aqua science engineers inc.

HAZMAT

94 MAY 31 PM 1:47

May 31, 1994

Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

ATTENTION: Ms. Juliet Shin

SUBJECT: PROJECT REPORT - PHASE II SITE ASSESSMENT
2110 Santa Clara Avenue
Alameda, CA 94501

Dear Ms. Shin:

On behalf of our client, Mr. Michael Ghidella, Aqua Science Engineers, Inc. is pleased to submit the subject report. Being that the subject site is currently in escrow, our client greatly appreciates your time and effort in reviewing this report and preparing the County's recommendation letter.

Mr. Ghidella's address is:

45750 San Louis Ray Avenue, Unit 158
Palm Desert, CA 92260

If you have any questions or comments, please feel free to give us a call at (510) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.

David Allen
Project Manager

Attachment: Phase II Site Assessment Report

cc: Mr. Michael Ghidella, Property Owner
Mr. Rich Hiett, RWQCB - San Francisco Bay Region

WE'VE MOVED TO
2411 OLD CROW CANYON RD. #4
SAN RAMON, CA 94583
510-820-9391

aqua science engineers inc.

May 26, 1994

REPORT
of
SOIL AND GROUNDWATER ASSESSMENT
ASE JOB NO. 2750
at
2110 Santa Clara Avenue
Alameda, California

Submitted 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

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1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineer's, Inc. (ASE) soil and groundwater investigation at the property located at 2110 Santa Clara Avenue in Alameda, California *(Figure 1)*. The proposed site assessment activities were initiated by the property owner, Mr. Micheal Ghidella, as a follow up to the May 3, 1994 underground heating oil storage tank removal. This assessment meets the requirements of the Alameda County Health Care Services Agency (ACHCSA) detailed in a May 16, 1994 letter (Appendix A).

2.0 SITE HISTORY

On May 3, 1993, ASE removed one (1) 1,500-gallon underground heating oil tank from the site. The tank was in good condition upon removal, and no obvious holes were visible upon field inspection. Up to 1,900 parts per million (ppm) total petroleum hydrocarbons as diesel (TPH-D) were detected in a soil sample collected from the excavation bottom. Soil overexcavation of contaminated soil was attempted but could not be fully completed because severe sloughing was undermining Santa Clara Avenue.

3.0 SCOPE OF WORK (SOW)

Based on the site history and requirements outlined in the ACHCSA May 16, 1994 letter, ASE's SOW was limited to:

1) Reviewing the site history and preparing a site safety plan;

2) Preparing a workplan for review and approval by the ACHCSA and the San Francisco Bay - Regional Water Quality Control Board;

3) Obtaining all necessary permits from the appropriate agencies for the installation of a monitoring well;

4) Drilling one soil boring to approximately 20-feet below ground surface (bgs) within 10-feet of the former tank in the assumed downgradient direction. Collecting soil samples for subsurface hydrogeologic description and possible chemical analyses;

5) Drilling soil borings to the south and east of the former tank location;

6) Collecting at least one soil sample from each boring and having the samples analyzed at a CAL-EPA certified environmental laboratory for TPH-D and benzene, toluene, ethylbenzene and total xylenes (BTEX);

7) Completing the boring described in task 4 as a 2-inch diameter groundwater monitoring well;

8) Developing the well and collecting groundwater samples for analyses;

9) Analyzing the groundwater samples for TPH-D and BTEX;

10) Reporting the subsurface investigation results.

4.0 DRILLING SOIL BORINGS AND COLLECTING SAMPLES

ASE obtained the required Alameda County Flood Control and Water Conservation District (Zone 7) well construction permit and a City of Alameda excavation permit prior to drilling (Appendix B).

On May 20, 1994, Gregg Drilling of Concord, California drilled soil boring MW-1 to 19-feet bgs using a Simco drill rig equipped with 8-inch diameter hollow-stem augers. Groundwater monitoring well MW-1 was subsequently constructed in the boring *(Figure 2)*. The drilling was directed by ASE project geologist Robert E. Kitay. The boring was located approximately 4-feet northeast of the former tank pit in the assumed downgradient direction.

Undisturbed soil samples were collected at 5, 7, 10 and 15-feet bgs for lithologic and hydrogeologic description and for possible chemical analysis. The samples were collected by driving a split-barrel drive sampler lined with 2-inch diameter stainless steel tubes ahead of the auger tip with a hydraulic hammer. The tube from 6 to 6.5-feet bgs, the capillary fringe, was immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled, sealed in a plastic bag and stored on wet ice for transport to American Environmental Network (AEN) of Pleasant Hill, California (DHS #1172) under chain of custody. Soil from the remaining tubes was described by the site geologist using the Unified Soil Classification System and was screened for volatile compounds with an Organic Vapor Meter (OVM). The soil was screened by emptying soil from one of the sample tubes into a plastic bag. The bag was then sealed and

placed in the sun for approximately 10 minutes. After the hydrocarbons were allowed to volatilize, the OVM measured the vapor in the bag through a small hole punched in the bag. OVM readings are used as a screening tool only, since the procedures are not as rigorous as those used in the laboratory.

