ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 15, 2003

Mr. James Lew
General Services Administration
S.F. Service Center (9PEC)
450 Golden Gate Avenue, 3rd Floor East
San Francisco, CA 94102-3400

Dear Mr. Lew:

Subject: Fuel Leak Site Case Closure – Alameda Federal Center, 620 Central Avenue, Alameda; Case No. RO 0000048

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at this site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

Please be advised that the following conditions exist at the site:

- Up to 6000 milligrams per kilogram (mg/kg) Total Petroleum Hydrocarbons (TPH) as Diesel, 6300 mg/kg Oil & Grease, and 0.0062 mg/kg Benzene, among low concentrations of other petroleum compounds, remain in soil at depths between 6.0 and 7.0' below grade.

- Up to 720 micrograms per liter (ug/l) TPH-D and 7.1 ug/l Methyl tert-Butyl Ether (MtBE), among trace concentrations of other petroleum and halogenated compounds, are present in groundwater.

If you have any questions, please contact Scott Seery at (510) 567-6783.

Sincerely,

Donna Drogos, P.E.
LOP Program Manager

Enclosures.
1 Case Closure Letter
2 Case Closure Summary

cc: Betty Graham (w/enc)
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Ste. 1400
Oakland, CA 94612

Toru Okamoto (w/enc)
State Water Resources Control Board
Underground Storage Tank Cleanup Fund
P.O. Box 944212
Sacramento, CA 94244-2120

Greg Fuz (w/enc)
City of Alameda Planning Department
2263 Santa Clara Ave., Rm. 190
Alameda, CA 94501

S. Seery (w/orig enc), R. Garcia (w/enc)

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450 Golden Gate Ave., 3rd Floor East
San Francisco, CA 94102-3400

Dear Mr. Lew:

Subject: Fuel Leak Site case Closure – Alameda Federal Center, 620 Central Avenue, Alameda; Case No. RO0000048

This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with the corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung
Director
Alameda County Environmental Health

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 09/05/01

Agency name: **Alameda County-EPD** Address: **1131 Harbor Bay Pkwy #250**
City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
Responsible staff person: **Scott Seery** Title: **Haz. Materials Spec.**

II. CASE INFORMATION

Site facility name: **Alameda Federal Center**
Site facility address: **620 Central Avenue, Alameda 94501**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **4655 / RO 0000048**
URF filing date: 06/04/92 SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
James Lew General Services Admin. S.F. Service Center (9PEC)	450 Golden Gate Ave., 3rd Fl. East San Francisco, CA 94102-3400	(415) 744-5995

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1000	used oil/MVF	removed	1/27/94
2	5000	gasoline	"	1/27/94
3	10,000	fuel oil	"	12/6/96
4	10,000	" "	"	12/6/96

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: UNK

Site characterization complete? YES

Date approved by oversight agency:

Monitoring Wells installed? YES Number: 10

Proper screened interval? YES

Highest GW depth below ground surface. 2.78' Lowest depth. 5.71'

Flow direction: generally south

Most sensitive current use: commercial

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Are drinking water wells affected? NO Aquifer name: NA

Is surface water affected? NO Nearest affected SW name: NA

Off-site beneficial use impacts (addresses/locations): NONE

Report(s) on file? **YES** Where is report filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda CA 94502

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	5000; 1000 gals.	Disposal - Erickson, Inc. Richmond, CA	01/24/94
	2 x 10,000 "	Disposal – Erickson, Inc. Richmond, CA	12/06/96
Piping	UNK	as above	01/24/94 and 12/06/96
Free Product	UNK	Treatment – EBMUD discharge	10/96 – 12/96
Groundwater	224,000 gal	as above	
Product	2100 gal.	Recycle – Gibson / Pilot Redwood City, CA	01/05/94
	737 gal.	Recycle – Gibson / Pilot Redwood City, CA	01/27/94
	1200 gal.	Recycle – Petrol. Recycling Corp. Patterson, CA	04/25/94
Soil	22 yds.	Disposal – Forward L.F. Manteca, CA	04/27/94
	54 yds.	Disposal – BFI Vasco Rd. L.F. Livermore, CA	04/26/94
	20 yds.	Disposal – Tri City L.F.	04/25/94
	~475 tons	Disposal – Altamont L F Livermore, CA	11/96 – 12/96
UST fill/sand	~256 tons	Disposal – Altamont L.F Livermore, CA	12/96
UST sludge	~36 tons	Disposal – Redwood L.F. Novato, CA	12/18/96

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	1.5	ND	ND	ND
TPH (Diesel)	5100	6000	"	720
Benzene	ND	0.0062	0.6	ND
Toluene	0.02	ND	ND	"
Xylene	0.075	0.025	"	0.60
Ethylbenzene	0.011	0.17	0.4	0.68
Oil & Grease	19,000	6300	NA	ND
Heavy metals	geogenic	geogenic	"	NA
Other: MtBE	NA	NA	"	7.1
HVOC	0.007 (TCE)	ND	1.5 (1,2-DCE)	2.2 (trans 1,2-DCE)
			1.0 (PCE)	15 (cis-1,2-DCE)
			3.0 (TCE)	1.4 (PCE)
SVOC	0.018 (a)	4.7 (c)	NA	NA
	0.035 (b)	4.8 (b)		

a) fluoranthene
b) pyrene
c) acenaphthene

Notes:
1) "Before" soil samples derived from 1994 soil borings advanced prior to 1994 and 1996 tank closures, as follows: TPH-G, BTEX, HVOC and SVOC, boring B-2; TPH-D and O&G, boring B-6 (MW-3).
2) "After" soil results from samples collected at the time of tank removals, as follows: TPH-G (all); TPH-D, O&G, SVOC and E, sample S-1-7.0' (tank 3 / 4); B and X, sample S-3-6.0' (tank 3 / 4); T (all).
3) "Before" water results reflect samples collected in 1994 from well MW-1 prior to initial tank removals. Well MW-3 exhibited black, free-phase product at that time.
4) "After" water results from samples collected from wells MW-1 and AMW-1 in February 1999. MtBE concentration based on EPA Method 8021B analysis.

Comments (Depth of Remediation, etc.):

The Alameda Federal Center is located in the northwest portion of the City of Alameda, approximately 500' east of San Francisco Bay. Two sets of tanks were removed from this site between 1994 and 1996. One set (Tanks 1 and 2) were located near Building 4, at the southern portion of the site. Tank 1 (1000 gallons) appears to have originally contained MVF (speculated to be gasoline), and then most recently, used oil. Tank 2 (~5000 gallons) previously contained gasoline. A dispenser was located near Tank 1. These tanks were removed in January 1994. Tanks 3 and 4 (10,000 gallons each) were located in the northwestern portion of the site, near Building 8, and were originally closed in place (reportedly) prior to the 1950s by filling each with sand Both are reported to have contained fuel oil to serve nearby boilers. These tanks were removed in December 1996

Prior to the 1994 tank removals, several soil borings were emplaced about both tank sites, with several converted to monitoring wells. The results of this work will be discussed in Sec. VII of this summary.

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Tanks 1 and 2 were removed in January 1994. Both tank excavations revealed the presence of shallow groundwater. Tank 1 was reported to be in "poor" condition, with several holes noted along the flanks and bottom of the tank. "Moderate" hydrocarbon (HC) staining and odor were reported in the tank pit at the saturated/unsaturated zone interface. Tank 2 was in better condition than the first, although a few small holes were noted. No HC odor or staining was noted, however. Samples were collected from the bottom of the tanks pits. The results of analyses of these samples were unremarkable, but it appears that these samples were not very representative of site conditions. Soil (and water) samples collected from soil borings B-1/MW-1 and SB-2 are better representations of impacts in the area of Tank 1 and 2 . No overexcavation occurred.

Tanks 3 and 4 were removed in December 1996. Both tanks had been secured to concrete slabs. The tanks were filled with approximately 90% sand and 200 gallons of liquids upon discovery. Liquids were reported to be a mixture of fuel oil and water. Liquids were pumped from the tanks, and excavation, to an above-ground Baker tank. The remaining contents were removed using an excavator, and finally by hand, after the tops of the tanks were cut open. Removed material was mixed with dry sand to facilitate its transport to an off-site disposal facility. Liquids stored in the Baker tank were treated through a series of GAC canisters and discharged under permit to the EBMUD sanitary sewer. Some 224,000 gallons of water/fuel were treated and discharged.

Small holes were seen in both tanks after their removals. Heavy soil staining was reported between 5 and 8' BG along the sidewalls of the excavation. The excavation bottom was reported to be between 11 and 14' BG. It has been reported that the excavation bottom appeared relatively uncontaminated. Samples were collected from each sidewall at a depth of ~7' BG, and at 13' at the excavation's base. Sidewall sample results revealed the presence of elevated concentrations of diesel-range HCs and "oil and grease", among others. The bottom sample was unremarkable.

Final excavation dimensions were 44 x 26 feet, with the bottom ranging from 11 to 14' BG.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? _____

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? _____

Does corrective action protect public health for current land use? YES
Site management requirements: NA

Should corrective action be reviewed if land use changes? YES

Monitoring wells Decommissioned YES

Number Decommissioned: 2 Number Retained 8 (pending case closure)

Leaking Underground Fuel Storage Tank Program

IV. CLOSURE (Continued)

List enforcement actions taken: NONE

List enforcement actions rescinded: NA

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery Title: Haz Mat Specialist
Signature: Date: 4-5-02

Reviewed by
Name: Susan Hugo Title: Supervising Haz Mat Specialist
Signature: Susan L Hugo Date: 4/5/02

Name: Eva Chu Title: Haz Mat Specialist
Signature: Date: 4/5/02

VI. RWQCB NOTIFICATION

Date Submitted to RB: 4-8-02 RB Response: Concur Chuck Headlee
RWQCB Staff Name: Chuck Headlee Title: Assoc. Eng. Geologist Date: 4/12/02

VII. ADDITIONAL COMMENTS, DATA, ETC.

Prior to initiating the 1994 UST closures, the contractor conducted an exploratory investigation in two areas of the site: the Tank 1 and 2 area located in the southern portion of the site, and the Tank 3 and 4 area located in the northwestern portion of the site. During this work, six soil borings (SB-1 through SB-6) were completed, converting 3 into monitoring wells (MW-1, -2, -3). Well MW-1 is located near Tank 1; MW-2 is located near Tank 2; and, MW-3 is located near Tanks 3 and 4. Well MW-2 was damaged and rendered unusable before it was sampled. All wells were installed to an approximate depth of 14' BG, with screened intervals between ~3 to 14' BG.

Up to 19,000 mg/kg oil and grease (O&G), among other, yet substantially lower concentration, compounds, were identified in shallow soil collected from boring SB-6 (MW-3) emplaced near Tank 3. Only trace fuel and used oil constituents were identified in soil samples collected from borings advanced adjacent Tanks 1 and 2. Trace TCE (7 ug/kg) was identified in soil from boring SB-2. Initial water samples revealed only trace concentrations of fuel compounds and HVOCs in well MW-1. Black, tarry free-product was observed in MW-3, and so it was not sampled.

Seven (7) additional soil borings were advanced in May 1995, with three (3) converted into new monitoring wells. Well MW-2 was also replaced at this time with well MW-2R. It was reported that subsurface soils in the

Leaking Underground Fuel Storage Tank Program

IV. CLOSURE (Continued)

List enforcement actions taken: NONE

List enforcement actions rescinded: NA

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Signature: Date: 4-5-02

Reviewed by
Name: Susan Hugo Title: Supervising Haz Mat Specialist
Signature: Susan L Hugo Date: 4/5/02

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Signature: Date: 4/5/02

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Seven (7) additional soil borings were advanced in May 1995, with three (3) converted into new monitoring wells. Well MW-2 was also replaced at this time with well MW-2R. It was reported that subsurface soils in the

Leaking Underground Fuel Storage Tank Program

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

Tank 1 and 2 area appear to consist of an upper artificial fill or regraded native beach or tidal flat sand of well or poorly graded sediments which generally fines downward to silty or clayey sand at the ~8' depth. Trace to abundant shell fragments were reported from 5 to 15' BG. Heaving sand was reported during installation of wells MW-4, TW/MW-5, and MW-6 from depths of 13 to 15' BG. Soils in the area of Tanks 3 and 4 are similar to the Tank 1 and 2 area, except that is reported that the sediments are generally coarser with notably fewer fines. Also, the presence of imported non-native materials is suggested by the presence of coarse granules and trace wood fragments and other debris, notably absent from the Tank 1 and 2 area. An additional common factor was the occurrence of shallow unconfined groundwater with a static water level ranging from ~ 4 to 5' BG.

Soil sample results were less than extraordinary, primarily with low ppm-range O&G and TEPH impacts in all borings, and ppb-range SVOC impacts in TW/MW-4, MW-6, TB-1, and TB-3, at depths between 5 and 15' BG. No BTEX components were noted in any soil samples. Up to 5500 ug/l TEPH, 1.1 ug/l benzene, 0.9 ug/l ethylbenzene, and 1.6 ug/l xylene were identified in water sampled from well MW-1. BTEX were not present in any other water samples, and only low ppb-range TEPH was identified in MW-3 and –5. Limited low ppb-range HVOC and/or SVOCs were also identified in samples collected from MW-1 (HVOC) and TW/MW-5 (HVOC/SVOC).

In February 1998, well AMW-1, -2, and –3, and soil boring AB-1, were completed in the Tank 3 and 4 area. Logs appear to show that AMW-1 was advanced into fill, while the remaining were advanced into apparent native sediments. Collected samples were transported from one California laboratory to another in Florida due to closure of the California site. Some confusion ensued, as some samples had already been extracted and analyzed, and others were not analyzed until outside their respective holding times once delivered to Florida. In the confusion, some analyses were omitted.

Diesel-range compounds and O&G were detected in most of the soil samples. All water samples revealed diesel-range compounds, with the sample collected from AMW-3 exhibiting 17,000 ug/l TPH-D and 140 ug/l O&G. Benzene was detected in the sample collected from AMW-2 at 0.99 ug/l.

