



RECEIVED  
HOSPITAL  
DIVISION  
JAN 15 1997

January 14, 1997

Moose Lodge # 324  
690 Hegenberger Road  
Oakland California 94621

ATTN: MR. HENRY MILLER  
  
SITE: MOOSE LODGE # 324  
690 HEGENBERGER ROAD  
OAKLAND CALIFORNIA 94621  
  
RE: SUBSURFACE INVESTIGATION REPORT

Dear Mr. Miller:

Please find enclosed a finalized copy of our subsurface investigation report for the above referenced site. A copy has been submitted to the following agency:

Mr. Barney Chan  
Alameda County Health Care Services Agency  
Environmental Protection (LOP)  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

If you have any questions regarding this report, please call me at (510) 606-9150.

Sincerely,

ALTON GEOSCIENCE

A handwritten signature in cursive script that reads 'Ron Scheele'.

Ron Scheele  
Project Geologist

Enclosures

M:\proposal\mooser02.isa

**SUBSURFACE INVESTIGATION REPORT**

January 13, 1997

MOOSE LODGE # 324  
690 Hegenberger Road  
Oakland California 94621

Alton Project No. 41-0096

Prepared For:

Mr. Henry Miller  
Moose Lodge # 324  
690 Hegenberger Road  
Oakland California 94621

By:



Ron A. Scheele  
Project Geologist



Matthew W. Katen, RG  
Associate

ALTON GEOSCIENCE  
30A Lindbergh Avenue  
Livermore, California 94611



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Appendix B: Analytical Methods, Official Laboratory Report, and Chain of Custody Records

## **Subsurface Investigation Report**

Moose Lodge #324, 690 Hegenberger Road, Oakland, California

January 13, 1997

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### **1.0 INTRODUCTION**

This report presents the findings of a subsurface investigation conducted at Moose Lodge #324 located at 690 Hegenberger Road in Oakland, California (Figure 1). This work was performed in accordance with Alameda County, Health Care Services Agency (ACHCSA) request dated October 2, 1996 and the Alton Geoscience's Work Plan for Subsurface Investigation dated November 1, 1996.

The objectives of this investigation were to:

- Investigate if the soil located beneath the former dispenser island area has been impacted by gasoline hydrocarbons;
- Investigate if lead has impacted the groundwater at the site; and,
- Evaluate site conditions prior to requesting site closure.

### **2.0 BACKGROUND SITE CONDITIONS**

The Moose Lodge site was formerly utilized as a trucking company's yard complete with a 10,000 gallon underground fuel storage tank (UST) and a fuel dispenser area (Figure 2). The Moose Lodge has not used the UST system to dispense fuel since they bought the property in approximately 1980. On August 16, 1995 the UST and fuel dispenser were removed from the site. Approximately 60 cubic yards of soil was excavated and stockpiled onsite during tank removal activities. The excavation was subsequently backfilled with clean, imported, structural backfill. The UST removal activities were performed by VCI of San Leandro, California under permit and guidance from the City of Oakland Fire Department and the ACHCSA. A summary of UST removal activities are described in VCI's UST Removal Report dated November 9, 1995.

### **3.0 FIELD ACTIVITIES**

#### **3.1 DRILLING AND SOIL/GROUNDWATER SAMPLING**

On November 27, 1996, one soil boring (SB-1) was drilled to a depth of 20 feet below grade (fbg) using a geoprobe drilling rig. Soil samples were collected at 5-foot intervals. Groundwater was encountered at 15 fbg during drilling. Refer to Appendix A for a description of general field procedures, drilling permit, and boring log details.

One shallow soil sample (SB-1 @ 5 fbg) was submitted to a state-certified laboratory and analyzed for total petroleum hydrocarbons as gasoline (TPH-G), and benzene, toluene,

## **Subsurface Investigation Report**

Moose Lodge #324, 690 Hegenberger Road, Oakland, California

January 13, 1997

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ethylbenzene, and total xylenes (BTEX). One grab groundwater sample (WS-1) was collected from the soil boring and analyzed for TPH-G, BTEX, and dissolved lead by a state-certified laboratory. Soil sample selection and laboratory methods analysis were pre-approved by Mr. Barry Chan of the ACHCSA. The results of laboratory analysis of soil and groundwater samples are shown on Figures 3 and 4, respectively. Refer to Appendix B for a description of the analytical methods used and copies of the Official Laboratory Report and Chain of Custody Records.