ASE drilled borings BH-S and BH-E to 6.5-feet bgs, the capillary fringe, to the east and south of the former tank using a hand auger. Soil samples were collected from each boring in stainless steel tubes from the bucket of the hand auger. The tubes were immediately trimmed, sealed with Teflon tape, plastic end caps and duct tape, labeled, sealed in a plastic bag and stored on wet ice for transport to AEN under chain of custody. The boreholes were backfilled with neat cement after the samples were collected.

Drilling equipment was steam-cleaned prior to use, and sampling equipment was washed with a TSP solution between sampling intervals to prevent cross-contamination. Rinsate was contained on-site in a sealed and labeled Department of Transportation approved 55-gallon (DOT 17H) drum.

Sediments encountered during the drilling consisted of silty sand from the ground surface to the total depth explored of 19-feet bgs. Groundwater was encountered at approximately 7-feet bgs. The boring log and well construction details for MW-1 are included as Appendix C. Drill cuttings were stockpiled with the cuttings produced during the tank removal and overexcavation, and have since been transported to an appropriate local landfill.

5.0 ANALYTICAL RESULTS FOR SOIL

The soil samples were analyzed by AEN for TPH-D by modified EPA Method 5030/8015 and BTEX by EPA Method 8020. The analytical results are tabulated below in Table One, and the certified analytical report and chain of custody record are included in Appendix D. No hydrocarbons were detected in any of the soil samples.

TABLE ONE
Summary of Chemical Analysis of **SOIL** Samples
All Results are in **parts per million**

Sample I.D.	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes
MW-1 6.0'	<10	<0.005	<0.005	<0.005	<0.005
BH-S 6.0'	<10	<0.005	<0.005	<0.005	<0.005
BH-E 6.0'	<10	<0.005	<0.005	<0.005	<0.005
EPA METHOD	3550/ 8015	8020	8020	8020	8020

6.0 MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Groundwater monitoring well MW-1 was installed in boring MW-1 *(Figure 2)*. The well was constructed with 2-inch diameter, 0.010-inch slotted, flush-threaded, Schedule 40 PVC well screen and blank casing. The well was screened between 4.0 and 19.0-feet bgs to monitor the first water bearing zone encountered. Lonestar #2/12 sand occupies the annular space between the borehole and the casing from the bottom of the boring to approximately 1-foot above the well screen. A 1/2-foot thick hydrated, bentonite layer separates the sand from the overlying cement surface seal. The wellhead is secured with a locking wellplug beneath an at-grade traffic-rated vault.

On May 23, 1994, the well was developed using two episodes of surge-block agitation and bailer evacuation. Ten well casing volumes of water were removed during development, and evacuation continued until the water was relatively clear. No free-floating hydrocarbons or odors were present during the well development and subsequent sampling. The well yielded approximately 0.5-gallons per minute during development.

ASE sampled the well immediately following the well development. Since the well went dry following the well development, the samples were collected after the well was allowed to recover to 80% of the static water level. The samples were collected from the well with a pre-cleaned PVC bailer. The groundwater samples were decanted from the bailer into three (3) 40-ml volatile organic analysis (VOA) vials and two (2) 1-liter amber glass bottles. All of the samples were preserved with hydrochloric acid,

labeled, placed in protective foam sleeves, and stored on wet ice for transport to AEN under chain of custody. No odors were present in the groundwater at the time of the sampling.

Well development and sampling purge water were contained in a DOT 17H drum and stored on-site for handling by the client at a later date. See Appendix E for a copy of the Field Log.

7.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by AEN for TPH-D by modified EPA Method 3510/8015 and BTEX by EPA Method 8020. The analytical results are tabulated below in Table Two, and the certified analytical report and chain of custody record are included in Appendix D. No hydrocarbons were detected in the groundwater samples.

TABLE TWO
Summary of Chemical Analysis of **GROUNDWATER** Samples
All Results are in **parts per billion**

Sample I.D.	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes
MW-1	<50	<0.5	<0.5	<0.5	<2
EPA METHOD	3510/ 8015	8020	8020	8020	8020

8.0 CONCLUSIONS

No hydrocarbons were detected in any of the soil or groundwater samples collected during this site assessment. There does not appear to be a significant threat to the environment or human health resulting from the operation of the former tank at the property.

