aqua science engineers inc.

April 4, 1996

QUARTERLY GROUNDWATER MONITORING REPORT
MARCH 11, 1996 GROUNDWATER SAMPLING
ASE JOB NO. 2607

at
Former Alameda Max's
1357 High Street
Alameda, California 94501

Prepared for:
Mr. James A. Phillipsen
3111 Marina Drive
Alameda, CA 94501

Prepared by:
AQUA SCIENCE ENGINEERS, INC.
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
(510) 820-9391

REGISTERED PROFESSIONAL ENGINEER
DAVID M. SCHULTZ
No. 38738
Exp. 4-97
CIVIL
STATE OF CALIFORNIA

1.0 INTRODUCTION

Site Location (Site), See Figure 1
Former Alameda Max's
1357 High Street
Alameda, CA 94501

Property Owner
Mr. James A. Phillipsen
3111 Marina Drive
Alameda, CA 94501

Environmental Consulting Firm
Aqua Science Engineers, Inc. (ASE)
2411 Old Crow Canyon Road, #4
San Ramon, CA 94583
Contact: Robert Kitay, Project Manager
(510) 820-9391

Agency Review
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway
Alameda, CA 94502
Contact: Ms. Juliet Shin
(510) 567-6700

California Regional Water Quality Control Board (RWQCB),
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612
Contact: Mr. Kevin Graves
(510) 286-4359

The following is a report detailing the results of the March 11, 1996, quarterly groundwater sampling at the above referenced site.

2.0 OIL SKIMMER

An oil skimmer operated in monitoring well MW-2 between September 15, 1995 and November 7, 1995 in order to remove the free-floating oil that has been present in this well. Approximately 65 gallons of oil and water were removed from the well during this period. Monitoring well MW-2 was subsequently destroyed on March 13, 1996, to allow for future overexcavation in that area.

3.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On March 11, 1996, ASE environmental specialist Scott Ferriman measured the depth to water in each site well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. A small amount of free-floating hydrocarbons was present on the surface of the groundwater in monitoring well MW-2. No free-floating hydrocarbons or sheen was present on the surface of water from monitoring wells MW-1, MW-3 or MW-4. Depth to groundwater measurements are presented in Table One.

Groundwater elevation contours are presented on Figure 2. On March 11, 1996, groundwater flowed to the southeast beneath the site at a gradient of 0.019-feet/foot, which is consistent with previous findings.

4.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

Prior to sampling, each monitoring well was purged of four well casing volumes of water using a 12 volt electric PVC pump. The pH, temperature and conductivity of the water were monitored during the purging, and samples were not collected until these parameters stabilized. Groundwater samples were then collected using dedicated polyethylene bailers. The samples were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials and 1-liter amber glass bottles. The samples were preserved with hydrochloric acid, capped, labeled, and placed into an ice chest containing wet ice for transport to Curtis and Tompkins, Ltd. (C&T) of Berkeley, California (DOHS #1459) under chain-of-custody.

The analytical results for this and previous quarters are presented in Tables ~~Two~~ 2 and ~~Three~~, 3 and the certified laboratory report and chain-of-custody form are included ~~as~~ in Appendix A.

The well purge water was placed in 55-gallon steel DOT 17H drums, labeled, and left on-site for temporary storage.

The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 5030/8015, total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 3510/8015, total and hydrocarbon oil and grease (O&G) by Standard Method 5520 B&F, benzene, toluene, ethylbenzene and total xylenes (BTEX) and methyl t-butyl ether (MTBE) by EPA Method 8020.

5.0 CONCLUSIONS

A small amount of free-floating hydrocarbons was present on the groundwater surface in monitoring well MW-2. Hydrocarbon concentrations in groundwater samples collected from monitoring well MW-3 increased slightly this quarter. Hydrocarbon concentrations in groundwater samples collected from monitoring well MW-4 decreased slightly this quarter. Benzene concentrations in the groundwater samples collected from monitoring wells MW-1, MW-3, and MW-4 decreased to non-detectable this quarter. No MTBE was detected in groundwater samples collected from monitoring wells MW-1, MW-3, and MW-4. None of the hydrocarbon concentrations detected this quarter exceeded California Department of Toxic Substance Control (DTSC) maximum contamination levels (MCLs) for drinking water.

