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

REMEDIAL ACTION COMPLETION CERTIFICATION

April 3, 1998

Mr. Neil Werner
Port of Oakland
530 Water Street
Oakland, CA 94607
STID 4581

RE: Future Amtrak Station, 245-2nd Street, Oakland, CA

Dear Mr. Werner:

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, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721(e) of Title 23 of the California Code of Regulations.

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

Sincerely,

Mee Ling Tung
Director of Environmental Health Services

cc: Chief, Hazardous Materials Division - files
Larry Seto, ACDEH
Chuck Headlee, RWQCB
Dave Deaner, SWRCB (w/ Case Closure Summary)
Leroy Griffin, Oakland Fire

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: **October 15, 1997**

Agency name: **Alameda County-HazMat**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Larry Seto**

Address: **1131 Harbor Bay Pkwy.**
Phone: **(510) 567-6774**
Title: **Senior HMS**

II. CASE INFORMATION

Site facility name:. Future Amtrak Station
Site facility address: 245-2nd Street, Oakland
URF filing date: May 17,1993

RB LUSTIS Case No: Local Case No./LOP 4581
SWEEPS No: **N/A**

Responsible Parties:	**Addresses:**	**Phone Numbers:**
Port of Oakland Contact: Neil Werner	530 Water Street, Oakland, CA 94607	

Tank No	Size in Gallons	Contents:	Closed in-place or Removed?	Date:
FF03	1,000	Gas	Removed	5-10-97
FF04	7,500	Gas	Removed	5-10-97
FF05	3,000	Bulk Oil	Removed	5-10-97
FF06	3,500	Bulk Oil	Removed	5-10-97

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Holes in tank

Monitoring Wells installed? Yes Number: 3

Site characterization complete? Yes

Date approved by oversight agency:

Proper screened interval?

Highest GW depth below ground surface: 4.5' (bgs) Lowest depth: 6.4' (bgs)

Flow direction: Southwest

Most sensitive current use: Unknown

Are drinking water wells affected? No Aquifer Name: NA

Is surface water affected? No Nearest affected SW name: ---

Off-site beneficial use impacts (addresses/locations): Unknown

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

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)
Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal /destination)	Date
Soil/Hydrocarbon	1,025 Cu.Yd.	Bioremediation/reuse	Approx. May'93
Groundwater	2,600 gallon	Gibson Oil/Pilot Petroleum Redwood City, CA	5-20-97
Oil and Water	1,400 gallon	PRC Patterson, Inc.	5-11-97
Underground Tanks (four)	1,000 - 7,500 gallon	Erickson Inc. Richmond, CA	5-10-93
Haz Waste Liquid	4,800 gallon	Gibson Oil/Pilot Petroleum Redwood City, CA	5-19-97

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm) Before[1]	Soil (ppm) After[3]	Water (ppb) Before[2]	Water (ppb) After[4]
TPH (Boiler Fuel)	31,000	1,800*	10,000*	N.D.
TPH (Gas)	1,200	N.D.	240	N.D.
Benzene	14.0	0.56.	7.7	N.D.
Toluene	28.0	0.34	6.5	N.D.
Ethylbenzene	34.0	0.17	1.8	N.D.
Xylenes	67.0	0.81	8.2	N.D.
MTBE	N.A.	N.A.	N.A.	N.D.

N.A.- Not Analyzed
N.D.- Non-Detect
1- Sample taken during tank excavation
2- Sample taken from excavation pit
3- Sample taken after over excavation
4- Most recent monitoring results
*- "Silica gel cleanup" was not performed prior to analysis

Comments (Depth of Remediation, etc.): See "Additional Comments" section.

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: None

Should corrective action be reviewed if land use changes?

List enforcement actions taken: None

List enforcement actions rescinded: None

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Larry Seto Title: **Senior HMS**
Signature: Date: 10-10-97

Reviewed by
Name: Eva Chu Title: **Hazardous Materials Specialist**
Signature: Date: 10/10/97

Name: **Thomas Peacock** Title: **Supervising HMS**
Signature: Date: 10-31-97

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response: Approved
RWQCB Staff Name: Kevin Graves Title: San. Engineering Asso. Date:
11-19-97

VII. ADDITIONAL COMMENTS, DATA, ETC.

Historical documents indicate the Amtrak Station site was formerly the site of the Central Oakland Light & Power Company. Fuel oil was used to power steam boilers that produce electricity. The future parking area was the site of the electric company office and storage sheds; the majority of the future parking area was used for residential housing. It is unknown when these facilities were removed. Prior to beginning the demolition work, the Amtrak Station site and the future parking area site contained abandoned warehouses.

Prior to the removal of the underground storage tanks (USTs), a site investigation was performed which included the following:

a) Determining location, size, and contents of known or suspected (UGTs) at the site,

b) assessment of site soil conditions to provide the locations, characteristics, and estimated volume of potentially contaminated soils that may be encountered by the construction contractor at the site, and

c) disposal options for the liquids contained in the USTs and the potentially contaminated soils

A total of fourteen soil borings and one grab sample were collected in the subsurface investigation. The samples contained up to 31,000 ppm of Diesel, 0.38 ppm Benzene, 0.17 ppm Toluene, 0.51 ppm ethyl benzene, 0.37 ppm p,m-xylene ,0.12 ppm o-xylene and ND for TPH(G).

Four underground storage tanks (UGT's) were removed from the site on May 30,1993. The four tanks included one 7,500 gallon-gasoline UGT, one 1,000 gallon -gasoline UGT, one 3,000 gallon fuel oil UGT, and one 3,500 gallon- bulk-oil UGT. Soil samples taken during the removal contained up to 1,900 ppm TPH (Boiler Fuel) and 1,200 ppm TPH (Gas). After over excavation, confirmatory samples contained up to 1,800 ppm TPH (boiler fuel), ND - TPH(Gas), 0.56ppm benzene, 0.34ppm toluene, 0.17 ppm ethylbenzene and 0.81ppm xylenes. The groundwater samples collected on May 17,1993, was analyzed for TPH (Diesel), and up to 10,000 ppb TPH (BoilerFuel) was detected. (See Table 8)

Hydrocarbon contaminated soils (1,025 cu. yd.) were transported to the Port's bioremediation site for treatment and reuse.

