PRELIMINARY ENVIRONMENTAL ASSESSMENT
PHASE 2
EMERYVILLE SENIOR HOUSING PROJECT
4300-4310 SAN PABLO AVENUE
SCI 537.003

Prepared for:

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July 13, 1990

I INTRODUCTION

This report records the results of our Phase 2 Preliminary Environmental Assessment of 4300-4310 San Pablo Avenue in Emeryville, California. The project location is shown on the Site Plan, Plate 1. We previously performed a Phase 1 Preliminary Environmental Assessment and a Geotechnical Investigation of 4300-4328 San Pablo Avenue and presented the results in our reports dated December 4, 1989 and January 19, 1990. We also performed a Phase 2 Preliminary Environmental Assessment of 4320-4328 San Pablo Avenue and presented the results in a report dated January 30, 1990.

The site includes two adjacent lots at 4300 and 4310 San Pablo Avenue. Research conducted during our phase 1 assessment indicated that the 4310 San Pablo Avenue lot was vacant until the late 1940's when the Emeryville Post Office was constructed. The 4300 San Pablo Avenue lot was vacant until a service station was constructed in about 1930. The station remained in operation until 1966. The lot has been occupied by a car wash since 1969.

In our December 4, 1989 report, we concluded that the former service station at 4300 San Pablo Avenue was a potential source of contamination from gasoline, diesel fuel, waste oil, hydraulic oil and/or solvents. This was confirmed during our geotechnical investigation, when organic vapors were detected while drilling test borings at the site. Subsequent analytical tests of soil samples from one of the borings indicated total petroleum

hydrocarbon (as gasoline) concentrations of up to 120 parts per million (ppm). We recommended that test borings/monitoring wells be drilled/installed at the site to determine former tank location(s) and check for soil and groundwater contamination.

Our research did not indicate previous uses of the 4310 San Pablo Avenue lot that may have resulted in significant contamination. However, we concluded that all urban sites have a risk of unidentified on-site and off-premises sources of contamination. We recommended that a soil and groundwater study be conducted.

The purpose of this Phase 2 assessment, as outlined in our proposal dated February 14, 1990, was to collect and analytically test soil and groundwater samples to further check for indications of contamination. Based upon the results of our investigation, we were to develop conclusions and/or recommendations regarding:

1. Subsurface conditions,
2. Groundwater gradient and flow direction,
3. Presence of TVH, TEH, TOG, BTXE, volatile and semi-volatile organic compounds, cyanide and heavy metals in the samples tested,
4. The significance of contaminant levels with respect to state and local regulatory criteria, and
5. The scope of future investigation/monitoring, if necessary.

II FIELD INVESTIGATION

A. Contaminant Source Investigation

We searched for available records regarding the former locations of underground storage tanks at 4300 San Pablo Avenue. To date no records have been found at the City of Emeryville Building and fire departments, nor at the Mobil real estate department, the former station operator. We also reviewed available aerial photographs[1] that include the site. The 1947 and 1959 aerial photographs show structures at the site with different configurations. No indications of underground storage tank locations (such as fill inlet covers) were noted in the photographs. The Sanborn Fire Insurance map, dated 1950, does not show the underground storage tank locations.

Subsurface conditions were explored at 4300 San Pablo Avenue to check for indications of the former tank locations, such as backfill and/or gasoline contaminated soil. A total of 22 probes were drilled to depths ranging from 6.5 to 12 feet. The probe locations, shown on the Site Plan, were chosen to provide coverage of most of the site. However, some areas were not probed, due to the presence of subsurface utilities and the existing car wash structure.

The probes were drilled using truck-mounted 6-inch-diameter continuous flight augers. Our geologist/engineer observed drilling operations and prepared logs of the conditions of the

[1] Pacific Aerial Surveys Photographs, AV-11-05-14 (1947) and AV-337-07-23/24 (1959)

conditions encountered. Undisturbed soil samples were obtained at 5 foot intervals. The samples were checked in the field for organic vapors using an Organic Vapor Meter (OVM). The results are shown on the probe logs. The highest OVM reading for each probe is presented on the Site Plan. Upon completion of drilling, the probe boreholes were backfilled with cement grout. The probe logs are presented on Plates 2 through 12. Soils are classified in accordance with the Unified Soil Classification System described on Plate 16.

B. Groundwater Monitoring Wells

Based upon the results of the probes, two groundwater monitoring wells were installed in the areas with the highest OVM readings in soil. Both wells are located at 4300 San Pablo Avenue. A third well was installed at 4310 San Pablo Avenue. The well locations are shown on the Site Plan. The wells extend to depths ranging from 21 to 25 feet.

Prior to installation of the groundwater monitoring wells, a permit was obtained from the Alameda County Flood Control and Water Conservation District, Zone 7. The boreholes for the wells were drilled using truck-mounted, 8-inch-diameter, hollow stem auger equipment. The drilling and sampling equipment was steam-cleaned prior to each use. Soil cuttings generated during drilling were encapsulated in polyethylene sheets, for later disposal by others.

Our geologist/engineer observed drilling operations and prepared logs of the soils encountered. The Logs of Test Borings are presented on Plates 13 through 15. Undisturbed soil samples

were obtained from the monitoring well test borings at frequent intervals. The samples were retained in brass sample liners. Teflon sheets were placed over the sample liner ends prior to capping, taping and labeling. The samples were refrigerated until delivery to the analytical laboratory. The samples were accompanied by Chain-of-Custody Records, copies of which are presented in the Appendix.

Schematic diagrams of the groundwater monitoring wells, as installed, are shown on the Logs of Test Borings. In summary, the monitoring wells consist of 2-inch-diameter, machine-slotted PVC pipe. All of the pipe is joined by threads (no gluing nor riveting). The wells extend about 5 to 10 feet below the groundwater level measured during drilling. The well heads are provided with locks, and are set below grade in utility boxes.

The wells were developed using a pneumatic pump until the water became relatively clear. About 15 gallons of water were removed from each well. The wells were relatively slow to recharge after pumping. The removed water was placed in steel drums for later disposal by others. Groundwater samples were obtained using pre-cleaned Teflon samplers dedicated to each well. The pump was cleaned with Alconox and rinsed with distilled water prior to each use. The water samples were placed in pre-cleaned containers and refrigerated until delivery to the analytical laboratory. The samples were accompanied by Chain-of-Custody Records, copies of which are presented in the Appendix.

III GROUNDWATER LEVEL MEASUREMENTS

A level survey, using an assumed elevation reference, was performed to determine the top of casing (TOC) elevation of each of the monitoring wells. The depth to groundwater, below the top of each casing, was periodically measured using a well sounder. The direction and gradient of groundwater flow was determined, based upon this data. The flow direction for the June 22, 1990 reading is shown on the Site Plan. The results of the readings to date are summarized in Table 1.

Table 1. Summary of Groundwater Data

	MW-1 TOC Elev. 101.13 ft. Groundwater		MW-2 TOC Elev. 101.49 ft. Groundwater		MW-3 TOC Elev. 100.20 ft. Groundwater	
Date	Depth (ft.)	Elev. (ft.)[1]	Depth (ft.)	Elev. (ft.)	Depth (ft.)	Elev. (ft.)
6/6/90	5.33	95.80	7.15	94.34	6.22	93.98
6/11/90	5.52	95.61	6.98	94.51	6.50	93.70
6/18/90	5.50	95.63	7.04	94.45	6.49	93.71
6/22/90	6.18	94.95	7.60	93.89	7.11	93.09

[1] Elevation reference: Top of curb at fire hydrant on 43rd Street (see Site Plan), is assumed to be at elevation 100.00 feet

IV ANALYTICAL TESTING

Selected soil and groundwater samples were analyzed by Curtis & Tompkins, Ltd., a laboratory certified by the Department of Health Services for Hazardous Waste and Water Testing. Because the actual contents of the former service station tanks were unknown, we assumed that at least one tank contained waste oil. Accordingly, the analytical tests were directed to typical constituents of fuel and waste oil. Soil samples from each test boring were analytically tested for:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

2. Total extractable hydrocarbons (TEH), sample preparation and analysis using EPA Methods 3550 (sonication) and 8015 (modified gas chromatograph coupled to a flame ionization detector),

3. Total oil and grease (TOG), sample preparation and analysis using EPA Methods 3550 (solvent extraction) and SMWW 17: 5520F (gravimetric determination),

4. Volatile organic compounds (VOC), sample preparation and analysis using EPA Methods 5030 and 8240 (gas chromatograph and mass spectrometer), and/or

5. Benzene, toluene, xylene and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector).

A composite of soil samples was analytically tested for:

6. Semi-volatile organics, sample preparation and analysis using EPA Methods 3520 (sepratory funnel extraction) and 8270 (gas chromatograph and mass spectroscope), and

7. Title 26 heavy metals and cyanide , sample preparation and analysis using EPA Method 6010 (inductively coupled plasma spectrometer).

The groundwater samples were analytically tested for TVH, TEH, and

BTXE. The water sample from the downgradient well (MW-2) was also analytically tested for Purgeable Halocarbons.

The analytical test results are summarized in Tables 2 through 5. The analytical test reports are presented in the Appendix.

