

Detterman, Mark, Env. Health

From: Chris Baldassari [cbaldassari@pesenv.com]
Sent: Monday, May 21, 2012 3:48 PM
To: Detterman, Mark, Env. Health
Cc: JULIE TREINEN; Robert S. Creps
Subject: RE: RO440 Data Package Submittal
Attachments: 121100102004_Tables 1_3.pdf; 121100102004_Plates 1-5.pdf; 121100102004_boring logs.pdf

Mark,

Thanks for agreeing to review and discuss the recent data for the site. Attached please find draft tables, figures, and boring logs from the recent investigation at the 1650 65th site in Emeryville. We look forward to discussing the results after you've had a chance to review the data. Please contact me if you have any questions.

Regards,
Chris

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From: Detterman, Mark, Env. Health [<mailto:Mark.Detterman@acgov.org>]
Sent: Thursday, May 17, 2012 4:57 PM
To: Chris Baldassari
Subject: RO440 Data Package Submittal

Chris,

It's been busy, but yes, you can submit a data package so that we can discuss the data and implications or concerns, or whatever for the site. Please include tabulated data, figures as needed, and bore logs, and anything else you think might help me understand the data. I'm fairly quick, but lately it's been busy, but then I've said that...!

Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
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Alameda, CA 94502
Direct: 510.567.6876
Fax: 510.337.9335
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PDF copies of case files can be downloaded at:

<http://www.acgov.org/aceh/lop/ust.htm>

**Table 1
Summary of Analytical Results for Groundwater - Petroleum Hydrocarbons and VOCs
1650 65th Street
Emeryville, California**

Sample ID	Date	TPHg (mg/L)	VOCs (µg/L)										
			Benzene	Toluene	Ethylbenzene	Xylenes	TBA	MTBE	DIPE	ETBE	1,2-DCA	TAME	1,2-DBA
TGW-1	3/21/2012	< 0.050	< 1.0	1.2	< 1.0	< 1.0	<20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vapor Intrusion ESL - C/I Exposure ⁽⁴⁾		–	1,800	530,000	170,000	160,000	–	80,000	–		690		510
Drinking Water Ceiling ESL ⁽²⁾		0.1	170	40	30	20	50,000	5	–		7,000		50,000
Drinking Water ESL ⁽³⁾		0.21	1	150	300	1,800	12	13	–		600		1
Non-Drinking Water Ceiling ESL ⁽¹⁾		5.0	20,000	400	300	5,300	50,000	1,800	–		50,000		50,000
San Francisco Bay Basin Plan ⁽⁵⁾		–	1	150	300	1,750	–	13	–		0.5		0.5

Notes:

VOCs = Volatile Organic Compounds

– = Not analyzed or not applicable

mg/L = Milligrams per liter

µg/L = Micrograms per liter

< 0.5 = Not detected at or above the indicated laboratory reporting limit

TPHg = Total petroleum hydrocarbons quantified as gasoline

TBA = tert-Butyl Alcohol

MTBE = Methyl tert-Butyl Ether

ETBE = Ethyl tert-butyl ether

DIPE = Diisopropyl Ether

TAME = Methyl tert-Amyl Ether

1,2-DCA = 1,2-Dichloroethane

1,2-DBA = 1,2-Dibromoethane

(1) California Regional Water Quality Control Board, San Francisco Region (RWQCB) Environmental Screening Level (ESL), Non-Drinking Water Gross Contamination Ceiling Levels (Table

(2) RWQCB Drinking Water Ceiling Levels (Table I-1; May 2008).

(3) RWQCB Drinking Water Screening Levels (Table F-3; May 2008).

(4) RWQCB Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (Table E-1; May 2008).

(5) RWQCB San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), December 2010.

**Table 2
Summary of Analytical Results for Sub-Slab Vapor Probes
1650 65th Street
Emeryville, California**

Sample Location	Sample ID	Date Collected	VOCs (µg/m ³)				Major Gases (% volume)			
			Benzene	Toluene	Ethylbenzene	Xylenes	Nitrogen	Oxygen	Carbon Dioxide	Methane
AA-1	AA-1	3/22/12	<1.1	<1.1	<1.1	<1.1	--	19.0	<0.22	<0.22
	AA-1	4/19/12	<3.19	4.30	<4.34	5.86	--	--	--	--
SS-1	SS-1 ^a	3/22/12	<3,200	<3,200	<3,200	<3,200	--	18.0	0.77	<0.2
	SS-1 ^a	4/19/12	<3.19	<3.77	<4.34	<4.34	78.9	19.3	1.76	<0.100
SS-2	SS-2 ^a	3/22/12	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	<1,300 / <1,300	--	18.0	0.22	<0.16
	SS-2 ^a	4/19/12	<3.19 / <3.19	<3.77 / <3.77	<4.34 / <4.34	<4.34 / <4.34	78.9	19.5	1.63	<0.100
Shallow Soil Vapor ESL ^b			280	180,000	3300	58,000	--	--	--	--
Subslab Soil Vapor Screening Levels ^c			2.8	1,800	32	580	--	--	--	--
Indoor Air ESLs ^d			0.14	88	1.60	29	--	--	--	--

Notes:

VOCs = Volatile Organic Compounds

µg/m³ = Micrograms per cubic meter of air

<0.22 = Not detected at or above the indicated laboratory reporting limit

<3.19 / <3.19 = Indicates results for primary/duplicate sample

-- = Not analyzed or not applicable

^a The samples for SS-1 and SS-2 collected on March 22, 2012 contained 1,1-difluoroethane (1,1-DFA) (the reference leak detection compound) at concentrations of 65,000 and 21,000 parts per million volumetric (ppmv) respectively; 1,1-DFA was detected in the accompanying shroud samples for SS-1 and SS-2 at concentrations of 98,000 and 2,600 ppmv, respectively. The detected concentrations indicated significant leaks in each sample. Therefore, the sub-slab vapor probes were resampled on April 19, 2012. 1,1-DFA was not detected at or above the laboratory reporting limit for the samples collected at SS-1 and SS-2 on April 19, 2012; 1,1-DFA was detected in the accompanying shroud samples at 8,800 and 8,560 ppmv, respectively, and indicates dilution from ambient air did not affect the samples. 1,1-DFA analyzed by EPA Method TO-3.

^b California Regional Water Quality Control Board - San Francisco Bay Region (SFBRWQCB) Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (ESLs), Table E-2. Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only), Interim Final, May 2008.

^c Subslab soil vapor screening calculated as indoor air screening level (ESL) divided by an attenuation factor of 0.05, in accordance with the Department of Toxic Substances Control Vapor Intrusion Guidance (October 2011).

^d SFBRWQCB ESLs, Table E-2. Ambient and Indoor Air Screening Levels (volatile chemicals only), Interim Final, May 2008.

