PORT OF OAKLAND

May 27, 2014

RECEIVED
By Alameda County Environmental Health at 2:55 pm, May 30, 2014

Mr. Keith E. Nowell, P.G., C.H.G.
Hazardous Materials Specialist
Alameda County Environmental Health Department
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6507

Subject:
Alameda County Environmental Health Department ("ACEH") Fuel Leak Case Numbers RO0000010/RO0000187

Dear Mr. Nowell:

Please find enclosed our response to comments entitled, *Response to ACEH Comments to the Response to ACEH Information Request dated March 26, 2014 for the Port of Oakland/Nations Way Transport Site, 651 Maritime Street, Oakland, California,* dated May 27, 2014. This document is being submitted in accordance with ACEH requirements, as specified in your email dated March 26, 2014 concerning data gaps at the above referenced site[1].

The Port of Oakland ("Port") has retained ARCADIS, U.S., Inc. ("ARCADIS") to prepare this document on behalf of the Port. If you have any questions or comments regarding the content of this document, please do not hesitate to contact Jeff Rubin at (510) 627-1134.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document prepared by ARCADIS are true and correct to the best of my knowledge. Please note that the report is stamped by a Professional Geologist in the State of California.

Sincerely,

Jeffrey R. Jones
Supervisor
Environmental Programs and Planning

Jeffrey L. Rubin, CPSS, REPA
Port Associate Environmental Scientist
Environmental Programs and Planning

Enclosure: ARCADIS document dated May 27, 2014 entitled: Response to ACEH Comments to the Response to ACEH Information Request dated March 26, 2014 for the Port of Oakland / Nations Way Transport Site, 651 Maritime Street, Oakland, California

Cc: Dilan Roe, P.E. (ACEH)
Katherine Brandt, P.G. (ARCADIS)

[1] The Site has been referred to historically as the "Shippers" and "Ringsby" sites, based on the Port tenants that occupied the site at the time of release discoveries. Prior to site redevelopment in 2004, the site was also referred to as 2277 and 2225 Seventh Street. After redevelopment, the Site address became 651 and 555 Maritime Street, although referenced hereafter as only 651Maritime Street.

ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco
California 94104
Tel 415.374.2744
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Mr. Keith Nowell
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

ENVIRONMENT

Subject:
Response to ACEH Comments to the *Response to ACEH Information Request* dated March 26, 2014 for the Port of Oakland/Nations Way Transport Site
651 Maritime Street, Oakland, California
Alameda County Fuel Leak Case Numbers RO0000010/RO0000187

Date:
May 27, 2014

Contact:
Kathy Brandt

Phone:
510-596-9675

Email:
Katherine.Brandt@arcadis-us.com

Our ref:
04656020.HFC1

Dear Mr. Nowell:

On October 7, 2013 the Port of Oakland (Port) submitted a Request for Closure for the Port of Oakland/Nations Way Transport Site [known as the Harbor Facility Complex (HFC)] located at 651 Maritime Street, Oakland, California. Alameda County Environmental Health Department (ACEH) requested a meeting with the Port and ARCADIS, Inc. (ARCADIS) to discuss the closure request. The meeting was held on December 19, 2013. On January 31, 2014, the Port submitted a *Response to ACEH Information Request* to address questions and data gaps that ACEH identified during the December meeting. ACEH provided follow-up comments to the Port in a letter dated March 26, 2014, including a request to prepare and submit a Revised Feasibility Study/Corrective Action Plan (FS/CAP) to ACEH by May 27, 2014. This letter provides responses to ACEH's follow-up comments. ACEH data gaps are in bold with the subsequent findings listed below:

1. **ACEH Follow-up Comment: The Port has adequately addressed the time line of Site redevelopment, information pertaining to lead and asbestos surveys, estimates of fill quantities and fill source, and on-Site building construction for the building provided. ACEH notes that no laboratory analysis of the import fill was conducted resulting in a data gap for potential direct contact and vapor intrusion to indoor air pathway scenarios of the State Water Resources Control Board's (SWRCBs) Low Threat Underground Storage Tank Case Closure Policy (LTCP) media specific criteria. Additionally, future on- or off-site redevelopment was not addressed by the IR. However, ACEH is of the opinion residual contaminants in soil can be managed with a soil management plan (SMP).**

   Action Item: No further information required.

The Port has noted that ACEH does not require additional information to address this item. The SMP is further addressed in items #8 and #9. The updated SMP will be submitted to the agency by June 15, 2014.

