

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

REMEDIAL ACTION COMPLETION CERTIFICATION

**RO-407 - 2021 Brush Street, Oakland, CA
(1-2K and 1-10K gallon tanks removed in May and December 1998)**

February 15, 2002

Mr. Alex Gaeta
1415 Morton St., Apt A
Alameda, CA 94501

Mr. Gardner Kent
Green Tortoise
494 Broadway
San Francisco, CA 94133

Dear Messrs. Gaeta and Kent:

This letter confirms the completion of site investigation and corrective 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 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(s) 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

cc: Chuck Headlee, RWQCB
Dave Deaner, SWRCB
Leroy Griffin, OFD
files-ec (peerless-13)

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RO0000407

February 15, 2002

Mr. Alex Gaeta
1415 Morton St., Apt A
Alameda, CA 94501

Mr. Gardner Kent
Green Tortoise
494 Broadway
San Francisco, CA 94133

Re: Fuel Leak Site Case Closure for 2021 Brush Street, Oakland, CA

Dear Messrs. Gaeta and Kent:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to 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 the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- 240ppm TPH as diesel, and 4.0ppm MTBE exists in soil beneath the site at 10 feet bgs;
- up to 1,200ppb TPHd, and 1,500ppb MTBE exists in groundwater beneath the site; and,
- a site safety plan must be prepared in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.

If you have any questions, please contact me at (510) 567-6762.

eva chu
Hazardous Materials Specialist

enclosures: 1. Case Closure Letter 2. Case Closure Summary

c. Mark Gomez, City of Oakland, Public Works, 250 Frank H Ogawa Plaza, Suite 5301, Oakland, CA 94612

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

JAN 03 2002

QUALITY CONTROL BOARD

I. AGENCY INFORMATION

Date: December 28, 2001

Agency name: Alameda County-HazMat
City/State/Zip: Alameda, CA 94502
Responsible staff person: Eva Chu

Address: 1131 Harbor Bay Pkwy
Phone: (510) 567-6700
Title: Hazardous Materials Spec.

II. CASE INFORMATION

Site facility name: Peerless Stages
Site facility address: 2021 Brush St, Oakland, CA 94612
RB LUSTIS Case No: N/A Local Case No./LOP Case No.: RO0000407
URF filing date: 1/29/98 SWEEPS No: N/A

JAN 10 2002

<u>Responsible Parties:</u>	<u>Addresses:</u>	<u>Phone Numbers:</u>
Alex Gaeta 1415 Morton St, Apt A Alameda, CA 94501	Gardner Kent Green Tortoise 494 Broadway San Francisco, CA 94133 (415) 739-5011	

<u>Tank No:</u>	<u>Size in gal.:</u>	<u>Contents:</u>	<u>Closed in-place or removed?:</u>	<u>Date:</u>
1	2000	Gasoline	Removed	5/13/98
2	10000	Diesel	"	12/17/98

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Unknown
Site characterization complete? YES
Date approved by oversight agency: 7/18/2001
Monitoring Wells installed? Yes Number: 4
Proper screened interval? Yes, 9 to 30 feet bgs in well MW-2
Highest GW depth below ground surface: 13.76 Lowest depth: 16.92 feet in well MW-2
Flow direction: Westerly (see Fig 7)
Most sensitive current use: Mixed commercial/residential
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): NA
Report(s) on file? YES Where is report(s) filed? Alameda County and Oakland Fire Dept-OES
1131 Harbor Bay Pkwy and 1605 MLK Jr Wy
Alameda, CA 94502 Oakland, CA 94612

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
Tank	2 USTs	Disposed by Erickson, in Richmond, CA	5/21 and 12/17/1998
Soil	150 tons	Disposed at Forward landfill in Manteca, CA	5/25/99
Groundwater			

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before¹</u>	<u>After²</u>	<u>Before³</u>	<u>After⁴</u>
TPH (Gas)	26	17	8,600	<2,500
TPH (Diesel)	3800	250	58,000	1,200
Benzene	<1.2	<.005	3.5	<.5
Toluene	.048	<.005	7.9	<.5
Ethylbenzene	.150	<.005	3.2	<.5
Xylenes	.620	<.005	15	<.5
MTBE	4.0	4.0	14,000	1,500
Heavy Metals	Pb/Sol Pb	<5.0	4.6/4.9	
Other	PNA's/HVOCs			ND

- NOTE: 1 Soil sample from north dispenser, except MTBE from gasoline tank pit at 10 feet bgs
 2 soil sample from dispenser after overexcavation to 11 feet bgs, except for MTBE
 3 maximum groundwater concentrations from monitorings wells, except TPHd is from grab groundwater sample from boring SB-4, advanced in 10/97
 4 most recent groundwater data from well MW-2, 5/01. MTBE confirmed at 1,400ppb and TBA at 230ppb in 8/01

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: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**
 Should corrective action be reviewed if land use changes? **YES**
 Monitoring wells Decommissioned: **None**, pending site closure
 Number Decommissioned: **0** Number Retained: **4**, pending site closure
 List enforcement actions taken: **NA**
 List enforcement actions rescinded: **NA**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Eva Chu

Title: Haz Mat Specialist

Signature:



Date:

12/28/01

Reviewed by

Name: Barney Chan

Title: Haz Mat Specialist

Signature:



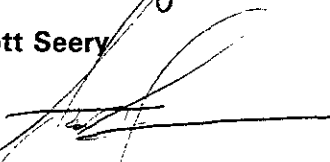
Date:

12/28/01

Name: Scott Seery

Title: Haz Mat Specialist

Signature:



Date:

12-28-01

VI. RWQCB NOTIFICATION

Date Submitted to RB:

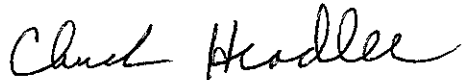
RB Response:

Concern

RWQCB Staff Name: Chuck Headlee

Title: AEG

Signature:



Date:

1/3/02

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site is located at the northwest corner of the intersection of Brush Street and 20th Street in Oakland, CA. The site was formerly a bus yard. The site is bounded to the north and west by residential properties. Two USTs (2,000-gallon gasoline and 10,000-gallon diesel) and one above ground waste oil tank were located in the northern portion of the site, behind the shop. (See Fig 1, 2)

A subsurface investigation was conducted on October 3, 1997, where five direct-push borings (SB-1 through SB-5) were advanced to 20' to 22' bgs. Groundwater was encountered at approximately 15 to 17 feet bgs. The subsurface consisted of clayey silts of low estimated permeability to approximately 11 to 15 feet bgs, which is underlain by silty sands of low to moderate estimated permeability to a depth of 22' bgs. (See Table 1)

Field screening methods noted hydrocarbon concentrations in soil samples taken from approximately 15 feet bgs in borings SB-1 and SB-4. However, only soil samples from borings SB-3 and SB-5 were selected for laboratory analysis. In addition, two water samples (from SB-2 and SB-4) were selected for TPHg, TPHd, and BTEX analyses. The water sample from boring SB-4 was also analyzed for purgeable halocarbons (HVOC). Hydrocarbon contamination was not identified in the two soil samples. Groundwater from boring SB-4 contained up to 58,000ppb TPHd and 120ppb TPHg. HVOCs were not detected.