Leaking Underground Fuel Storage Tank Program

There are three monitoring wells on-site that have been monitored for four quarters. Commencing with the second quarter of monitoring, water samples were analyzed for TPH-D using the "silica gel cleanup" procedure, and for methyl-tert-butyl-ether (MTBE). Clayton Environmental states that the "'Silica gel cleanup" procedure is often used in conjuction with the 8015 modified analysis for TPH-D. This process removes non-petroleum based hydrocarbon (eg. hydrocarbons from decaying plant material). If this process is not used, the reported TPH-D concentrations can be erroneously higher." During the last two quarter, all three wells were ND for TPH (D), TPH(G), BTEX and MTBE. (See Table2)

In summary, this office is recommending that this case be closed for the following reasons:

1. The leak has been stopped and ongoing sources, removed or remediated.

2. The site has been adequately characterized.

3. Little or no groundwater impact currently exist.

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

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

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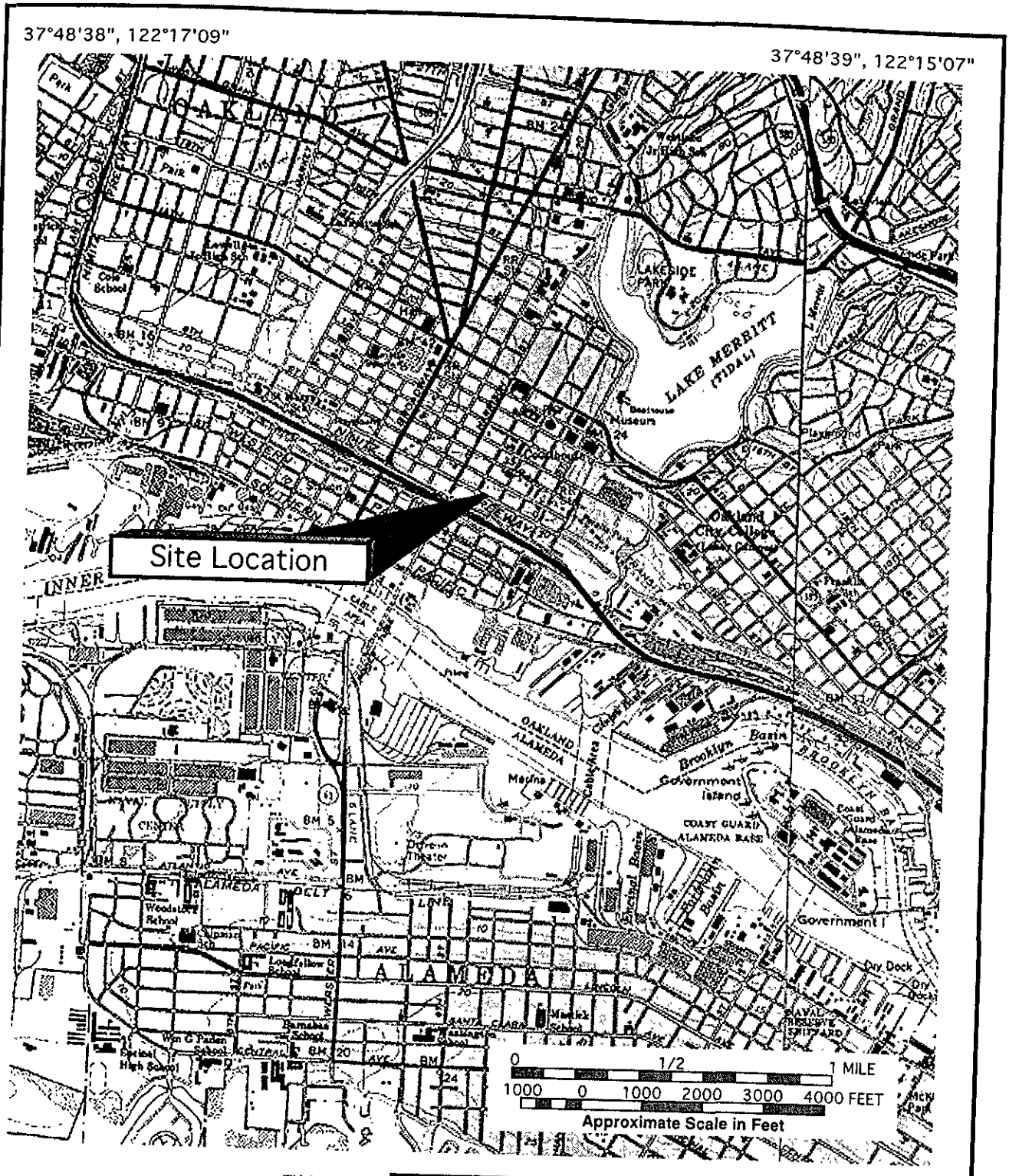