### **4.0 FINDINGS**

The results of this investigation are summarized as follows:

- Soil types encountered during drilling consisted of clay with varying amounts of silt and sand.
- Groundwater was encountered during drilling at 15 fbg.
- No dissolved-phase TPH-G and BTEX concentrations were detected in groundwater beneath the former dispenser island.
- No dissolved lead concentrations were detected in groundwater beneath the former dispenser island.
- No TPH-G and BTEX concentrations were detected in the soil sample collected at 5 fbg beneath the former dispenser island.

### **5.0 CONCLUSIONS**

Based on the results of this investigation, Alton Geoscience concludes:

- No gasoline constituents are present in soil or groundwater beneath the former dispenser island.
- A stockpile of excavated soil from UST removal activities still exists onsite (VCI, 1995). Mr. Henry Miller of the Moose Lodge has assured Alton Geoscience that this stockpile represents the full amount of soil that was excavated.

## **Subsurface Investigation Report**

Moose Lodge #324, 690 Hegenberger Road, Oakland, California

January 13, 1997

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### **6.0 RECOMMENDATIONS**

- On behalf of Moose Lodge, Alton Geoscience recommends that the remaining stockpiled soil be spread onsite and capped with a layer of asphalt. Following completion and written documentation of these activities, full site closure will be requested from Alameda County, Health Care Services Agency.

### **7.0 REFERENCES**

VCI of California, UST Removal Report, Moose Lodge #324, 690 Hegenberger Road, Oakland, California, November 9, 1994 (date correction 1995).

Alton Geoscience, Workplan For Subsurface Investigation, Moose Lodge #324, 690 Hegenberger Road, Oakland, California, November 1, 1996.

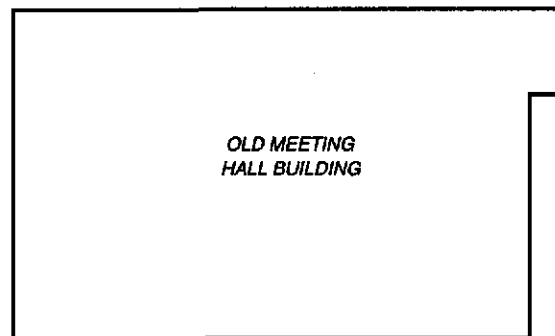
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The site assessment activities summarized in this report have been conducted in accordance with current practice and the standard of care exercised by geologists and engineers performing similar tasks in this area. No warranty, expressed or implied, is made regarding the conclusions and recommendations presented in this report. The conclusions and recommendations are based solely upon an analysis of the observed conditions. If actual conditions differ from those described in this report, our office should be notified.

