



April 27, 1999

REPORT
of
SOIL AND GROUNDWATER ASSESSMENT
ASE JOB NO. 3487
at
The Salvation Army
810 Clay Street
Oakland, California

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

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1.0 INTRODUCTION

This report presents the methods and findings of Aqua Science Engineers, Inc. (ASE)'s soil and groundwater assessment at the Salvation Army property located at 810 Clay Street in Oakland, California (Figures 1 and 2). The site assessment activities were initiated by Major Al Summerfield of the Salvation Army to meet the requirements of the Alameda County Health Care Services Agency (ACHCSA) as outlined in their letter dated March 5, 1999 (Appendix A). The scope of work presented is based on the requirements of the ACHCSA as discussed between Mr. Larry Seto of the ACHCSA and ASE senior geologist Robert Kitay in a telephone conversation on March 15, 1999.

2.0 BACKGROUND

2.1 Site History

Prior to the construction of the current site structure in 1965, a gasoline service station was located at the site. It is believed that the former underground storage tanks (USTs) for the station were located in the area of the current basement for the building. No information regarding the condition of the USTs upon the closing of the service station was available.

2.2 Previous Environmental Assessment

In January 1999, Ceres Associates of Oakland, California drilled three (3) soil borings at the site to assess subsurface environmental conditions for a potential buyer of the site (Figure 2). Soil samples were collected from each boring at a depth of 15-feet below ground surface (bgs) and groundwater samples were collected from a depth of 28-feet bgs. The soil sample collected from 15-feet bgs in boring SB-1 contained 3,800 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G), 1,000 ppm total petroleum hydrocarbons as diesel (TPH-D), 22 ppm benzene, 88 ppm toluene, 28 ppm ethylbenzene and 170 ppm total xylenes. The groundwater sample collected from boring SB-1 contained 610 parts per billion (ppb) TPH-G, 610 ppb TPH-D, 47 ppb benzene, 30 ppb toluene, 26 ppb ethylbenzene and 120 ppb total xylenes. Borings SB-2 and SB-3 contained much lower concentrations of hydrocarbons, below levels that are typically of concern to regulators.

3.0 SCOPE OF WORK (SOW)

Based on the site background and history, ASE's SOW was as follows:

- 1) Prepare a workplan and health and safety plan for the site.
- 2) Obtain a drilling permit from the Alameda County Public Works Agency and an excavation permit from the City of Oakland.
- 3) Using a Geoprobe, drill two soil borings in the Clay Street sidewalk on each side of former boring SB-1 and collect soil and groundwater samples from the borings for analysis (Figure 2).
- 4) Drill one soil boring across Clay Street downgradient of the site and collect soil and groundwater samples for analysis.
- 5) Analyze two soil samples collected from each of the borings described above as well as the groundwater samples at a CAL-EPA certified analytical laboratory for TPH-G by EPA Method 5030/8015M, TPH-D by EPA Method 3510/8015M, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) by EPA Method 8020 and methyl tertiary butyl ether (MTBE) by EPA Method 8020.
- 6) Drill four soil borings in the basement using a hand auger and collect soil samples from 1-foot below the base of the concrete.
- 7) Analyze one soil sample collected from each of the four borings described in task 5 at a CAL-EPA certified analytical laboratory for TPH-G by EPA Method 5030/8015M, TPH-D by EPA Method 3550/8015M, and BTEX and MTBE by EPA Method 8020.
- 8) Prepare a report presenting the results of the soil and groundwater assessment.

4.0 DRILLING SOIL BORINGS AND COLLECTING SAMPLES

4.1 Soil Boring Drilling and Soil Sample Collection

Prior to drilling, ASE obtained Alameda County Public Works Agency (ACPWA) drilling permit # 99WR155 and an excavation permit from the City of Oakland (Appendix A).

On April 9, 1999, Vironex of Hayward, California drilled soil borings BH-A and BH-B at the site using a Geoprobe hydraulic sampling rig (Figure 2). These borings were located on each side of former boring SB-1 to determine the lateral extent of soil and groundwater contamination.