207-1-10d site loc map FH 4.21.97 DYU

2277 Seventh Street

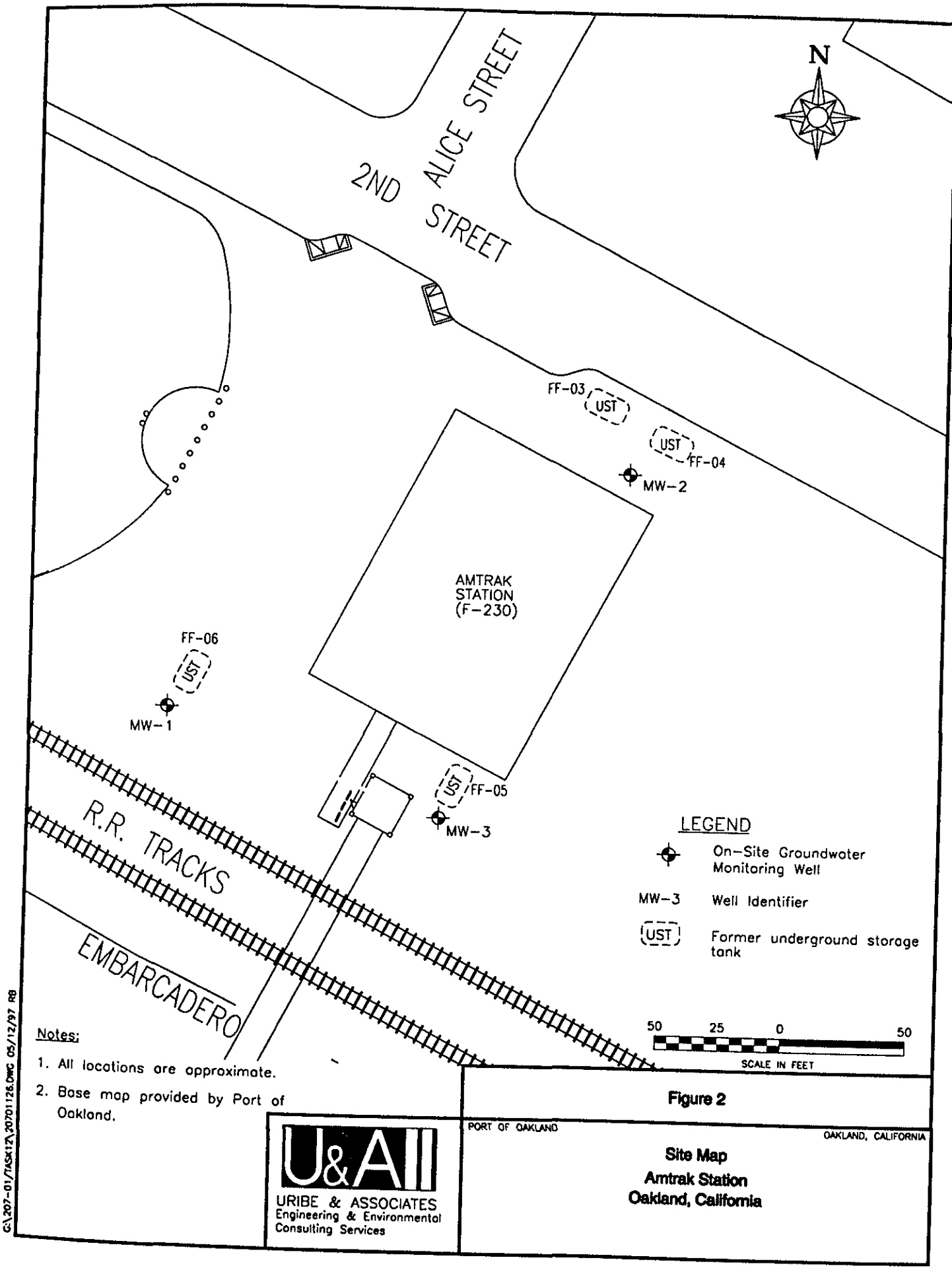
City of Oakland

Oakland, California

Figure 1: Site Location Map
Amtrak Station
245 2nd Street
Oakland, California

U&A

URIBE & ASSOCIATES
Engineering and Environmental
Consulting Services



Notes:

1. All locations are approximate.
2. Base map provided by Port of Oakland.

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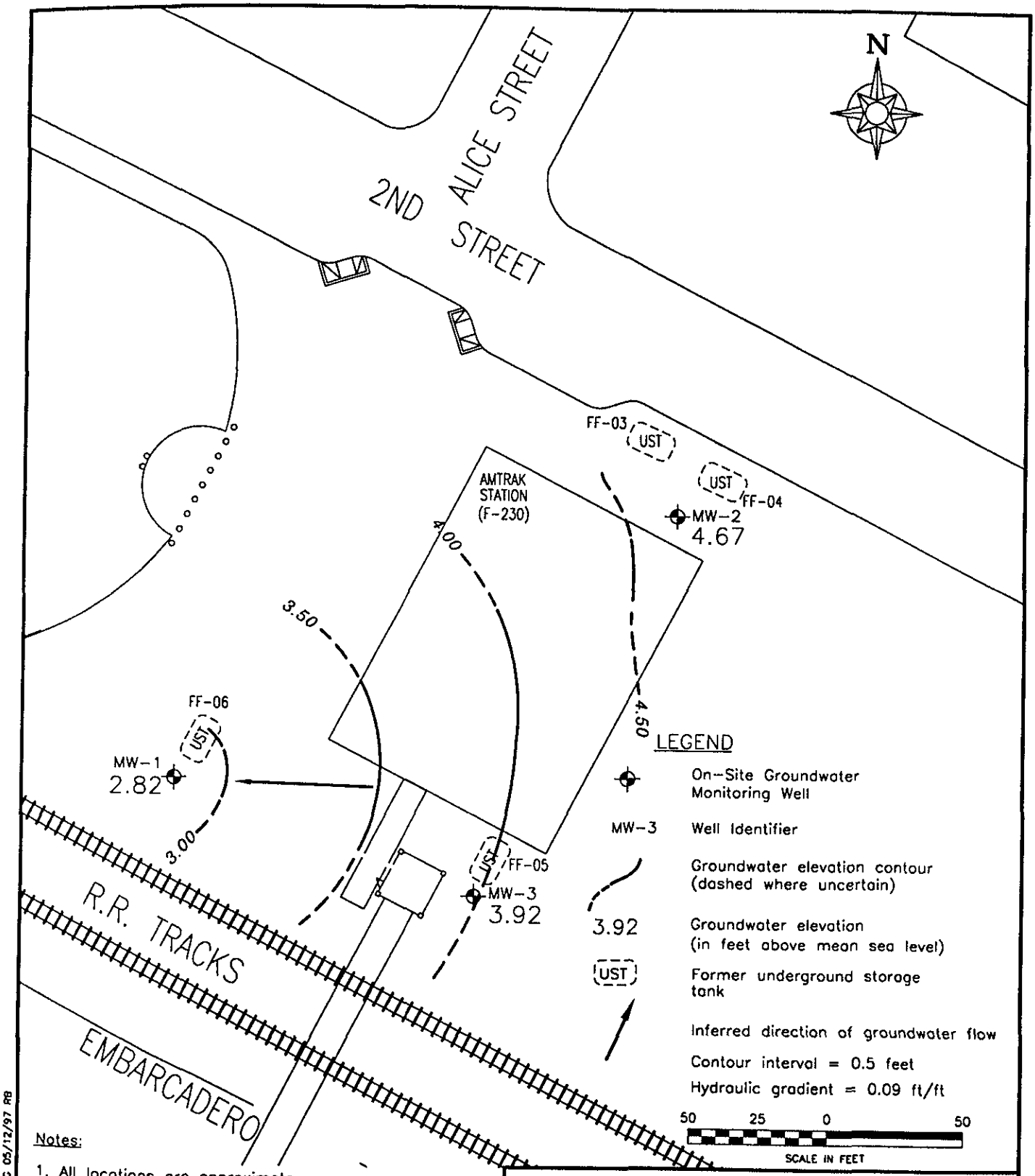
URIBE & ASSOCIATES
Engineering & Environmental Consulting Services

Figure 2

PORT OF OAKLAND
OAKLAND, CALIFORNIA

Site Map
Amtrak Station
Oakland, California



Notes:

1. All locations are approximate.
2. Base map provided by Port of Oakland.

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Engineering & Environmental Consulting Services

Figure 3

PORT OF OAKLAND — OAKLAND, CALIFORNIA

Potentiometric Surface Map for October 16, 1996 Amtrak Station Oakland, California

Table 1
Groundwater Elevations
Port of Oakland
Amtrak Station, 245 2nd Street, Oakland, California

Well	Date	Top of Casing Elevation[1] (feet)	Depth to Water (feet)	Groundwater Elevation (feet)
MW-1	6/29/95	9.20	6.05	3.15
	7/3/95		6.11	3.09
	5/14/96		6.02	3.18
	10/16/96		6.38	2.82
	2/27/97		5.83	3.37
MW-2	6/29/95	9.47	4.58	4.89
	7/3/95		4.67	4.80
	5/14/96		4.69	4.78
	10/16/96		4.80	4.67
	2/27/97		4.33	5.14
MW-3	6/29/95	9.72	5.03	4.69
	7/3/95		5.10	4.62
	5/14/96		5.65	4.07
	10/16/96		5.80	3.92
	2/27/97		4.74	4.98

Notes

[1] Top of casing (TOC) elevations from "May 1996 Groundwater Monitoring Event" report by Clayton Environmental Consultants, Inc., dated July 11, 1996. TOC elevations surveyed to nearest 0.01 foot relative to mean sea level.

