chloroform	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,1,1-Trichloroethane	3.0	0.50	ug/L	1.00	05/26/2000 01:34	
Carbon tetrachloride	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,2-Dichloroethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Trichloroethene	13	0.50	ug/L	1.00	05/26/2000 01:34	
1,2-Dichloropropane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Bromodichloromethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
2-Chloroethylvinyl ether	ND	0.50	ug/L	1.00	05/26/2000 01:34	
trans-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
cis-1,3-Dichloropropene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,1,2-Trichloroethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Tetrachloroethene	24	0.50	ug/L	1.00	05/26/2000 01:34	
Dibromochloromethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Chlorobenzene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Bromoform	ND	2.0	ug/L	1.00	05/26/2000 01:34	
1,1,2,2-Tetrachloroethane	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,3-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,4-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
1,2-Dichlorobenzene	ND	0.50	ug/L	1.00	05/26/2000 01:34	
Trichlorotrifluoroethane	ND	2.0	ug/L	1.00	05/26/2000 01:34	
Chloromethane	ND	1.0	ug/L	1.00	05/26/2000 01:34	
Bromomethane	ND	1.0	ug/L	1.00	05/26/2000 01:34	
<b>Surrogate(s)</b> 1-Chloro-2-fluorobenzene	99.4	50-150	%	1.00	05/26/2000 01:34	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn.: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Batch QC Report Halogenated Volatile Organic Compounds

Method Blank	Water	QC Batch # 2000/05/24-01.26
MB: 2000/05/24-01.26-001		Date Extracted: 05/24/2000 17:47

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Dichlorodifluoromethane	ND	1.0	ug/L	05/24/2000 17:47	
Vinyl chloride	ND	0.5	ug/L	05/24/2000 17:47	
Chloroethane	ND	0.5	ug/L	05/24/2000 17:47	
Trichlorofluoromethane	ND	0.5	ug/L	05/24/2000 17:47	
1,1-Dichloroethene	ND	0.5	ug/L	05/24/2000 17:47	
Methylene chloride	ND	5.0	ug/L	05/24/2000 17:47	
trans-1,2-Dichloroethene	ND	0.5	ug/L	05/24/2000 17:47	
cis-1,2-Dichloroethene	ND	0.5	ug/L	05/24/2000 17:47	
1,1-Dichloroethane	ND	0.5	ug/L	05/24/2000 17:47	
Chloroform	ND	0.5	ug/L	05/24/2000 17:47	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/24/2000 17:47	
Carbon tetrachloride	ND	0.5	ug/L	05/24/2000 17:47	
1,2-Dichloroethane	ND	0.5	ug/L	05/24/2000 17:47	
Trichloroethene	ND	0.5	ug/L	05/24/2000 17:47	
1,2-Dichloropropane	ND	0.5	ug/L	05/24/2000 17:47	
Bromodichloromethane	ND	0.5	ug/L	05/24/2000 17:47	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/24/2000 17:47	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/24/2000 17:47	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/24/2000 17:47	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/24/2000 17:47	
Tetrachloroethene	ND	0.5	ug/L	05/24/2000 17:47	
Dibromochloromethane	ND	0.5	ug/L	05/24/2000 17:47	
Chlorobenzene	ND	0.5	ug/L	05/24/2000 17:47	
Bromoform	ND	2.0	ug/L	05/24/2000 17:47	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/24/2000 17:47	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/24/2000 17:47	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/24/2000 17:47	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/24/2000 17:47	
Trichlorotrifluoroethane	ND	2.0	ug/L	05/24/2000 17:47	
Chloromethane	ND	1.0	ug/L	05/24/2000 17:47	
Bromomethane	ND	1.0	ug/L	05/24/2000 17:47	
<b>Surrogate(s)</b>					
1-Chloro-2-fluorobenzene	95.5	50-150	%	05/24/2000 17:47	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn.: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Batch QC Report Halogenated Volatile Organic Compounds

Method Blank	Water	QC Batch # 2000/05/25-01.26
MB: 2000/05/25-01.26-001		Date Extracted: 05/25/2000 20:31

