aqua science engineers inc.

August 22, 2000

REPORT
for
SOIL AND GROUNDWATER ASSESSMENT
at the
Former Alaska Oil Service Station
1310 Central Avenue
Alameda, California

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

1.0 INTRODUCTION

Site Location (Site), See Figure 1
1310 Central Avenue
Alameda, CA

Responsible Party
Mr. Pritpaul Sappal
c/o Mr. Nissan Saidian
5733 Medallion Court
Castro Valley, CA 94522

Environmental Consulting Firm
Aqua Science Engineers, Inc. (ASE)
208 West El Pintado
Danville, CA 94526
Contact: Robert Kitay, Senior Geologist
(925) 820-9391

Agency Review
Mr. Larry Seto
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Mr. Chuck Headlee
California Regional Water Quality Control Board (RWQCB)
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

This submittal presents Aqua Science Engineers, Inc. (ASE)'s results for a soil and groundwater assessment at the Former Alaska Oil Service Station located at 1310 Central Avenue in Alameda, California *(Figure 1)*. The proposed site assessment activities were initiated by Mr. Nissan Saidian, property owner, as required by the Alameda County Health Care Services Agency.

2.0 BACKGROUND INFORMATION

The subject site is currently a small operating gasoline service station.

In May 1996, Petrotek removed one 10,000-gallon gasoline underground storage tank (UST), one 7,500-gallon gasoline UST, and one 5,000-gallon gasoline UST from the western corner of the site. All associated piping and dispensers were also removed. In addition, one 500-gallon waste-oil UST was removed from a location adjacent to the building. Soil samples collected during the UST removal contained elevated hydrocarbon concentrations, and free-product was observed on groundwater within the UST excavation. Apparently, 600 tons of contaminated soil were removed from the site and disposed of off-site, and approximately 15,000 gallons of water and product were pumped from the excavation, treated and discharged into the storm sewer. Two new USTs were installed in the former UST excavations. New dispensers and piping were also installed. It is ASE's understanding that Petrotek did not issue a report regarding these activities.

In November 1998, All Environmental, Inc. (AEI) drilled 14 soil borings at the site and collected soil and groundwater samples for analysis. Up to 5,900 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) were detected in soil samples collected from the borings. Up to 120,000 parts per billion (ppb) TPH-G and 7,200 ppb benzene were detected in groundwater samples collected from the borings.

In December 1999, HerSchy Environmental of Bass Lake, California installed three groundwater monitoring wells at the site. Up to 43,000 ppb TPH-G, 8,700 ppb total petroleum hydrocarbons as diesel (TPH-D), 1,300 ppb benzene and 120,000 ppb methyl tertiary butyl ether (MTBE) were detected in groundwater samples collected from the monitoring wells. The groundwater flow direction was to the southwest at a gradient of 0.0085-feet/foot.

On May 16, 2000, ASE collected groundwater samples from the three site monitoring wells. Groundwater samples collected from monitoring well MW-1 contained 2,000 ppb TPH-G, 38 ppb benzene, 6.3 ppb toluene, 740 ppb ethyl benzene, 1,600 ppb total xylenes. No MTBE or other oxygenates were detected in this groundwater sample. The groundwater samples collected from monitoring well MW-3 contained 17,000 ppb TPH-G, 2,800 ppb benzene, 60 ppb toluene, 380 ppb ethyl benzene, 190 ppb total xylenes, 990 ppb MTBE, 9.1 ppb tert-amyl methyl ether (TAME) and 350 ppb tert-butanol (TBA). No hydrocarbons were detected in groundwater

samples collected from monitoring well MW-2. These results are significantly different to the previous results, especially in respect to hydrocarbon concentrations in monitoring well MW-2, and the MTBE concentrations throughout the site. The radically different MTBE concentrations this sampling period are probably related to the use of EPA Method 8260 this period which is a much more reliable method for MTBE identification than EPA Method 8020, which was used during the December 1999 sampling. It appears that the very high MTBE concentrations detected in December 1999 were a false positive. The groundwater flow direction on May 16, 2000 was to the west-southwest.

3.0 PROPOSED SCOPE OF WORK (SOW)

ASE's proposed scope of work is to further delineate the extent of soil and groundwater contamination off-site. To accomplish this task, ASE prepared the following scope of work:

1) Prepare a workplan and health and safety plan for submittal to the Alameda County Health Care Services Agency (ACHCSA).

2) Obtain a drilling permit from the Alameda County Public Works Agency and an encroachment permit from the City of Alameda to drill in city right of way areas.

3) Contract with a subsurface utility locator to mark underground utility lines in the site vicinity.

4) Drill twelve (12) soil borings in areas both on and off the site to a depth not to exceed 12-feet below ground surface (bgs). Collect soil and groundwater samples for analysis.

5) Analyze one soil and one groundwater sample from each boring at a CAL-EPA certified analytical laboratory for TPH-D by modified EPA Method 3510/8015, and TPH-G, benzene, toluene, ethylbenzene and total xylenes (collectively known as BTEX) and fuel oxygenates by EPA Method 8260.

6) Following collection of the soil and groundwater samples, each boring will be backfilled with neat cement to the ground surface.

7) Prepare a report presenting results from this assessment.

Details of the assessment are presented below.

4.0 UNDERGROUND UTILITY LOCATING

On July 25, 2000, Subtronics Corporation of Concord, California accurately located the public utilities around the proposed drilling locations *(Figure 2)*.

5.0 DRILL SOIL BORINGS AND COLLECT SAMPLES

Prior to drilling, ASE obtained a drilling permit from the Alameda County Public Works Agency (ACPWA) and an excavation permit from the City of Alameda. ASE also obtained an encroachment permit from the California Department of Transportation (CALTRANS) for drilling located in the shoulder of State Highway 61 (Encinal Avenue). Copies of these permits are presented in *Appendix A*.

On July 28, 2000, Vironex, Inc. of Hayward, California drilled soil borings BH-A through BH-L at the site using a Geoprobe hydraulic sampling rig *(Figure 2)*. The drilling was directed by ASE associate geologist Ian Reed.

Undisturbed soil samples were collected continuously as drilling progressed for lithologic and hydrogeologic description and for possible 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 tape, labeled, sealed in plastic bags and stored on ice for transport to Kiff Analytical, LLC of Davis, California 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 using 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 volatile compounds 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. OVM readings can be found on the boring logs located in *Appendix B*.

Groundwater samples were removed from the borings with a peristaltic pump. The groundwater samples were contained in 40-ml volatile organic analysis (VOA) vials (pre-preserved with hydrochloric acid) and sealed without headspace. The samples were then labeled and stored on ice for transport to Kiff Analytical, LLC under chain of custody.

Upon completion of the soil and groundwater sampling, the borings were backfilled with neat cement to the ground surface.

Drilling equipment was cleaned with a TSP solution between sampling intervals and between borings to prevent potential cross-contamination.

Sediments encountered during drilling generally consisted of silty sand beneath the surface to the total depth explored of 12-feet bgs. Groundwater was encountered at approximately 3.5-feet bgs. Boring logs are presented as *Appendix B*.

5.0 ANALYTICAL RESULTS FOR SOIL

Soil samples collected from 3.5-feet bgs in boring BH-A, 2.5-feet bgs in boring BH-B, and 3.0-feet bgs in borings BH-C through BH-L were analyzed by Kiff Analytical, LLC for TPH-D by modified EPA Method 3510/8015, and TPH-G, BTEX and fuel oxygenates by EPA Method 8260. These samples represent either the capillary zone or the unsaturated soil sample that appeared the most contaminated based on odor, staining, and/or OVM readings. The analytical results are tabulated in *Table One* and the certified analytical report and chain of custody forms are included in *Appendix C*.

The soil samples collected from 3.0-feet bgs in boring BH-K contained 0.0061 ppm of MTBE. There were no hydrocarbons or oxygenates detected in soil samples analyzed from the remaining borings.

6.0 ANALYTICAL RESULTS FOR GROUNDWATER

The groundwater samples were analyzed by Chromalab for TPH-D by modified EPA Method 3510/8015, and TPH-G, BTEX and fuel oxygenates by EPA Method 8260. The analytical results are tabulated in Table Two, and the certified analytical report and chain of custody forms are included in *Appendix D*. TPH-G, benzene, and MTBE isoconcentration maps are presented as *Figures 3, 4, and 5*, respectively.

The groundwater samples collected from boring BH-A contained 0.7 ppb toluene and 0.9 ppb total xylenes. The groundwater samples collected from boring BH-B contained 1,800 ppb TPH-G, 270 ppb benzene, 8.8 ppb toluene, 18 ppb ethyl benzene, 13 ppb total xylenes, 4,100 ppb MTBE, 5.6 ppb tert-amyl methyl ether (TAME), and 440 ppb tert-butanol (TBA). The groundwater samples collected from boring BH-C contained 230 ppb TPH-G, 11 ppb benzene, 1.2 ppb toluene, 0.96 ppb total xylenes, 760 ppb

MTBE, 6.6 ppb TAME, and 130 ppb TBA. The groundwater samples collected from boring BH-D contained 72 ppb TPH-D and 1.7 ppb MTBE. The groundwater samples collected from boring BH-I contained 0.55 ppb MTBE. The groundwater samples collected from boring BH-J contained 200 ppb TPH-D. The groundwater samples collected from boring BH-K contained 520 ppb TPH-D and 0.77 ppb MTBE. The groundwater samples collected from boring BH-L contained 2.5 ppb MTBE.

7.0 CONCLUSIONS AND RECOMMENDATION

The benzene and MTBE concentrations in groundwater samples collected from borings BH-B and BH-C exceeded California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water. Although potentiometric surface maps previously prepared for the site indicate groundwater flow to the south or southwest, the distribution of hydrocarbons in the borings suggests a more northwestern groundwater flow direction.

ASE recommends that further investigation be performed to assist in delineating the extent of hydrocarbons downgradient of boring BH-B. ASE also recommends the installation of downgradient groundwater monitoring wells.

