A·C·C
ENVIRONMENTAL
CONSULTANTS

92 JUL 23 PM 1:19

July 13, 1992

Mr. Donald Diel
Alameda Unified School District
2200 Central Avenue
Alameda, CA 94501

RE: Monitoring Well Construction and Groundwater Sampling at
the Alameda Historical High School in Alameda, California
Permit # 92316

Dear Don:

The attached report describes the materials and procedures used during drilling, installation, and sampling for three monitoring wells located at the Alameda Historical High School in Alameda, California. This work was performed to evaluate the presence or absence of residual hydrocarbon concentrations in groundwater, and to evaluate if remediation of the soil or groundwater is necessary.

ACC's investigatative approach was to drill four borings of which one was located within the previous underground storage tank excavation. The other three borings were converted into groundwater monitoring wells.

Soil and groundwater samples collected during drilling and sampling were submitted to Chroma Lab Analytical Laboratory for petroleum hydrocarbon analyses. The results of the soil samples indicated non detectable levels of the constituents evaluated. Analytical results of the groundwater samples collected from monitoring well MW-1 (nearest to the previous excavation) revealed 170 parts per billion (ppb) of Total Petroleum Hydrocarbons (TPH) as diesel. No other constituents were found above the detection limits.

If you have any questions or comments regarding this report or any other comments regarding this project, please call.

Sincerely,

Misty C. Kaltreider

Misty C. Kaltreider
Geologist

Encl.

cc. Mr. Eddie So - Regional Water Quality Control Board
Ms. Kevin Tensley - Alameda County Health Agency - Hazardous Materials
Mr. Wyman Hong - Alameda County Flood Control

1000 Atlantic Avenue, Suite 110 • Alameda, CA 94501 • (415) 522-8188 • FAX: (415) 865-5731

ACC
ENVIRONMENTAL CONSULTANTS

92 JUL -6 PM 1:19

MONITORING WELL INSTALLATION - GROUNDWATER SAMPLING

ALAMEDA HISTORICAL HIGH SCHOOL
2200 CENTRAL AVENUE
ALAMEDA, CALIFORNIA

Prepared for:
Mr. Don Diel
Alameda School District
2200 Central Avenue
Alameda, CA 94501

Prepared by:

Misty Kaltreider
Project Geologist

Reviewed by:

Susan B. Churchill, Principal
ACC Environmental Consultants

Reviewed by:

Elyse D. Heilshorn, P.E.
Environmental Engineer

REGISTERED PROFESSIONAL ENGINEER
ELYSE D. HEILSHORN
CIVIL
STATE OF CALIFORNIA

ENVIRONMENTAL CONSULTANTS

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1.0 INTRODUCTION

This report presents the procedures and findings of ACC Environmental Consultants' ("ACC") monitoring well installation and groundwater investigation at the Alameda Historical High School in Alameda, California. The objective of this project, as described in the Work Plan dated June 9, 1992, was to determine if groundwater has been impacted from the release of petroleum hydrocarbons discovered during removal of two underground heating oil tanks. During drilling, groundwater was discovered at approximately 10 feet below ground surface. Three borings were converted into monitoring wells. These wells were sampled and analyzed to determine what impact this release had on the groundwater. This report documents the procedures and results found during drilling, soil sampling, monitoring well installation, development and groundwater sampling.

2.0 BACKGROUND

In December of 1991, Semco of San Mateo removed two heating oil tanks (one 4000-gallon and one 2000-gallon) from Alameda Historical High School Campus. During excavation, it was discovered that the tanks were stacked one on top of each other. Analysis of soil samples collected from 11 feet within the excavation revealed non-detectable levels of Total Petroleum Hydrocarbons (TPH) as diesel, benzene, toluene, ethylbenzene and total xylenes. A sample of the groundwater found within the excavation was collected and analyzed. Results indicated the groundwater contained 0.6 parts per billion (ppb) of toluene, 1.2 ppb ethylbenzene and 1.8 ppb total xylenes.

As a result, Alameda County Health Services - Hazardous Materials Division (HAZMAT) requested the installation of one monitoring well in the verified downgradient direction of the former heating oil tanks with verification sampling to determine the impact of groundwater from this release. In addition, Alameda County Health Services - HAZMAT requested one boring to be drilled within the former excavation to verify that clean fill was used to backfill the excavation.

In order to verify the groundwater gradient, three monitoring wells (MW-1, MW-2 and MW-3) were installed within 100 feet of the tank excavation in addition to the boring drilled within the former excavation. The Site Plan, Figure 1, shows the approximate well locations. The following is a detailed description of all field activities.

3.0 FIELD PROCEDURES

Borings B-1, B-2, B-3 and B-4, were drilled on June 26, 1992 using a B-53 mobile drill rig equipped with 8-inch outside diameter hollow-stem augers. Concurrent with drilling, subsurface soil samples were obtained with a Modified California Sampler equipped with three six-inch long brass liners. The sampler and brass liners were pre-cleaned prior to use and between sample drives by washing them with a trisodium phosphate (TSP) and potable water solution, a potable water rinse, and distilled water rinse. Soil

samples were collected every five feet, at any noted changes in lithology and at the approximate soil/groundwater interface. Subsurface soil samples were obtained by drilling to the approximate sampling location and then driving the sampler eighteen inches into undisturbed material.

Soil samples and drill cuttings were prescreened for volatile organic compounds with a photoionization detector (PID) calibrated for benzene. At least two soil samples were chosen from each boring and were transported to the analytical laboratory for analysis. The middle brass liner was retained for analysis from each sampler. Upon removal from the sampler each end of the brass liner was covered with Teflon tape and plastic caps, labeled, and stored in an ice-filled cooler to be transported under chain of custody to Chroma Lab, a Cal-EPA certified laboratory. Chain of custody forms are attached in Appendix A.

The soil cuttings and samples were logged by an ACC geologist during drilling operations. Lithologic logs of borings B-1, B-2, B-3 and B-4 are shown in Figures 3 through 6, respectively. The soils are described in accordance with the Unified Soil Classification System, as shown in Figure 7. Soil cuttings were stored in sealed 55-gallon drums and were labeled with a waste material sticker identifying the content, date obtained and the generator.

3.1 Monitoring Well Construction and Development

Monitoring wells MW-1, MW-2 and MW-3 were installed within the borings B-4, B-2 and B-1, respectively, upon completion of drilling. Well construction details are presented on Figures 8 - 10. Monitoring Wells MW-1, MW-2 and MW-3 were installed with well casings consisting of 2-inch I.D. Schedule 40 PVC with 8 feet of 0.020-inch factory slotted screen below 7 feet of solid casing.

The wells were installed with Lonestar #3 sand used as annular fill around the screen that extended from the screen base to at least 1.5 feet above the top of the screen. One foot of 1/4-inch pelletized bentonite was placed between the annular sand and neat cement seal. "Christy" boxes were cemented over the tops of the PVC casings and set slightly above grade to drain surface waters away from the well head. Locking expansion plugs with locks were placed on each well.

The wells were developed on July 1, 1992. Prior to development, the wells were surged using a double-ended rubber O-ring stopper followed by development, using a submersible water pump. The wells were developed until development water was clear and essentially free of fine materials. At least four well casing volumes of water were removed from each monitoring well.

3.2 Groundwater Sampling

Groundwater samples were taken on July 6, 1992 from monitoring wells MW-1, MW-2 and MW-3. Prior to groundwater sampling the depth to the surface of the water table was measured from the top of the PVC casing using a Solinst Water Level Meter. Information regarding depths of wells, well elevations and groundwater level measurements are summarized in Table 1 below:

Table 1 - Well Information

Well No.	Depth of Well	Depth to Water During Drilling	Static Water Level 07/06/92	Well Elevation	GW Elevation
MW-1	15*	10	9.49	31.50	22.01
MW-2	15	10	10.05	32.16	22.11
MW-3	15	10	9.03	31.02	21.99

* all measurments in feet

After water-level measurements were taken, each well was purged by hand using a pre-cleaned PVC bailer. Groundwater pH, temperature and electrical conductivity were monitored during well purging. Each well was considered to be purged when these parameters stabilized. Approximately four well volumes were removed to purge each well.