6.0 RECOMMENDATIONS

A workplan to destroy monitoring well MW-2, overexcavate and dispose of contaminated soil in the vicinity of the former waste oil tank, and replace monitoring well MW-2 following the backfilling has been approved ~~from~~ by the Alameda County Health Care Services Agency. The overexcavation is scheduled for April 1996.

The next quarterly groundwater sampling is scheduled for June 1996.

7.0 REPORT LIMITATIONS

The results of 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 for 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 for by the laboratory. All of the laboratory work cited in this report was prepared under the direction of 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 to you, and trust that this report meets your needs. Please feel free to call us at (510) 820-9391 if you have any questions or comments.

Respectfully submitted,

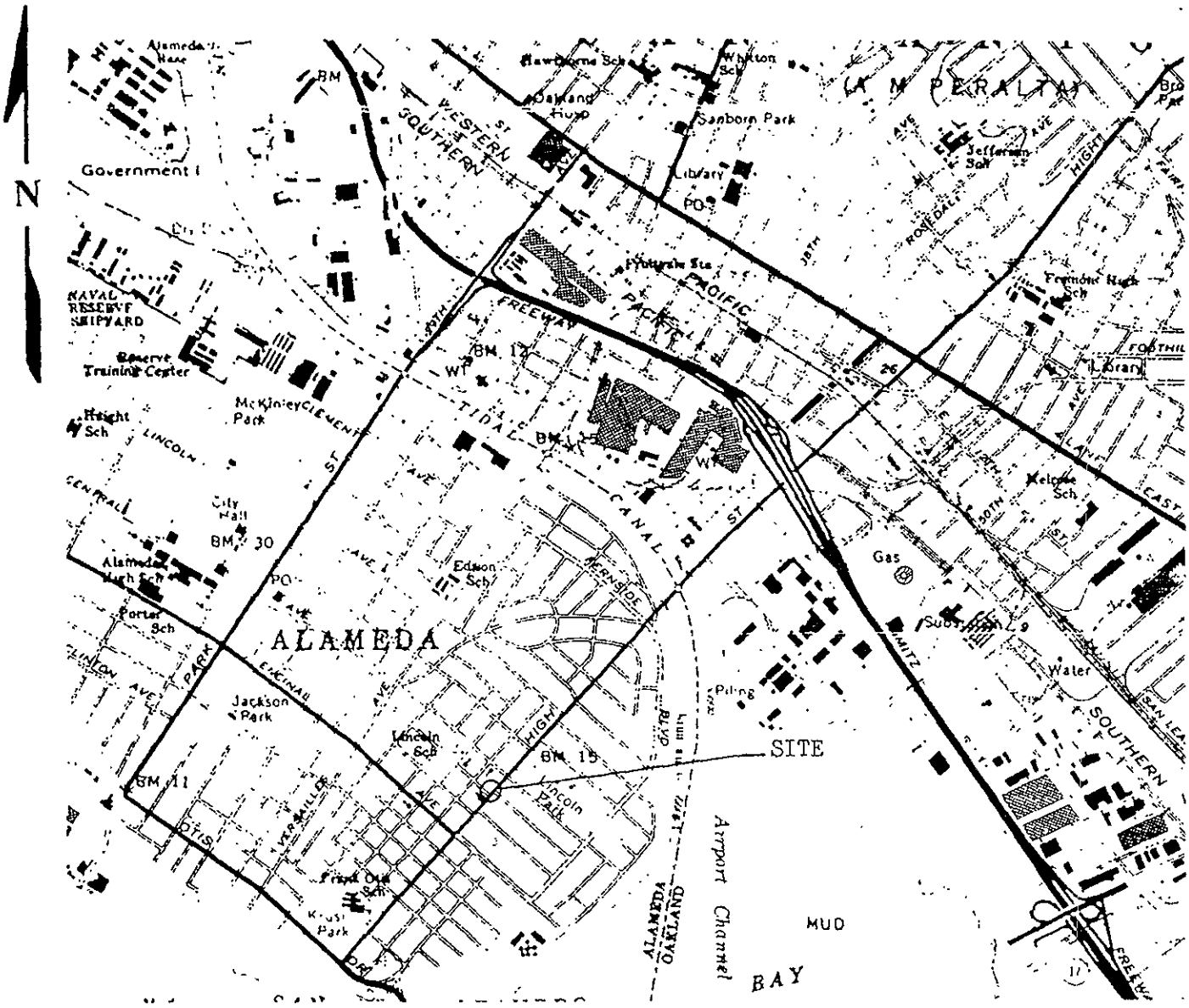
AQUA SCIENCE ENGINEERS, INC.