Overall, samples were collected from the (then existing) well network in a rather inconsistent manner through July 1996. Well MW-3 was destroyed during the 1996 removals of Tanks 3 and 4, and had not been sampled since May 1995. No sampling occurred from 12/96 until wells AMW-1, -2, and -3 were installed in the Tank 3 and 4 area in February 1998. From that point forward, only wells MW-1 (Tank 1 and 2 area) and the AMW series wells (Tank 3 and 4 area) were sampled until the final event of February 1999, although all wells were gauged to calculate groundwater flow Well MW-2R was later sampled in July 1999 to discern potential MtBE concentrations

Final water samples collected from wells MW-1, -2R , and AMW-1, -2, and –3 were fairly unremarkable, with only trace to low ppb concentrations of TPH-D, X, E, and select HVOC constituents. All MtBE analyses were likewise unremarkable.

Leaking Underground Fuel Storage Tank Program

This case should be closed as it meets the definition of a "Low Risk Groundwater Case", as outlined in the 05 January 1996 guidance from the San Francisco Bay Regional Water Quality Control entitled *"Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Sites"*, as follows:

1) **The leak has been stopped and ongoing sources, including free product, have been removed or remediated.**

   The subject USTs were removed in 1994 and 1996. Hence, no ongoing HC source remains at the site

2) **The site has been adequately characterized.**

   Over the course of the investigation of this site several soil borings, and 10 monitoring wells have been installed. From each, soil and GW samples have been collected and analyzed over a period of several years. This site is very well characterized as a result of this work.

3) **The dissolved hydrocarbon plume is not migrating.**

   Long-term sampling of the well network has demonstrated that the HC plume is substantially constrained to the source site. The plume appears stable at this time, and is anticipated to shrink due to intrinsic biodegradation.

4) **No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.**

   There are no known drinking water wells in close proximity to this site. San Francisco Bay lies ~500' southwest of the site. Sampling of well MW-1, the most down-gradient well of the network, has shown only minimal impacts over time. Therefore, impacts to the Bay are not reasonably anticipated from historic releases from the subject tanks.

5) **The site presents no significant risk to human health.**

   No significant health risk is anticipated for potential commercial and residential receptors based on plausible exposure scenarios.

6) **The site presents no significant risk to the environment.**

   No potential environmental risk was identified due to the geographic separation of the site from possible receptor locations and limited plume dimensions

FIGURES

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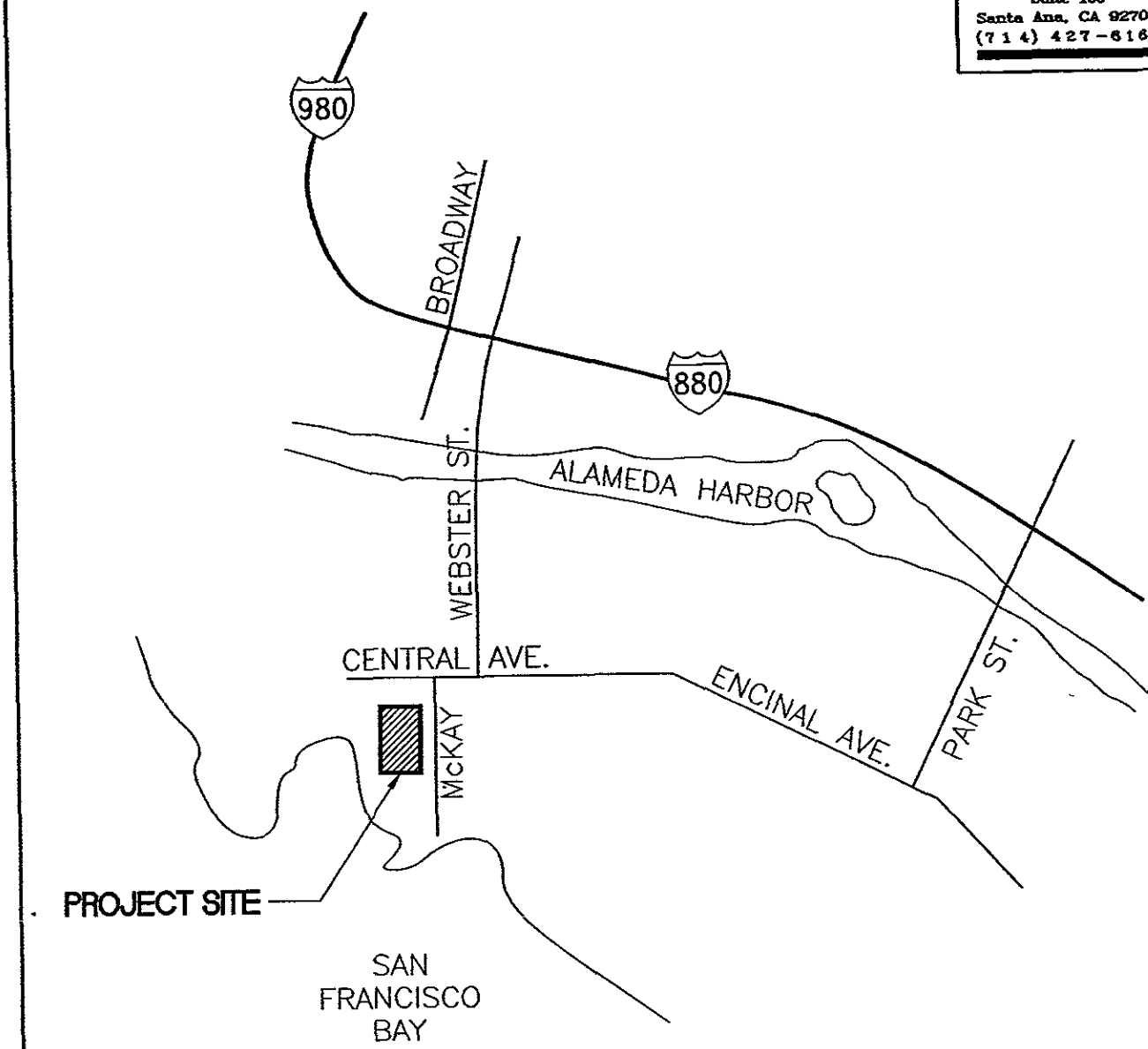

VICINITY MAP

NOT TO SCALE

PROJECT NORTH

SHEET TITLE: FIGURE 1 – SITE VICINITY MAP		CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C 24
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: G.R.F	DATE: DEC. 1998	SHEET: 1

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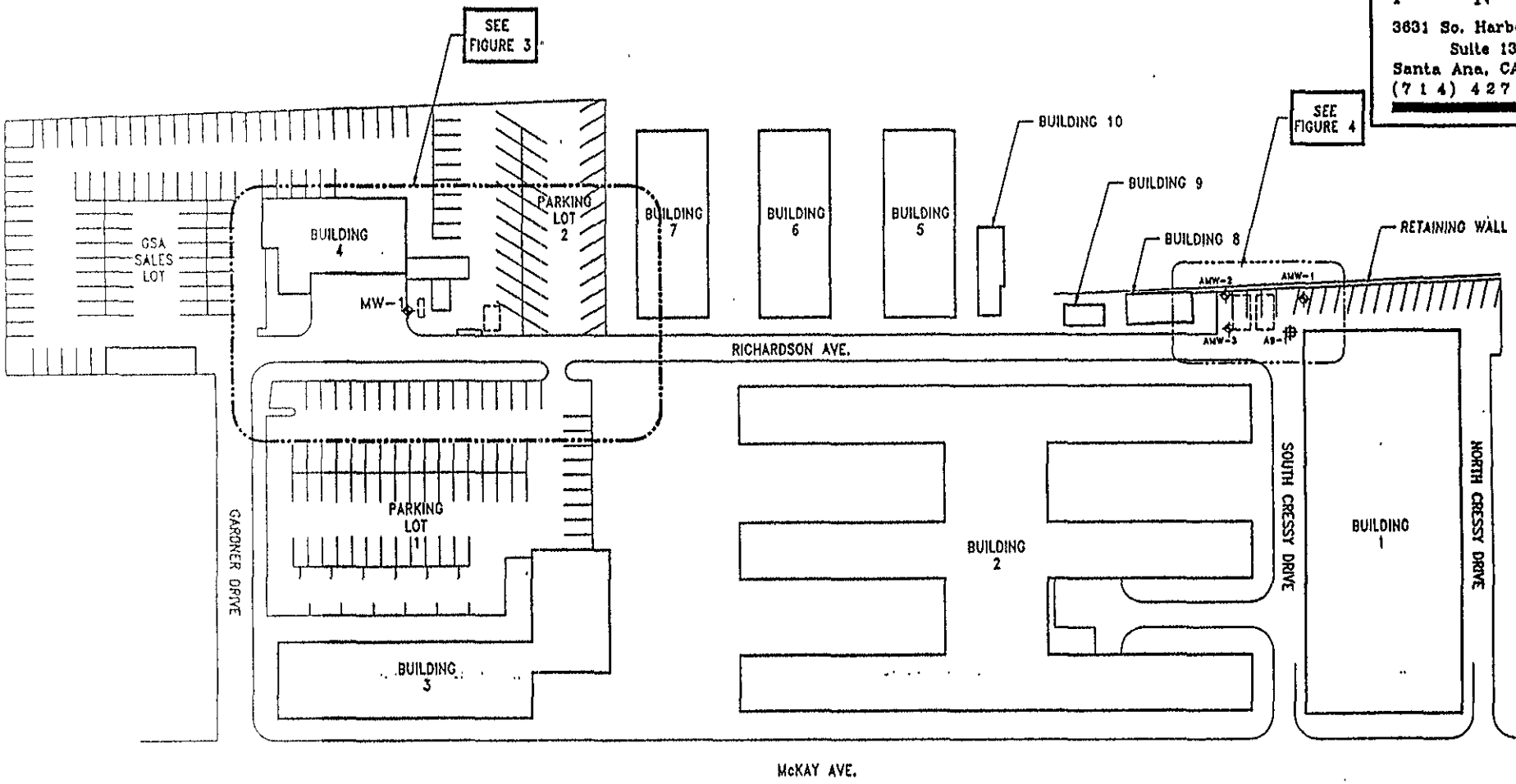

LEGEND

MW-1 ⊕ MONITORING WELL

AB-1 ⊕ SOIL BORING

GRAPHIC SCALE

0 10' 50' 100' 150'

PROJECT NORTH

SHEET TITLE: FIGURE 2 - SITE MAP	CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24	
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: G.R.F.	DATE: SEPT. 1998	SHEET: 2 OF 5

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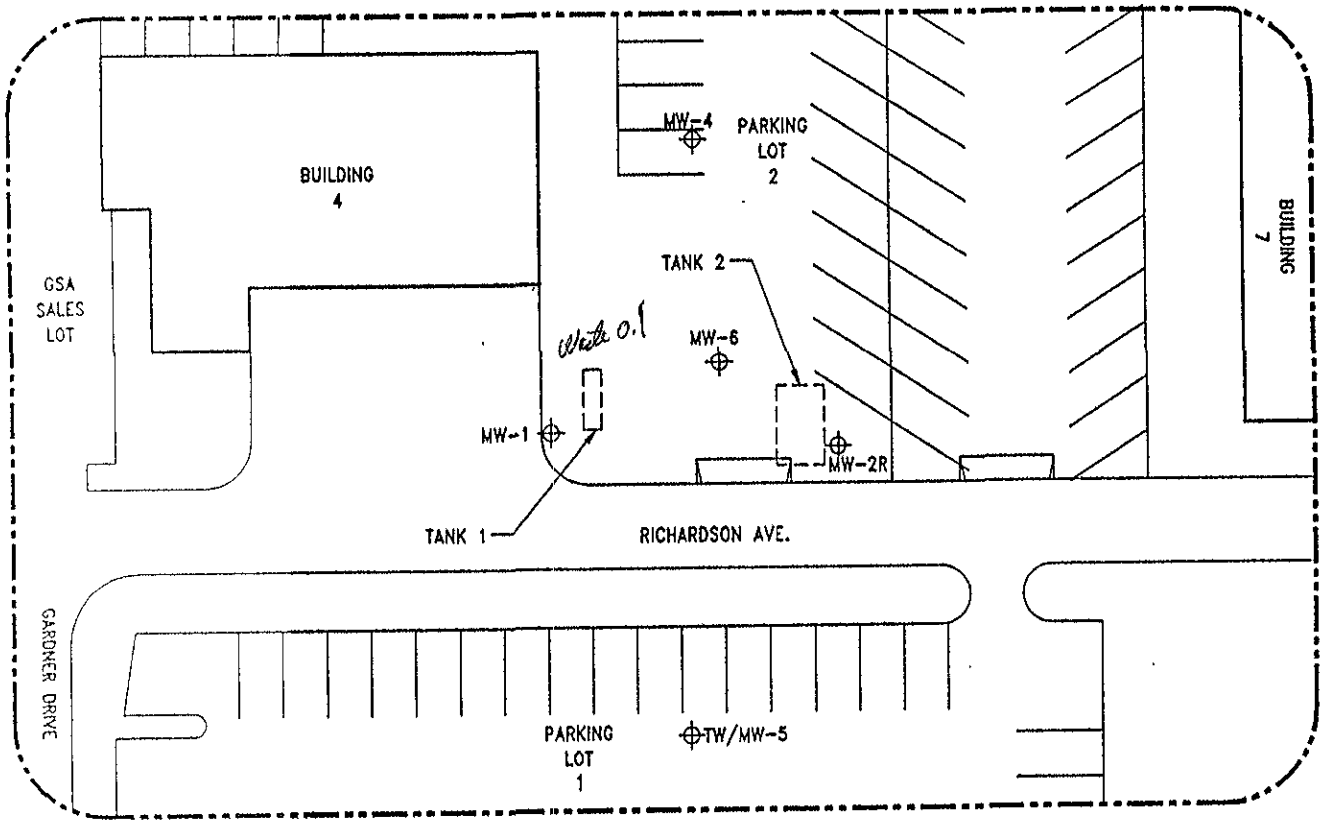