After the groundwater had recovered to a minimum of approximately 80 percent of its static level, water samples were obtained using a separate, disposal Teflon bailers for each well. Two (2) 40 ml VOA vials, without headspace, and two (2) liter bottles were filled with water from each well using the Teflon bailer. These samples were preserved on ice and submitted to Chroma Lab analytical laboratory the same day under chain of custody protocol (forms are provided in Appendix A).

4.0 FINDINGS

During drilling and sampling activities, the site was observed to be covered with a baserock/asphalt cap, below the cap, the subsurface soils consisted of brown fine grain sand to the depths investigated of 15 feet. In borings B-2 and B-4, an extra layer of asphalt and baserock was discovered just below the top baserock/asphalt cap. This cover is presumed to be from Alameda Avenue which previously extended through the school yard.
No indications (i.e., odor or discoloration) of contamination were observed in the borings. Groundwater was encountered at depths of approximately 10 feet while drilling borings B-1, B-2, B-3 and B-4.

At minimum, two soil samples were selected from borings B-1 - B-4 and were submitted to Chroma Lab of San Ramon, California for analysis of total petroleum hydrocarbons (TPH) as diesel, kerosene and heating oil with benzene, toluene, ethylbenzene, and total xylenes (BTEX) using Environmental Protection Agency (EPA) Test 8015-Modified and EPA Test Method 8020. Copies of the analytical results and chain of custody forms are provided in Appendix A.

4.1 Hydrocarbon Concentrations in Soil

Analysis of soil samples taken from under the removed heating oil tanks in December, 1991, revealed non-detectable levels of Total Petroleum Hydrocarbons (TPH) as diesel, benzene, toluene, ethylbenzene and total xylenes. Analysis of the groundwater taken from the excavation at that same time, revealed 0.6 parts per billion (ppb) of toluene, 1.2 ppb ethylbenzene and 1.8 ppb total xylenes.

Analysis of soil collected from boring B-3 drilled within the previous excavation indicated non-detectable levels of the constituents evaluated. Analysis of soil samples collected from borings B-1, B-2 and B-4 also indicated non-detectable levels of constituents.

After well installation and development, one groundwater sample from each groundwater monitoring well was collected and submitted to Chroma Lab for analysis of TPH as diesel, kerosene and heating oil with BTEX using EPA Method 602. The laboratory analyses results indicated 170 ppb of TPH as diesel in monitoring well MW-1 (adjacent to the excavation). Other analytical results indicated non-detectable concentrations of the constituents evaluated. Copies of the analytical results are provided in Appendix A.

4.2 Groundwater Gradient

Prior to calculating the groundwater gradient, elevations for the newly installed monitoring wells were surveyed by Ron Archer Civil Engineer, Inc. to an accuracy of one-hundredth of a foot. The well elevation was surveyed at the top of the PVC well casing. The elevations of the monitoring wells were established relative to a nearby benchmark located on the northwest corner of Central Avenue and Oak Street in Alameda, California.

The groundwater gradient at the site was evaluated by triangulation using the elevations of the tops of the well casings measured with respect to Mean Sea Level datum. As shown on Figure 2, the estimated groundwater gradient direction at the time of measurement was to the northwest.

5.0 CONCLUSION

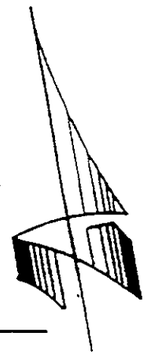
The data and observations provided herein allow the technical evaluation that an impact to groundwater, derived from the unauthorized release of hydrocarbons, has apparently occurred following discovery of the release. Groundwater monitoring of the on-site wells will continue to evaluate the groundwater conditions and monitor the contaminant levels.

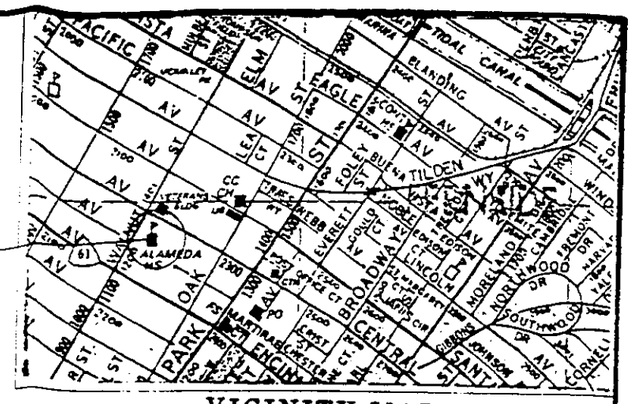
JUNE 30, 1992 JOB NO. 1941

PLAT SHOWING EXISTING MONITOR WELLS BEHIND THE GIRLS GYMNASIUM BUILDING AT THE ALAMEDA HIGH SCHOOL FACILTY, LOCATED AT 2200 CENTRAL AVENUE, BETWEEN OAK STREET AND WALNUT STREET, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

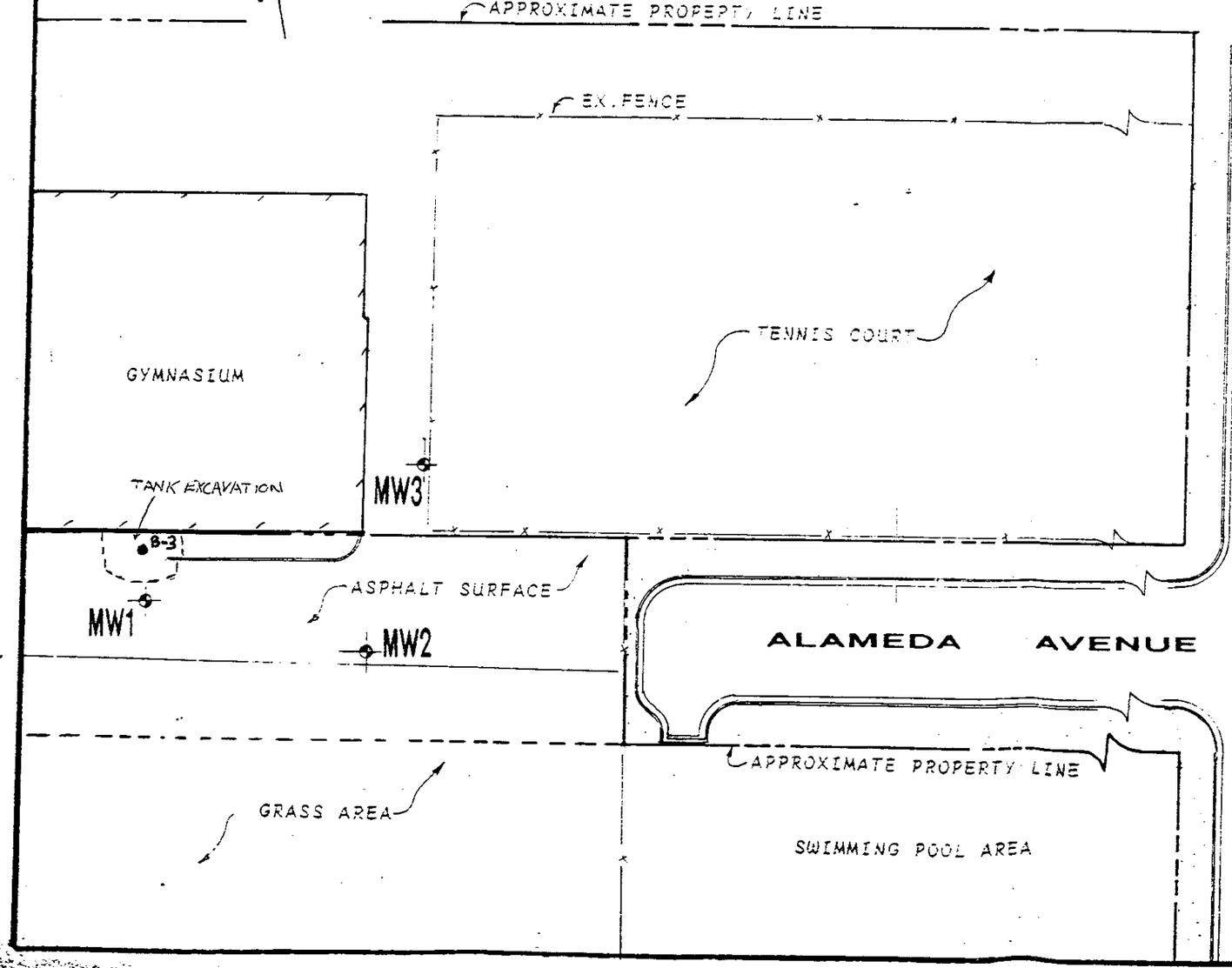
FOR: ACC ENVIRONMENTAL CONSULTANTS, INC.
PROJECT NO. 6029-2

BENCHMARK:
A FOUND CHISELD SQUARE IN TOP OF CURB IN MID RETURN AT THE NORTHWEST CORNER OF CENTRAL AVENUE AND OAK STREET. ELEVATION TAKEN AS 30.147 M.S.L