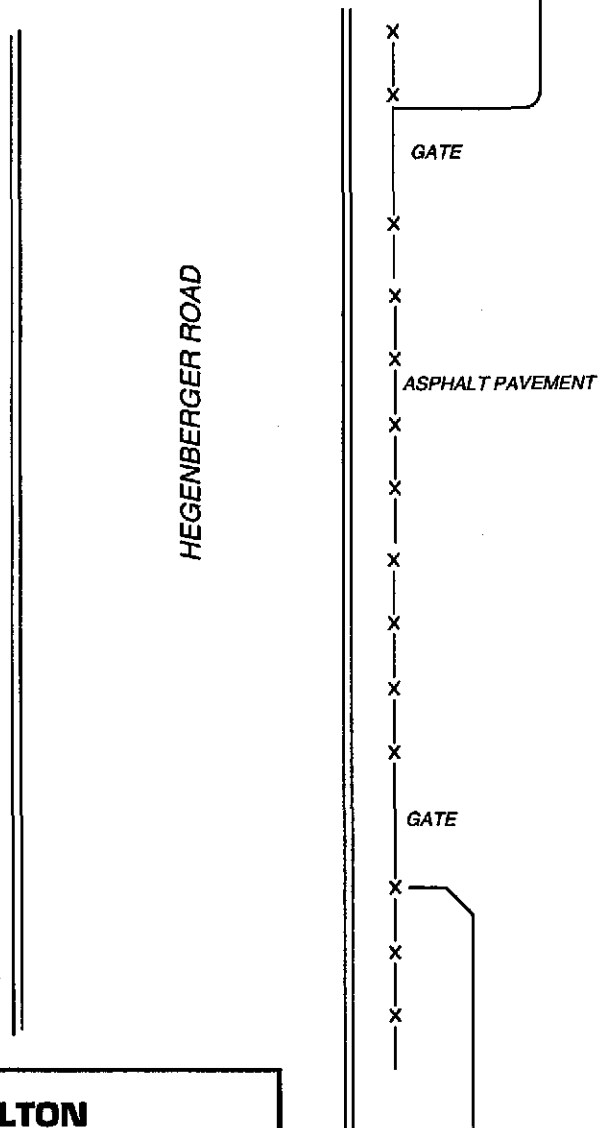
**FIGURES**

**LEGEND**

⊕ SB-1 Soil Boring



OLD MEETING  
HALL BUILDING



HEGENBERGER ROAD

GATE

ASPHALT PAVEMENT

GATE

FORMER  
DISPENSER  
ISLAND



SB-1

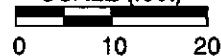


FORMER 10,000-gallon UST

PARKING

A/C PAVING

SCALE (feet)



**SITE PLAN**

690 Hegenberger Road  
Oakland, California

**FIGURE 1**



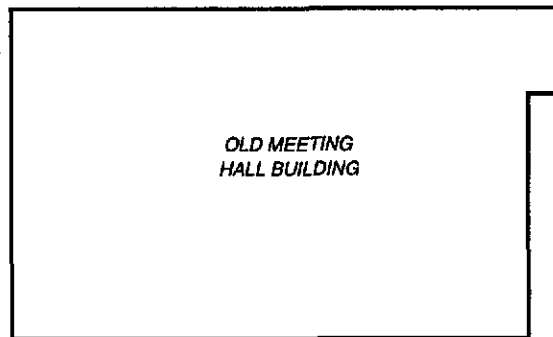


**LEGEND**

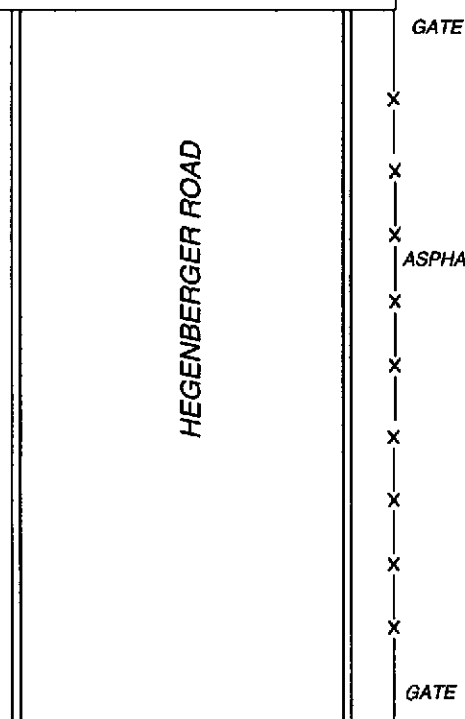
⊕ SB-1 Soil Boring

SB-1	Depth
TPH-G	
B	
T	
E	
X	

Hydrocarbon concentrations in soil (ppm) Depth in feet below grade



OLD MEETING HALL BUILDING



HEGENBERGER ROAD

GATE

ASPHALT PAVEMENT

FORMER DISPENSER ISLAND



SB-1	5.0'
TPH-G	ND
B	ND
T	ND
E	ND
X	ND



FORMER 10,000-gallon UST

PARKING

GATE

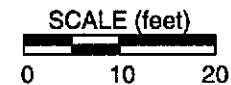
A/C PAVING

**NOTES:**

Hydrocarbon concentrations are based on results of laboratory analysis of soil sample collected November 27, 1996. ND = not detected at detection limits stated in official laboratory reports. TPH-G = total petroleum hydrocarbons as gasoline, B = benzene, T = toluene, E = ethylbenzene, X = total xylenes; ppm = parts per million.