LEGEND

⊕ MW — EXISTING MONITORING WELL

- - - - APPROX. LOCATION OF REMOVED UST's

GRAPHIC SCALE

0 10' 20' 30' 40'

SCALE: 1" = 40'

PROJECT NORTH

SHEET TITLE: FIGURE 3 - TANK 1 & 2 AREA / BORING LOCATIONS	CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24	
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: G.R.F.	DATE: SEPT. 1998	SHEET: 3 OF 5

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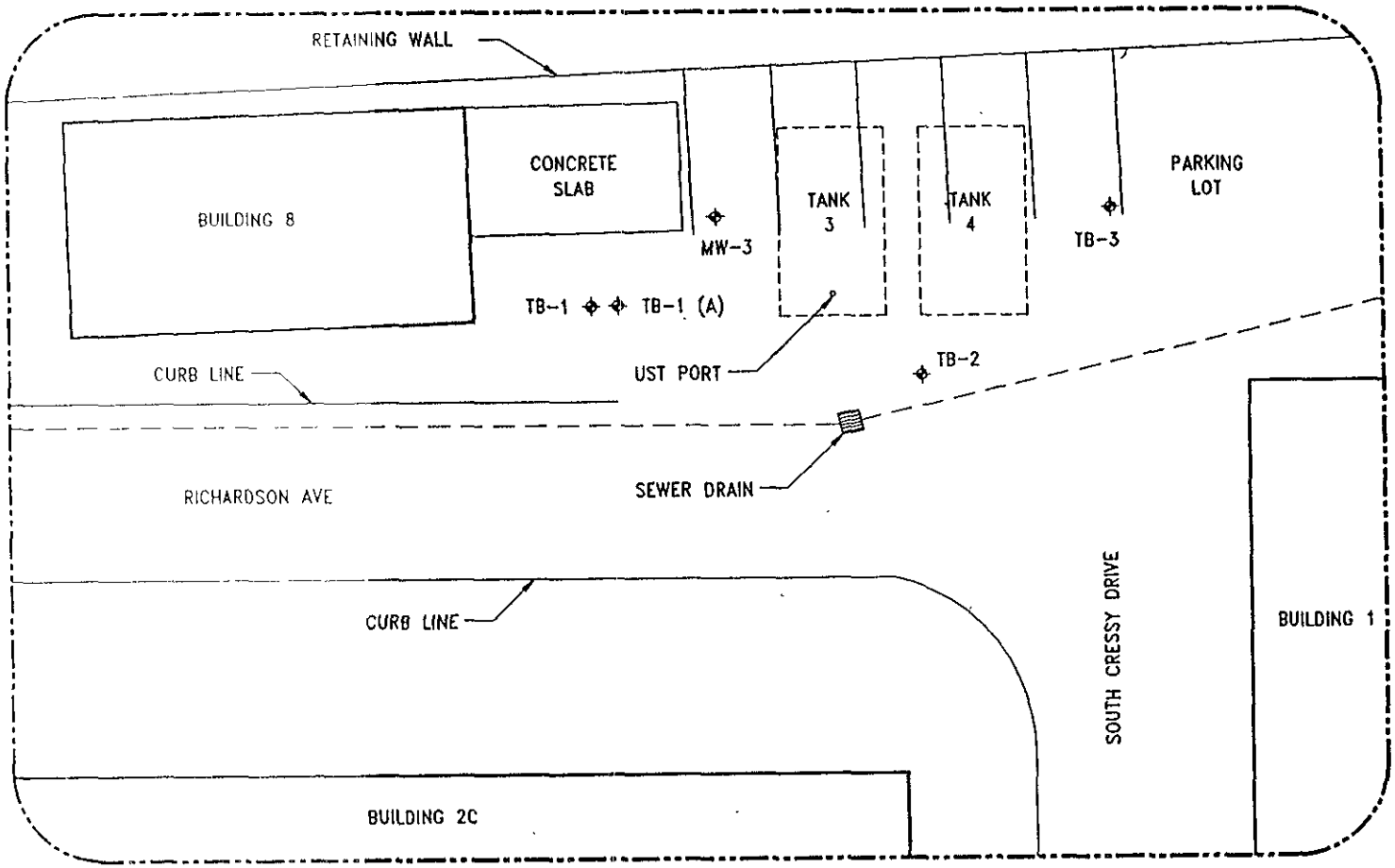

LEGEND

MW	EXISTING MONITORING WELL
TB	TEST BORING LOCATION
----	APPROX. LOCATION OF EXISTING UST's
— —	SEWER PIPE

NOT TO SCALE

PROJECT NORTH

SHEET TITLE: FIGURE 4 - TANK 3 & 4 AREA / BORING LOCATIONS	CHECKED BY: L. HARLAN	PROJECT NUMBER: 2403C.16	
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: J. GONZALES	DATE: JUN. 20, '95	SHEET: 1 OF 1

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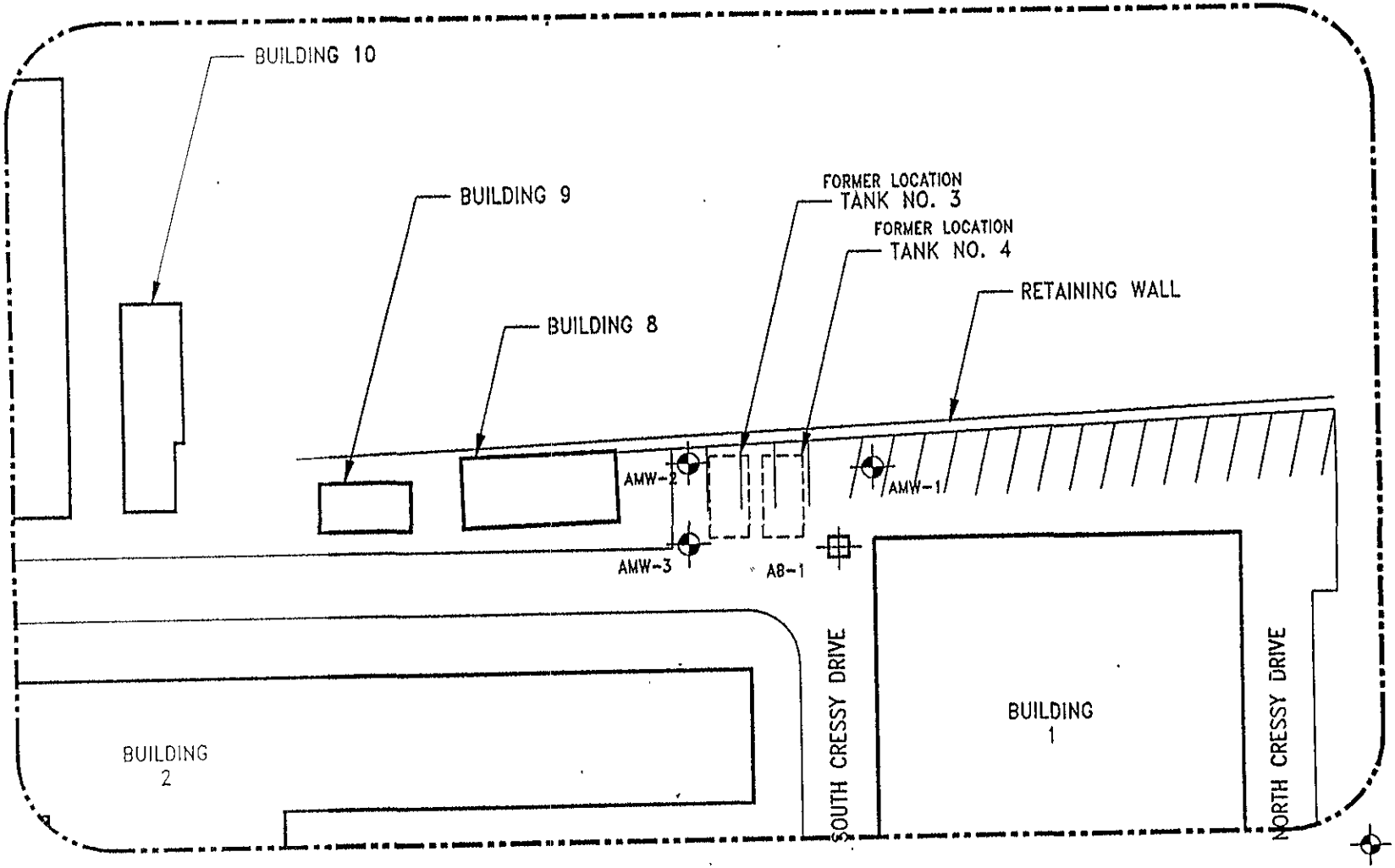


LEGEND

MONITORING WELLS

SOIL BORING

APPROX. LOCATION OF REMOVED UST's

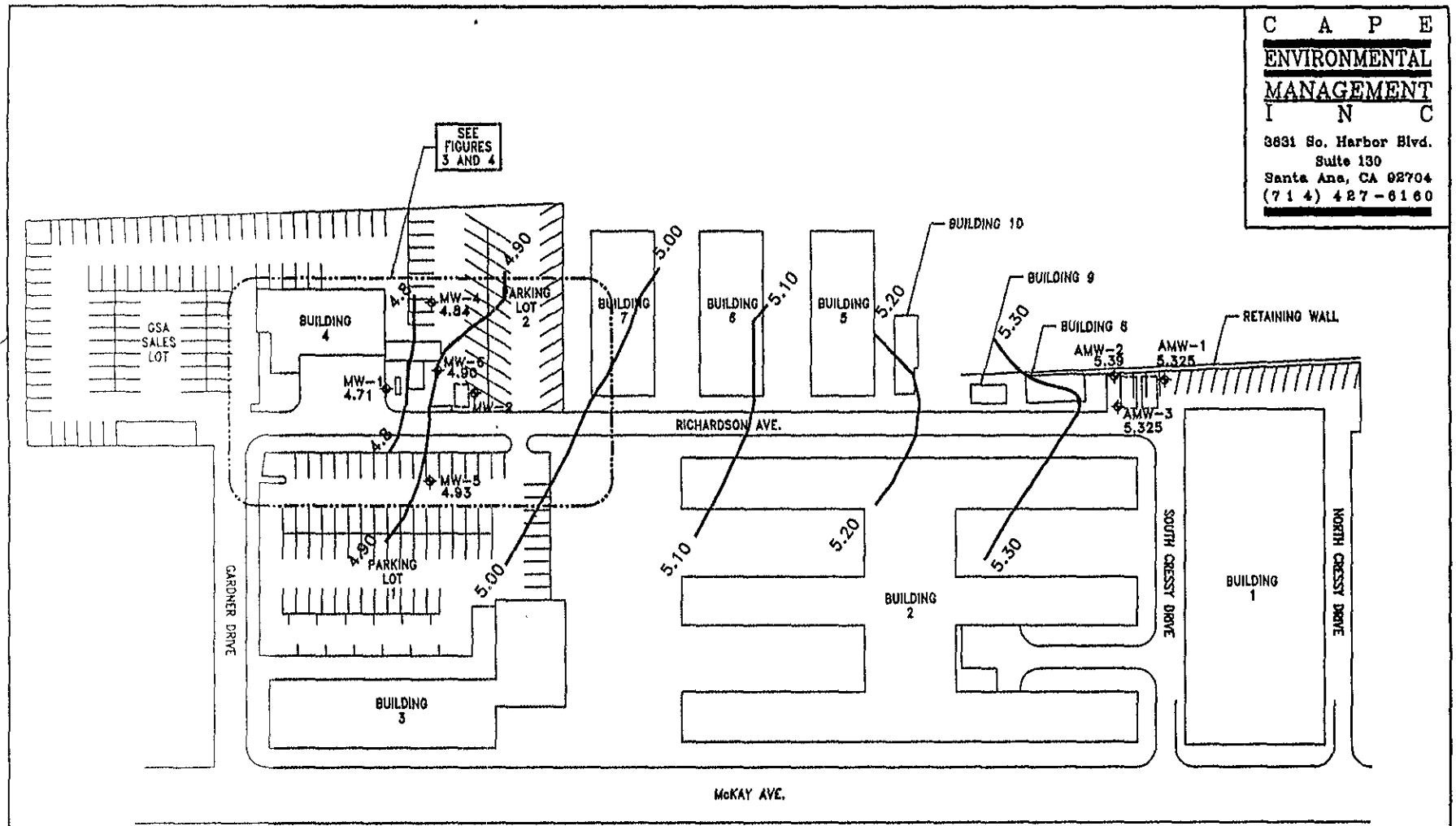
GRAPHIC SCALE

0 15' 30' 30' 45'

SCALE: 1" = 40'

PROJECT NORTH

SHEET TITLE: FIGURE 4 - TANK 3 & 4 AREA / MONITORING WELL LOCATIONS	CHECKED BY: W.W.M.	PROJECT NUMBER: 2403C.24	
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: G.R.F.	DATE: SEPT. 1998	SHEET: 4 OF 5



