

MAR 2 1990

BP OIL CO.
ENVIRONMENTAL DEPT.
WEST COAST REGION OFFICE

SITE INVESTIGATION REPORT

Former Mobil Service Station No. 10-H69

4280 Foothill Boulevard

Oakland, California

Project No. 30-103

Prepared for:

**Mobil Oil Corporation
3800 West Alameda Avenue, Suite 700
Burbank, California**

Prepared by:

Alton Geoscience, Inc.

February 16, 1989

SITE INVESTIGATION

**FORMER MOBIL OIL CORPORATION
STATION NO. 10-H69
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA**

ALTON GEOSCIENCE PROJECT NO. 30-103

This report was based on currently available data and was developed in accordance with current hydrogeologic and engineering practices.


This report was prepared by:



Brady Nagle
Project Manager

2/16/90
Date

This report was reviewed by:



Al Sevilla
Registered Civil Engineer
No. 26392
Operation Manager

2/16/90
Date



TABLE OF CONTENTS
(cont'd)

FIGURES

- 1 VICINITY MAP
- 2 SITE PLAN
- 3 GROUND WATER ELEVATION CONTOUR MAP
- 4 HYDROGEOLOGIC CROSS-SECTION A-A'
- 5 HYDROGEOLOGIC CROSS-SECTION B-B'

APPENDIX A - DRILLING AND SOIL SAMPLING

APPENDIX B - WELL PERMIT

APPENCIX C - BORING LOGS

APPENDIX D - MONITORING WELL INSTALLATION PROCEDURES
AND CONSTRUCTION DETAILS

APPENDIX E - WELL DEVELOPMENT AND WATER SAMPLING PROCEDURES
AND FIELD SURVEY FORMS

APPENDIX F - ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS,
AND CHAIN OF CUSTODY RECORDS

1.0 INTRODUCTION

Mobil Oil Corporation retained Alton Geoscience, Inc. to perform a site investigation at the former Mobil Service Station No. 10-H69, located at 4280 Foothill Boulevard, Oakland, California. The Site Vicinity Map is presented in Figure 1 and the Site Plan is shown in Figure 2.

1.1 Purpose and Scope

This site investigation was performed to: (1) address the concerns of the Alameda County Department of Environmental Health (ACDEH) and the San Francisco Regional Water Quality Control Board (RWQCB) regarding a suspected petroleum hydrocarbon contamination of the subsurface soil and/or ground water at the site, (2) determine the presence of subsurface contamination, if any, and (3) develop an appropriate course of action for regulatory case closure or further remedial investigation and feasibility study.

The scope of the preliminary investigation work included the following tasks:

- Installation of soil borings and ground water monitoring wells.
- Collection and analysis of soil and ground water samples.
- Determination of the presence or non-presence of subsurface contamination.
- Preparation of a technical report presenting the results, findings, and recommendations of the study.

The results of these tasks provides the basis in determining the potential impact of contaminants on ground water quality and the need for further investigation and/or remediation.

1.2 Site Location and Description

The site, located at 4280 Foothill Boulevard, Oakland, California, is presently an operating BP Oil Company service station on the north corner of Foothill Boulevard and High Street. Three underground product storage tanks occupy a single cavity on the eastern corner of the site and one waste oil tank is located on the northern corner. The location and layout of the underground storage tanks is shown in Figure 2, Site

Soil samples were collected at 5-foot intervals to the total depth of each boring. Saturated soils were encountered at approximately 31 feet below grade in Boring B-3 and approximately 20 feet below grade in Boring B-4. A description of drilling procedures and soil sampling protocol is included as Appendix A, while copies of the boring logs are presented in Appendix C.

2.2 Ground Water Monitoring Well Construction

Borings B-3 and B-4 were converted to ground water monitoring wells MW-3 and MW-4, respectively. The wells were constructed of clean, 4-inch-diameter, flush threaded, Schedule 40 polyvinyl chloride (PVC) blank casing and 0.020-inch, slotted PVC casing, to a depth of 32.0 feet below grade for MW-3, and to a depth of 27 feet below grade for MW-4. Well installation procedures and construction details are presented in Appendix D.

2.3 Monitoring Well Development and Sampling

Well development of all wells onsite was conducted on January 31, 1990 and February 5, 1990, using 2-inch and 4-inch bailers. Each well was developed by purging until stabilization of pH, temperature, and conductivity of the well water was achieved, indicating the presence of formation water in the well. Field observations during well development are presented in the water sampling survey forms (Appendix E).

Water samples were collected on February 5, 1990, following the purging of approximately 10 gallons from each well, with the exception of MW-1, which was observed to have 0.04 foot of free floating product. The well development and sampling procedures were conducted in accordance with the Regional Water Quality Control Board (RWQCB) guidelines and the standard protocol described in Appendix E.

Water samples were collected in clean containers and transported in an iced cooler to Anamatrix Analytical Laboratories for analysis, following proper chain of custody procedures.

2.4 Ground Water Level Monitoring and Surveying

Ground water level monitoring data collected at the time of sample collection is presented in Table 1. A ground water elevation contour map based on interpretation of this monitoring data is presented in Figure 3.

The monitoring wells were surveyed on February 5, 1990, using a City of Oakland Survey Station (Section 20; Station D; Quadrant 19) with an elevation of 42.19 feet. The purpose of the survey was to determine the relative top of casing elevations of the four monitoring wells, for use in calculating the water table elevation at each well. The water table elevation data is then used to determine the direction of ground water flow in the shallow aquifer beneath the site, as discussed in Section 3.2, Site Hydrogeology. The survey data is also included in Table 1.

TABLE 1
SURVEY AND WATER LEVEL MONITORING DATA

Well Number	Elevation (feet)	Depth to Water (feet)	Water Level Elevation (feet)
February 5, 1990			
MW-1	38.19	---	---
MW-2	38.18	21.19	16.27
MW-3	37.73	17.45	20.28
MW-4	37.07	20.75	16.32

--- Not measured due to the presence of free floating product

3.0 SITE GEOLOGY AND HYDROGEOLOGY

This section presents a brief description of the pertinent background information on the site geology and hydrogeology.

3.1 Site Geology

Lithology in the two borings, B-3 and B-4, drilled by Alton Geoscience was relatively different. The uppermost unit in each boring was a dark brown to black, damp, silty clay to a depth of 3 to 5 feet underlain by a brown, silty clay of lesser plasticity. Underlying the silty clay was a brown, moist to damp sandy clay. In Boring B-4 two separate clayey sand layers from about 13 to 16 feet and from about 20 to 24 feet below grade were encountered. These clayey sand layers were not encountered in Boring B-3. In Boring B-3, a sandy

clay layer was encountered at 26 feet and became saturated at 26 feet. However, in Boring B-4, a very stiff, silty clay layer was encountered at 24 feet changing into a damp, very stiff clayey silt to about 28 feet below grade.

Comparison of the boring logs for MW-1 and MW-2 generated by RZA and Alton Geoscience boring logs indicated some correlation in the site stratigraphy. The upper silty and sandy clay layers were encountered at similar depths in each of the RZA borings. Likewise, competent silt and clay aquitards were found at similar depths below the first encountered ground water. The boring logs for MW-1 and MW-2, however, show a clayey sand layer from about 25 or 26 to about 29 feet below grade. This clayey sand unit was not encountered in MW-3, but was observed at a relatively different interval in MW-4.

Hydrogeologic cross-sections, as presented in Figures 4 and 5, have been developed based on the two soil boring logs prepared by Alton Geoscience and the boring logs generated from the preliminary investigation work by RZA.

3.2 Site Hydrogeology

Depth to water measurements in the wells ranged from 17.45 to 21.19 feet, while ground water elevation ranged from approximately 16.27 to 20.28 feet above mean sea level. The ground water flow direction is towards the northeast, with a gradient of approximately 0.05 foot per foot.

4.0 ANALYTICAL METHODS AND RESULTS

All laboratory analyses of soil and ground water samples were performed by a California state-certified analytical laboratory, using standard test methods of the U.S. Environmental Protection Agency (EPA) and the California Department of Health Services (DHS). Anamatrix, of San Jose, analyzed both soil and ground water samples. A listing of the analytical methods used is presented in Appendix F.

4.1 Soil Analysis

Soil samples collected from Borings B-3 and B-4 were analyzed for total petroleum hydrocarbons (TPH) as gasoline, and benzene, toluene, ethylbenzene, and xylenes (BTEX). The results of the laboratory analyses of soil samples are presented in Table 2. The official laboratory reports and chain of custody records are included in Appendix F.

4.2 Ground Water Analysis

Ground water samples collected from Monitoring Wells MW-1 through MW-4 were analyzed for TPH-G and BTEX. The results of the laboratory analyses are presented in Table 3. The official laboratory reports and chain of custody record are included in Appendix F.