VICINITY MAP
N.T.S



MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	31.50	TOP OF PVC CASING
	32.21	TOP OF BOX
MW2	32.16	TOP OF PVC CASING
	32.56	TOP OF BOX
MW3	31.02	TOP OF PVC CASING
	31.60	TOP OF BOX

1" = 40'

0 20 40 80 120
Graphic Scale
in feet

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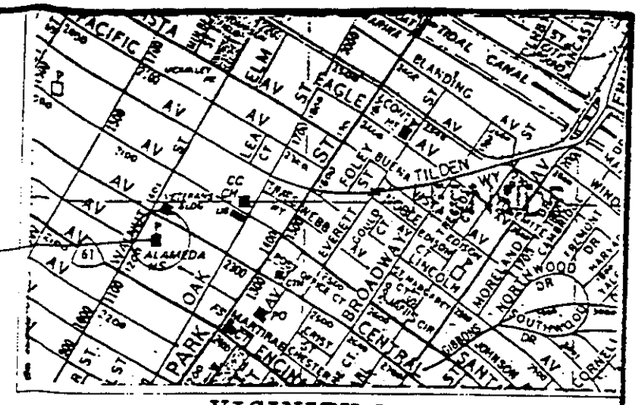
Alameda High School
Site Plan Map
Figure 1

JUNE 30, 1992 - JOB NO. 1941

PLAT SHOWING EXISTING MONITOR WELLS BEHIND THE GIRLS GYMNASIUM BUILDING AT THE ALAMEDA HIGH SCHOOL FACILTY, LOCATED AT 2200 CENTRAL AVENUE, BETWEEN OAK STREET AND WALNUT STREET, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

FOR: ACC ENVIRONMENTAL CONSULTANTS, INC.
PROJECT NO. 6029-2

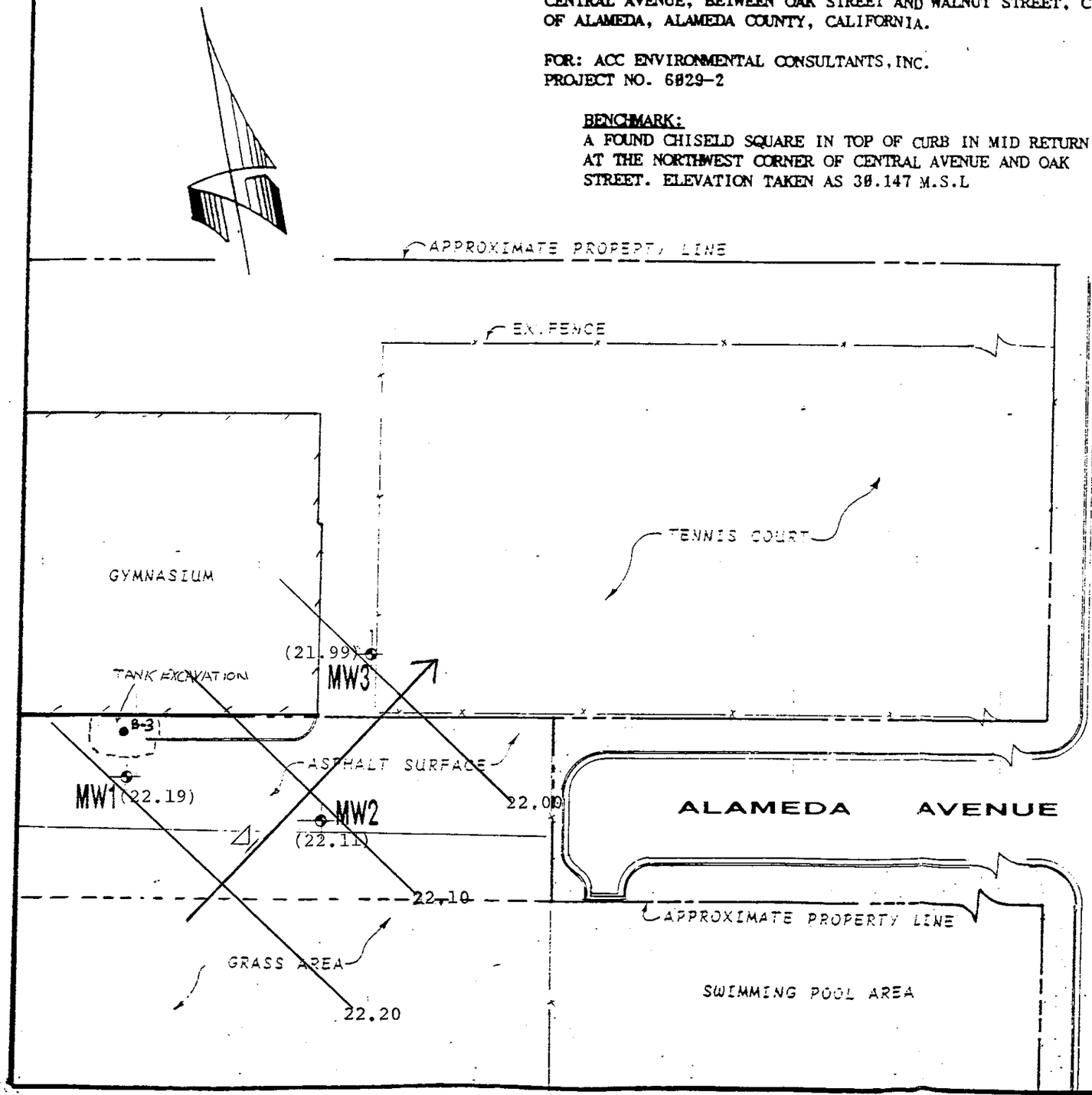
BENCHMARK:
A FOUND CHISELD SQUARE IN TOP OF CURB IN MID RETURN AT THE NORTHWEST CORNER OF CENTRAL AVENUE AND OAK STREET. ELEVATION TAKEN AS 30.147 M.S.L



VICINITY MAP
N.T.S

MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	31.50	TOP OF PVC CASING
	32.21	TOP OF BOX
MW2	32.16	TOP OF PVC CASING
	32.56	TOP OF BOX
MW3	31.82	TOP OF PVC CASING
	31.60	TOP OF BOX



1" = 40'