In May 1998 the 2000-gallon gasoline UST was removed. Hydrocarbon impacted soil was overexcavated to a depth where no obvious signs of contamination remained. A soil sample was collected beneath each end of the UST at approximately 10 feet bgs. Analytical results did not identify TPHg, TPHd or BTEX above the detection limits (note that the detection limit for BTEX was 1.2ppm). Up to 4.0ppm MTBE was identified in soil (using Method 8020). (See Fig 3, Table 2)

In December 1998 the 10,000-gallon diesel UST and dispensers (2 diesel, 1 gasoline) were removed. Two soil samples (TB-W-13' and TB-E-13') were collected from the bottom of the tank excavation. These samples did not contain remarkable levels of petroleum hydrocarbons. (See Fig 4, Table 3)

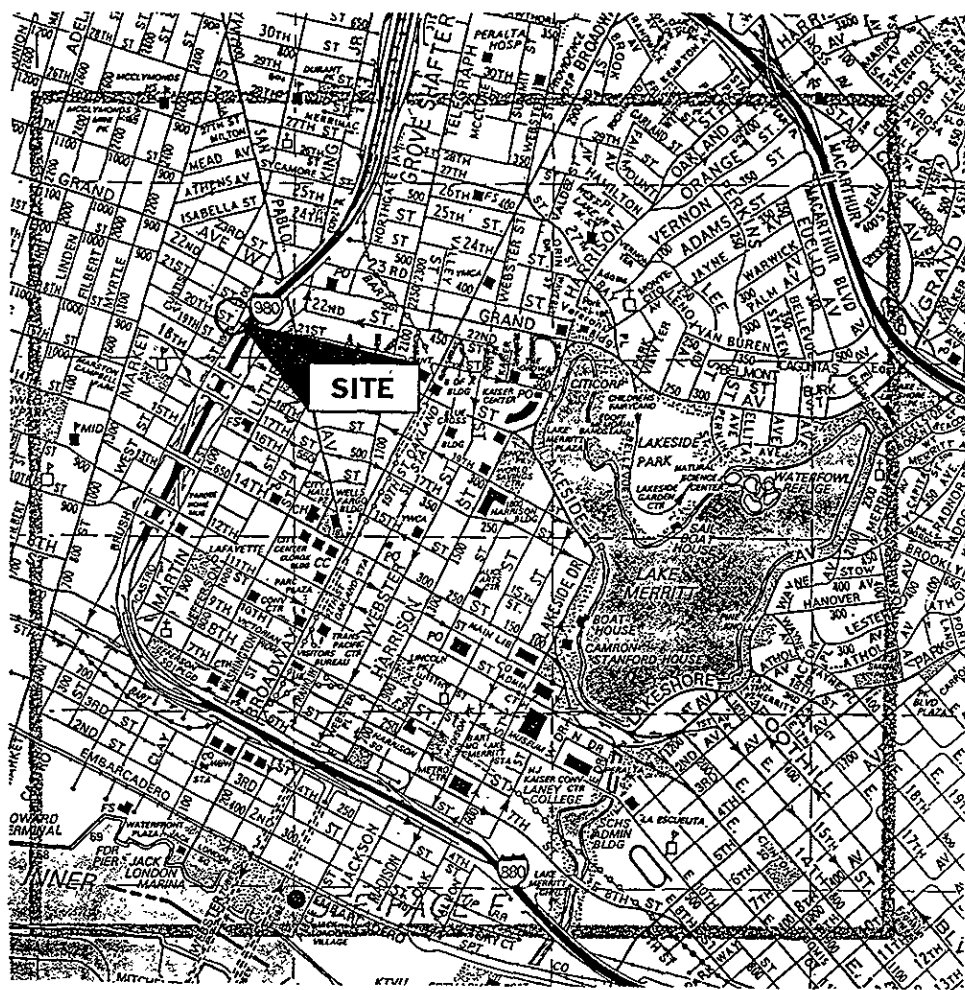
Beneath each of the dispenser piping, obvious soil contamination was present. Soil was excavated from the area below the dispensers to a depth of 5 feet bgs. Low levels of TPHg, BTEX and MTBE were in the soil samples from 5 feet bgs. Up to 3,800ppm TPHd was found beneath the north dispenser. Additional overexcavation to 11 feet bgs was conducted beneath the former dispensers. A total of approximately 10 cy of soil was removed. Confirmatory soil samples (OEX-N and OEX-S) were collected at 11 feet bgs. A maximum of 250ppm TPHd was identified. BTEX and MTBE were non-detect. (See Fig 5, 6 and Table 3, 4)

In August 1999 four groundwater monitoring wells (MW-1 through MW-4) were installed. Soil samples were collected from 15.5 feet bgs. Only soil from boring MW-2 contained petroleum hydrocarbon constituents (53ppm TPHg, 190ppm TPHd) (see Fig 7, Table 5). Groundwater samples were also collected in August 1999. Low levels of petroleum hydrocarbon constituents were detected in each well, with the exception of Well MW-2, which contained 8,600ppb TPHg, 1,200ppb TPHd, and 14,000ppb MTBE.

Quarterly groundwater monitoring commenced in August 1999. The MTBE concentrations have steadily decreased. Two offsite soil borings, BH-A and BH-B, were advanced west of the site, along West Street (downgradient) in May 2001. Soil samples collected from these boreholes did not contain analytes sought. Grab groundwater samples did not contain MTBE, but identified 69ppb TPHd. It appears that the contaminant plume is limited in extent (see Fig 7, Table 6, 7). Continued monitoring is not warranted.

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- the dissolved hydrocarbon plume is not migrating;
- no preferential pathways exist at the site;
A conduit study demonstrated that utility trenches will not act as preferential pathways.
- no water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted;
A water well survey conducted did not identify any drinking water wells within 1,000 feet of the site. (see Fig 8)
- the site presents no significant risk to human health or the environment.

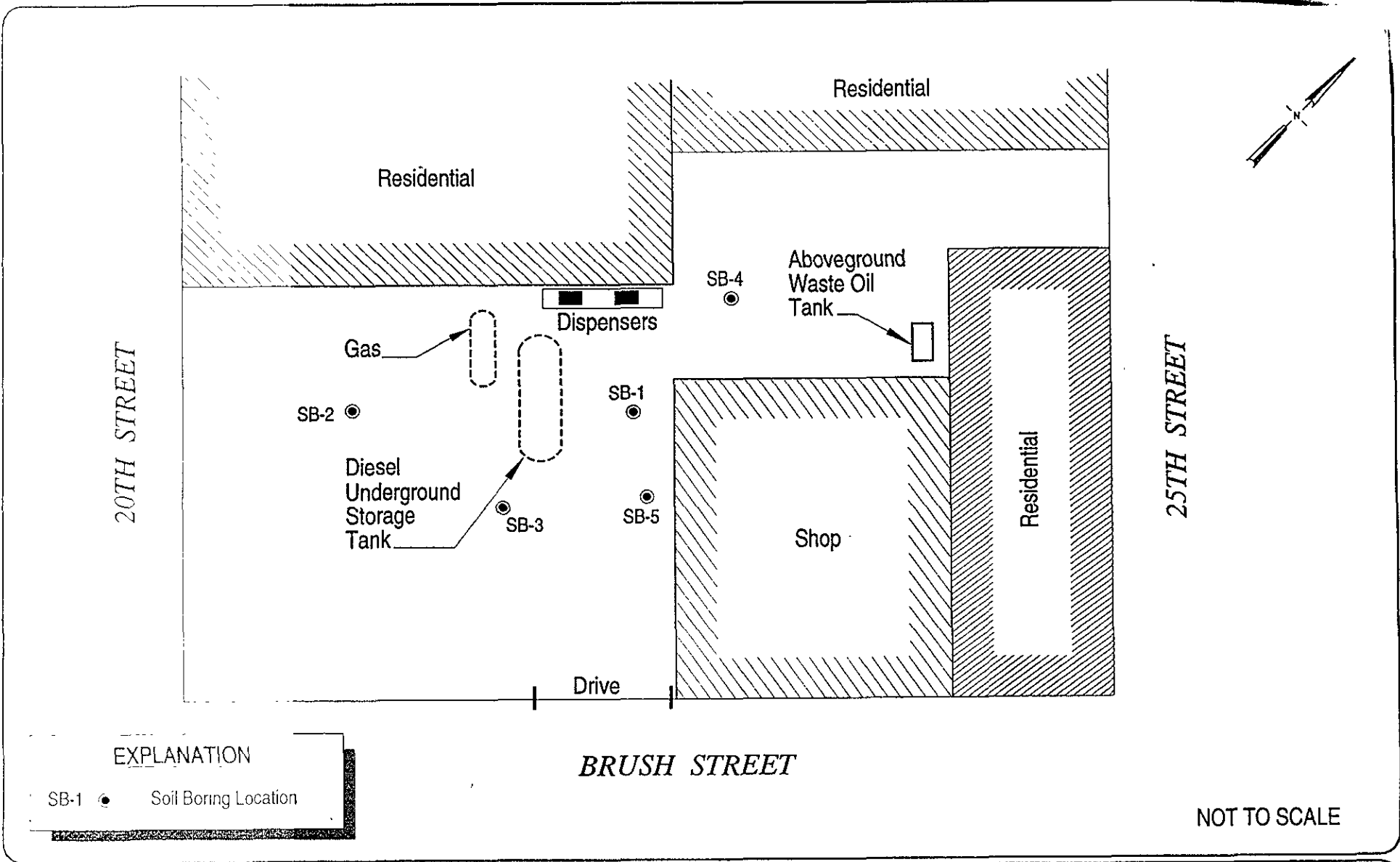


SITE LOCATION MAP

Peerless Stages, Inc
2021 Brush Street
Oakland, California

Aqua Science Engineers

Figure 1



CAMBRIA
Environmental Technology, Inc.