TABLE 2
RESULTS OF
LABORATORY ANALYSIS OF SOIL SAMPLES

Boring	Sample Depth (feet)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
B-3	5	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	10	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	15	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	20	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	25	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	29	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
B-4	5	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	10	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	15	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	20	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	25	16,000	ND<50.0	ND<50.0	ND<50.0	170
	29	ND<1,000	ND<5.0	ND<5.0	ND<5.0	ND<5.0

Notes: TPH-G = total petroleum hydrocarbons as gasoline
 B = benzene
 T = toluene
 E = ethylbenzene
 X = xylenes
 ND = not detected at the given method detection
 limits
 ppb = parts per billion

TABLE 3
RESULTS OF
LABORATORY ANALYSIS OF GROUND WATER SAMPLES

Monitoring Well	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
MW-1	---	---	---	---	---
MW-2	1,300	14.0	ND<1.0	9.0	13.0
MW-3	1,400	15.0	ND<2.5	11.0	8.0
MW-4	620	ND<0.5	9.0	ND<0.5	10.0

Notes: TPH-G = total petroleum hydrocarbons as gasoline
 B = benzene
 T = toluene
 E = ethylbenzene
 X = xylenes
 --- = not analyzed due to presence of free product
 ppb = parts per billion

5.0 DISCUSSION OF RESULTS

The results of the laboratory analyses of soil and ground water samples collected during this investigation are discussed below.

5.1 Soil

Twelve soil samples were collected from the 2 borings for chemical analysis. Analysis of the soil samples indicated that only one sample contained compounds above the laboratory detection limits. The soil sample from B-4 at 25 feet below grade contained 16,000 ppb TPH as gasoline and 170 ppb total xylenes. Analysis of the other soil samples did not detect any of the petroleum hydrocarbon constituents above the corresponding method detection limits.

5.2 Ground Water

Laboratory analyses of ground water samples collected from three of the four monitoring wells on site all had detectable levels of TPH as gasoline and BTEX. The highest levels of TPH as gasoline and benzene detected through analysis were

from MW-3, with 1,400 ppb TPH as gasoline and 15 ppb benzene as well as 11.0 ppb ethylbenzene and 8.0 ppb total xylenes. The sample from MW-2 contained 1,300 ppb TPH as gasoline and 14.0 ppb benzene, while the sample from MW-4 contained 620 ppb TPH as gasoline and no detectable level of benzene.

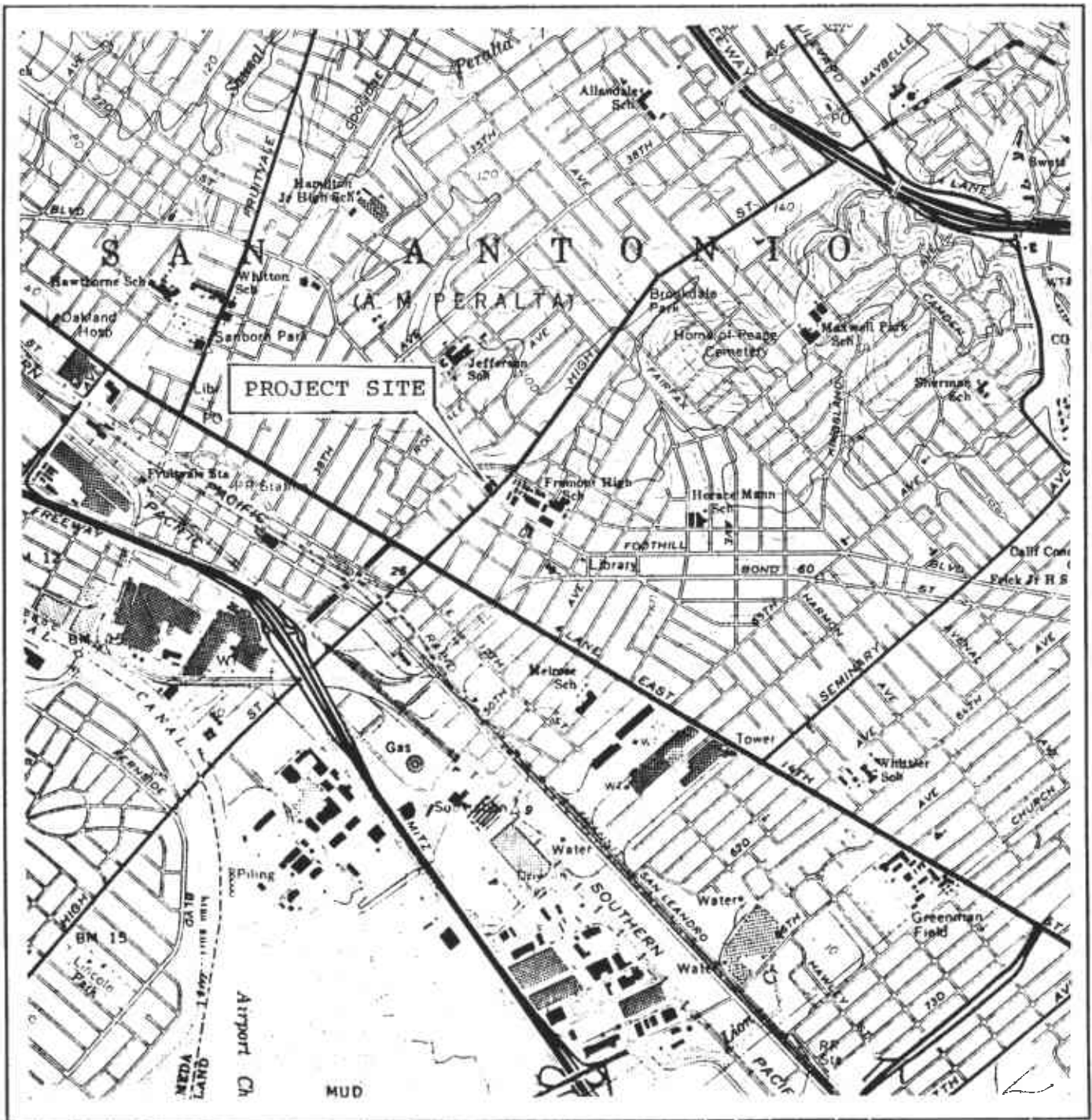
6.0 FINDINGS AND CONCLUSIONS

The preliminary investigation work involved drilling two soil borings of approximately 33.5 and 29.5 feet below grade. Subsurface soils consist primarily of clay with various amounts of silt and sand. During drilling, ground water was encountered at a depth of 20 and 31 feet below grade. Each of the borings was completed as a ground water monitoring well, with ground water stabilizing at depths between 17.45 and 21.79 feet below the top of the well casings.

The ground water elevation contour map developed from the water level and survey data indicates a relatively steep gradient with a northeasterly flow direction beneath the site.

Petroleum hydrocarbon constituents were detected in only one of the 12 soil samples from the two borings. Only the sample from B-4 at the 25-foot depth contained 16,000 ppb TPH as gasoline and 170 ppb benzene. All ground water samples analyzed contained detectable levels of TPH as gasoline and BTEX and one sample was observed to have free floating product.

It is apparent that additional investigative work is warranted to determine the extent of subsurface contamination and the appropriate course of action for remediation. Since there are no domestic or municipal wells in the region, and since municipal water supply is from an imported source, it does not appear that the petroleum hydrocarbon contamination of the shallow ground water is a threat to any domestic water supply source.