Table 2. PETROLEUM HYDROCARBON, VOLATILE ORGANIC COMPOUND OR BTXE CONCENTRATIONS IN SOIL

Sample Designation	TVH[1] (ppm)[5]	TEH[2] (ppm)	TOG[3] (ppm)	Toluene[4] (ppm)	Total Xylenes[4] (ppm)	Other[4] (ppm)
1 @ 5.5'	TNR[6]	ND[7]	TNR	TNR	TNR	TNR
1 @ 9.5'	TNR	120[8]	TNR	TNR	TNR	TNR
MW-1 @ 6'	ND	ND	ND	0.011	0.020	ND
MW-1 @ 10'	63	ND	ND	ND[9]	ND[9]	ND[9]
MW-2 @ 7'	4.1	ND	ND	ND[9]	ND[9]	ND[9]
MW-2 @ 12'	ND	ND	ND	0.007	0.007	ND
MW-2 @ 16.5'	ND	TNR	TNR	ND	ND	ND
MW-3 @ 6'	ND	ND	ND	ND[9]	ND[9]	ND[9]

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1 TVH = Total Volatile Hydrocarbons as determined by EPA Methods 5030 and 8015 modified
2 TEH = Total Extractable Hydrocarbons as determined by EPA Methods 3550 and 8015
3 TOG = Total oil and grease, as determined by SMWW 17:5520F
4 As determined by EPA Method 8020 unless otherwise indicated
5 ppm = parts per million = milligrams per kilogram = mg/kg
6 TNR = Test not requested
7 ND = None detected, chemicals not present at concentrations above detection limits
8 Quantified by laboratory as gasoline
9 As determined by EPA Method 8240

Table 3. LEAD CONCENTRATION IN SOIL

	Total Lead (ppm)[1]
MW-1 @ 6 '	16
MW-2 @ 7'	15
MW-3 @ 2'	17
Regulatory Criteria	1000

Table 4. ORGANIC CHEMICAL CONCENTRATIONS IN SOIL COMPOSITE[2]

Analytical Test	Concentration
EPA Method 8270[3] chemicals	ND[4]
Cyanide	ND

Table 5. PETROLEUM HYDROCARBON, BTXE AND PURGEABLE HALOCARBON CONCENTRATIONS IN GROUNDWATER

Sample Designation	TVH (ppb)[7]	TEH (ppb)	B[5] (ppb)	T (ppb)	X (ppb)	E (ppb)	Purgeable Halocarbons[6] (ppb)
MW-1	940	1,900	5.3	1.8	1.9	1.8	TNR
MW-2	1,800	2,800	ND	ND	3.8	3.8	ND
MW-3	ND	ND	ND	ND	ND	0.5	TNR

1 ppm = parts per million = milligrams per kilogram = mg/kg
2 Composite includes samples MW-1 @ 6', MW-2 @ 7' and MW-3 @ 2'
3 Method includes the chemicals listed on the test reports in the Appendix
4 ND = None detected, chemicals not present at concentrations above the detection limits
5 B = Benzene, T = Toluene, X = Total Xylenes, E = Ethylbenzene, all determined by EPA Method 8010
6 As determined by EPA Method 8010
7 Parts per billion = micrograms per Liter = ug/L

Table 6. HEAVY METAL CONCENTRATIONS IN SOIL COMPOSITE[1]

Total Metal	Concentrations (ppm)[5]	Regulatory Criteria STLC[2] (ppm)	TTLC[3] (ppm)
Antimony (Sb)	ND[4]	15[5]	500
Arsenic (As)	ND	5	500
Barium (Ba)	140	100[6]	10,000[7]
Beryllium (Be)	ND	0.75	75
Cadmium (Cd)	1.0	1.0	100
Chromium (Cr)[8]	18	560	2,500
Cobalt (Co)	11	80	8,000
Copper (Cu)	23	25	2,500
Lead (Pb)	16	5	1,000
Mercury (Hg)	ND	0.2	20
Molybdenum (Mo)	ND	350	3,500
Nickel (Ni)	24	20	2,000
Selenium (Se)	ND	1.0	1,000
Silver (Ag)	ND	5	500
Thallium (Tl)	ND	7.0	700
Vanadium (V)	12	24	2,400
Zinc (Zn)	40	250	5,000

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1 Composite includes samples MW-1 @ 6', MW-2 @ 7' and MW-3 @ 2'
2 Soluble Threshold Limit Concentration (22 CAC 66699). Provided for reference only and should not be compared to test results.
3 Total Threshold Limit Concentration (CAC 666999)
4 ND = None detected
5 ppm = parts per million = milligrams per kilogram = mg/kg
6 Excluding Barite
7 Excluding Barite and Barium Sulfate
8 Total Chromium compounds

V SITE CONDITIONS

A. Surface Conditions

The site includes 2 adjacent lots situated on the northeast corner of the intersection of San Pablo Avenue and 43rd Street. The relatively level lots cover an area measuring about 100 by 215 feet in plan. The site is bordered by residential areas to the north and east.

The Emeryville Post Office currently occupies the 4310 San Pablo Avenue lot. The post office consists of 2 buildings surrounded by paved access areas. The 4300 San Pablo lot is paved and occupied by a car wash facility.

B. Subsurface Conditions

Information regarding subsurface conditions at the site was obtained from test borings drilled during our previous geotechnical investigation (the applicable boring logs are presented in the Appendix), and borings and probes drilled for this investigation. The site is blanketed with silty and sandy clays to a depth of about 15 feet. Local areas of surface fills (consisting of clays) up to about 5 feet deep were encountered. Because the site was previously a gasoline station, it is likely that backfilled former tank excavations also exist at the site. Beneath the silty and sandy clays, are interbedded layers of clays, silty sands and clayey gravels to the depths explored.

Groundwater was measured at depths ranging from about 11 to 18 feet below the groundsurface during drilling and about 6 to

7.5 feet during subsequent measurements from the monitoring wells.

VI CONCLUSIONS

A. General

1. 4310 San Pablo Avenue (Post Office Site)

Based upon our research, we conclude that there are no indications of past or current sources of hazardous materials on the site. We judge that if unidentified hazardous materials were used on-site, the most likely soil contamination that could have occurred would have resulted from surface spills. Analytical tests of soil samples from 4310 San Pablo Avenue and the adjacent sites did not indicate contaminants. In addition, no contaminants were detected in the groundwater samples from the site. Accordingly, we judge that the site does not appear to be contaminated with chemicals associated with typical commercial properties.

2. 4300 San Pablo Avenue (Car Wash/Service Station Property)

Our preliminary assessment indicates that fuel related contaminants are present in the soil and groundwater at the site. Relatively low quantities of heavy metals exist in the soil at the site. No detectable concentrations of oil and grease (TOG), volatile organic compounds (other than toluene and xylene), cyanide and semi-volatile organics exist in the soil samples

tested. Purgeable halocarbons (solvents) were not detected in the groundwater. Our findings are discussed in more detail in the following sections.

B. Soil Contamination at 4300 San Pablo Avenue

1. Fuel-Related Contaminants

Elevated concentrations of petroleum hydrocarbons (TEH and TVH) and associated fuel constituents (toluene and xylene) were detected in soil samples from 4300 San Pablo Avenue at Test Boring 1, and Wells MW-1 and MW-2. Additionally, numerous samples from the probes at 4300 San Pablo Avenue exhibited concentrations of organic vapors.

We judge that the contamination appears to be associated with the past use of the site at 4300 San Pablo Avenue as a service station. In particular, it appears that the former tanks, fuel pipelines and/or pumps may have leaked. Our research of available records, and subsurface exploration (with probes), did not result in identification of the former underground tank location(s). However, relatively high organic vapor concentrations were measured in the two areas where Monitoring Wells MW-1 and MW-2 were installed. Higher vapor concentrations would be anticipated near former leaks in underground tanks and/or fuel pipelines.

The petroleum hydrocarbon concentrations identified in soil are all from 4300 San Pablo Avenue, and range from 4 to 120 ppm. Because the site was previously a gasoline station, buried tanks and/or fuel pipelines could still exist. In addition,

contaminated soil, and/or tank excavation backfill may be encountered during site demolition and/or grading. We recommend that the site be evaluated after site demolition to determine if additional soil sampling and analytical testing is necessary. Soil remediation may be required, depending upon the contaminant levels encountered during site development, and requirements of regulatory agencies. Additional investigation may also be required, based upon the results of the regulatory agency review.

2. Heavy Metals, Semi-Volatile Organics and Cyanide

One soil composite was analyzed for heavy metals, semi-volatile organic compounds and cyanide. The results presented in Tables 4 and 6, do not represent chemical concentrations at specific locations, but instead represent an average of the chemical/metal concentration within the samples included in the composites.

Semi-volatile organic compounds and cyanide were not detected in the composite sample. However, several heavy metals (Ba, Cd, Cr, Co, Cu, Pb, Ni, V, Zn) were detected. Total lead was also detected in the individual samples making up the composite. However, the total metal concentrations detected are considered low and not indicative of a contamination problem requiring further study. Concentrations similar to those detected are frequently encountered in soils in the Bay Area and are often considered to represent background levels.

C. Groundwater Contamination at 4300 San Pablo Avenue

Total petroleum hydrocarbons as gasoline and diesel, and fuel constituents (benzene, toluene, xylene, and ethylbenzene)

are present in the groundwater beneath the site at 4300 San Pablo Avenue. The highest concentrations were encountered in Wells MW-1 and MW-2, however, no floating product was observed in any of the wells.