Measurements on 10/16/96 and 2/27/97 by U&A. All other measurements listed are from Clayton Environmental Consultants, Inc. (1996).

5-10-93

Table 1: Analysis Results from Soils at Tank FF-03 (UST had holes)
Results in mg/kg + black stained soil in W end of pit.

Sample ID	TPH-gas	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
Intermediate Pit Bottom (8' depth)						
FF-03-3	110	14	28	34	67	7.0
Final Pit Bottom Over excavation (8' to 9' depth)						
FF-03-1	nd <2	nd (<0.010)	nd (<0.010)	nd (<0.010)	nd (<0.035)	nd(<4.0)
FF-03-2	nd <2	0.032	0.100	0.170	0.810	nd(<4.0)
Intermediate Pit Sidewalls (6' to 8' depth)						
FF-03-4	83	0.110	4.1	5.6	26	
FF-03-5	1,200	1.6	7.9	9.3	22	
Pit Sidewalls Over excavation (6' to 8' depth)						
FF-03-6 *	nd <2	0.056	0.340	0.110	0.210	
FF-03-7 *	nd <2	0.018	0.050	0.026	0.110	
FF-03-8 *	nd <2	0.110	0.083	0.078	0.230	
FF-03-9 *	nd <2	nd (<0.010)	nd (<0.010)	0.024	0.090	

5-11-93

Notes: nd = not detected at or above the detection limit, detection limit in parentheses.

** = Sample from edge of excavation area, from area of greatest discoloration.*

Analysis Methods: EPA 8015 modified for TPH-gasoline, EPA 8020 for BTEX and EPA 3050/7420 for lead.

Hydrocarbon analysis by Smith Emery mobile laboratory. Lead analysis by Smith Emery Laboratory

See Figure 4 for sample locations.

boiler fuel standard chromatograms are included with Clayton's laboratory reports for comparison purposes.

TABLE 2
Summary of Results of Analyses Performed on Soil Samples
Collected on June 22 and 23, 1995

	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1 @ 6.5'	190	ND	ND	ND	ND	ND
MW-2 @ 5.5'	25	ND	ND	ND	ND	ND
MW-3 @ 5'	1,800	ND	ND	ND	ND	ND

TPH-D Total Petroleum Hydrocarbons as Diesel
TPH-G Total Petroleum Hydrocarbons as Gasoline
ND Not Detected at or above limit of detection
All concentrations are reported in mg/Kg

TABLE 3
Summary of Results of Analyses Performed on Groundwater Samples
Collected on July 3, 1995

	TPH-D	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1	160	ND	ND	ND	ND	ND
MW-2	570	ND	ND	ND	ND	ND
MW-3	1,900	ND	ND	ND	ND	ND

TPH-D Total Petroleum Hydrocarbons as Diesel
TPH-G Total Petroleum Hydrocarbons as Gasoline
ND Not Detected at or above limit of detection
All concentrations are reported in µg/L

4.0 FINDINGS AND CONCLUSIONS

Based on the field investigation and laboratory analysis, Clayton's findings are as follows:

- Unidentified hydrocarbons in the oil range, which were quantified as TPH-D, were detected at concentrations of 190, 25, and 1,800 mg/kg in soil samples MW-1 @ 6.5', MW-2 @ 5.5', and MW-3 @ 5', respectively.

Table 2-II

Table 2: Analysis Results from Soils at Tank FF-04
Results in mg/kg

ID	TPH-gas	Benzene	Toluene	Ethylbenzene	Xylenes	Lead
Bottom						
	nd (<2)	nd (<0.010)	nd (<0.010)	nd (<0.010)	nd (<0.035)	nd (<4.0)
	nd (<2)	nd (<0.010)	nd (<0.010)	nd (<0.010)	0.230	28

nd = not detected at or above the detection limit, detection limit in parentheses.
Analysis Methods: EPA 8015 modified for TPH-gasoline, EPA 8020 for BTEX, and EPA Method 3050/7420 for lead.
Analysis for hydrocarbons by Smith Emery mobile laboratory. Analysis for lead by Smith Emery Laboratory.
See Figure 4 for sample locations.

Table 2-II

Table 2
Groundwater Analytical Results
Port of Oakland
Amtrak Station, 245 2nd Street, Oakland, California

Well	Date	Analyte (µg/l)							
		TPH-G	TPH-D	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Lab
MW-1	7/3/95	ND(50)	160(a)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	na	CEC
	5/14/96	ND(50)	ND(50)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	ND(5)	CEC
	10/16/96	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace
	2/27/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace
MW-2	7/3/95	ND(50)	570(a)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	na	CEC
	5/14/96	ND(50)	ND(50)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	ND(5)	CEC
	10/16/96	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace
	2/27/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace
MW-3	7/3/95	ND(50)	1800(a)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	na	CEC
	5/14/96	ND(50)	120(b)	ND(0.4)	ND(0.3)	ND(0.3)	ND(0.4)	ND(5)	CEC
	10/16/96	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace
	2/27/97	ND(50)	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(1)	ND(5)	Pace

Notes

TPH = total petroleum hydrocarbons; as gasoline (TPH-G) and diesel (TPH-D)
MTBE = methyl-tert-butyl ether
ug/l = micrograms per liter
ND(#) = not detected at indicated method detection limit
na = not analyzed
(a) = Analysis performed without "silica gel cleanup" procedure.
(b) = Sample does not match the typical diesel pattern. Sample appears to be oil.
Samples collected on 10/16/96 and 2/27/97 by U&A. All other data from "May 1996 Groundwater Monitoring Event" report by Clayton Environmental Consultants, Inc., dated July 11, 1996.
CEC = Clayton Environmental Consultants, Inc. / Pace = Pace Analytical Services, Inc.