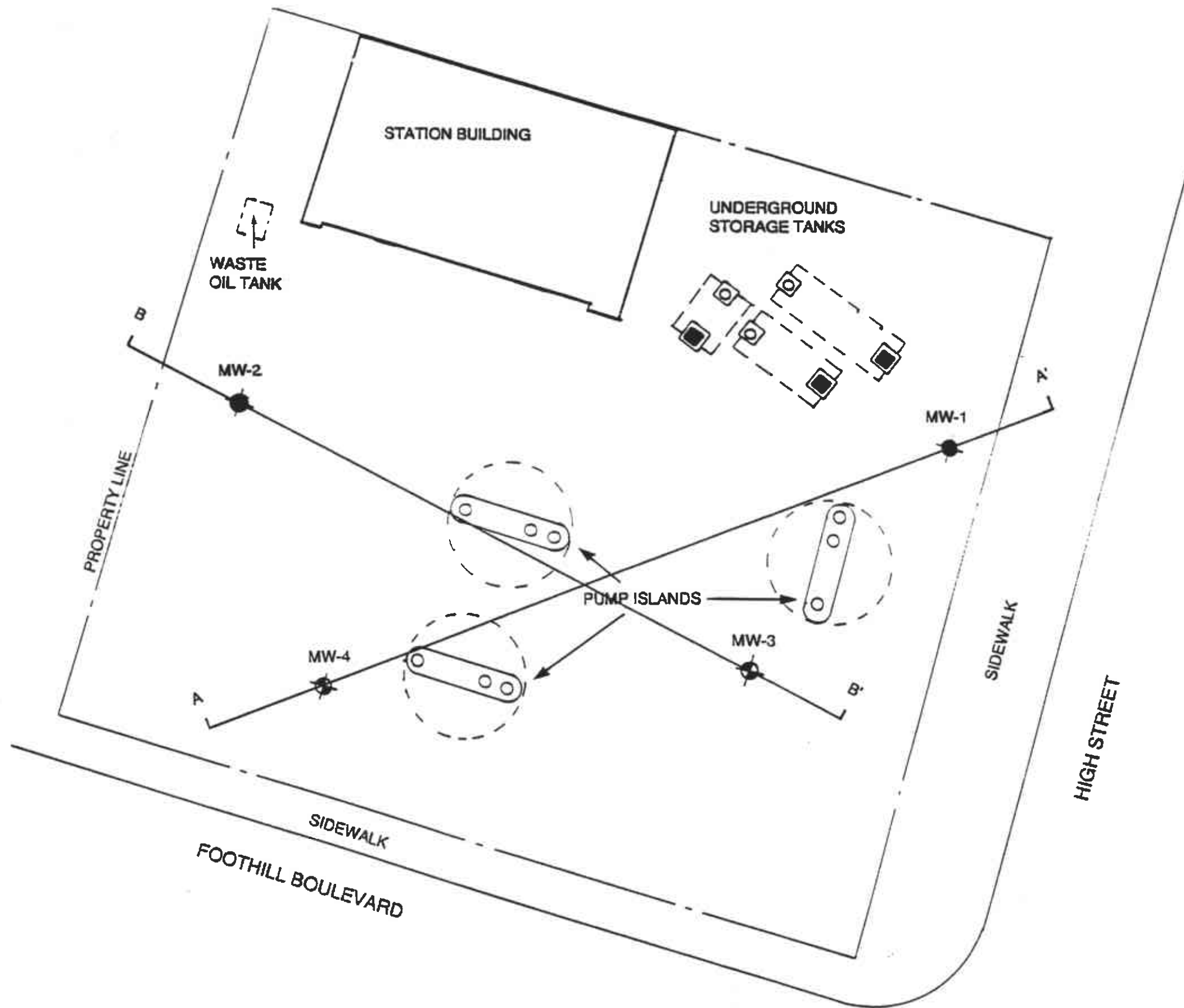
0 1000 2000
 SCALE IN FEET

Source: U.S. Geological Map, Oakland East Quadrangle, California. 7.5 minute series. 1959. Photorevised 1980.

FIGURE 1 VICINITY MAP



ALTON GEOSCIENCE
 1170 BURNETT AVE., STE S
 CONCORD, CA. 94520



LEGEND:




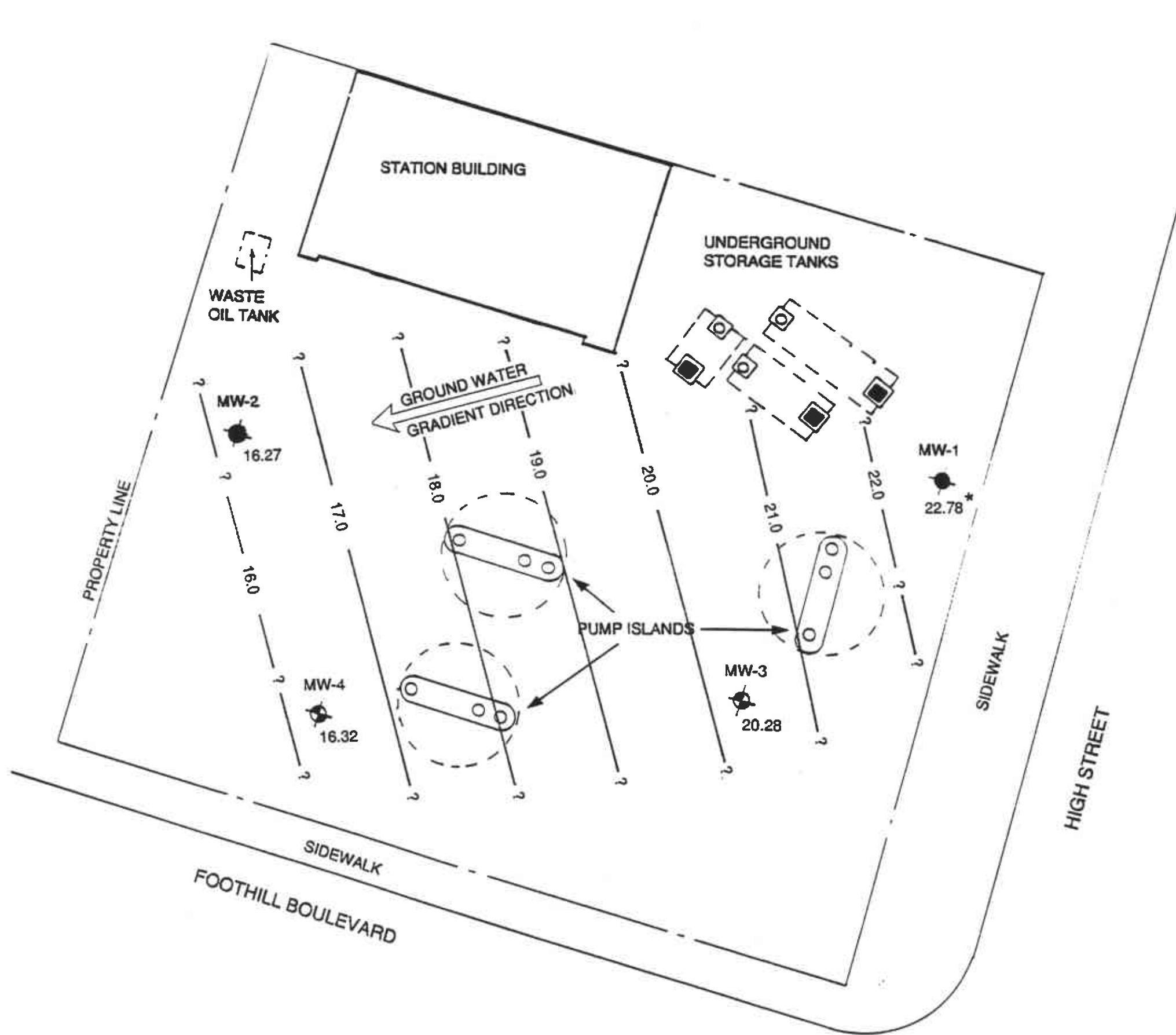
- 
 EXISTING MONITERING WELL BY ALTON
- 
 EXISTING MONITERING WELL BY OTHERS
- 
 A — A' LINE OF HYDROGEOLOGIC CROSS SECTION

FIGURE 2
SITE PLAN





LEGEND:

- ⊕ EXISTING MONITERING WELL BY ALTON
- EXISTING MONITERING WELL BY OTHERS
- ?—? GROUND WATER ELEVATION CONTOUR (DASHED AND QUERIED WHERE UNCERTAIN)
- * GROUND WATER ELEVATION FOR MW-1 TAKEN JANUARY 31, 1990

FIGURE 3
GROUND WATER GRADIENT MAP

FEBRUARY 5, 1990



APPENDIX A
DRILLING AND SOIL SAMPLING

APPENDIX A

DRILLING AND SOIL SAMPLING

Soil borings/monitoring wells were drilled utilizing 10-inch-diameter, continuous-flight, hollow-stem augers. Boring B-1 was initially drilled with 8-inch-diameter, hollow-stem augers. It was determined that the installation of monitoring wells was necessary and therefore required re-drilling with 10-inch-diameter, hollow-stem augers. To avoid cross-contamination, the augers were steam-cleaned prior to drilling each boring.

Soil samples were obtained for soil description, field hydrocarbon vapor testing, and laboratory analysis. Samples were collected at 5-foot intervals from Borings B-3 and B-4.

Soil samples collected at 5-foot intervals were retrieved ahead of the lead auger, utilizing an 18-inch-long by 2-inch-diameter split spoon sampler lined with 1.5-inch-diameter stainless steel sample tube inserts. The sampler and sample tubes were washed with a sodium tripolyphosphate solution and rinsed before each sampling event. The sampler was driven by a 30-inch free fall of a 140-pound hammer. Blow counts were recorded for three successive 6-inch intervals.

Upon retrieval from the 18-inch sampler, the sample tubes were removed and securely sealed with Teflon sheeting and polyurethane caps. The bottom sample tube was removed and capped. The sample was labeled with sample identification, sample depth, geologist's initials, and date of collection. The soil sample was kept on dry ice prior to and during transport to a state-certified laboratory.

Soil immediately adjacent to that selected for laboratory analysis was tested for elevated hydrocarbon concentrations, with a Gastech Model 1238 combustible gas indicator (CGI). The CGI reading was taken after approximately 15 seconds and recorded on the boring log.

The remaining soil recovered was described in accordance with the Unified Soil Classification System. For each soil type, field estimates of density/consistency, moisture, color, grading, and soil type were recorded on the boring logs.

APPENDIX B
WELL PERMIT

482 39/14



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 4280 Foothill Blvd (at High St.) Oakland, CA

PERMIT NUMBER 90030 LOCATION NUMBER

CLIENT Name Mobil Oil Corporation Address 3800 W. Alameda Phone (415) 953-2626 City Burbank, CA Zip 91505-4331

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT Name Brady Nagle Address 1170 Burnett Phone (415) 682-1582 City Concord, CA Zip 94520

TYPE OF PROJECT Well Construction Geotechnical Investigation Cathodic Protection General Water Supply Contamination Monitoring X Well Destruction

PROPOSED WATER SUPPLY WELL USE Domestic Industrial Other n/a Municipal Irrigation

DRILLING METHOD: Mud Rotary Air Rotary Auger X Cable Other

DRILLER'S LICENSE NO. 374152

WELL PROJECTS Drill Hole Diameter 10 in. Maximum Casing Diameter 4 in. Depth 50 ft. Surface Seal Depth 20 ft. Number 4

GEOTECHNICAL PROJECTS Number of Borings n/a Maximum Hole Diameter in. Depth ft.