Peerless Stages
2026 Brush Street
Oakland, CA

F:\PROJECT\MISC\GREENTORT\FIGURES\SOIL-LOC.DWG

Soil Boring Locations
October 3, 1997

FIGURE
1

FIG 2

CAMBRIA

Table 1. Soil and Ground Water Analytic Data - Peerless Stages, 2026 Brush Street, Oakland, California

Sample ID	Units	Date Collected	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes
Soil Samples:								
SB-3, 16'	mg/kg	10/03/97	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
SB-5, 15.5'	mg/kg	10/03/97	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005
Water Samples								
SB-2	ug/L	10/03/97	<50	310 a	<0.5	0.70	<0.5	0.91
SB-4	ug/L	10/03/97	120 b	58,000 a,c	<0.5	1.8	0.50	3.7

Abbreviations/Notes:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA method 8015.
Benzene, ethylbenzene, toluene, xylenes by EPA method 8020.

a = oil range compounds are significant

b = strongly aged gasoline or diesel range compounds are significant

c = gasoline range compounds are significant

No volatile organic compounds detected in ground water sample SB-4 by EPA method 8010.

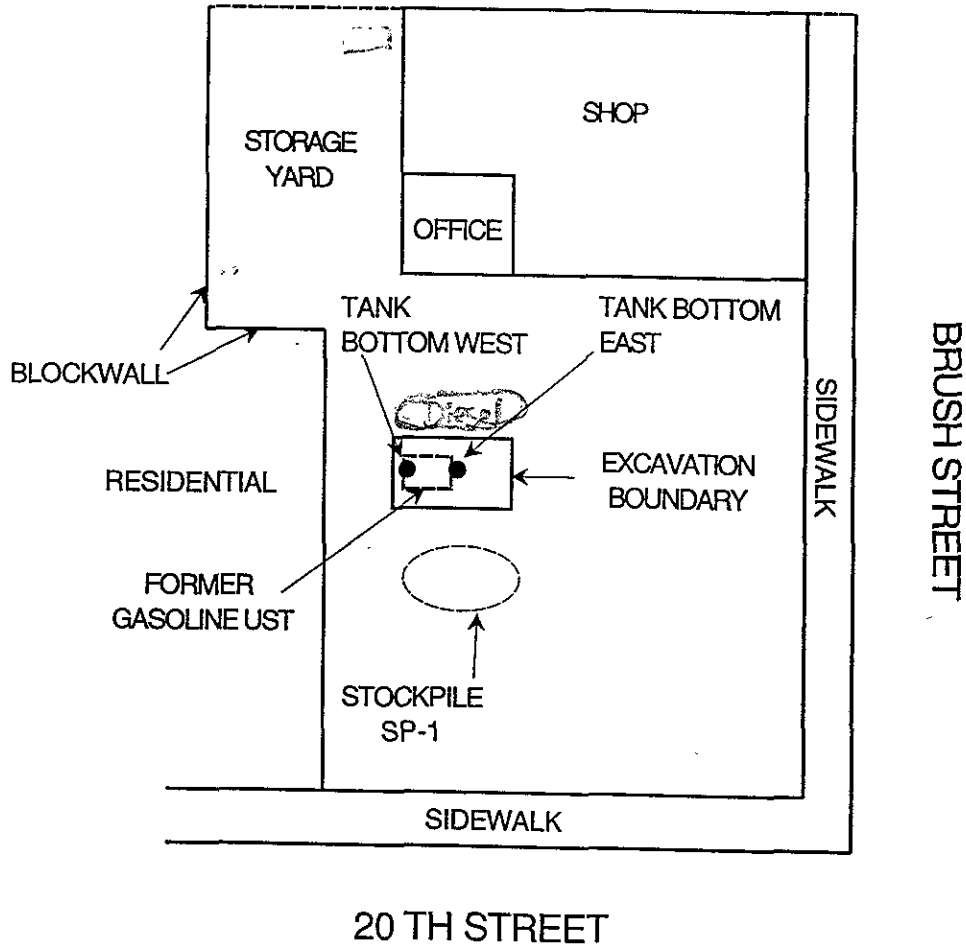
Soil samples reported in milligrams per kilogram (mg/kg). Water samples reported micrograms per liter (ug/L).

TABLE 1

FIG 3



NORTH
SCALE 1" = 40'



LEGEND

- SOIL BORING LOCATION
- FORMER GASOLINE UST

SITE MAP

Peerless Stages, Inc.
2021 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS

Figure 2

TABLE 2

TABLE TWO
SOIL SAMPLE RESULTS GASOLINE UST
TPH-G, TPH-D, BTEX, MTBE & TTLC Lead
All Results in Parts Per Million

Sample Name	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	Total Lead
WEST-10.0'	<20	<1.0	<1.2	<1.2	<1.2	<1.2	2.4	<5.0
EAST-10.0'	<20	<1.0	<1.2	<1.2	<1.2	<1.2	4.0	<5.0
SP1 ABCD	1.6	170	<0.005	0.0067	<0.005	0.081	0.23	180
EPA METHOD	8015M	8015M	8020	8020	8020	8020	8020	7420A

Notes:

Detectable concentrations are in **bold**.

Non-detectable concentrations are indicated by a less than sign (<) followed by the laboratory detection limit.

FIG 4



NORTH
SCALE 1" = 40'

RESIDENTIAL

STORAGE
YARD

SHOP

OFFICE

BLOCKWALL

DISP-OEX-N-5'
DISP-OEX-S-5'

FORMER
DISPENSERS
AREA

STKP (A-D)

EXCAVATION
BOUNDARY

TB-W-13' TB-E-13'

RESIDENTIAL

BLOCKWALL

SIDEWALK

BRUSH STREET

SIDEWALK

20 TH STREET

LEGEND



DIESEL



DISCRETE SOIL SAMPLE LOCATION



COMPOSITE SOIL SAMPLE LOCATION

SITE MAP

Peerless Stages, Inc.
2021 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS

Figure 2

FIG 5



NORTH
SCALE 1" = 40'

RESIDENTIAL

STORAGE
YARD

SHOP

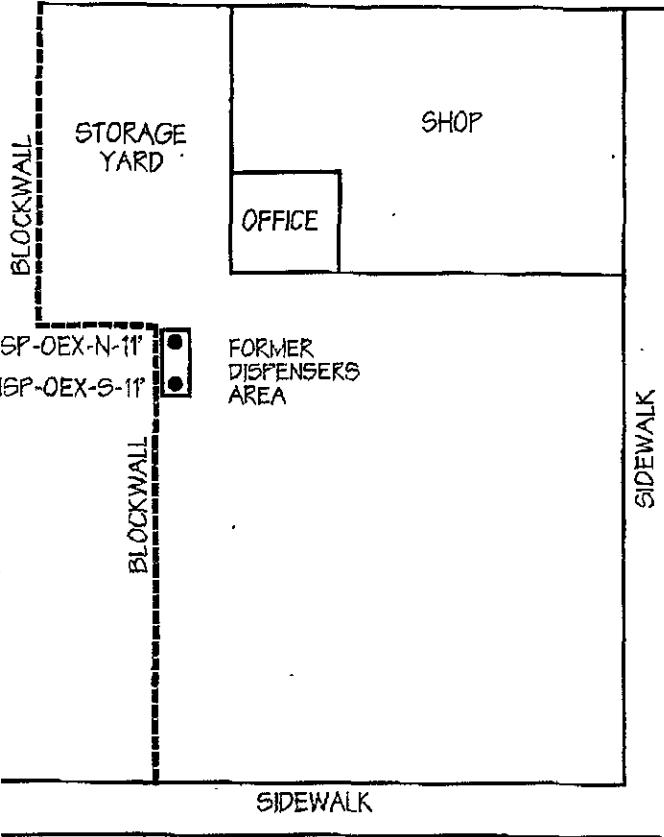
OFFICE

DISP-OEX-N-11'