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.

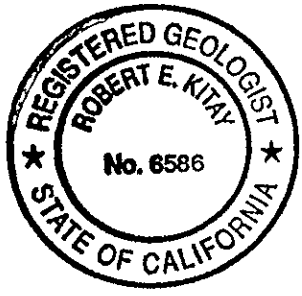
This report does not fully characterize the site for contamination resulting from unknown sources or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory 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.

Ian T. Reed
Associate Geologist



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

Attachments: Tables One and Two
Figures 1 and 5
Appendices A through D

cc: Mr. Nissan Saidian
Mr. Larry Seto, ACHCSA
Mr. Chuck Headlee, RWQCB, San Francisco Bay Region

TABLES

TABLE ONE

Summary of Chemical Analysis of SOIL Samples

Nissan Alameda - Collected on July 29, 2000

Petroleum Hydrocarbons

All results are in parts per million

Boring - Depth	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
BH-A-3.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-B-2.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-C-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-D-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-E-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-F-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-G-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-H-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-I-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
PRGs	NE	NE	0.67	520	230	210	NE	NE	NE	NE

table continued on next page

TABLE ONE

Summary of Chemical Analysis of SOIL Samples

Nissan Alameda - Collected on July 29, 2000

Petroleum Hydrocarbons

All results are in parts per million

Boring	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
BH-J-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
BH-K-3.0'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	**0.0061**	< 0.005	< 0.005	< 0.005
BH-L-3.5'	< 1.0	< 1.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
PRGs	NE	NE	0.67	520	230	210	NE	NE	NE	NE

Notes:

MTBE = Methyl-t-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-Butanol

PRG = United States Environmental Protection Agency Region IX Preliminary Remediation Goal for Residential Soil.

NE = PRG has not been established.

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

Detectable concentrations are in bold.

TABLE TWO

Summary of Chemical Analysis of GROUNDWATER Samples

Nissan Alameda - Collected on July 29, 2000

Petroleum Hydrocarbons

All results are in parts per billion method 8260

Boring	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
BH-A	< 50	< 50	< 0.5	0.7	< 0.5	0.9	< 0.5	< 0.5	< 5.0	< 0.5
BH-B	1,800	< 2,000	270	8.8	18	13	4,100	5.6	440	< 3.0
BH-C	230	< 100	11	1.2	< 0.5	0.96	760	6.6	130	< 0.5
BH-D	< 50	72	< 0.5	< 0.5	< 0.5	< 0.5	1.7	< 0.5	< 5.0	< 0.5
BH-E	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
BH-F	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
BH-G	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
BH-H	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
BH-I	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.55	< 0.5	< 5.0	< 0.5
DHS MCL	NE	NE	1	150	700	1,750	13	NE	NE	VARIES

table continued on next page

TABLE TWO

Summary of Chemical Analysis of GROUNDWATER Samples

Nissan Alameda - Collected on July 29, 2000

Petroleum Hydrocarbons

All results are in parts per billion

method 8260

Boring	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TAME	TBA	Other Oxygenates
BH-J	< 50	**200**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	< 0.5
BH-K	< 50	**520**	< 0.5	< 0.5	< 0.5	< 0.5	**0.77**	< 0.5	< 5.0	< 0.5
BH-L	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	**2.5**	< 0.5	< 5.0	< 0.5
DHS MCL	NE	NE	1	150	700	1,750	13	NE	NE	VARIES

Notes:

MTBE = Methyl-t-butyl ether

TAME = Tert-amyl methyl ether

TBA = Tert-Butanol

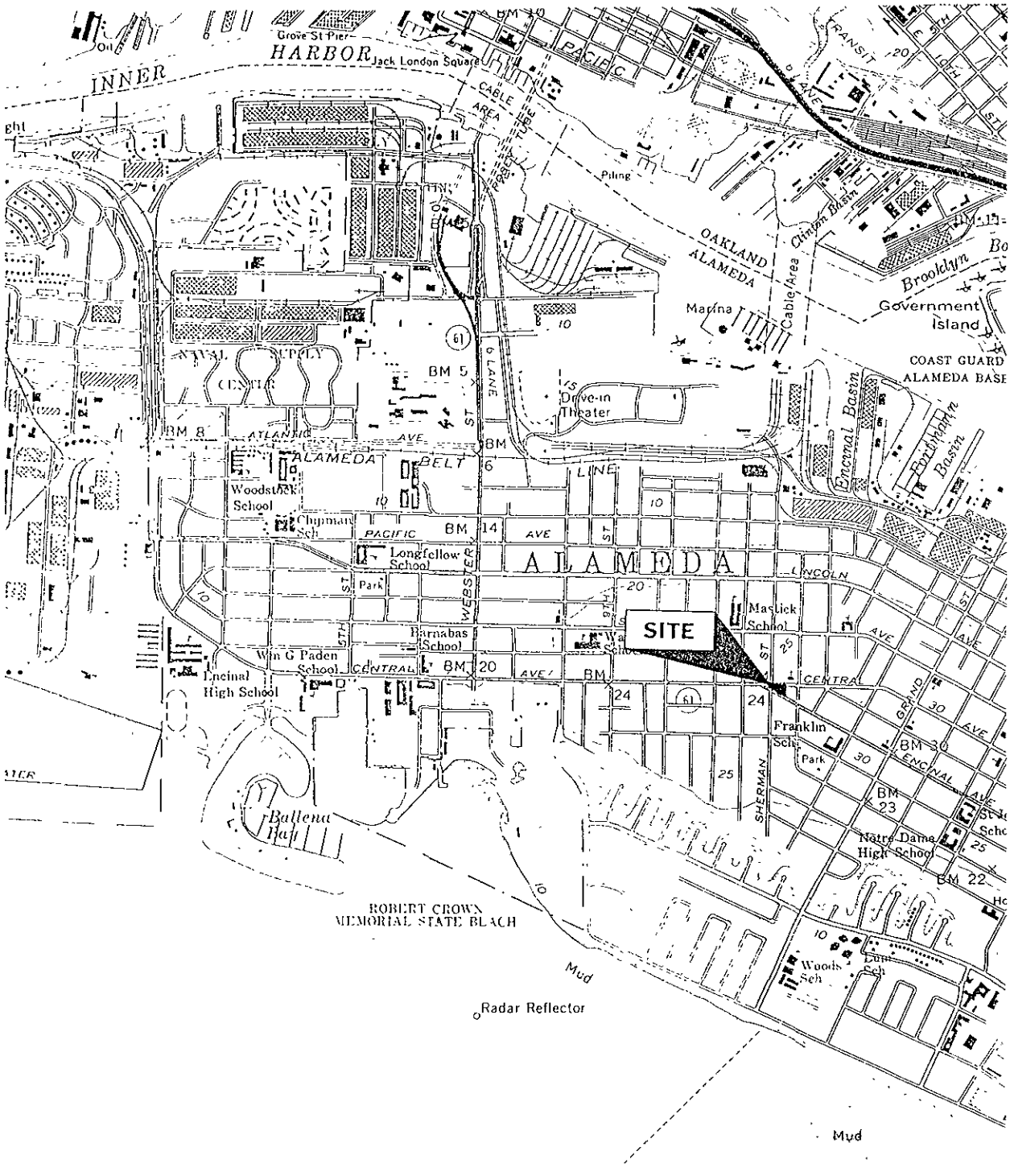
DHS MCL is the California Department of Health Services maximum contaminant level for drinking water.

NE = DHS MCLs are not established.

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

Detectable concentrations are in bold.