Table 3-II

Table 3: Analysis of Results from Soils at Tank FF-05
Results in mg/kg

Sample ID	TPH-Boiler Fuel
Intermediate Pit Bottom (9' depth)	
FF-05-1	nd (<25) ✓
FF-05-2	nd (<25) ✓
Final Pit Bottom (9' to 10' depth)	
FF-05-3	nd (<25) ✓
FF-05-4	nd (<25) ✓
FF-05-5	nd (<25) ✓

Notes: *nd = not detected at or above the detection limit, detection limit in parentheses.*
Excavation pit bottoms analysis by Smith Emery mobile laboratory.
EPA 8015 modified for TPH-boiler fuel.
See Figure 4 for sample locations.

Table 4: Analysis of Results from Soils at Tank FF-06
Results in mg/kg

	TPH-Gasoline	TPH-Boiler Fuel
	na	nd (<25)
	na	nd (<25)
alls		
(4' depth)	nd (<0.3)	na
(11' depth)	nd (<0.3)	na
hwalls		
	0.4	na
T-2	nd (<0.3)	na

Notes: ***nd*** *= not detected at or above the detection limit, detection limit in parentheses.*
na *= not analyzed.*
Excavation *pit bottoms analysis by Smith Emery mobile laboratory.*
Excavation *sidewalls and trenches analysis by Clayton Analytical Laboratories.*
Pit bottom *samples were not analyzed for TPH-gasoline because the tank contained boiler* ***fuel oil.*** *Analysis by EPA 8015 modified for TPH-gasoline and TPH-boiler fuel.*
See Figure 4 *for sample locations.*

Results from Soils at Excavation Pit Bottoms from Foundations and Footings

Results in mg/kg

	TPH-gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
Bottom					
	nd (<2) ✓	nd (<0.010) ✓	nd (<0.010)	nd (<0.010)	nd (<0.035)
	nd (<2) ✓	nd (<0.010) ✓	nd (<0.010)	nd (<0.010)	nd (<0.035)

nd = not detected at or above the detection limit, detection limit in parentheses.
Analysis Methods: EPA 8015 modified for TPH-gasoline and EPA 8020 for BTEX.
Analysis by Smith Emery mobile laboratory.
Excavation pits for the foundations and footings were analyzed for TPH-gasoline because these excavations were downgradient of the gasoline storage tanks (FF-03 and FF-04) and upgradient of the boiler fuel oil tanks (FF-05 and FF-06).
See Figure 4 for sample locations.

Analysis Results from Stockpile Soils from Trench Excavation Near Tank FF-06

Results in mg/kg

Sample Id	TPH-Gas	TPH-Boiler Fuel	Benzene	Toluene	Ethylbenzene	Xylenes
[illegible]-S-5	nd(<2)	NA	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
[illegible]-S-6	nd(<2)	NA	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
[illegible]-S-7	nd(<2)	NA	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
[illegible]-S-8	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
[illegible]-S-9	nd(<2)	nd(<85)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
[illegible]-S-10**	nd(<2)	33	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-11	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-12	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-13	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-14	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-15	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-16	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)
96205-S-17	nd(<2)	nd(<25)	nd(<0.010)	nd(<0.010)	nd(<0.010)	nd(<0.035)

** 20 cubic yards of soils associated with this sample were sent to the Port of Oakland bioremediation site. All other soils from the trench were replaced in the excavation.*

nd = not detected, detection limit in parentheses.

Analysis Methods: EPA 8015 modified for TPH-gasoline and TPH-boiler fuel and EPA 8020 for BTEX. Analysis by Smith Emery mobile laboratory. One composite sample analyzed for every 20 cubic yards of stockpiled soil.

See Figure 4 for sample locations.

Table 8: Analysis Results from Groundwater Samples from Excavation Pits at Tanks FF-03, FF-04, and FF-06

Results in µg/L

Sample ID	TPH-gas	Benzene	Toluene	Ethylbenzene	Xylenes
FF-03-W	240	7.7	6.5	1.8	8.2
FF-04-W	nd (<50)	nd (<0.4)	nd (<0.3)	nd (<0.3)	nd (<0.4)
FF-06-W	nd (<50)	nd (<0.4)	nd (<0.3)	nd (<0.3)	nd (<0.4)

Notes: *nd = not detected at or above the detection limit, detection limit in parentheses.*
Analysis Methods: EPA 8015 modified for TPH-gasoline and EPA 8020 for BTEX.
Analysis by Clayton Analytical Services.

Table 9: TPH as Boiler Fuel Levels in Groundwater Samples from Excavation Pits at Tanks FF-05 and FF-06

Results in µg/L

lab data see TPH-d

Sample ID	TPH-Boiler Fuel aka TPH-d
FF-05-W	10,000 → C10 to C42
FF-06-W	970

Notes: Analysis Methods: EPA 8015 modified for TPH-gasoline and EPA 8020 for BTEX.
Analysis by Clayton Analytical Services.