Undisturbed soil samples were collected continuously as drilling progressed for lithologic and hydrogeologic description and for chemical analysis. The samples were collected by driving a sampler lined with acetate tubes using hydraulic direct push methods. Selective soil samples were immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled and cooled in an ice chest for delivery to Chromalab, Inc. of Pleasanton, California (ELAP #1094) under chain of custody. Soil from the remaining tubes was described by the site geologist using the Unified Soil Classification System (USCS).

Five attempts were made to drill a third boring with a Geoprobe across Clay Street in the downgradient direction. The purpose of this boring was to determine the extent of contamination downgradient of the site. However, in each attempt the drilling was met with refusal at depths between 7 and 9 feet bgs. These attempts were made on the inside, outside and center portions of the sidewalk and in the street area a few feet off the curb. Based on these attempts, ASE is convinced that it is not possible to drill past this level with direct push methods on the opposite side of Clay Street downgradient of the site. ASE does not know what was present at this depth which caused the drilling refusal.

Borings Basement #1, #2, #3 and #4 were drilled in the basement area of the building with a hand auger. Soil samples were collected from these borings from a depth of 1-foot below the concrete surface of the basement.

The drilling was directed by ASE senior geologist Robert E. Kitay, R.G. Drilling equipment was cleaned with a TSP solution between sampling intervals and between borings to prevent potential cross-contamination.

4.2 Groundwater Sample Collection

Borings BH-A and BH-B were advanced into groundwater for collection of groundwater samples. Groundwater samples were removed from the borings with a pre-cleaned bailer. The groundwater samples to be analyzed for volatile compounds were contained in 40-ml volatile organic analysis (VOA) vials, pre-preserved with hydrochloric acid, and sealed without headspace. The samples to be analyzed for TPH-D were contained

in 1-liter amber glass containers. Each sample was labeled and cooled in an ice chest with wet ice for delivery to Chromalab under chain of custody.

4.3 Site Specific Geology and Hydrogeology

Sediments encountered in all of the soil borings consisted of silty sand from the ground surface to the total depth explored of 26-feet bgs. Groundwater was encountered at approximately 22-feet bgs. There was no indication of contamination in any of the soil or groundwater encountered in boring BH-A. Hydrocarbons odors and staining was present in soil 20-feet bgs in boring BH-B. Boring logs are presented as Appendix B.

5.0 ANALYTICAL RESULTS FOR SOIL

Soil samples collected from 15.5-feet bgs in borings BH-A and BH-B, 21.5-feet bgs in boring BH-A, 20.0-feet bgs in boring BH-B and from each of the borings in the basement were analyzed by Chromalab, Inc. of Pleasanton, California, a state certified environmental laboratory (ELAP #1094), for TPH-G by EPA Method 5030/8015M, TPH-D by EPA Method 3510/8015, and BTEX and MTBE by EPA Method 8020. The analytical results for soil are tabulated in Table One, and the certified analytical report and chain of custody forms are included in Appendix C.

TABLE ONE
 Summary of Chemical Analysis of **SOIL** Samples
 Petroleum Hydrocarbons
 All results are in **parts per million**

Boring/ Sample Depth	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE
BH-A - 15.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
21.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-B - 15.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
20.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Basement #1	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Basement #2	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Basement #3	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Basement #4	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
USEPA PRG	NE	NE	0.62	520	230	210	NE

Notes:

Detectable concentrations are in **bold**.

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

USEPA PRG is the United States Environmental Protection Agency Region IX preliminary remediation goal for residential soil.

USEPA PRG has not been established.

No hydrocarbons were detected in any of the soil samples analyzed for this assessment.

6.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples collected from borings BH-A and BH-B were analyzed by Chromalab for TPH-G by EPA Method 5030/8015M, TPH-D by EPA Method 3510/8015M, and BTEX and MTBE by EPA Method 8020. The analytical results are tabulated in Tables Two, and the certified analytical report and chain of custody forms are included in Appendix C.

TABLE TWO
 Summary of Chemical Analysis of **GROUNDWATER** Samples
 Petroleum Hydrocarbons
 All results are in **parts per billion**

Boring	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- Benzene	Total Xylenes	MTBE
BH-A	<50	<50	<0.5	<0.5	<0.5	<0.5	<5
BH-B	3,100	1,000*	540	<5.0	250	38	<5
DTSC MCL	NE	NE	1.0	150	680	1,750	35**

Notes:

Detectable concentrations are in **bold**.