FIGURES

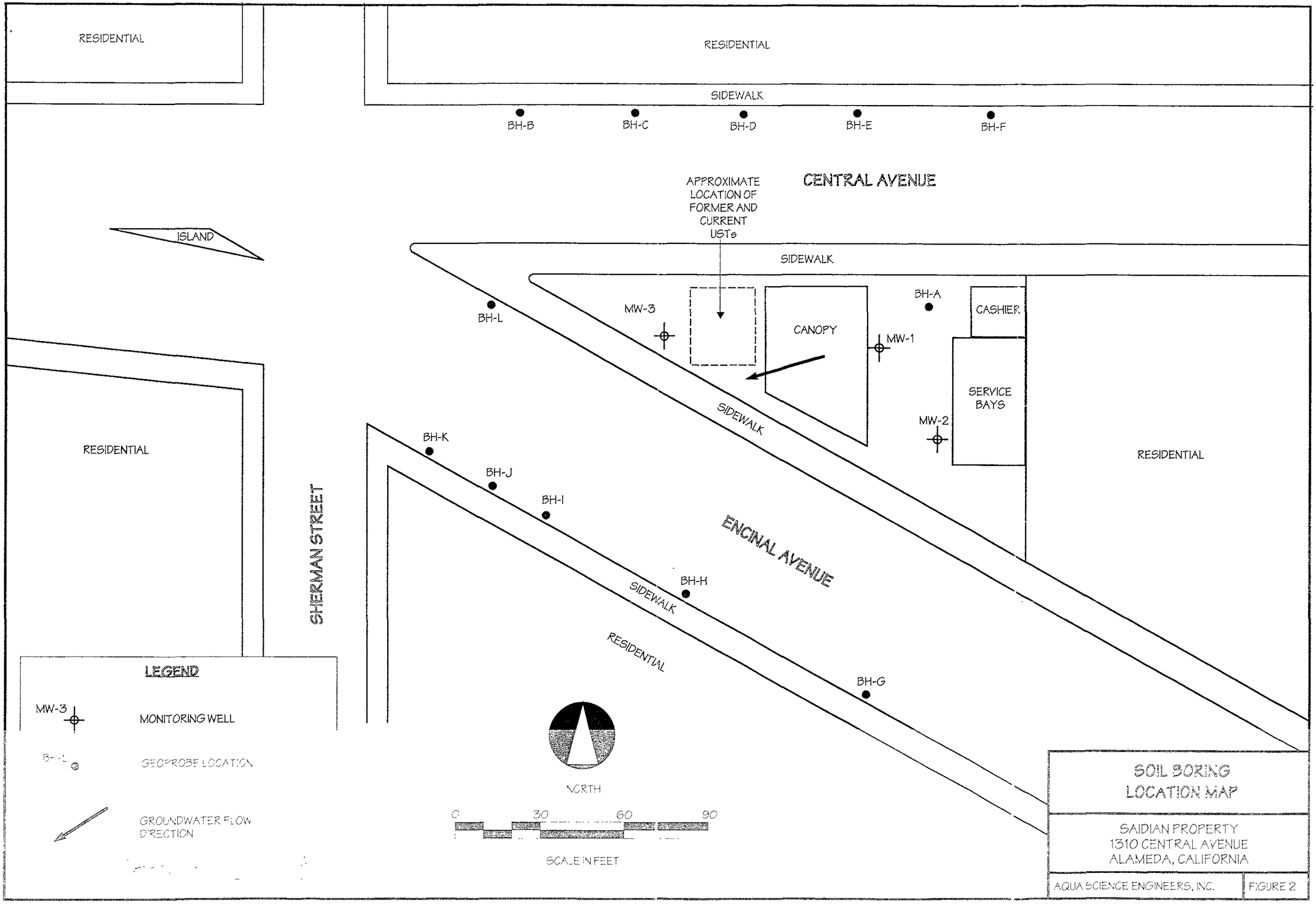


NORTH

LOCATION MAP

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | Figure 1


RESIDENTIAL
RESIDENTIAL
SIDEWALK
BH-B
BH-C
BH-D
BH-E
BH-F
APPROXIMATE LOCATION OF FORMER AND CURRENT USTs
CENTRAL AVENUE
ISLAND
SIDEWALK
BH-L
MW-3
CANOPY
MW-1
BH-A
CASHIER
SERVICE BAYS
MW-2
SIDEWALK
RESIDENTIAL
BH-K
BH-J
BH-I
SHERMAN STREET
ENCINAL AVENUE
BH-H
SIDEWALK
RESIDENTIAL
BH-G
LEGEND
MW-3
MONITORING WELL
B-1
GEOPROBE LOCATION
GROUNDWATER FLOW DIRECTION
NORTH
0
30
60
90
SCALE IN FEET
SOIL BORING LOCATION MAP
SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA
AQUA SCIENCE ENGINEERS, INC.
FIGURE 2

RESIDENTIAL

RESIDENTIAL

100 1,000 1,000 100

SIDEWALK

BH-B (1,800) BH-C (230) BH-D (< 50) BH-E (< 50) BH-F (< 50)

CENTRAL AVENUE

APPROXIMATE LOCATION OF FORMER AND CURRENT USTs

ISLAND

SIDEWALK

10,000

(< 50) BH-L

MW-3 (16,000*)

CANOPY

BH-A (< 50)

CASHIER

MW-1 (20,000*)

SERVICE BAYS

MW-2 (< 50*)

SIDEWALK

RESIDENTIAL

RESIDENTIAL

BH-K (< 50)

BH-J (< 50)

BH-I (< 50)

ENCINAL AVENUE

SHERMAN STREET

BH-H (< 50)

SIDEWALK

RESIDENTIAL

BH-G (< 50)

LEGEND

MW-3 — MONITORING WELL

BH-L — GEOPROBE LOCATION

(230) — TPH-G CONCENTRATION IN PARTS PER BILLION

SAMPLES COLLECTED ON 8/3/00

10,000 — TPH-G CONCENTRATION CONTOUR WITH CONCENTRATION

NORTH

0 30 60 90

SCALE IN FEET

TPH-G ISOCONCENTRATION CONTOUR MAP
JULY 28, 2000

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 3

RESIDENTIAL

RESIDENTIAL

1 10 100 100 10 1

SIDEWALK

BH-B (270)

BH-C (11)

BH-D (< 0.5)

BH-E (< 0.5)

BH-F (< 0.5)

CENTRAL AVENUE

APPROXIMATE LOCATION OF FORMER AND CURRENT USTs

ISLAND

SIDEWALK

(< 0.5) BH-L

1,000

MW-3 (1,600*)

CANOPY

BH-A (< 0.5)

CASHIER

MW-1 (56*)

SERVICE BAYS

MW-2 (< 0.5*)

SIDEWALK

RESIDENTIAL

RESIDENTIAL

BH-K (< 0.5)

BH-J (< 0.5)

BH-I (< 0.5)

SHERMAN STREET

ENCINAL AVENUE

SIDEWALK

BH-H (< 0.5)

RESIDENTIAL

BH-G (< 0.5)

LEGEND

MW-3 — MONITORING WELL

BH-L — GEOPROBE LOCATION

(1,600) — BENZENE CONCENTRATION IN PARTS PER BILLION

SAMPLES COLLECTED ON 8/3/00

1,000 — BENZENE CONCENTRATION CONTOUR WITH CONCENTRATION

NORTH

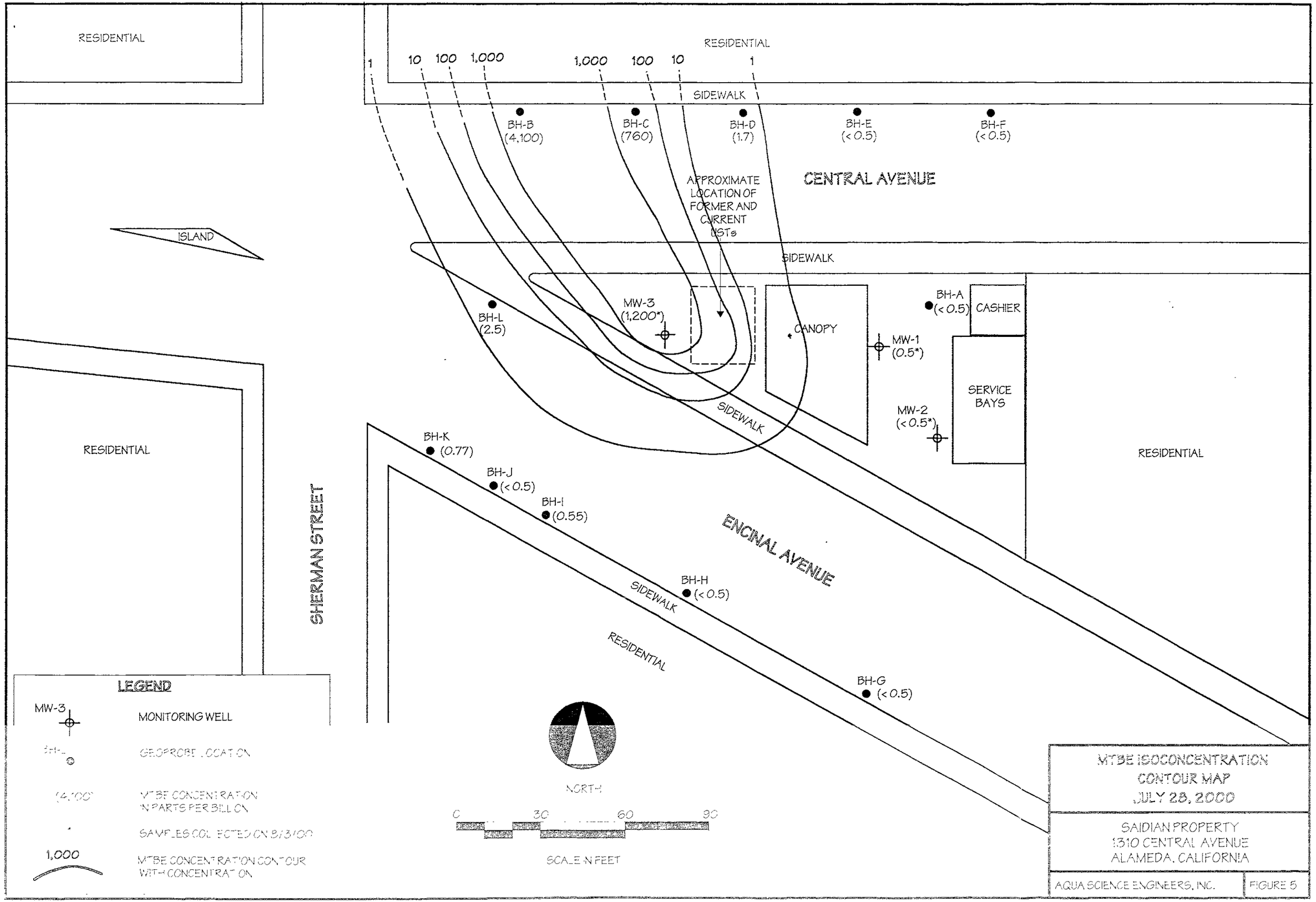
0 30 60 90

SCALE IN FEET

BENZENE ISOCONCENTRATION CONTOUR MAP
JULY 28, 2000

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 4



MTBE ISOCONCENTRATION CONTOUR MAP
JULY 28, 2000

SAIDIAN PROPERTY
1310 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

AQUA SCIENCE ENGINEERS, INC. | FIGURE 5

APPENDIX A

Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-5554 MARLON MAGALLANES/FRANK CODD (510) 670-5783
FAX (510)782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1310 Central Ave
Alameda, CA.

CLIENT
Name Nissan Section
Address 1310 Central Ave. Phone
City Alameda, Cal Zip 94501

APPLICANT
Name Agua Science Engineers
Attn: Robert Kitay Fax 925-837-4853
Address 253 W. El Pintado Phone 925-820-2391
City Danville, CA Zip 94526

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☐	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other:	☒ Geoprobe		

DRILLER'S NAME Vironex

DRILLER'S LICENSE NO. C-57 705227

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in Depth ____ ft.
Surface Seal Depth ____ ft. Owner's Well Number ____

GEOTECHNICAL PROJECTS
Number of Borings 12 Maximum
Hole Diameter 2 in. Depth 12 ft

ESTIMATED STARTING DATE 7-28-00
ESTIMATED COMPLETION DATE 8-1-00

FOR OFFICE USE

PERMIT NUMBER ____
WELL NUMBER ____
APN ____

PERMIT CONDITIONS
Circled Permit Requirements Apply

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 original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
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.