Scott T. Ferriman
Environmental Specialist

Attachments: Figures 1 and 2
Tables 1, 2 and 3
Appendices A and B

cc: Ms. Juliet Shin, Alameda County Health Care Services Agency
Mr. Kevin Graves, RWQCB, San Francisco Bay Region

FIGURES

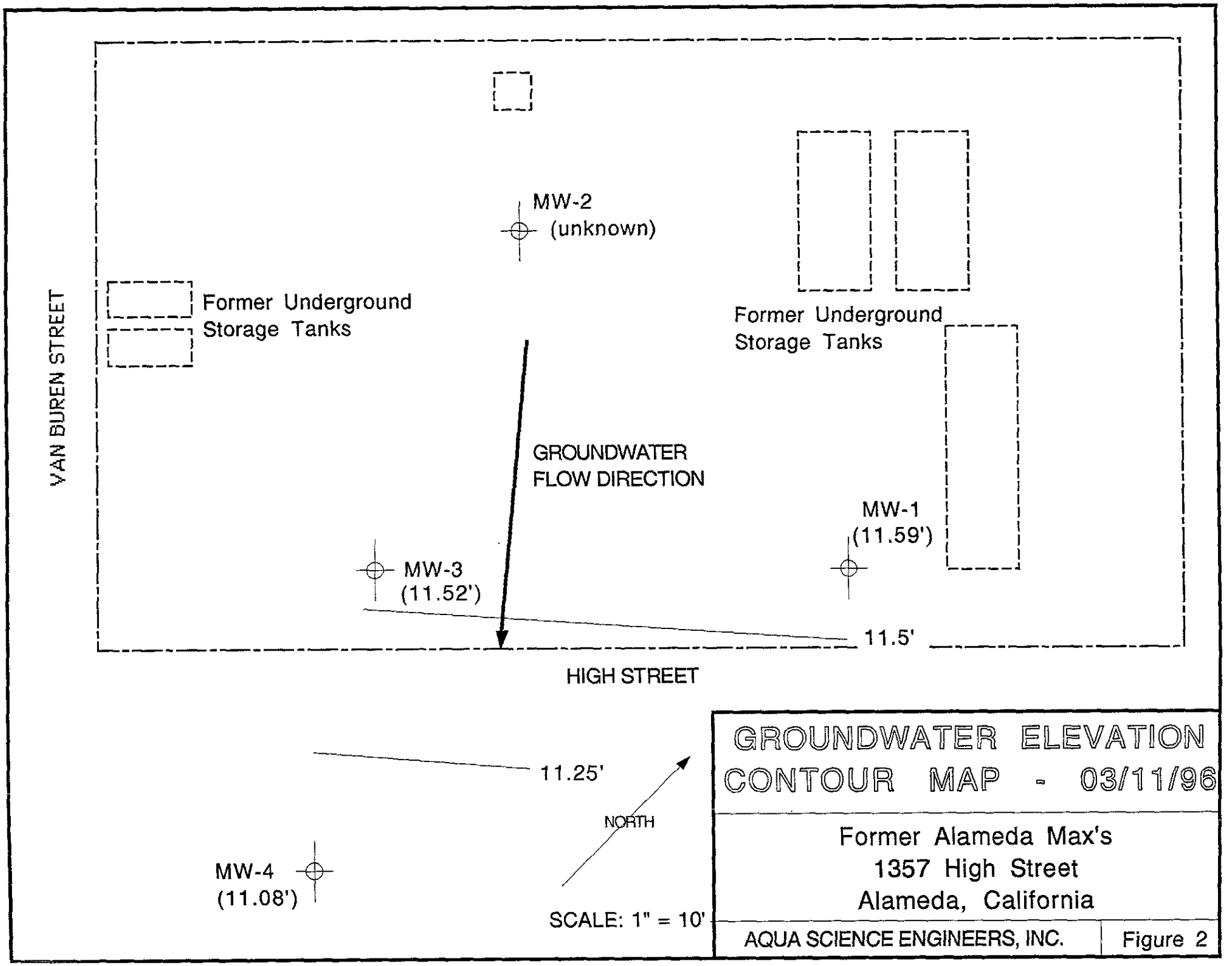


BASE: Oakland East and Oakland West 7.5 minute quadrangle topographic map, dated 1980, scale 1:24,000.