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

DTSC MCL is the California Department of Toxic Substances Control maximum contaminant level for drinking water.

NE = DTSC MCL has not been established.

* = Hydrocarbons detected do not match the pattern of a diesel standard.

** = DTSC interim action level for drinking water; MCL not established.

The benzene concentration detected in the groundwater sample collected from boring BH-B exceeded the California Department of Toxic Substances Control (DTSC) maximum contaminant level (MCL) for drinking water of 1 ppb. The ethylbenzene and total xylene concentrations detected in this sample did not exceed DTSC MCLs for drinking water. No toluene or MTBE were detected in the groundwater sample collected from boring BH-B. No hydrocarbons were detected in the groundwater sample collected from boring BH-A.

7.0 CONCLUSIONS AND RECOMMENDATIONS

No hydrocarbons were detected in any of the soil samples analyzed for this assessment. Based on these results, it appears that the extent of elevated hydrocarbons in soil are relatively limited to the area immediately surrounding former boring SB-1.

Moderate hydrocarbon concentrations were detected in the groundwater sample collected from boring BH-B. The benzene concentration of 540 ppb exceeded the DTSC MCL for drinking water. These concentrations

were higher than those previously detected in boring SB-1 and is probably related to the higher water table during this sampling period.

ASE has contacted Mr. Larry Seto of the ACHCSA, the lead regulatory agency for this site, regarding how his agency will view these results. Mr. Seto stated that his agency will not be able to close this case based on these results alone, and that they will require groundwater monitoring prior to closing this case. He also stated that no remediation will be required unless additional contamination is discovered at the site.

8.0 REPORT LIMITATIONS

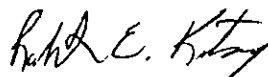
The results of this assessment represent conditions at the time of the soil and groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory.

This report 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.

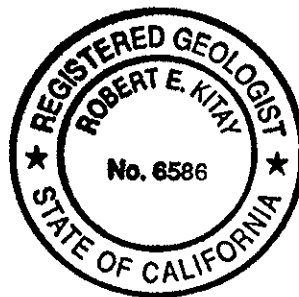
Aqua Science Engineers appreciates the opportunity provide environmental consulting services for this project. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



