



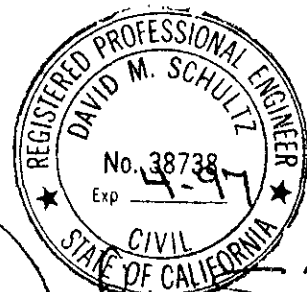
August 16, 1993

QUARTERLY GROUNDWATER MONITORING REPORT
ASE JOB NO. 2596

at
The Goodman Property
2501 Santa Clara Avenue
Alameda, California 94501

Prepared for:
Ms. Helen Goodman
3239 Thompson Avenue
Alameda, California 94501

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



1.0 INTRODUCTION

Site Location (Site), See Figure 1

The Goodman Property
2501 Santa Clara Avenue
Alameda, CA 94501

Property Owner

Ms. Helen Goodman
3239 Thompson Avenue
Alameda, CA 94501

Environmental Consulting Firm

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

Agency Review

Alameda County Health Care Services Agency (ACHCSA)
80 Swan Way, Room 350
Oakland, CA 94621
Contact: Ms. Juliet Shin
(510) 271-4530

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

The following is a report detailing the results of the July 27, 1993, quarterly groundwater sampling at the above referenced site. This sampling was conducted as required by the RWQCB and the ACHCSA. ASE has prepared this report on behalf of the property owner, Ms. Helen Goodman. This report is intended to supplement to the following ASE report: "Final Report of Environmental Activities Detailing the Source Removal and Assessment Operations" dated June 8, 1993.

2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On July 27, 1993, ASE resurveyed the top of casing elevations relative to a project datum. The top of casing elevations are presented below in Table One.

Prior to purging water from the three monitoring wells, ASE measured the depth to water in each site well using a 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 detected in any of the wells. Depths to groundwater are presented below in Table One.

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	4-26-93	23.96	5.68	18.28
	5-26-93		6.08	17.88
	6-29-93		6.22	17.74
	7-27-93		6.51	17.45
MW-2A	4-26-93	23.87	4.90	18.97
	5-26-93		5.56	18.31
	6-29-93		5.80	18.07
	7-27-93		6.18	17.69
MW-3	4-26-93	25.00	6.65	18.35
	5-26-93		7.20	17.80
	6-29-93		7.42	17.58
	7-27-93		7.76	17.24

Groundwater elevation contours for the July 27, 1993 measurements are presented on Figure 2. Groundwater is currently flowing to the northeast beneath the site at a gradient of 0.006 feet/feet.

3.0 GROUNDWATER SAMPLE COLLECTION AND ANALYSIS

Prior to sampling, each monitoring well was purged of five well casing volumes of water using an electric PVC pump. Groundwater samples were then collected from each well using a new polyethylene bailer. The samples were decanted from the bailer into three 40-ml volatile organic analysis (VOA) vials. In addition to the VOA vial samples, groundwater

from well MW-1 was also decanted into two brown 1-liter bottles. The samples were then preserved with hydrochloric acid (except for the sample to be analyzed for pH), capped, labeled and placed on wet ice for transport to Priority Environmental Labs of Milpitas, California under chain-of-custody.

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

The well purge water was placed in 55-gallon steel 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, benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 602, pH by EPA Method 9045 and electrical conductivity by EPA Method 120.1. In addition, the samples from well MW-1 were also analyzed for total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 3510/8015 and oil and grease by EPA Method 5520 C&F.

TABLE TWO
Summary of Analytical Results of WATER Samples
TPH as Gasoline and Diesel, BTEX, and Oil & Grease
All results are in parts per billion

Well ID & Dates Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Oil & Grease
<u>MW-1</u>							
10-26-92	<50	<50	<0.5	<0.5	<0.5	<0.5	<500
04-26-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<500
07-27-93	<50	<50	<0.5	<0.5	<0.5	<0.5	<500
<u>MW-2*</u>							
10-26-93	32,000	---	76	100	77	220	---
<u>MW-2A</u>							
04-26-93	<50	---	<0.5	<0.5	<0.5	<0.5	---
07-27-93	<50	---	<0.5	<0.5	<0.5	<0.5	---
<u>MW-3</u>							
10-26-93	320	---	2.2	1.7	1.3	9.5	---
04-26-93	2200	---	3.5	4.6	8.0	28	---
07-27-93	7200	---	3.9	4.7	6.2	19	---
EPA METHOD	5030/ 8015	3510/ 8015	602	602	602	602	5520 C&F

--- = Not Analyzed

* = Monitoring well MW-2 was destroyed during overexcavation activities.