DISP-OEX-S-11'

FORMER
DISPENSERS
AREA

RESIDENTIAL



20 TH STREET

BRUSH STREET

SITE MAP

Peerless Stages, Inc.
202 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS

Figure 2

~~Table One~~
SOIL SAMPLE RESULTS DIESEL UST
All Results in Parts Per Million

Sample Name, depth	TPH Gasoline	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	MTBE
TB-W-13'	< 1.0 ¹	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
TB-E-13'	< 1.0 ²	< 0.005	< 0.005	< 0.005	< 0.005	0.064
STKP-(A-D)	510	< 0.01	0.063	0.27	0.32	< 0.2
DISP-OEX-S-5'	26.0	< 0.005	< 0.005	< 0.005	< 0.005	0.26
DISP-OEX-N-5'	< 10.0 ³	< 0.005	0.048	0.15	0.62	0.011
EPA METHOD	8015M	8020	8020	8020	8020	8020
Sample Name	TPH Diesel	TtLC Lead	StLC Lead			
TB-W-13'	5.1 *	< 5.0	---			
TB-E-13'	30.0 *	< 5.0	---			
STKP-(A-D)	2,900	130	4.9			
DISP-OEX-S-5'	26.0 **	< 5.0	---			
DISP-OEX-N-5'	3,800 *	< 5.0	---			
EPA METHOD	8015M	7420A	7420A			

Notes:

1. Hydrocarbons found are uncharacteristic of gasoline profile. Quantified value 1.1 ppm
 2. Hydrocarbons found are uncharacteristic of gasoline profile. Quantified value 12 ppm
 3. Hydrocarbons found are uncharacteristic of gasoline profile. Quantified value 450 ppm
- * Hydrocarbons reported are in the early diesel range and do not match diesel standard
 ** Hydrocarbon report has characteristic of weathered/aged diesel
 Detectable concentrations are in bold.

TABLE ONE

Summary of Chemical Analysis of Dispenser Overexcavation Soil Samples
Peerless Stages Property, Oakland, California
TPH-G, TPH-D, BTEX, MTBE, and Total Lead
All results are in parts per million

SAMPLE NAME	TPH-G	TPH-D	BENZENE	TOLUENE	BENZENE	XYLENES	MTBE	LEAD
DIS.OEX.N.II'	17	250	<0.005	<0.005	<0.005	<0.005	<0.005	4.6
DIS.OEX.S.II'	8.9	55	<0.005	<0.005	<0.005	<0.005	<0.005	4.1
EPA METHOD	8015M	8015M	8020	8020	8020	8020	8020	7420

NOTES:

Detectable concentrations are in **bold**.

Non-detectable concentrations are noted by the less than sign (<) followed by the laboratory detection limit.

TABLE 4



NORTH
SCALE 1" = 30'

21th STREET

SIDEWALK

GATE

RESIDENTIAL

RESIDENTIAL

MW-3
(3.38)

AG
3.5'

SHOP

RESIDENTIAL

BH-B

STORAGE SHED

4.0'

OFFICE

MW-4
(4.53)

SB-4

WEST STREET

BH-A

SIDEWALK

RESIDENTIAL

FORMER DISPENSERS

4.5'

GATE

SIDEWALK

BRUSH STREET

RESIDENTIAL

MW-2
(4.09)

FORMER USTs

MW-1
(4.19)

BLOCKWALL

RESIDENTIAL

SIDEWALK

20th STREET

LEGEND

MW-4	MONITORING WELL
[Dashed box]	FORMER UST LOCATION
BH-A	GEOPROBE LOCATION

GROUNDWATER ELEVATION
CONTOUR MAP 6/10/01

Former Peerless Stages, Inc. Property
2021 Brush Street
Oakland, California

AQUA SCIENCE ENGINEERS

Figure 2

TABLE ONE
 Summary of Chemical Analysis for Soil Samples Collected 8/18/99
 Peerless Stages Property, Oakland, California
 All results are in parts per million (ppm)

SAMPLE LOCATION	DEPTH (FT)					ETHYL-	TOTAL		TOTAL	
		TPH-G	TPH-D	BENZENE	TOLUENE	BENZENE	XYLENES	MTBE	LEAD	PNAs
MW-1	15.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
MW-2	15.5	53	190	< 0.62	< 0.62	< 0.62	< 0.62	< 0.62	< 5.0	0.018*
MW-3	15.5	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
MW-4	15.0	< 1.0	< 1.0	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 5.0	NA
Industrial PRG		NE	NE	1.4	520	230	210	NE	1000	varies
Residential PRG		NE	NE	0.62	520	230	210	NE	130	varies

Notes.

Detected concentrations in bold.

Non-Detectable concentrations are noted by a less than symbol (<) followed by the laboratory reporting limit

NE = Not established

PNAs = Polynuclear Aromatic Hydrocarbons

* Fluorene at 0.018 ppb was the only PNA detected above the laboratory reporting method

NA = Sample was not analyzed

PRG = US EPA Preliminary Remediation Goal

TABLES

TABLE ONE

Summary of Chemical Analysis for Soil Samples Collected 5/8/01
 Former Peerless Stages Property, Oakland, California
 All results are in parts per million (ppm)

SAMPLE LOCATION	DEPTH (FT)	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE
BH A	11.5'-12.0'	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
BH-B	13.5'-14.0'	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Industrial PRG		NE	NE	174	520	230	210	NE
Residential PRG		NE	NE	0.62	520	230	210	NE

Notes:

Detected concentrations in bold

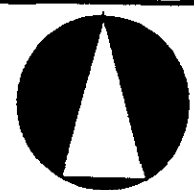
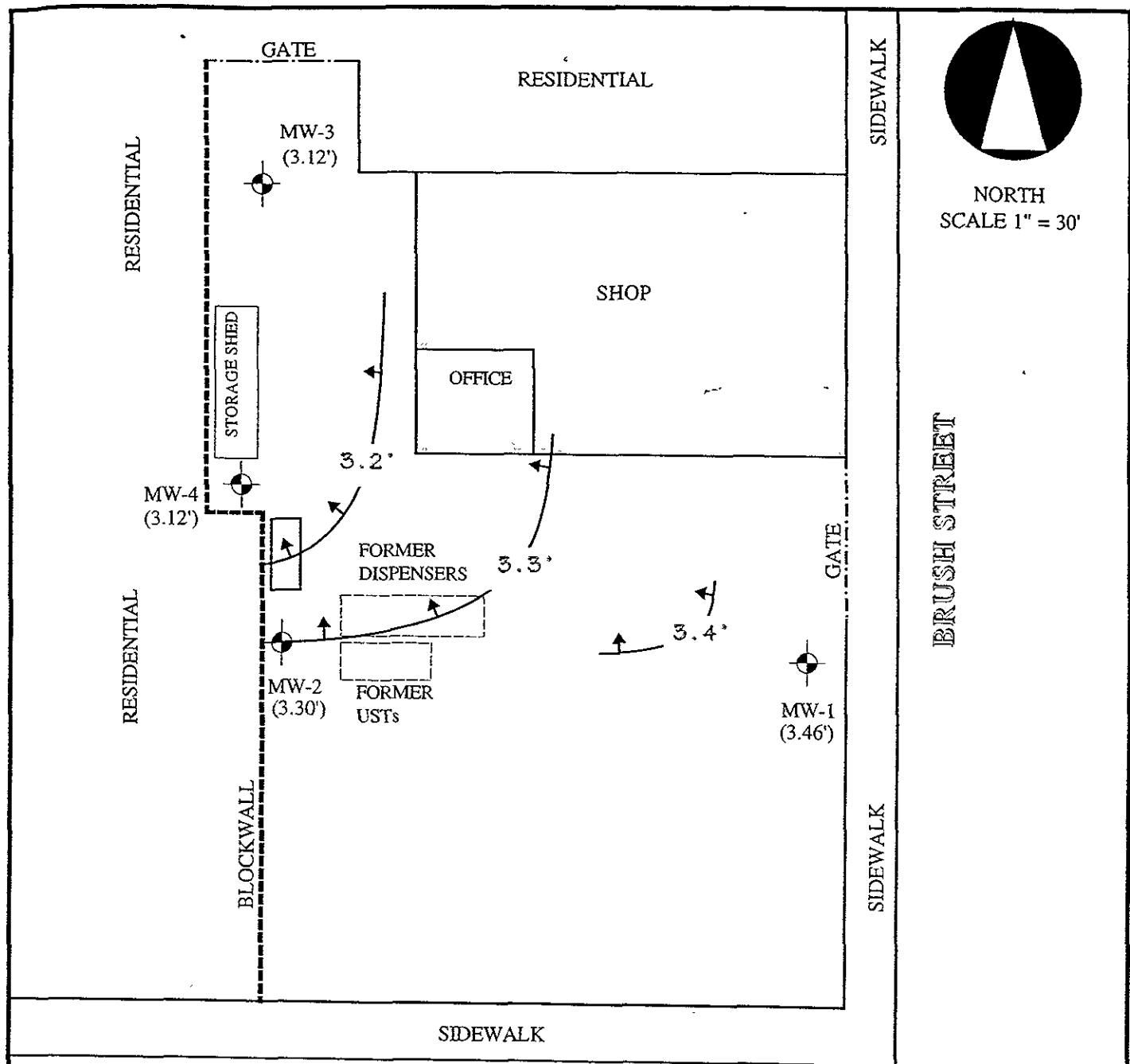
Non-Detectable concentrations are noted by a less than symbol (<) followed by the laboratory reporting limit