We judge the source of contamination was previous tank and/or pipe leakage. The lateral and vertical extent of the dissolved product in groundwater cannot be defined by the data generated to date. Whether or not groundwater remediation will be necessary will depend upon the results of regulatory agency review. At a minimum, quarterly monitoring of the existing wells will likely be required. In addition, depending upon the results of regulatory agency review, investigation of the extent of groundwater contamination, and evaluating the need for remediation may be required

D. Submittals to Regulatory Agencies

We recommend that this report be provided to the following regulatory agencies:

Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Mr. Lester Feldman
California Regional Water Quality Control Board
San Francisco Bay Region
1800 Harrison Street
Oakland, California

E. Limitations

This study was intended to provide a preliminary means of checking the site for indications of soil contamination, based

upon the previous known use of the lots. If areas of contamination exist on other portions of the property, away from the areas investigated, it is probable that they would not have been detected by the analyses. In addition, if chemicals that were not tested for were used at the site, they would not have been detected during this study.

List of Attached Plates:

Plate 1	Site Plan
Plate 2 thru 12	Logs of Probes 1 thru 22
Plates 13 thru 15	Logs of Monitoring Wells MW-1 thru MW-3
Plate 16	Unified Soil Classification System

Appendix:

Analytical Test Results
Chain-of-Custody Records
Logs of Test Borings 1 and 2 (from previous investigation

Distribution:

5 copies: Mr. Ignacio M. Dayrit
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1 copy: Ms. Alice M. Beasley
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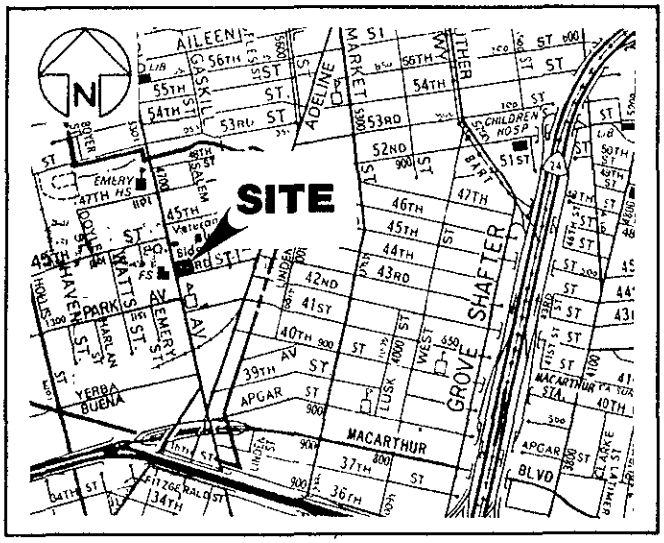
JNA:WKW:RWR:nf



VICINITY MAP

EMERYVILLE POST (

MONITORING WELL

PROBE (SHOWING HIGHEST OVM READING IN ppm)

PREVIOUS SCI TEST BORING

FORMER FUEL STATION PRIOR TO 1950 (APPROXIMATE LOCATION)

FORMER FUEL STATION AFTER 1959 (APPROXIMATE LOCATION)

— X — FENCE

SITE PLAN

NOTE: DIMENSIONS SHOWN ON PLAN WERE DETERMINED FROM KNOWN LANDMARKS AND ARE APPROXIMATE

EMERYVILLE SENIOR HOUSING

NUMBER	DATE	APPROVED
7.003	6/13/90	

PLATE 1

LOG OF TEST BORING P1

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT
				0		
			700	5		20
				10		
				15		

ASPHALTIC CONCRETE
BASE ROCK - 12" thick
DARK GRAY-BROWN SILTY CLAY (CL)
medium stiff, moist
BROWN SANDY CLAY (CL)
medium dense, moist

borehole backfilled with neat cement grout

LOG OF TEST BORING P2

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT
				0		
			200	5		17
				10		-
				15		

ASPHALTIC CONCRETE - 2" thick
BASE ROCK - 8" thick
DARK GRAY SILTY CLAY (CL)
medium dense, moist, with sand and gravel (fill)
GRAY-BROWN SANDY CLAY (CL)
medium stiff, moist, fine grained sand

MOTTLED LIGHT GRAY, BROWN & GRAY-GREEN SILTY CLAY (CL)
medium stiff, moist

borehole backfilled with neat cement grout

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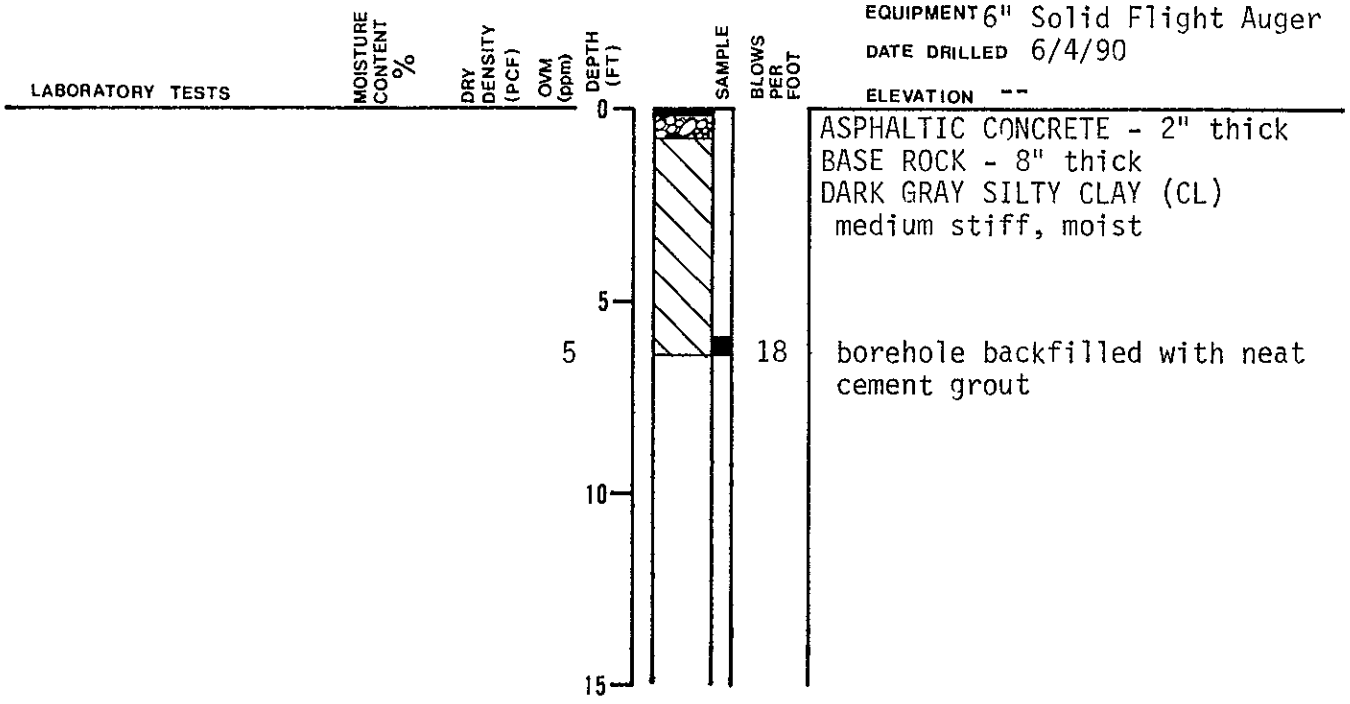
PLATE 2

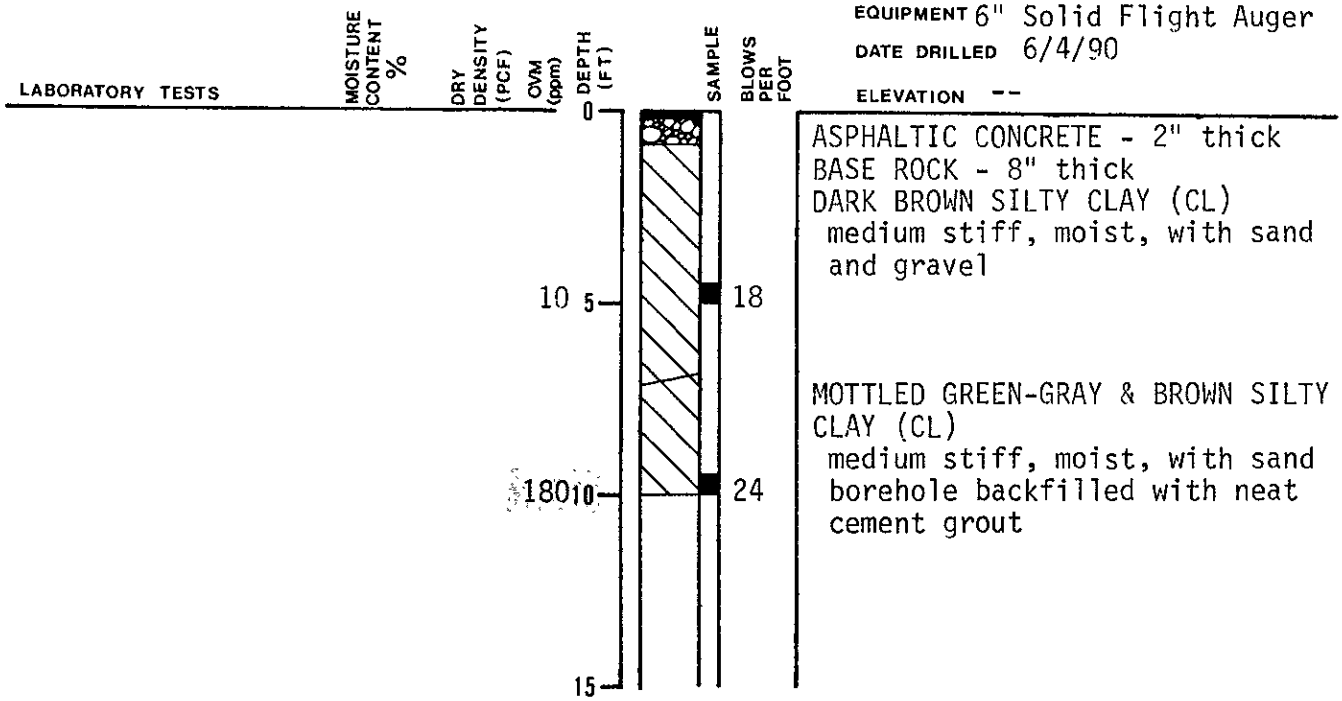
LOG OF TEST BORING P3

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --



LOG OF TEST BORING P4

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --



Subsurface Consultants	EMERYVILLE SENIOR HOUSING			PLATE 3
	JOB NUMBER 537.003	DATE 6/13/90	APPROVED	