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.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie

F. WELL DESTRUCTION
See attached requirements for destruction of shallow wells Send a map of work site A different permit application is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED ____ DATE ____

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

APPLICANT'S SIGNATURE Robert E. Kitay DATE 7-24-00

PLEASE PRINT NAME Robert E. Kitay

Rev.6 -5-00

950 West Mall Square, #110
Alameda Point
Alameda, CA 94501

CITY OF ALAMEDA

(510) 749-5840

Public Works Department

Fax (510) 749-5867

Right-of-Way Permit

Printed: *06-02-2000*

Permit # ***EX00-0067***

Applicant	Contractor Information	Owner Information
AQUA SCIENCE ENGINEERS, INC. LAL SHIVCHARANJIT & SAPPAL PRITP 2411 OLD CROW CANYON RD #4 SAN RAMON, CA 94583 510 820-9391	AQUA SCIENCE ENGINEERS, INC. 2411 OLD CROW CANYON RD #4 SAN RAMON, CA 94583	 872 CORAL DR RODEO CA 94572

Project Information

RTOFWAY - Right-of-Way Permit - *PENDING*
Sub-Type:

Applied: **06/02/2000**
Finaled:

Issued.
Expires:
Valuation: **$0.00**

Job Address. 1310 CENTRAL AVE
Suite / Unit
Work Description. EXCAVATE-ENVIRONMENTAL SAMPLING

Parcel Number: **072 034100100**

Total Fees:	$0.00
Total Payments.	$0.00
BALANCE DUE	$0.00

Payments Made:

RECEIPT

Receipt #

Total Payment: $.00

Payee:

Current Payment Made to the Following Items:

Payments Made for this Receipt:

Type	Method	Description	Amount

Account Summary for Fees and Payments:

**** See application for additional requirements ****

INSPECTIONS 510-749-5840

NOTE: All construction within the public right of way must have barricades with flashers for night time protection.

This is to certify that the above work has been completed to my satisfaction and approval.

Date

Inspector

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT

TR-0120

Permit No	0400-6SV-1725
Dist/Co/Rte/PM	04-Ala-61-21.24/21.26
Date	July 11, 2000
Fee Paid	$210.00
Deposit	$
Performance Bond Amount (1)	
Payment Bond Amount (2)	
Bond Company	
Bond Number (1)	
Bond Number (2)	

In compliance with (*Check one*):

- ☐ Your application of June 20, 2000
- ☐ Utility Notice No. _____ of _____
- ☐ Agreement No. _____ of _____
- ☐ R/W Contract No. _____ of _____

TO: ☐ AQUA SCIENCE ENGINEERING, INC
208 W. El Pintado Street
Danville, CA 94526

Attn. Ian T. Reed
Phone: (925) 820-9391

☐, PERMITTEE

and subject to the following, *PERMISSION IS HEREBY GRANTED* to:
Drill six (6) soil borings on State Highway 04-Ala-61, Post Mile 21.24/21.26 in Alameda.

Two days before work started under this permit, notice shall be given to, and approval of construction details, operations, public safety, and traffic control shall be obtained from State Representative Norm Freitag, 600 Lewelling Boulevard, San Leandro, 94579, 510-614 5951, weekdays, between 7:30 AM and 4:00 PM.

Immediately following completion of the work permitted herein, the Permittee shall fill out and mail the Notice of Completion attached to this Permit.

All personnel shall wear hats and orange vests, shirts, or jackets as appropriate during construction.

The following attachments are also included as part of this permit (*Check applicable*):

☒ Yes	☐ No	General Provisions
☐ Yes	☒ No	Utility Maintenance Provisions
☐ Yes	☒ No	Special Previsions
☐ Yes	☒ No	A Cal-OSHA permit required prior to beginning work: # _____

In addition to fee, the permittee will be billed actual costs for.

☐ Yes	☒ No	Review
☐ Yes	☒ No	Inspection
☒ Yes	---------	Field Work

(If any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before July 31, 2000
This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.
No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

APPROVED:

HARRY Y. YAHATA, District Director

BY:

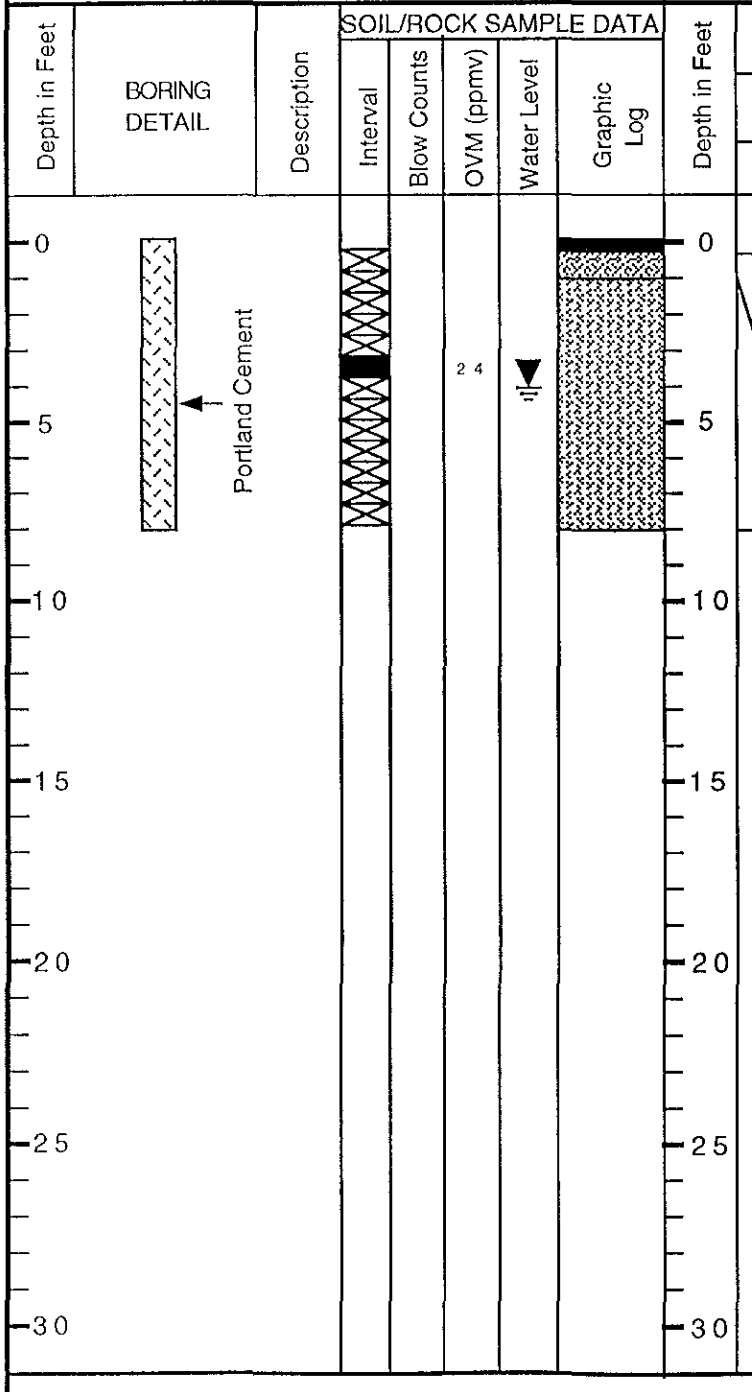
G. J. BATTAGLINI, District Permit Engineer

APPENDIX B

Boring Logs

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-A
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 4.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



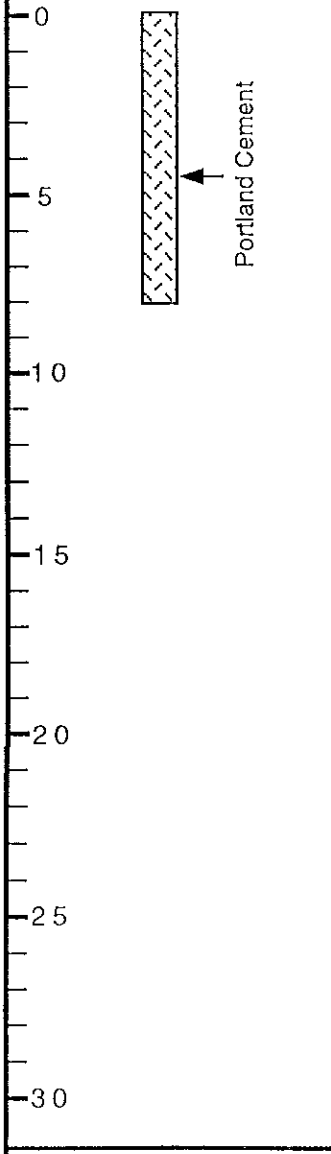
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Sandy SILT (ML); brown; stiff; damp; 60% silt; 40% fine to medium sand; non-plastic; medium estimated K; no odor
5	Silty SAND (SM); light brown; stiff; damp to moist; 60% fine sand; 40% silt; non-plastic; high estimated K; no odor wet at 4' olive gray at 7.5'; no odor
	End of Boring at 8'
10	
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-B
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 3.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