prep 3510

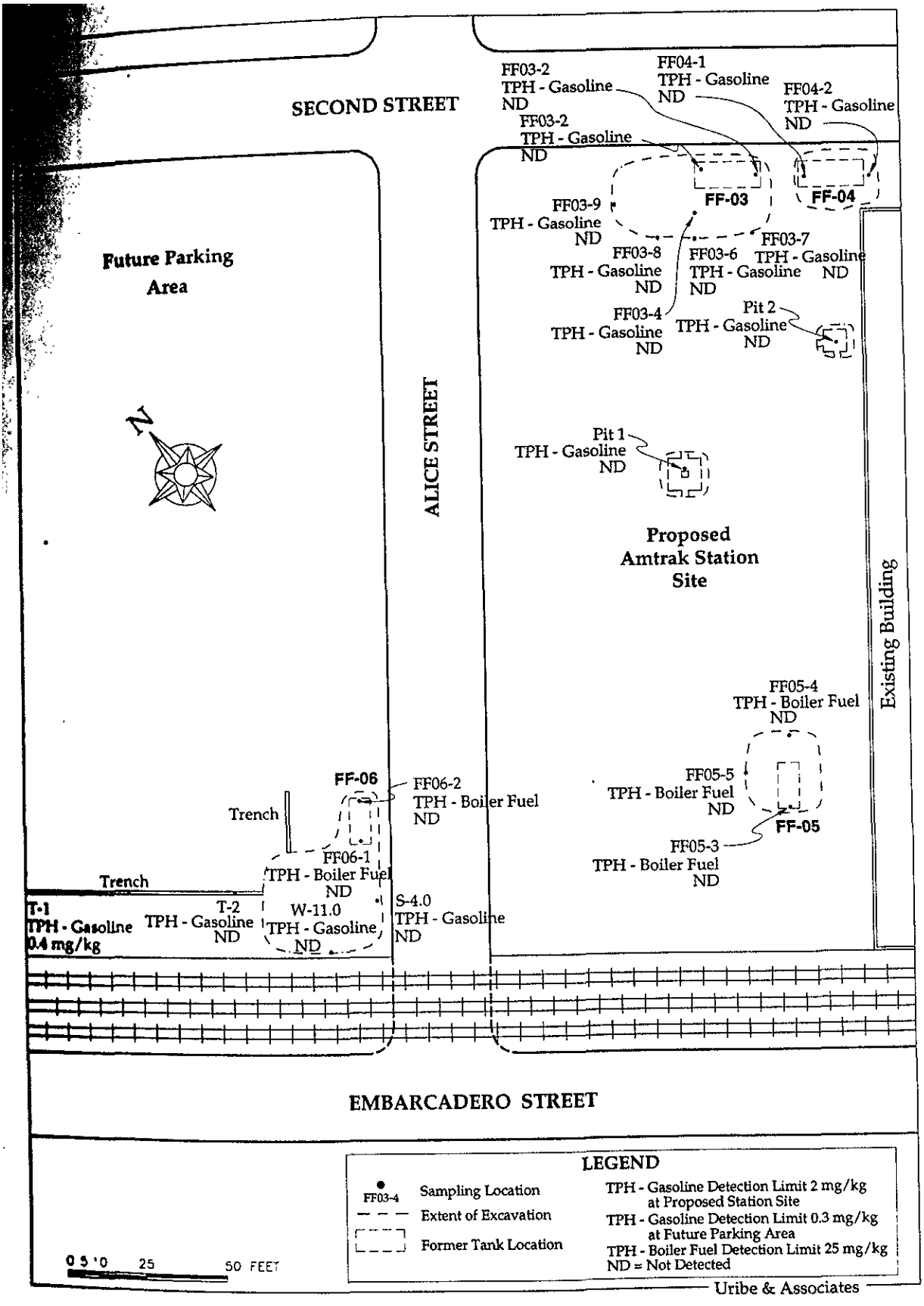


Figure 5: Site Plan, with Sample Locations and Results for Full Extent of Excavations