**HYDROCARBON CONCENTRATIONS IN SOIL**  
November 27, 1996

690 Hegenberger Road  
Oakland, California

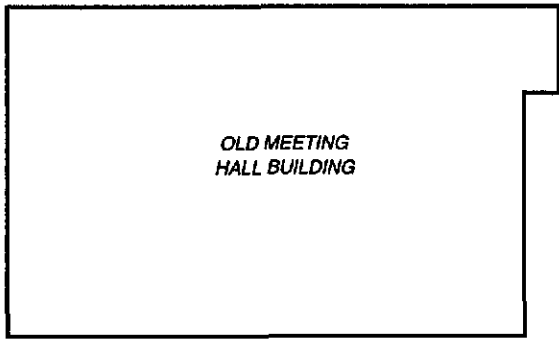


**FIGURE 2**

**LEGEND**

⊕ SB-1 Soil Boring

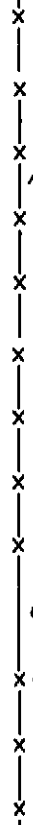
SB-1	
TPH-G	Dissolved-phase hydrocarbon concentrations (ppb)
B	
T	
E	
X	
Lead	



OLD MEETING HALL BUILDING

HEGENBERGER ROAD

GATE



ASPHALT PAVEMENT

FORMER DISPENSER ISLAND



SB-1	
TPH-G	ND
B	ND
T	ND
E	ND
X	ND
Lead	ND



FORMER 10,000-gallon UST

PARKING

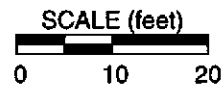
GATE

A/C PAVING

**NOTES:**  
Hydrocarbon concentrations are based on results of laboratory analysis of grab water sample collected November 27, 1996. ND = not detected at detection limits stated in official laboratory reports. TPH-G = total petroleum hydrocarbons as gasoline, B = benzene, T = toluene, E = ethylbenzene, X = total xylenes; ppb = parts per billion.

**DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS**  
November 27, 1996

690 Hegenberger Road  
Oakland, California



**FIGURE 3**

**APPENDIX A**

**GENERAL FIELD PROCEDURES, DRILLING PERMIT, AND BORING LOG**

## APPENDIX A

### GENERAL FIELD PROCEDURES

A description of the general field procedures used during site investigation and monitoring activities is presented below. For an overview of protocol, refer to the appropriate section(s).

#### DRILLING AND SOIL SAMPLING

Soil borings are drilled using either a hydraulic/pneumatic powered geoprobe rig and hollow stem auger rig. Borings that are not completed as monitoring wells are grouted to within 2 feet of the ground surface with a cement/bentonite slurry. The remaining 2 feet is filled with concrete.

Soil samples are obtained for soil description and possible laboratory analysis. Soil samples are retrieved from the borings by using either a 2-foot-long, acetate, continuous-core barrel sampler or using a standard split-spoon sampler lined with four 1.5-inch-diameter stainless steel or brass sample inserts. The split-spoon sampler is driven approximately 18 inches beyond the lead auger with a 140-pound hammer dropped from a height of 30 inches.

During drilling activities, soil adjacent to the laboratory sample is described in accordance with the Unified Soil Classification System. For each sampling interval, field estimates of soil type, density/consistency, moisture, color, and grading are recorded on the boring logs.

#### SOIL SAMPLE HANDLING

Upon retrieval, soil samples are immediately removed from the sampler, sealed with Teflon sheeting and polyurethane caps, and wrapped with tape. Each sample is labeled with the project number, boring/well number, sample depth, geologist's initials, and date of collection. After the samples have been labeled and documented in the chain of custody record, they are placed in a cooler with ice at approximately 4 degrees Celsius ( $^{\circ}\text{C}$ ) prior to and during transport to a state-certified laboratory for analysis. Samples not selected for immediate analysis may be transported in a cooler with ice and archived in a frostless refrigerator at approximately  $4^{\circ}\text{C}$  for possible future testing.

#### GROUNDWATER SAMPLING

Groundwater samples are collected by lowering a 0.75-inch-diameter, bottom-fill, disposable, polyethylene bailer just below the static water level in the well. The samples

are carefully transferred from the check-valve-equipped bailer to 40-milliliter glass containers. The sample containers are filled to zero headspace and fitted with Teflon-sealed caps. Each sample is labeled with the project number, well number, sample date, and sampler's initials. Samples remain chilled at approximately 4°C prior to analysis by a state-certified laboratory.

## CHAIN OF CUSTODY PROTOCOL

Chain of custody protocol is followed for all soil and ground water samples selected for laboratory analysis. The chain of custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to analysis.

## DECONTAMINATION

### Drilling and Soil Sampling

Drilling equipment is decontaminated by steam cleaning before being brought onsite. The augers are also steam cleaned before each new boring is commenced. Prior to use, the sampler and sampling tubes are brush-scrubbed in a Liqui-nox and potable water solution and rinsed twice in clean potable water. Sampling equipment and tubes are also decontaminated before each sample is collected to avoid cross-contamination between borings.