NE = Not established

PRG = US EPA Preliminary Remediation Goal

TABLE 6




FIG 7



NORTH
SCALE 1" = 30'

BRUSH STREET

20th STREET

LEGEND	
MW-4 	MONITORING WELL
(3.12')	GROUNDWATER ELEVATION RELATIVE TO PROJECT DATUM
3.2' 	GROUNDWATER ELEVATION CONTOUR
	FORMER UST LOCATION

GROUNDWATER ELEVATION CONTOUR MAP 2/24/2001	
Former Peerless Stages, Inc Property 2021 Brush Street Oakland, California	
AQUA SCIENCE ENGINEERS	Figure 2

TABLE TWO

Summary of Chemical Analysis for Groundwater Samples
Former Peerless Stages Property, Oakland, California
All results are in parts per billion (ppb)

SAMPLE ID	DATE SAMPLED	TPH-G	TPH-D	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	MTBE	Tert-Butonal	FNAs	YOCs
MW-1	8/26/1999	81	<50	3.5	7.9	3.2	15	<5.0	NA	NA	NA
	11/11/1999	<50	110	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/16/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/17/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/23/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	11/30/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/22/2001	87**	54*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/10/2001	<50	77*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/24/2001										
MW-2	8/26/1999	8,600	1,200*	<25	<25	<25	<25	14,000	NA	<0.057 - <0.23	NA
	11/11/1999	710	2,300*	<0.5	<0.5	<0.5	<0.5	6,200	NA	NA	NA
	2/16/2000	<50	1,500*	<0.5	<0.5	<0.5	<0.5	3,800	NA	NA	<10 - <1,000
	5/17/2000	58	1,400*	<0.5	<0.5	<0.5	<0.5	5,800	NA	NA	NA
	8/23/2000	1,300**	600*	<0.5	<0.5	<0.5	<0.5	2,000	NA	NA	<0.5 - <50
	11/30/2000	<2,500	1,200*	<0.5	<0.5	<0.5	<0.5	2,700	NA	NA	NA
	2/22/2001	<2,500	1,300*	<0.5	<0.5	<0.5	<0.5	1,600	NA	NA	NA
	5/10/2001	<2,500	1,200*	<0.5	<0.5	<0.5	<0.5	1,500	NA	NA	NA
	8/24/2001	NA	NA	NA	NA	NA	NA	1,400	230	NA	NA
MW-3	8/26/1999	<50	<63	2.5	3	0.87	4	<5.0	NA	NA	NA
	11/11/1999	<50	<56	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/16/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/17/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/23/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	11/30/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/22/2001	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/10/2001	59	58*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/24/2001										
MW-4	8/26/1999	<50	420*	<0.5	<0.5	0.88	3.6	<5.0	NA	NA	NA
	11/11/1999	<50	120*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/16/2000	<50	76*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/17/2000	120**	130*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/23/2000	<50	73*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	11/30/2000	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	2/22/2001	76**	170*	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	5/10/2001	<50	<63	<0.5	<0.5	<0.5	<0.5	<5.0	NA	NA	NA
	8/24/2001										
BH-A	5/8/2001	<50	69	<0.5	1.5	<0.5	1.5	<0.5	NA	NA	NA
BH-B	5/8/2001	<50	60	<0.5	1.7	<0.5	1.7	<0.5	NA	NA	NA
DHS MCL		NE	NE	1	150	700	1,750	15		Varies	Varies

Notes:

Non-Detectable concentrations are noted by a less than symbol (<) followed by the laboratory report of limit

NE = DHS MCL not established

FNAs = Polynuclear Aromatic hydrocarbons

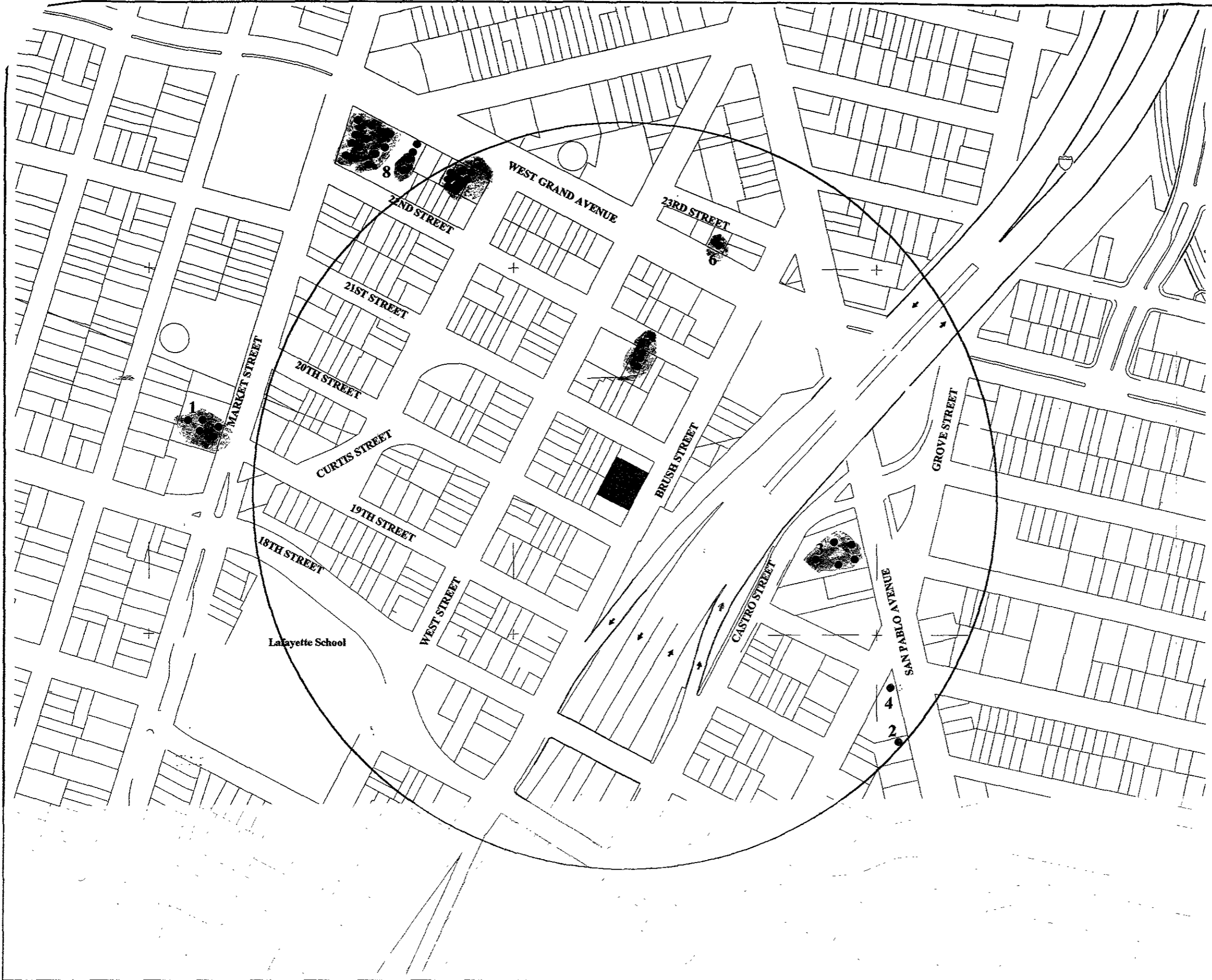
YOCs = Volatile Organic Compounds

DHS MCL = Department of Health Services Maximum Contaminant Level for drinking water