9.0 REPORT LIMITATIONS

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

It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed for by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an 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 assist you with your environmental needs. Should you have any questions or comments, please feel free to call us at (510) 820-9391.

Respectfully submitted,

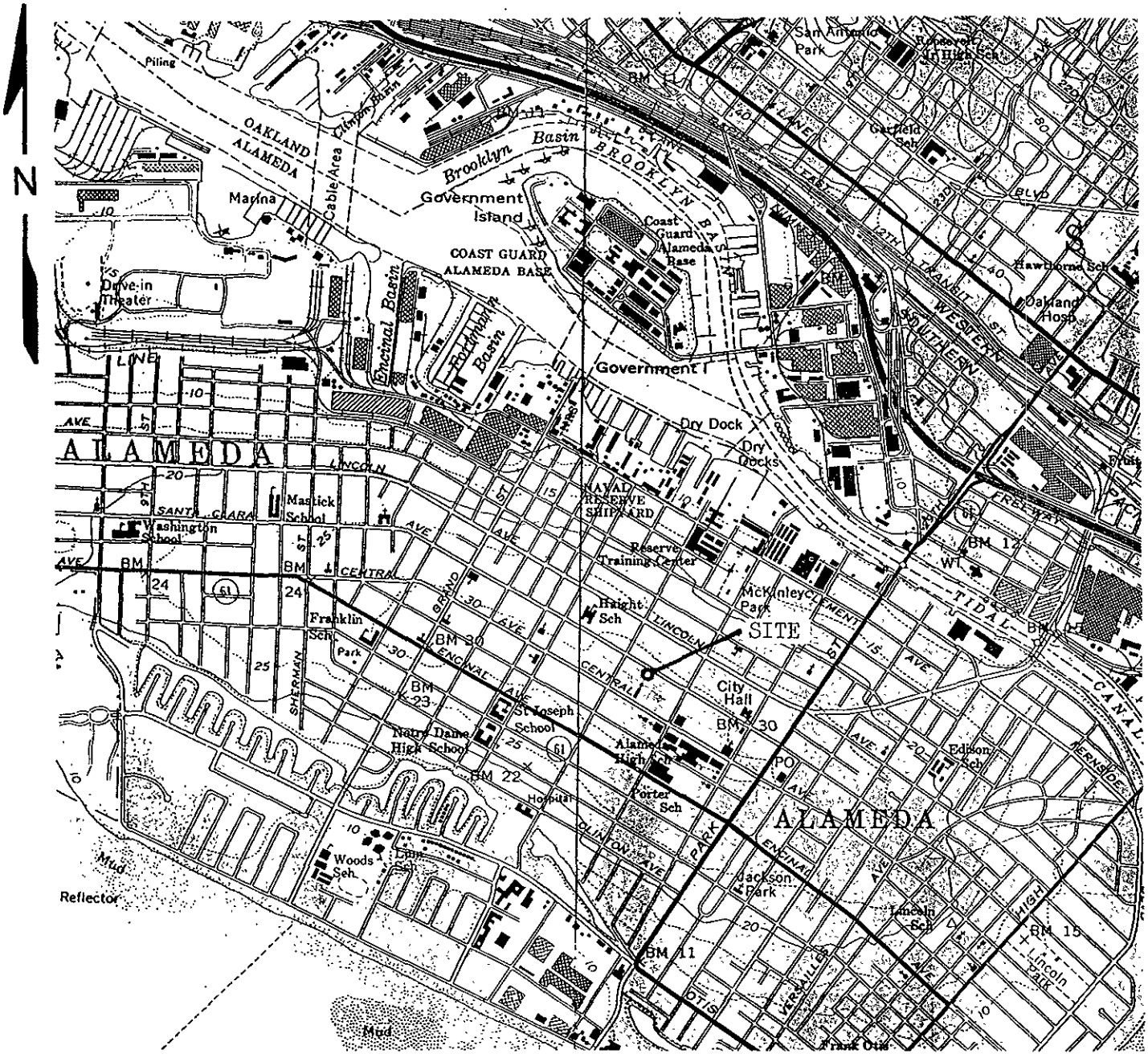
AQUA SCIENCE ENGINEERS, INC.