TABLE THREE
Summary of Chemical Analysis of WATER Samples
pH and Electrical Conductivity
July 27, 1993 Sampling

Sample I.D.	pH	Conductivity (uS)
MW-1	6.6	530
MW-2A	6.7	580
MW-3	6.7	630
EPA METHOD	9045	120.1

4.0 CONCLUSIONS

Groundwater flowed to the northeast beneath the site at a gradient of 0.006 feet/feet on July 27, 1993. The benzene concentration in groundwater from well MW-3 exceeded the California EPA Department of Toxic Substance Control maximum contaminant level for drinking water of 1 part per billion. No hydrocarbons were detected in groundwater samples from monitoring wells MW-1 and MW-2A.

5.0 RECOMMENDATIONS

ASE recommends continuing the quarterly groundwater sampling program. After the first year, a review of the quarterly reports will dictate if any further action will be required.

Monthly groundwater elevation readings will continue to be collected during the next quarter.


6.0 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 CSDHS 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.

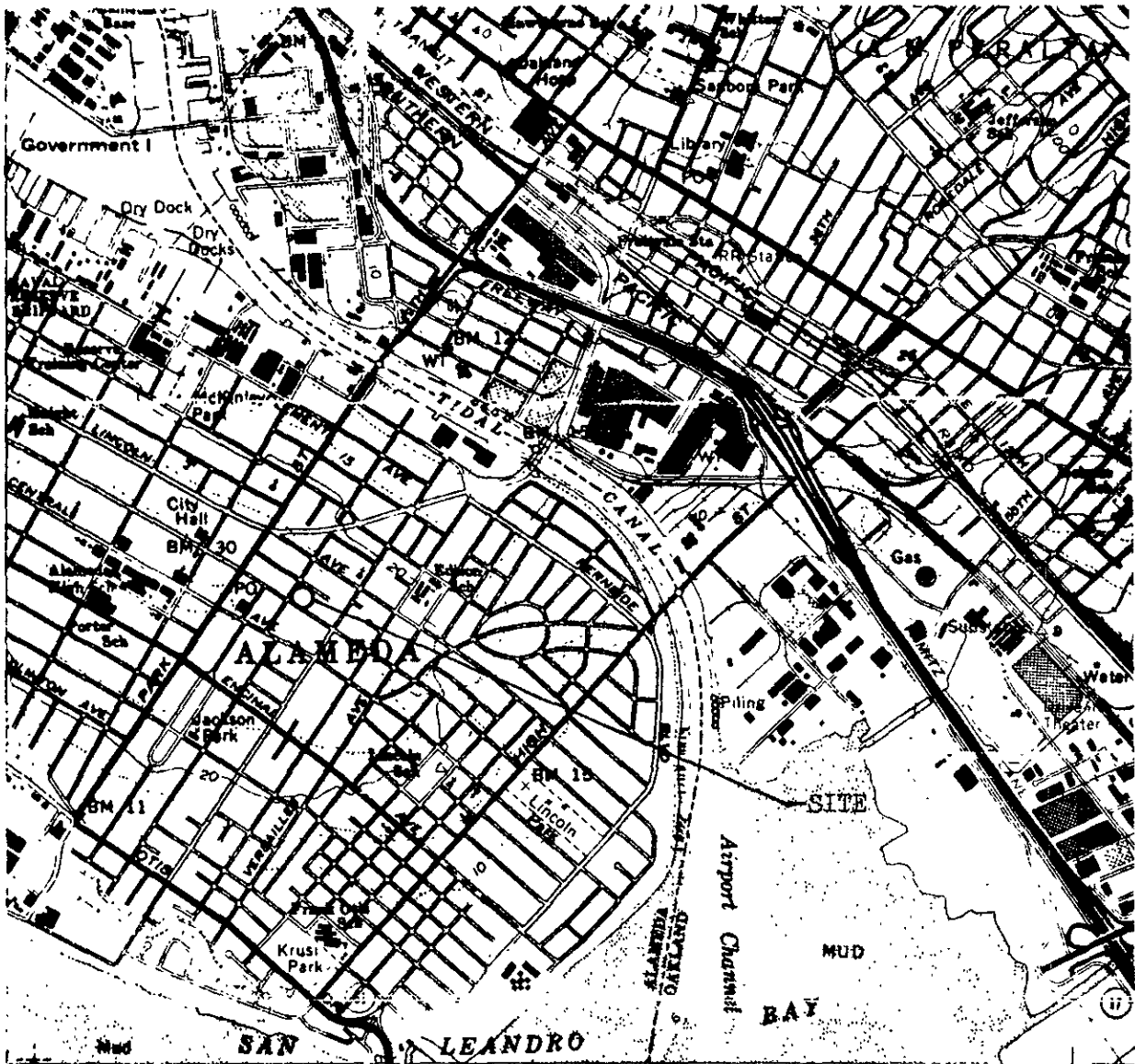
Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.