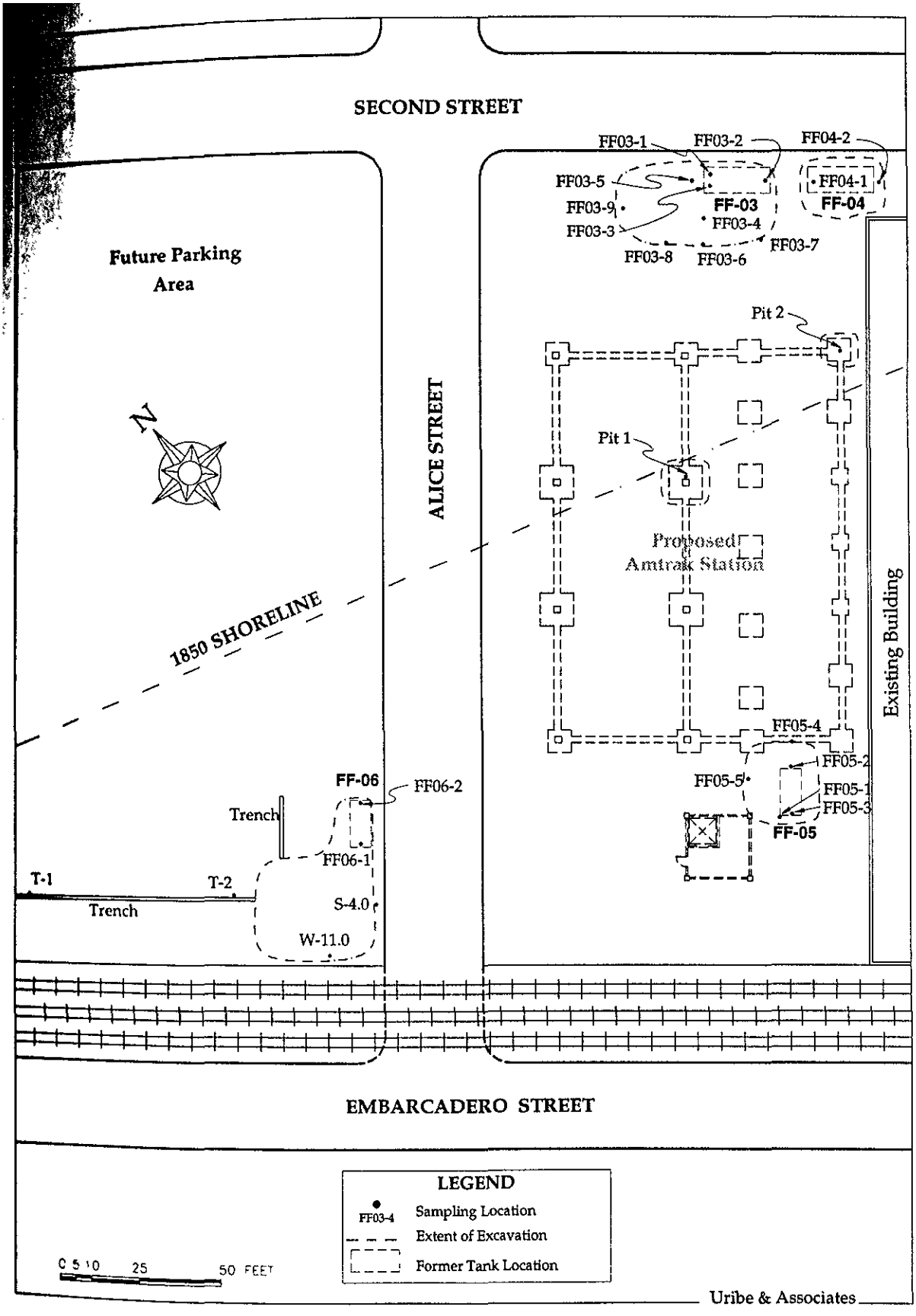


Figure 4: Site Plan, with Sample Locations and Extent of Excavation

gw results

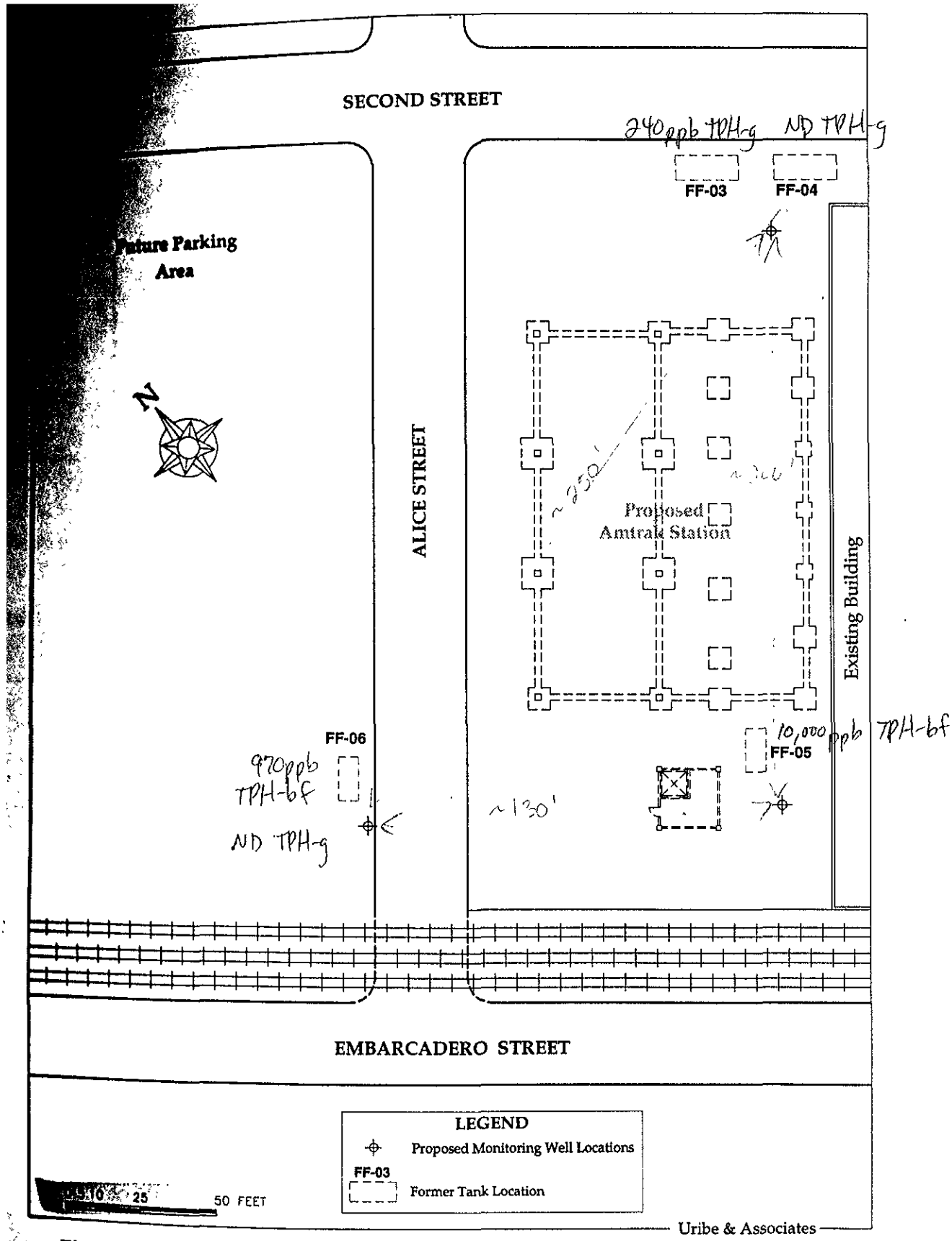


Figure 6: Site Plan, with Proposed Groundwater Monitoring Well Locations

Monitoring Well No. MW-3

PROJECT: Port of Oakland-Amtrak
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 5.0 ft.

DATE: 6/23/95
HOLE DIA.: 8 in.
FINAL GW: 5.42 ft.

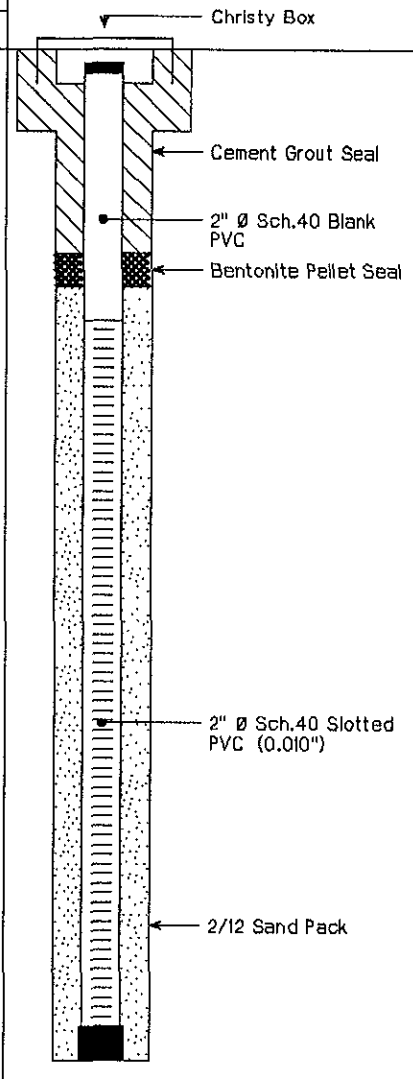
LOGGED BY: George W. Mead IV
SAMPLER: Split Spoon
HOLE ELEV.: 13.25 ft, MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT
CONCRETE	Conc.		0		
SILTY SAND: very dark gray (10 YR, 3/2), damp, medium dense; minor gravel, (FILL).	SM		1		
			2		
			3		
			4		
PID reading = 0 ppm VOCs @ 4.5 ft bgs					
SILTY GRAVEL: dark gray (2.5 YR, 4/0), saturated, loose; (FILL).	GM		5		9
			6		
			7		
			8		
SAND: dark gray (2.5 YR, 4/2), saturated, medium dense.	SP		9		
			10		
PID reading = 0 ppm VOCs @ 10.5 ft bgs					
			11		15
			12		
			13		
			14		
PID reading = 0 ppm VOCs @ 14.5 ft bgs					42
Bottom of Boring @ 15 ft bgs			15		
			16		
			17		
			18		
			19		
			20		