NA = Sample was not analyzed for these compounds

* = hydrocarbons do not meet the laboratory diesel standard

** = hydrocarbons do not meet the laboratory gasoline standard



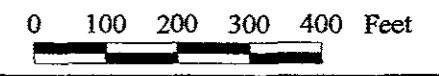
WELLS

- Extraction
- Recovery
- Monitoring
- Test

Locations are Approximate

- Site of Concern
- 1,000 Foot Radius

SCALE



**AREA WELL SURVEY
1,000 FOOT RADIUS**

**2021 BRUSH STREET
OAKLAND, CA**

Pierless Seages
 2026

SB-1

MW-

Act Number:
 Logist: JB

Boring Location: ~~see map~~ shop-side of tanks
 Drilling Method: hydraulic push

Date: 10/3/97
 Time: 9:15

Depth (ft)	Sample Interval	Time/Blow Cnt.	Well Const.	USC Class.	Soil Type and Comments	Color	Pen. Resist.	Moisture	Odor	Percentages				Plasticity	Permeability
										Clay	Silt	Sand	Gravel		
0					concrete 2-8"										
5					organics	blk/brn	loose	damp	—	15	80	5		VL	High
10					organics	tan/grey	stiff			25	65	10		M	L
15					SW organics	grn	stiff	damp mild		5	15	80		VL	Low
20					@ 185	grn/brn	loose	wet	—	5	15	80		VL	M
25															
30															
35															

Peerless Stages
 Address: 2026 Brush St.

SB-2

MW-

Project Number:
 Geologist: JB

Boring Location: down gradient of tanks
 Drilling Method:

Date: 10/3/97
 Time: 11:10

Depth (ft)	Sample Interval	Time/Blow Cnt.	Well Const.	USC Class.	Soil Type and Comments	Color	Pen. Resist.	Moisture	Odor	Percentages				Plasticity	Permeability
										Clay	Silt	Sand	Gravel		
0					Asphalts										
5					organics	brn/tan	stiff			~	15	75	10		LM L
10		60 ppm			organics	tan	stiff moist			—	15	75	10		M L
15		80 ppm			@ 14'	tan	soft			—	10	80	10		L M
20		80 ppm				tan	soft damp				10	85	5		LM L
22						brn	soft wet			—	15	10	75		LM L
25					bkg OVA = 20 ppm										
30					Water recharged in temp. screen to ~ 10' bgs.										
35															

Peerless
 2026 Brush St.

SB-3

MW-

Project Number:
 Geologist: JB

Boring Location: X-grad. of tanks
 Drilling Method:

Date: 10/3/97
 Time: 12:20

Depth (ft)	Sample Interval	Time/Blow Cnt.	Well Const.	USC Class.	Soil Type and Comments	Color	Pen. Resist.	Moisture	Odor	Percentages				Plasticity	Permeability	
										Clay	Silt	Sand	Gravel			
					concrete - 6"											
5						light brown	loose damp	-	-		15	80	5		VL	M
10						brn	soft	-	-		10	30	60		L	LM
15					organics	tan	stiff				25	70	5		M	L
20						brn	loose damp				5	15	80		L	M
25							in sand pocket		slight							
30						brn	soft wet	-	-		15	10	75		LM	L

Peerless
 Address: 2026 Brush St., Oakland

SB-4

MW-

Project Number:
 Geologist: SB

Boring Location: down-grad. of W.O.
 Drilling Method:

Date: 10/3/97
 Time: 1:20

Depth (ft)	Sample Interval	Time/Blow Cnt.	Well Const.	USC Class.	Soil Type and Comments	Color	Pen. Resist.	Moisture	Odor	Percentages				Plasticity	Permeability
										Clay	Silt	Sand	Gravel		
0					Asphalt										
5						blk/brn	loose	damp	—	15	80	5		VL	M
10					organics	brn, tan	stiff		—	15	75	10		LM	L
15					organics	tan w/ green	hard/stiff		—	20	75	5		LM	L
20					organics	green	loose	moist	mild	5	30	65		L	LM
21						green	loose	wet	mild	5	10	85		VL	M
22						brn	loose	wet	—	5	10	85		VL	M
25					Water recharged to screen ~ 12' bgs in temp.										
30															
35															

BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-1

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 1

Driller: West Hazmat Drilling Corp.

Type of Rig: Hollow-Stem Auger

Size of Drill: 8.0" Diameter

Logged By: Ian Reed

Date Drilled: August 18, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 22.0'

Total Depth of Well Completed: 29.0'

Static Depth of Water in Well: 16.44'

Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter

Well Screen Slot Size: 0.02"

Total Depth of Boring: 31.0'

Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		
0		Street Box Locking Well Cap						Asphalt	
0 - 5		Portland Cement	11 - 15		0			Clayey SILT (ML); olive gray and brown; stiff; damp; 70% silt; 20% clay; 10% sand; trace gravel; moderate plasticity; low estimated K; no odor	
5 - 10		Bentonite Seal	6 - 10		0				
10 - 15		2" ID Blank Sch 40 PVC	7 - 16		0			Sandy SILT (ML); dark brown; stiff; moist; 70% silt; 30% sand; non-plastic; high estimated K; no odor	
15 - 20		2" diameter 0.020" slotted sch. 40 PVC	4 - 22		0.5	▽		80% silt; 15% sand; 5% clay	
20 - 25			8 - 27		0	▽		Silty SAND (SP), light brown, dense, wet, 90% fine to medium sand, 10% silt, non-plastic high estimated K no odor	
25 - 30		#3 Sand							

BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-1

Project Name: Peerless

Project Location: 2021 Brush Street, Oakland, CA

Page 2 of 2

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level		
				27 53				standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
								Clayey SILT (ML); gray to brown; dense; wet; 80% silt; 20% clay; medium plasticity; low estimated: no odor
35								End of boring at 31.0'
40								
45								
50								
55								
60								
65								

BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-2

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 2

Driller: West Hazmat Drilling Corp.