Table 3
Summary of Analytical Results for Soil - Petroleum Hydrocarbons and VOCs
1650 65th Street
Emeryville, California

Sample ID	Sample Depth (ft bgs)	Sample Location	Date	TPHmo (mg/Kg)	TPHd (mg/Kg)	TPHg (mg/Kg)	VOCs										
							Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	TBA (mg/Kg)	MTBE (mg/Kg)	DIPE (mg/Kg)	ETBE (mg/Kg)	1,2-DCA (mg/Kg)	TAME (mg/Kg)	1,2-DBA (mg/Kg)
SB-1-4.5	4.5	SB-1	3/20/2012	110	9.2 Y	<0.23	<0.0049	<0.0049	<0.0049	<0.0049	<0.097	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049
SB-1-9	9.0	SB-1	3/20/2012	13	4.6 Y	0.91	0.240	0.015	<0.0066	0.0073	<0.13	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066
SB-1-14	14.0	SB-1	3/20/2012	510	140 Y	250	0.48	7.4	6.0	31.3	<4.0	<0.200	<0.200	<0.200	<0.200	<0.200	<0.200
SB-1-20	20.0	SB-1	3/20/2012	520	440	3.1 Y	0.056	0.018	<0.0060	<0.0060	<0.120	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB-2-4.5	4.5	SB-2	3/20/2012	410	48 Y	0.24	<0.0058	<0.0058	<0.0058	<0.0058	<0.120	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
SB-2-8.5	8.5	SB-2	3/20/2012	280	27 Y	4.0	0.021	<0.015	0.120	0.367	<0.30	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
SB-2-13	13.0	SB-2	3/20/2012	320	1,200 Y	8,600	8.9	100	75	353	<86.0	<4.300	<4.300	<4.300	<4.300	<4.300	<4.300
SB-2-21	21.0	SB-2	3/20/2012	28	20 Y	3.0	0.029	0.011	<0.0069	0.0069	<0.14	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069	<0.0069
SB-3-4.5	4.5	SB-3	3/21/2012	600	110 Y	22	<0.450	<0.450	<0.450	1.2	<9.0	<0.450	<0.450	<0.450	<0.450	<0.450	<0.450
SB-3-9	9.0	SB-3	3/21/2012	1,300	130 Y	7,500	160	21	290	1,080	<320	<16.0	<16.0	<16.0	<16.0	<16.0	<16.0
SB-3-16	16.0	SB-3	3/21/2012	110	42 Y	1.0	0.150	0.180	0.023	0.086	<0.085	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
SB-3-20	20.0	SB-3	3/21/2012	6.9	3.5 Y	2.3	0.016	0.100	0.059	0.274	<0.085	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043
SB-4-4.5	4.5	SB-4	3/21/2012	620	99 Y	<0.22	<0.0050	<0.0050	<0.0050	<0.0050	<0.099	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB-4-9	9.0	SB-4	3/21/2012	1,600	970 Y	11	1.1	<0.210	<0.210	0.430	<4.20	<0.210	<0.210	<0.210	<0.210	<0.210	<0.210
SB-4-16	16.0	SB-4	3/21/2012	130	130 Y	1.8	0.2	0.1	0.044	0.176	<0.13	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066	<0.0066
SB-4-20	20.0	SB-4	3/21/2012	<5.0	1.4 Y	<0.17	<0.0056	<0.0056	<0.0056	0.0058	<0.110	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
SB-5-4.5	4.5	SB-5	3/21/2012	20	4.1 Y	3.8	0.040	<0.0063	<0.0063	0.037	<0.130	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB-5-9.5	9.5	SB-5	3/21/2012	76	270 Y	13,000	<15	240	210	930	<310.0	<15.0	<15.0	<15.0	<15.0	<15.0	<15.0
SB-5-16	16.0	SB-5	3/21/2012	190	130 Y	0.81	0.160	0.037	<0.0042	<0.0042	<0.084	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042
SB-5-20	20.0	SB-5	3/21/2012	<5.0	2.5 Y	<0.20	<0.0042	<0.0042	<0.0042	<0.0042	<0.085	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042
Shallow Soil ESL for C/I, Direct Exposure ⁽¹⁾				3,700	450	450	0.27	210	5	100	32,000	65	--	--	0.48	--	0.044
Deep Soil ESL for C/I, Direct Exposure ⁽¹⁾				12,000	4,200	4,200	12	650	210	420	32,000	2,800	--	--	21	--	1.7
Shallow Soil C/I ESL ⁽¹⁾				2,500	180	180	0.27	9.3	4.7	11	110	84	--	--	0.0045	--	0.00033
Deep Soil C/I ESL ⁽¹⁾				5,000	180	180	2	9.3	4.7	11	110	84	--	--	0.0045	--	0.00033

Notes:

VOCs = Volatile Organic Compounds

mg/kg = milligrams per kilogram

ft bgs = Feet below ground surface

< 0.15 = Not detected at or above the indicated laboratory reporting limit

-- = Not analyzed or not applicable

Y = Sample exhibits chromatographic pattern that does not resemble standard.

TPHmo = Total petroleum hydrocarbons quantified as motor oil

TPHd = Total petroleum hydrocarbons quantified as diesel

TPHg = Total petroleum hydrocarbons quantified as gasoline

C/I - Commercial/Industrial Land Use

ESL = Environmental Screening Level

(1) California Regional Water Quality Control Board, San Francisco Region (RWQCB) Environmental Screening Level (ESL), May 2008