Bay

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LEGEND

MW-1 4.71 ✦ EXISTING MONITORING WELL WITH GROUNDWATER LEVEL

5.30 GROUNDWATER CONTOUR GRADIENT

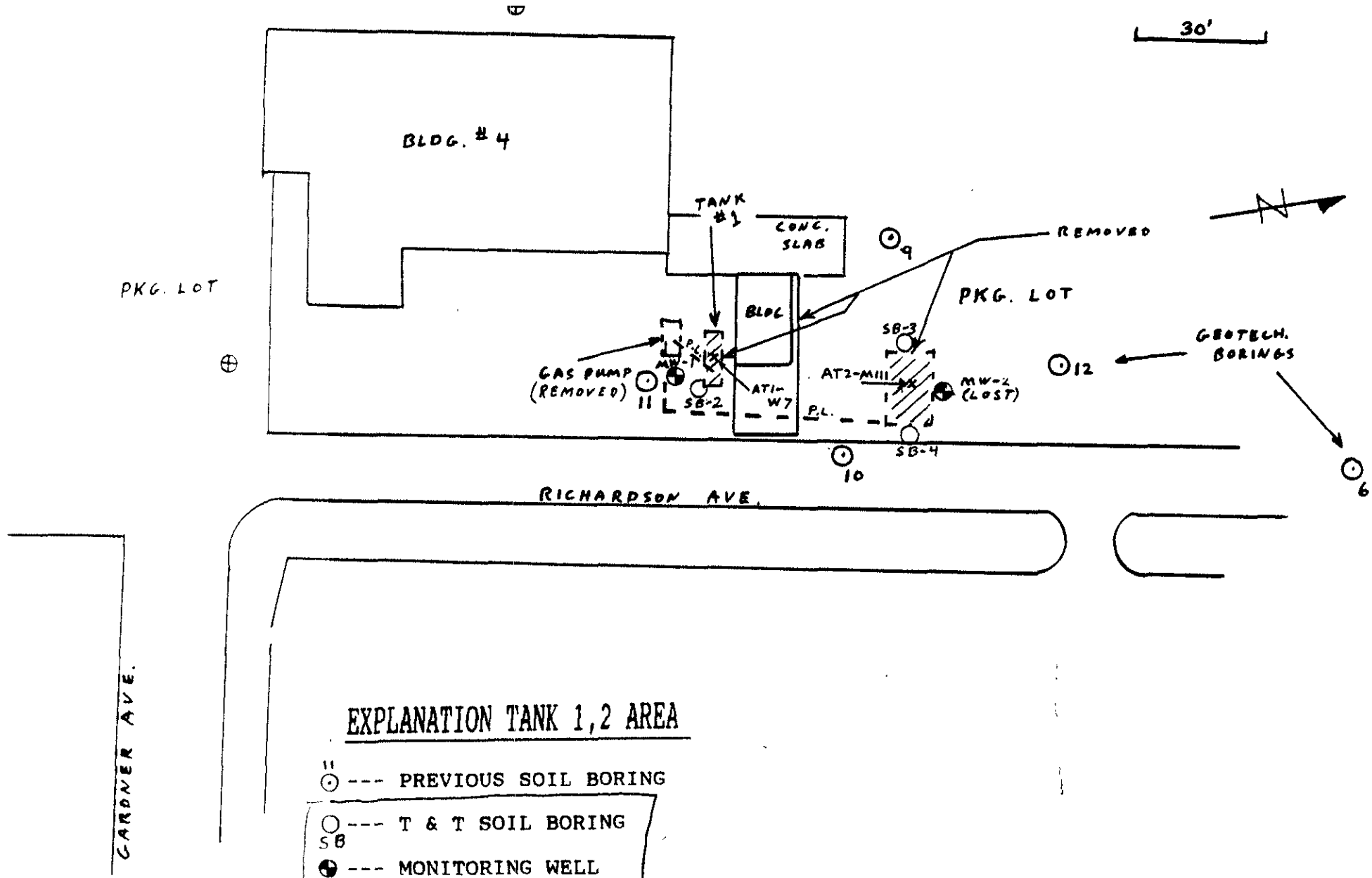
GRAPHIC SCALE

0 10' 20' 100' 180'

PROJECT NORTH

SHEET TITLE: FIGURE 5 - GROUNDWATER GRADIENT MAP 02-22-99	CHECKED BY: B. Millar	PROJECT NUMBER: 2403C.24.001	
PROJECT TITLE: ALAMEDA FEDERAL CENTER, ALAMEDA, CA	DRAWN BY: G. Fagin	DATE: 03-24-99	SHEET: FIG.5

FILE: GW0299F5.dwg



EXPLANATION TANK 1,2 AREA

11 ⊙ --- PREVIOUS SOIL BORING

SB ○ --- T & T SOIL BORING

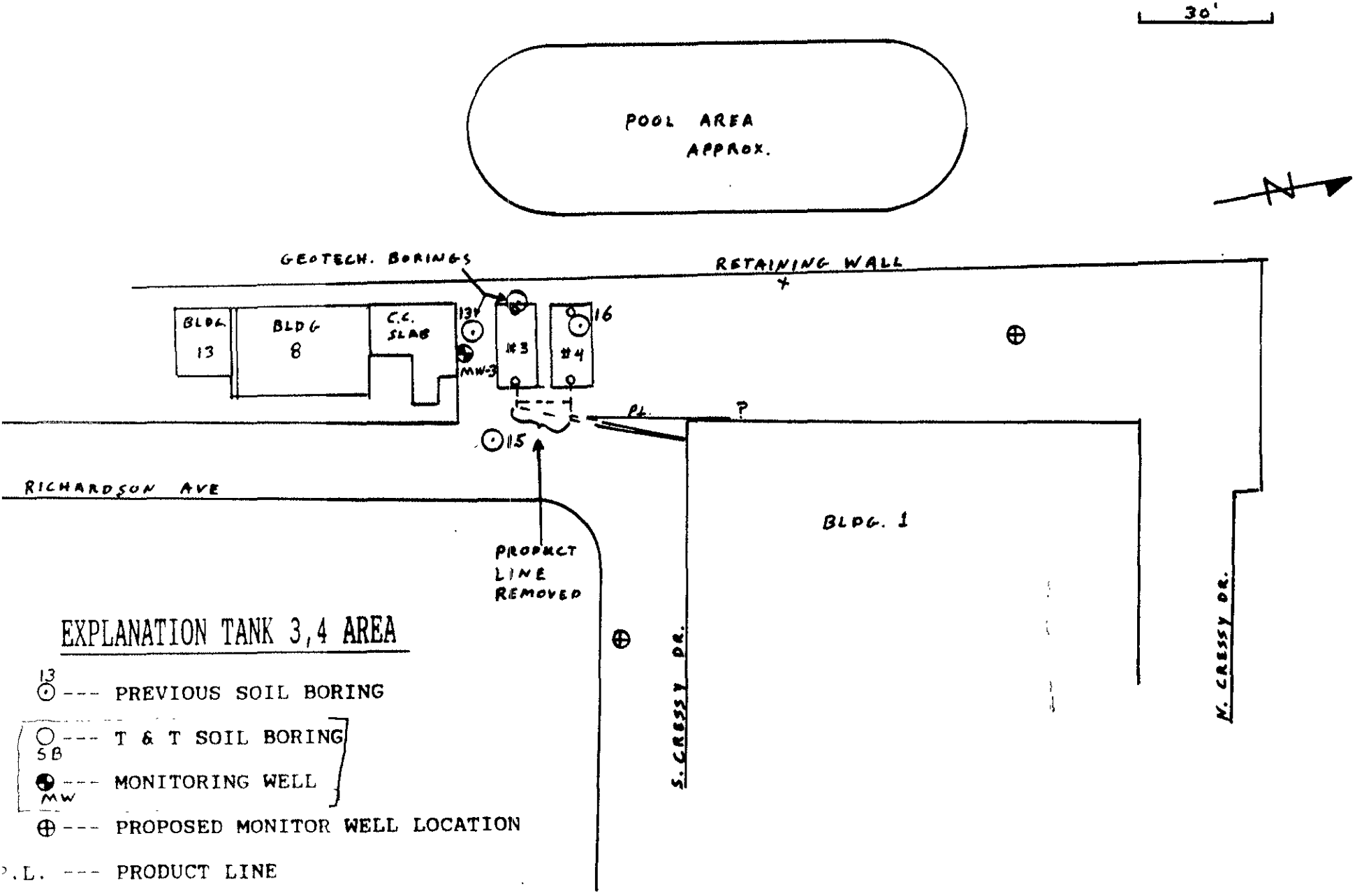
MW ◒ --- MONITORING WELL

⊕ --- PROPOSED MONITOR WELL LOCATION

P.L. --- PRODUCT LINE

\ \ --- STRUCTURE REMOVED

1" = 30'



EXPLANATION TANK 3,4 AREA

13 ⊙ --- PREVIOUS SOIL BORING

○ SB --- T & T SOIL BORING

● MW --- MONITORING WELL

⊕ --- PROPOSED MONITOR WELL LOCATION

P.L. --- PRODUCT LINE

\ --- STRUCTURE REMOVED

1" = 30'

Tables

Table 1
Summary of Analytical Results
Petroleum and Volatile Compounds (Soil)

Sample ID (Depth in feet)	Date Sampled	O&G (mg/Kg)	TEPH (mg/Kg)	TVH (mg/Kg)	B (µg/Kg)	T (µg/Kg)	E (µg/Kg)	X (µg/Kg)	VH (µg/Kg)
TW/MW4-5'	5/17/95	ND	3.3	ND	ND	ND	ND	ND	ND
TW/MW4-10'	5/17/95	ND	19 (2.0)	ND	ND	ND	ND	ND	ND
TW/MW4-15'	5/17/95	290	3.2	ND	ND	ND	ND	ND	ND
MW6-4'	5/18/95	90	ND	ND	ND	ND	ND	ND	ND
MW6-10'	5/18/95	98	25 (5.0)	ND	ND	ND	ND	ND	ND
MW6-13'	5/18/95	ND	ND	ND	ND	ND	ND	ND	ND
TB1-10'	5/18/95	ND	ND	ND	ND	ND	ND	ND	ND
TB1-15'	5/18/95	ND	ND	ND	ND	ND	ND	ND	ND
TB2-10'	5/18/95	520	3.2	ND	ND	ND	ND	ND	ND
TB2-15'	5/18/95	ND	ND	ND	ND	ND	ND	ND	ND
TB3-5'	5/18/95	140	9.3 (5.0)	ND	ND	ND	ND	ND	ND
TB3-10'	5/18/95	150	42 (5.0)	ND	ND	ND	ND	ND	ND
TB3-15'	5/18/95	120	10	ND	ND	ND	ND	ND	ND

NOTES:

mg/Kg- Milligrams per kilogram
µg/Kg- Micrograms per kilogram
ND- Not detected at or above Method Detection Limit (MDL).
O&G- Hydrocarbon oil and grease using test method SMWW 5520 with MDL of 50 mg/Kg.
TEPH- Total extractable petroleum hydrocarbons as diesel fuel using California Department of Health Services (DOHS) Method with MDL of 1.0 mg/Kg. Number in parenthesis following reported concentration represents raised MDL.
TVH- Total volatile hydrocarbons as gasoline using California DOHS Method with a MDL of 1.0 mg/Kg.
BTEX- Benzene, toluene, ethyl benzene and total xylenes using EPA Test Method 8020 with MDL of 5.0 µg/Kg.
VH- Volatile halocarbons for EPA Test Method 8010 compounds using EPA Test Method 8240 with compound MDLs ranging from 5.0 µg/Kg to 20.0 µg/Kg.

Table 2
Summary of Analytical Results
Polynuclear Aromatic Hydrocarbons (Soil)

Sample ID (Depth in feet)	Date Sampled	PNA ($\mu g/K_g$)
TW/MW4-5'	5/17/95	ND
TW/MW4-10'	5/17/95	450 Phenanthrene 1,400 Fluoranthene 3,400 Pyrene (3,300) 740 Benzo (a) anthracene 1,000 Chrysene 1,000 Benzo (b) fluoranthene 660 Benzo (k) fluoranthene 1,400 Benzo (a) pyrene 770 Indeno (1,2,2-cd) pyrene 980 Benzo (g,h,i) perylene
TW/MW4-15'	5/17/95	ND
MW6-4'	5/18/95	ND
MW6-10'	5/18/95	*240 Phenanthrene 490 Fluoranthene 1,100 Pyrene 450 Benzo (a) anthracene 390 Chrysene 660 Benzo (b)fluoranthene 540 Benzo (k) fluoranthene 830 Benzo (a) pyrene 370 Indeno (1,2,3-cd) pyrene 460 Benzo (g,h,i) perylene
MW6-13	5/18/95	ND
TB1-10'	5/18/95	*230 Pyrene
TB1-15'	5/18/95	ND
TB2-10'	5/18/95	ND
TB2-15'	5/18/95	ND

NOTES: Results indicate concentrations of compounds detected at or above Method Detection Limit (MDL) of 330 $\mu g/L$. Number in parenthesis following compound indicate raised MDL. Undetected compounds are not listed.

PNA- Polynuclear aromatic hydrocarbons using EPA Test Method 8270.

$\mu g/L$- Micrograms per liter.

ND- Not detected at or above MDL.

* Concentration of compound detected using instrument detection limit (IDL) of 50 $\mu g/L$.

Table 2 (cont.)
Summary of Analytical Results
Polynuclear Aromatic Hydrocarbons (Soil)

Sample ID (Depth in feet)	Date Sampled	PNA (µg/L)
TB3-5'	5/18/95	ND
TB3-10'	5/18/95	420 Phenanthrene 1,100 Fluoranthene 2,600 Pyrene 660 Benzo (a) anthracene 780 Chrysene 680 Benzo (b) fluoranthene 710 Benzo (k) fluoranthene 930 Benzo (a) pyrene 340 Indeno (1,2,3-cd) pyrene 410 Benzo (g,h,i) perylene
TB3-15'	5/18/95	*260 Phenanthrene 900 Fluoranthene 1,500 Pyrene 410 Benzo (a) anthracene 500 Chrysene 370 Benzo (b) fluoranthene 370 Benzo (k) fluoranthene 590 Benzo (a) pyrene *270 Indigo (1,2,3-cd) pyrene 330 Benzo (g,h,i) perylene

NOTES: Results indicate concentration of compound detected at or above Method Detection Limit (MDL) of 330 µg/L. Undetected compounds are not listed.

PNA- Polynuclear aromatic hydrocarbons using EPA Test Method 8270.
µg/L- Micrograms per liter.
* Concentration of compound detected using instrument detection limit (IDL) of 50 µg/L.