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

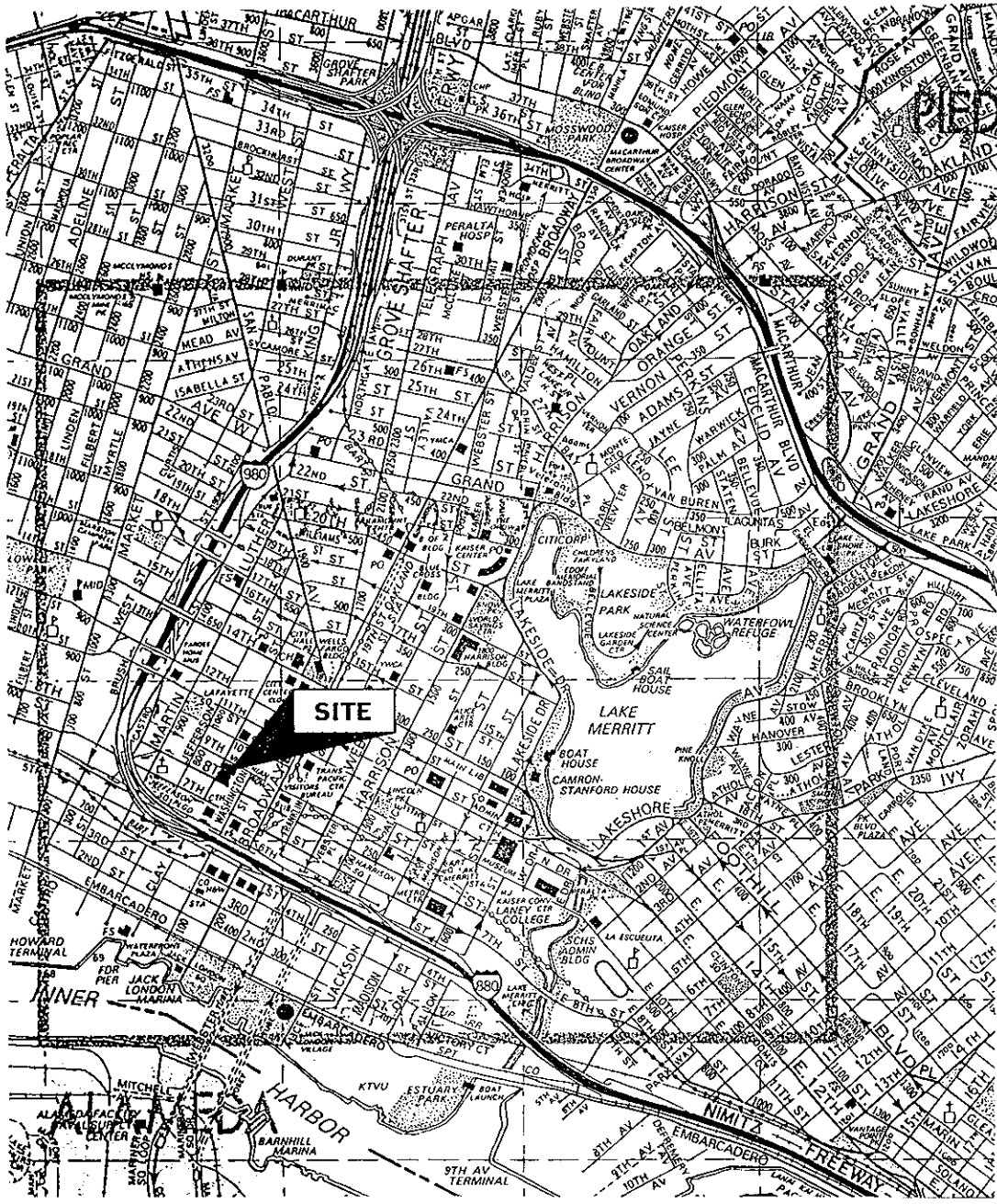


Attachments: Figures 1 and 2
Appendices A through C

FIGURES



NORTH



SITE LOCATION MAP	
THE SALVATION ARMY 810 CLAY STREET OAKLAND, CALIFORNIA	
AQUA SCIENCE ENGINEERS, INC.	Figure 1



NORTH

SCALE
1" = 30'

J & M Meats Building

Parking

■
SB-3

Parking

Clay Street

Sidewalk

Basement #3

SALVATION ARMY BUILDING

Adjacent Building

Basement #4

Former Gasoline Station Area

Basement #2

Basement #1

●
BH-A

■
SB-1

●
BH-B

■
SB-2

Sidewalk

Area of Attempted Borings

Eighth Street

LEGEND

- Soil boring drilled for this assessment
- Hand augered soil boring drilled in basement area
- Previous soil boring

SOIL BORING LOCATION MAP

THE SALVATION ARMY
810 CLAY STREET
OAKLAND, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC.

FIGURE 2

APPENDIX A

Permits



ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
 951 TURNER COURT, SUITE 300, MAYWARD, CA 94545-2651
 PHONE (510) 676-5575 ANDREAS GODFREY FAX (510) 670-5262
 (510) 670-5243 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 810 Clay Street
Oakland, CA

PERMIT NUMBER 49WR 155
 WELL NUMBER _____
 APN _____

California Coordinates Source _____ Accuracy ± _____
 CCM _____ R. CCE _____
 APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT
 Name The Salvation Army
 Address P.O. Box 12397 Phone (510) 451-5547
 City Oakland Zip 94604

- A. GENERAL**
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
 2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.