### Groundwater Sampling

Purging and sampling equipment that could contact well fluids is either dedicated to a particular well or cleaned prior to each use in a Liqui-nox solution followed by two tap water rinses.



# ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600  
FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT MOOSE LODGE # 324  
690 HELEN BERGER ROAD  
OAKLAND CA 94621

PERMIT NUMBER 96834  
LOCATION NUMBER \_\_\_\_\_

### CLIENT

Name MR. HENRY MILLER  
Address 690 HELEN BERGER RD Voice (510) 568-8871  
City OAKLAND CA Zip 94621

### PERMIT CONDITIONS

Circled Permit Requirements Apply

### APPLICANT

Name ALTON GEOSCIENCE  
Address 30A LINDBERGH AVE Fax 510 606-9360  
City LIVERMORE CA Zip 94556

### TYPE OF PROJECT

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

### PROPOSED WATER SUPPLY WELL USE

Domestic	_____	Industrial	_____	Other	_____
Municipal	_____	Irrigation	_____		

### DRILLING METHOD:

Mud Rotary	_____	Air Rotary	_____	Auger	_____
Cable	_____	Other	<u>GEOPROBE BORING</u>		

DRILLER'S LICENSE NO. C57 # 705927

### WELL PROJECTS

Drill Hole Diameter	<u>1</u> in.	Maximum	
Casing Diameter	<u>NA</u> in.	Depth	<u>15</u> ft.
Surface Seal Depth	_____ ft.	Number	_____

### GEOTECHNICAL PROJECTS

Number of Borings	_____	Maximum	
Hole Diameter	_____ in.	Depth	_____ ft.

ESTIMATED STARTING DATE 11/27/96  
ESTIMATED COMPLETION DATE 11/27/96

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

APPLICANT'S SIGNATURE Ron Schuch for Alton Geoscience Date 11/26/96

### 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 30 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 27 Nov 96  
Wyman Hong

# UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			TYPICAL NAMES			
<b>COARSE-GRAINED SOILS</b> <small>MORE THAN HALF IS LARGER THAN No. 200 SIEVE</small>	<b>GRAVELS</b> <small>MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE</small>	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		<small>GRAVELS WITH OVER 12% FINES</small>	<small>CLEAN SANDS WITH LITTLE OR NO FINES</small>	GP		POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES
				GM		SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		<b>SANDS</b> <small>MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE</small>	<small>GRAVELS WITH OVER 12% FINES</small>	<small>CLEAN SANDS WITH LITTLE OR NO FINES</small>	GC	
	SW					WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	<small>SANDS WITH OVER 12% FINES</small>		<small>CLEAN SANDS WITH LITTLE OR NO FINES</small>	SP		POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SM		SILTY SANDS, SAND-SILT MIXTURES
		SC			CLAYEY SANDS, SAND-CLAY MIXTURES	
<b>FINE-GRAINED SOILS</b> <small>MORE THAN HALF IS SMALLER THAN No. 200 SIEVE</small>	<b>SILTS AND CLAYS</b> <small>LIQUID LIMIT LESS THAN 50</small>		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
	<b>SILTS AND CLAYS</b> <small>LIQUID LIMIT GREATER THAN 50</small>		CL		INORGANIC CLAYS OF LOW- TO MEDIUM-PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
			OL		ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	<b>SILTS AND CLAYS</b> <small>LIQUID LIMIT GREATER THAN 50</small>		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
			OH		ORGANIC CLAYS OF MEDIUM- TO HIGH-PLASTICITY, ORGANIC SILTS	
<b>HIGHLY ORGANIC SOILS</b>			Pt		PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

## SYMBOLS AND NOTES

- SAMPLE INTERVAL
- SAMPLE NOT RECOVERED
- BENTONITE
- CONCRETE
- GROUT
- FILTER SAND PACK
- STATIC WATER LEVEL
- WATER LEVEL ENCOUNTERED WHEN DRILLING

- ppm = parts per million (mg/kg)
- ppb = parts per billion (µg/kg)
- ND = not detected at detection limits stated in official laboratory reports
- CGI = combustible gas indicator
- OVA = organic vapor analyzer
- PID = photoionization detector
- LEL = lower explosive limit
- TPH = total petroleum hydrocarbons
- TRPH = total recoverable petroleum hydrocarbons
- NA = not applicable