TABLE 3
SUMMARY OF ANALYSTICAL RESULTS (SOIL)
PETROLEUM COMPOUNDS

SAMPLE	DATE	Oil/Grease (mg/kg)	DRO (mg/kg)	PAH (mg/kg)
AB-1-5'	2/16/98	ND	15	ND
AB-1-10'	2/16/98	15	5.1	ND
AB-1-15'	2/16/98	ND	6.9	ND
AMW-2-5'	2/16/98	350	12	ND
AMW-2-10'	2/16/98	310	4.7	ND
AMW-2-15'	2/16/98	400	7.1	ND
AMW-3-5'	2/16/98	530	20	ND
AMW-3-10'	2/16/98	160	21	0.27 pyrene
AMW-3-15'	2/18/98	ND	ND	ND

Abbreviations:

Oil/Grease	=	hydrocarbon oil and grease (DL = 10 mg/kg)
DRO	=	Diesel range organics (DL = 1 mg/kg)
-mg/L	=	milligrams per liter
-µg/L	=	micrograms per liter
ND	=	not detected at or above the defined detection limit (DL)

PAH Polynuclear aromatic hydrocarbons

Note:
No detectable levels of GRO or BTEX were found to be present in the samples.

TABLE 4
SOIL SAMPLES COLLECTED AFTER UST REMOVAL (TANKS 3 AND 4)
SAMPLE RESULTS
GSA Alameda
UST Removal Project

Sample Number Location	TPH-G (mg/kg)	B/T/E/X (mg/kg)	TPH-D (mg/kg)	8240 VOCs (µg/kg)	8270 SVOCs (µg/kg)	6010 Cd/Cr/Ni/Pb/ Zn (mg/kg)	5520 Oil & Grease (mg/kg)
S-1-7.0' NW Corner	ND	0.17 Ethyl Benzene 0.14 Xylenes 18 Unknowns	6000	ND	4700 Acenaphthene 4800 Pyrene	ND Cd ND Cr 1.6 Ni 3.2 Pb 83 Zn	6300
S-2-7.0' North Sidewall	ND	0.059 Ethyl Benzene 0.052 Xylenes 9.5 Unknowns	4500	ND	ND	ND Cd ND Cr 1.4 Ni 4.2 Pb 67 Zn	5000
S-3-6.0' East Sidewall	ND	0.009 Ethyl Benzene 0.15 Xylenes 1.9 Unknowns	1100	6.2 Benzene 25 Xylenes	ND	ND Cd 14 Cr 12 Ni 6.2 Pb 72 Zn	2900
S-4-6.0' SE Corner	ND	0.019 Ethyl Benzene 0.016 Xylenes 4.1 Unknowns	3800	ND	ND	0.64 Cd ND Cr 1.2 Ni 8.8 Pb 250 Zn	2100
S-5-13.0' Southwest Excavation Bottom	ND	ND	37	ND	ND	ND Cd 3.5 Cr 5.8 Ni 5.2 Pb 54 Zn	<85

TPH-G	Total Petroleum Hydrocarbons as gasoline
B/T/E/X	Benzene/Toluene/Ethyl Benzene/Xylene
TPH-D	Total Petroleum Hydrocarbons as diesel
TPH-Motor Oil	Total Petroleum Hydrocarbons as Motor Oil
8240	Volatile Organic Compounds
8270	Semi-Volatile Organic Compounds
6010	California Assessment Metals (Cadmium, Chromium, Nickel, Lead, Zinc)
5520	Oil & Grease
ND	Not detected

TABLE 5 - SOIL BORING SAMPLE RESULTS

SAMPLE NUMBER	BORING/ PIT	TYPE/FT DEEP	TPH-G MG/KG	B/T/E/X UG/KG	TPH-D MG/KG	413.2 MG/KG	8080 PCB MG/KG	8270 MG/KG	6010 MG/KG CD/CR/NI /PB/ZN	8010 UG/KG
B1-5 mw-1	B1/MW-1	TUBE/ 5	ND	ND	1.3	ND	ND	ND	ND/10/9/ ND/21	ND
B1-10.5	B1/MW-1	TUBE/ 10.5	ND	ND	12.0	100.0	ND	ND	ND/33/32 /8.7/58	ND
B1-14.5	B1/MW-1	TUBE/ 14.5	ND	ND	1.1	ND	ND	ND	ND/36/32 /ND/38	ND
B2-8.5	B2	TUBE/ 8.5	1.5	ND/20/ 11/75	57.0	120.0	ND	ND Fluoranthene ↓ 12/26(A) Pyrene	ND/15/11 /ND/14	(TCE)7
B3-10.5	B3	TUBE/ 10.5	ND	ND	NR	NR	NR		NR	NR
B4-5	B4	TUBE/ 5	ND	ND	NR	NR	NR	NR	NR	NR
B4-10.5	B4	TUBE/ 10.5	ND	ND	NR	NR	NR	NR	NR	NR
mw-2 B5-5	B5	TUBE/ 5	ND	ND	NR	NR	NR	NR	NR	NR
B5-10.5	B5	TUBE/ 10.5	ND	ND	NR	NR	NR	NR	NR	NR
B6-5 mw-3	B6	TUBE/ 5	ND	ND	5100	19000	ND	ND	ND/14/ 8.5/ND/ 85	ND
B6-10.5	B6	TUBE/ 10.5	ND	ND	17	30	ND	18/35(A)	ND/25/21 /17/80	ND
B6-14	B6	TUBE/14	ND	ND	18	15	ND	ND	ND/29/28 /ND/22	ND
	MISC.	SAMPLES								
TOP SLUDGE	TANK 3	GRAB	ND	ND	~~490,000~~ ~~45000~~	600000	ND	ND	ND	NR
BOTTOM SED.	TANK 3	GRAB	ND	ND	4000	12000	ND	ND	ND metals	ND/22/33 /10/47
SED. TANK 4	TANK 4	GRAB	ND	ND/ND/ 12/64	220		NP	NR	NR	ND/17/21 /ND/15
GSA PL SPILL ?	TANK 4	GRAB	11000	11000/ 75000/ 51000/ 250000	170000	~~NR~~ 310,000	NR	NR	NR	NR

SPOILS SAMPLES

SAMPLE NUMBER/ TANK	SPOILS PILE/ APPROX. VOL.	TYPE	TPH-G MG/KG	B/T/E/X UG/KG	TPH-D MG/KG	413.2 MG/KG	8080 PCB MG/KG	8270 MG/KG	6010 MG/KG 17 METALS	8010 UG/KG
GSA SP-1-1 TANK 1	1/ 67 CU.YD.	6 PT. COMP	2.5	ND/5.3/ 9.7/15	D=ND MO=23	NR	NR	NR	NO TITLE 22 STLC	NR
GSA SP-1-2 TANK 1	1/ 67 CU.YD.	6 PT. COMP	36	ND/77/ 240/ 1600	D=ND MO=390	NR	NR	NR	NO TITLE 22 STLC	NR
GSA SP-2-1 TANK 1	2/ 14.5 CU.YD.	6 PT. COMP	ND	ND	D=ND MO=3200	NR	NR	NR	NO TITLE 22 STLC	NR
GSA SP-3-1 TANK 2	3/ 19.5 CU.YD.	6 PT. COMP	ND	ND	D=ND MO=30	NR	NR	NR	NO TITLE 22 STLC	NR

TANK REMOVAL SAMPLES — TANKS 1 AND 2

SAMPLE NUMBER/ TANK	LOCATION	TYPE	TPH-G MG/KG	B/T/E/X uG/KG	TPH-D MG/KG	413.2 MG/KG	8080 PCB MG/KG	8270 MG/KG	6010 MG/KG 17 METALS	8010 uG/KG
GSAT1-W7/ TANK 1	TANK PIT WEST END BOTTOM AT 7 FT.	TUBE GRAB	ND	ND	D=ND MO=2.9	NR	NR	NR	NR	ND
GSAT2-N11 TANK 2	TANK PIT BOTTOM CENTER 11 FT.	TUBE GRAB	ND	ND	D=ND MO=5.1	NR	NR	NR	NR	NR
GSA PL-1	TANK 2 PRODUCT LINE	TUBE GRAB	ND	ND	D=ND MO=3.1	NR	NR	NR	NR	NR

D= DIESEL
MO= MOTOR OIL
ND= NON DETECT
NR= NOT RUN

Table C-1
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well **MW-1**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
O&G	mg/l	SMWW5520	ND	ND	NA	ND	**16**	ND	NA	<5	<5	<5
TEPHd	ug/l	DOHS 8015m	**5500**	**840**	NA	**49**	**13000**	ND *	**360**	**88**	**230**	**720**
TEPHmo	ug/l	DOHS 8015m	ND	**1400**	NA	ND	ND	NA	ND	NA	NA	NA
TVH	ug/l	DOHS 8015m	ND	NA	ND	NA	NA	NA	ND	<50	<50	<50
Benzene	ug/l	EPA 8020	**1.1**	NA	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5
Toluene	ug/l	EPA 8020	ND	NA	ND	ND	ND	ND	ND	<0.5	<0.5	<0.5
Ethy Benzene	ug/l	EPA 8020	**0.9**	NA	ND	ND	ND	ND	ND	<0.5	<0.5	**0.68**
Total Xylenes	ug/l	EPA 8020	**1.6**	NA	ND	ND	ND	ND	ND	<0.5	<0.5	**0.56**
Total Dissolved Solids	mg/l	EPA 160.1	NA	**410**	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		**3**	NA	**7.4**	**5.7**	**1**	**22**	**5.6**	**15**	NA	**15**
trans-1,2-dichloroethene	ug/l		**3**	NA	**3.4**	**2.1**	ND	**5**	ND	**2.0**	NA	**2.2**
trichloroethene	ug/l		**7**	NA	**1.3**	ND	ND	ND	ND	ND	NA	<0.5
tetra-chloroethene	ug/l		**1**	NA	ND	ND	ND	ND	**2.1**	ND	NA	**1.4**
chloroform	ug/l		**1**	NA	ND	ND	ND	ND	ND	ND	NA	<1
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		NA	ND	NA	ND	ND	ND	NA	NA	NA	NA
naphthalene	ug/l		ND	ND	NA	ND	ND	ND	NA	NA	NA	NA
fluoranthrene	ug/l		ND	ND	NA	ND	ND	ND	NA	NA	NA	NA
pyrene	ug/l		ND	ND	NA	ND	ND	ND	NA	NA	NA	NA
chrysene	ug/l		ND	ND	NA	ND	ND	ND	NA	NA	NA	NA
benzo(a)pyrene	ug/l		ND	ND	NA	ND	ND	ND	NA	NA	NA	NA

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified

* = TEPH analysis for diesel (C12-C22) using silica gel cleanup

Table C-2
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well **MW-2R**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
					Not Sampled			Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
O&G	mg/l	SMWW5520	ND	ND		ND	ND					
TEPHd	ug/l	DOHS 8015m	ND	**140**		ND	ND					
TEPHmo	ug/l	DOHS 8015m	ND	ND		NA	NA					
TVH	ug/l	DOHS 8015m	ND	ND		NA	NA					
Benzene	ug/l	EPA 8020	ND	ND		NA	NA					
Toluene	ug/l	EPA 8020	ND	ND		NA	NA					
Ethy Benzene	ug/l	EPA 8020	ND	ND		NA	NA					
Total Xylenes	ug/l	EPA 8020	ND	ND		NA	NA					
Total Dissolved Solids	mg/l	EPA 160.1	NA	**390**		NA	NA					
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		ND	ND		ND	ND					
trans-1 2-dichloroethene	ug/l		ND	ND		ND	ND					
trichloroehtene	ug/l		ND	ND		ND	ND					
tetra-chloroethene	ug/l		ND	ND		ND	ND					
chloroform	ug/l		ND	ND		ND	ND					
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		ND	ND		ND	ND					
naphthalene	ug/l		ND	ND		ND	ND					
fluoranthrene	ug/l		ND	ND		ND	ND					
pyrene	ug/l		ND	ND		ND	ND					
chrysene	ug/l		ND	ND		ND	ND					
benzo(a)pyrene	ug/l		ND	ND		ND	ND					

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Table C-3
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well MW-3

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
				Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
O&G	mg/l	SMWW5520	ND									
TEPHd	ug/l	DOHS 8015m	92									
TEPHmo	ug/l	DOHS 8015m	ND									
TVH	ug/l	DOHS 8015m	ND									
Benzene	ug/l	EPA 8020	ND									
Toluene	ug/l	EPA 8020	ND									
Ethy Benzene	ug/l	EPA 8020	ND									
Total Xylenes	ug/l	EPA 8020	ND									
Total Dissolved Solids	mg/l	EPA 160.1	NA									
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		ND									
trans-1,2-dichloroethene	ug/l		ND									
trichloroehtene	ug/l		ND									
tetra-chloroethene	ug/l		ND									
chloroform	ug/l		ND									
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		ND									
naphthalene	ug/l		ND									
fluoranthrene	ug/l		ND									
pyrene	ug/l		ND									
chrysene	ug/l		ND									
benzo(a)pyrene	ug/l		ND									

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Table C-4
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well **MW-4**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
					Not Sampled			Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
O&G	mg/l	SMWW5520	ND	ND		ND	ND					
TEPHd	ug/l	DOHS 8015m	ND	**190**		ND	ND					
TEPHmo	ug/l	DOHS 8015m	ND	ND		NA	NA					
TVH	ug/l	DOHS 8015m	ND	ND		NA	NA					
Benzene	ug/l	EPA 8020	ND	ND		NA	NA					
Toluene	ug/l	EPA 8020	ND	ND		NA	NA					
Ethy Benzene	ug/l	EPA 8020	ND	ND		NA	NA					
Total Xylenes	ug/l	EPA 8020	ND	ND		NA	NA					
Total Dissolved Solids	mg/l	EPA 160.1	NA	**410**		NA	NA					
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		ND	ND		ND	ND					
trans-1,2-dichloroethene	ug/l		ND	ND		ND	ND					
trichloroehtene	ug/l		ND	ND		ND	ND					
tetra-chloroethene	ug/l		ND	ND		ND	ND					
chloroform	ug/l		ND	ND		ND	ND					
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		ND	ND		ND	ND					
naphthalene	ug/l		ND	ND		ND	ND					
fluoranthrene	ug/l		ND	ND		ND	ND					
pyrene	ug/l		ND	ND		ND	ND					
chrysene	ug/l		ND	ND		ND	ND					
benzo(a)pyrene	ug/l		ND	ND		ND	ND					