0 20 40 80 120

Graphic Scale in feet

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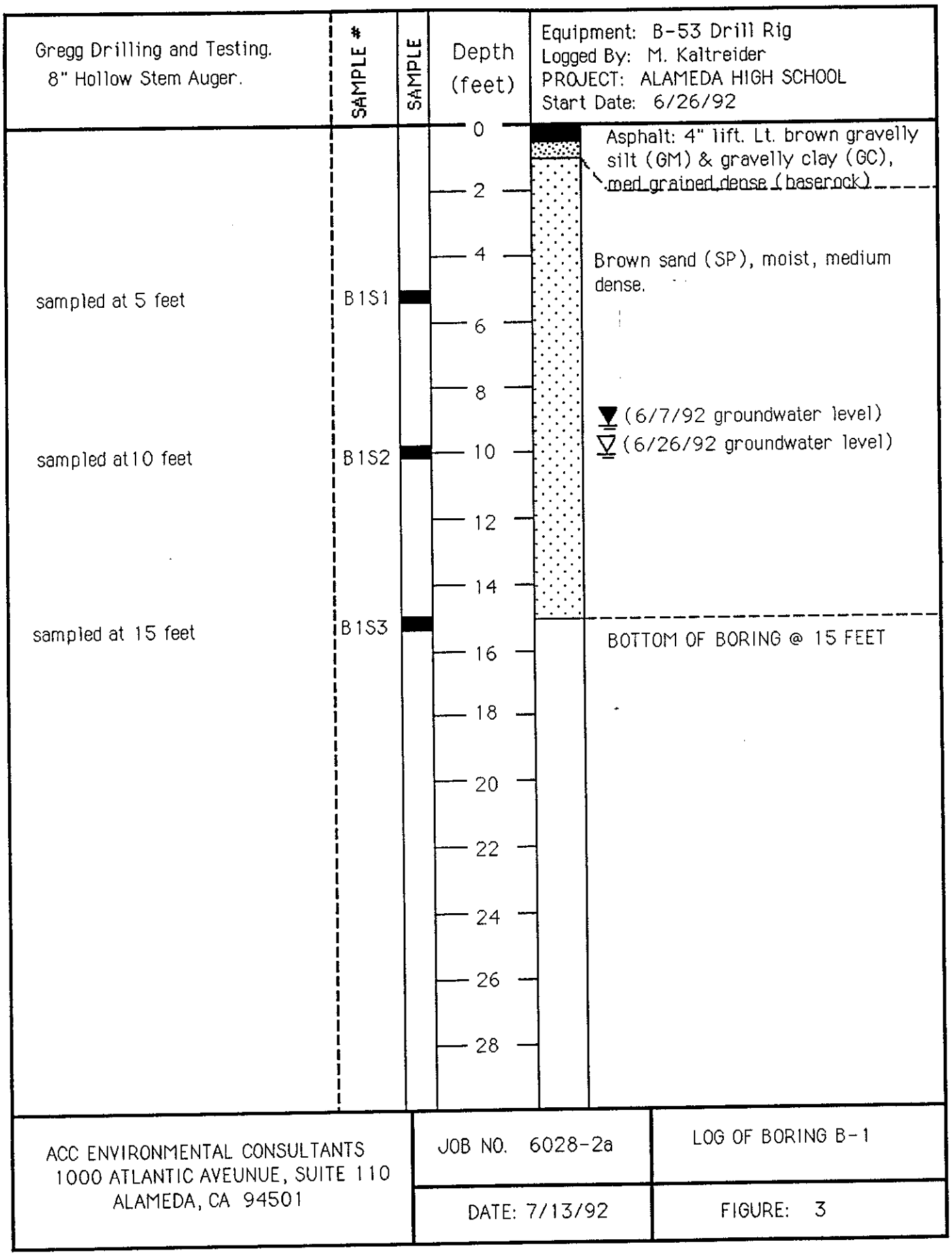
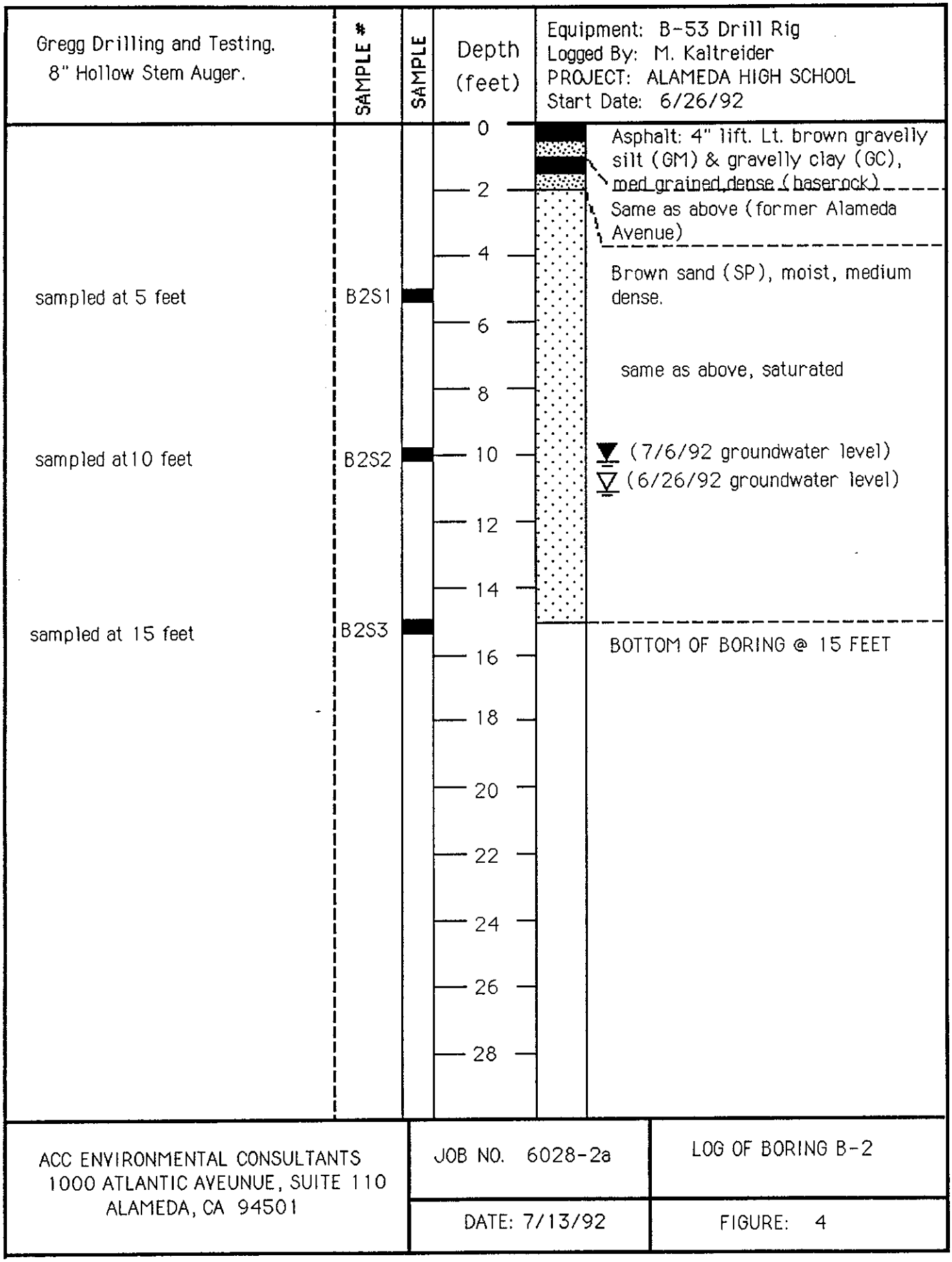
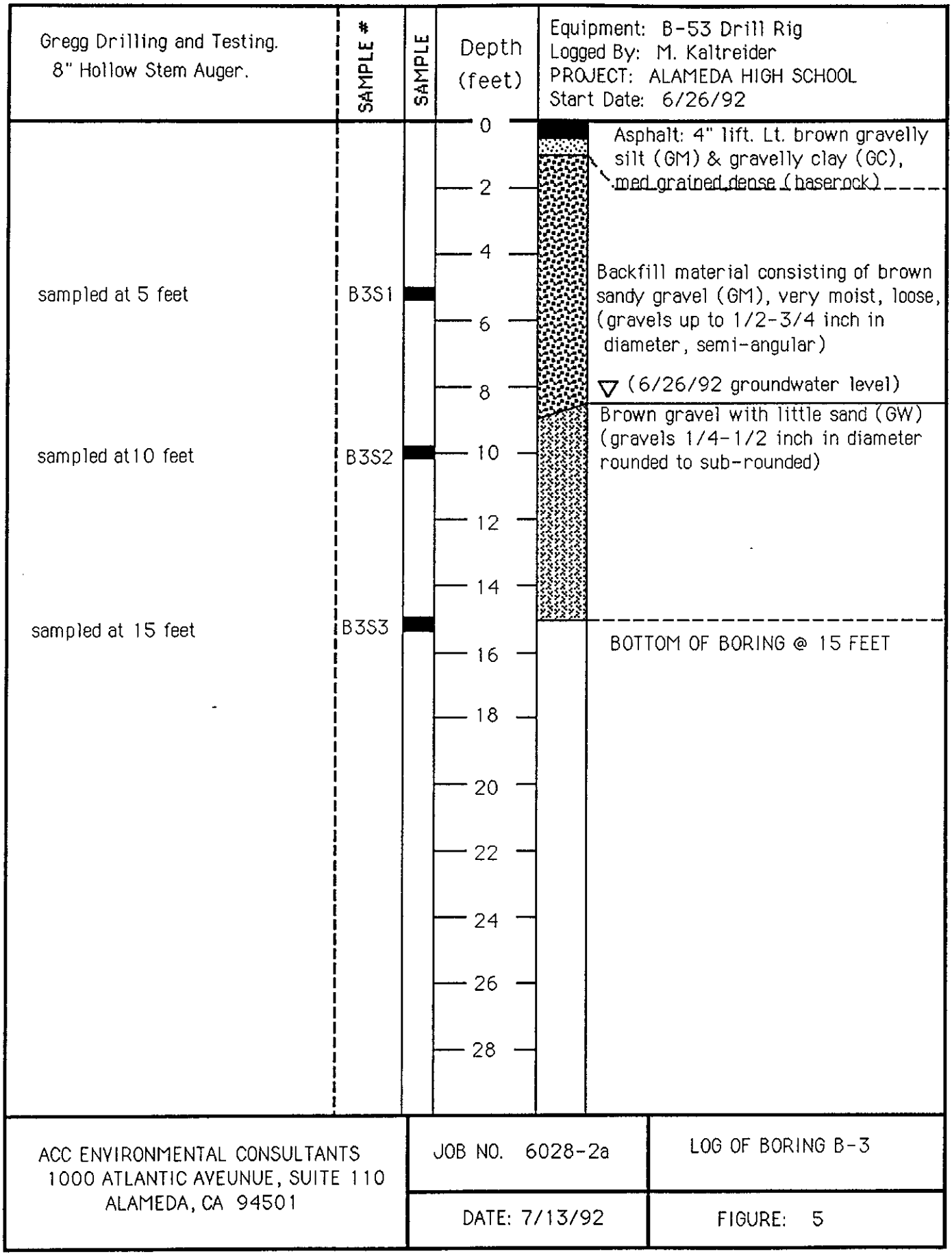
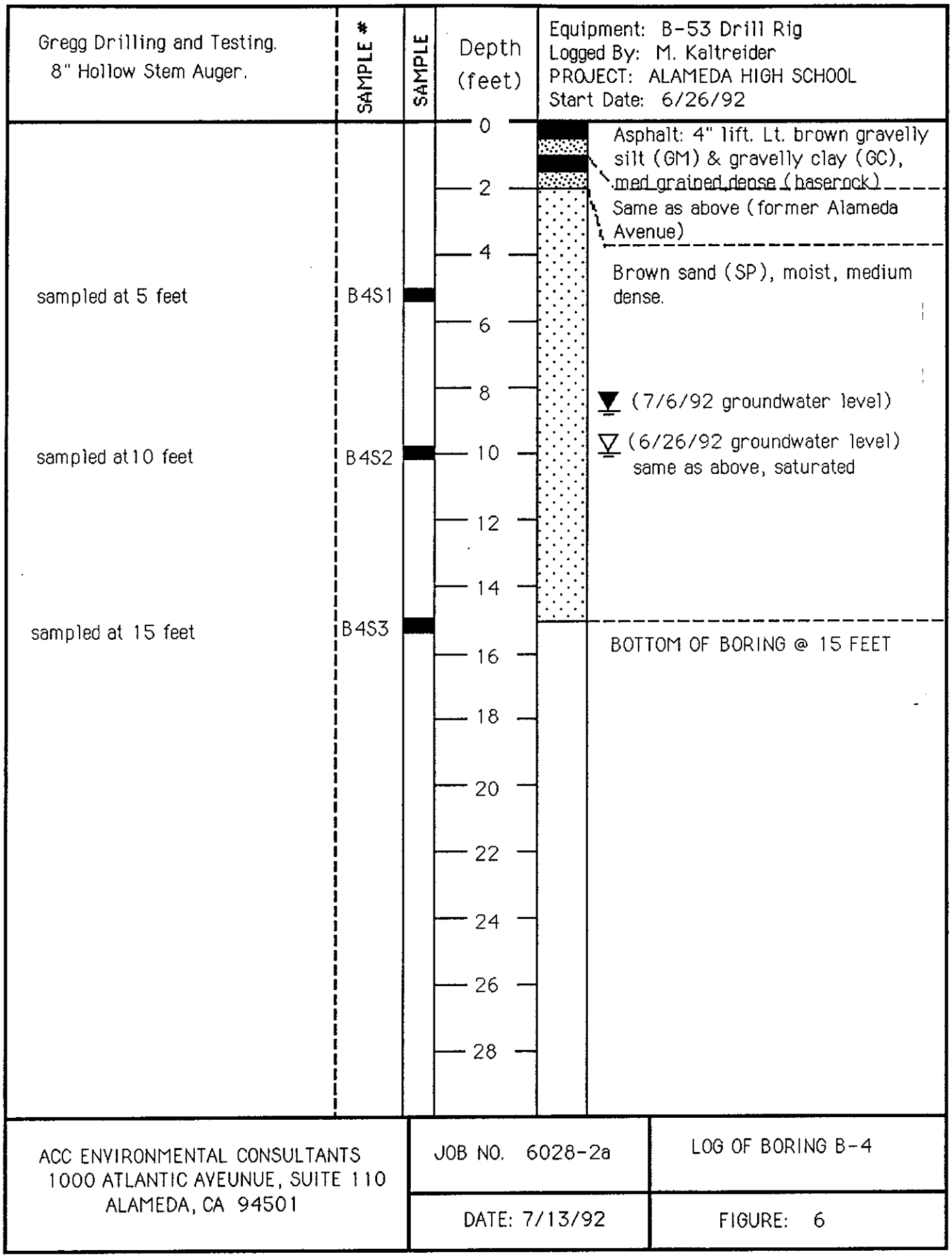
Alameda High School
Groundwater Gradient