Robert E. Kitay
Project Geologist

Attachments: Figures 1 & 2
Appendices A and B

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



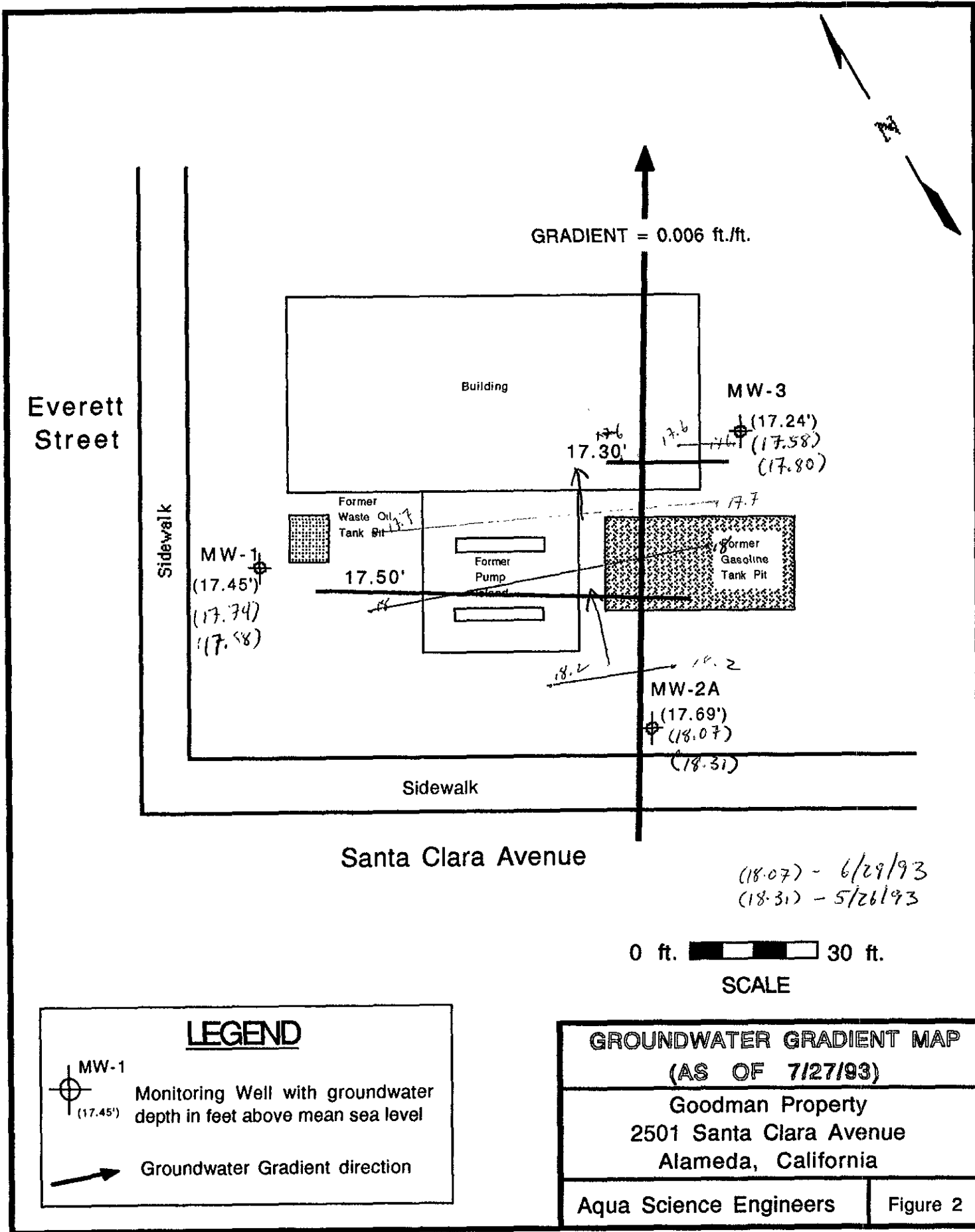
SITE LOCATION MAP

Goodman Property
 2501 Santa Clara Avenue
 Alameda, California

Aqua Science Engineers

Figure 1

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



GRADIENT = 0.006 ft./ft.