ESTIMATED STARTING DATE 1/29/90 ESTIMATED COMPLETION DATE 1/31/90

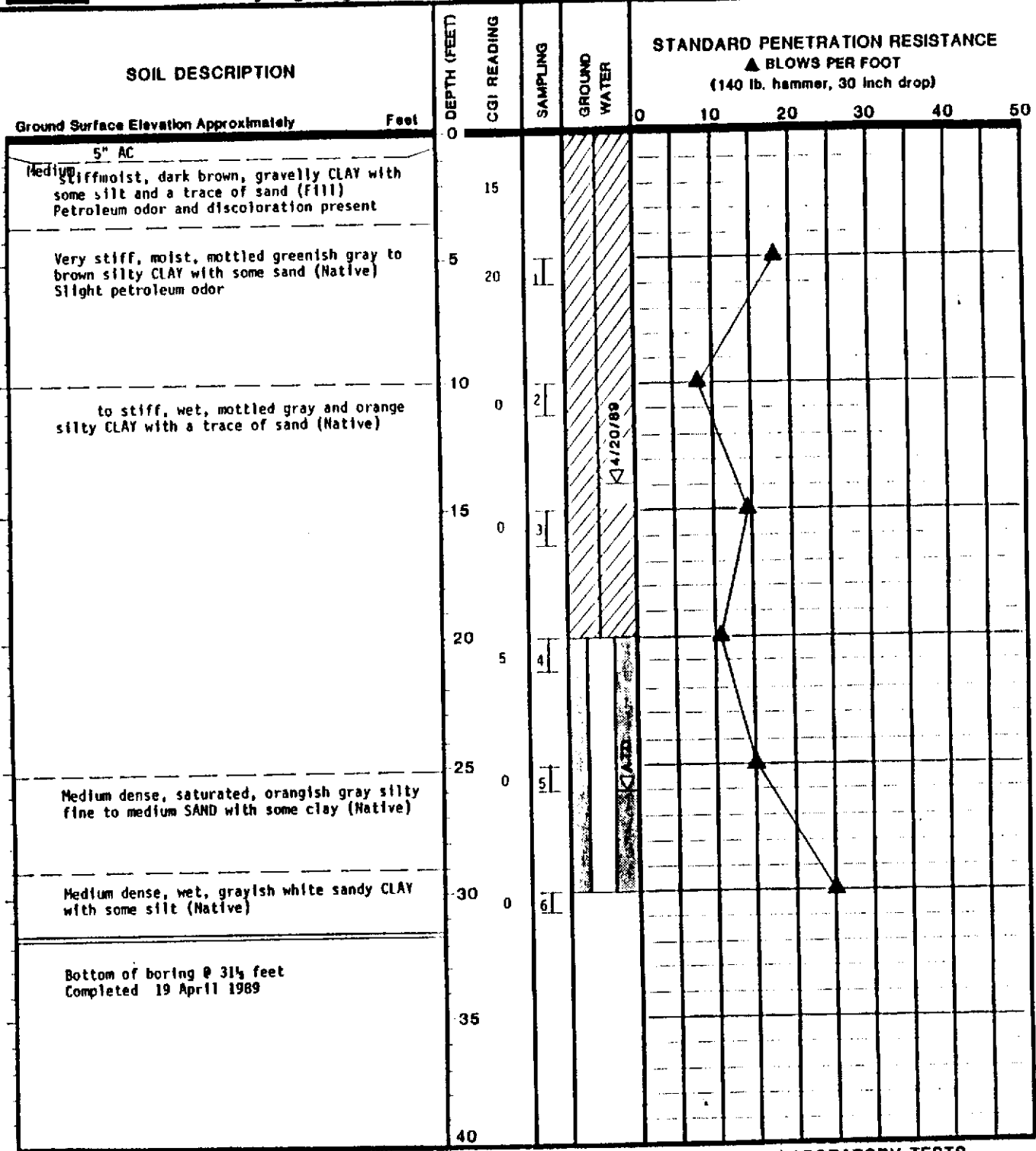
I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Brady Nagle Date

- A. GENERAL 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date. B. WATER WELLS, INCLUDING PIEZOMETERS 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet. C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremie cement grout shall be used in place of compacted cuttings. D. CATHODIC. Fill hole above anode zone with concrete placed by tremie. E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 18 Jan 90 Wyman Hong

APPENDIX C
BORING LOGS



- SAMPLING**
- I 2" OD SPLIT SPOON SAMPLE
 - II 3" OD SHELBY SAMPLE
 - ⊠ 2.5" ID RING SAMPLE
 - B BULK SAMPLE
 - ★ SAMPLE NOT RECOVERED

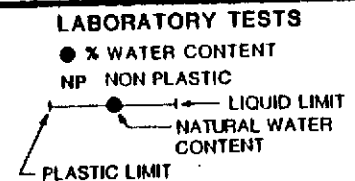
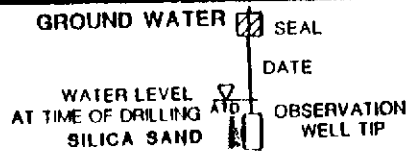
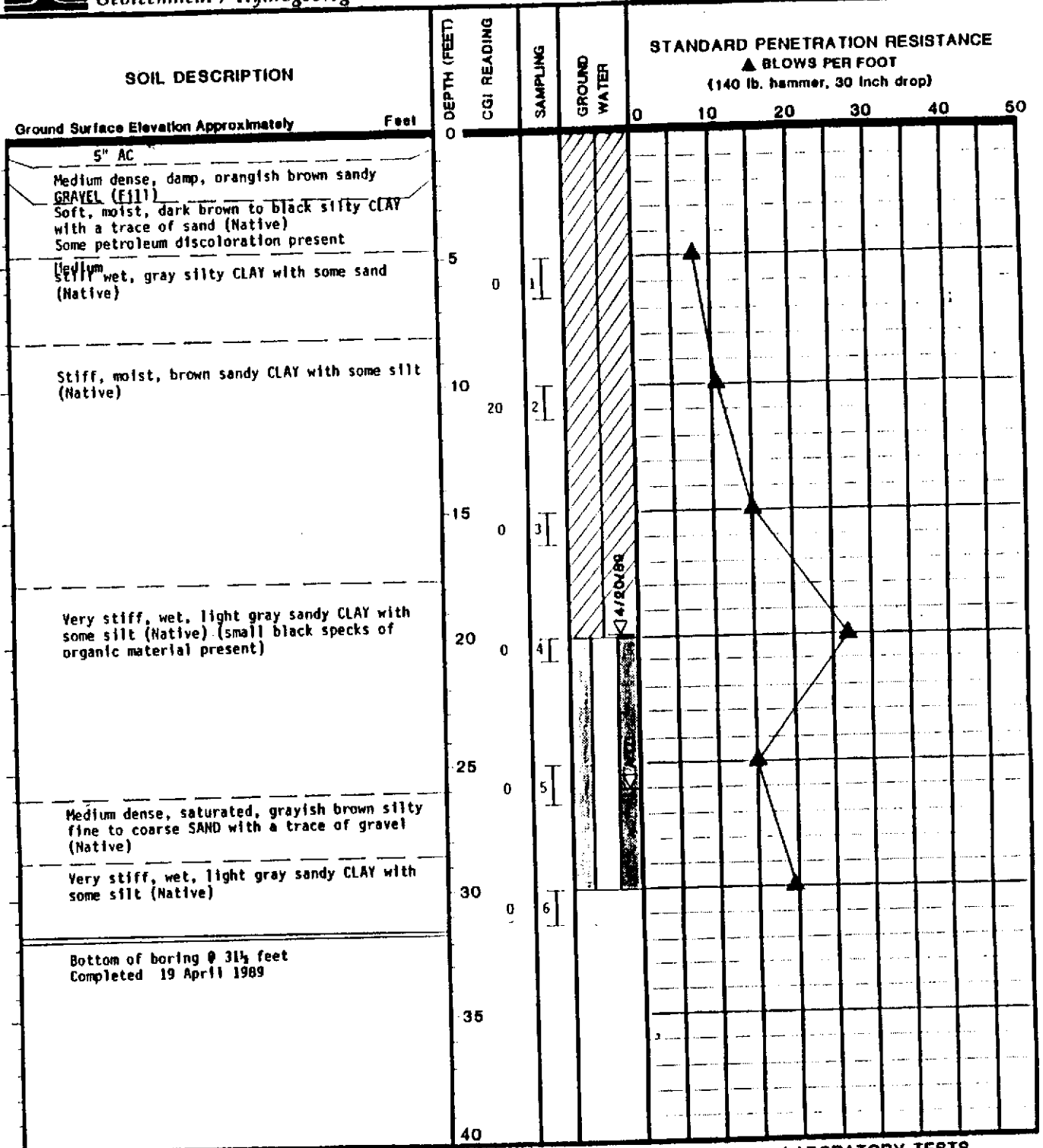