Prepared By/Date: [signature] 10/20/95

Approved By/Date: [signature] 10/20/95

WELL CONSTRUCTION DETAIL



Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.27

Monitoring Well No. MW-2

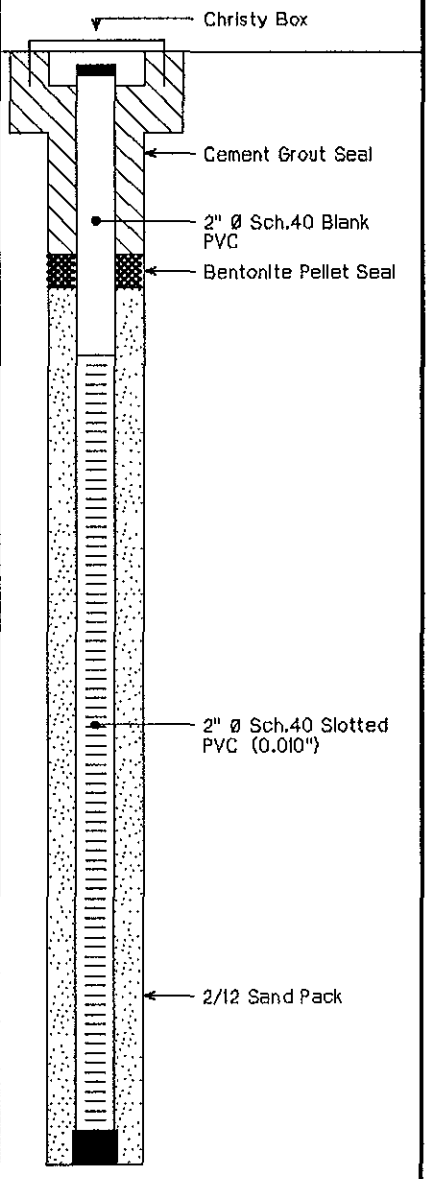
PROJECT: Port of Oakland-Amtrak
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 6.5 ft.

DATE: 6/22/95
HOLE DIA.: 8 in.
FINAL GW: 5.31 ft.

LOGGED BY: George W. Mead IV
SAMPLER: Split Spoon
HOLE ELEV.: 13.23 ft, MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT
CONCRETE	Conc.		0		
SAND : dark brown (7.5 YR, 3/2), damp, medium dense; medium grained sand, (FILL).	SP		1		
			2		
			3		
			4		
			5		
SAND : black (7.5 YR, 2/0), moist, very loose; medium grained sand, (FILL?).	SP		6		2
PID reading = 7.1 ppm VOCs @ 6.0 ft bgs					
SAND : olive brown (2.5 YR, 4/4), saturated, very loose; medium grained sand.	SP		7		4
PID reading = 0 ppm VOCs @ 7.5 ft bgs			8		
			9		
SAND : dark yellowish brown (10 YR, 4/6), saturated, very loose.	SP		10		
			11		
PID reading = 0 ppm VOCs @ 12.5 ft bgs			12		4
			13		
			14		
			15		
PID reading = 0 ppm VOCs @ 16.0 ft bgs			16		
Bottom of Boring @ 16.5 ft bgs			17		
Prepared By/Date: JW M 10/20/95			18		
Approved By/Date: RH 10/20/95			19		
			20		

WELL CONSTRUCTION DETAIL



Clayton Environmental Consultants
1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.27

Monitoring Well No. MW-1

PROJECT: Port of Oakland-Amtrak
DRILL RIG: Hollow Stem Auger
INITIAL GW DEPTH: 6.5 ft.

DATE: 6/23/95
HOLE DIA.: 8 in.
FINAL GW: 6.11 ft.

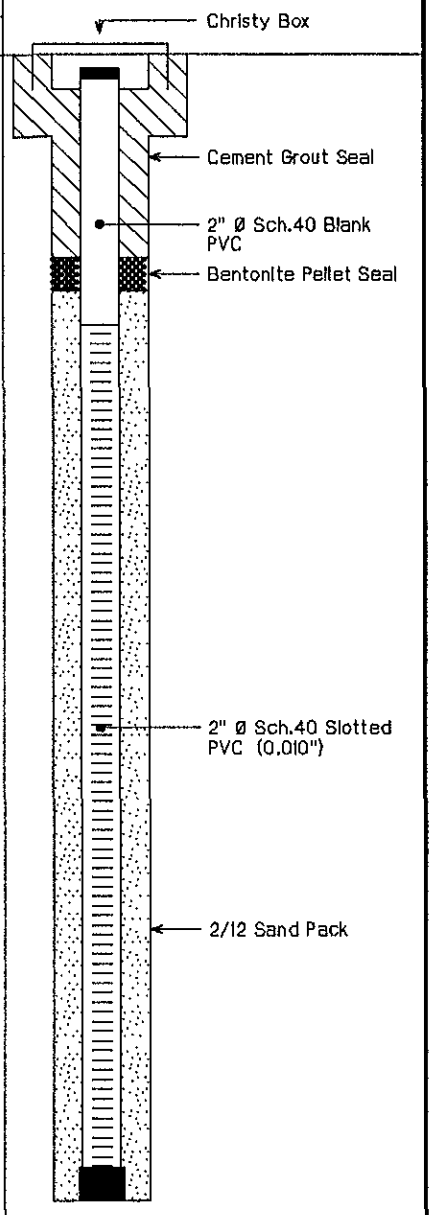
LOGGED BY: George W. Mead IV
SAMPLER: Split Spoon
HOLE ELEV.: 13.18 ft, MSL

DESCRIPTION	USCS CLASS	GRAPHIC LOG	DEPTH	SAMPLE	BLOWS/FOOT
CONCRETE	Conc.		0		
SILTY SAND: very dark gray (10 YR, 3/2), damp, medium dense; minor gravel, (FILL).	SM		1		
			2		
SAND: dark yellowish brown (10 YR, 4/4), damp, loose; medium grained sand, minor silt.	SP		3		
			4		
CLAYEY SAND: very dark gray (7.5 YR, 3/2), moist, very loose; low plasticity. PID reading = 0 ppm VOCs @ 5 to 7 ft bgs	SC		5		4
			6		
CLAY: very dark gray (7.5 YR, 3/2), moist, very soft; plant fragments, low plasticity.	CL		7		2
SANDY CLAY: very dark gray (7.5 YR, 3/2), wet, firm; low plasticity.	SC		8		7
			9		
SAND: dark gray (2.5 YR, 4/0), saturated, loose; medium to fine grained sand, minor clay. PID reading = 0 ppm VOCs @ 10.5 ft bgs	SP		10		
			11		12
			12		
			13		
			14		
			15		
			16		39
Bottom of Boring @ 17 ft bgs			17		
			18		
			19		
			20		

Prepared By/Date: [signature] 10/20/95

Approved By/Date: [signature] 10/20/95

WELL CONSTRUCTION DETAIL



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1252 Quarry Lane
Pleasanton, California

Notes:

Project No. 58580.27