LOG OF TEST BORING P5

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK BROWN SILTY CLAY (CL) medium stiff, moist, with sand
				5			
			0			23	BROWN GRAVELLY CLAY (CL) medium stiff, moist
					▼		GROUNDWATER LEVEL DURING DRILLING
				10			
			30			-	borehole backfilled with neat cement grout
				15			

LOG OF TEST BORING P6

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick GRAY-BROWN SILTY CLAY (CL) medium stiff, moist
				5			
			50			14	borehole backfilled with neat cement grout
				10			
				15			

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PLATE 4

LOG OF TEST BORING P7

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick MOTTLED GRAY-GREEN SILTY CLAY (CL) medium stiff, moist, with sand and gravel
			500	5		16	GRAY-GREEN GRAVELLY CLAY (CL) medium stiff, moist borehole backfilled with neat cement grout
				10			
				15			

LOG OF TEST BORING P8

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK GRAY SILTY CLAY (CL) medium stiff, moist
			50	5		18	
				10			MOTTLED GREEN-GRAY & BROWN SILTY CLAY (CL) medium stiff, moist, with fine grained sand borehole backfilled with neat cement grout
			50			20	
				15			

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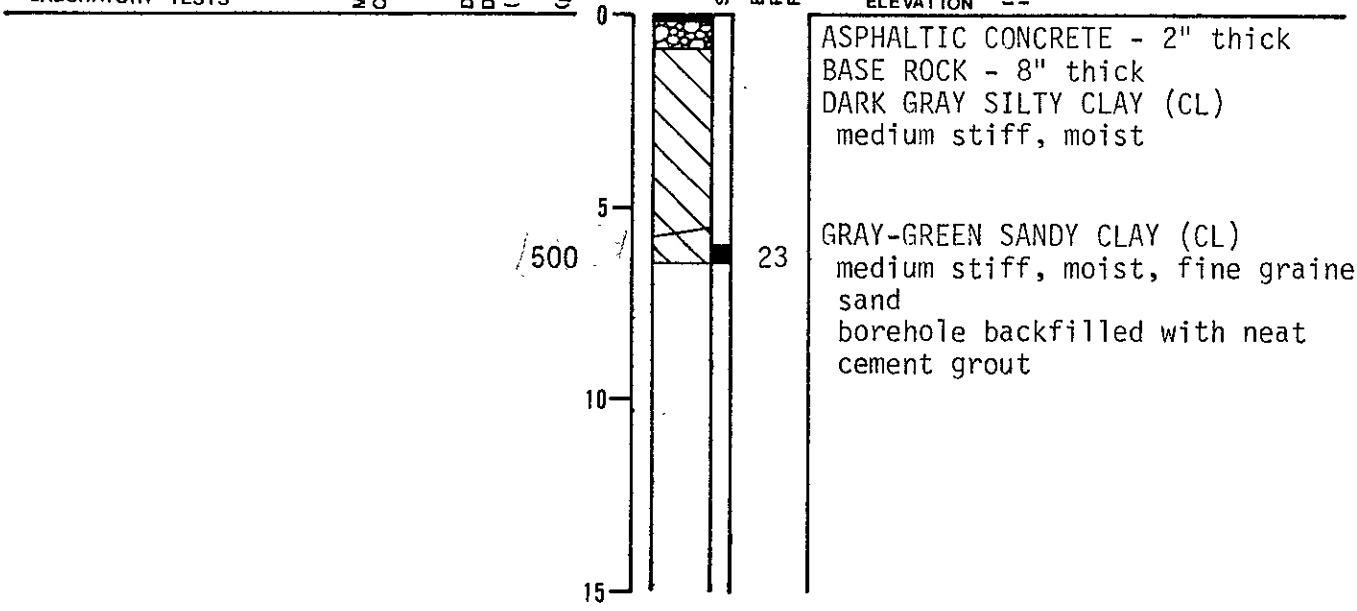
PLATE 5

LOG OF TEST BORING P9

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

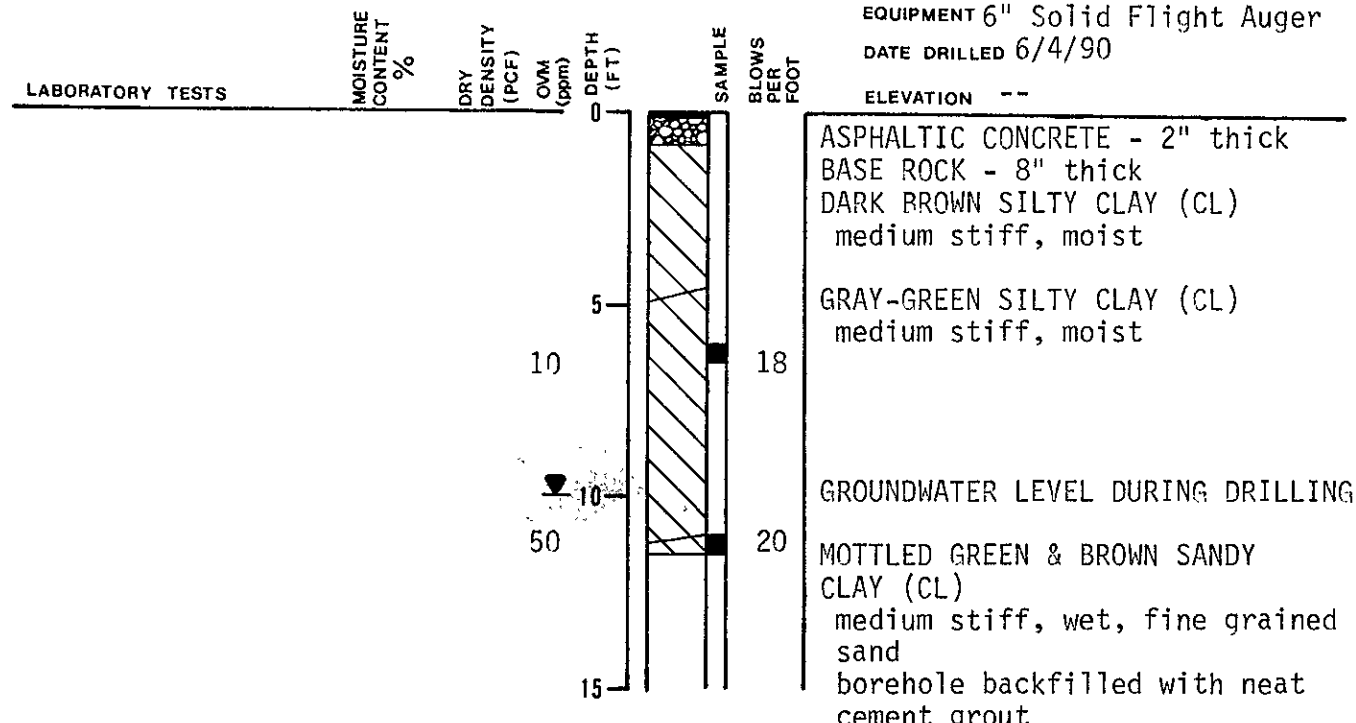


ASPHALTIC CONCRETE - 2" thick
BASE ROCK - 8" thick
DARK GRAY SILTY CLAY (CL)
medium stiff, moist

GRAY-GREEN SANDY CLAY (CL)
medium stiff, moist, fine grained sand
borehole backfilled with neat cement grout

LOG OF TEST BORING P10

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --



ASPHALTIC CONCRETE - 2" thick
BASE ROCK - 8" thick
DARK BROWN SILTY CLAY (CL)
medium stiff, moist

GRAY-GREEN SILTY CLAY (CL)
medium stiff, moist

GROUNDWATER LEVEL DURING DRILLING

MOTTLED GREEN & BROWN SANDY CLAY (CL)
medium stiff, wet, fine grained sand
borehole backfilled with neat cement grout