Figure 2


Gregg Drilling and Testing.
8" Hollow Stem Auger.
SAMPLE #
SAMPLE
Depth (feet)
Equipment: B-53 Drill Rig
Logged By: M. Kaltreider
PROJECT: ALAMEDA HIGH SCHOOL
Start Date: 6/26/92
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained dense (baserock)
Brown sand (SP), moist, medium dense.
(6/7/92 groundwater level)
(6/26/92 groundwater level)
sampled at 5 feet
B1S1
sampled at10 feet
B1S2
sampled at 15 feet
B1S3
BOTTOM OF BORING @ 15 FEET
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO. 6028-2a
DATE: 7/13/92
LOG OF BORING B-1
FIGURE: 3


Gregg Drilling and Testing.
8" Hollow Stem Auger.
SAMPLE #
SAMPLE
Depth (feet)
Equipment: B-53 Drill Rig
Logged By: M. Kaltreider
PROJECT: ALAMEDA HIGH SCHOOL
Start Date: 6/26/92
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained,dense (baserock)
Same as above (former Alameda Avenue)
Brown sand (SP), moist, medium dense.
same as above, saturated
(7/6/92 groundwater level)
(6/26/92 groundwater level)
BOTTOM OF BORING @ 15 FEET
sampled at 5 feet
B2S1
sampled at10 feet
B2S2
sampled at 15 feet
B2S3
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO. 6028-2a
LOG OF BORING B-2
DATE: 7/13/92
FIGURE: 4