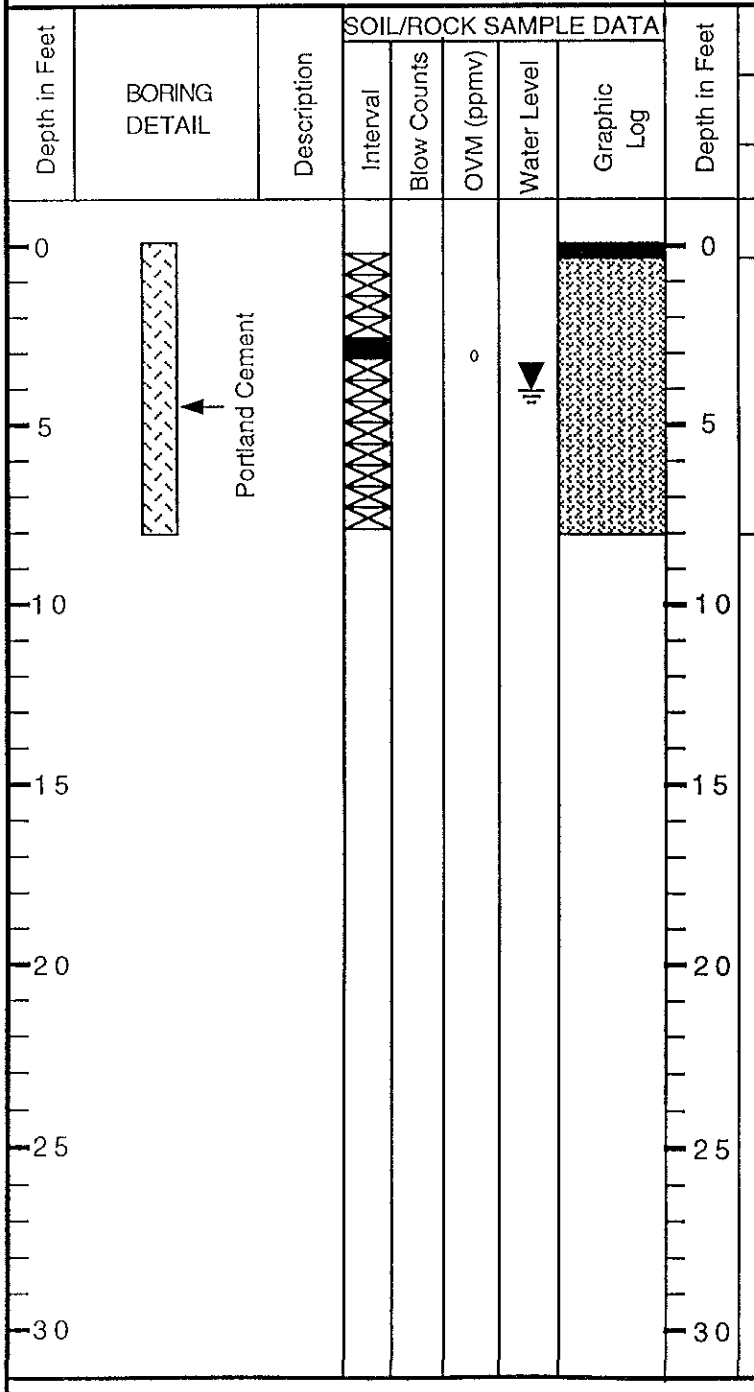
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Sandy SILT (ML); dark brown; stiff; moist; 60% silt; 40% fine sand; non-plastic; medium estimated K; no odor
5	Silty SAND (SM); dark brown; stiff; wet; 70% fine sand; 30% silt; non-plastic; high estimated K; no odor
	End of Boring at 8'
10	
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-C
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

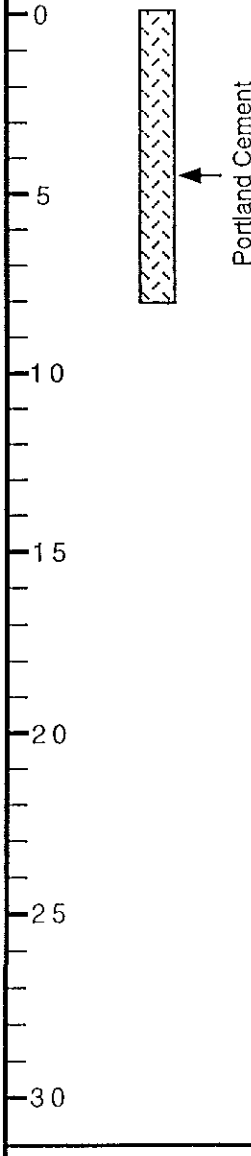
Depth of Water First Encountered: 3.0'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Silty SAND (SM); dark brown; stiff; moist; 60% fine sand; 40% silt; non-plastic; high estimated K; no odor
	wet at 4'
5	olive gray; saturated; moderate hydrocarbon odor at 6'
	End of Boring at 8'
10	
15	
20	
25	
30	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-D
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 3.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 Asphalt

Silty SAND (SM); dark brown; stiff; moist; 60% fine sand; 40% silt; non-plastic; high estimated K; no odor

wet at 3.5'

5 80% fine sand; 20% silt; saturated; very slight hydrocarbon odor at 6'

End of Boring at 8'

10

15

20

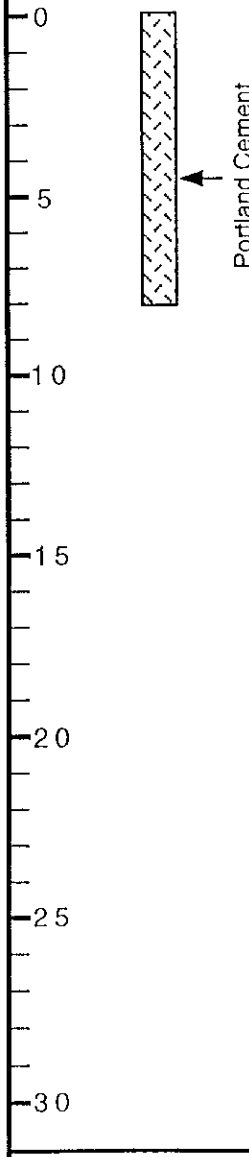
25

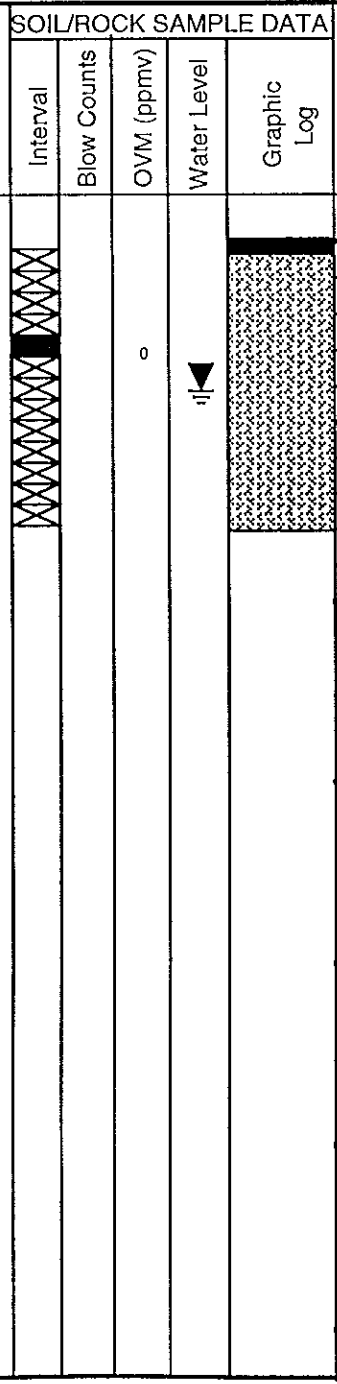
30

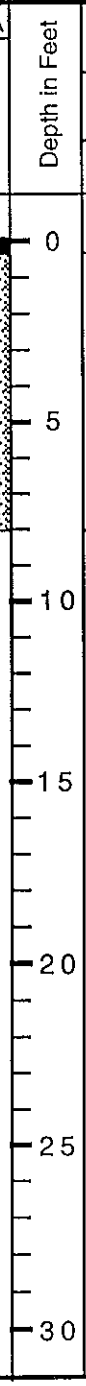
AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-E
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 3.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler







DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

0 Asphalt

Silty SAND (SM); dark brown; stiff; moist; 60% fine sand; 40% silt; non-plastic; medium estimated K; no odor

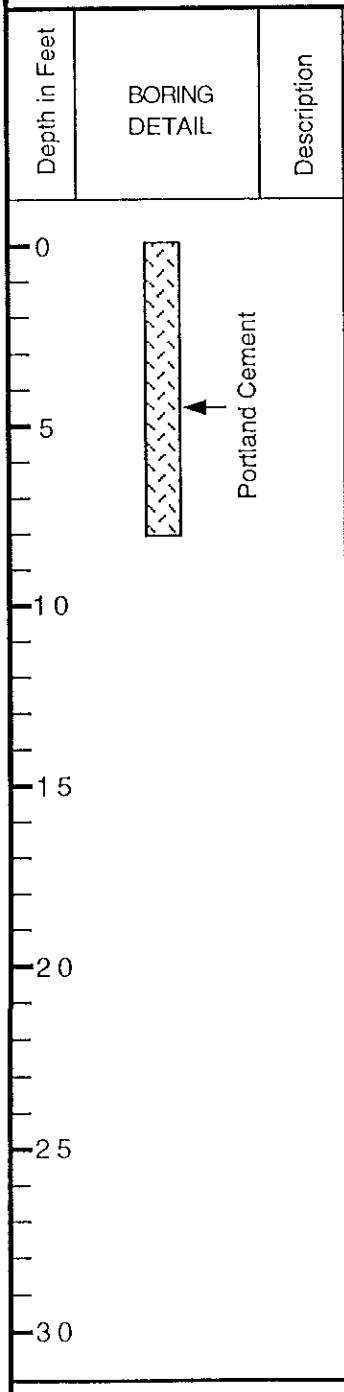
5 light brown with gray modeling; 80% fine sand; 20% silt; wet; high estimated K; no odor

End of Boring at 8'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-F
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 3.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