SITE LOCATION MAP

Alameda Max's
1357 High Street
Alameda, California

Aqua Science Engineers | Figure 1



GROUNDWATER ELEVATION CONTOUR MAP - 03/11/96

Former Alameda Max's
1357 High Street
Alameda, California

AQUA SCIENCE ENGINEERS, INC. | Figure 2

TABLES

TABLE ONE
Summary of Groundwater Well Survey Data

Well I.D.	Date of Measurement	Top of Casing Elevation (relative to project datum)	Depth to Water (feet)	Groundwater Elevation (project data)
MW-1	04-06-94	15.00	3.92	11.08
	08-02-94		4.10	10.90
	10-04-94		4.42	10.58
	12-14-94		3.42	11.58
	03-16-95		3.21	11.79
	06-06-95		3.84	11.16
	09-14-95		4.18	10.82
	12-05-95		4.28	10.72
	03-11-96		3.41	11.59
MW-2	04-06-94	14.37	3.02	11.35
	08-02-94		3.32	11.18*
	12-14-94		2.90	11.52*
	03-16-95		Unknown	Unknown
	06-06-95		Unknown	Unknown
	09-14-95		Unknown	Unknown
	12-05-95		3.49	10.88
	03-11-96		Unknown	Unknown
MW-3	04-06-94	14.56	3.51	11.05
	08-02-94		3.68	10.88
	10-04-94		3.97	10.59
	12-14-94		3.04	11.52
	03-16-95		2.84	11.72
	06-06-95		3.44	11.12
	09-14-95		3.76	10.80
	12-05-95		3.87	10.69
	03-11-96		3.04	11.52
MW-4	10-04-94	14.70	4.31	10.39
	12-14-94		3.62	11.08
	03-16-95		3.48	11.22
	06-06-95		3.86	10.84
	09-14-95		4.10	10.60
	12-05-95		4.18	10.52
	03-11-96		3.62	11.08

product

* = Adjusted for the presence of free-floating oil by the equation: Adjusted Groundwater Elevation = Top of Casing Elevation - Depth to Groundwater + (0.8 x Floating Hydrocarbon Thickness)

TABLE TWO

Summary of Chemical Analysis of **GROUNDWATER** Samples

All results are in **parts per billion**

Sample & Date	TPH Gasoline	TPH Diesel	Oil & Grease	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-1								
04/04/94	80	<50	<500	<0.5	<0.5	0.5	2	---
08/02/94	60	500	<1,000	<0.5	<0.5	<0.5	<2	---
12/14/94	200	1,500	<1,000	<0.5	<0.5	6	<2	---
03/16/95	200	1,600	<500	<0.5	<0.5	3	<2	---
06/06/95	<50	680	<500	<0.5	<0.5	<0.5	<2	---
09/14/95	<50	500	<500	<0.5	<0.5	0.8	<2	---
12/05/95	69	<50	<1,000	1	6	2	12	<50
03/11/96	**260**	**380**	**<5,000**	**<0.5**	**2.4**	**4**	**1.2**	**<2**
MW-2								
04/04/94	150	<50	6,200	0.6	1	2	6	---
08/02/94	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS							
12/14/94	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS							
03/16/95	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS							
06/06/95	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS							
09/14/95	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS							
12/05/95	110	<50	2,000*	<0.5	<0.5	<0.5	<2	<50
03/11/96	**NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS**							
MW-3								
04/04/94	1,200	180	<500	3	27	44	230	---
08/02/94	2,700	<50	<1,000	6	16	70	470	---
12/14/94	2,600	80	<1,000	9	30	78	430	---
03/16/95	1,200	300	<500	4	16	38	270	---
06/06/95	500	300	<500	2	1	13	61	---
09/14/95	730	300	<500	3	5	28	94	---
12/05/95	360	<50	<1,000	3	5	8	33	<50
03/11/96	**2,400**	**490**	**<5,000**	**<0.5**	**15**	**44**	**230**	**<2**

TABLE TWO (continued)
Summary of Chemical Analysis of GROUNDWATER Samples
All results are in parts per billion