Robert E. Kitay, R.E.A.
Project Geologist

David Allen
Project Manager

Attachments: Figures 1 and 2
Appendices A through E

cc: Mr. Micheal Ghidella
Ms. Juliet Shin, ACHCSA
Mr. Rich Hiett, RWQCB, San Francisco Bay Region

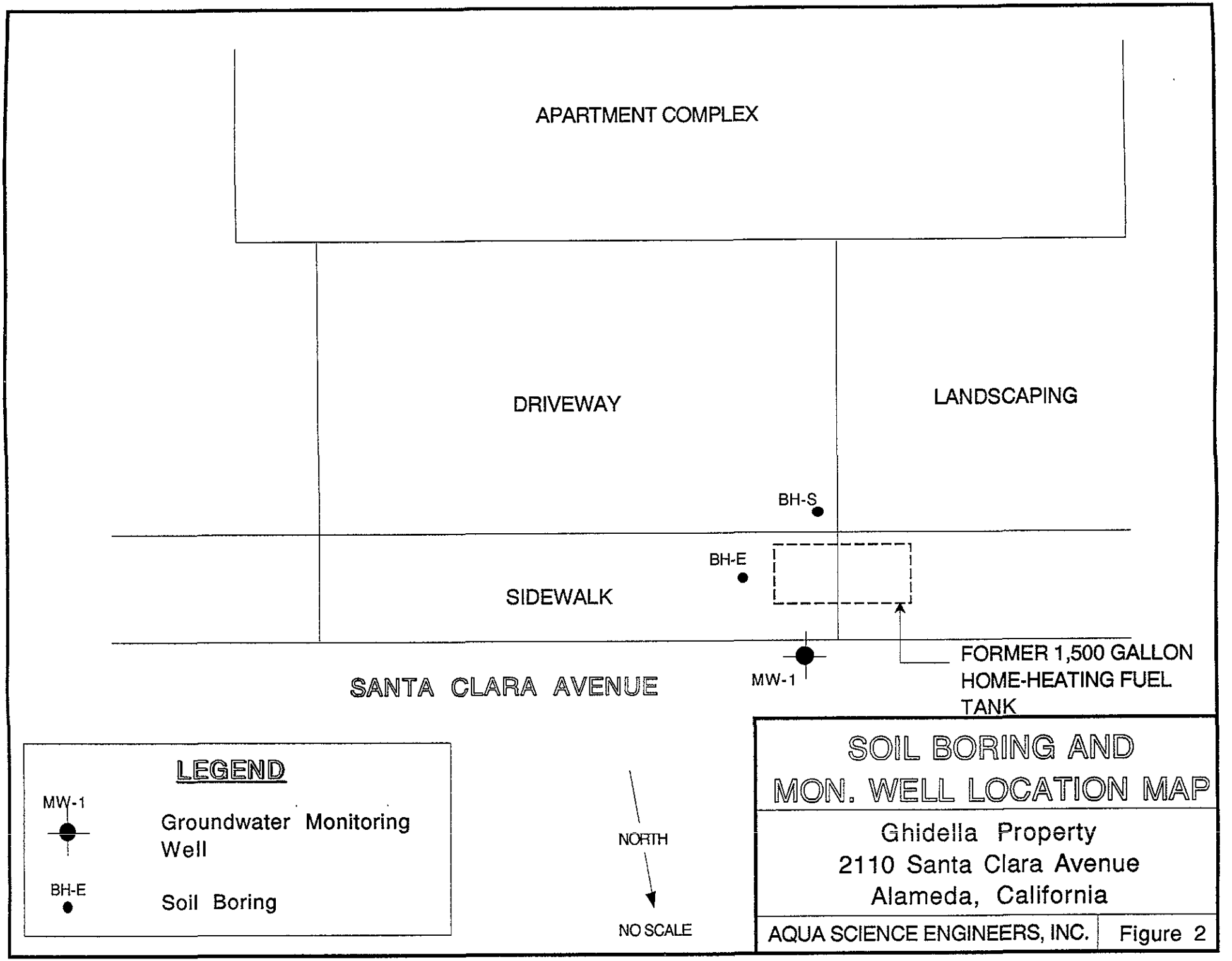


BASE: Oakland East and Oakland West 7.5 minute quadrangle topographic map, dated 1980, scale 1:24,000.

LOCATION MAP

Ghidella Property
2110 Santa Clara Avenue
Alameda, California

Aqua Science Engineers | Figure 1


APARTMENT COMPLEX
DRIVEWAY
LANDSCAPING
BH-S
BH-E
SIDEWALK
MW-1
FORMER 1,500 GALLON HOME-HEATING FUEL TANK
SANTA CLARA AVENUE
LEGEND
MW-1
Groundwater Monitoring Well
BH-E
Soil Boring
NORTH
NO SCALE
SOIL BORING AND MON. WELL LOCATION MAP
Ghidella Property
2110 Santa Clara Avenue
Alameda, California
AQUA SCIENCE ENGINEERS, INC.
Figure 2

APPENDIX A

Alameda County Health Care Services Agency
"Direction" Letter

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

May 16, 1994

Mr. Michael Ghidella
45750 San Louis Ray Ave., Unit 158
Palm Desert, CA 92260

Re: Work plan for investigations at 2110 Santa Clara Ave., Alameda, California

Dear Mr. Ghidella,

This office has reviewed Aqua Science Engineers' (ASE) work plan, dated May 16, 1994. This work plan is acceptable to this office with the following additional requirements:

- Per Article 11, Title 23 California Code of Regulations, you are required to delineate the extent of both soil and ground water contamination at the site. At this time, it appears that the extent of soil contamination has been delineated to the west, per the Non Detect sample results of Sample BOT-W. Additionally, it appears that the extent of any potential soil contamination to the north will be addressed through collecting soil sample(s) from the proposed monitoring well. However, the extent of soil contamination to the south and east have not yet been addressed. **As part of the proposed work, you are required to delineate the extent of soil contamination to the south and east.**

- It appears that one monitoring well installed to the north/northeast of the tank pit will be acceptable at this time, since several contamination sites in the area (2200 Central Ave., 2501 Santa Clara Ave., 2244 Santa Clara Ave.) have all consistently documented the ground water gradient to be flowing anywhere between the northerly direction and easterly direction. However, if ground water contamination is identified from this well, you may be required to install additional ground water monitoring wells to delineate the extent of the ground water contaminant plume.

- Please be reminded that soil samples are required to be collected from every 5 feet, at lithologic changes, and from the soil/water interface.

APPENDIX B

Permits

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE ♦ PLEASANTON, CALIFORNIA 94588 ♦ (415) 484-2600

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT
2110 Santa Clara
Alameda, CA

CLIENT
Name Michael Ghielia
Address 45750 San Louis Rey #158 Phone (619) 779-9626
City Palm Desert, CA Zip 92260

APPLICANT
Name Agua Science Engineers
Address 2411 Old Crow Canyon Rd #4 Phone (510) 820-9391
City San Ramon, CA Zip 94583
FAX # (510) 837-4853

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C-57 485165

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 30 ft.
Surface Seal Depth 4 ft. Number 1

GEOTECHNICAL PROJECTS
Number of Borings ___ Maximum
Hole Diameter ___ in. Depth ___ ft.

ESTIMATED STARTING DATE 5-20-94
ESTIMATED COMPLETION DATE 5-20-94

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Ruth C. Kelly Date 5-17-94

FOR OFFICE USE

PERMIT NUMBER 94304
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 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.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 19 May 94
Wyman Hong

5199

CITY OF ALAMEDA
CENTRAL PERMIT OFFICE
2263 SANTA CLARA AVE., ROOM 204
ALAMEDA, CA 94501

415-522-4100

APPLICATION FOR PERMIT TO EXCAVATE IN THE RIGHT-OF-WAY OF THE CITY OF ALAMEDA

_____ SERVICE NUMBER

DATE 5-17 19 94

Application is hereby made for a permit to excavate on the SOUTH side of SANTA CLARA (Ave.) St. 200 +/- feet EAST of WILLOW AVE.

House No. 2110 Owner MICHAEL GHIDELLA

For the purpose of INSTALLATION OF A GROUNDWATER MONITORING WELL

Name of Applicant DAVID ALLEN AQUA SCIENCE ENGINEERS Address 2411 OLD CROW CANYON RD, #4 SAN RAMON, CA 94583

Phone 510-820-9391

☐ VERBAL APPROVAL
Date 5/19/94
By _____
Reasons: EQUIP AVAILABLE

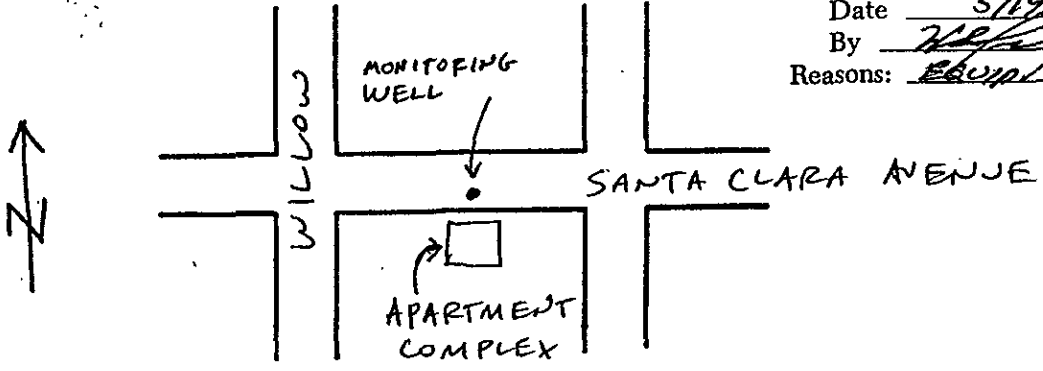


Diagram of Proposed Work

FOR OFFICE USE ONLY

This permit to be Inspected by ☑ ENGINEERING DIVISION ☐ MAINTENANCE DIVISION

☐ ALL STRIPING, PAINTED GRAPHICS AND PAVEMENT MARKERS DAMAGED OR DESTROYED BY STREET EXCAVATION WORK ARE TO BE RESTORED BY THE PERMITEE.