FIGURE 2



- SAMPLING**
- I 2' OD SPLIT SPOON SAMPLE
 - II 3' OD SHELBY SAMPLE
 - ⊗ 2.5" ID RING SAMPLE
 - B BULK SAMPLE
 - ★ SAMPLE NOT RECOVERED

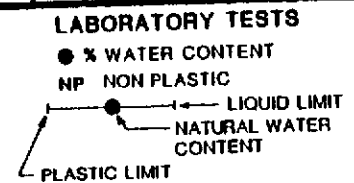
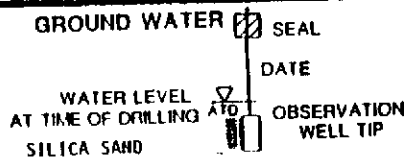


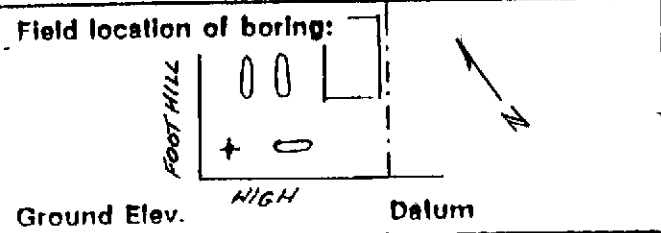
FIGURE 3



LOG OF EXPLORATORY BORING

PROJECT NO. 30-103 DATE 01/29/90
 CLIENT Mobil Oil Corporation
 LOCATION 4280 Foothill Blvd., Oakland
 LOGGED BY B. Nagle DRILLER Bayland

BORING NO. B-3
 Sheet 1
 of 1



Drilling method Hollow-stem auger
 Hole Dia. 10"
 Casing Installation Data 4" perforated (0.020") pipe
32-20', #3 lonestar sand 33-18', bentonite
pellets 18-17'; cement seal to surface.

Blow Counts	PID OVA	Depth	Sample	Soil Group Symbol (uscs)	Litho-graphic Symbol	Water Level		DESCRIPTION			
						6.72	20.28				
						Time	11:00				
Date	1/29/90	2/05/90									
								3" asphalt; 6" baserock			
	25	2		CL				SILTY CLAY: Black, moist, high plasticity.			
		4						Appearance of fine to coarse grained sand; color change to dark brown.			
3,4,8	50	6		CL				SILTY CLAY: Mottled olive green/brown, moist, moderate plasticity, stiff; gravels up to 1/4".			
		8									
10,13,17	40	10		CL				SANDY CLAY: Brown, moist, low plasticity, very stiff; gravels up to 1/2".			
		12						Driller felt auger out of gravels at 13'			
		14									
6,7,9	40	16		CL				SILTY CLAY: Tan, damp to moist, medium plasticity, stiff, blue-gray staining along occasional rootlets.			
		18									
		20		CL				Change to very moist, increase in 1/2" carbon granules.			
5,9,10	25	22									
		24									
4,9,15	50 100 Tip Shoe	26		CL				SANDY CLAY: Blue-gray to tan, moist, low plasticity, stiff. Color change to light gray.			
		28									
5,6,9		30						Top of 32'-33 1/2' sample wet with sandy gravel stringers up to 2".			
7,10,14		32		CL				SILTY CLAY: Mottled brown and gray, damp, medium plasticity, very stiff.			
								Boring terminated at 33 1/2'. Free ground water encountered at approximately 31'.			

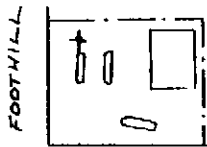


LOG OF EXPLORATORY BORING

PROJECT NO. 30-103 DATE 01/30/90
 CLIENT Mobil Oil Corporation
 LOCATION 4280 Foothill Blvd., Oakland
 LOGGED BY B. Nagle DRILLER Bayland

BORING NO. B-4
 Sheet 1 of 1

Field location of boring:







Drilling method Hollow-stem auger
 Hole Dia. 10"
 Casing Installation Data 4" perforated (0.020") pipe
 27-20'; #3 lonestar 27-18½, bentonite pellets
 18½-17½; neat cement seal 17½ to surface.

Ground Elev. HIGH Datum




Blow Counts	PID OVA	Depth	Sample	Soil Group Symbol (uscs)	Litho-graphic Symbol	Water Level		DESCRIPTION					
						Time	Date	17.07	16.32				
						13:30	1/30/90	13:15	2/05/90				
								4" asphalt, 6" baserock					
		2						SILTY CLAY: Dark brown, damp to moist, high plasticity, stiff.					
		4											
4, 7, 7	20	6						SILTY CLAY: Mottled orange-brown, damp, low plasticity, stiff; minor fine sand and angular gravels up to ¼".					
		8											
3, 5, 7	40	10						SANDY CLAY: Light brown, damp, medium plasticity, stiff; occasional carbon granules.					
		12						Driller felt increase in resistance at 13½ feet.					
		14						CLAYEY SAND: Brown, moist, medium dense; occasional fine to coarse grained gravels up to ¼".					
		16						Driller felt smoother drilling at approximately 17'.					
6, 9, 11	25	18											
4, 5, 13		20						SANDY CLAY: Light brown, moist, low plasticity, stiff					
		22						CLAYEY SAND: Light brown, wet, medium dense.					
		24											
5, 9, 12	75	26						SILTY CLAY: Mottled blue gray and brown, low plasticity, very stiff; minor very fine sand.					
		28						Driller needed more pressure to drill at 27'.					
3, 7, 10	70							CLAYEY SILT: Whiteish gray to tan, moist, low plasticity, very stiff; some fine sand.					
								Boring terminated at 29½ feet.					
								Free ground water encountered at approximately 20 feet.					

KEY TO BORING LOGS AND WELL CONSTRUCTION

BORING LOG SYMBOLS

	GEOLOGIC CONTACT LINE
	TERMINATION OF BORING
	WATER LEVEL, PRELIMINARY MEASUREMENT
	WATER LEVEL, STABILIZED

SAMPLE RECOVERY

	UNDISTURBED SAMPLE, RETAINED IN LAB
	SAMPLER DRIVE DISTANCE, SAMPLE EXAMINED IN FIELD
	NO RECOVERY



ALTON GEOSCIENCE
16510 ASTON ST.
IRVINE, CA 92714

APPENDIX D

**MONITORING WELL INSTALLATION PROCEDURES
AND CONSTRUCTION DETAILS**

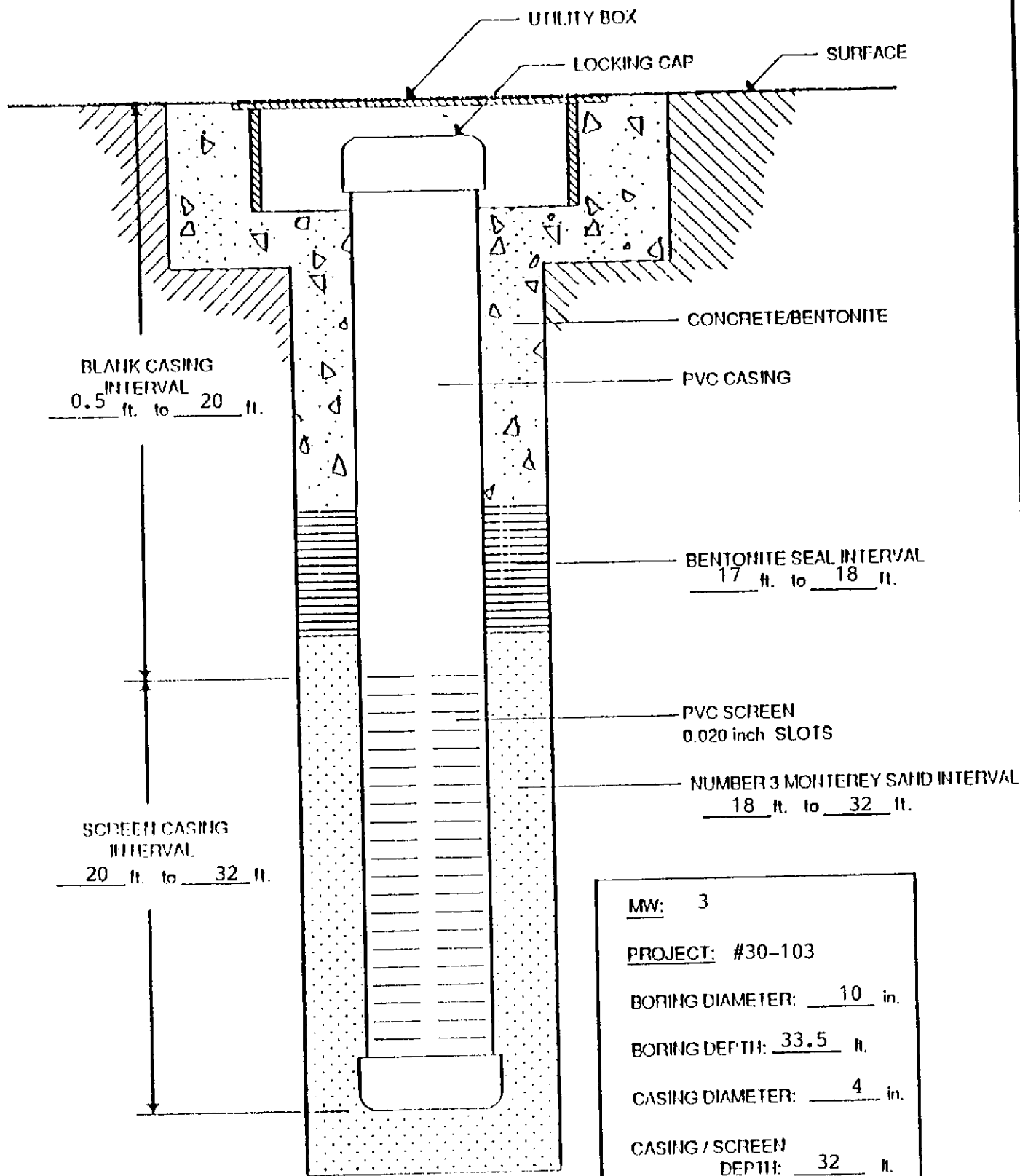
APPENDIX D

MONITORING WELL INSTALLATION AND CONSTRUCTION DETAILS


Included in this appendix are monitoring well installation and construction details for monitoring wells installed as part of this study.