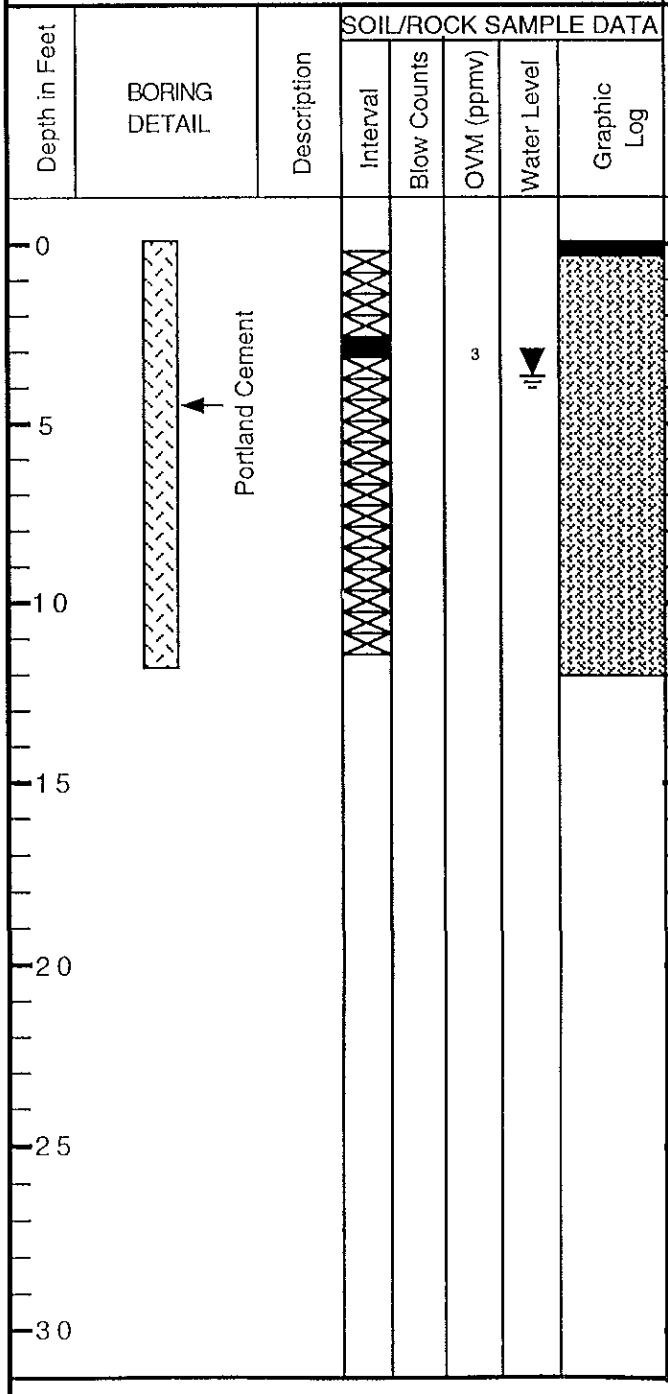
Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Asphalt
	Silty SAND (SM); brown; stiff; moist; 60% fine sand; 40% silt; non-plastic; medium estimated K; no odor
5	80% fine sand; 20% silt; wet; high estimated K; no odor
	End of Boring at 8'
10	
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-G
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 3.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 12.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

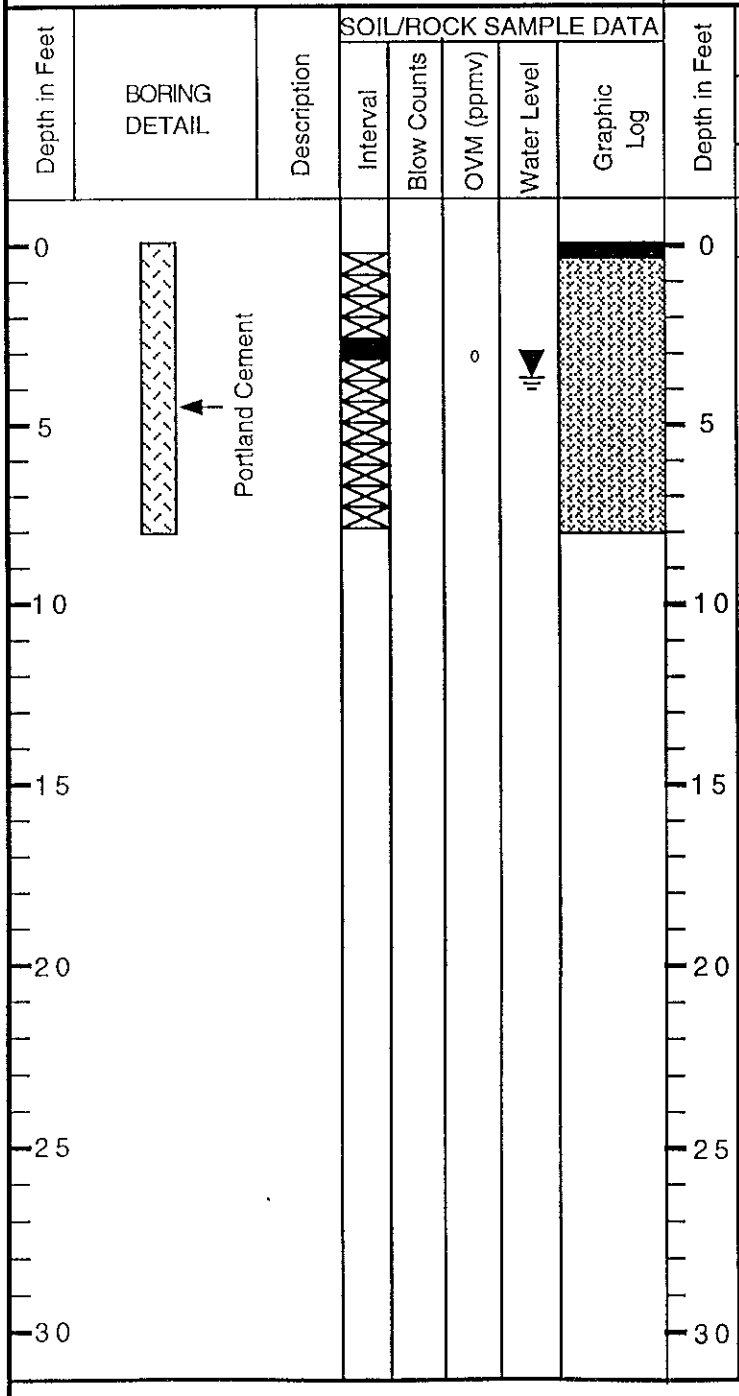


Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
	Silty SAND (SM); light brown; stiff; moist; 70% fine sand; 30% silt; trace gravel; non-plastic; medium estimated K; no odor wet at 3.5' gray modeling
10	End of Boring at 12'
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-H
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 3.5'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

Silty SAND (SM); brown; stiff; moist; 70% fine sand; 30% silt; non-plastic; medium estimated K; no odor

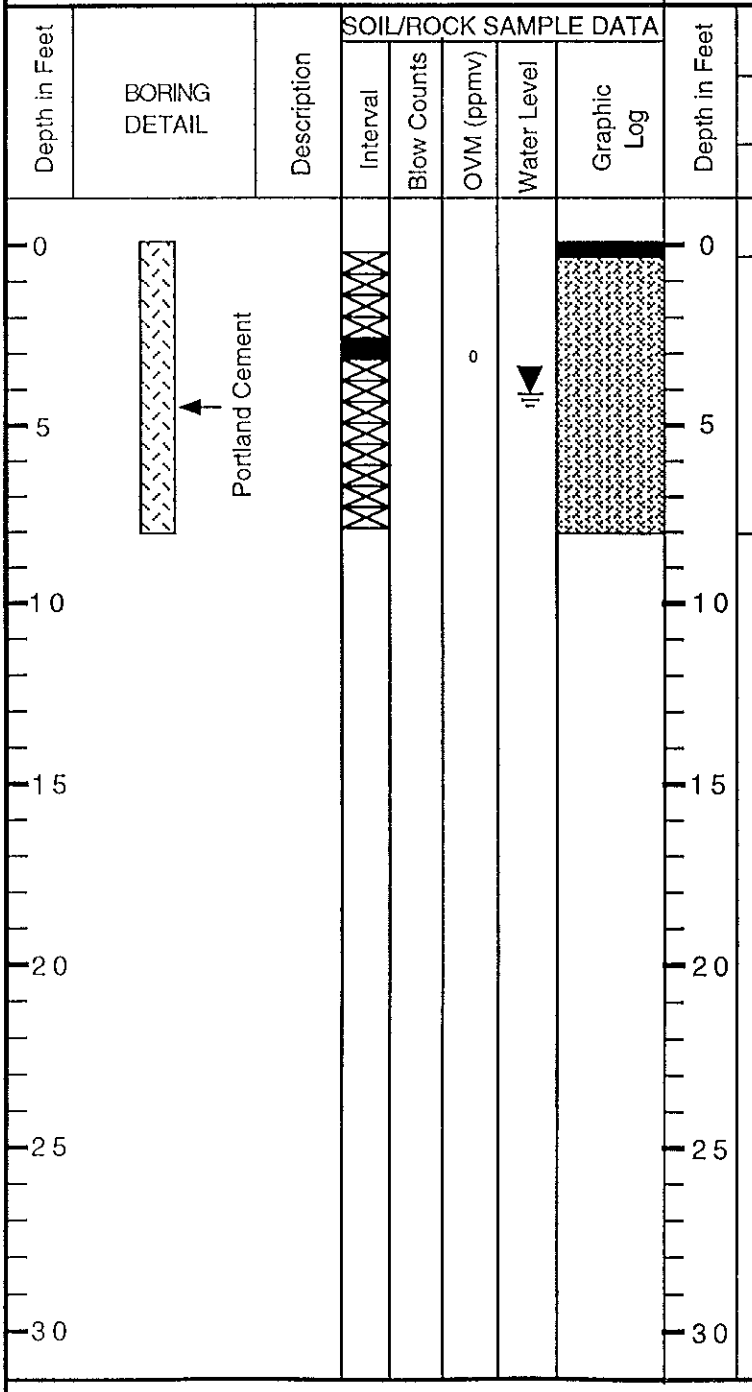
wet at 3.5'

End of Boring at 8'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-I
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 4'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