2. **<u>ACEH Follow-up Comment</u>: The Port has adequately addressed the soil-gas vapor intrusion system, methane sensor, and system performance for the 651 Maritime Street building. ACEH does not perceive the lack of 2006 to 2008 methane monitoring results as a significant data gap. However, it is unclear to ACEH that this is the only structure at the Site and considers this to be a data gap.**

   <u>Action Item</u>: Identify all on-site structures and if the structure(s) are slab-on-grade or have raised foundation systems and if they have active or passive soil gas mitigation systems and provide as an updated site conceptual model in the requested Revised FS/CAP.

The Port met with ACEH on May 14, 2014 for an onsite meeting, a site walk, and facility tour. A figure is attached documenting all existing on-site and off-site buildings (Attachment 1). A figure documenting the various on-site offices, shops, and work zones will be presented in the Revised Focused Conceptual Site Model/Natural Source Zone Depletion Study Report.

3. **<u>ACEH Follow-up Comment</u>: ACEH does not consider the lack of availability of the TOC elevation data for wells RW-1 through RW-9 prior to Site re-development as a significant data gap. ACEH agrees with the Port that the lack of a bore log for monitoring well MW-6 is a data gap. ACEH notes that the well construction data table does not include columns presenting post-grading depths to TOC or bottom of the screened interval; and that the provided bore logs are only for the monitoring and remediation wells and does not include non-well boring logs for Site soil and groundwater investigations.**

   <u>Action Item</u>: Update and resubmit table in an updated site conceptual model as part of the requested Revised FS/CAP.

Upon completing a further search of the available documents, the Port located the boring log for monitoring well MW-6 in the *Transmittal of Boring Log for MW-6* submitted to ACEH on October 21, 1996 as an addendum to the *Site Investigation Report* dated January 30, 1996. With this additional information, the Port has completed the MW-6 information in the Well Construction Data table. The revised table and boring log is submitted as Attachment 2.

The Well Construction Data table has also been revised to include TOC elevation data for recovery wells RW-1 through RW-9. The elevations are based on survey data dated May 26, 2005, prior to the Site re-development. These data are used to calculate current depths to screen intervals in the revised table.

Additionally, Attachment 2 contains available boring logs for historic soil and groundwater investigations. These borings include: soil borings BH-1 through BH-6 drilled in December 1992; soil borings SB-1 through SB-6 drilled in May 1994; temporary wells GP-1 through GP-8 installed on May 23, 1995; soil borings SB-7 through SB-17

installed in May 1995; piezometer borings PZ-A through PZ-F installed in February 2002; and soil borings MFC-1 through MFC-46 installed in March 2002.

4. **ACEH Follow-up Comment: ACEH considers the Port response as adequate for the duplicate well descriptions.**

   Action Item: No additional action required.

The Port has noted that ACEH does not require additional information to address this item.

5. **ACEH Follow-up Comment: ACEH does not consider the submergence frequency calculations for wells RW-1 through RW-9 as a significant data gap and is of the opinion that the Port has adequately addressed the depth-to-water and laboratory groundwater monitoring data for other Site monitoring wells. However, the post-grading submergence for the RW wells are not adequately addressed as Table 2 does not indicate if the well screens were- or were not submerged. Further, it is the position of ACEH that the presence/absence of free product has not been adequately addressed as not all data located in the file has been included in the table.**

   Action Item: Update and resubmit table in an updated site conceptual model as part of the requested Revised FS/CAP.

The Port has updated the Historical Groundwater Elevation and Free Product Data table to include data on well screen submergence for recovery wells RW-1 through RW-9. Depths to top and bottom of the well screens are calculated based on the surveyed top of casing elevations before and after re-development of the Site in 2006. Groundwater elevation and free product thickness verse time graphs have been prepared presenting the top and bottom of the screen relative to groundwater elevation. The Historical Groundwater Elevation and Free Product Data and graphs are included as Attachment 3.

6. **ACEH Follow-up Comment: ACEH considers the Port response inadequate. ACEH's review of the groundwater data suggests more flow directions contrary to the prominent flow determined by the Ports review exist than are depicted on Attachment 9. No discussion of Site hydrogeology is presented and the interpreted predominant north/northwest flow direction does not appear to be consistent with Site geology.**

   Action Item: Provide a discussion of Site hydrogeology, update the figure, and resubmit in an updated site conceptual model as part of the Revised FS/CAP.

The Port has developed a rose diagram of historic groundwater flow direction and added it to the existing Groundwater Flow Direction Map. The updated figure is included as Attachment 4. Data used to develop the diagram include groundwater flow directions from all available Groundwater Monitoring Reports between 1994 until present. The

diagram indicates a dominant groundwater flow direction ranging from north to northeast, with occasional localized flow to the northwest, west, and southwest. The local variations in flow direction are likely due to the heterogeneous nature of the fill material used to develop the Site and seasonal variation in groundwater elevation. Recent (since 2008) groundwater monitoring data indicate that groundwater elevation has ranged from approximately 1.5 to 8.0 feet above mean sea level in wells at the Site.