☑ ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT OF WAY MUST HAVE BARRICADES WITH FLASHERS FOR NIGHT TIME PROTECTION.

☑ ALL WORK INVOLVED IS TO BE DONE IN ACCORDANCE WITH STANDARD CITY OF ALAMEDA SPECIFICATIONS AND CITY OF ALAMEDA PRACTICES ALL TO THE SATISFACTION OF THE CITY ENGINEER. INSPECTION CHARGES SHALL BE PAID TO THE CITY MONTHLY. ACCEPTANCE OF THIS PERMIT CONSTITUTES ACCEPTANCE OF THE CONDITIONS INCLUDED.

X Gerald Wilson 5/18/94
SIGNATURE DATE

☐ CONCRETE PERMIT REQUIRED

☐ NO OPEN TRENCH CUTTING

☐ STATE PERMIT REQUIRED

CLEAR SIGNATURE DATE

☐ SPECIAL CONDITIONS _____

RECEIVED DATE 5/19/94 SIGNED D. Colvin

APPROVAL DATE 5/19/94 SIGNED _____

ISSUED DATE 5/20/94 SIGNED D. Colvin

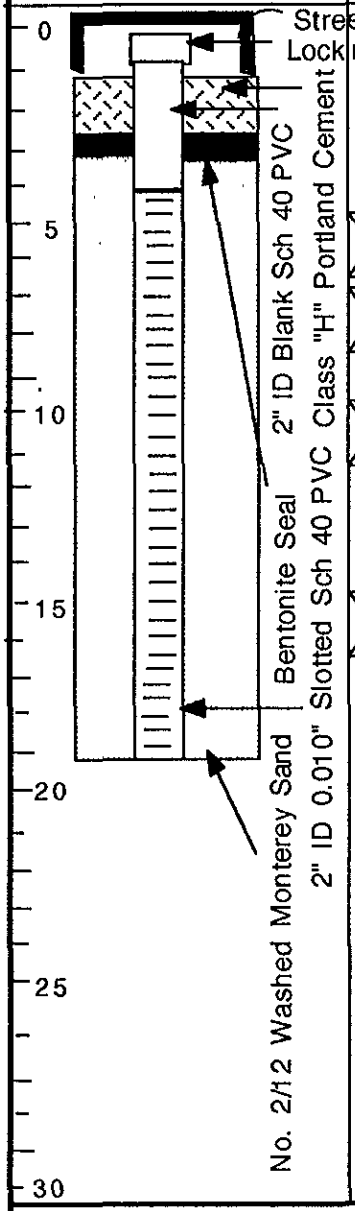
PERMIT # 94-0065

APPENDIX C

Boring Log and Well Construction Log

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DETAILS		Monitoring Well MW-1
Project Name: Ghidella Property	Project Location: 2110 Santa Clara Ave., Alameda, CA	Page 1 of 1
Driller: Gregg Drilling	Type of Rig: Simco	Type and Size of Auger: 8-inch O.D. Hollow-stem.
Logged By: Robert E. Kitay	Date Drilled: May 20, 1994	Checked By: David M. Schultz, P.E.

WATER AND WELL DATA	
Depth of Water First Encountered: 7.0'	Total Depth of Well Completed: 19.0'
Static Depth of Water in Well: 7.0'	Well Screen Type and Diameter: 2" Diameter Schedule 40 PVC
Total Depth of Boring: 19'	Well Screen Slot Size: 0.010"
	Type and Size of Soil Sampler: 1.5" I.D. Split-barrel



SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
Interval	OVM	Time	Graphic Log		
				0	Silty SAND (SM); yellow brown; medium dense; damp; 70-85% fine to medium sand; 15-30% silt; high estimated K; no odor
	0	10:30		5	slight olive mottling at 5.5' wet at 7'
	0			10	
				15	
				20	End of boring at 19'
				25	
				30	

APPENDIX D

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

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

AQUA SCIENCE ENGINEERS, INC
2411 OLD CROW CANYON RD. #4
SAN RAMON, CA 94583

ATTN: ROBERT KITAY
CLIENT PROJ. ID: 2750
CLIENT PROJ. NAME: GHIDELLA PROP.

REPORT DATE: 05/26/94
DATE(S) SAMPLED: 05/20/94
DATE RECEIVED: 05/20/94
AEN WORK ORDER: 9405266

PROJECT SUMMARY:

On May 20, 1994, this laboratory received 3 soil sample(s).