Everett Street

Sidewalk

Building

MW-3

MW-1
(17.45')
(17.74)
(17.88)

Former Waste Oil Tank Pit

Former Pump

(17.24')
(17.58)
(17.80)

Former Gasoline Tank Pit

Sidewalk

MW-2A

(17.69')
(18.07)
(18.31)

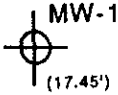
Santa Clara Avenue

(18.07) - 6/29/93
(18.31) - 5/26/93

0 ft. 30 ft.

SCALE

LEGEND



Monitoring Well with groundwater depth in feet above mean sea level



Groundwater Gradient direction

**GROUNDWATER GRADIENT MAP
(AS OF 7/27/93)**

Goodman Property
2501 Santa Clara Avenue
Alameda, California

Aqua Science Engineers

Figure 2

APPENDIX A

**California EPA Certified Laboratory
Report of Groundwater Samples**



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

July 29, 1993

PEL # 9307075

AQUA SCIENCE ENGINEERS, INC.

Attn: David Allen

Re: Three water samples for pH, Gasoline/BTEX, Diesel, Oil & Grease, and Conductivity analyses.

Project name: Goodman

Project location: 2501 Santa Clara. - Alameda, CA.

Project number: 2596

Date sampled: Jul 27, 1993

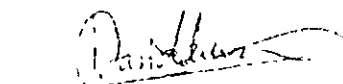
Date submitted: Jul 28, 1993

Date extracted: Jul 28, 1993

Date analyzed: Jul 28, 1993

RESULTS:

SAMPLE I.D.	pH	Gasoline (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Oil & Grease (mg/L)	Conductivity (uS)
MW-1	6.6	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	530
MW-2A	6.7	N.D.	---	N.D.	N.D.	N.D.	N.D.	---	580
MW-3	6.7	7200	---	3.9	4.7	6.2	19	---	630
Blank	7.0	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0
Spiked Recovery	---	82.4%	97.6%	80.5%	83.9%	92.1%	95.6%	---	---
Duplicate Spiked Recovery	---	89.8%	91.2%	87.8%	93.2%	96.5%	104.1%	---	---
Detection limit	0.05	50	50	0.5	0.5	0.5	0.5	0.5	10
Method of Analysis	9045	5030 / 8015	3510 / 8015	602	602	602	602	5520 C & F	120.1


 David Duong
 Laboratory Director

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

Chai

PEL # 9307075

INV # 23832

ody

DATE 7/27/93 PAGE 1 OF 1

SAMPLERS (SIGNATURE)

(PHONE NO.)

PROJECT NAME Goodman

NO. 2596

[Signature]

820-9391

ADDRESS 2501 SANTA CLARA ALAMEDA, CA 94501

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	TPH- GASOLINE (EPA 5030/8015)	TPH- GASOLINE/BTEX (EPA 5030/8015-8020)	TPH- DIESEL (EPA 3510/8015)	PURGABLE AROMATICS (EPA 602/8020)	PURGABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240)	BASE/NEUTRALS, 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 MET (EPA 1311/1310)	REACTIVITY CORROSIVITY IGNITABILITY	pH + COND.
MW-2A	↓	15:20	↓	3		X												X
MW-3	√	15:45	√	3		X												X

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY LABORATORY:

COMMENTS:

[Signature]

8:05

(signature)

(time)

(signature)

(time)

(signature)

(time)

[Signature]

8:05 AM

(signature)

(time)

D Allen

7/28/93

(printed name)

(date)

(printed name)

(date)

(printed name)

(date)

DAVID DUCHE

7/28/93

(printed name)

(date)

Company- ASE, Inc.