APPLICANT
 Name Agua Sencada Engineers
 Address 208 W. El Estrella Fax (925) 223-9853
 City Sanville Phone (925) 820-7391
 Zip 94574

- B. WATER SUPPLY WELLS**
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 30 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	<input type="checkbox"/>	General	<input type="checkbox"/>
Water Supply	<input type="checkbox"/>	Contamination	<input checked="" type="checkbox"/>
Monitoring	<input type="checkbox"/>	Well Destruction	<input type="checkbox"/>

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS**
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

New Domestic	<input type="checkbox"/>	Replacement Domestic	<input type="checkbox"/>
Municipal	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	Other	<input type="checkbox"/>

- D. GEOTECHNICAL**
 Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, braced cement grout shall be used in place of compacted cuttings.
- E. CATHODIC**
 Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION**
 See attached.
- G. SPECIAL CONDITIONS**

DRILLING METHOD:

Mud Rotary	<input type="checkbox"/>	Air Rotary	<input type="checkbox"/>	Auger	<input type="checkbox"/>
Cable	<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>	<u>Wagon</u>	

DRILLER'S LICENSE NO. C-37 487000

WELL PROJECTS

Drill Hole Diameter	_____ in.	Maximum	_____ ft.
Casing Diameter	_____ in.	Depth	_____ ft.
Surface Seal Depth	_____ ft.	Number	_____

GEOTECHNICAL PROJECTS

Number of Borings	<u>3</u>	Maximum	_____ ft.
Hole Diameter	<u>3</u> in.	Depth	<u>35</u> ft.

ESTIMATED STARTING DATE 4-9-99
 ESTIMATED COMPLETION DATE 4-9-99

APPROVED Andreas Godfrey DATE 4/9/99

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 71-68.

APPLICANT'S SIGNATURE Robert E. Kelly DATE 4-6-99

EXCAVATION

Job Site 810 CLAY ST

Parcel# 001-0203-010-00

Appl# X9900267

Descr 3 soil borings on clay st side of property.

Permit Issued 04/07/99

Work Type EXCAVATION-PRIVATE P

USA #

Util Co. Job #
Util Fund #:

Acctg#:

Applicant Phone# Lic# License Classes

Owner SALVATION ARMY

Contractor AQUA SCIENCE ENGINEERS, INC.

X (925) 820-3291 487000 A 057

Arch/Engr

Agent

Applic. Addr 302 WEST EL PINTADO, DANVILLE, CA., 94526

\$246.00 TOTAL FEES PAID AT ISSUANCE	
\$41.00 Applic	\$205.00 Permit
\$.00 Process	\$.00 Rec Mgmt
\$.00 Gen Plan	\$.00 Invsig
\$.00 Other	

CITY OF OAKLAND

APPENDIX B

Boring Logs

SOIL BORING LOG AND WELL COMPLETION DETAILS

Soil Boring: BH-A

Project Name: Salvation Army

Project Location: 810 Clay Street, Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, R.G.

Date Drilled: April 9, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Total Depth of Well Completed: NA

Depth of Water First Encountered: 22'

Well Screen Type and Diameter: NA

Static Depth of Water in Well: Unknown

Well Screen Slot Size: NA

Total Depth of Boring: 26'

Type and Size of Soil Sampler: Macro Core Sampler

Depth in Feet	WELLBORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Water Level	OMV (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0		Class "H" Portland Cement	Interval	Water Level	OMV (ppmv)	Graphic Log	0	Concrete
5					0		5	Silty SAND (SP); yellow brown; medium.dense; damp; 90% fine to medium sand; 10% clay; non-plastic; high estimated K; no odor
10					0		10	
15					0		15	
20					0		20	moist at 20'
25							25	wet at 22'
30							30	End of boring at 26'

SOIL BORING LOG AND WELL COMPLETION DETAILS

Soil Boring: BH-B

Project Name: Salvation Army

Project Location: 810 Clay Street, Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: Macro Core Sampler

Logged By: Robert E. Kitay, R.G.