Notes

mg/l =milligrams per liter
ug/l = micrograms per liter
ND = not detected at or above the detection limit of the method used
NA = not analyzed
O&G = hydrocarbon oil and grease using test method SMWW5520
TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.
TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Table C-5
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well **TW/MW-5**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
			Not Sampled						Not Sampled	Not Sampled	Not Sampled	Not Sampled
O&G	mg/l	SMWW5520	ND	ND		ND	ND	ND				
TEPHd	ug/l	DOHS 8015m	**680**	**230**		ND	ND	ND				
TEPHmo	ug/l	DOHS 8015m	ND	ND		NA	NA	NA				
TVH	ug/l	DOHS 8015m	ND	ND		NA	NA	NA				
Benzene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Toluene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Ethy Benzene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Total Xylenes	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Total Dissolved Solids	mg/l	EPA 160.1	NA	**380**		NA	NA	NA				
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		ND	ND		ND	**1.0**	ND				
trans-1,2-dichloroethene	ug/l		ND	ND		ND	ND	ND				
trichloroehtene	ug/l		ND	ND		ND	ND	ND				
tetra-chloroethene	ug/l		ND	ND		ND	ND	ND				
chloroform	ug/l		**1.0**	ND		ND	ND	ND				
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		ND	**14**		ND	ND	ND				
naphthalene	ug/l		**7.5**	ND		ND	ND	ND				
fluoranthrene	ug/l		**8.5**	ND		ND	ND	ND				
pyrene	ug/l		**14**	ND		ND	ND	ND				
chrysene	ug/l		**5.5**	ND		ND	ND	ND				
benzo(a)pyrene	ug/l		**6.2**	ND		ND	ND	ND				

Notes

mg/l =milligrams per liter
ug/l = micrograms per liter
ND = not detected at or above the detection limit of the method used
NA = not analyzed
O&G = hydrocarbon oil and grease using test method SMWW5520
TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.
TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Summary of Analytical Results Groundwater Monitoring Well **MW-6**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/18/98	8/31/98	11/16/98	2/22/99
			Not Sampled						Not Sampled	Not Sampled	Not Sampled	Not Sampled
O&G	mg/l	SMWW5520	ND	ND		ND	ND	ND				
TEPHd	ug/l	DOHS 8015m	ND	**370**		**3700**	ND	ND				
TEPHmo	ug/l	DOHS 8015m	ND	ND		NA	NA	NA				
TVH	ug/l	DOHS 8015m	ND	ND		NA	NA	NA				
Benzene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Toluene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Ethy Benzene	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Total Xylenes	ug/l	EPA 8020	ND	ND		NA	NA	NA				
Total Dissolved Solids	mg/l	EPA 160.1	NA	**450**		NA	NA	NA				
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l		ND	ND		ND	ND	ND				
trans-1,2-dichloroethene	ug/l		ND	ND		ND	ND	ND				
trichloroehtene	ug/l		ND	ND		ND	ND	ND				
tetra-chloroethene	ug/l		ND	ND		ND	ND	ND				
chloroform	ug/l		ND	ND		ND	ND	ND				
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l		ND	ND		ND	ND	ND				
naphthalene	ug/l		ND	ND		ND	ND	ND				
fluoranthrene	ug/l		ND	ND		ND	ND	ND				
pyrene	ug/l		ND	ND		ND	ND	ND				
chrysene	ug/l		ND	ND		ND	ND	ND				
benzo(a)pyrene	ug/l		ND	ND		ND	ND	ND				

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Table C-7
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well AMW-1

Compounds	Units	Date / Method	5/18/95 Not Sampled	8/31/95 Not Sampled	10/5/95 Not Sampled	12/8/95 Not Sampled	3/8/96 Not Sampled	7/5/96 Not Sampled	2/16/98	8/31/98	11/16/98	2/22/99
O&G	mg/l	SMWW5520							NA	<5	<5	<5
TEPHd	ug/l	DOHS 8015m							**150**	**63**	**61**	**53**
TEPHmo	ug/l	DOHS 8015m							NA	NA	NA	NA
TVH	ug/l	DOHS 8015m							ND	<50	<50	<50
Benzene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Toluene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Ethy Benzene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Total Xylenes	ug/l	EPA 8020							ND	<0.5	<0.5	**0.6**
Total Dissolved Solids	mg/l	EPA 160.1							NA	NA	NA	NA
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l								ND	ND	NA	<0.5
trans-1,2-dichloroethene	ug/l								ND	ND	NA	<0.5
trichloroehtene	ug/l								ND	ND	NA	<0.5
tetra-chloroethene	ug/l								ND	ND	NA	<0.5
chloroform	ug/l								ND	ND	NA	<1
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l								ND	NA	NA	NA
naphthalene	ug/l								ND	NA	NA	NA
fluoranthrene	ug/l								ND	NA	NA	NA
pyrene	ug/l								ND	NA	NA	NA
chrysene	ug/l								ND	NA	NA	NA
benzo(a)pyrene	ug/l								ND	NA	NA	NA

Notes

mg/l =milligrams per liter
ug/l = micrograms per liter
ND = not detected at or above the detection limit of the method used
NA = not analyzed
O&G = hydrocarbon oil and grease using test method SMWW5520
TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.
TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Alameda Federal Service

Summary of Analytical Results Groundwater Monitoring Well **AMW-2**

Compounds	Units	Date / Method	5/18/95 Not Sampled	8/31/95 Not Sampled	10/5/95 Not Sampled	12/8/95 Not Sampled	3/8/96 Not Sampled	7/5/96 Not Sampled	2/16/98	8/31/98	11/16/98	2/22/99
O&G	mg/l	SMWW5520							NA	<5	<5	<5
TEPHd	ug/l	DOHS 8015m							**380**	<50	**58**	<50
TEPHmo	ug/l	DOHS 8015m							NA	NA	NA	NA
TVH	ug/l	DOHS 8015m							ND	<50	<50	<50
Benzene	ug/l	EPA 8020							**0.99**	<0.5	<0.5	<0.5
Toluene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Ethy Benzene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Total Xylenes	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/l	EPA 160.1							NA	NA	NA	NA
Volatile Halocarbons		EPA 8010										
cis-1,2-dichloroethene	ug/l								ND	ND	NA	<0.5
trans-1,2-dichloroethene	ug/l								ND	ND	NA	<0.5
trichloroehtene	ug/l								ND	ND	NA	<0.5
tetra-chloroethene	ug/l								ND	ND	NA	<0.5
chloroform	ug/l								ND	ND	NA	<1
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l								ND	NA	NA	NA
naphthalene	ug/l								ND	NA	NA	NA
fluoranthrene	ug/l								ND	NA	NA	NA
pyrene	ug/l								ND	NA	NA	NA
chrysene	ug/l								ND	NA	NA	NA
benzo(a)pyrene	ug/l								ND	NA	NA	NA

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.

Table C-9
Alameda Federal Center, 620 Central Avenue, Alameda, California
Summary of Analytical Results Groundwater Monitoring Well **AMW-3**

Compounds	Units	Date / Method	5/18/95	8/31/95	10/5/95	12/8/95	3/8/96	7/5/96	2/16/98	8/31/98	11/16/98	2/22/99
			Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled				
O&G	mg/l	SMWW5520							NA	<5	<5	<5
TEPHd	ug/l	DOHS 8015m							**17000**	**420**	**580**	**140**
TEPHmo	ug/l	DOHS 8015m							NA	NA	NA	NA
TVH	ug/l	DOHS 8015m							**140**	<50	<50	<50
Benzene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Toluene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Ethy Benzene	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Total Xylenes	ug/l	EPA 8020							ND	<0.5	<0.5	<0.5
Total Dissolved Solids	mg/l	EPA 160.1							NA	NA	NA	NA
Volatile Halocarbons		EPA 8010										
cis-1 2-dichloroethene	ug/l								ND	ND	NA	<0.5
trans-1,2-dichloroethene	ug/l								ND	ND	NA	<0.5
trichloroehtene	ug/l								ND	ND	NA	<0.5
tetra-chloroethene	ug/l								ND	ND	NA	<0.5
chloroform	ug/l								ND	ND	NA	<1
Polynuclear Aromatic Hydrocarbons		EPA 8270										
bis(2-ethylhexyl)phthalate	ug/l								ND	NA	NA	NA
naphthalene	ug/l								ND	NA	NA	NA
fluoranthrene	ug/l								ND	NA	NA	NA
pyrene	ug/l								ND	NA	NA	NA
chrysene	ug/l								ND	NA	NA	NA
benzo(a)pyrene	ug/l								ND	NA	NA	NA

Notes

mg/l =milligrams per liter

ug/l = micrograms per liter

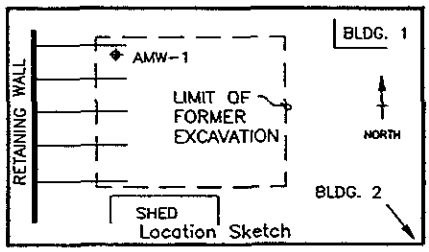
ND = not detected at or above the detection limit of the method used

NA = not analyzed

O&G = hydrocarbon oil and grease using test method SMWW5520

TEPH = total extractable petroleum hydrocarbons using California Department of Health Services (DOHS) Method 8015 modified. A "d" or "mo" following the reported concentration represents quantities of diesel or motor oil range respectively.

TVH = total volatile hydrocarbons as gasoline using California DOHS Method 8015 modified.



BORING LOG AMW-1

Date 2-16-98 Sheet 1 OF 1

Project ALAMEDA FED. CNTR. Project No. 2403C.24

Drilling Co. GREGG Type of Rig B-61

Hole Diameter 8" O.D. in. Drive Weight 140 LB Drop 30 in.

Surface Elevation _____ (msl) Top of Casing Elevation _____ (msl)

Logged by: Bill Millar

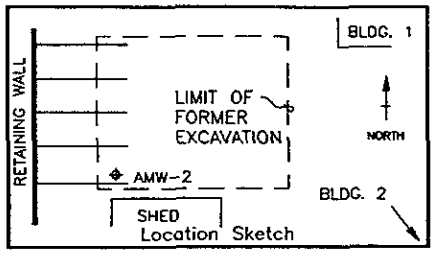
Reviewed by: _____

Depth (Feet)	Well Construction: Casing Detail	Well Construction: Backfill Detail	Well Construction: Sample ID.	Samples: Time	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1		6" GROUT. CONCRETE								3" of asphalt Pea gravel fill material, excavation. fill
2	BLANK PVC							GW	▽	
3		BENTONITE PELLETS								
4										
5			NO RECOVERY	0845		6 4 2		GW	0	No Recovery, wet, loose.
6										
7										
8										
9										
10	0.01" SLOT SCREEN	#3 SAND FILTER PACK	NO RECOVERY	0858		11 4 4		GW	0	@10'–Dark yellowish brown (10YR 4/2), sandy gravel, wet, medium – dense, no hydro carbon odor, no recovery no soil sample collected.
11										
12										
13										
14										@15'–Dark yellowish brown (10YR 4/2), sandy gravel, wet, medium – dense, no hydrocarbon odor, no recovery, no soil sample collected. geotextile in shoe of sampler.
15			NO RECOVERY	0904		8 12 16		GW	0	
16										NOTE: Installing the filter pack was diffcult. The gravel caved into the boring as the augers were removed.
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

LEGEND
BGS – Below Ground Surface
TD – Total Depth BGS
B – Bentonite Chips 3/8"
BG – Bentonite Grout
PCC – Portland Cement Concrete

NOTE This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.



Location Sketch

BORING LOG AMW-2

Date 2-16-98 Sheet 1 OF 1

Project ALAMEDA FED. CNTR. Project No. 2403C.24

Drilling Co. GREGG Type of Rig B-61

Hole Diameter 8" O.D. in. Drive Weight 140 LB Drop 30 in.

Surface Elevation _____ (msl) Top of Casing Elevation _____ (msl)

Logged by: Bill Millar

Reviewed by: _____

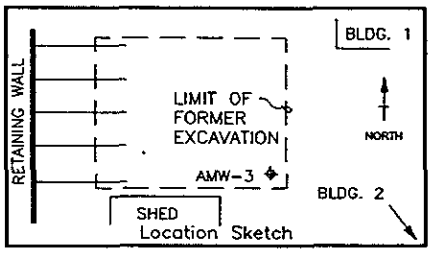
Depth (Feet)	Well Construction: Casing Detail	Well Construction: Backfill Detail	Samples: Sample ID.	Samples: Time	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1										4" asphalt 6" base
2	BLANK PVC	GROUT / CONCRETE							▽	
3			BENTONITE PELLETS							
4										
5			AMW2-5' Grab Sample	1030		4 4 5		GC	0	@5'-Moderate yellowish brown (10YR 5/4) gravelly clay w/sand, grab soil sample from augers, no recover in sampler, wet, firm, no hydrocarbon odor.
6										
7		#3 SAND FILTER PACK								
8										
9										
10	0.01" SLOT SCREEN		AMW2-10' Grab Sample	1037		5 5 3		SM	0	@10'-Light olive gray (5Y 5/2), gravely fine sand with organics, wet, stiff, no hydrocarbon odor, oily sheen observed in soil sample, grab sample collected from augers, no recovery in sampler.
11										
12										
13										
14								SP	0	@15'-Olive gray (5Y 3/2), fine sand with organics, wet, medium-dense, no hydrocarbon odor, oily sheen observed in sample.
15			AMW2-15' Grab Sample	1045		12 7 8				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

LEGEND
BGS - Below Ground Surface
TD - Total Depth BGS
S - Bentonite Chips 3/8"
BGG - Bentonite Grout
PCC - Portland Cement Concrete

NOTE This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG AMW-3



Date 2-16-98 Sheet 1 OF 1

Project ALAMEDA FED. CNTR. Project No. 2403C.24

Drilling Co. GREGG Type of Rig B-61

Hole Diameter 8" O.D. in. Drive Weight 140 LB Drop 30 in.