Silty SAND (SM); dark brown; stiff; moist; 70% fine sand; 30% silt; non-plastic; medium estimated K; no odor

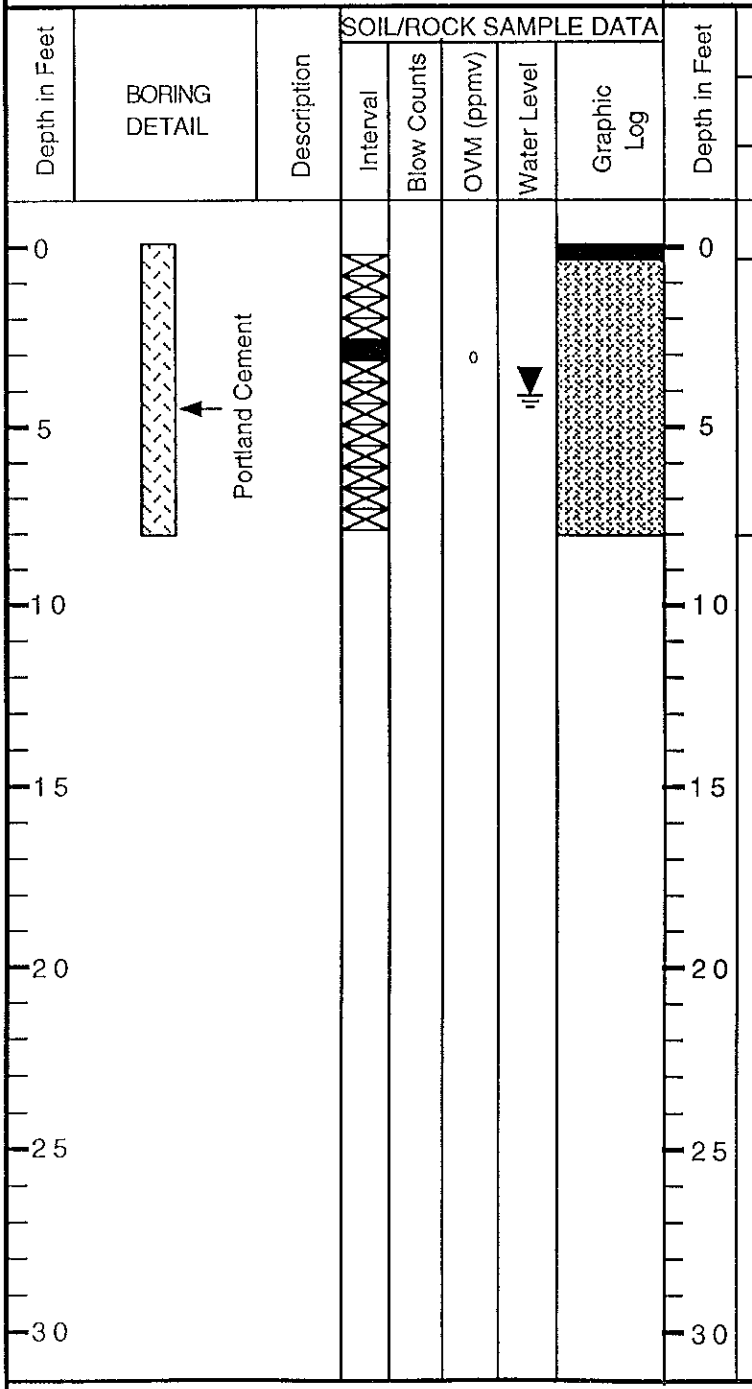
wet at 4'

End of Boring at 8'

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-J
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 4'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

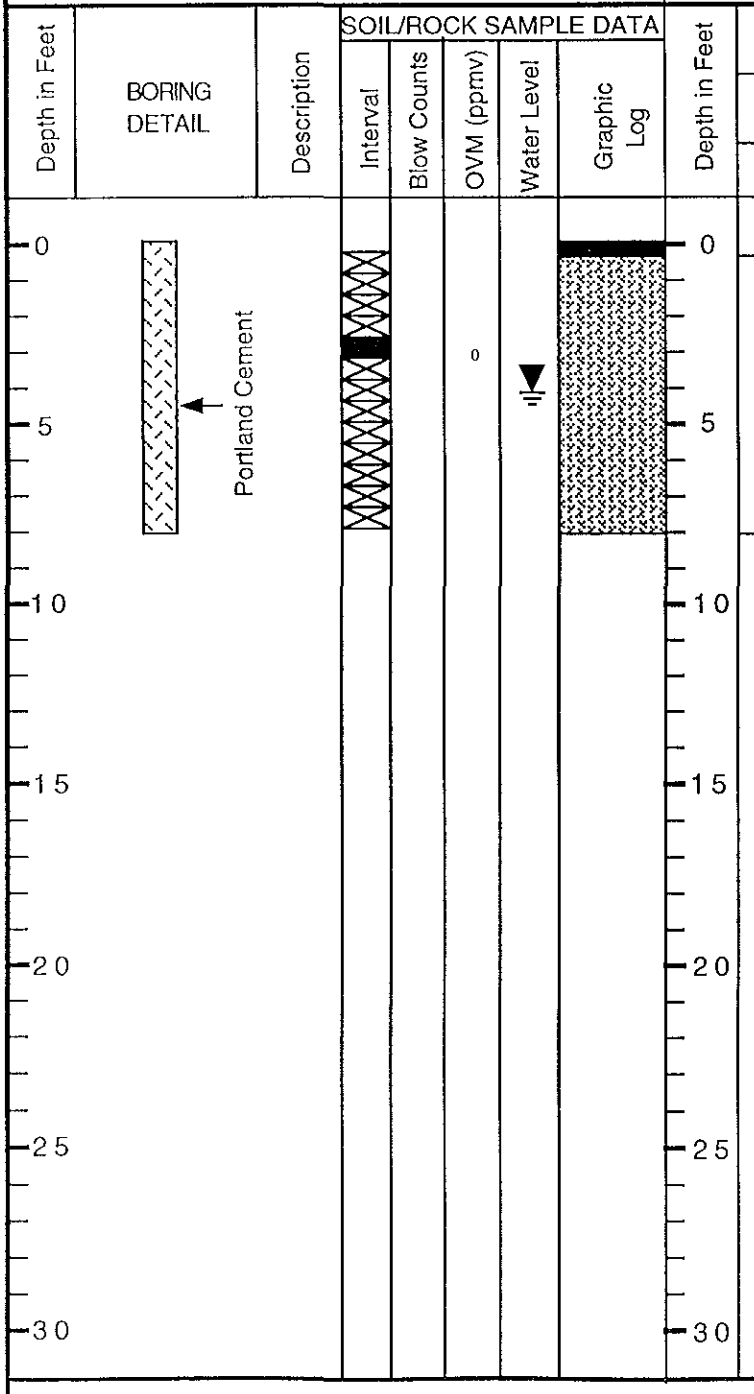


Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
0	Silty SAND (SM); brown; stiff; moist; 60% fine sand; 40% silt; trace gravel; non-plastic; medium estimated K; no odor
5	80% fine sand; 20% silt; wet; no odor
	End of Boring at 8'
10	
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-K
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 4'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler

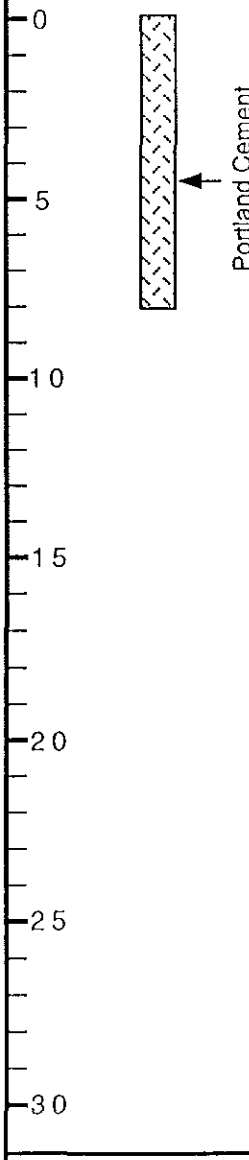


Depth in Feet	DESCRIPTION OF LITHOLOGY standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	Concrete
0	Silty SAND (SM); brown to gray; damp to moist; stiff; 80% fine sand; 20% silt; trace gravel; non-plastic; high estimated K; no odor wet at 4'
5	
8	End of Boring at 8'
10	
15	
20	
25	
30	

AQUA SCIENCE ENGINEERS, INC.

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS		Boring: BH-L
Project Name: Saidian - Alameda	Project Location: 1310 Central Avenue, Alameda, CA	Page 1 of 1
Driller: Vironex	Type of Rig: Geoprobe	Size of Drill: 2.0" Diameter
Logged By: Ian T. Reed	Date Drilled: July 28, 2000	Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA	
Depth of Water First Encountered: 4'	Total Depth of Well Completed: NA
Static Depth of Water in Well: NA	Well Screen Type and Diameter: NA
Total Depth of Boring: 8.0'	Well Screen Slot Size: NA
	Type and Size of Soil Sampler: 2.0" I.D. Macro Sampler



DESCRIPTION OF LITHOLOGY

standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.

Concrete

Silty SAND (SM); dark brown to gray; stiff; moist; 70% fine sand; 30% silt; trace gravel; non-plastic; medium estimated K; no odor

wet at 4'

gray; fine sand, no odor

End of Boring at 8'

AQUA SCIENCE ENGINEERS, INC.