Date Drilled: April 9, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Total Depth of Well Completed: NA

Depth of Water First Encountered: 21'

Well Screen Type and Diameter: NA

Static Depth of Water in Well: Unknown

Well Screen Slot Size: NA

Total Depth of Boring: 26'

Type and Size of Soil Sampler: Macro Core Sampler

Depth in Feet	WELLBORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Water Level	OMV (ppmv)	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0		Class "H" Portland Cement	0-1		0		0	Concrete
5			5				0	Silty SAND (SP); yellow brown; medium.dense; damp; 90% fine to medium sand; 10% clay; non-plastic; high estimated K; no odor
10			10				0	
15			15				0	
20			20				7	olive; moist; faint hydrocarbon odor at 20' wet at 21'
25			25					
30			30					End of boring at 26'

APPENDIX C

Analytical Report and Chain of Custody Form
For Soil and Groundwater Samples

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY
Received: April 12, 1999

Project#: 3487

re: 10 samples for TPH - Diesel analysis.
Method: EPA 8015M

Sampled: April 9, 1999 Matrix: SOIL Run#: 18294 Extracted: April 13, 1999 Analyzed: April 14, 1999


Spl#	CLIENT SPL ID	DIESEL (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
236295	BH-A 15.5'	N.D.	1.0	N.D.	74.5	1
236296	BH-A 21.5'	N.D.	1.0	N.D.	74.5	1
236297	BH-B 15.5'	N.D.	1.0	N.D.	74.5	1
236298	BH-B 20.0'	N.D.	1.0	N.D.	74.5	1
236299	BASEMENT #1	N.D.	1.0	N.D.	74.5	1
236300	BASEMENT #2	N.D.	1.0	N.D.	74.5	1
236301	BASEMENT #3	N.D.	1.0	N.D.	74.5	1
236302	BASEMENT #4	N.D.	1.0	N.D.	74.5	1

Sampled: April 9, 1999 Matrix: WATER Run#: 18317 Extracted: April 14, 1999 Analyzed: April 14, 1999

Spl#	CLIENT SPL ID	DIESEL (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
236303	BH-A WATER	N.D.	50	N.D.	83.2	1
236304	BH-B WATER	1000	50	N.D.	83.2	1

Note: Hydrocarbon reported does not match the pattern of our Diesel Standard.


Carolyn House
Analyst


Bruce Havlik
Analyst

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY
Received: April 12, 1999

Project#: 3487

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-A 15.5'

Spl#: 236295

Matrix: SOIL

Sampled: April 9, 1999

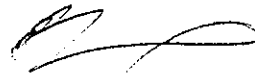
Run#: 18342

Analyzed: April 14, 1999

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	105	1
MTBE	N.D.	0.0050	N.D.	87	1
BENZENE	N.D.	0.0050	N.D.	82	1
TOLUENE	N.D.	0.0050	N.D.	80	1
ETHYL BENZENE	N.D.	0.0050	N.D.	78	1
XYLENES	N.D.	0.0050	N.D.	77	1



Craig Huntzinger
Analyst



Michael Verona
Laboratory Operations Manager

925-837-4853

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) 484-1919 • Facsimile (925) 484-1096
Federal ID #68-0140157

PM V132 O:BTEXQC0221
CRAIG 16:20

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY
Received: April 12, 1999

Project#: 3487

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-A 21.5'

Spl#: 236296


Matrix: SOIL

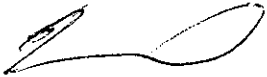
Sampled: April 9, 1999

Run#:18342

Analyzed: April 14, 1999

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	105	1
MTBE	N.D.	0.0050	N.D.	87	1
BENZENE	N.D.	0.0050	N.D.	82	1
TOLUENE	N.D.	0.0050	N.D.	80	1
ETHYL BENZENE	N.D.	0.0050	N.D.	78	1
XYLENES	N.D.	0.0050	N.D.	77	1


Craig Huntzinger
Analyst


Michael Verona
Laboratory Operations Manager

925-837-4853

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Federal ID #68-0140157

PM V132 O: BTEXQC0221

CRAIG 16:29

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-B 15.5'

Spl#: 236297


Matrix: SOIL

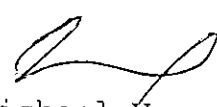
Sampled: April 9, 1999

Run#: 18342

Analyzed: April 14, 1999

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	105	1
MTBE	N.D.	0.0050	N.D.	87	1
BENZENE	N.D.	0.0050	N.D.	82	1
TOLUENE	N.D.	0.0050	N.D.	80	1
ETHYL BENZENE	N.D.	0.0050	N.D.	78	1
XYLENES	N.D.	0.0050	N.D.	77	1