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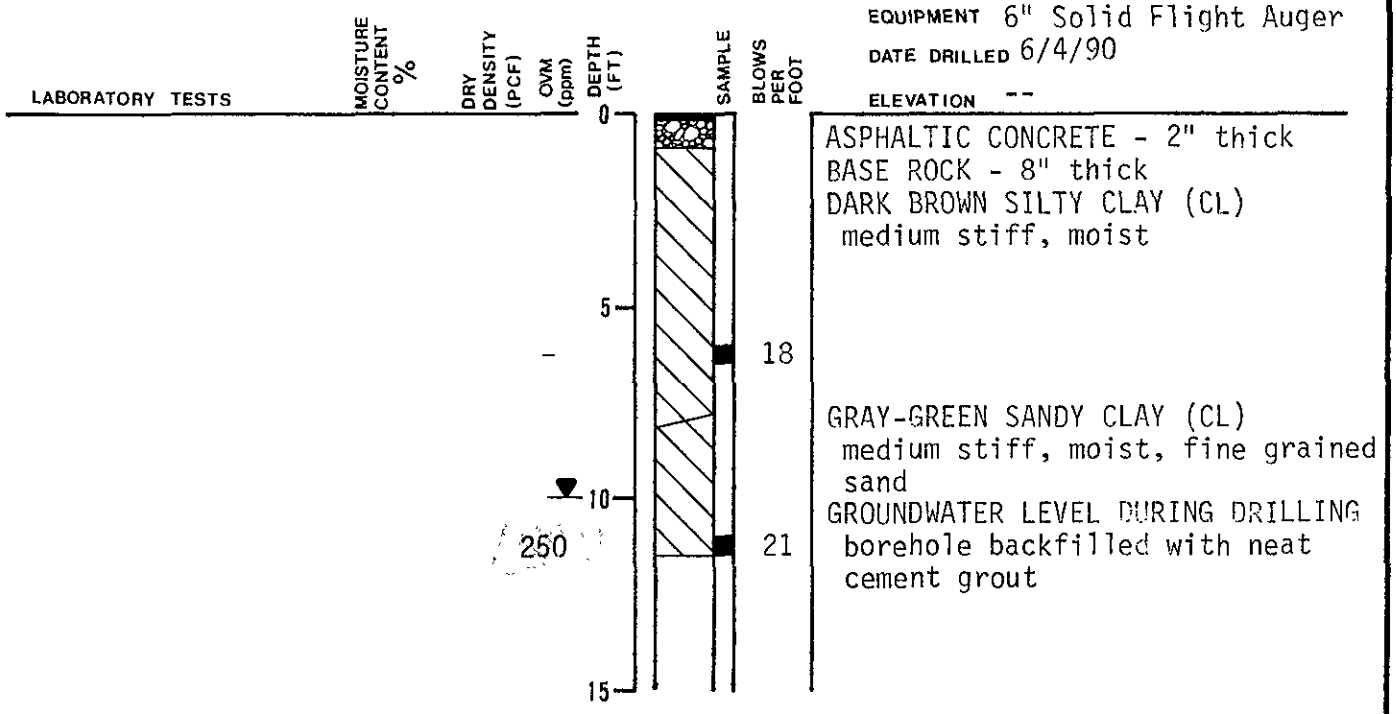
PLATE 6

LOG OF TEST BORING P11

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

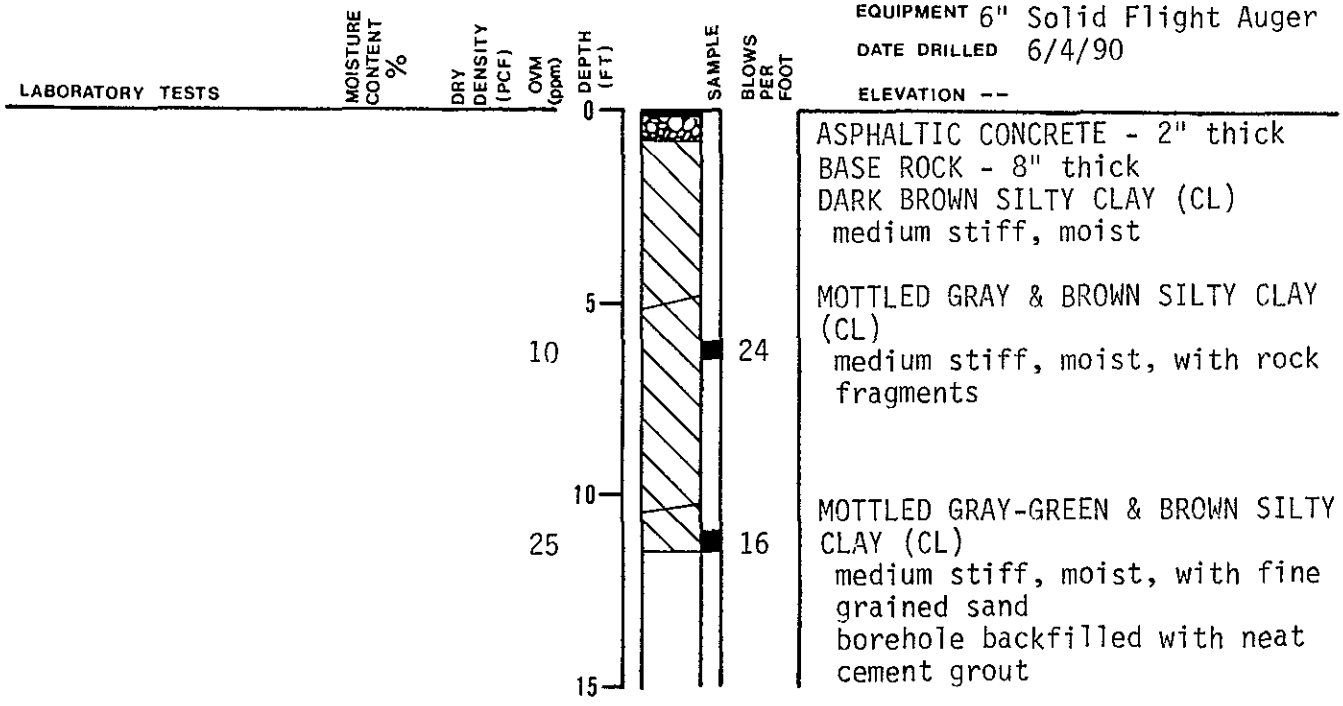


ASPHALTIC CONCRETE - 2" thick
BASE ROCK - 8" thick
DARK BROWN SILTY CLAY (CL)
medium stiff, moist

GRAY-GREEN SANDY CLAY (CL)
medium stiff, moist, fine grained sand
GROUNDWATER LEVEL DURING DRILLING
borehole backfilled with neat cement grout

LOG OF TEST BORING P12

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --



ASPHALTIC CONCRETE - 2" thick
BASE ROCK - 8" thick
DARK BROWN SILTY CLAY (CL)
medium stiff, moist

MOTTLED GRAY & BROWN SILTY CLAY (CL)
medium stiff, moist, with rock fragments

MOTTLED GRAY-GREEN & BROWN SILTY CLAY (CL)
medium stiff, moist, with fine grained sand
borehole backfilled with neat cement grout

Subsurface Consultants

EMERYVILLE SENIOR HOUSING

JOB NUMBER	DATE	APPROVED	PLATE
537.003	6/13/90		7

LOG OF TEST BORING P13

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK BROWN SILTY CLAY (CL) medium stiff, moist
				5			
			50			20	borehole backfilled with neat cement grout
				10			
				15			

LOG OF TEST BORING P14

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK BROWN SILTY CLAY (CL) medium stiff, moist
				5			
			0			20	BROWN CLAYEY GRAVEL (GC) medium dense, moist borehole backfilled with neat cement grout
				10			
				15			

Subsurface Consultants

EMERYVILLE SENIOR HOUSING

JOB NUMBER 537.003 | DATE 6/13/90 | APPROVED

PLATE 8

LOG OF TEST BORING P15

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK BROWN SILTY CLAY (CL) medium stiff, moist
			0	5		20	
				10			RED-BROWN & GRAY SILTY CLAY (CL) medium stiff, moist
			0			17	RED-BROWN CLAYEY GRAVEL (GC) medium dense, moist borehole backfilled with neat cement grout
				15			

LOG OF TEST BORING P16

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/4/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK BROWN SILTY CLAY (CL) medium stiff, moist
			10	5		22	BROWN CLAYEY GRAVEL (GC) medium dense, moist borehole backfilled with neat cement grout
				10			
				15			