Surface Elevation _____ (msl) Top of Casing Elevation _____ (msl)

Logged by: Bill Millar

Reviewed by: _____

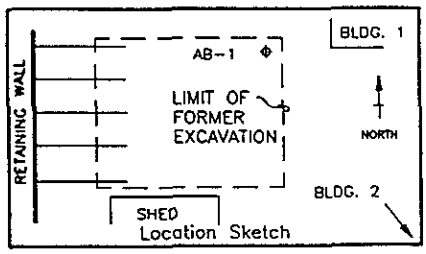
Depth (Feet)	Well Construction: Casing Detail	Well Construction: Backfill Detail	Well Construction: Sample ID.	Samples: Time	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1	BLANK PVC	6" GROUT CONCRETE								3" asphalt
2									▽	
3		BENTONITE PELLETS								
4										
5			AMW3-5' GRAB SAMPLE	1220		4 2 2		GC	0	@5'-Moderate yellowish brown (10YR 5/4), clayey gravel, wet, firm, no hydrocarbon odor, no sheen observed, grab soil sample from augers, no recover in sampler.
6										
7		#3 SAND FILTER PACK								
8										
9										
10	0.01" SLOT SCREEN		AMW3-10' GRAB SAMPLE	1228		2 4 5		SW	0	@10'-Olive gray (5Y 3/2), fine sand, wet, loose, no hydrocarbon odor, no sheen observed in soil sample, grab sample collected from augers, no recovery in sampler, sea shells in sand.
11										
12										
13										
14										@15'-Light olive gray (5Y 5/2), fine grained sand, wet, medium-dense, no hydrocarbon odor, no sheen observed in sample.
15			AMW3-15'	1235		12 12 10		SW	0	
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

LEGEND
BGS - Below Ground Surface
TD - Total Depth BGS
B - Bentonite Chips 3/8"
BGC - Bentonite Grout
PCC - Portland Cement Concrete

NOTE This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG AB-1



Location Sketch

Date 2-16-98 Sheet 1 OF 1

Project ALAMEDA FED. CNTR. Project No. 2403C.24

Drilling Co. GREGG Type of Rig B-61

Hole Diameter 8" O.D. in. Drive Weight 140 LB Drop N/A in.

Surface Elevation _____ (msl) Top of Casing Elevation _____ (msl)

Logged by: Bill Millar

Reviewed by: _____

Depth (Feet)	Well Construction: Casing Detail	Well Construction: Backfill Detail	Samples: Sample ID	Samples: Time	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1										4" asphalt
2									▽	
3										
4										
5		GROUT CONCRETE	AB-1-5'	1500		N/A		GC	0	@5'-Light olive brown (5Y 5/6), gravely clay little sand, moist, firm (?), no hydrocarbon odor, no sheen.
6										
7										
8										
9										
10			AB-1-10'	1505		N/A		SW	0	@10'-Grayish olive (10Y 4/2), sand, wet, medium-dense (?), no hydrocarbon odor, no sheen, sea shells in sand.
11										
12										
13										
14								SW	0	@15'-Moderate olive brown (5Y 4/4), sand trace gravel, wet, medium-dense (?), no hydrocarbon odor, no sheen, sea shells in sand.
15			AB-1-15'	1515		N/A				
16										
17										
18										
19										NOTE: Winch on rig malfuncting no reliable drop distance, no blow counts.
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

LEGEND
BGS - Below Ground Surface
TD - Total Depth BGS
B - Bentonite Chips 3/8"
BCG - Bentonite Grout
PCC - Portland Cement Concrete

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG MW2-R

SEE FIGURE 3

Location Sketch

Date MAY 17, 1995 Sheet 1 OF 1

Project GSA - ALAMEDA FEDERAL CENTER Project No. 2403C.16

Drilling Co. WEST HAZMAT Type of Rig MOBILE B-57 HSA

Hole Diameter 8" O.D. 10" REAM in. Drive Weight N.A. Drop N.A. in.

Surface Elevation N.A. (msl) Top of Casing Elevation 8.27 (msl)

Logged by: KEN PITCHFORD, CEG

Approved by: KEN PITCHFORD, CEG

Depth (Feet)	Well Construction: Detail	Well Construction: Remarks	Samples: ID	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)
1-15	BLANK / FILTER / SCREEN	PCC, BP, FILTER, SCREEN	NO SAMPLES COLLECTED			N.A.	N.A.	N.A.	N.A.

SOIL/GEOLOGIC DESCRIPTION

NOTES:
1. TD=15 FT.
2. THIS BORING DRILLED THROUGH EXISTING MW-2 WELL, TO DESTROY AND REPLACE.
3. 8" DIA. INITIAL PILOT HOLE, 10" DIA. REAM.
4. CASING OBSTRUCTION @ - 3.5 FT. = ~ 10 DEGREE BEND IN ORIGINAL WELL PVC (2" DIA.) BLANK @ JOINT THREAD.
5. MW2-R REPLACEMENT WELL COMPLETION DETAILS IN COLUMN (LEFT) THIS LOG.
6. SWL=4.72 FT. (T.O.C.) 5/16/95 @ 15:00 HRS.
7. WELL CASING=4" NOMINAL DIA. SCH. 40 PVC.
8. WELL SCREEN=4" NOMINAL DIA. SCH. 40 PVC 0.020" MILL SLOT.
9. FILTER PACK=MONTEREY No.3 WASHED, GRADED HIGH-SILICA SAND.
10. HYDRATED BENTONITE PELLET SURFACE SEAL ("BAROID" 3/8" DIA.)
11. PORTLAND CEMENT CONCRETE MONUMENT WITH TRAFFICABLE AT-GRADE COVER.
12. WELL PRE-DEVELOPED BY VENTED SURGE BLOCK AND BAILER.
13. WELL CONSTRUCTION :
    CASING=4" NOMINAL DIA. SCH. 40 PVC.
    SCREEN=0.020" MILL SLOT.
    FILTER=MONTEREY No.3 WASHED, GRADED HIGH-SILICA SAND.
    SURFACE SEAL=HYDRATED BENTONITE PELLETS.
    SURFACE MONUMENT=TRAFFICABLE AT-GRADE COVER IN TYPE I-II NEAT PORTLAND CEMENT CONCRETE.

LEGEND

TD	TOTAL DEPTH
FT	FEET
SCH	SCHEDULE
PCC	TYPE I-II NEAT PORTLAND CEMENT CONCRETE
BP	HYDRATED BENTONITE PELLET SEAL
N A	NOT APPLICABLE

2403C-16\BORE-LOG\MW-LOG2R DWG

NOTE This log of subsurface conditions is a simplification of actual conditions encountered It applies at the location and time of drilling Subsurface conditions may differ at other locations and times

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG. MW-4

SEE FIGURE 3

Location Sketch

Date MAY 17, 1995 Sheet 1 OF 1

Project GSA - ALAMEDA FEDERAL CENTER Project No. 2403C.16

Drilling Co. WEST HAZMAT Type of Rig MOBILE B-57 HSA

Hole Diameter 8" O.D. in. Drive Weight 140# Drop 30 in.

Surface Elevation N.A. (msl) Top of Casing Elevation 8.53 (msl)

Logged by: KEN PITCHFORD, CEG

Approved by: KEN PITCHFORD, CEG

Depth (Feet)	Well Construction: Detail	Well Construction: Remarks	Samples: ID	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1		PCC					AC		6" ROLLED ASPHALTIC CONCRETE SURFACE
2	BLANK	BP					SP		MEDIUM GRAY-BROWN POORLY GRADED FINE SAND WITH TRACE SILT, MEDIUM SAND AND ROOTS, SHELL FRAGMENTS. @ 5 FT. DAMP TO WET OR SATURATED. NO STAIN OR ODOR.
3									
4			TW/MW 4-4		76			3.4	
5					76				
6					8				
7		FILTER							
8									
9		SCREEN					SM	7.6	MEDIUM GRAY FINE SILTY SAND WITH SHELL FRAGMENTS AND TRACE CLAY. LOOSE. SATURATED. NO SHEEN, STAIN OR ODOR.
10			TW/MW 4-10		8				
11					14				
12					30				
13									
14								11.3	
15	HS		TW/MW 4-15		20		SW		MOTTLED MEDIUM GRAY TO MEDIUM BROWN SILTY-CLAYEY FINE SAND. DAMP, MODERATELY COHESIVE. NO STAIN OR ODOR.
16					30		SC		
					50				
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

NOTES:
1. TD=16.5 FT.
2. SWL=4.53 FT. (5/18/95 @ 07:50 HRS.).
3. WELL CONSTRUCTION:
   CASING=NOMINAL 4" DIA. SCH. 40 PVC.
   SCREEN=0.020" MILL SLOT.
   FILTER=MONTEREY No.3 WASHED, GRADED HIGH-SILICA SAND.
   SURFACE SEAL=HYDRATED BENTONITE PELLETS.
   SURFACE MONUMENT=TRAFFICABLE AT-GRADE COVER IN TYPE I-II NEAT PORTLAND CEMENT CONCRETE.

LEGEND

TD	TOTAL DEPTH
FT	FEET
SWL	STATIC WATER LEVEL
SCH	SCHEDULE
PCC	TYPE I-II NEAT PORTLAND CEMENT CONCRETE
BP	HYDRATED BENTONITE PELLET SEAL
N.A	NOT APPLICABLE
HS	HEAVING SAND

2403C-16\BORE-LOG\MW-LOG4.DWG

NOTE: This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG TW/MW-5

SEE FIGURE 3

Location Sketch

Date MAY 17, 1995 Sheet 1 OF 1

Project GSA - ALAMEDA FEDERAL CENTER Project No. 2403C.16

Drilling Co. WEST HAZMAT Type of Rig MOBILE B-57 HSA

Hole Diameter 8" O.D. in. Drive Weight 140# Drop 30 in.

Surface Elevation N.A. (msl) Top of Casing Elevation 8.37 (msl)

Logged by: KEN PITCHFORD, CEG

Approved by: KEN PITCHFORD, CEG

Well Construction Detail	Well Construction Remarks	Samples ID	Samples Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
	PCC					AC		6" ROLLED ASPHALTIC CONCRETE SURFACE
BLANK	BP					SM	0.0	MOTTLED MEDIUM BROWN TO MEDIUM GRAY FINE TO MEDIUM SILTY SAND WITH SOME COARSE SAND AND FINE GRAVEL. DAMP TO MOIST. LOOSE. NO STAIN OR ODOR.
		TW/MW 5-4'		4 5 6		SP		MEDIUM GRAY POORLY GRADED MEDIUM SAND WITH ABUNDANT SHELL FRAGMENTS (REWORKED BEACH SAND) WET TO SATURATED. LOOSE. NO SHEEN, STAIN OR ODOR.
FILTER								
SCREEN		TW/MW 5-10'		7 30 33			1.6	SAME AS ABOVE. BUT LESS SHELL FRAGMENTS. SOME THIN (~3"-6" THICK PLASTIC CLAY LAYERS IN 10 TO 12 FT. DEPTH INTERVAL).
		TW/MW 5-13'		18 30 40			6.6	SAME AS ABOVE.
HS								

NOTES:
1. TD=14.5 FT.
2. SWL=4.27 FT. (5/18/95 @ 07:50 HRS.).
3. CASING SILTED WITH ENTRAINED FORMATION SEDIMENT @ - 8.0 FT. ; WILL REQUIRE JETTING/DEVELOPMENT TO CLEAR.
4. WELL CONSTRUCTION :
   CASING=NOMINAL 2" DIA. SCH. 40 PVC.
   SCREEN=0.020" MILL SLOT.
   FILTER=MONTEREY No.3 WASHED, GRADED HIGH-SILICA SAND.
   SURFACE SEAL=HYDRATED BENTONITE PELLETS.
5. NO DEVELOPMENT RECORD OR WELL SAMPLING LOG HAS BEEN PREPARED. A WATER SAMPLE WAS COLLECTED BY HAND BAILER FOR LAB ANALYSIS. SEE PROJECT FILE FOR DETAILS.

LEGEND

TD	TOTAL DEPTH
FT	FEET
SWL	STATIC WATER LEVEL
SCH	SCHEDULE
PCC	TYPE I-II NEAT PORTLAND CEMENT CONCRETE
BP	HYDRATED BENTONITE PELLET SEAL
N.A.	NOT APPLICABLE
HS	HEAVING SAND

2403C-16\BORE-LOG\TW-LOG5.DWG

NOTE This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

BORING LOG MW-6

SEE FIGURE 3

Location Sketch

Date MAY 18, 1995 Sheet 1 OF 1

Project GSA - ALAMEDA FEDERAL CENTER Project No. 2403C.16

Drilling Co. WEST HAZMAT Type of Rig MOBILE B-57 HSA

Hole Diameter 8" O.D. in. Drive Weight 140# Drop 30 in.