Craig Huntzinger
Analyst


Michael Verona
Laboratory Operations Manager

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PM V132 O: BTEXQC022
CRAIG 16:2

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-B 20.0'

Spl#: 236298

Matrix: SOIL

Sampled: April 9, 1999

Run#: 18342

Analyzed: April 14, 1999

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	105	1
MTBE	N.D.	0.0050	N.D.	87	1
BENZENE	N.D.	0.0050	N.D.	82	1
TOLUENE	N.D.	0.0050	N.D.	80	1
ETHYL BENZENE	N.D.	0.0050	N.D.	78	1
XYLENES	N.D.	0.0050	N.D.	77	1



Craig Huntzinger
Analyst



Michael Verona
Laboratory Operations Manager

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BASEMENT #1

Spl#: 236299


Matrix: SOIL

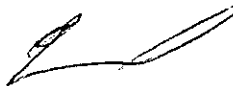
Sampled: April 9, 1999

Run#:18318

Analyzed: April 14, 1999

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	103	1
MTBE	N.D.	0.0050	N.D.	100	1
BENZENE	N.D.	0.0050	N.D.	92	1
TOLUENE	N.D.	0.0050	N.D.	91	1
ETHYL BENZENE	N.D.	0.0050	N.D.	89	1
XYLENES	N.D.	0.0050	N.D.	89	1


Craig Huntzinger
Analyst


Michael Verona
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PM V132 O: BTEXQC022
CRAIG 16:25

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY
Received: April 12, 1999

Project#: 3487

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BASEMENT #2

Spl#: 236300

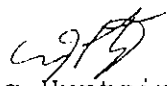
Matrix: SOIL

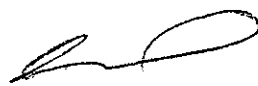
Sampled: April 9, 1999

Run#:18318

Analyzed: April 14, 1999

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	103	1
MTBE	N.D.	0.0050	N.D.	100	1
BENZENE	N.D.	0.0050	N.D.	92	1
TOLUENE	N.D.	0.0050	N.D.	91	1
ETHYL BENZENE	N.D.	0.0050	N.D.	89	1
XYLENES	N.D.	0.0050	N.D.	89	1


Craig Huntzinger
Analyst


Michael Verona
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Federal ID #68-0140157

PMV1320:BTEXQC022

CRAIG 18/2

CHROMALAB, INC.

Environmental Services (SDB)

April 19, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY
Received: April 12, 1999

Project#: 3487

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BASEMENT #3

Spl#: 236301

Matrix: SOIL

Sampled: April 9, 1999

Run#:18318

Analyzed: April 14, 1999

<u>ANALYTE</u>	<u>RESULT</u> (mg/Kg)	<u>REPORTING</u> <u>LIMIT</u> (mg/Kg)	<u>BLANK</u> <u>RESULT</u> (mg/Kg)	<u>BLANK</u> <u>SPIKE</u> (%)	<u>DILUTION</u> <u>FACTOR</u>
GASOLINE	N.D.	1.0	N.D.	103	1
MTBE	N.D.	0.0050	N.D.	100	1
BENZENE	N.D.	0.0050	N.D.	92	1
TOLUENE	N.D.	0.0050	N.D.	91	1
ETHYL BENZENE	N.D.	0.0050	N.D.	89	1
XYLENES	N.D.	0.0050	N.D.	89	1



Craig Huntzinger
Analyst



Michael Verona
Laboratory Operations Manager

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Federal ID #68-0140157

PM V132 O: BTEXQC022
KWRIGHT 11:0

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BASEMENT #4

Spl#: 236302


Matrix: SOIL


Sampled: April 9, 1999

Run#: 18318

Analyzed: April 14, 1999

ANALYTE	RESULT (mg/Kg)	REPORTING LIMIT (mg/Kg)	BLANK RESULT (mg/Kg)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	1.0	N.D.	103	1
MTBE	N.D.	0.0050	N.D.	100	1
BENZENE	N.D.	0.0050	N.D.	92	1
TOLUENE	N.D.	0.0050	N.D.	91	1
ETHYL BENZENE	N.D.	0.0050	N.D.	89	1
XYLENES	N.D.	0.0050	N.D.	89	1