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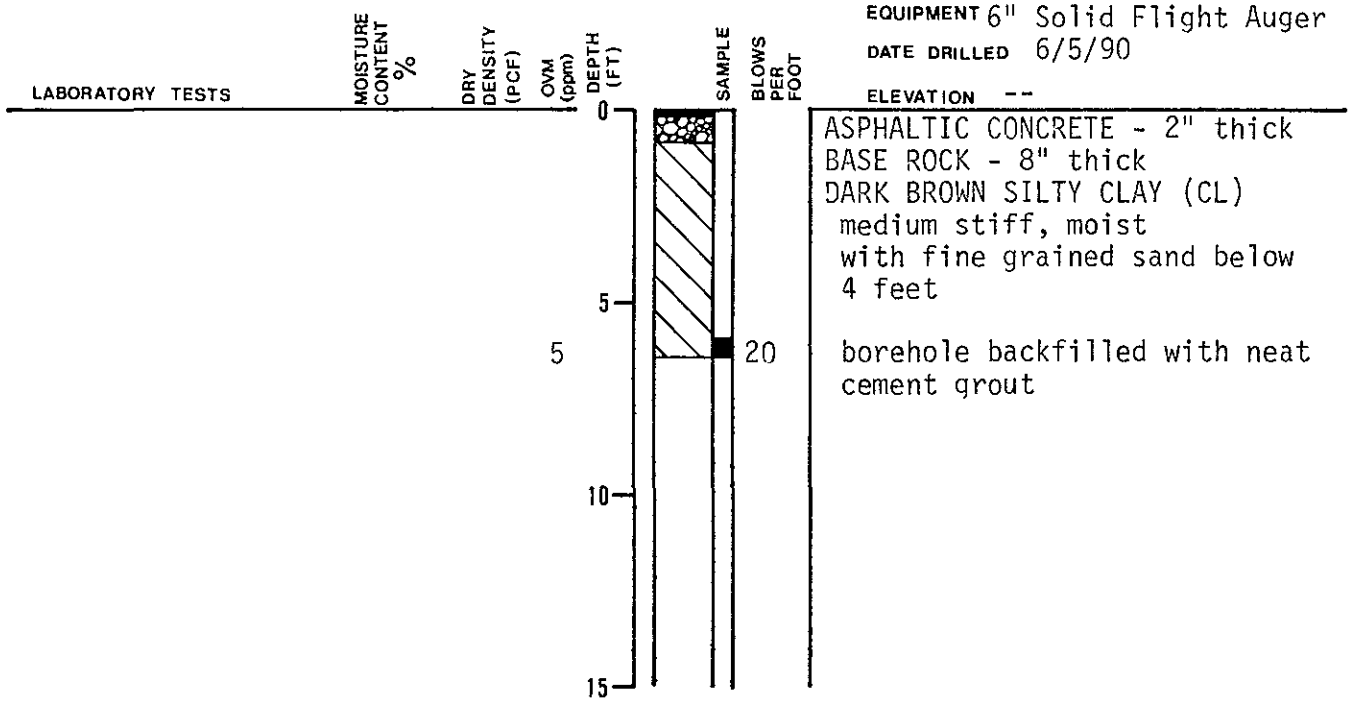
JOB NUMBER 537.003 | DATE 6/13/90 | APPROVED

PLATE 9

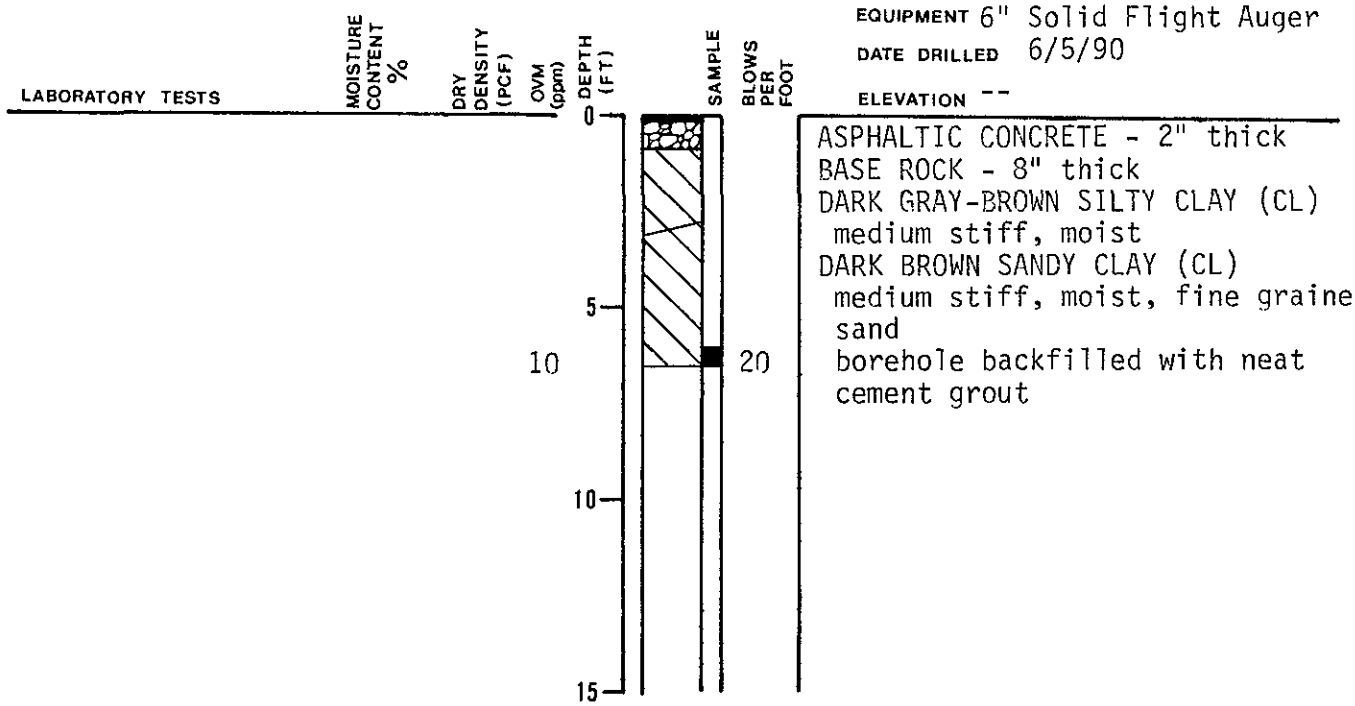
LOG OF TEST BORING P17

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/5/90
ELEVATION --



LOG OF TEST BORING P18

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/5/90
ELEVATION --



Subsurface Consultants

EMERYVILLE SENIOR HOUSING

JOB NUMBER 537.003 | DATE 6/13/90 | APPROVED

PLATE 10

LOG OF TEST BORING P19

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/5/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK GRAY-BROWN SILTY CLAY (CL) medium stiff, moist
				5			BROWN SILTY CLAY (CL) medium stiff, moist, with fine grained sand
			5			16	borehole backfilled with neat cement grout
				10			
				15			

LOG OF TEST BORING P20

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/5/90
ELEVATION --

LABORATORY TESTS	MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
				0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 10" thick BLUE-GRAY & DARK GRAY SILTY CLAY (CL) medium stiff, moist, with brick fragments (fill)
				5			DARK GRAY SILTY CLAY (CL) medium stiff, moist
			0			12	borehole backfilled with neat cement grout
				10			
				15			

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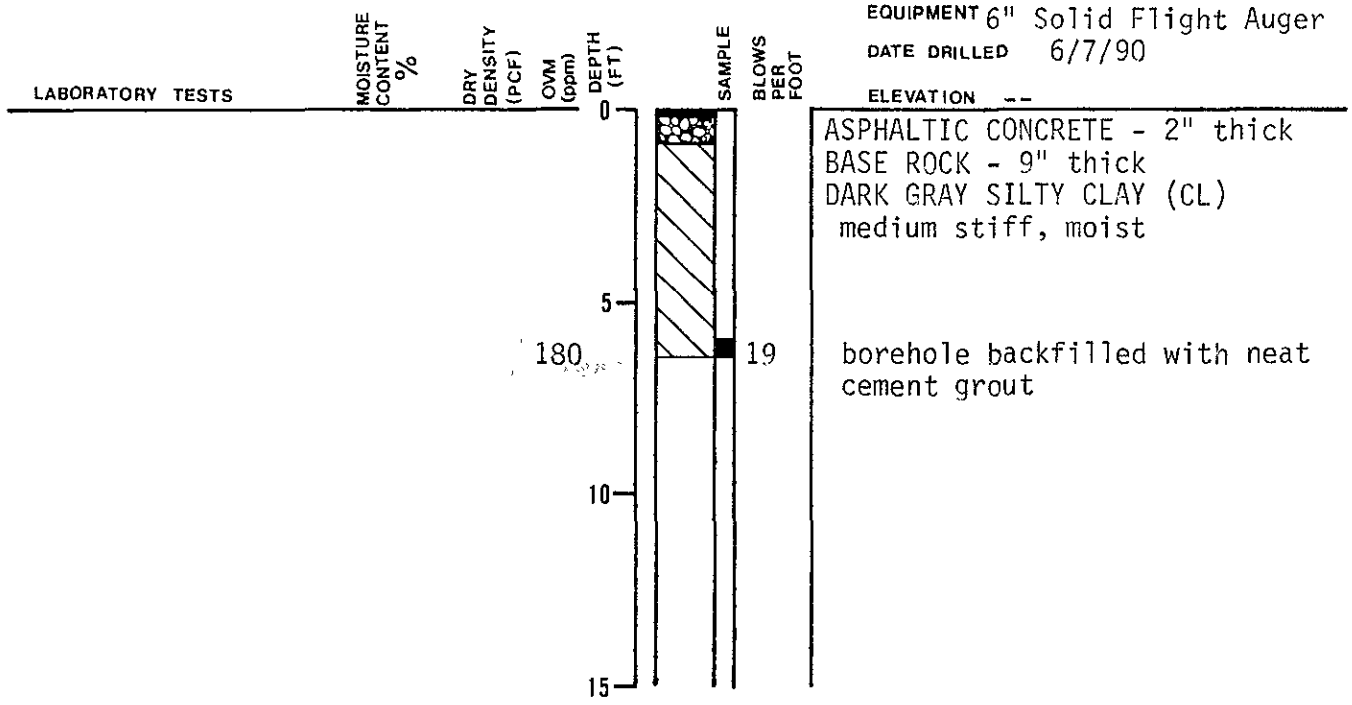
EMERYVILLE SENIOR HOUSING