Sample & Date	TPH Gasoline	TPH Diesel	Oil & Grease	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE
MW-4								
10/04/94	500	200	<1,000	2	19	14	70	---
12/14/94	1,500	200	<1,000	8	37	68	190	---
03/16/95	500	300	<500	3	5	23	41	---
06/06/95	1,600	620	<500	5.9	48	83	240	---
09/14/95	2,900	300	600	13	79	180	450	---
12/05/95	1,500	500	<1,000	9	27	72	130	<50
03/11/96	**340**	**220**	**<5,000**	**<0.5**	**2.3**	**13**	**17**	**<2**
EPA METHOD	5030/ 8015M	3510/ 8015M	5520 B&F	8020	8020	8020	8020	8020

Notes:
MTBE = Methyl t-butyl ether
--- = Not analyzed
* = Hydrocarbon oil and grease; total oil and grease is 3,000 ppb

TABLE THREE
Summary of Chemical Analysis of **GROUNDWATER** Samples
Volatile Organic Compounds
All results in **parts per billion**

Sample I.D.	Date of Sampling	TCE	Other VOCs
MW-1	08-02-94	<0.5	<0.5
	12-14-94	<0.5	<0.5
	03-16-95	<0.5	<0.5
	06-06-95	<0.5	<0.5
	12-05-95	<0.5	<0.5-2
MW-2	04-04-94	0.7	<0.5
	08-02-94	NOT SAMPLED DUE TO FLOATING HYDROCARBONS	
	12-14-94	NOT SAMPLED DUE TO FLOATING HYDROCARBONS	
	03-16-95	NOT SAMPLED DUE TO FLOATING HYDROCARBONS	
	06-06-95	NOT SAMPLED DUE TO FLOATING HYDROCARBONS	
	12-05-95	<0.5	<0.5-2
MW-3	08-02-94	<0.5	<0.5
	12-14-94	<0.5	<0.5
	03-16-95	<0.5	<0.5
	06-06-95	<0.5	<0.5
	12-05-95	<0.5	<0.5-2
MW-4	10-04-94	<0.5	<0.5
	12-14-94	<0.5	<0.5
	03-16-95	<0.5	<0.5
	06-06-95	<0.5	<0.5
	12-05-95	<0.5	<0.5-2
EPA METHOD		8010	8010

TCE = Trichloroethene
VOCs = volatile organic compounds

APPENDIX A

California EPA Certified Laboratory
Report of Groundwater Samples

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

ANALYTICAL REPORT

Prepared for:

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Rd
Suite 4
San Ramon, CA 94583

Date: 22-MAR-96
Lab Job Number: 124790
Project ID: 2545
Location: Phillipsin

Reviewed by: _____

Reviewed by: _____

Curtis & Tompkins, Ltd.

Client: Aqua Science Engineers, Inc.

Laboratory Login Number: 124790

Project Name: Phillipsin
Project Number: 2545

Report Date: 22 March 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD:** SMWW 17:5520BF

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
124790-001	MW-1	Water	11-MAR-96	13-MAR-96	18-MAR-96	ND	mg/L	5	DLP	26479
124790-002	MW-3	Water	11-MAR-96	13-MAR-96	18-MAR-96	ND	mg/L	5	DLP	26479
124790-003	MW-4	Water	11-MAR-96	13-MAR-96	18-MAR-96	ND	mg/L	5	DLP	26479

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd.

Q C B a t c h R e p o r t

Client: Aqua Science Engineers, Inc.
Project Name: Phillipsin
Project Number: 2545

Laboratory Login Number: 124790
Report Date: 22 March 96

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 26479**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
MB	ND	5	mg/L	SMWW 17:5520BF	18-MAR-96

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	85%	SMWW 17:5520BF	18-MAR-96
BSD	81%	SMWW 17:5520BF	18-MAR-96

		Control Limits
Average Spike Recovery	83%	80% - 120%
Relative Percent Difference	4.9%	< 20%

TEH-Tot Ext Hydrocarbons

Client: Aqua Science Engineers, Inc.
Project#: 2545
Location: Phillipsin

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 3520

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
124790-001	MW-1	26473	03/11/96	03/18/96	03/19/96	
124790-002	MW-3	26473	03/11/96	03/18/96	03/19/96	
124790-003	MW-4	26473	03/11/96	03/18/96	03/19/96	

Analyte	Units	124790-001	124790-002	124790-003
Diln Fac:		1	1	1
Diesel Range	ug/L	380 YLH	490 YZ	220 YZ
Surrogate				
Hexacosane	%REC	89	90	95

Y: Sample exhibits fuel pattern which does not resemble standard
Z: Sample exhibits unknown single peak or peaks
H: Heavier hydrocarbons than indicated standard
L: Lighter hydrocarbons than indicated standard