Client requested samples be analyzed for organic parameters. Sample identification, methodologies, results and dates analyzed are summarized on the following pages.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

AQUA SCIENCE ENGINEERS, INC.

DATE SAMPLED: 05/20/94
DATE RECEIVED: 05/20/94
CLIENT PROJ. ID: 2750

REPORT DATE: 05/26/94
AEN JOB NO: 9405266

Client Sample Id	AEN Lab Id	Extractable Hydrocarbons as Diesel (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)
MW-1 6.0'	01A	ND	ND	ND	ND	ND
BH-S 6.0'	02A	ND	ND	ND	ND	ND
BH-E 6.0'	03A	ND	ND	ND	ND	ND
Reporting Limit		1	0.005	0.005	0.005	0.005
EPA Method:		3550 GCFID	8020	8020	8020	8020
Instrument:		C	H	H	H	H
Date Extracted:		05/20/94	NA	NA	NA	NA
Date Analyzed:		05/22-24/94	05/23/94	05/23/94	05/23/94	05/23/94

NA = Not Applicable
ND = Not Detected

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9405266

CLIENT PROJECT ID: 2750

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

DATE EXTRACTED: 05/20/94
DATE ANALYZED: 05/24/94
CLIENT PROJ. ID: 2750

AEN JOB NO: 9405266
SAMPLE SPIKED: 9405247-01A
INSTRUMENT: C

MATRIX SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE SOIL
METHOD: EPA 3550 GCFID

ANALYTE	Spike Added (mg/kg)	Average Percent Recovery	RPD
Diesel	40.8	75	8

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Diesel	(44-105)	18

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

CLIENT PROJ. ID: 2750

AEN JOB NO: 9405266

INSTRUMENT: H

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8020
(SOIL MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION Sample Id.	Lab Id.	SURROGATE RECOVERY (PERCENT) Fluorobenzene
05/23/94	MW-1 6.0'	01	101
05/23/94	BH-S 6.0'	02	101
05/23/94	BH-E 6.0'	03	101

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Fluorobenzene	(78-114)

QUALITY CONTROL DATA

DATE ANALYZED: 05/23/94
SAMPLE SPIKED: 9405155-04A
CLIENT PROJ. ID: 2750

AEN JOB NO: 9405226
INSTRUMENT: H

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8020
(SOIL MATRIX)

ANALYTE	Spike Added (ug/kg)	Average Percent Recovery	RPD
Benzene	19.6	109	1
Toluene	72.9	109	2

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Benzene	(81-127)	11
Toluene	(84-121)	14

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-7, S-H 4405260 LP

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 5/20/94 PAGE 1 OF 1

SAMPLERS (SIGNATURE) Robert E. Kitay (PHONE NO.) (510) 820-9391

PROJECT NAME Ghidella Property NO. 2750

ADDRESS 2110 Santa Clara Avenue, Alameda, Calif

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) BTEX	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					
01A	MW-1 6.0'	5/20	10:30	Soil	1			X	X														
02A	BH-S 6.0'	↓	9:25	↓	1			X	X														
03A	BH-E 6.0'	↓	10:05	↓	1			X	X														

RELINQUISHED BY:	RECEIVED BY	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
Robert E. Kitay 5-20-94 15:25	Michael Nichols 15:25	Michael Nichols 18:05	Lori L Pruitt 1805	3 day TAT
(signature) (time)	(signature) (time)	(signature) (time)	(signature) (time)	5/23/94 8020 for BTEX only per Diane RB
Robert E. Kitay	Michael Nichols 5/20/94	5/20/94	Lori L Pruitt 5/20/94	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE	Company- AEN	Company-	Company- AEN	

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

AQUA SCIENCE ENGINEERS, INC
2411 OLD CROW CANYON RD. #4
SAN RAMON, CA 94583

ATTN: ROBERT KITAY
CLIENT PROJ. ID: 2750
CLIENT PROJ. NAME: GHIDELLA PROP.

REPORT DATE: 05/26/94
DATE(S) SAMPLED: 05/23/94
DATE RECEIVED: 05/23/94
AEN WORK ORDER: 9405286

PROJECT SUMMARY:

On May 23, 1994, this laboratory received 1 water sample(s).

Client requested the sample be analyzed for organic parameters. Sample identification, methodologies, results and dates analyzed are summarized on the following page.

Please see quality control report for a summary of QC data pertaining to this project.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
General Manager

AQUA SCIENCE ENGINEERS, INC.