JOB NUMBER	DATE	APPROVED	PLATE
537.003	6/13/90		11

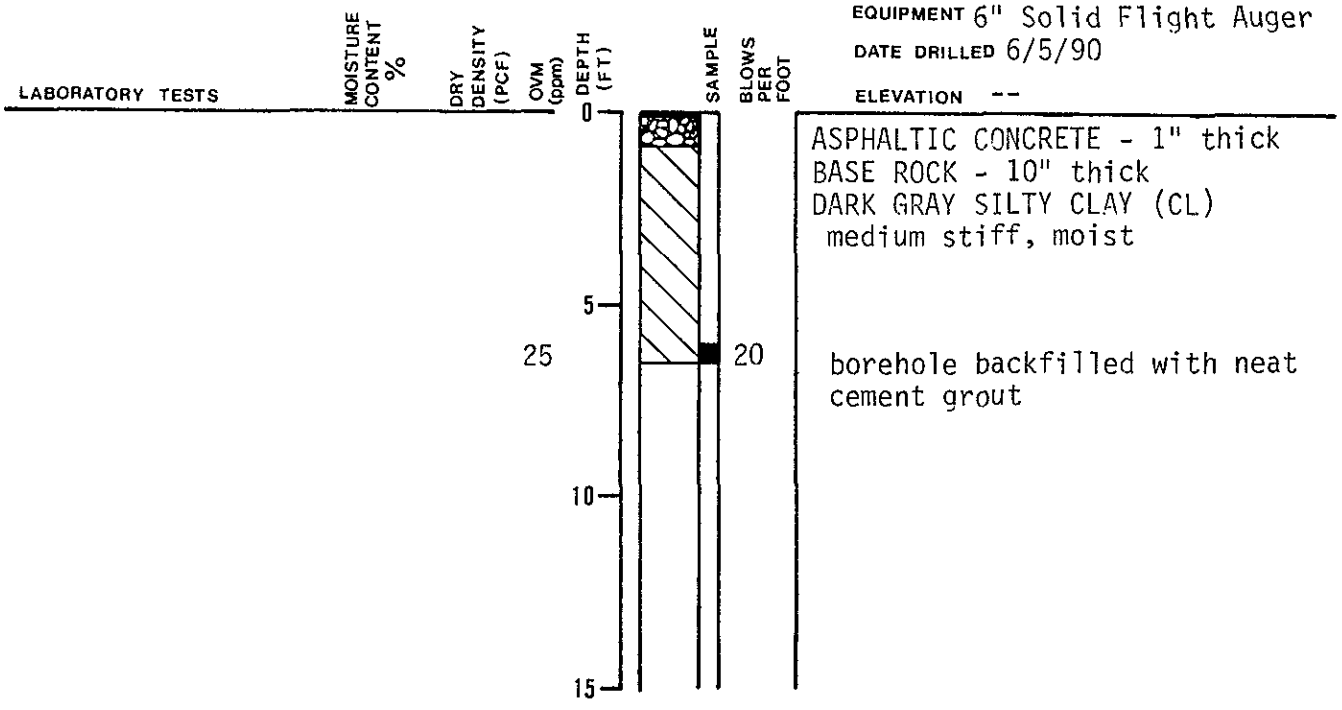
LOG OF TEST BORING P21

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/7/90
ELEVATION --



LOG OF TEST BORING P22

EQUIPMENT 6" Solid Flight Auger
DATE DRILLED 6/5/90
ELEVATION --



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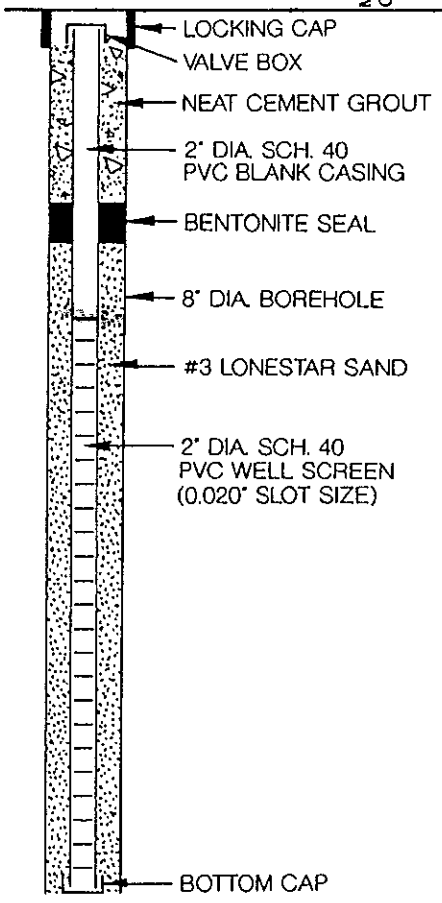
EMERYVILLE SENIOR HOUSING

JOB NUMBER 537.003 | DATE 6/13/90 | APPROVED

PLATE 12

LOG OF TEST BORING MW-1

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/5/90
ELEVATION 101.13 feet**



MOISTURE CONTENT %	DRY DENSITY (PCF)	OVM (ppm)	DEPTH (FT)	SAMPLE	BLOWS PER FOOT	
			0			ASPHALTIC CONCRETE - 2" thick BASE ROCK - 8" thick DARK GRAY SILTY CLAY (CL) medium stiff, moist
			5			GROUNDWATER LEVEL 6/6/90
		300			12	MOTTLED BROWN & GRAY-GREEN SANDY CLAY (CL) medium stiff, moist, fine grained sand, with gravel
		800	10		19	
		0			20*	MOTTLED BROWN & GRAY-GREEN SILTY CLAY (CL) medium stiff, moist, with fine grained sand
		0			19	
		0			17	
			15			
		0			18	
		0			10	GROUNDWATER LEVEL DURING DRILLING
		0			16	
			20			
		0			15	
			25			
			30			
			35			
			40			

SAMPLER TYPE:
CALIFORNIA DRIVE
O.D.: 2.5 inches
I.D.: 2.0 inches
*MODIFIED CALIFORNIA DRIVE
O.D.: 3.0 inches
I.D.: 2.5 inches