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons	
Client: Aqua Science Engineers, Inc.	Analysis Method: CA LUFT (EPA 8015M)
Project#: 2545	Prep Method: EPA 3520
Location: Phillipsin	
METHOD BLANK	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26473	Analysis Date: 03/19/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC17319

Analyte	Result	
Diesel Range	<50	
Surrogate	%Rec	Recovery Limits
Hexacosane	109	60-140 ✓

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons	
Client: Aqua Science Engineers, Inc.	Analysis Method: CA LUFT (EPA 8015M)
Project#: 2545	Prep Method: EPA 3520
Location: Phillipsin	
BLANK SPIKE/BLANK SPIKE DUPLICATE	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26473	Analysis Date: 03/19/96
Units: ug/L	
Diln Fac: 1	

BS Lab ID: QC17320

Analyte	Spike Added	BS	%Rec #	Limits
Diesel Range	2475	2203	89	60-140
Surrogate	%Rec	Limits		
Hexacosane	95	60-140		

BSD Lab ID: QC17321

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel Range	2475	2640	107	60-140	18	<35
Surrogate	%Rec	Limits				
Hexacosane	93	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

TVH-Total Volatile Hydrocarbons

Client: Aqua Science Engineers, Inc.
Project#: 2545
Location: Phillipsin

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
124790-001	MW-1	26472	03/11/96	03/18/96	03/18/96	
124790-002	MW-3	26472	03/11/96	03/18/96	03/18/96	
124790-003	MW-4	26472	03/11/96	03/18/96	03/18/96	

Analyte Dilu Fac:	Units	124790-001 1	124790-002 1	124790-003 1
Gasoline	ug/L	260	2400	340
Surrogate				
Trifluorotoluene	%REC	101	104	101
Bromobenzene	%REC	107	118	103

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons	
Client: Aqua Science Engineers, Inc.	Analysis Method: CA LUFT (EPA 8015M)
Project#: 2545	Prep Method: EPA 5030
Location: Phillipsin	
METHOD BLANK	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26472	Analysis Date: 03/18/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC17315

Analyte	Result	
Gasoline	<50	
Surrogate	**%Rec**	**Recovery Limits**
Trifluorotoluene	94	69-120
Bromobenzene	91	70-122

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

TVH-Total Volatile Hydrocarbons	
Client: Aqua Science Engineers, Inc.	Analysis Method: CA LUFT (EPA 8015M)
Project#: 2545	Prep Method: EPA 5030
Location: Phillipsin	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26472	Analysis Date: 03/18/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC17547

Analyte	Result	Spike Added	%Rec #	Limits
Gasoline	2091	2000	105	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	100	69-120		
Bromobenzene	109	70-122		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 1 outside limits

BTXE

Client: Aqua Science Engineers, Inc.
Project#: 2545
Location: Phillipsin

Analysis Method: EPA 8020
Prep Method: EPA 5030

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
124790-001	MW-1	26472	03/11/96	03/18/96	03/18/96	
124790-002	MW-3	26472	03/11/96	03/18/96	03/18/96	
124790-003	MW-4	26472	03/11/96	03/18/96	03/18/96	

Analyte	Units	124790-001	124790-002	124790-003
Diln Fac:		1	1	1
Benzene	ug/L	<0.5	<0.5	<0.5
Toluene	ug/L	2.4C	15	2.3
Ethylbenzene	ug/L	4	44	13
m,p-Xylenes	ug/L	0.6	140	9.2
o-Xylene	ug/L	0.6	88	7.6
Surrogate				
Trifluorotoluene	%REC	101	101	99
Bromobenzene	%REC	99	103	97

C: Presence of this compound confirmed by second column, however, the confirmation concentration differed from the reported result by more than a factor of two

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 124790
CLIENT: AQUA SCIENCE ENGINEERS, INC.
PROJECT#: 2545
LOCATION: PHILLIPSIN

DATE SAMPLED: 03/11/96
DATE RECEIVED: 03/13/96
DATE ANALYZED: 03/18/96
DATE REPORTED: 03/22/96
BATCH NO: 26472

ANALYSIS: MTBE
ANALYSIS METHOD: EPA 8020

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
124790-001	MW-1	ND	ug/L	2.0
124790-002	MW-3	ND	ug/L	2.0
124790-003	MW-4	ND	ug/L	2.0
METHOD BLANK	N/A	ND	ug/L	2.0

ND = Not detected at or above reporting limit.