TBA = tert-Butyl Alcohol

MTBE = Methyl tert-Butyl Ether

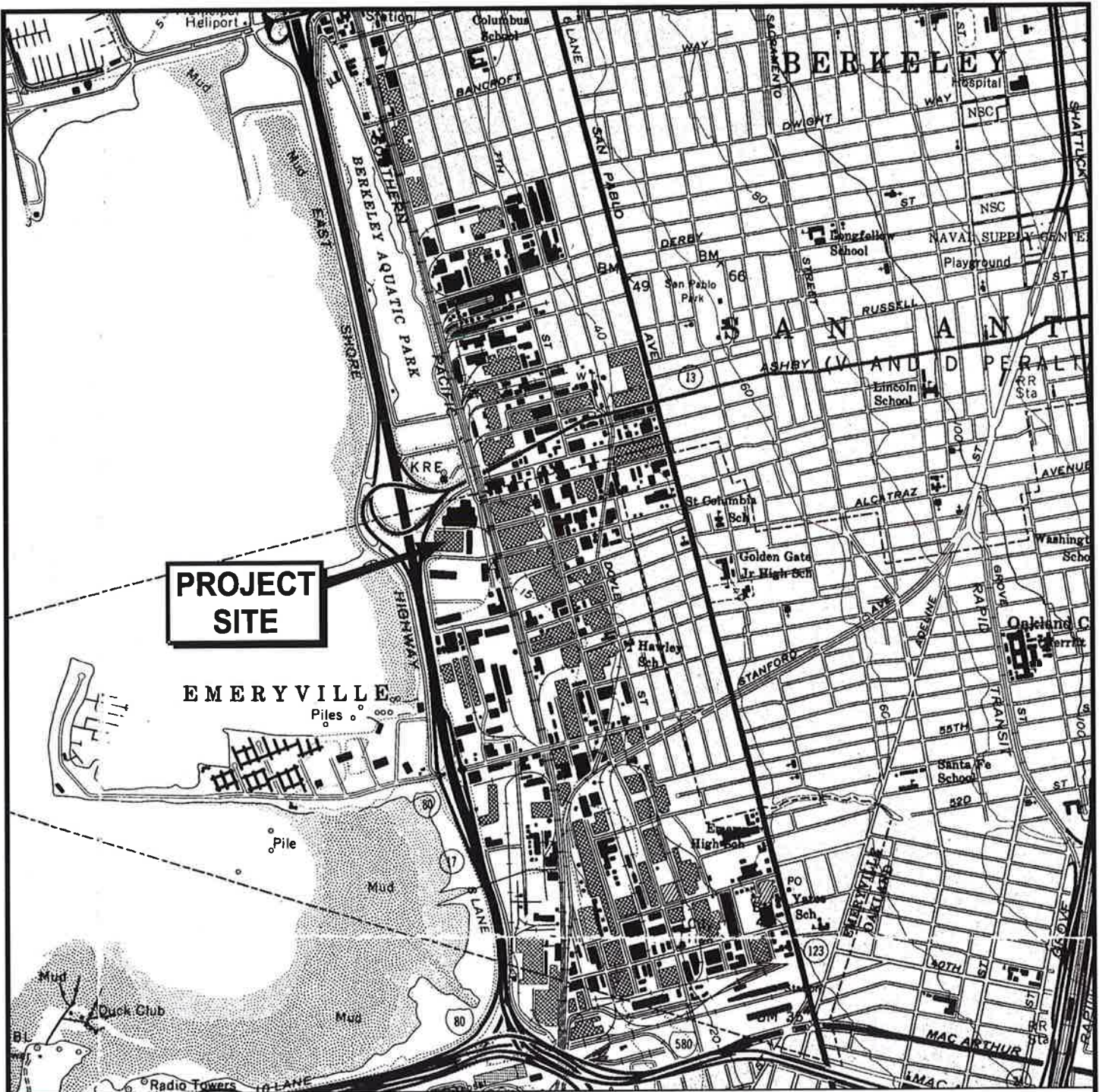
DIPE = Diisopropyl Ether

ETBE = Ethyl tert-Butyl Ether

TAME = Methyl tert-Amyl Ether

1,2-DCA = 1,2-Dichloroethane

1,2-DBA = 1,2-Dibromoethane



PROJECT SITE

EMERYVILLE
Piles



U.S.G.S. Topo Map - Oakland West, California, 7.5-minute quadrangle. Map version 1997; current as of 1993



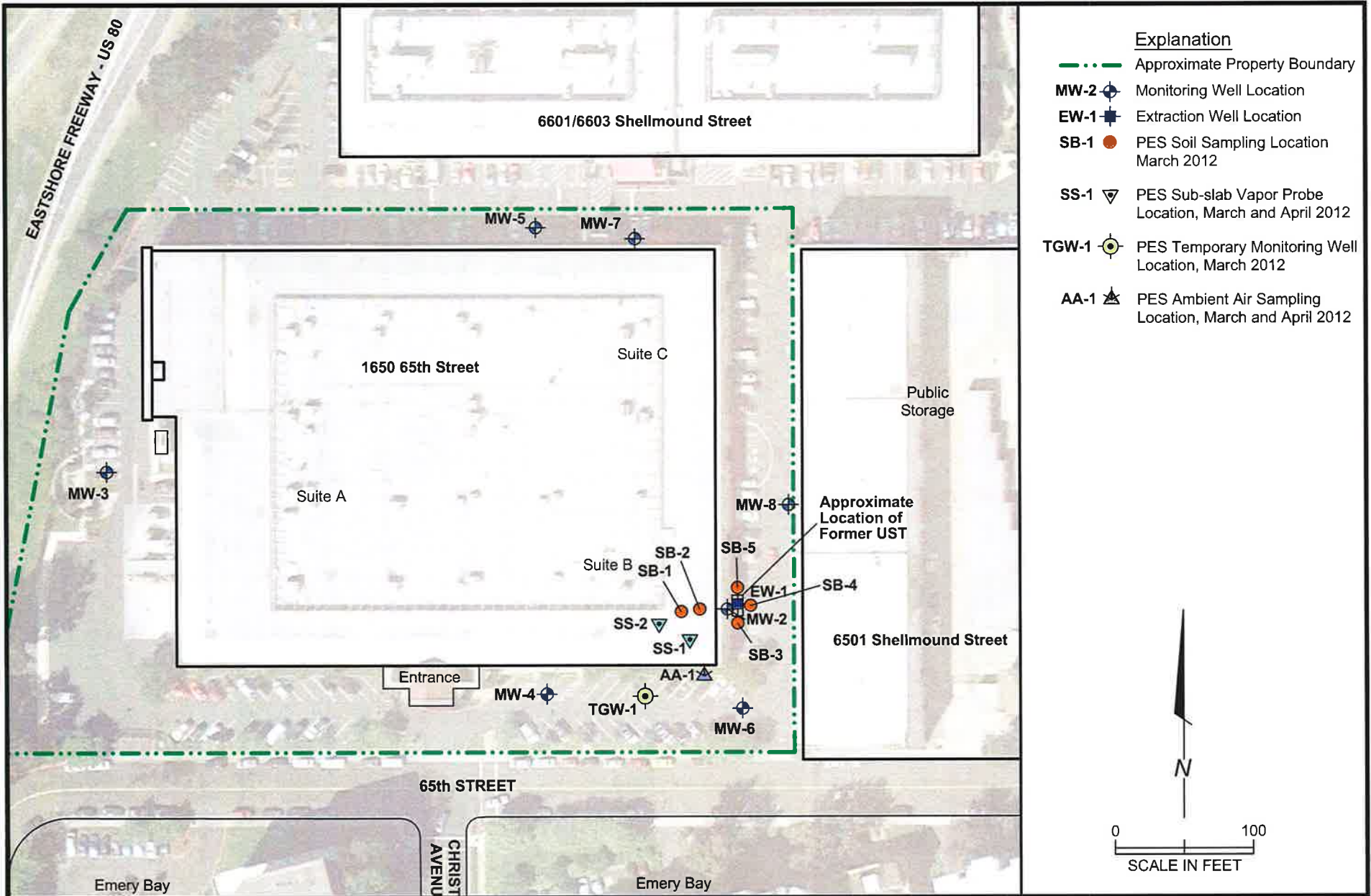
Site Location Map
1650 65th Street
Emeryville, California