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Dichlorodifluoromethane	ND	1.0	ug/L	05/25/2000 20:31	
Vinyl chloride	ND	0.5	ug/L	05/25/2000 20:31	
Chloroethane	ND	0.5	ug/L	05/25/2000 20:31	
Trichlorofluoromethane	ND	0.5	ug/L	05/25/2000 20:31	
1,1-Dichloroethene	ND	0.5	ug/L	05/25/2000 20:31	
Methylene chloride	ND	5.0	ug/L	05/25/2000 20:31	
trans-1,2-Dichloroethene	ND	0.5	ug/L	05/25/2000 20:31	
cis-1,2-Dichloroethene	ND	0.5	ug/L	05/25/2000 20:31	
1,1-Dichloroethane	ND	0.5	ug/L	05/25/2000 20:31	
Chloroform	ND	0.5	ug/L	05/25/2000 20:31	
1,1,1-Trichloroethane	ND	0.5	ug/L	05/25/2000 20:31	
Carbon tetrachloride	ND	0.5	ug/L	05/25/2000 20:31	
1,2-Dichloroethane	ND	0.5	ug/L	05/25/2000 20:31	
Trichloroethene	ND	0.5	ug/L	05/25/2000 20:31	
1,2-Dichloropropane	ND	0.5	ug/L	05/25/2000 20:31	
Bromodichloromethane	ND	0.5	ug/L	05/25/2000 20:31	
2-Chloroethylvinyl ether	ND	0.5	ug/L	05/25/2000 20:31	
trans-1,3-Dichloropropene	ND	0.5	ug/L	05/25/2000 20:31	
cis-1,3-Dichloropropene	ND	0.5	ug/L	05/25/2000 20:31	
1,1,2-Trichloroethane	ND	0.5	ug/L	05/25/2000 20:31	
Tetrachloroethene	ND	0.5	ug/L	05/25/2000 20:31	
Dibromochloromethane	ND	0.5	ug/L	05/25/2000 20:31	
Chlorobenzene	ND	0.5	ug/L	05/25/2000 20:31	
Bromoform	ND	2.0	ug/L	05/25/2000 20:31	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	05/25/2000 20:31	
1,3-Dichlorobenzene	ND	0.5	ug/L	05/25/2000 20:31	
1,4-Dichlorobenzene	ND	0.5	ug/L	05/25/2000 20:31	
1,2-Dichlorobenzene	ND	0.5	ug/L	05/25/2000 20:31	
Trichlorotrifluoroethane	ND	2.0	ug/L	05/25/2000 20:31	
Chloromethane	ND	1.0	ug/L	05/25/2000 20:31	
Bromomethane	ND	1.0	ug/L	05/25/2000 20:31	
<b>Surrogate(s)</b>					
1-Chloro-2-fluorobenzene	82.5	50-150	%	05/25/2000 20:31	

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Batch QC Report

### Halogenated Volatile Organic Compounds

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 2000/05/24-01.26</b>
LCS: 2000/05/24-01.26-002	Extracted: 05/24/2000 16:21	Analyzed 05/24/2000 16:21
LCSD: 2000/05/24-01.26-003	Extracted: 05/24/2000 17:04	Analyzed 05/24/2000 17:04

Compound	Conc. [ug/L]		Exp. Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
1,1-Dichloroethene	19.3	23.1	20	20	96.5	115.5	17.9	50-140	20		
Trichloroethene	20.4	24.1	20	20	102.0	120.5	16.6	50-150	20		
Chlorobenzene	22.4	24.3	20	20	112.0	121.5	8.1	50-150	20		
<b>Surrogate(s)</b>											
1-Chloro-2-fluorobenzene	19.7	21.5	20	20	98.5	107.5		50-150			

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# CHROMALAB, INC.

Environmental Services (SDB)

Submission #: 2000-05-0411

To: Aqua Science Engineers, Inc.  
Attn: Ian T. Reed

Test Method: 8010  
Prep Method: 5030

## Batch QC Report

### Halogenated Volatile Organic Compounds

<b>Laboratory Control Spike (LCS/LCSD)</b>	<b>Water</b>	<b>QC Batch # 2000/05/25-01.26</b>
LCS: 2000/05/25-01.26-002	Extracted: 05/25/2000 21:14	Analyzed 05/25/2000 21:14
LCSD: 2000/05/25-01.26-003	Extracted: 05/25/2000 21:57	Analyzed 05/25/2000 21:57

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD [%]	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD		Recovery	RPD	LCS	LCSD
1,1-Dichloroethene	18.4	19.1	20	20	92.0	95.5	3.7	50-140	20		
Trichloroethene	20.2	20.4	20	20	101.0	102.0	1.0	50-150	20		
Chlorobenzene	21.9	21.9	20	20	109.5	109.5	0.0	50-150	20		
<b>Surrogate(s)</b>											
1-Chloro-2-fluorobenzene	19.3	19.3	20	20	96.5	96.5		50-150			

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

# Chain of Custody

2000-05-0411

SAMPLER (SIGNATURE) Jan T Reed (PHONE NO.) (925) 820-9391 PROJECT NAME Rendall - Union St. JOB NO. 3515  
 ADDRESS 2221 Union ST, Oakland DATE 5/18/00

ANALYSIS REQUEST					TPH-GAS / MTBE & BTEX (EPA 5030/8015-8020)	TPH-GASOLINE (EPA 5030/8015)	TPH-DIESEL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	PURGEABLE AROMATICS (EPA 602/8020)	VOLATILE ORGANICS (EPA 624/8240)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LIFT METALS (5) (EPA 6010+7000)	CAMEL METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140) (EPA 608/8080)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)				COMPOSITE	
SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES																			
MW-1	5/16	1515	water	3				X															
MW-2	5/16	1440	water	3				X															
MW-3	5/16	1550	water	3				X															
MW-4	5/16	1405	water	3				X															

RELINQUISHED BY: <u>Jan T Reed</u> 1005 (signature) (time)	RECEIVED BY: <u>B Morrow</u> 1005 (signature) (time)	RELINQUISHED BY: <u>B Morrow</u> 1504 (signature) (time)	RECEIVED BY LABORATORY: <u>D. Harrington</u> (signature) (time)	COMMENTS:  <u>5-day TAT.</u>
<u>Jan T. Reed</u> 5/18/00 (printed name) (date)	<u>B Morrow</u> 5-18-00 (printed name) (date)	<u>B Morrow</u> 5/18/00 (printed name) (date)	<u>D. Harrington</u> (printed name) (date)	
Company- <u>ASE</u>	Company- <u>Chronal</u>	Company- <u>Chronal</u>	Company- <u>1504</u> <u>Chronal</u> 5/18/00	