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

BTXE	
Client: Aqua Science Engineers, Inc.	Analysis Method: EPA 8020
Project#: 2545	Prep Method: EPA 5030
Location: Phillipsin	
METHOD BLANK	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26472	Analysis Date: 03/18/96
Units: ug/L	
Diln Fac: 1	

MB Lab ID: QC17315

Analyte	Result
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
m,p-Xylenes	<0.5
o-Xylene	<0.5

Surrogate	%Rec	Recovery Limits
Trifluorotoluene	94	58-130
Bromobenzene	92	62-131

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

BTXE	
Client: Aqua Science Engineers, Inc.	Analysis Method: EPA 8020
Project#: 2545	Prep Method: EPA 5030
Location: Phillipsin	
LABORATORY CONTROL SAMPLE	
Matrix: Water	Prep Date: 03/18/96
Batch#: 26472	Analysis Date: 03/18/96
Units: ug/L	
Diln Fac: 1	

LCS Lab ID: QC17316

Analyte	Result	Spike Added	%Rec #	Limits
Benzene	20	20	100	80-120
Toluene	19	20	95	80-120
Ethylbenzene	18	20	90	80-120
m,p-Xylenes	34	40	85	80-120
o-Xylene	19	20	95	80-120
Surrogate	**%Rec**	**Limits**		
Trifluorotoluene	99	58-130		
Bromobenzene	91	62-131		

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
Spike Recovery: 0 out of 5 outside limits

Curtis & Tompkins, Ltd.

Lab #: 124790 BATCH QC REPORT

BTXE	
Client: Aqua Science Engineers, Inc.	Analysis Method: EPA 8020
Project#: 2545	Prep Method: EPA 5030
Location: Phillipsin	

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Field ID:	ZZZZZZ	Sample Date:	03/08/96
Lab ID:	124771-022	Received Date:	03/12/96
Matrix:	Water	Prep Date:	03/18/96
Batch#:	26472	Analysis Date:	03/18/96
Units:	ug/L		
Diln Fac:	1		

MS Lab ID: QC17317

Analyte	Spike Added	Sample	MS	%Rec #	Limits
Benzene	20	<0.5000	19	95	75-125
Toluene	20	<0.5000	18	90	75-125
Ethylbenzene	20	<0.5000	18	90	75-125
m,p-Xylenes	20	<0.5000	18	92	75-125
o-Xylene	20	<0.5000	18	90	75-125

Surrogate	%Rec	Limits
Trifluorotoluene	98	58-130
Bromobenzene	95	62-131

MSD Lab ID: QC17318

Analyte	Spike Added	MSD	%Rec #	Limits	RPD #	Limit
Benzene	20	15	75	75-125	2	<20
Toluene	20	19	95	75-125	3	<20
Ethylbenzene	20	19	95	75-125	2	<20
m,p-Xylenes	20	19	93	75-125	2	<20
o-Xylene	20	19	95	75-125	2	<20

Surrogate	%Rec	Limits
Trifluorotoluene	101	58-130
Bromobenzene	98	62-131

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

124790

Aqua Science Engineers, Inc.
2411 Old Crow Canyon Road, #4,
San Ramon, CA 94583
(510) 820-9391 - FAX (510) 837-4853

Chain of Custody

DATE 3-11-96 PAGE 1 OF 1

SAMPLERS (SIGNATURE) Scott T. Ferriman (PHONE NO.) 510-820-9391

PROJECT NAME Phillipsen NO. 2607

ADDRESS 1357 High Street, Alameda, CA

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-Day

	SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH-GASOLINE (EPA 5030/8015)	TPH-GASOLINE/BTEX/MTBE (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/CC20)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NUETRALS, ACIDS (EPA 625/8270)	OIL & GREASE (EPA 5520 E&F or B&F)	LUFT METALS (5) (EPA 6010+7000)	TITLE 22 (CAM 17) (EPA 6010+7000)	TCLP (EPA 1311/1310)	STLC- CAM WET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	MTBE
1	MW-1	3-11-96	11:45	Water	5		X	X					X						X
2	MW-3		12:30				X	X					X						X
3	MW-4		12:59				X	X					X						X

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Scott T. Ferriman 10:00	[signature]			
(signature) (time)	(signature) (time)	(signature) (time)	(signature) (time)	
Scott T. Ferriman 3-13-96	JOSE DELGADO			
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE, Inc	Company CT 3/13/96 10:00	Company-	Company-	