Monitoring wells were constructed of 4-inch-diameter, flush-threaded, Schedule 40 PVC blank and screened (0.020-inch slot size) casing. The annular space surrounding the screened portion was backfilled with No. 3 Monterey sand (filter pack) to approximately 1.5 feet above the top of the screened section. A 1-foot-thick bentonite annular seal was placed above the filter pack and the remaining annulus was grouted with neat cement to the surface. Utility boxes were installed slightly above grade to minimize infiltration of surface waters. Locking, water-tight well caps were installed to ensure the integrity of the well.

MONITORING WELL CONSTRUCTION DETAIL



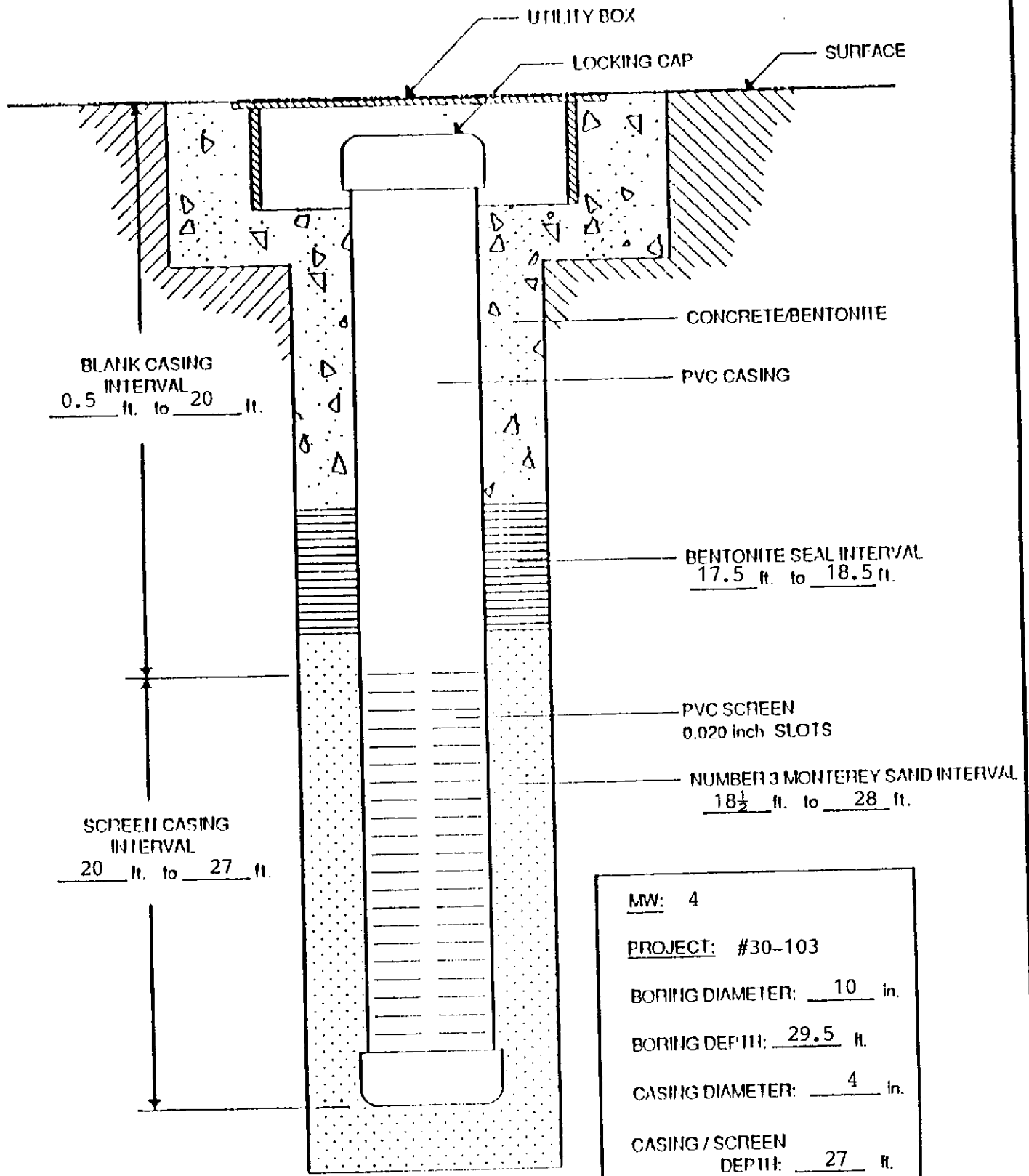
MW: 3
PROJECT: #30-103
BORING DIAMETER: 10 in.
BORING DEPTH: 33.5 ft.
CASING DIAMETER: 4 in.
CASING / SCREEN DEPTH: 32 ft.


ALTON GEOSCIENCE
 1170 BURNETT AVE., STE S
 CONCORD, CA. 94520

NOTE: DRAWING IS NOT TO SCALE

PROJECT #30-103

MONITORING WELL CONSTRUCTION DETAIL



<u>MW:</u> 4
<u>PROJECT:</u> #30-103
<u>BORING DIAMETER:</u> 10 in.
<u>BORING DEPTH:</u> 29.5 ft.
<u>CASING DIAMETER:</u> 4 in.
<u>CASING / SCREEN DEPTH:</u> 27 ft.

NOTE: DRAWING IS NOT TO SCALE PROJECT #30-103

ALTON GEOSCIENCE
1170 BURNETT AVE., STE S
CONCORD, CA. 94520

APPENDIX E

**WELL DEVELOPMENT AND WATER SAMPLING
PROCEDURES AND FIELD SURVEY FORMS**

APPENDIX E

WELL DEVELOPMENT, WATER SAMPLING PROCEDURES, AND FIELD SURVEY FORMS

All purging and ground water sampling equipment was cleaned prior to use to minimize cross-contamination between wells. All equipment in contact with ground water was triple-rinsed prior to each sampling event in successive baths consisting of tripolyphosphate solution, tap water, and deionized water. Prior to sampling, the well was developed and purged in accordance with EPA protocol. During purging, pH, temperature, and electroconductivity were measured periodically until these parameters stabilized, indicating formation water had entered the well casing. The purged water was pumped into barrels prior to disposal or recycling at an appropriate waste disposal facility.

Ground water samples were collected by lowering a 2-inch-diameter, bottom-fill, Teflon bailer just below the water level in the well. The samples were carefully transferred from the check-valve-equipped Teflon bailer to zero-headspace 1-liter and 40-milliliter glass containers fitted with Teflon-sealed caps. All samples were inverted to ensure that entrapped air was not present. Each sample was labeled with sample number, well number, sample date, and geologist's initials. The samples remained on ice prior to laboratory analysis.

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10-H69 Date: 1/31/90

Well: MW-1 Sampling Team: Donnie/Brady

Well Development Method: Bailing

Sampling Method: N/A

Describe Equipment Before Sampling This Well: N/A

Well Development/ Well Sampling Data

Total Well Depth: 30.26 feet Time: 14:48 Depth to Water Before Pumping: 15.41

Water Column	Casing Diameter		Volume	Factor	Volume to Purge
	2-inch	4-inch			
<u>14.85</u> feet x	<u>0.16</u>	<u>0.65</u>	<u>2.37</u>	<u>4</u>	<u>9.5</u>

Depth Purging From: 30 feet. Time Purging Begins: 15:00

Notes on Initial Discharge: 0.04" f.p. on clear ground water.

NOTES

1528 - Bailed dry after removing over 10 gals. Fire product became only a sheen after removing 1/2 gal.

Time Field Parameter Measurement Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
Temperature (F)	_____	_____	_____	_____

Presample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10-H69 Date: 1/31/90

Well: MW-2 Sampling Team: Donnie/Brady

Well Development Method: Bailing

Sampling Method: N/A

Describe Equipment Before Sampling This Well: N/A

Well Development/ Well Sampling Data

Total Well Depth: 29.52 feet Time: 13:02 Depth to Water Before Pumping: 21.89

Water Column	Casing Diameter		Volume	Factor	Volume to Purge
	2-inch	4-inch			
<u>7.63</u> feet x <u>0.16</u>	<u>0.65</u>	<u>1.2</u>	<u>4</u>	<u>4.8</u>	

Depth Purging From: 29 feet. Time Purging Begins: 13:10

Notes on Initial Discharge: Very Silty

NOTES

1407 - 14 gals. removed. Water became slightly less silty.