HAMMER WEIGHT: 140 pounds
HAMMER DROP: 30 inches

**Top of casing, using assumed elevation reference as shown on Site Plan, Plate 1

Subsurface Consultants

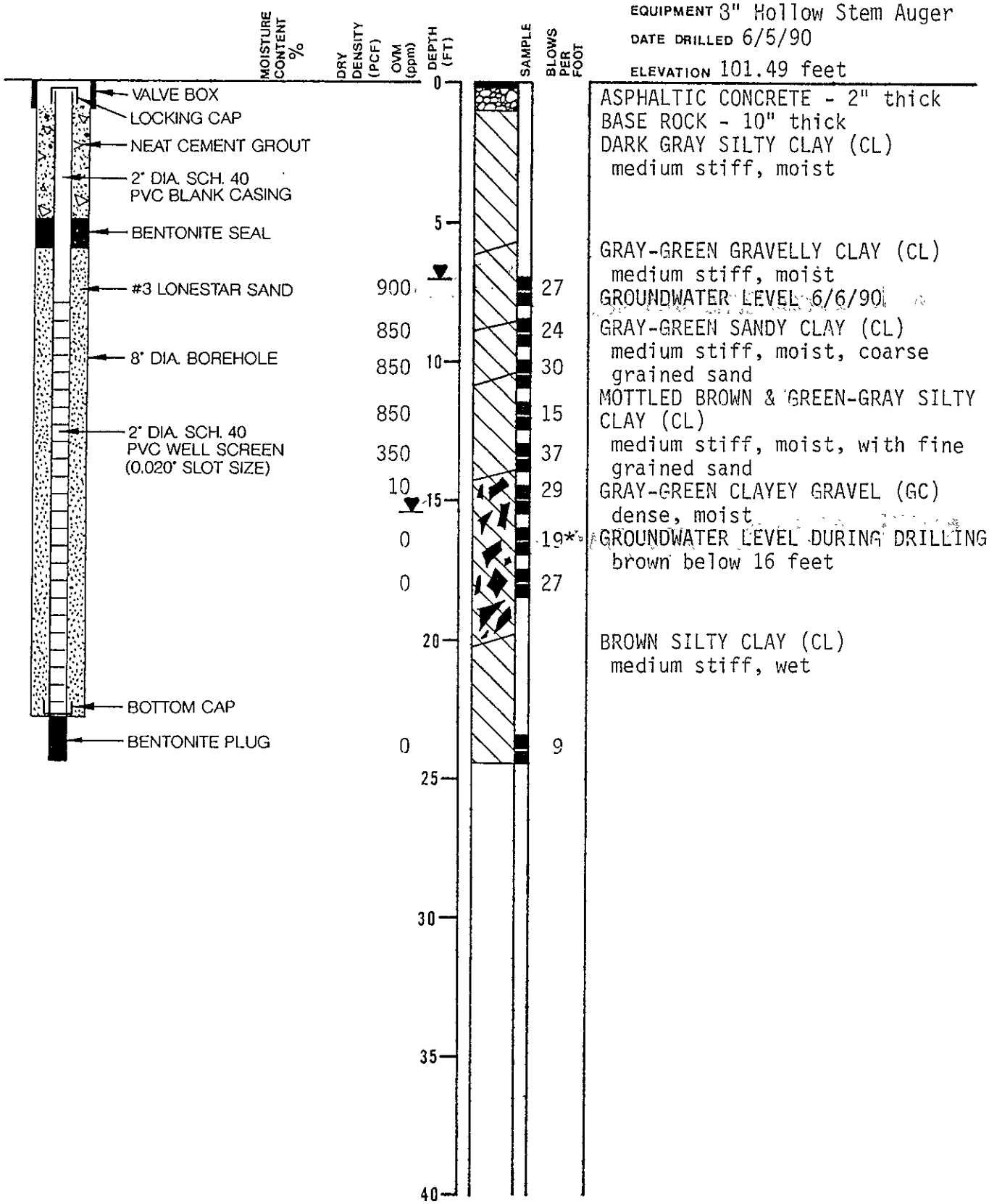
EMERYVILLE SENIOR HOUSING

JOB NUMBER 537.003 | DATE 6/13/90 | APPROVED

PLATE 13

LOG OF TEST BORING MW-2

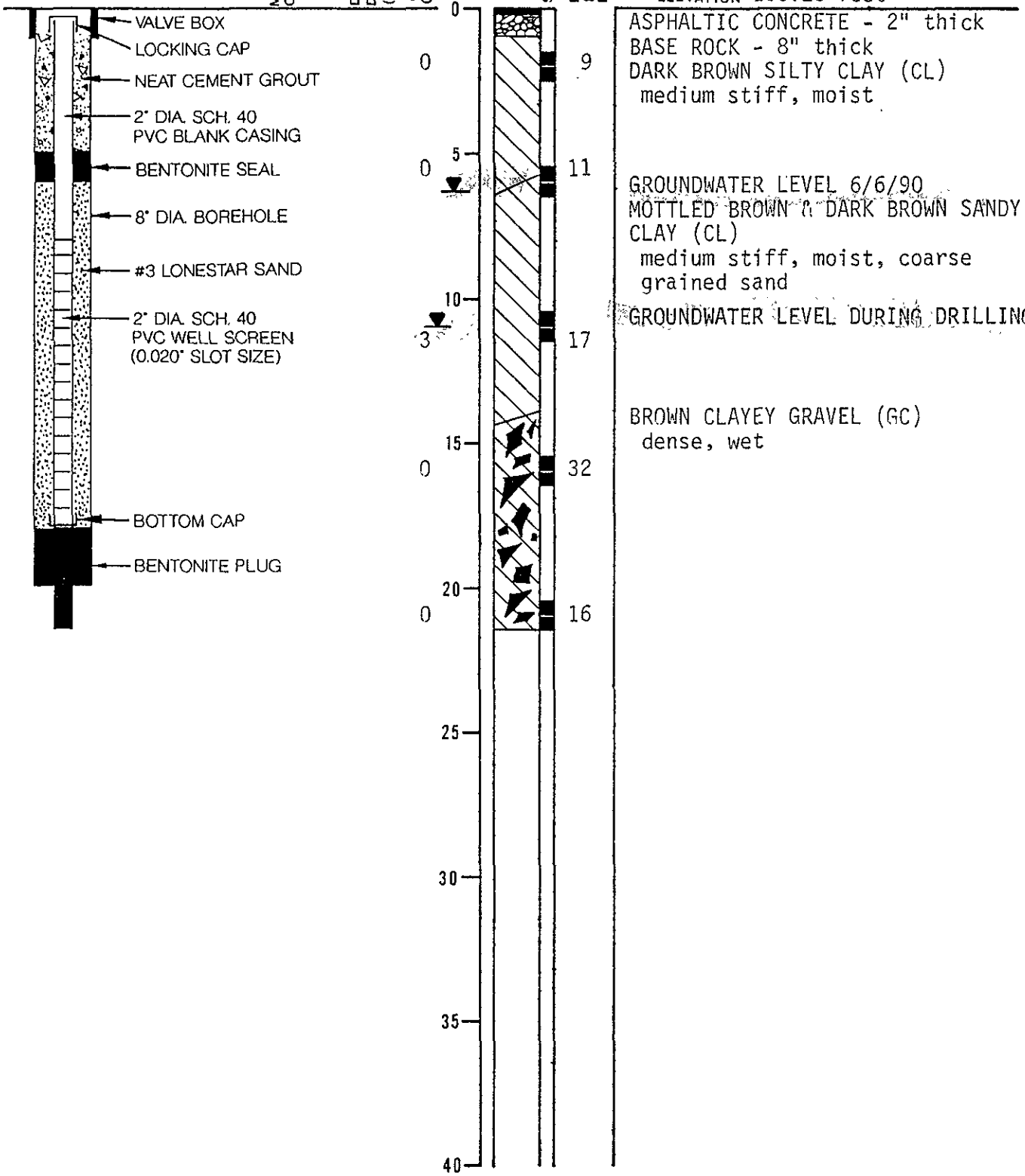
EQUIPMENT 3" Hollow Stem Auger
DATE DRILLED 6/5/90
ELEVATION 101.49 feet



Subsurface Consultants	EMERYVILLE SENIOR HOUSING			PLATE 14
	JOB NUMBER 537.003	DATE 6/13/90	APPROVED	

LOG OF TEST BORING MW-3

EQUIPMENT 8" Hollow Stem Auger
DATE DRILLED 6/5/90
ELEVATION 100.20 feet



Subsurface Consultants	EMERYVILLE SENIOR HOUSING			PLATE 15
	JOB NUMBER 537.003	DATE 6/13/90	APPROVED	

GENERAL SOIL CATEGORIES			SYMBOLS		TYPICAL SOIL TYPES
COARSE GRAINED SOILS More than half is larger than No. 200 sieve	GRAVEL More than half coarse fraction is larger than No. 4 sieve size	Clean Gravel with little or no fines	GW		Well Graded Gravel, Gravel-Sand Mixtures
			GP		Poorly Graded Gravel, Gravel-Sand Mixtures
		Gravel with more than 12% fines	GM		Silty Gravel, Poorly Graded Gravel-Sand-Silt Mixtures
			GC		Clayey Gravel, Poorly Graded Gravel-Sand-Clay Mixtures
	SAND More than half coarse fraction is smaller than No. 4 sieve size	Clean sand with little or no fines	SW		Well Graded Sand, Gravelly Sand
			SP		Poorly Graded Sand, Gravelly Sand
		Sand with more than 12% fines	SM		Silty Sand, Poorly Graded Sand-Silt Mixtures
			SC		Clayey Sand, Poorly Graded Sand-Clay Mixtures
FINE GRAINED SOILS More than half is smaller than No. 200 sieve	SILT AND CLAY Liquid Limit Less than 50%		ML		Inorganic Silt and Very Fine Sand, Rock Flour, Silty or Clayey Fine Sand, or Clayey Silt with Slight Plasticity
			CL		Inorganic Clay of Low to Medium Plasticity, Gravelly Clay, Sandy Clay, Silty Clay, Lean Clay
			OL		Organic Clay and Organic Silty Clay of Low Plasticity
	SILT AND CLAY Liquid Limit Greater than 50%		MH		Inorganic Silt, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silt
			CH		Inorganic Clay of High Plasticity, Fat Clay
			OH		Organic Clay of Medium to High Plasticity, Organic Silt
HIGHLY ORGANIC SOILS			PT		Peat and Other Highly Organic Soils

UNIFIED SOIL CLASSIFICATION SYSTEM

Subsurface Consultants

EMERYVILLE SENIOR HOUSING

JOB NUMBER	DATE	APPROVED
537.003	6/13/90	

PLATE 16

CITY OF EMERYVILLE
REDEVELOPMENT AGENCY
2200 POWELL STREET, SUITE 1200
EMERYVILLE, CALIFORNIA 94608
(415) 654-6161

July 31, 1990

Dennis Byrne
Alameda County Health Care Services Agency
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Byrne:

Please find enclosed a copy of the Phase 2 Preliminary Environmental Assessment of 4300 - 4310 San Pablo Avenue in Emeryville, prepared by Subsurface Consultants Inc. (SCI) for the City of Emeryville Redevelopment Agency. This study concluded that the property located at 4310 San Pablo Avenue does not appear to be contaminated with chemicals.

SCI concluded that the soil at 4300 San Pablo Avenue had petroleum hydrocarbons ranging up to 120 ppm. They recommended that the site be evaluated after site demolition and stated that soil remediation may be required based upon the results of regulatory agency review.

SCI also concluded that groundwater at 4300 San Pablo Avenue contained petroleum hydrocarbons. They recommended that the existing wells be monitored quarterly and stated that the regulatory agency would determine if additional investigation and/or groundwater remediation will be necessary.

The City proposes to construct senior housing and commercial spaces on the site. If additional investigation and/or remediation will be necessary, it should be performed prior to construction. Please review the attached report and advise us of your requirements. We appreciate your timely response on this matter. Thank you.

Sincerely,

IGNACIO DAYRIT
Projects Coordinator

cc. Subsurface Consultants
Erickson, Beasley & Hewitt

HO 22 : IG05:SH-HAZ.LTR

90 AUG -2 PM 11:29

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REDEVELOPMENT AGENCY
2200 POWELL STREET, SUITE 1200
EMERYVILLE, CALIFORNIA 94608
(415) 654-6161

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HO 22 : IG05:SH-HAZ.LTR