PLATE
1

1211.001.02.003 121100102003_1
JOB NUMBER DRAWING NUMBER

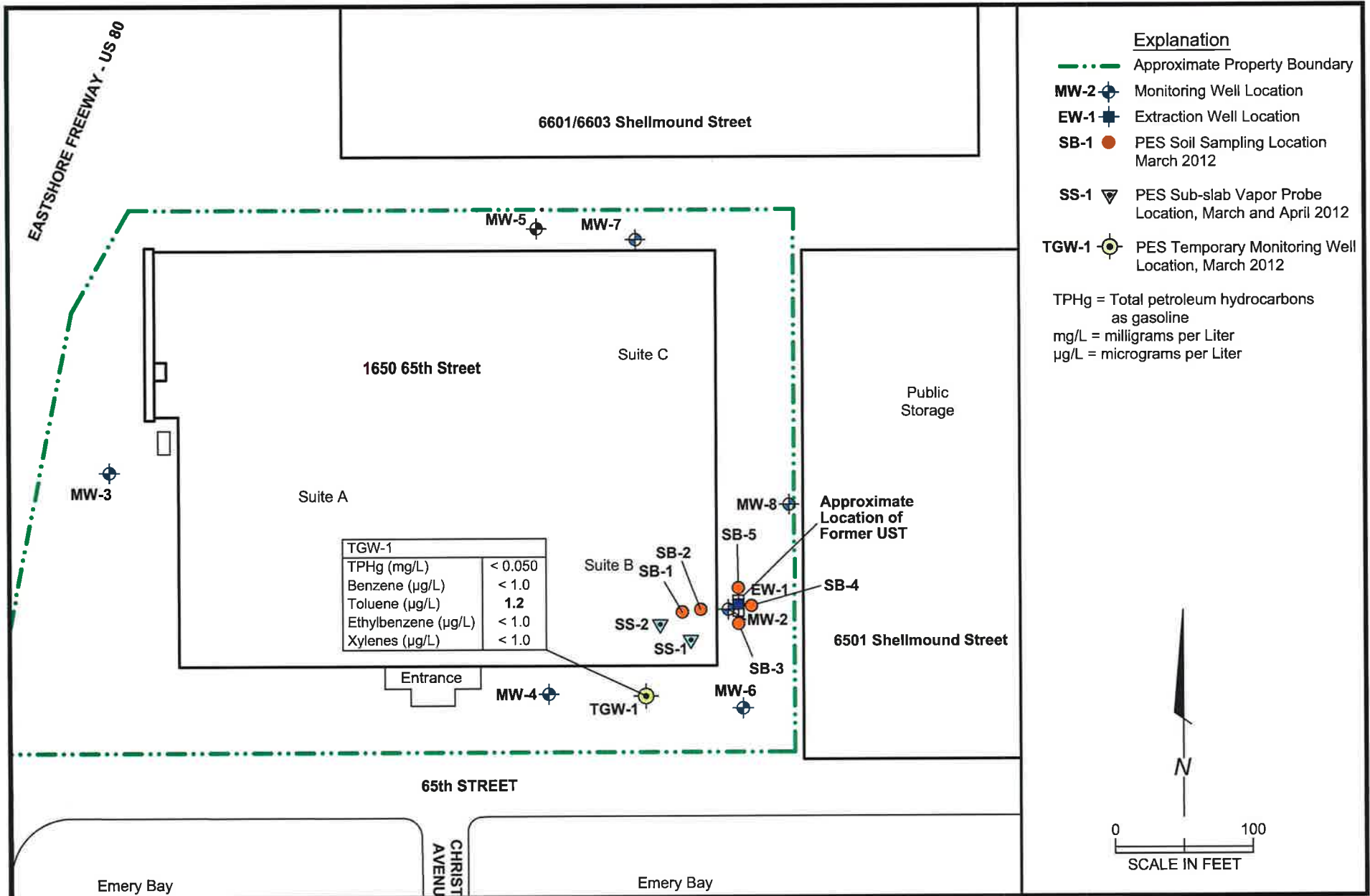
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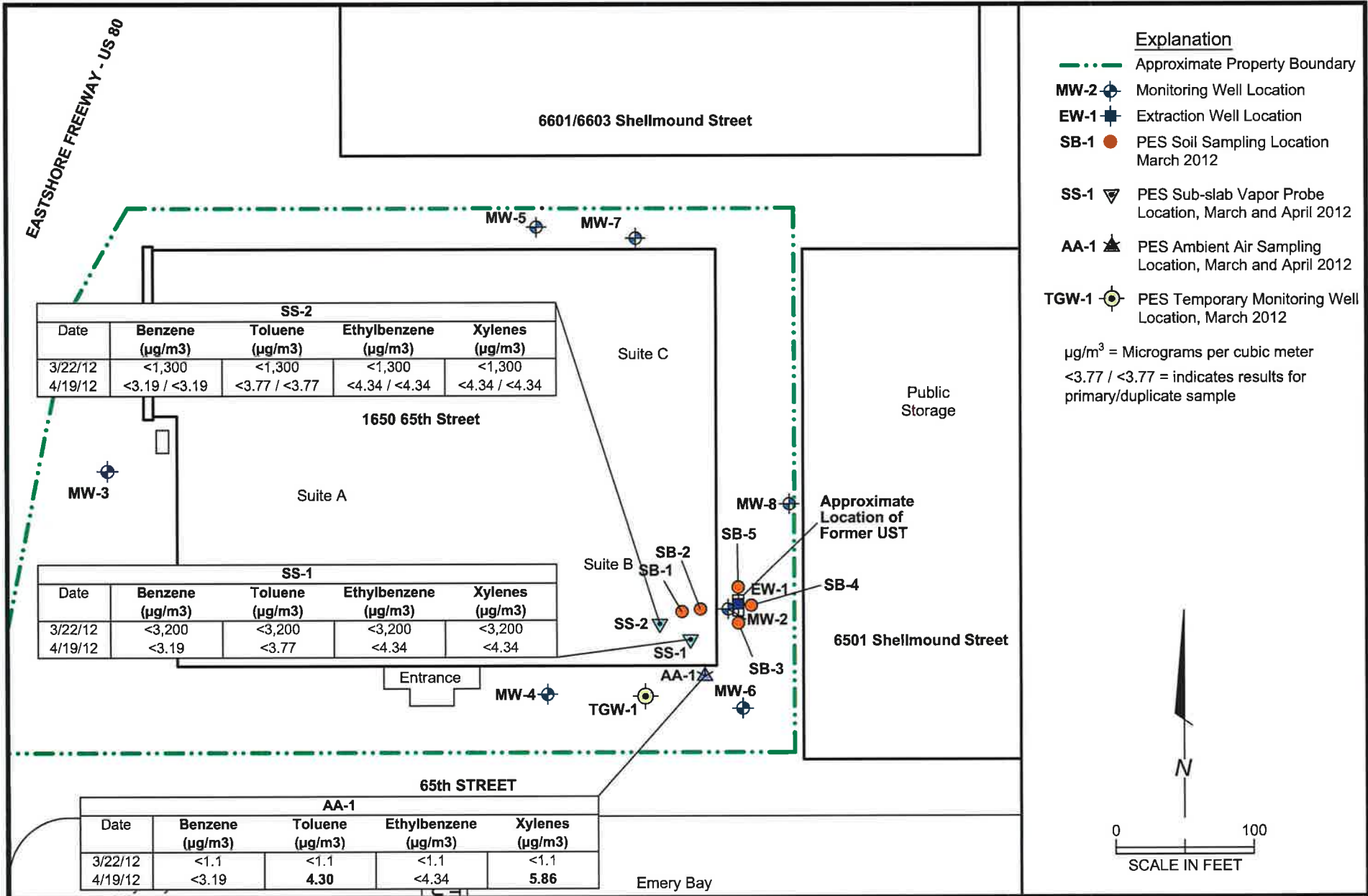
5/12
DATE