Time Field Parameter Measurement Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
Temperature (F)	_____	_____	_____	_____

Presample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10H69 Date: 1/31/90
 Well: MW-3 Sampling Team: Donnie/Brady
 Well Development Method: Bailing
 Sampling Method: N/A
 Describe Equipment Before Sampling This Well: N/A

Well Development/ Well Sampling Data

Total Well Depth: 31.48 feet Time: 12:09 Depth to Water Before Pumping: 20.92

Water Column	Casing Diameter		Volume	Factor	Volume to Purge
	2-inch	4-inch			
<u>10.56</u> feet x	<u>0.16</u>	<u>0.65</u>	<u>6.86</u>	<u>4</u>	<u>27.4</u>

Depth Purging From: 31 feet. Time Purging Begins: 12:15

Notes on Initial Discharge: Clear, then slightly silty.

NOTES

1230 - Bailed dry after removing 12 gal.
1330 - Bailed dry after removing 6 gal.
1520 - Bailed dry after removing 3 gal.
1540 - Well still dry
21 gal. total

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
Temperature (F)	_____	_____	_____	_____

Presample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10-H69 Date: 1/31/90
 Well: MW-4 Sampling Team: Donnie/Brady
 Well Development Method: Bailing
 Sampling Method: N/A
 Describe Equipment Before Sampling This Well: N/A

Well Development/ Well Sampling Data

Total Well Depth to Water
 Depth: 26.10 feet Time: 11:13 Before Pumping: 20.53

Water Column	Casing Diameter		Volume	Factor	Volume to Purge
	2-inch	4-inch			
<u>5.57</u> feet x	<u>0.16</u>	<u>0.65</u>	<u>3.62</u>	<u>4</u>	<u>14.46</u>

Depth Purging From: 25 feet. Time Purging Begins: 11:20

Notes on Initial Discharge: Clear, then slightly silty.

NOTES

- 1150 - Bailed dry after removing 10 gals.
- 1400 - Water level at approximately 23'.
- 1420 - Bailed dry after removing 3 gals.

Time Field Parameter Measurement Begins: _____

	<u>Rep #1</u>	<u>Rep #2</u>	<u>Rep #3</u>	<u>Rep #4</u>
pH	_____	_____	_____	_____
Conductivity	_____	_____	_____	_____
Temperature (F)	_____	_____	_____	_____

Presample Collection Gallons Purged: _____

Time Sample Collection Begins: _____

Time Sample Collection Ends: _____

Total Gallons Purged: _____

Comments: _____

**ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey**

Project # 30-103 Site: Mobil-#10-H69 Date: 02/05/90

Well: MW-2 Sampling Team: W. Shipp/C. Niesterowicz

Well Development Method: _____

Sampling Method: 2" Bailer

Describe Equipment Before Sampling This Well: Triple Rinse 2" Bailer

Well Development/ Well Sampling Data

Total Well Depth: 29.52 feet Time: 12:20p.m. Depth to Water Before Pumping: 21.91

Water Column	Casing Diameter	Volume	Factor	Volume to Purge
	2-inch 4-inch			
<u>7.61</u> feet x <u>0.16</u>	<u>0.65</u>	<u>1.22</u>	<u>4</u>	<u>4.9</u>

Depth Purging From: 21-25 feet. Time Purging Begins: 12:32

Notes on Initial Discharge: No Odor, Clear, No Sheen

Time	Volume	pH	X100 Conductivity	°F T	Notes
<u>12:37</u>	<u>2.5</u>	<u>10.78</u>	<u>11.08</u>	<u>69.1</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>12:44</u>	<u>3.0</u>	<u>9.07</u>	<u>11.08</u>	<u>67.7</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>12:45</u>	<u>3.5</u>	<u>8.36</u>	<u>11.04</u>	<u>67.3</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>12:48</u>	<u>4.0</u>	<u>8.26</u>	<u>11.04</u>	<u>67.4</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>12:50</u>	<u>5.0</u>	<u>7.76</u>	<u>10.69</u>	<u>66.8</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>

Time Field Parameter Measurement Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH	<u>9.07</u>	<u>8.36</u>	<u>8.26</u>	<u>7.76</u>
Conductivity	<u>11.08</u>	<u>11.04</u>	<u>11.04</u>	<u>10.69</u>
Temperature (F)	<u>67.7</u>	<u>67.3</u>	<u>67.4</u>	<u>66.80</u>

Presample Collection Gallons Purged: 5.0

Time Sample Collection Begins: 12:59p.m.

Time Sample Collection Ends: 1:02p.m.

Total Gallons Purged: 5.5

Comments: _____

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10-H69 Date: 02/05/90

Well: MW-3 Sampling Team: W. Shipp/C. Niesterowicz

Well Development Method: _____

Sampling Method: Bailing

Describe Equipment Before Sampling This Well: Triple Rinse

Well Development/ Well Sampling Data

Total Well Depth: 31.48 feet Time: 1:51 Depth to Water Before Pumping: 17.45

Water Column	Casing Diameter		Volume	Factor	Volume to Purge
	2-inch	4-inch			
<u>14.03</u> feet x	<u>0.16</u>	<u>0.65</u>	<u>9.11</u>	<u>4</u>	<u>36.5</u>

Depth Purging From: _____ feet. Time Purging Begins: 1:51p.m.

Notes on Initial Discharge: Clear, No Odors

Time	Volume	pH	X100 Conductivity	°F T	Notes
<u>2:02</u>	<u>15</u>	<u>7.61</u>	<u>13.71</u>	<u>67.6</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:09</u>	<u>19</u>	<u>7.27</u>	<u>13.95</u>	<u>67.0</u>	<u>Cloudy, Vry Lt., Brn., No Odor</u>
<u>2:47</u>	<u>22.5</u>	<u>8.10</u>	<u>13.15</u>	<u>67.0</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:50</u>	<u>24.0</u>	<u>7.60</u>	<u>13.10</u>	<u>67.7</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:59</u>	<u>24.5</u>	<u>7.43</u>	<u>13.17</u>	<u>67.9</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>

Time Field Parameter Measurement Begins: 1:51

	Rep #1	Rep #2	Rep #3	Rep #4
pH	<u>7.27</u>	<u>8.10</u>	<u>7.60</u>	<u>7.43</u>
Conductivity	<u>13.95</u>	<u>13.15</u>	<u>13.10</u>	<u>13.17</u>
Temperature (F)	<u>67.0</u>	<u>67.0</u>	<u>67.7</u>	<u>67.9</u>

Presample Collection Gallons Purged: 24.5

Time Sample Collection Begins: 2:56

Time Sample Collection Ends: 3:04

Total Gallons Purged: 25.0

Comments: MW-3 Poor Recovery Rate

ALTON GEOSCIENCE, INC.
Well Development and
Water Sampling Field Survey

Project # 30-103 Site: Mobil-#10-H69 Date: 02/05/90

Well: MW-4 Sampling Team: W. Shipp/C. Niesterowicz

Well Development Method: _____

Sampling Method: Bailing

Describe Equipment Before Sampling This Well: 4" Bailer

Well Development/ Well Sampling Data

Total Well Depth: 26.10 feet Time: 1:15p.m. Depth to Water Before Pumping: 20.75

Water Column	Casing Diameter	Volume	Factor	Volume to Purge
	2-inch 4-inch			
<u>5.35</u> feet x	0.16 <u>0.65</u>	<u>3.47</u>	<u>4</u>	<u>13.9</u>

Depth Purging From: _____ feet. Time Purging Begins: 1:19

Notes on Initial Discharge: Clear, No Odor

Time	Volume	pH	X100 Conductivity	°F T	Notes
<u>1:25</u>	<u>6</u>	<u>8.09</u>	<u>10.75</u>	<u>68.0</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>1:36</u>	<u>9</u>	<u>7.84</u>	<u>9.55</u>	<u>64.5</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:15</u>	<u>10</u>	<u>7.66</u>	<u>8.53</u>	<u>63.4</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:19</u>	<u>11</u>	<u>7.47</u>	<u>8.22</u>	<u>65.5</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>
<u>2:20</u>	<u>12.5</u>	<u>7.61</u>	<u>8.52</u>	<u>67.3</u>	<u>Cloudy, Vry Lt. Brn., No Odor</u>

Time Field Parameter Measurement Begins: _____

	Rep #1	Rep #2	Rep #3	Rep #4
pH	<u>7.84</u>	<u>7.66</u>	<u>7.47</u>	<u>7.61</u>
Conductivity	<u>9.55</u>	<u>8.53</u>	<u>8.22</u>	<u>8.52</u>
Temperature (F)	<u>64.5</u>	<u>63.4</u>	<u>65.5</u>	<u>65.3</u>

Presample Collection Gallons Purged: 12.5

Time Sample Collection Begins: 2:24

Time Sample Collection Ends: 2:26

Total Gallons Purged: 13.0

Comments: MW-4 Poor Recovery Rate

APPENDIX F

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

APPENDIX F

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

This appendix includes copies of the official laboratory reports and chain of custody records for soil and ground water samples selected for laboratory analysis. A description of laboratory methods and chain of custody procedures is presented below.