APPENDIX C

Certified Analytical Report
and
Chain of Custody Documentation
Soil Samples

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Ian Reed
Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526

Subject : 12 Soil Samples
Project Name : Saidan Alameda
Project Number : 3648

Dear Mr. Reed,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17278

Date : 8/10/00

Project Name : Saidan Alameda

Project Number : 3648

Sample : BH-A-3.5'

Matrix : Soil

Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/5/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/5/00
4-Bromofluorobenzene (Surr)	97.6		% Recovery	EPA 8260B	8/5/00
1-Chlorooctadecane (Diesel Surrogate)	96.0		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-B-2.5'
Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/5/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/5/00
4-Bromofluorobenzene (Surr)	97.5		% Recovery	EPA 8260B	8/5/00
1-Chlorooctadecane (Diesel Surrogate)	94.8		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

720 Olive Drive, Suite D, Davis, CA 95616, 530 297-4800

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : **BH-C-3** Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/10/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/10/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/10/00
4-Bromofluorobenzene (Surr)	96.2		% Recovery	EPA 8260B	8/10/00
1-Chlorooctadecane (Diesel Surrogate)	92.8		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-D-3
Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/5/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	8/5/00
4-Bromofluorobenzene (Surr)	96.2		% Recovery	EPA 8260B	8/5/00
1-Chlorooctadecane (Diesel Surrogate)	98.2		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-E-3 Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/5/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	8/5/00
4-Bromofluorobenzene (Surr)	98.2		% Recovery	EPA 8260B	8/5/00
1-Chlorooctadecane (Diesel Surrogate)	97.1		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

2795 Olive Drive, Suite D, Davis, CA 95616, 530 297-4800

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-F-3 Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/5/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/5/00
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	8/5/00
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	8/5/00
1-Chlorooctadecane (Diesel Surrogate)	96.3		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

720 Olive Drive, Suite D, Davis, CA 95616, 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-G-3'
Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/10/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	102		% Recovery	M EPA 8015	8/10/00

Approved By: Joel Kiff

720 Olive Drive, Suite D, Davis, CA 95616, 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-H-3'
Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	97.4		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

720 Olive Drive, Suite D, Davis, CA 95616, 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : **BH-I-3** Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/9/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	99.2		% Recovery	M EPA 8015	8/9/00

Approved By: Joel Kiff

720 Olive Drive, Suite D, Davis, CA 95616, 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17278

Date : 8/10/00

Project Name : **Saidan Alameda**

Project Number : **3648**

Sample : BH-J-3

Matrix : Soil

Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/10/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	98.8		% Recovery	M EPA 8015	8/10/00

Approved By: Joel Kiff

[illegible] Davis, CA 95616 530 297 4800

KIFF ANALYTICAL LLC

Report Number : 17278

Date : 8/10/00

Project Name : **Saidan Alameda**

Project Number : **3648**

Sample : **BH-K-3'** Matrix : Soil

Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/10/00
Methyl-t-butyl ether (MTBE)	0.0061	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	101		% Recovery	M EPA 8015	8/10/00

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17278
Date : 8/10/00

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-L-3.5'
Matrix : Soil
Sample Date :7/28/00

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	8/4/00
TPH as Diesel	< 1.0	1.0	mg/Kg	M EPA 8015	8/10/00
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Diisopropyl ether (DIPE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Ethyl-t-butyl ether (ETBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-amyl methyl ether (TAME)	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Tert-Butanol	< 0.0050	0.0050	mg/Kg	EPA 8260B	8/4/00
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	8/4/00
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	8/4/00
1-Chlorooctadecane (Diesel Surrogate)	106		% Recovery	M EPA 8015	8/10/00

Approved By: Joel Kiff

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

Chain of Custody

17278

PAGE 1 OF 2

SAMPLER (SIGNATURE) Lori Rood (PHONE NO.) (925) 820-9391

PROJECT NAME Alaska Gas JOB NO. 3648

ADDRESS 1310 Central Avenue, Alameda CA DATE 7/31/00

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

	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) (EPA 608/8080)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	TPH-G / BTEX & Oxygenates by 8240			COMPOSITE
01	Bit-A-3.5'	7/28	0750	Soil	1			X												X			
02	Bit-B-2.5'		0830					X												X			
03	Bit-C-3		0905					X												X			
04	Bit-D-3		0935					X												X			
05	Bit-E-3		1015					X												X			
06	Bit-F-3		1120					X												X			
07	Bit-G-3'		1255					X												X			
08	Bit-H-3'		1415					X												X			
09	Bit-I-3		1440					X												X			
10	Bit-J-3		1505					X												X			
11	Bit-K-3'	↓	1515	↓	↓			X												X			

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (signature) (time)	RELINQUISHED BY: (signature) (time)	RECEIVED BY LABORATORY: (signature) (time)	COMMENTS:
Lori Rood			A. Agos 1545	
Lori Rood 7/31/00 (printed name) (date)			A. Agos 07/31/00 (printed name) (date)	5 day TAT
Company- ASE	Company-	Company-	Company- Kiff	

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

Chain of Custody

PAGE 2 OF 2

SAMPLER (SIGNATURE) Lori Reed (PHONE NO.) (925)820-9391

PROJECT NAME Alaska Gas JOB NO. 3648

ADDRESS 1310 Central Avenue, Alameda CA DATE 7/31/00

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

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) (EPA 608/8080)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	TPH-G / BTEX & oxygenates by 8260			COMPOSITE
12- Bit-L 3.5'	7/28	1640	Soil	1			X												X			

RELINQUISHED BY: (signature) (time)	RECEIVED BY: (signature) (time)	RELINQUISHED BY: (signature) (time)	RECEIVED BY LABORATORY: (signature) (time)	COMMENTS:
Lori Reed			A. Agocs 1545	
Lori Reed 7/31/00 (printed name) (date)			A. Agocs 7/31/00 (printed name) (date)	
Company- ASE	Company-	Company-	Company- KTA	

APPENDIX D

Certified Analytical Report
and
Chain of Custody Documentation
Groundwater Samples

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Ian Reed
Aqua Science Engineers, Inc.
208 W. El Pintado Road
Danville, CA 94526

Subject : 12 Water Samples
Project Name : Saidan Alameda
Project Number : 3648

Dear Mr. Reed,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-A
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	0.70	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	0.90	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/10/2000
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-B
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	270	3.0	ug/L	EPA 8260B	08/05/2000
Toluene	8.8	3.0	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	18	3.0	ug/L	EPA 8260B	08/05/2000
Total Xylenes	13	3.0	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 2000	2000	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	4100	20	ug/L	EPA 8260B	08/10/2000
Diisopropyl ether (DIPE)	< 3.0	3.0	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 3.0	3.0	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	5.6	3.0	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	440	30	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	1800	300	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	94.2		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-C
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	11	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	1.2	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	0.96	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 100	100	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	760	5.0	ug/L	EPA 8260B	08/07/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	6.6	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	130	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	230	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

720 Ol... Drive, S... D... Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-D
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	72	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	1.7	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277

Date : 08/10/2000

Project Name : Saidan Alameda

Project Number : 3648

Sample : BH-E

Matrix : Water

Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-F
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : **BH-G** Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	**< 0.50**	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	**< 5.0**	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-H
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-I
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	0.55	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : Saidan Alameda
Project Number : 3648

Sample : BH-J
Matrix : Water
Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	200	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277

Date : 08/10/2000

Project Name : **Saidan Alameda**

Project Number : 3648

Sample : BH-K

Matrix : Water

Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	520	500	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	0.77	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 17277
Date : 08/10/2000

Project Name : **Saidan Alameda**
Project Number : **3648**

Sample : BH-L

Matrix : Water

Sample Date :07/31/2000

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Toluene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
TPH as Diesel	< 50	50	ug/L	M EPA 8015	08/05/2000
Methyl-t-butyl ether (MTBE)	2.5	0.50	ug/L	EPA 8260B	08/05/2000
Diisopropyl ether (DIPE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Ethyl-t-butyl ether (ETBE)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-amyl methyl ether (TAME)	< 0.50	0.50	ug/L	EPA 8260B	08/05/2000
Tert-Butanol	< 5.0	5.0	ug/L	EPA 8260B	08/05/2000
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	08/05/2000
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	08/05/2000
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	08/05/2000

Approved By: Joel Kiff

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

Chain of Custody

17277

PAGE 1 OF 2

SAMPLER (SIGNATURE) (PHONE NO.)
Lat Reed (925) 820-9391

PROJECT NAME Alaska Gas JOB NO. 3648
ADDRESS 1310 Central Ave, Alameda CA DATE 7/31/00

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:
5-day TAT

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) (EPA 608/8080)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	TPH-G-BTEX Soxhlet by 8260			COMPOSITE	
B1-A	7/31	0810	water	5			X												X				-01
B1-B		0840		5			X												X				-02
B1-C		0910		5			X												X				-03
B1-D		0940		5			X												X				-04
B1-E		1020		5			X												X				-05
B1-F		1140		4			X												X				-06
B1-G		1400		5			X												X				-07
B1-H		1430		5			X												X				-08
B1-I		1515		5			X												X				-09
B1-J		1540		5			X												X				-10
B1-K		1600		5			X												X				-11

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
(signature) (time)	(signature) (time)	(signature) (time)	(signature) 1545 (time)	
Lat Reed 2/31/00			A. Agocs 07/31/00	
(printed name) (date)	(printed name) (date)	(printed name) (date)	(printed name) (date)	
Company- ASE	Company-	Company-	Company- K-T-E	

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

Chain of Custody

PAGE 2 OF 2

SAMPLER (SIGNATURE) Jeff Reed (PHONE NO.) (925) 820-5391

PROJECT NAME Alaska Gas JOB NO. 3648

ADDRESS 1310 Central Ave Alameda CA DATE 7/31/00

ANALYSIS REQUEST

SPECIAL INSTRUCTIONS:

5-day TAT

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) (EPA 608/8080)	ORGANOCHLORINE HERBICIDES (EPA 8150)	FUEL OXYGENATES (EPA 8260)	TPH-G / BTEX 5 oxygenates by 8260			COMPOSITE
1314-L	7/31	1635	water	5			X												X			

12

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY LABORATORY:	COMMENTS:
(signature) (time)	(signature) (time)	(signature) (time)	A. Agocs 1545 (signature) (time)	
Jeff Reed (printed name) (date)	(printed name) (date)	(printed name) (date)	A. Agocs 07/31/00 (printed name) (date)	
Company- ASE	Company-	Company-	Company- Kiff	