APPENDIX B

Well Sampling Field Logs

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Phillipsen
Job #: 2545 Date of sampling: 3-11-96
Well Name: MW-1 Sampled by: SF
Total depth of well (feet): 18.14 Well diameter (inches): 4"
Depth to water before sampling (feet): 3.41
Thickness of floating product if any: none
Depth of well casing in water (feet): 14.73
Number of gallons per well casing volume (gallons): 9.7
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 39
Equipment used to purge the well: 12 volt PVC Pump
Time Evacuation Began: 11:00 Time Evacuation Finished: 11:37
Approximate volume of groundwater purged: 40
Did the well go dry?: no After how many gallons: —
Time samples were collected: 11:45
Depth to water at time of sampling: 3.71
Percent recovery at time of sampling: 98%
Samples collected with: Dedicated Polyethylene Bailer
Sample color: none Odor: ~~none~~ Slight HC odor
Description of sediment in sample: none

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.5	7.38	849
2	64.7	7.69	838
3	64.7	7.45	810
4	64.7	7.41	795

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	3	40 ml VOAs	HCl	Y	TPHg/BTEX/MTBE
"	1	1 L Amber	—	"	TPHD
"	1	1 L Amber	HCl	"	O+G BF

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WELL SAMPLING FIELD LOG

Project Name and Address: Phillipsen
Job #: 2545 Date of sampling: 3-11-96
Well Name: MW-2 Sampled by: SF
Total depth of well (feet): 13.74 Well diameter (inches): 4"
Depth to water before sampling (feet): _____
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: _____

Not Sampled Due to Floating Product

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity

SAMPLES COLLECTED

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

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WELL SAMPLING FIELD LOG

Project Name and Address: Phillipsen
Job #: 2545 Date of sampling: 3-11-96
Well Name: MW-3 Sampled by: SF
Total depth of well (feet): 16.84 Well diameter (inches): 4"
Depth to water before sampling (feet): 3.04
Thickness of floating product if any: none
Depth of well casing in water (feet): 13.8
Number of gallons per well casing volume (gallons): 9.1
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 36
Equipment used to purge the well: 12 volt PVC Pump
Time Evacuation Began: 11:50 Time Evacuation Finished: 12:25
Approximate volume of groundwater purged: 36
Did the well go dry?: no After how many gallons: —
Time samples were collected: 12:30
Depth to water at time of sampling: 3.36
Percent recovery at time of sampling: 98%
Samples collected with: Dedicated Polyethylene Bailer
Sample color: none Odor: Moderate HC Odor
Description of sediment in sample: none

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	64.4	7.66	511
2	64.6	7.26	470
3	64.5	7.10	455
4	64.5	7.08	441

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-3	3	40 ml VOAs	HCl	Yes	TPHg/BTEX/MTBE
↓	1	1 L Amber	—	↓	TPHD
↓	1	1 L Amber	HCl		D+6 BF

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WELL SAMPLING FIELD LOG

Project Name and Address: Phillipsen
Job #: 2545 Date of sampling: 3-11-96
Well Name: MW-4 Sampled by: SC
Total depth of well (feet): 13.12 Well diameter (inches): 2"
Depth to water before sampling (feet): 3.62
Thickness of floating product if any: none
Depth of well casing in water (feet): 9.5
Number of gallons per well casing volume (gallons): 1.6
Number of well casing volumes to be removed: 4
Req'd volume of groundwater to be purged before sampling (gallons): 6.5
Equipment used to purge the well: 12 volt PVC pump
Time Evacuation Began: 12:45 Time Evacuation Finished: 12:51
Approximate volume of groundwater purged: 6.5
Did the well go dry?: no After how many gallons: —
Time samples were collected: 12:59
Depth to water at time of sampling: 3.76
Percent recovery at time of sampling: 99%
Samples collected with: Dedicated Polyethylene Bailer
Sample color: none Odor: slight HC odor
Description of sediment in sample: none

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
1	65.6	8.34	314
2	65.0	8.14	328
3	65.0	8.01	354
4	64.9	7.95	351

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-4	3	40 ml VOAs	HCl	Yes	TPHg/BTEX/MTBE
↓	1	1 L Amber	—	↓	TPHD
↓	1	1 L Amber	HCl	↓	O+G BF

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