Type of Rig: Hollow-Stem Auger

Size of Drill: 8.0" Diameter

Logged By: Ian Reed

Date Drilled: August 18, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 19.5'

Total Depth of Well Completed: 30.0'

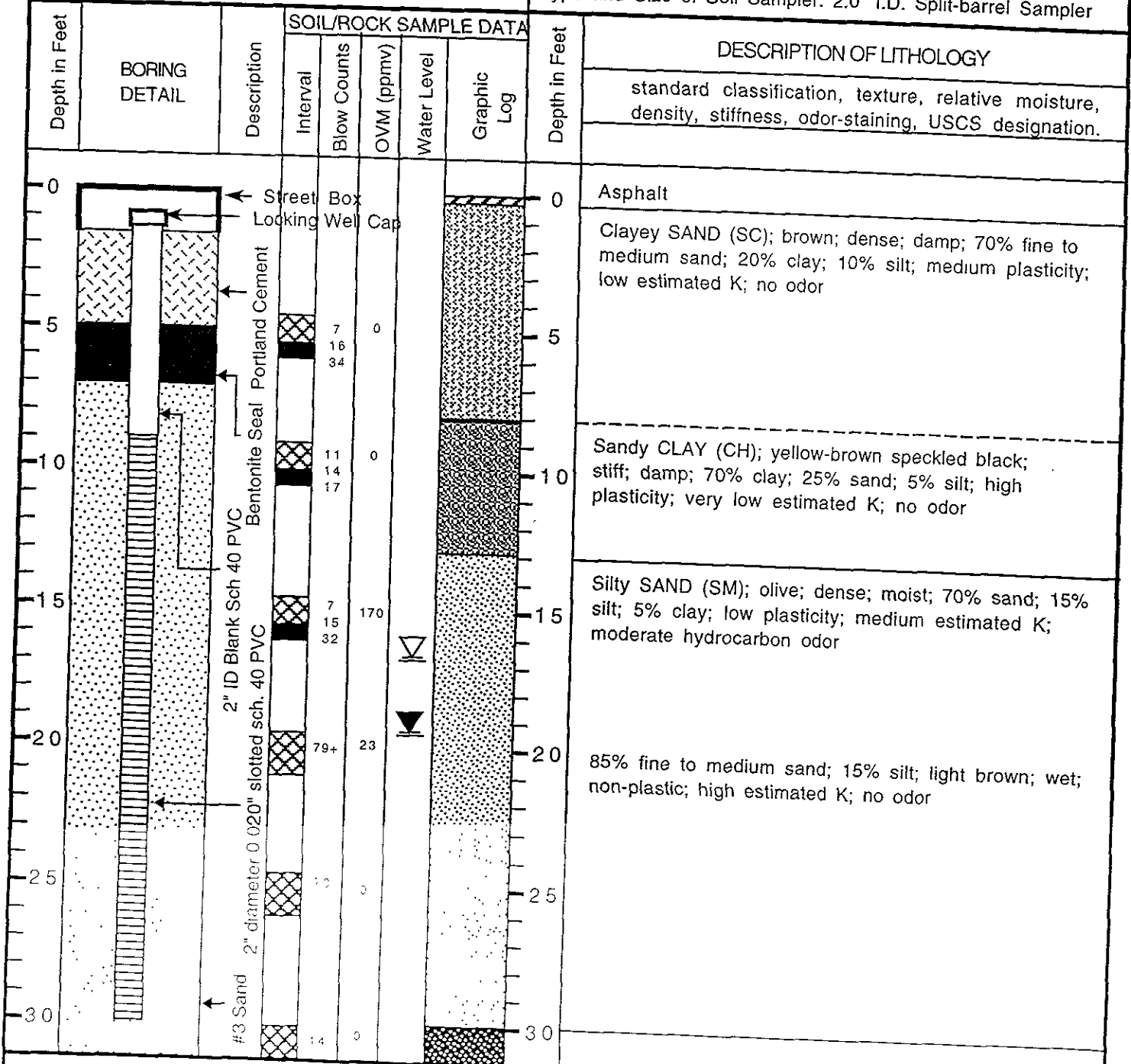
Static Depth of Water in Well: 16.88'

Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter

Total Depth of Boring: 31.0'

Well Screen Slot Size: 0.02"

Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



BORING LOG AND MONITORING WELL COMPLETION DETAILS

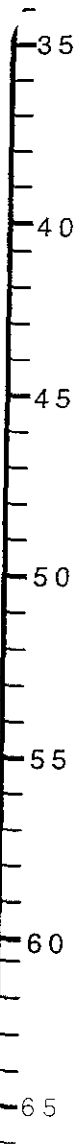
Monitoring Well: MW-2

Name: Peerless

Project Location: 2021 Brush Street, Oakland, CA

Page 2 of 2

BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
		Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		
			25 32					standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
								Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 15% silt; 5% sand; high plasticity; very low estimated K; no odor
								End of boring at 31.0'



BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-3

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 2

Driller: West Hazmat Drilling Corp.

Type of Rig: Hollow-Stem Auger

Size of Drill: 8.0" Diameter

Logged By: Ian Reed

Date Drilled: August 18, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 16.0'

Total Depth of Well Completed: 30.0'

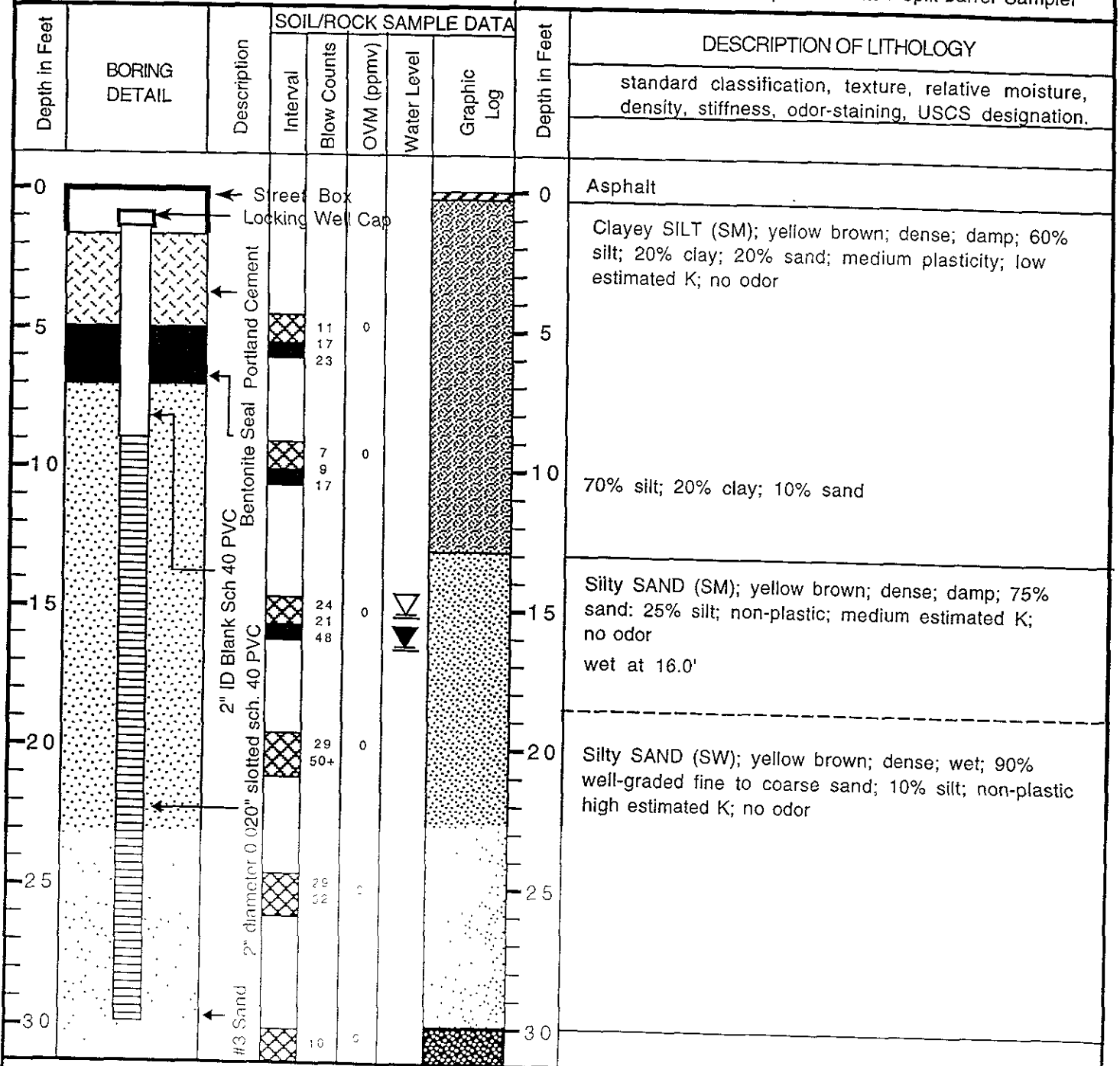
Static Depth of Water in Well: 15.94'

Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter

Total Depth of Boring: 31.0'

Well Screen Slot Size: 0.02"

Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler



BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-3

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 2 of 2

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth in Feet	DESCRIPTION OF LITHOLOGY	
			Interval	Blow Counts	OVM (ppmv)	Water Level		Graphic Log	standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				15 17					Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 20% silt; high plasticity; low estimated K; no odor
35									End of boring at 31.0'
40									
45									
50									
55									
60									
65									

BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-4

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 2

Driller: West Hazmat Drilling Corp.