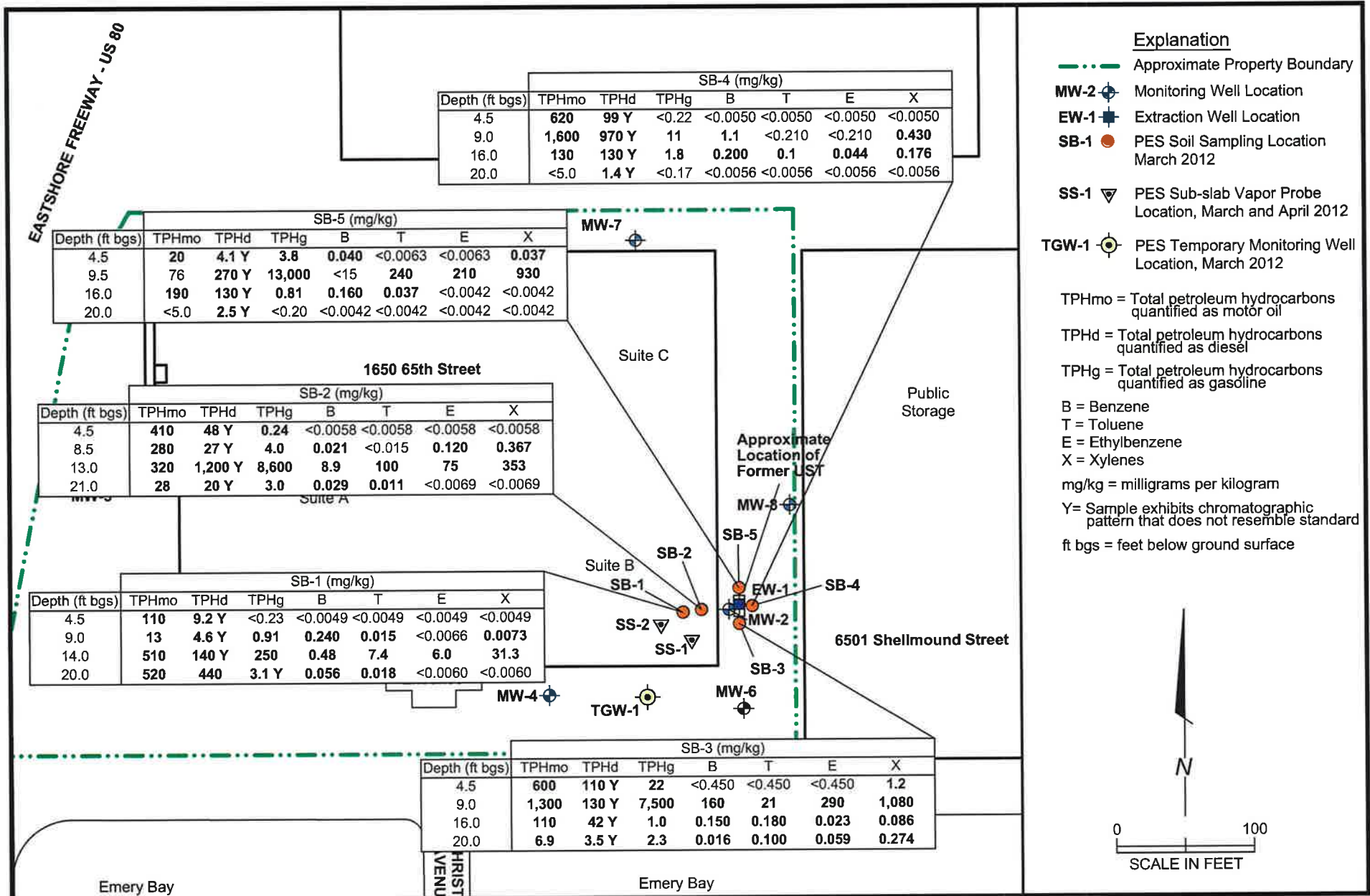


Explanation

- · - · - Approximate Property Boundary
- MW-2** Monitoring Well Location
- EW-1** Extraction Well Location
- SB-1** PES Soil Sampling Location
March 2012
- SS-1** PES Sub-slab Vapor Probe
Location, March and April 2012
- TGW-1** PES Temporary Monitoring Well
Location, March 2012
- AA-1** PES Ambient Air Sampling
Location, March and April 2012







MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL-GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY-GRADED SANDS WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS	ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%	MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		CH		INORGANIC CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
		OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL	
HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS	

ABBREVIATION KEY

- PID (PPM) - Photo Ionization Detector readings in parts per million from field headspace sample screening.
- BLOWS/6IN - Blows required to drive sampler 6 inches as indicated on the logs using sample drive hammer weight of 140 pounds falling 30 inches.
- (10,60,30) - Percent gravel, percent sand, percent silt/clay
- 2.5YR 6/2 - Soil Color according to Munsell Soil Color Charts (1994 Revised Edition)
- feet MSL - feet above Mean Sea Level
- feet BGS - feet below ground surface

SYMBOLS KEY

- No Soil Sample Recovered
- Partial Soil Sample Recovered
- Undisturbed Soil Sample Recovered
- - Soil Sample Submitted for Laboratory Analysis
- ▣ - Hydropunch Sample
- ▽ - First Encountered Wet Soil
- ▼ - Piezometric Groundwater level