DATE SAMPLED: 05/23/94
DATE RECEIVED: 05/23/94
CLIENT PROJ. ID: 2750

REPORT DATE: 05/26/94

AEN JOB NO: 9405286

Client Sample Id	AEN Lab Id	Extractable Hydrocarbons as Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
MW-1	01A	ND	ND	ND	ND	ND
Reporting Limit		50	0.5	0.5	0.5	2
EPA Method:		3510 GCFID	8020	8020	8020	8020
Instrument:		C	F	F	F	F
Date Extracted:		05/23/94	NA	NA	NA	NA
Date Analyzed:		05/25/94	05/25/94	05/25/94	05/25/94	05/25/94

NA = Not Applicable
ND = Not Detected

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9405286

CLIENT PROJECT ID: 2750

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

The following abbreviations are found throughout the QC report:

ND = Not Detected at or above the reporting limit
RPD = Relative Percent Difference
< = Less Than

QUALITY CONTROL DATA

DATE EXTRACTED: 05/23/94
DATE ANALYZED: 05/25/94
CLIENT PROJ. ID: 2750

AEN JOB NO: 9405286
SAMPLE SPIKED: DI WATER
INSTRUMENT: C

METHOD SPIKE RECOVERY SUMMARY
TPH EXTRACTABLE WATER
METHOD: EPA 3510 GCFID

ANALYTE	Spike Added (mg/L)	Average Percent Recovery	RPD
Diesel	2.04	97	2

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Diesel	(63-109)	10

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

QUALITY CONTROL DATA

CLIENT PROJ. ID: 2750

AEN JOB NO: 9405286

INSTRUMENT: F

SURROGATE STANDARD RECOVERY SUMMARY
METHOD: EPA 8020
(WATER MATRIX)

Date Analyzed	SAMPLE IDENTIFICATION		SURROGATE RECOVERY (PERCENT)
	Sample Id.	Lab Id.	Fluorobenzene
05/25/94	MW-1	01	98

CURRENT QC LIMITS

ANALYTE	PERCENT RECOVERY
Fluorobenzene	(70-115)

QUALITY CONTROL DATA

DATE ANALYZED: 05/24/94
SAMPLE SPIKED: 9405203-02
CLIENT PROJ. ID: 2750

AEN JOB NO: 9405286
INSTRUMENT: F

MATRIX SPIKE RECOVERY SUMMARY
METHOD: EPA 8020
(WATER MATRIX)

ANALYTE	Spike Added (ug/L)	Average Percent Recovery	RPD
Benzene	10.0	103	5
Toluene	34.7	108	<1

CURRENT QC LIMITS

Analyte	Percent Recovery	RPD
Benzene	(81-115)	10
Toluene	(85-112)	9

Daily method blanks for all associated analytical runs showed no contamination over the reporting limit.

*** END OF REPORT ***

R-1, S-A 9405286

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 5/23/94 PAGE 1 OF 1

SAMPLERS (SIGNATURE) (PHONE NO.)
Robert C. Kitay (510) 820-9391

PROJECT NAME Ghidotti Property NO. 2750
ADDRESS 2110 Santa Clara Avenue, Alameda, CA

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) BTEX only	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					
1A-E MW-1	5/23	12:30	water	5			X	X														

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
5-23-94 14:05	14:05	14:35	14:35	72 hour TAT
Robert E. Kitay (signature) (time)	Michael McMullen (signature) (time)	(signature) (time)	Lori L. Pruitt (signature) (time)	
Robert E. Kitay (printed name) (date)	Michael McMullen 5/23/94 (printed name) (date)	5/23/94 (printed name) (date)	Lori L. Pruitt 5/23/94 (printed name) (date)	
Company- ASE	Company- AEN	Company- AEN	Company- AEN	

APPENDIX E

Well Sampling Field Log

aqua science engineers inc.

WELL SAMPLING FIELD LOG

Project Name and Address: Ghidella, 2110 Santa Clara Ave, Alameda, CA
Job #: 2750 Date of sampling: 5-23-94
Well Name: MW-1 Sampled by: RK
Total depth of well (feet): 19' Well diameter (inches): 2
Depth to water before sampling (feet): 6.48
Thickness of floating product if any: None
Depth of well casing in water (feet): 12.52
Number of gallons per well casing volume (gallons): 2.1
Number of well casing volumes to be removed: 10
Req'd volume of groundwater to be purged before sampling (gallons): 21
Equipment used to purge the well: Pre-cleaned PVC bailer
Time Evacuation Began: 9:40 Time Evacuation Finished: 12:10
Approximate volume of groundwater purged: 21 gallons
Did the well go dry?: Yes After how many gallons: 10
Time samples were collected: 12:30
Depth to water at time of sampling: 8.86
Percent recovery at time of sampling: 81%
Samples collected with: Pre-cleaned PVC bailer
Sample color: clear Odor: none
Description of sediment in sample: fine brown silt

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
MW-1	3	40-ml VOA vials	HCl	Yes	BTEX
MW-1	2	1-liter amber glass	↓	↓	TPH-D

FAX 415 837 4853