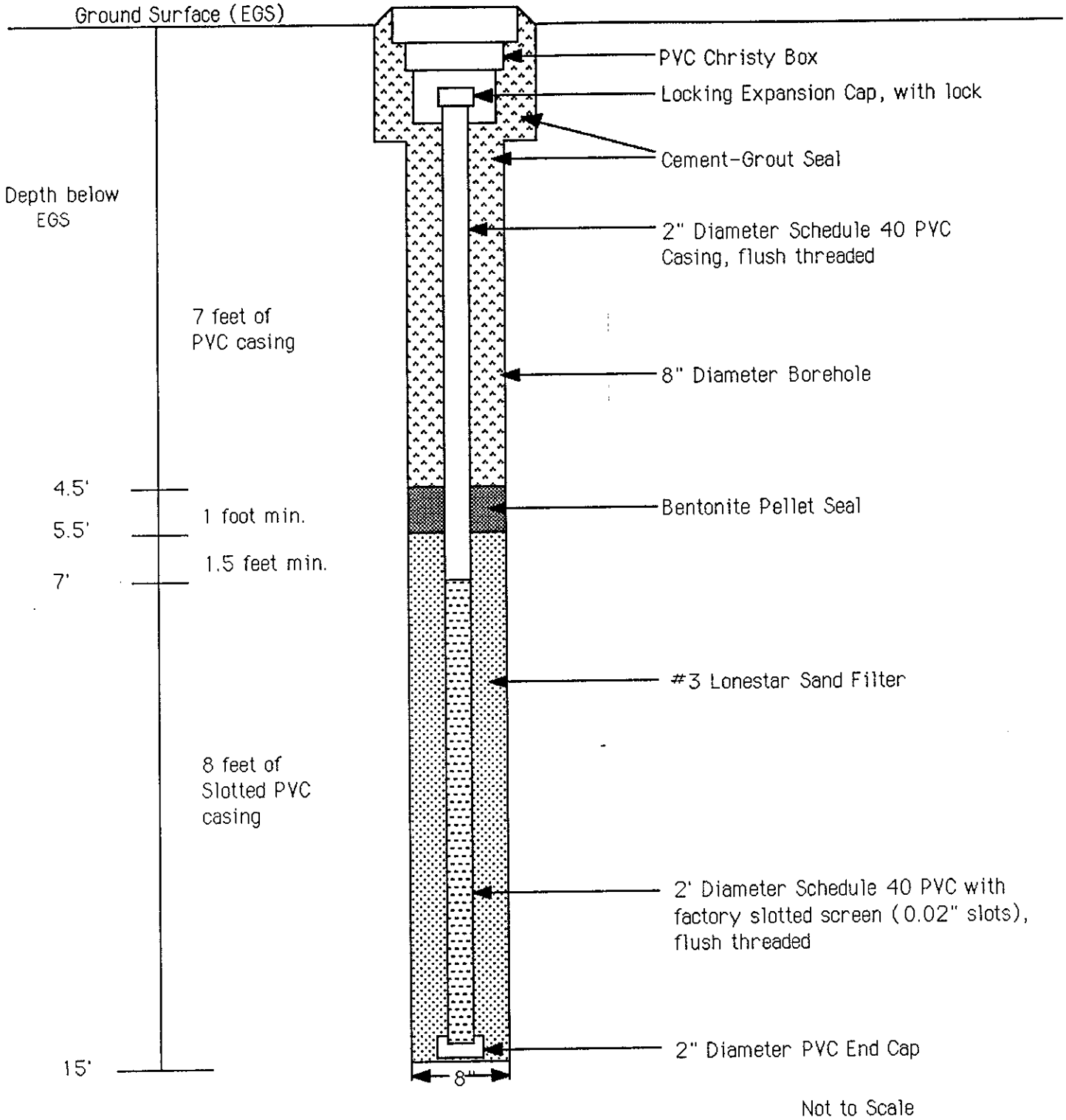

Gregg Drilling and Testing.
8" Hollow Stem Auger.
SAMPLE #
SAMPLE
Depth (feet)
Equipment: B-53 Drill Rig
Logged By: M. Kaltreider
PROJECT: ALAMEDA HIGH SCHOOL
Start Date: 6/26/92
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained dense (baserock)
Backfill material consisting of brown sandy gravel (GM), very moist, loose, (gravels up to 1/2-3/4 inch in diameter, semi-angular)
(6/26/92 groundwater level)
Brown gravel with little sand (GW) (gravels 1/4-1/2 inch in diameter rounded to sub-rounded)
sampled at 5 feet
B3S1
sampled at10 feet
B3S2
sampled at 15 feet
B3S3
BOTTOM OF BORING @ 15 FEET
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO. 6028-2a
LOG OF BORING B-3
DATE: 7/13/92
FIGURE: 5


Gregg Drilling and Testing.
8" Hollow Stem Auger.
SAMPLE #
SAMPLE
Depth (feet)
Equipment: B-53 Drill Rig
Logged By: M. Kaltreider
PROJECT: ALAMEDA HIGH SCHOOL
Start Date: 6/26/92
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Asphalt: 4" lift. Lt. brown gravelly silt (GM) & gravelly clay (GC), med grained dense (baserock)
Same as above (former Alameda Avenue)
Brown sand (SP), moist, medium dense.
sampled at 5 feet
B4S1
(7/6/92 groundwater level)
(6/26/92 groundwater level)
same as above, saturated
sampled at10 feet
B4S2
sampled at 15 feet
B4S3
BOTTOM OF BORING @ 15 FEET
ACC ENVIRONMENTAL CONSULTANTS
1000 ATLANTIC AVEUNUE, SUITE 110
ALAMEDA, CA 94501
JOB NO. 6028-2a
LOG OF BORING B-4
DATE: 7/13/92
FIGURE: 6

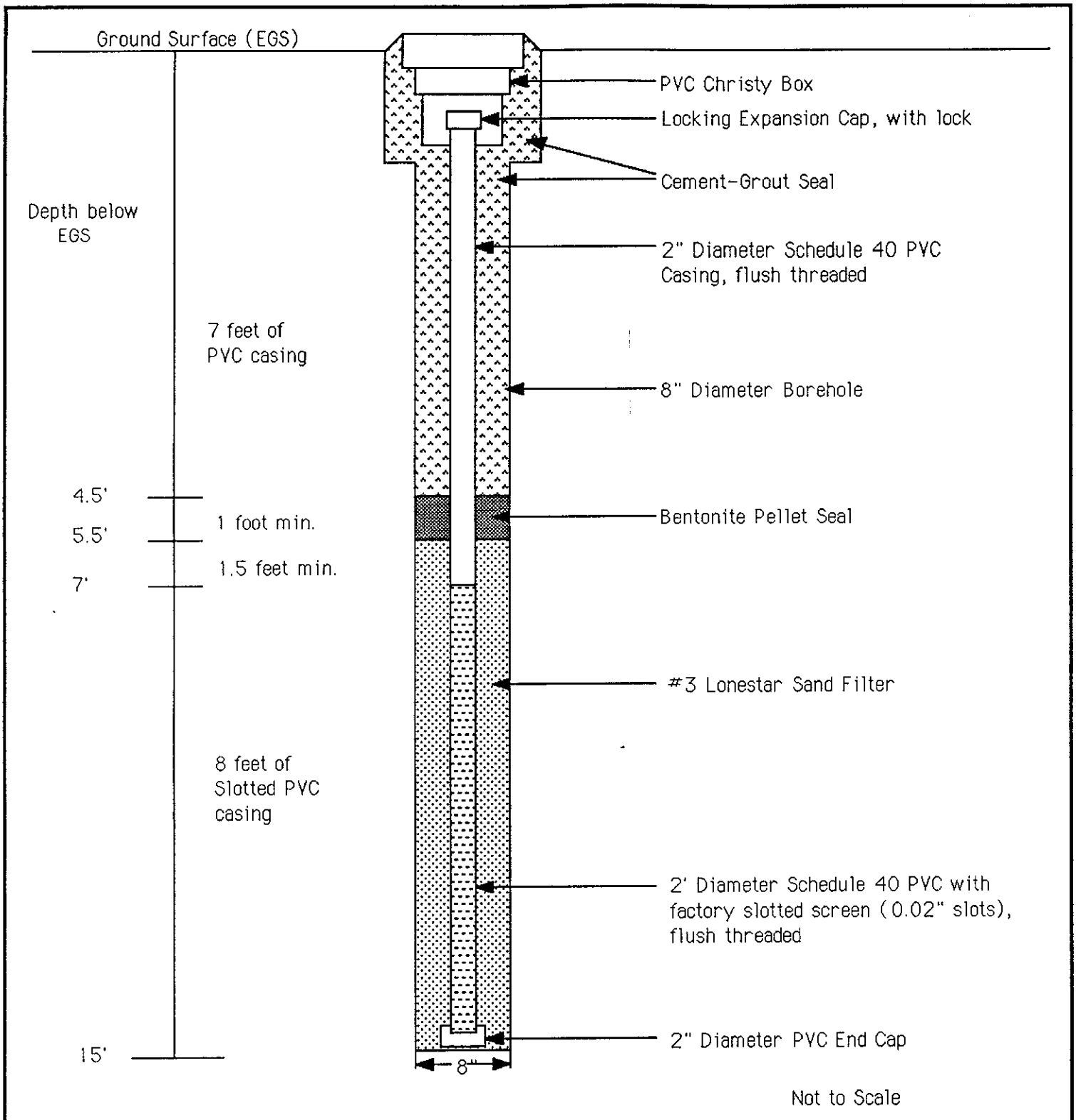
	MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS more than half > #200 sieve	GRAVELS more than half corse fraction is larger than No. 4 sieve	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		well graded gravels, gravel-sand mixtures
			GP		poorly graded gravels, gravel-sand mixtures
		GRAVELS WITH OVER 12% FINES	GM		silty gravels, poorly graded gravel-sand silt mixtures
			GC		clayey gravels, poorly graded gravel-sand clay mixtures
	SANDS more than half corse fraction is smaller than no. 4 sieve	CLEAN SANDS WITH LITTLE OR NO FINES	SW		well graded sands, gravelly sands
			SP		poorly graded sands, gravelly sands
		SANDS WITH OVER 12% FINES	SM		silty sands, poorly graded sand-silt mixtures
			SC		clayey sands, poorly graded sand-clay mixtures
FINE GRAINED SOILS more than half < #200 sieve	SILTS AND CLAYS liquid limit less than 50		ML		inorg. silts and v.fine sands, rock flour silty or clayey sands, or clayey silts w/sl. plasticity
			CL		inorg. clays of low-med plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		organic clays and organic silty clays of low plasticity
	SILTY AND CLAYS liquid limit greater than 50		MH		inorganic silty, micaceous or diatomacious fine sandy or silty soils, elastic silts
			CH		inorganic clays of high plasticity, fat clays
			OH		organic clays of medium to high plasticity organic silts
	HIGHLY ORGANIC SOILS		Pt		peat and other highly organic soils