Laboratory Procedures

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

<u>Sample Analysis</u>	<u>Soil</u>	<u>Water</u>
Total Petroleum Hydrocarbons -Low to Med Boiling Point	EPA Methods 5030/8015	EPA Methods 5030/8015
Benzene, Toluene, Ethylbenzene, and xylenes	EPA Methods 5030/8020	EPA Methods 5030/8020

Chain Of Custody Procedure

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

ANAMETRIX INC

Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 - Fax (408) 432-8198



REPORT

RECEIVED FEB 08 1990

Brady Nagle
Alton Geoscience
1170 Burnett Avenue
Suite S
Concord, CA 94520

February 07, 1990
Anamatrix W.O.#: 9002007
Date Received : 02/01/90
Project Number : 30-103

Dear Mr. Nagle:

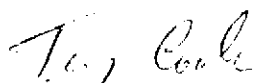
Your samples have been received for analysis. The REPORT SUMMARY lists your sample identifications and the analytical methods you requested. The following sections are included in this report: RESULTS and QUALITY ASSURANCE.

NOTE: Amounts reported are net values, i.e. corrected for method blank contamination.

If there is any more that we can do, please give us a call. Thank you for using ANAMETRIX, INC.

Sincerely,

ANAMETRIX, INC.



Terry Cooke
TPH Supervisor

TC/dag

REPORT SUMMARY
ANAMETRIX, INC. (408) 432-8192

Client : Alton Geoscience
Address : 1170 Burnett Avenue
Suite S
City : Concord, CA 94520
Attn. : Brady Nagle

Anametrix W.O.#: 9002007
Date Received : 02/01/90
Purchase Order#: N/A
Project No. : 30-103
Date Released : 02/07/90

Anametrix I.D.	Sample I.D.	Matrix	Date Sampled	Method	Date Extract	Date Analyzed	Inst I.D.
----------------	-------------	--------	--------------	--------	--------------	---------------	-----------

RESULTS

9002007-01	B-3/5	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-02	B-3/10	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-03	B-3/15	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-04	B-3/20	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-05	B-3/25	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-06	B-3/29	SOIL	01/29/90	TPHg		02/06/90	N/A
9002007-07	B-4/5	SOIL	01/30/90	TPHg		02/06/90	N/A
9002007-08	B-4/10	SOIL	01/30/90	TPHg		02/06/90	N/A
9002007-09	B-4/15	SOIL	01/30/90	TPHg		02/06/90	N/A
9002007-10	B-4/20	SOIL	01/30/90	TPHg		02/06/90	N/A
9002007-11	B-4/25	SOIL	01/30/90	TPHg		02/06/90	N/A
9002007-12	B-4/29	SOIL	01/30/90	TPHg		02/06/90	N/A

QUALITY ASSURANCE (QA)

9002007-01	B-3/5	SOIL	01/29/90	SPIKE		02/06/90	N/A
------------	-------	------	----------	-------	--	----------	-----

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-103 MW-2
Matrix : WATER
Date sampled : 02/05/90
Date anl.TPHg: 02/08/90
Date ext.TPHd: N/A
Date anl.TPHd: N/A

Anamatrix I.D. : 9002050-01
Analyst : CB
Supervisor : TC
Date released : 02/12/90
Date ext. TOG : N/A
Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
71-43-2	Benzene	1	14
108-88-3	Toluene	1	ND
100-41-4	Ethylbenzene	1	9
1330-20-7	Total Xylenes	2	13
	TPH as Gasoline	100	1300

ND - Below reporting limit.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-103 MW-3
Matrix : WATER
Date sampled : 02/05/90
Date anl.TPHg: 02/12/90
Date ext.TPHd: N/A
Date anl.TPHd: N/A

Anamatrix I.D. : 9002050-02
Analyst : CB
Supervisor : TC
Date released : 02/12/90
Date ext. TOG : N/A
Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
71-43-2	Benzene	2.5	15
108-88-3	Toluene	2.5	ND
100-41-4	Ethylbenzene	2.5	11
1330-20-7	Total Xylenes	5	8
	TPH as Gasoline	250	1400

ND - Below reporting limit.

TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GC/FID using EPA Method 5030.

BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

ANALYSIS DATA SHEET - PETROLEUM HYDROCARBON COMPOUNDS
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 30-103 MW-4	Anamatrix I.D. : 9002050-03
Matrix : WATER	Analyst : CS
Date sampled : 02/05/90	Supervisor : TC
Date anl.TPHg: 02/08/90	Date released : 02/12/90
Date ext.TPHd: N/A	Date ext. TOG : N/A
Date anl.TPHd: N/A	Date anl. TOG : N/A

CAS #	Compound Name	Reporting Limit (ug/l)	Amount Found (ug/l)
71-43-2	Benzene	0.5	ND
108-88-3	Toluene	0.5	9
100-41-4	Ethylbenzene	0.5	ND
1330-20-7	Total Xylenes	1	10
	TPH as Gasoline	50	620

ND - Below reporting limit.
 TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using EPA Method 5030.
 BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA 8020.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

MS 18:00

ANAMETRIX 9002007

2



ALTON GEOSCIENCE
1170 BURNETT AVE., STE S
CONCORD, CA 94520

CHAIN of CUSTODY RECORD

PAGE 1 of 2

DATE: 2/1/90
RESULTS DUE BY: 2/8/90

PROJECT NUMBER: 30-103

PROJECT NAME AND ADDRESS: Mobil #10-H69

PROJECT MANAGER: BRADY NAGLE

SAMPLER'S SIGNATURE: *BN*

LABORATORY: ANAMETRIX

REMARKS OR SPECIAL INSTRUCTIONS:

ONE WEEK T.A.T.

NOTE: PLEASE INDICATE VERBAL REQUESTS FOR ADDITIONAL ANALYSES IN THIS BOX

NUMBER OF CONTAINERS

SAMPLE PREP. SOIL ANALYSIS WATER ANALYSIS

TPH-G w/BTEX

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE:	
				GRAB	COMP.

01
02
03
04
05
06
07
08
09

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION DESCRIPTION	SAMPLE MATERIAL	SAMPLE TYPE:		NUMBER OF CONTAINERS	SAMPLE PREP.				SOIL ANALYSIS				WATER ANALYSIS			
				GRAB	COMP.													
B-3/5	1/29/90	B-3 5 1/2-6'	SOIL	X		1					X							
B-3/10		B-3 10 1/2-11'		X		1					X							
B-3/15		B-3 15 1/2-16'		X		1					X							
B-3/20		B-3 20 1/2-21'		X		1					X							
B-3/25		B-3 25 1/2-26'		X		1					X							
B-3/29	↓	B-3 29-29 1/2'	↓	X		1					X							
B-4/5	1/30/90	B-4 5 1/2-6'	SOIL	X		1					X							
B-4/10		B-4 10 1/2-11'		X		1					X							
B-4/15	↓	B-4 15 1/2-16'	↓	X		1					X							

TOTAL NO. OF CONTAINERS: 9

RELINQUISHED BY: <i>BN</i>	DATE/TIME: 2/1/90 9:40	RECEIVED BY: <i>[Signature]</i>	DATE/TIME: 2/1/90 9:40	METHOD OF SHIPMENT:
RELINQUISHED BY: <i>[Signature]</i>	DATE/TIME: 2/1/90 10:40	RECEIVED BY: <i>[Signature]</i>	DATE/TIME: 2/1/90 18:00	SHIPPED BY:
RELINQUISHED BY:	DATE/TIME:	RECEIVED BY:	DATE/TIME:	COURIER:

ANAMETRIX 902050



ALTON GEOSCIENCE
1170 BURNETT AVE., STE. S
CONCORD, CA. 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 02/05/90 DUE BY:

LABORATORY: ANAMETRIX

PROJECT NUMBER / MANAGER: ³⁰⁻¹⁰³ BRADY NAGLE
SAMPLERS SIGNATURE: *Chris W. Mesterowicz*

PROJECT NAME / ADDRESS: MOBIL #10-H69

REMARKS OR SPECIAL INSTRUCTIONS:
1 week Turn a round

TYPE & NUMBER OF CONTAINERS

SOIL ANALYSIS WATER ANALYSIS

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	SAMPLE TYPE:		TYPE & NUMBER OF CONTAINERS	SOIL ANALYSIS				WATER ANALYSIS			
				GRAB	COMP.									
MW-2	02/05/90	MW-2	WATER	—		3x40ml.								
MW-3	02/05/90	MW-3		—		3x40ml								
MW-4	02/05/90	MW-4	/	—		3x40ml								

CHAIN OF CUSTODY

SIGNATURE	INCLUSIVE DATES/TIMES	SIGNATURE	INCLUSIVE DATES/TIMES
1. <i>Chris W. Mesterowicz</i>	_____	4. <i>N. Collins</i>	2/6/90 11:00
2. <i>Chris W. Mesterowicz</i>	02/06/90 9:32 AM	5. <i>[Signature]</i>	2/6/90 11:00
3. <i>[Signature]</i>	02/06/90 9:32 AM	6. _____	_____