## KEY TO BORING LOG

PROJECT NO.: 41-0096  
 LOCATION: Moose Lodge  
 960 Hegenberger Road  
 Oakland, California

DATE DRILLED: 11/27/96  
 LOGGED BY: J. Madden  
 APPROVED BY: M. Katen, RG *MK*  
 DRILLING CO.: Vironex

BLOWS PER 6 INCHES	PID (ppm)	TPH-G (ppm)	SAMPLE DEPTH (feet below grade)	DRILLING METHOD: 1.5-inch Geoprobe SAMPLER TYPE: Direct Push Geoprobe TOTAL DEPTH: 20.0 feet DEPTH TO WATER: 20.0 feet		USCS	LITHOLOGY	WELL CONSTRUCTION DETAIL
				DESCRIPTION				
—	—	ND	0					0 Concrete
—	—	—	5	SILTY ORGANIC CLAY: greenish black, dense, moist, fine-grained, poorly graded, <10% sand, medium to low plasticity.		OH		5 Bentonite Chips
—	—	—	10	CLAY: greenish gray, dense, moist, with 5% pebbles, medium plasticity.		CH		10
—	—	—	15	Brown olive, moist to wet, high plasticity, very minor silt.				15
—	—	—	20	SANDY CLAY: green, wet, very fine-grained sand, low plasticity, 40% sand, 60% clay.		CL		20
			25					25
			30					30
			35					35
			40					40



**LOG OF EXPLORATORY BORING**

**B-1**  
 PAGE 1 OF 1



## APPENDIX B

### ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND CHAIN OF CUSTODY RECORDS

#### ANALYTICAL METHODS

All analyses were performed by a state-certified laboratory in accordance with the following methods:

<u>Sample Analysis</u>	<u>Soil</u>	<u>Water</u>
Total Petroleum Hydrocarbons as Gasoline (TPH-G)	EPA Method 8015	EPA Method 8015
Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)	EPA Method 8020	EPA Method 8020
Dissolved Lead	NA	EPA Method 3010/6010

#### OFFICIAL LABORATORY REPORTS AND QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) REPORTS

Official laboratory and QA/QC reports are provided by the state-certified laboratory performing the analyses. The QA/QC reports for samples from each group of analyses completed for a single gas chromatograph calibration are provided.

#### CHAIN OF CUSTODY PROTOCOL

Chain of Custody protocol was followed for all samples selected for laboratory analysis. The Chain of Custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of possession prior to analysis.

# American Environmental Network

## Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

ALTON GEOSCIENCE  
30A LINDBERGH AVENUE  
LIVERMORE, CA 94550

ATTN: RON SCHEELE  
CLIENT PROJ. ID: -

REPORT DATE: 12/17/96

DATE(S) SAMPLED: 11/27/96

DATE RECEIVED: 11/27/96

AEN WORK ORDER: 9611402

### PROJECT SUMMARY:

On November 27, 1996, this laboratory received 4 (3 soil & 1 water) sample(s).

Client requested 2 sample(s) be analyzed for chemical parameters; two samples were placed on hold. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

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



Larry Klein  
Laboratory Director

ALTON GEOSCIENCE

SAMPLE ID: SB-1  
 AEN LAB NO: 9611402-01A  
 AEN WORK ORDER: 9611402  
 CLIENT PROJ. ID: -

DATE SAMPLED: 11/27/96  
 DATE RECEIVED: 11/27/96  
 REPORT DATE: 12/17/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	5	ug/kg	12/10/96
Toluene	108-88-3	ND	5	ug/kg	12/10/96
Ethylbenzene	100-41-4	ND	5	ug/kg	12/10/96
Xylenes, Total	1330-20-7	ND	5	ug/kg	12/10/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.2	mg/kg	12/10/96

ND = Not detected at or above the reporting limit  
 \* = Value at or above reporting limit

ALTON GEOSCIENCE

SAMPLE ID: WS-1  
 AEN LAB NO: 9611402-04A  
 AEN WORK ORDER: 9611402  
 CLIENT PROJ. ID: -

DATE SAMPLED: 11/27/96  
 DATE RECEIVED: 11/27/96  
 REPORT DATE: 12/17/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	12/09/96
Toluene	108-88-3	ND	0.5	ug/L	12/09/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	12/09/96
Xylenes, Total	1330-20-7	ND	2	ug/L	12/09/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	12/09/96