Craig Huntzinger
Analyst


Michael Verona
Laboratory Operations Manager

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Federal ID #68-0140157

PM V132 O: BTEXQC02

CRAIG 16.7

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.
Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-A WATER

Spl#: 236303


Matrix: WATER


Sampled: April 9, 1999

Run#:18329

Analyzed: April 14, 1999

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	N.D.	50	N.D.	95	1
MTBE	N.D.	5.0	N.D.	89	1
BENZENE	N.D.	0.50	N.D.	102	1
TOLUENE	N.D.	0.50	N.D.	106	1
ETHYL BENZENE	N.D.	0.50	N.D.	102	1
XYLENES	N.D.	0.50	N.D.	100	1


Vincent Vancil
Analyst


Michael Verona
Operations Manager

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Federal ID #68-0140157

PM V132 O: BTEXQC022
CRAIG 16:4

CHROMALAB, INC.

Environmental Services (SDB)

April 16, 1999

Submission #: 9904147

AQUA SCIENCE ENGINEERS, INC

Atten: Robert Kitay

Project: SALVATION ARMY

Project#: 3487

Received: April 12, 1999

re: One sample for Gasoline BTEX MTBE analysis.

Method: SW846 8020A Nov 1990 / 8015Mod

Client Sample ID: BH-B WATER

Spl#: 236304

Matrix: WATER

Sampled: April 9, 1999

Run#: 18339

Analyzed: April 14, 1999

ANALYTE	RESULT (ug/L)	REPORTING LIMIT (ug/L)	BLANK RESULT (ug/L)	BLANK SPIKE (%)	DILUTION FACTOR
GASOLINE	3100	500	N.D.	94	10
MTBE	N.D.	50	N.D.	101	10
BENZENE	540	5.0	N.D.	97	10
TOLUENE	N.D.	5.0	N.D.	97	10
ETHYL BENZENE	250	5.0	N.D.	93	10
XYLENES	38	5.0	N.D.	93	10

Craig Huntzinger
Analyst

Michael Verona
Laboratory Operations Manager

9704/10 1234290 - 206004

45479

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

Chain

SUB#: 930-1147 REP: PH
 CLIENT: ASE
 DUE: 04/19/99
 REF #: 43479

.GE 1 OF 2

SAMPLER (SIGNATURE) *Robert E. Kitay* (PHONE NO.) (925) 820-9391

PROJECT NAME Salvation Army
 ADDRESS 810 Clay Street, Oakland, CA

JOB NO. 3487
 DATE 4-9-99

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
Sand report attn: Robert Kitay

SAMPLE ID.	DATE	TIME	MATRIX	NO. OF SAMPLES	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)	LUFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	HOLD	COMPOSITE	
BH-A 11.5'	4-9-99	10:10	Soil	1																	
BH-A 15.5'		10:20			X		X													X	
BH-A 20.0'		10:42																			X
BH-A 21.5'		10:55			X		X														X
BH-B 5.0'		12:46																			X
BH-B 11.5'		12:54																			X
BH-B 15.5'		12:55			X		X														X
BH-B 20.0'		13:10			X		X														X
BH-B 23.0'		13:34																			X
Basement #1		12:30			X		X														X
Basement #2	✓	12:52	✓	✓	X		X														X

5.5' cap
 3 inches
 6 VOLS.
 5 soil jars
 8 soil tubes

RELINQUISHED BY:
Robert E. Kitay 14:30
 (signature) (time)
 Robert E. Kitay 4-12-99
 (printed name) (date)
 Company- ASE

RECEIVED BY:
[Signature] 14:34
 (signature) (time)
 R. Mowere 4-12
 (printed name) (date)
 Company- C/C

RELINQUISHED BY:
[Signature] 16:00
 (signature) (time)
 R. Mowere 4-12
 (printed name) (date)
 Company- C/C

RECEIVED BY LABORATORY:
A. Paredes 1600
 (signature) (time)
 A. Paredes 4/12/99
 (printed name) (date)
 Company- Chromalox

COMMENTS:
 5-DAY T.A.T.
 BH-B had one 1-liter bottle freezer and break