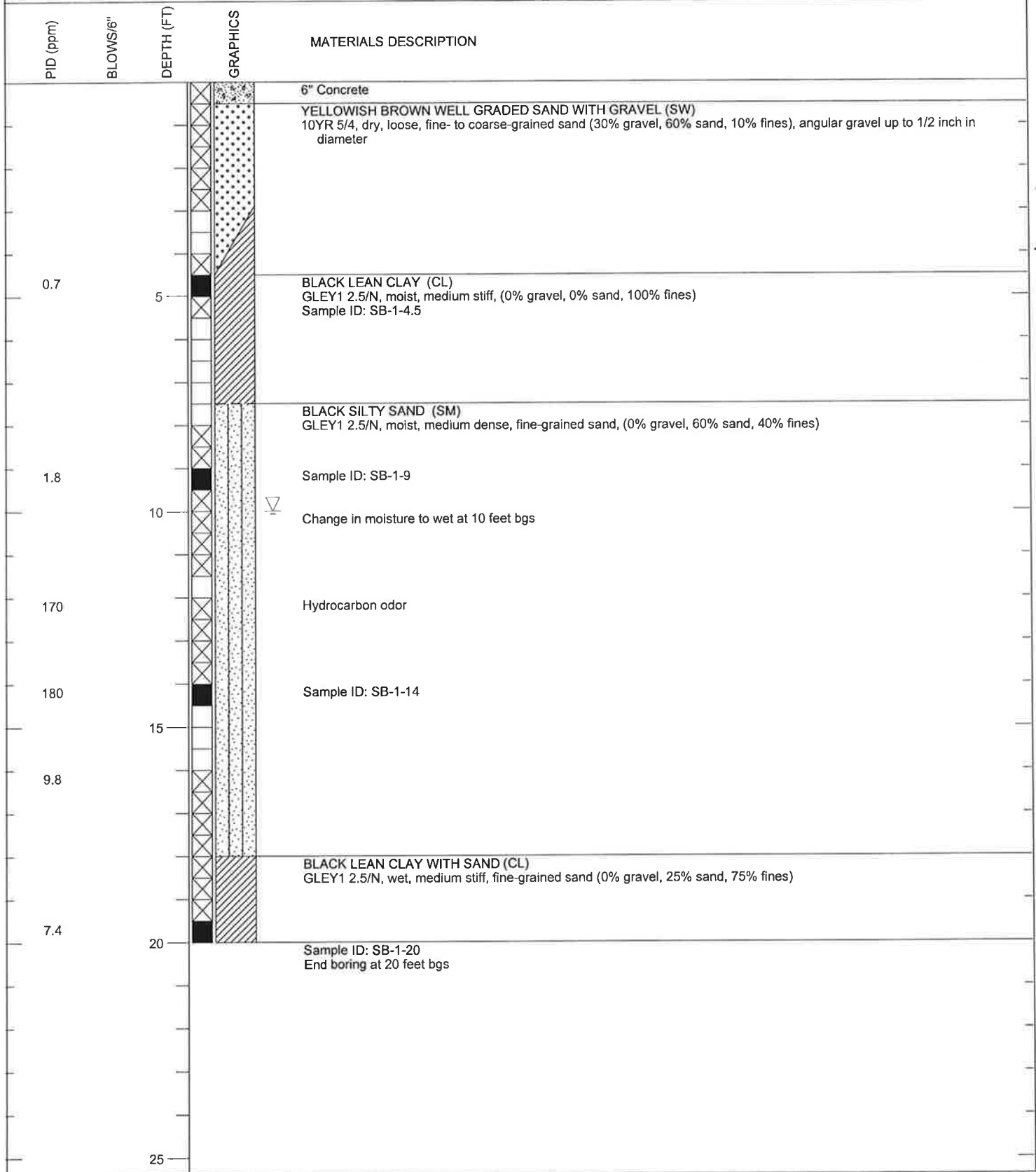


PES Environmental, Inc.
Engineering & Environmental Services

Unified Soil Classification System Chart
1650 65th Street
Emeryville, California

PLATE

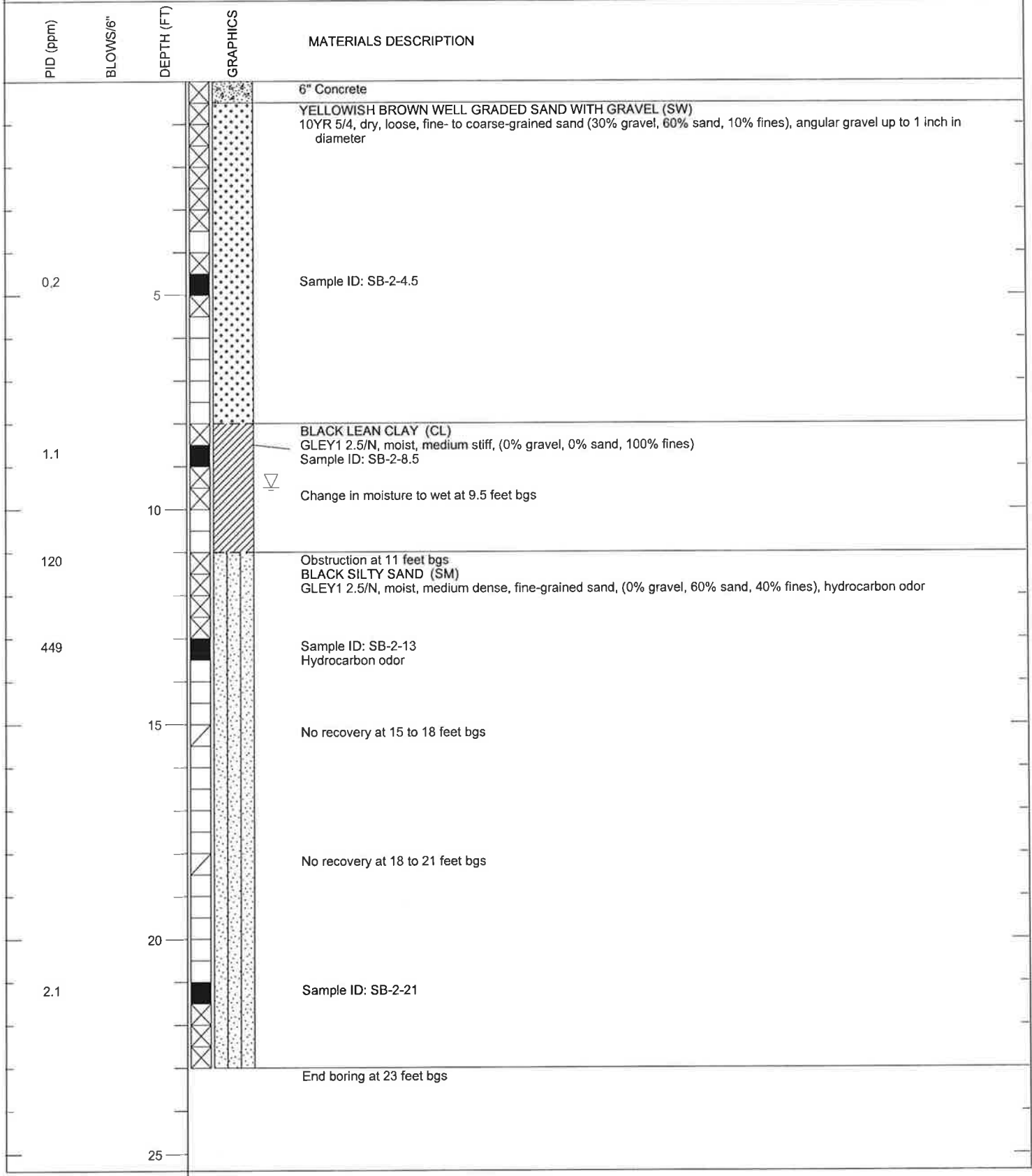
B-0



PROJECT 1650 65th Street
 LOCATION 1650 65th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