UNIFIED SOIL CLASSIFICATION SYSTEM

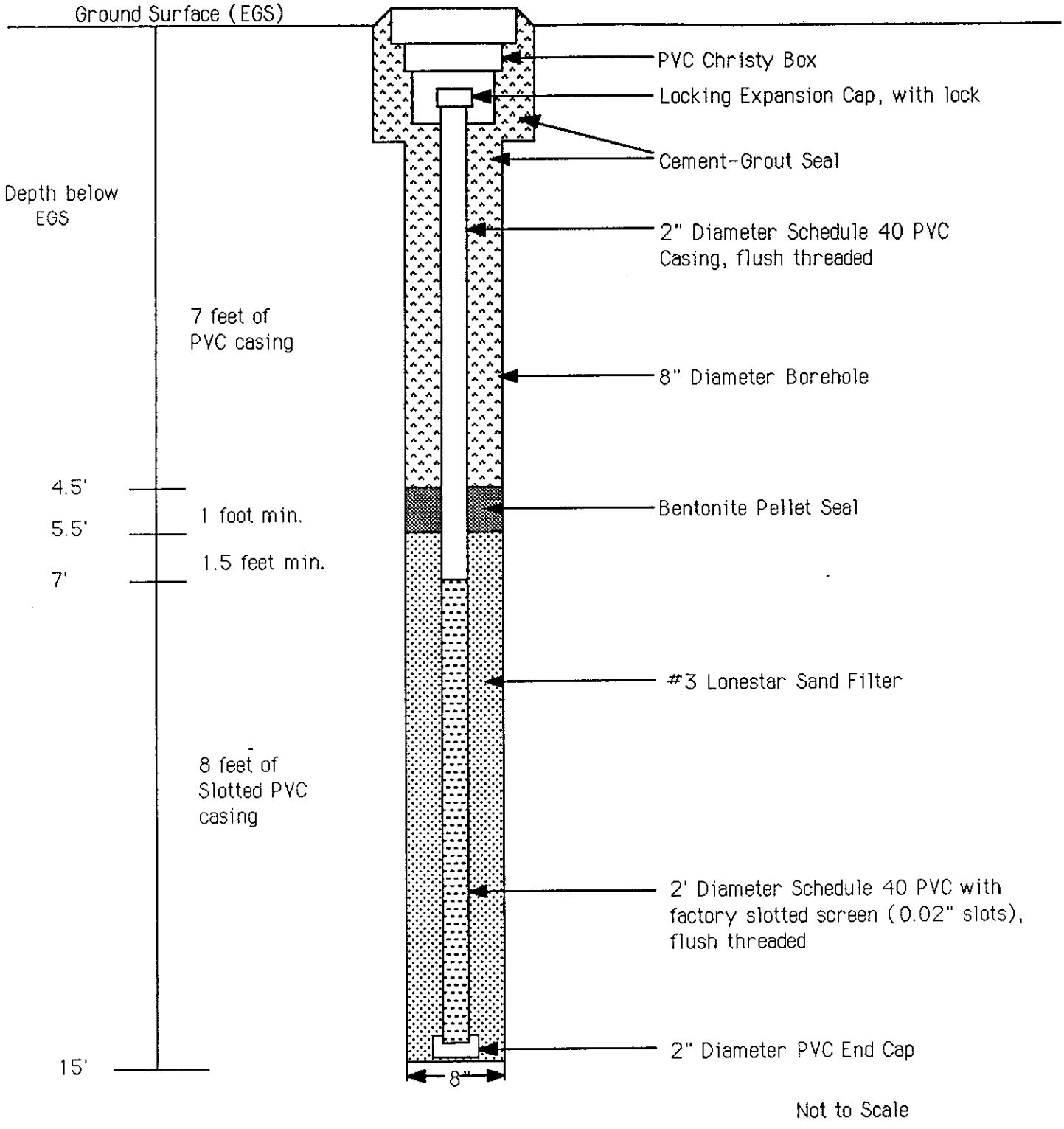
ACC ENVIRONMENTAL CONSULTANTS 1000 ATLANTIC AVEUNUE, SUITE 110 ALAMEDA, CA 94501		Soil Classification System	
Project No. 6029-2a	Date: 6/22/91	DRN: MCK	Figure No. 7



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6029-2a	Schematic of Monitoring Well No.: MW-1
	Date: 7/13/92	Figure No.: 8



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6029-2a	Schematic of Monitoring Well No.: MW-2
	Date: 7/13/92	Figure No.: 9



ACC Environmental Consultants 1000 Atlantic Avenue, Suite 110 Alameda, CA 94501	Job No.: 6029-2a	Schematic of Monitoring Well No.: MW-3
	Date: 7/13/92	Figure No.: 10

APPENDIX A

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

June 29, 1992 ChromaLab File No.: 0692254

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Three rush soil samples for TEPH and BTEX analyses

Project Name: ALAMEDA H.S.
Project Number: 6029-2a
Date Sampled: June 26, 1992 Date Submitted: June 26, 1992
Date Extracted: June 29, 1992 Date Analyzed: June 29, 1992

RESULTS:

Sample I.D.	Kerosene (mg/Kg)	Diesel (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)	Heating Oil (mg/Kg)
B1S1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1S2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B1S3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	97%	103%	89%	98%	103%	101%	----
DUP SPIKE REC	98%	101%	88%	113%	101%	104%	----
DET. LIMIT	1.0	1.0	5.0	5.0	5.0	5.0	10
METHOD OF ANALYSIS	3550/ 8015	3550/ 8015	8020	8020	8020	8020	3550/ 8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

ACC Environmental Consultants
1000 Atlantic Ave, Suite 110
Alameda, CA 94501

Lab Name Chromalab.

CHAIN OF CUSTODY RECORD

CHROMALAB FILE # 692254
ORDER # 6878

PROJECT NUMBER	PROJECT NAME
6029-20	Alameda H.S.

SAMPLER(S): (Signature) Misty Kaltwieder

ID#	Depth	Date '92	Time	Water	Soil	Location	# Containers	TPH as diesel	Kerosene, heating oil	BTEX					Remarks
~~B1~~	—	6/26	—	—	—	—		~~X~~	~~X~~						24 hour turnaround.
B1S1	5'	↓	9:20		X		1	X	X						↓
B1S2	10'		9:30		X		1	X	X						
B1S3	15'		9:50		X		1	X	X						✓

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Misty Kaltwieder	6/26	1455					
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Sample Integrity:	
				6/26/92	1455	OK	

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

July 8, 1992 ChromaLab File No.: 0692264

ACC ENVIRONMENTAL CONSULTANTS

Attn: Misty Kaltreider

RE: Six soil samples for BTEX and TEPH analyses

Project Name: ALAMEDA HIGH SCHOOL
Project Number: 6029-2a
Date Sampled: June 24, 1992 Date Submitted: June 29, 1992
Date Extracted: July 2, 1992 Date Analyzed: July 2-6, 1992

RESULTS:

Sample I.D.	Diesel (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl Benzene (µg/Kg)	Total Xylenes (µg/Kg)	Kerosene (mg/Kg)	Heating Oil (mg/Kg)
B2S2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B2S3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3S1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B3S2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4S1	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
B4S2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	97%	91%	106%	101%	100%	----	----
DUP. SPIKE REC	93%	92%	108%	104%	103%	----	----
DET LIMIT	1.0	5.0	5.0	5.0	5.0	1.0	10
METHOD OF ANALYSIS	5030/ 8015	8020	8020	8020	8020	3550/ 8015	3550/ 8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

2239 Omega Road, #1 • San Ramon, California 94583
510/831-1788 • Facsimile 510/831-8798
Federal ID #68-0140157

CHROMALAB FILE # 692264
ORDER # 6888

Lab Name Chroma lab.