Type of Rig: Hollow-Stem Auger

Size of Drill: 8.0" Diameter

Logged By: Ian Reed

Date Drilled: August 18, 1999

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 20.0'

Total Depth of Well Completed: 30.0'

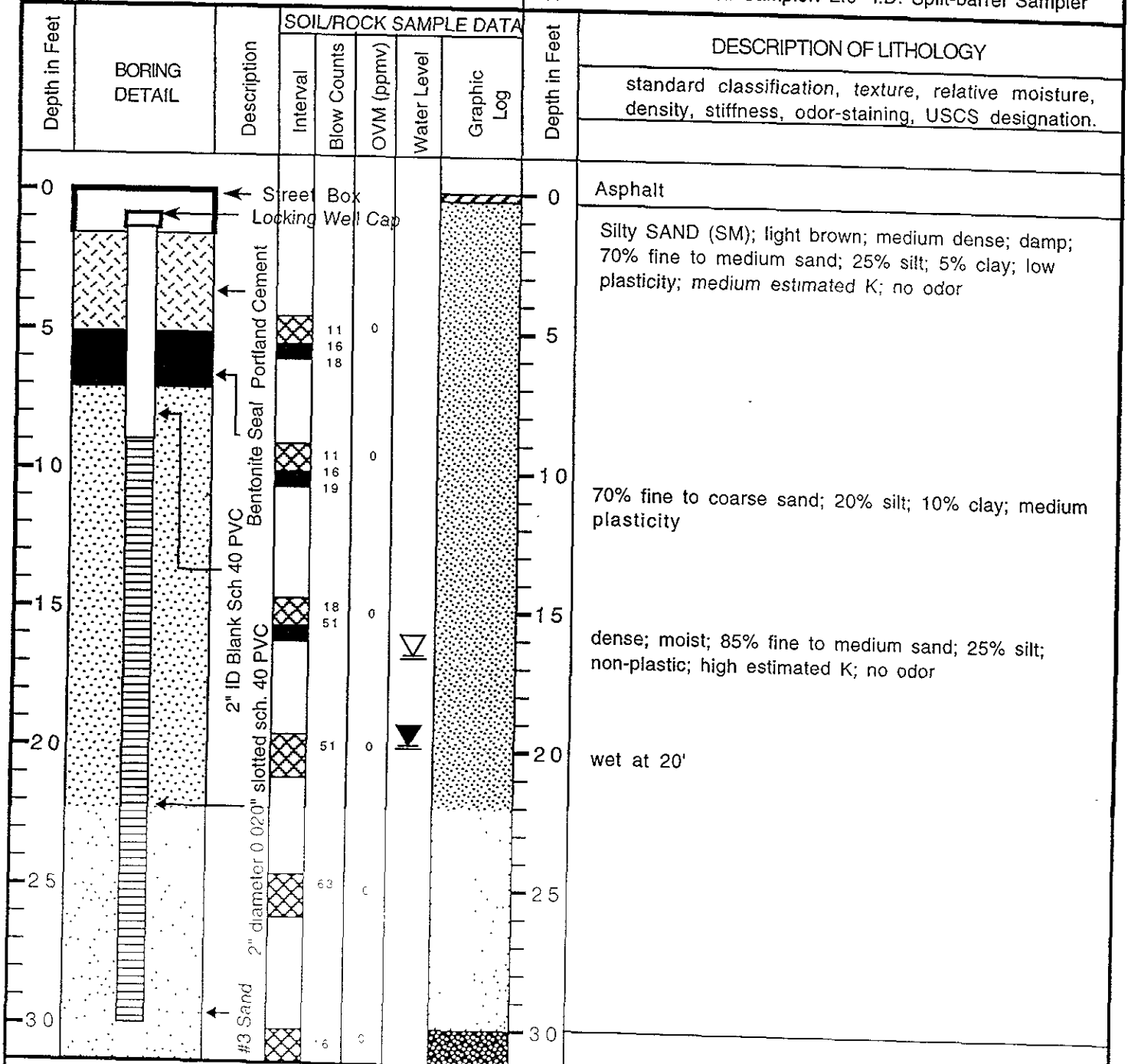
Static Depth of Water in Well: 16.48'

Well Screen Type and Diameter: Sch. 40 PVC, 2" diameter

Well Screen Slot Size: 0.020"

Total Depth of Boring: 31.0'

Type and Size of Soil Sampler: 2.0" I.D. Split-barrel Sampler





BORING LOG AND MONITORING WELL COMPLETION DETAILS

Monitoring Well: MW-4

Project Name: Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 2 of 2

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA					Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level	Graphic Log		standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
				51					Silty CLAY (CH); olive gray; stiff; wet; 80% clay; 20% silt; high plasticity; low estimated K; no odor
35									End of boring at 31.0'
40									
45									
50									
55									
60									
65									

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-A

Project Name: Former Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Erik H. Paddleford

Date Drilled: May 8, 2001

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Total Depth of Well Completed: NA

Depth of Water First Encountered: 15'

Well Screen Type and Diameter: NA

Static Depth of Water in Well: NA

Well Screen Slot Size: NA

Total Depth of Boring: 19'

Type and Size of Soil Sampler: 2.0" I.D. Macro Core Sampler

Depth in Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Graphic Log	Depth in Feet	DESCRIPTION OF LITHOLOGY
			Interval	Blow Counts	OVM (ppmv)	Water Level			standard classification, texture, relative moisture, density, stiffness, odor-staining, USCS designation.
0	<p>Portland Cement</p>						0	Asphalt	
5							2.2	5	Silty SAND (SM); brown; loose; dry; 60% medium to coarse sand; 20% silt; 20% gravel; non-plastic; medium estimated K; no odor moist; 60% fine sand; 20% silt; 20% clay
10							5.0	10	Sandy SILT (ML); brown to gray; stiff; moist; 70% silt; 25% fine sand; 5% gravel; moderate plasticity; low estimated K; no odor
15							6.2	15	Clayey SILT (ML); blue-green; very stiff; moist; 60% silt; 30% clay; 10% fine sand; low plasticity; very low estimated K; no odor
20							6.2	20	Silty SAND (SM); brown; stiff; moist; 60% fine sand; 30% silt; 10% gravel; non-plastic; moderate estimated K; no odor 80% fine sand; 10% silt; 10% gravel 80% fine sand; 20% silt
30				4.1			30	End of Boring at 19'	

SOIL BORING LOG AND MONITORING WELL COMPLETION DETAILS

Boring: BH-B

Project Name: Former Peerless Stages

Project Location: 2021 Brush Street, Oakland, CA

Page 1 of 1

Driller: Vironex

Type of Rig: Geoprobe

Size of Drill: 2.0" Diameter

Logged By: Erik H. Paddleford

Date Drilled: May 8, 2001

Checked By: Robert E. Kitay, R.G.

WATER AND WELL DATA

Depth of Water First Encountered: 14'

Total Depth of Well Completed: NA

Well Screen Type and Diameter: NA

Static Depth of Water in Well: NA

Well Screen Slot Size: NA

Total Depth of Boring: 18'

Type and Size of Soil Sampler: 2.0" I.D. Macro Core Sampler

Depth In Feet	BORING DETAIL	Description	SOIL/ROCK SAMPLE DATA				Depth In Feet	DESCRIPTION OF LITHOLOGY	
			Interval	Blow Counts	OVM (ppmv)	Water Level			Graphic Log
0								0	Asphalt
5								Silty SAND (SM); brown; loose; dry; 60% medium to coarse sand; 20% silt; 20% gravel; non-plastic; medium estimated K; no odor gray; stiff; moist; 70% fine sand; 25% silt; 5% gravel; no odor	
10								Sandy SILT (ML); blue-gray; very stiff; moist; 60% silt; 30% clay; 10% fine sand; low plasticity; very low estimated K; no odor	
15								SAND (SP); brown; medium dense; wet; 90% fine sand; 10% silt; non-plastic; high estimated K; no odor	
20								End of Boring at 18'	
25									
30									