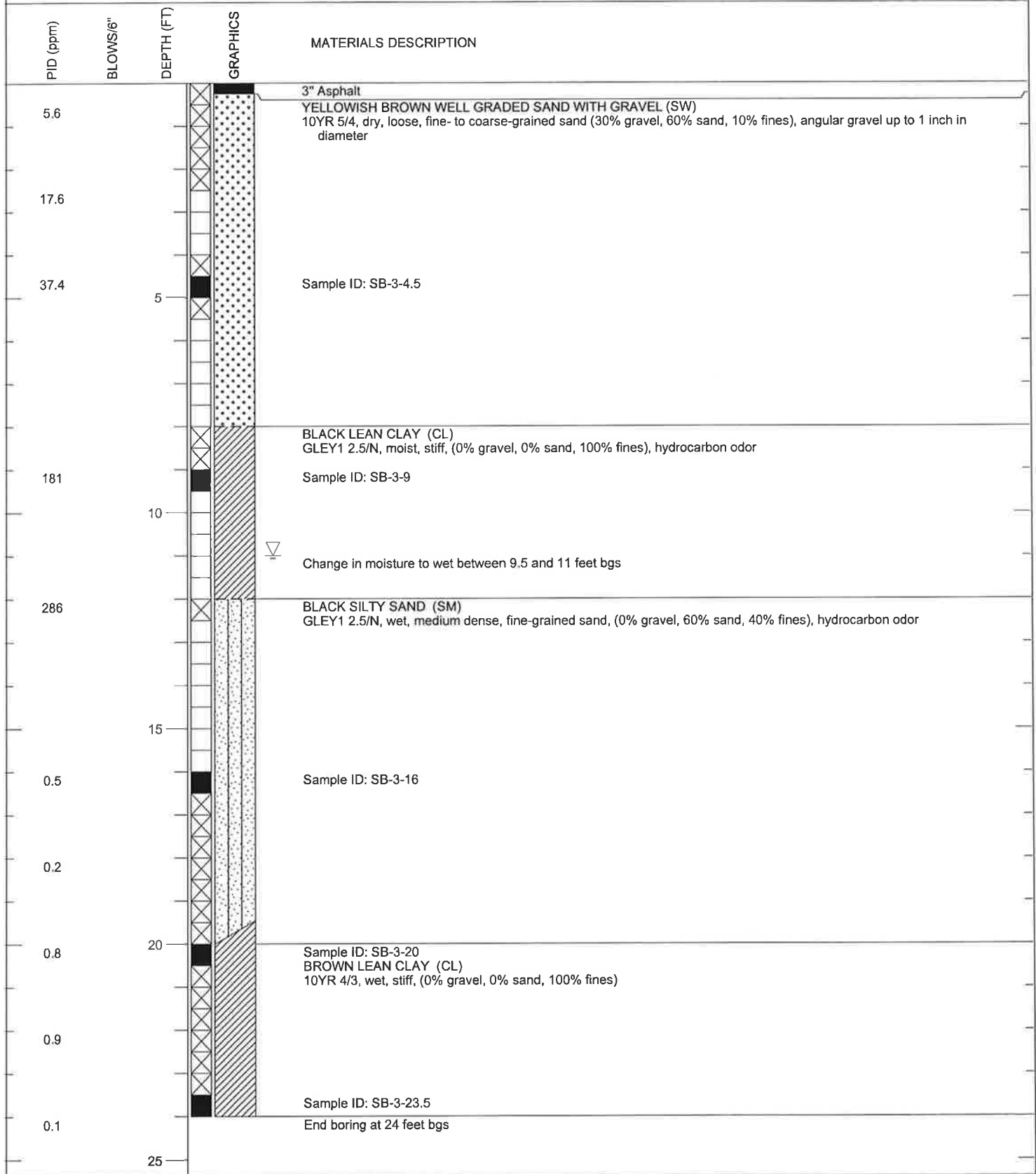
REVIEWED BY
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 20 feet
 DATE STARTED 3/20/12
 DATE COMPLETED 3/20/12

PLATE
B-1



PROJECT	1650 65th Street	REVIEWED BY	DRAFT
LOCATION	1650 65th Street, Emeryville CA	DIAMETER OF HOLE	2 inch
JOB NUMBER	1211.001.02.003	TOTAL DEPTH OF HOLE	23 feet
LOGGED BY	J Alexander	DATE STARTED	3/20/12
DRILL RIG	Direct Push	DATE COMPLETED	3/20/12