ACC Environmental Consultants
1000 Atlantic Ave, Suite 110
Alameda, CA 94501

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
6029-2a	Alameda High School

SAMPLER(S): (Signature)
Misty Kaltreider

ID#	Depth	Date	Time	Water	Soil	Location	# Containers	TPH as diesel	Heating Oil / Kerosene	BTEX						Remarks
B2S1	5'	6/24/02	10:50		X		1									HOLD Standard turn around time
B2S2	10'	↓	11:00		↓		1	X	X							
B2S3	16'	↓	11:30		↓		1	X	X							
B3S1	5'	↓	1:00		↓		1	X	X							(only analyze samples indicated)
B3S2	10'	↓	1:05		↓		1	X	X							
B3S3	15'	↓	1:10		↓		1									HOLD
B4S1	5'	↓	1:45		↓		1	X	X							
B4S2	10'	↓	1:50		↓		1	X	X							
B4S3	15'	↓	2:00		↓											HOLD

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Misty Kaltreider	6/24/02	17:30					
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Sample Integrity:	

CHROMALAB, INC.

Environmental Laboratory (1094)

5 DAYS TURNAROUND

July 13, 1992

ChromaLab File No.: 0792034

ACC ENVIRONMENTAL

Attn: Misty Kaltreider

RE: Three water samples for TEPH and BTEX analyses

Project Name: ALAMEDA HIGH SCHOOL
Project Number: 6029.2A
Date Sampled: July 6, 1992
Date Extracted: July 10, 1992

Date Submitted: July 6, 1992
Date Analyzed: July 10, 1992

RESULTS:

Sample I.D.	Kerosene (ug/L)	Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Total Xylenes (ug/L)	Heating Oil (mg/L)
MW-1	N.D.	170	N.D.	N.D.	N.D.	N.D.	N.D.
MW-2	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
MW-3	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE REC.	----	95%	110%	117%	105%	110%	----
DUP SPIKE REC	----	96%	100%	108%	100%	104%	----
DET. LIMIT	50	50	0.5	0.5	0.5	0.5	0.5
METHOD OF ANALYSIS	3510/ 8015	3510/ 8015	8020	8020	8020	8020	3510/ 8015

ChromaLab, Inc.

Yiu Tam
Analytical Chemist

Eric Tam
Laboratory Director

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Federal ID #68-0140157

ACC Environmental Consultants
1000 Atlantic Ave, Suite 110
Alameda, CA 94501

CHROMALAB FILE # 792034
ORDER # 6946

Lab Name Chroma Lab

CHAIN OF CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
6029-2a	Alameda High School

SAMPLER(S): (Signature) Misty Kaltreider

ID#	Depth	Date	Time	Water	Soil	Location	# Containers	TPH as diesel, Kerosene, heating oil	BTEX						Remarks
MW-1	–	7/6/92	12:30	X	–		4	X	X						Standard turnaround
MW-2	–		11:45		–		4	X	X						Time
MW-3	–		11:00		–		4	X	X						

Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Misty Kaltreider	7/6/92	16:00					
Relinquished by (Signature)	Date	Time	Received by (Signature)	Relinquished by (Signature)	Date	Time	Received by (Signature)
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time	Sample Integrity:	

RON ARCHER
CIVIL ENGINEER, INC.
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REGISTERED PROFESSIONAL ENGINEER
RONALD R. ARCHER
No. 23721
EXP. 12/31/93
CIVIL
STATE OF CALIFORNIA

JUNE 30, 1992 JOB NO. 1941

ELEVATIONS OF EXISTING MONITOR WELLS BEHIND THE GIRLS GYMNASIUM BUILDING AT THE ALAMEDA HIGH SCHOOL FACILTY, LOCATED AT 2200 CENTRAL AVENUE, BETWEEN OAK STREET AND WALNUT STREET, CITY OF ALAMEDA, ALAMEDA COUNTY, CALIFORNIA.

FOR: ACC ENVIRONMENTAL CONSULTANTS, INC.
PROJECT NO. 6029-2

BENCHMARK:
A FOUND CHISELD SQUARE IN TOP OF CURB IN MID RETURN AT THE NORTHWEST CORNER OF CENTRAL AVENUE AND OAK STREET. ELEVATION TAKEN AS 30.147 M.S.L

MONITOR WELL DATA TABLE

WELL DESIGNATION	ELEV	DESCRIPTION
MW1	31.50	TOP OF PVC CASING
	32.21	TOP OF BOX
MW2	32.16	TOP OF PVC CASING
	32.56	TOP OF BOX
MW3	31.02	TOP OF PVC CASING
	31.60	TOP OF BOX

Well Sampling ☐ Well Development ☐ check one

Well Number: MW-1

Job Number: 6039-2a

Job Name: Alameda N.S

Date: 7/6/92

Sampler: mcl

Depth to Water (measured from TOC): 9.49

Inside Diameter of Casing: 2

Depth of Boring: 15'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 4 gal.

Depth to Water after well development: —

Depth to water prior to sampling: 9.92

Bailed water stored on-site ? How ? 55-gallon drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? Yes

Water Appearance:

	yes	no
froth		X
irridesence		X
oil		X
smell		X
product		X
other, describe		X

silty

Gallons Removed	pH	EC	Temp
5	7.87	3.33	70.7
10	7.85	3.19	69.6
15	7.87	3.30	69.9
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	X
TPH (motor oil)	
BTXE	X
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	X
Field Blank	

Heating oil Kerosene

Well Sampling ☐ Well Development ☐ check one

Well Number: MW-2

Job Number: 6039-20

Job Name: Alameda N.S.

Date: 7/6/92

Sampler: MCL

Depth to Water (measured from TOC): 10.05

Inside Diameter of Casing: 2

Depth of Boring: 15'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 4 gal.

Depth to Water after well development: —

Depth to water prior to sampling: 10.54

Bailed water stored on-site ? How ? 55 gal drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? Yes

Water Appearance:

	yes	no
froth		X
irridesence		X
oil		X
smell		X
product		X
other, describe		X

Silty

Gallons Removed	pH	EC	Temp
5	7.28	7.40	68.0
10	7.23	7.18	68.3
15	7.26	7.16	67.5
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	X
TPH (motor oil)	
BTXE	X
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	X
Field Blank	

Kerosene, heating oil

Well Sampling ☐ Well Development ☐ check one

Well Number: MW-3

Job Number: 6039-22

Job Name: Alameda N.S.

Date: 7/6/92

Sampler: MCL

Depth to Water (measured from TOC): 9.03'

Inside Diameter of Casing: 2

Depth of Boring: 15'

Method of well development/purging: bailing

Amount of Water Bailed/Pumped from well: 4 gallons

Depth to Water after well development: —

Depth to water prior to sampling: 9.18

Bailed water stored on-site ? How ? 55-gal. drums

Number of well volumes removed: 4

TSP wash, distilled rinse, new rope ? yes

Water Appearance:

	yes	no
froth		X
irridesence		
oil		
smell		
product		
other, describe		

other, describe: SiH1

Gallons Removed	pH	EC	Temp
5	8.26	407	71.9
10	7.96	3.79	70.5
15	7.93	3.11	69.9
20			
25			
30			
35			
40			
45			
50			

Samples Obtained:

TPH (gasoline)	
TPH (diesel)	X
TPH (motor oil)	
BTXE	X
EPA 624	
EPA 625	
EPA 608	
PCBs only	
Metals	
Other, specify	X heating oil, Kerosene
Field Blank	