Company-

Company-

Company- PEL

APPENDIX B

Well Sampling Field Logs

WELL SAMPLING FIELD LOG

Aqua Science Engineers, Inc. San Ramon, CA 94583

Project Name: Goodman Phase II

Project Address: 2501 Santa Clara Ave. Alameda

Job # 2596 Date of sampling: 7-27-93

Completed by: DA/RK

Well Number / Designation: MW-1

Top of casing elevation: 23.96'

Total depth of well casing: 23.09 Well diameter: 2"

Depth to water (before sampling): 6.51'

Thickness of floating product if any: 0

Depth of well casing in water: 16.58

Req'd volume of groundwater to be purged before sampling: 14 gal.

Approximate volume of groundwater purged: 15 gal.

Type of seal at grade: Portland

Type of cap on the casing: Locking, expandable

Is the seal water tight? Yes Is the cap water tight? Yes

Number of samples (containers) collected 5

Did 40 ml VOA vials have headspace: No

Were sample containers chilled after sampling & for delivery? Yes

Are Chain of Custody documents accompanying the samples: Yes

Sample temperature: 18.8°C

Sample pH: 6.6 Test method: 9045

Conductivity: 530 Test method: 120.1

Physical description of water during initial bailing period:

Clear

Physical description of water sample: Clear

Type of analysis requested: TPH - G

TPH - D

BTEX

O+G

8010 pH, Cond.

Type of bailer/sampling equipment used: Electric PVC Pump +

New, disposable bailer

Equipment decontamination procedures: TSP + H₂O Wash, H₂O RINSE (2x)

Disposition of bailed water volume:

Drummed on site.

WELL SAMPLING FIELD LOG

Aqua Science Engineers, Inc., San Ramon, CA 94583

Project Name: GOODMAN PHASE II

Project Address: 2501 Santa Clara Ave. Alameda

Job # 2596 Date of sampling: 7.27.93

Completed by: DA/RA

Well Number / Designation: MW-2A

Top of casing elevation: 23.87'

Total depth of well casing: 21.96' Well diameter: 2"

Depth to water (before sampling): 6.18'

Thickness of floating product if any: 0

Depth of well casing in water: 15.78

Req'd volume of groundwater to be purged before sampling: 13.5 gal

Approximate volume of groundwater purged: 15 gal.

Type of seal at grade: Portland

Type of cap on the casing: locking, expandable

Is the seal water tight? Yes Is the cap water tight? Yes

Number of samples (containers) collected 3

Did 40 ml VOA vials have headspace: No

Were sample containers chilled after sampling & for delivery? Yes

Are Chain of Custody documents accompanying the samples: Yes

Sample temperature: 18.9°C

Sample pH: 6.7 Test method: 7043

Conductivity: 580 Test method: 1201

Physical description of water during initial bailing period:

Clear

Physical description of water sample: Clear

Type of analysis requested: TPH-C

BTEX

pH

conductivity

Type of bailer/sampling equipment used: PVC, electric pump and
new disposable bailer

Equipment decontamination procedures: TSP + H₂O wash, H₂O rinse (2x)

Disposition of bailed water volume:

Drummed on site.

WELL SAMPLING FIELD LOG

Aqua Science Engineers, Inc. San Ramon, CA 94583

Project Name: GOODMAN PHASE II

Project Address: 2501 SANTA CLARA AVE. ALAMEDA

Job # 2506 Date of sampling: 7.27.93

Completed by: DA/RK

Well Number / Designation: MW-3

Top of casing elevation: 2500'

Total depth of well casing: 23.30' Well diameter: 2"

Depth to water (before sampling): 7.76'

Thickness of floating product if any: 0

Depth of well casing in water: 15.54'

Req'd volume of groundwater to be purged before sampling: 13.2 gal

Approximate volume of groundwater purged: 15 gal.

Type of seal at grade: Portland

Type of cap on the casing: locking, expandable

Is the seal water tight? Yes Is the cap water tight? Yes

Number of samples (containers) collected 3

Did 40 ml VOA vials have headspace: No

Were sample containers chilled after sampling & for delivery? Yes

Are Chain of Custody documents accompanying the samples: Yes

Sample temperature: 18.8°C

Sample pH: 6.7 Test method: 9093

Conductivity: 430 Test method: 12011

Physical description of water during initial bailing period:

Clear

Physical description of water sample: Clear

Type of analysis requested: TPH-G

BTEX

pH

conductivity

Type of bailer/sampling equipment used: Electric PVC Pump and

new disposable bailer

Equipment decontamination procedures: TSP + H₂O Wash, Heirine (2x)

Disposition of bailed water, volume:

Disposal on site