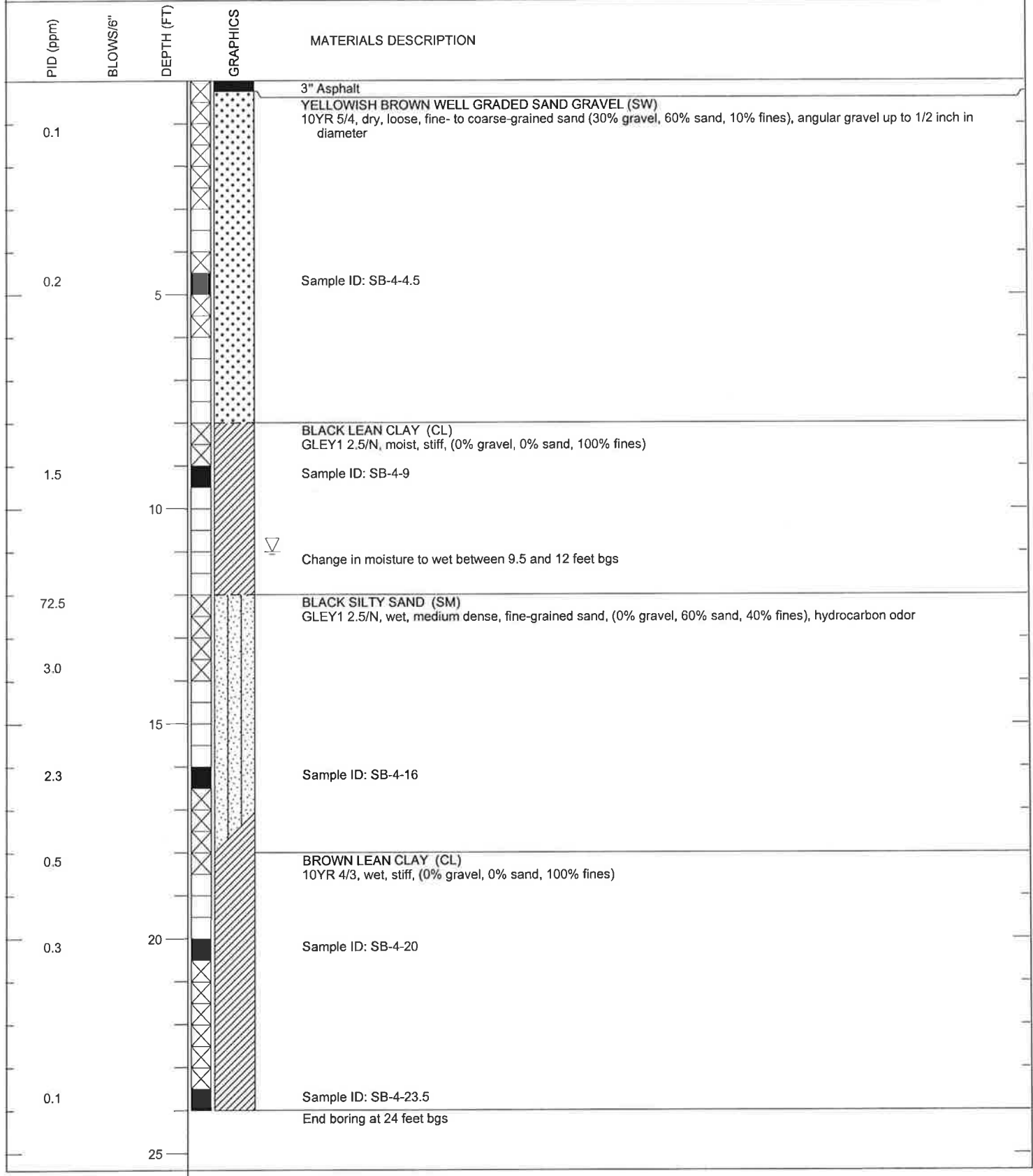
PLATE
B-2



PROJECT 1650 65th Street
 LOCATION 1650 65th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

REVIEWED BY DRAFT
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 24 feet
 DATE STARTED 3/21/12
 DATE COMPLETED 3/21/12

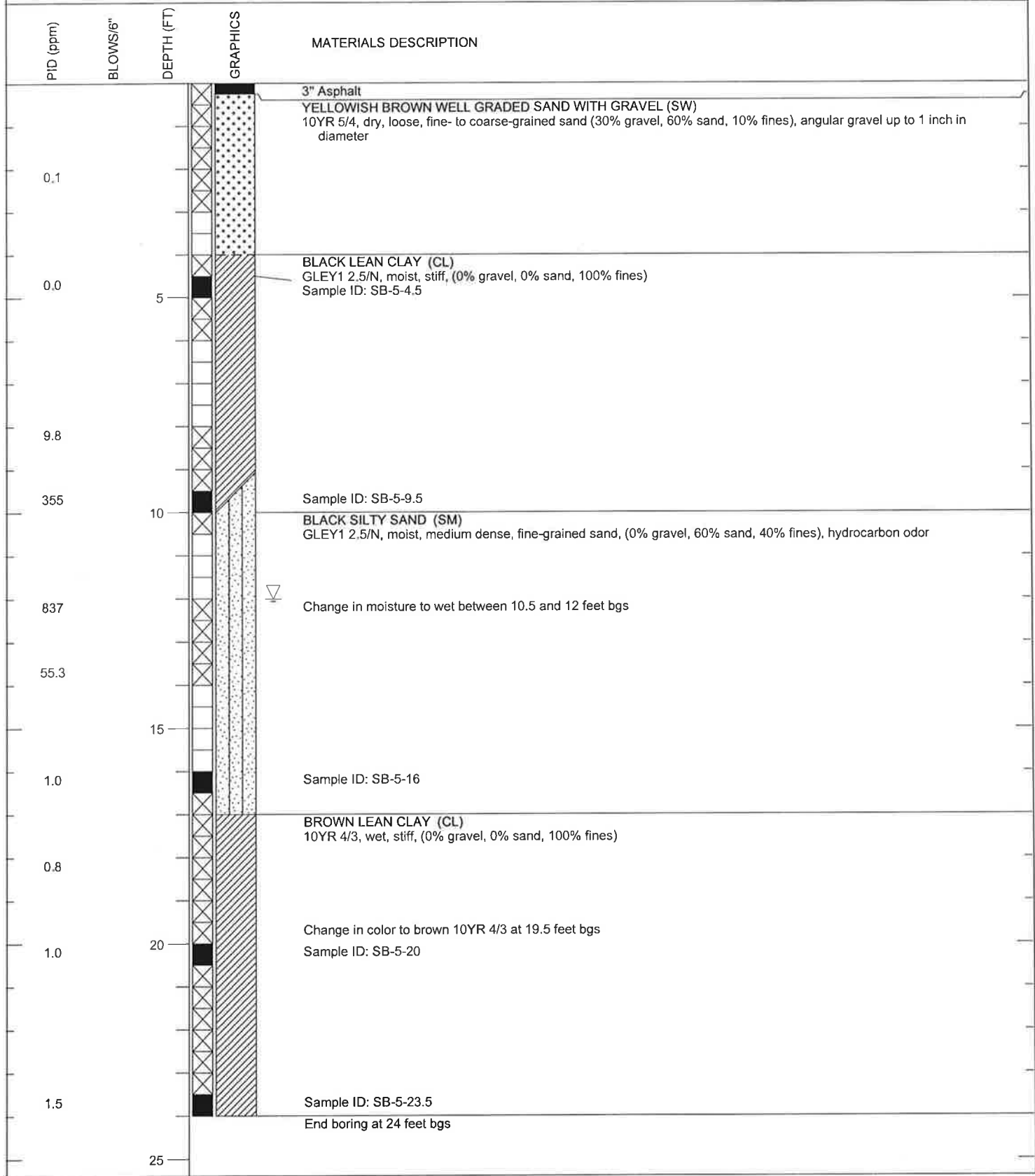
PLATE
B-3



PROJECT 1650 65th Street
 LOCATION 1650 65th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

REVIEWED BY
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 24 feet
 DATE STARTED 3/21/12
 DATE COMPLETED 3/21/12

PLATE
B-4



PROJECT 1650 65th Street
 LOCATION 1650 65th Street, Emeryville CA
 JOB NUMBER 1211.001.02.003
 LOGGED BY J Alexander
 DRILL RIG Direct Push

REVIEWED BY
 DIAMETER OF HOLE 2 inch
 TOTAL DEPTH OF HOLE 24 feet
 DATE STARTED 3/21/12
 DATE COMPLETED 3/21/12

PLATE
B-5