ND = Not detected at or above the reporting limit  
 \* = Value at or above reporting limit

ALTON GEOSCIENCE

SAMPLE ID: WS-1  
AEN LAB NO: 9611402-04D  
AEN WORK ORDER: 9611402  
CLIENT PROJ. ID: -

DATE SAMPLED: 11/27/96  
DATE RECEIVED: 11/27/96  
REPORT DATE: 12/17/96

---

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	0.45 um	-		Filtr Date	11/27/96
#Digestion, Metals by ICP	EPA 3010	-		Prep Date	12/04/96
Lead	EPA 6010	ND	0.04	mg/L	12/05/96

---

ND = Not detected at or above the reporting limit  
\* = Value at or above reporting limit

AEN (CALIFORNIA)  
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9611402

CLIENT PROJECT ID: -

Quality Control and Project Summary

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9611402  
 INSTRUMENT: E  
 MATRIX: SOIL

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/10/96	SB-1	01	103
QC Limits:			70-130

DATE ANALYZED: 12/11/96  
 SAMPLE SPIKED: 9612064-10  
 INSTRUMENT: E

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/kg)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	27.0	88	14	79-113	26
Toluene	75.7	95	3	84-110	20
Hydrocarbons as Gasoline	500	101	15	60-126	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9611402  
 INSTRUMENT: E  
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
12/09/96	WS-1	04	100
QC Limits:			70-130

DATE ANALYZED: 12/10/96  
 SAMPLE SPIKED: 9611365-03  
 INSTRUMENT: E

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	27.0	99	5	85-109	17
Toluene	75.7	106	4	87-111	16
Hydrocarbons as Gasoline	500	107	3	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.



QUALITY CONTROL DATA

AEN JOB NO: 9611402  
SAMPLE SPIKED: DI WATER  
DATE(S) ANALYZED: 12/05/96  
MATRIX: WATER

Method Blank and Spike Recovery Summary

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Analyte	Inst. / Method	Blank Result (mg/L)	Spike Added (mg/L)	Percent Recovery	RPD	QC Limits	
						Percent Recovery	RPD
Pb, Lead	ICP/6010	ND	0.50	107	2	90-122	10

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\*\*\* END OF REPORT \*\*\*

1. Client: Alfa Geoscience Corp / Mosby Lodge  
 Address: 30 A Lindbergh AVE  
Livermore CA. 94550  
 Contact: Ron Scheele  
 Alt. Contact: \_\_\_\_\_

3440 Vincent Road, Pleasant Hill, CA 94523  
 Phone (510) 930-9090  
 FAX (510) 930-0256

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number: 9611402  
 Lab Destination: \_\_\_\_\_  
 Date Samples Shipped: \_\_\_\_\_  
 Lab Contact: \_\_\_\_\_  
 Date Results Required: Standard  
 Date Report Required: \_\_\_\_\_  
 Client Phone No.: (510) 606-9150  
 Client FAX No.: (510) 606-9260

INORG. R-3, S-2  
R-7, S-H

Address Report To:

Send Invoice To:

2. Same

3. Same

Send Report To: 1 or 2 (Circle one)

Client P.O. No.: \_\_\_\_\_ Client Project I.D. No.: \_\_\_\_\_

Sample Team Member (s) \_\_\_\_\_

Lab Number	Client Sample Identification	Air Volume	Date/Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	ANALYSIS										Comments / Hazards	
								THG	BTEX	Soluble lead	Dissolved lead	HOLD							
01A	SB-1		11-27	8				X											Run
02A	SB-2		11-27	8															Hold
03A	SB-3		↓	8															Hold
04A-C, D	WS-1		↓	7	3HCl	5	3 vials 1 liter	X	X	X	X	X	X	X	X	X	X	X	

Relinquished by: (Signature) <u>[Signature]</u>	DATE <u>11-27-96</u>	TIME <u>17:00</u>	Received by: (Signature) <u>[Signature]</u>	DATE <u>11/27/96</u>	TIME <u>17:00</u>
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
Method of Shipment	Lab Comments				

\*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter  
 4) PVC filter, diam. \_\_\_\_\_ pore size \_\_\_\_\_ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample  
 10) Other \_\_\_\_\_ 11) Other \_\_\_\_\_