Surface Elevation N.A. (msl) Top of Casing Elevation 8.61 (msl)

Logged by: KEN PITCHFORD, CEG

Approved by: KEN PITCHFORD, CEG

Depth (Feet)	Well Construction: Detail	Well Construction: Remarks	Samples: ID	Samples: Interval	Blows Per 6" Interval	Graphic Log	USCS	OVA/PID (PPM)	SOIL/GEOLOGIC DESCRIPTION
1	BLANK	PCC					AC		4" ROLLED ASPHALTIC CONCRETE SURFACE
2		BP					SP		MEDIUM GRAY-BROWN POORLY GRADED MEDIUM SAND WITH TRACE SHELL FRAGMENTS. DAMP TO WET. LOOSE. NO SHEEN, STAIN OR ODOR.
3									
4			MW-6-4'		6				
5					10				
6					7			68.2	
7		FILTER							
8							SM		MEDIUM TO DARK GRAY SILTY-CLAYEY FINE TO MEDIUM SAND WITH SOME SHELL FRAGMENTS. WET TO SATURATED. LOOSE. TO SLIGHTLY PLASTIC. VERY DARK GRAY TO BLACK SOIL MATERIAL @ 11 TO 12 FT. INTERVAL, WITH POSSIBLE FAINT DECAYED HC ODOR.
9		SCREEN					SC		
10			MW-6-10'		14			95	
11					16				
12					14				
13			MW-6-13'		17		SP	128	MOTTLED MEDIUM BROWN-GRAY SAND WITH TRACE SILT. NO SHELL FRAGMENTS. WET. LOOSE. NO STAIN. POSSIBLE VERY FAINT DECAYED HC ODOR.
14	HS				25				
					20				
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

NOTES:
1. TD=14.5 FT.
2. SWL=
3. VERY SLOW WATER LEVEL RECOVERY NOTED DURING DEVELOPMENT.
4. WELL CONSTRUCTION:
   CASING=NOMINAL 4" DIA. SCH. 40 PVC.
   SCREEN=0.020" MILL SLOTTED.
   FILTER=MONTEREY No.3 WASHED, GRADED HIGH-SILICA SAND.
   SURFACE SEAL=HYDRATED BENTONITE PELLETS.
   SURFACE MONUMENT=TRAFFICABLE AT-GRADE COVER IN TYPE I-II NEAT PORTLAND CEMENT CONCRETE.

LEGEND

TD	TOTAL DEPTH
FT	FEET
SWL	STATIC WATER LEVEL
SCH	SCHEDULE
PCC	TYPE I-II NEAT PORTLAND CEMENT CONCRETE
BP	HYDRATED BENTONITE PELLET SEAL
HC	HYDROCARBON
N.A	NOT APPLICABLE
HS	HEAVING SAND

2403C-16\BORE-LOG\MW-LOG6.DWG

NOTE This log of subsurface conditions is a simplification of actual conditions encountered. It applies at the location and time of drilling. Subsurface conditions may differ at other locations and times.

CAPE ENVIRONMENTAL MANAGEMENT INC.

DATE STARTED: 1/6/94 SURFACE CONDITIONS: A/C Pavement

DATE COMPLETED: 1/6/94 SURFACE ELEVATION:

DRILLING EQUIPMENT: IR A-700 COORDINATES:

DRILLING CONTRACTOR: Hunt GROUNDWATER CONDITIONS: Heavy

LOGGED BY: T. Smith

TOTAL DEPTH: 15.5 CASING DEPTH: 13' 7"

BORING DIAMETER: 8" FILTER PACK: #3 Sand SLOT SIZE: .020"

REMARKS	FIELD WELL	FIELD SAMP. NO.	FIELD FIELD READ.	BLOWS/6"	SAMP TYPE	DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
Street Box								ASPHALT
								BASE ROCK
Bentonite/Cement Grout						2		CLAYEY GRAVEL GC Brown
								SILTY SAND SM Brown
Bentonite Pellet Seal						4		
		B1-5	18 PPM	3 4 3	SPT	6		SAND SP 5' to 6.5' clean green sand, with shells, mod. N.C. odor, loose
						8		SAND SP
Filter Pack		10.5	100	2 2 2	SPT	10		CLAY CH
								SAND SP
						12		CLAYEY SAND SC-SM Loose, no shells
End Cap		14.5	ND	9 16	SPT	14		SILTY SAND SW-SC 14' to 15'

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PROJECT NO.

GSA

ALAMEDA

LOG OF MW-1 / B1

Fig. 1

Sheet 1 of 2

REMARKS	FIELD					DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
	WELL	SAMP. NO.	FIELD READ.	BLOWS/6"	SAMP TYPE			
				3		16		silty sand, fine, mod. light SILTY SAND SW-SC 15' TO 15.5' loose, fine sand .M=SW-SC T=2 A=10 SAND SW-SM Loose fine sand Bottom of MW-1 at 14'
						18		
						20		
						22		
						24		
						26		
						28		
						30		
						32		
						34		
						36		
						38		

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PROJECT NO.

GSA
ALAMEDA

LOG OF MW-1 / B1

Fig. 2

Sheet 2 of 2

DATE STARTED: 1/6/94

DATE COMPLETED: 1/6/94

DRILLING EQUIPMENT: IR A-200

DRILLING CONTRACTOR: Hunt Drilling

LOGGED BY: Tim Smith

TOTAL DEPTH: 9.5

BORING DIAMETER: 8"

SURFACE CONDITIONS:

SURFACE ELEVATION:

COORDINATES:

GROUNDWATER CONDITIONS:

CASING DEPTH:

FILTER PACK: SLOT SIZE:

REMARKS	FIELD					DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
	WELL	SAMP. NO.	FIELD READ.	BLOWS / 6"	SAMP TYPE			
								ASPHALT
								CLAYEY GRAVEL GC
						2		SANDY GRAVEL GPS
						4		SAND SM Hydrocarbon odor
Boring Grouted with Neat Cement	▽							
						6		SAND SP Hydrocarbon odor
		B2-8.5	90 PPM	2 3 1	SPT	8		SAND SW Fine, gray green, with shells, loose
						10		Bottom of Boring at 9.5'
						12		
						14		

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ALAMEDA

LOG OF B-2

Fig. 1

Sheet 1 of 1

DATE STARTED: 1/6/94

DATE COMPLETED: 1/6/94

DRILLING EQUIPMENT: IR A-200

DRILLING CONTRACTOR: Hunt Drilling

LOGGED BY: Tim Smith

TOTAL DEPTH: 11.5

BORING DIAMETER: 8"

SURFACE CONDITIONS:

SURFACE ELEVATION:

COORDINATES:

GROUNDWATER CONDITIONS:

CASING DEPTH:

FILTER PACK: SLOT SIZE:

REMARKS	FIELD					DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
	WELL	SAMP. NO.	FIELD READ.	BLOWS/6"	SAMP TYPE			
								ASPHALT
								CLAYEY GRAVEL GC
						2		SAND SP-SM Med. sand
						4		
Boring Grouted with Neat Cement	▽	B3-5'	ND	1 1	SPT			Gray sand starts at 5', no odor
						6		
						8		SAND SP Loose sand, ND in core tube
			5 PPM	2 4 1	SPT	10		SILTY SAND SM
								SAND with CLAY SW-SM
						12		Bottom of B-3 at 10', sample to 11.5'
						14		

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ALAMEDA

LOG OF B-3

Fig. 2

Sheet 1 of 1

DATE STARTED: 1/6/94

DATE COMPLETED: 1/6/94

DRILLING EQUIPMENT: IR A-200

DRILLING CONTRACTOR: Hunt Drilling

LOGGED BY: Tim Smith

TOTAL DEPTH: 11.5

BORING DIAMETER: 8"

SURFACE CONDITIONS:

SURFACE ELEVATION:

COORDINATES:

GROUNDWATER CONDITIONS:

CASING DEPTH:

FILTER PACK: SLOT SIZE:

REMARKS	FIELD					DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
	WELL	SAMP. NO.	FIELD READ.	BLOWS/6"	SAMP TYPE			
						0		ASPHALT
						1		CLAYEY GRAVEL GC
								SAND SP
						2		
						4		SAND with SILT SP-SM
Boring Grouted with Neat Cement	▽	B4-5'	ND	1 2	SPT	6		
						8		SAND with SILT SW-SM
			90 PPM			10		CLAY
								CLAYEY SAND SC
						12		
						14		

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ALAMEDA

LOG OF B-4

Fig. 3

Sheet 1 of 1

DATE STARTED: 1/6/94

DATE COMPLETED: 1/6/94

DRILLING EQUIPMENT: IR A-200

DRILLING CONTRACTOR: Hunt Drilling

LOGGED BY: Tim Smith

TOTAL DEPTH: 14.0

BORING DIAMETER: 8"

SURFACE CONDITIONS: A/C Pavement

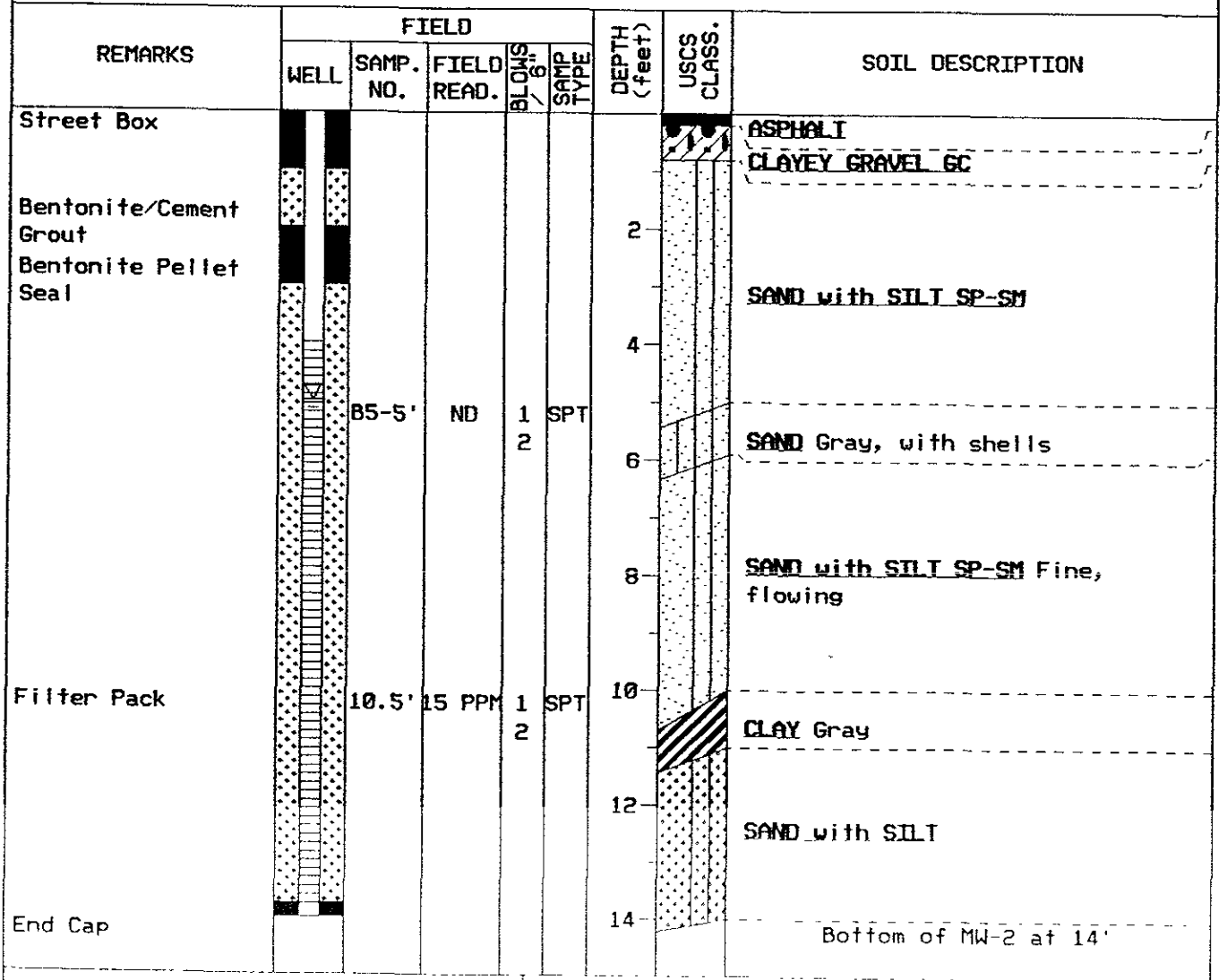
SURFACE ELEVATION:

COORDINATES:

GROUNDWATER CONDITIONS: Heavy

CASING DEPTH: 13' 4"

FILTER PACK: #3 Sand SLOT SIZE: .020"



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PROJECT NO.

GSA
ALAMEDA

LOG OF MW-2 / B5

Fig. 1

Sheet 1 of 1

DATE STARTED: 1/7/94

DATE COMPLETED: 1/7/94

DRILLING EQUIPMENT: IR A-200

DRILLING CONTRACTOR: Hunt Drilling

LOGGED BY: Tim Smith

TOTAL DEPTH: 15.5

BORING DIAMETER: 8"

SURFACE CONDITIONS: A/C Pavement

SURFACE ELEVATION:

COORDINATES:

GROUNDWATER CONDITIONS: Heavy

CASING DEPTH: 13' 6"

FILTER PACK: #3 Sand SLOT SIZE: .020"

REMARKS	FIELD: WELL	SAMP. NO.	FIELD READ.	BLOWS/6"	SAMP. TYPE	DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
Street Box								ASPHALT
Bentonite/Cement Grout						2		CLAYEY GRAVEL GC
Bentonite Pellet Seal						4		CLAY CL-ML Brown
		B6-5'	28 PPM	2 1 2	SPT	6		
						8		CLAYEY GRAVEL GC Gray, with oil pockets, black, mod. odor, OVA 6 ppm in auger, some shells
Filter Pack				2 3 4		10		
						12		SILTY SAND SM Brown, poorly sorted
End Cap		14.5'	ND	4 3	SPT	14		Heaving Sand on Bottom Bottom of MW-3 at 14'

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PROJECT NO.

GSA
ALAMEDA

LOG OF MW-3/B6

Fig. 2

Sheet 1 of 2

REMARKS	FIELD					DEPTH (feet)	USCS CLASS.	SOIL DESCRIPTION
	WELL	SAMP. NO.	FIELD READ.	BLOWS/6"	SAMP. TYPE			
				3		16		
						18		
						20		
						22		
						24		
						26		
						28		
						30		
						32		
						34		
						36		
						38		

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GSA
ALAMEDA

LOG OF MW-3 / B6

Fig. 3

Sheet 2 of 2