7. **ACEH Follow-up Comment: ACEH considers the Port response as adequate for the summary of the history of free product removal at the Site, including the cumulative product removal tables.**

   Action Item: ACEH notes that the March 2011 Feasibility Study/ Corrective Action Plan, and the Feasibility Study/ Corrective Action Plan Addendum, dated December 30, 2011, were not approved by this agency and, based on free product rebound in the remediation wells (increase in free product thickness of up to 7.66 feet in RW-7 since remedial system shut down), methods for free product abatement should be reevaluated in a Revised FS/CAP.

As discussed in the May 14, 2014 meeting, the Port is preparing a Natural Source Zone Depletion Study Work Plan. The data gathered from this site investigation will determine the stability of the free product plume and evaluate the mobility and recoverability of the free product. A Revised Focused Conceptual Site Model/Natural Source Zone Depletion Study Report will be prepared documenting the findings and submitted to the agency by September 15, 2014.

8. **ACEH Follow-up Comment: ACEH considers the Port response as adequate for the assessment of dissolved metals concentrations and agrees with the Port this is a data gap. However, based on the distance to potential receptors, ACEH is of the opinion residual dissolved metals concentrations can be managed with a SMP.**

   Action Item: Manage residual contamination in accordance with the SMP.

As recommended, an updated Soil Management Plan will be developed to manage residual contamination from dissolved metals and fill material at the Site. The SMP will be submitted to ACEH by June 15, 2014.

9. **ACEH Follow-up Comment: ACEH agrees with the Port that the soil vapor concentrations of volatile COPCs have very likely decreased since the collection of soil gas samples 11 years ago; however, ACEH considers the Port response as inadequate for the verification of the adequacy of the risk assessment. No analytical analysis of the import fill has been conducted and cannot be evaluated against the LTCP media specific direct contact or vapor intrusion criteria or other appropriate screening levels specific to non-**

petroleum related contaminants. As mentioned in Item 1 above, lack of analytical data for the import fill is considered by ACEH as a data gap. Additionally, the effect of the fill either as a mitigator or contributor to the migration of soil vapor cannot be evaluated. However, based on the Site being either paved or covered by structures and the vapor barrier and soil gas venting system, ACEH is of the opinion residual contaminants in soil can be managed with a SMP.

Action Item: Manage residual contamination in accordance with the SMP.

As indicated above, an updated SMP will be developed to manage residual contamination from dissolved metals and fill material at the Site. The updated SMP will be submitted to the agency by June 15, 2014.

10. **ACEH Follow-up Comment: It is unclear to ACEH that the 651 Maritime Street building is the only structure at the Site and considers this to be a data gap. It is the opinion of ACEH that the lack of sub-slab soil gas monitoring data may be a significant data gap as the data would provide useful as part of an explosive hazard evaluation for other structures situated over the petroleum product plume. ACEH recommends evaluating nearby structures for soil gas/ vapor mitigation systems as well as the type of foundation system used.**

    Action Item: Identify all on-site structures and off-site structures within 500 feet of the Site. Determine the foundation type for the structures (e.g. slab-on-grade or raised foundation system) and if they have active or passive soil gas mitigation systems. Provide this information in an updated site conceptual model as part of the requested Revised FS/CAP.

The Port met with ACEH on May 14, 2014 for an onsite meeting, a site walk, and facility tour. A figure is attached documenting all existing on-site and off-site buildings (Attachment 1). A figure documenting the various on-site offices, shops, and work zones will be presented in the Revised Focused Conceptual Site Model/Natural Source Zone Depletion Study (NSZDS).

11. **ACEH Follow-up Comment: It is the opinion of ACEH that not all soil boring locations conducted at the Site are depicted on the figure and therefore presents a data gap.**

    Action Item: Update figure and resubmit in an updated site conceptual model as part of the revised FS/CAP.

The figure has been updated to show all soil boring locations and is included as Attachment 5. In addition to the existing monitoring and recovery wells, the figure includes the following soil and groundwater sampling locations: soil borings BH-1 through BH-6 drilled in December 1992; soil borings SB-1 through SB-6 drilled in May 1994; temporary wells GP-1 through GP-8 installed on May 23, 1995; soil borings SB-7 through SB-17 installed in May 1995; CPT boring and piezometers PZ-A through PZ-F installed in

February 2002; CPT boring locations B-1 through B-32 investigated in February 2002; and soil borings MFC-1 through MFC-46 installed in March 2002.

If you have any questions or concerns regarding the information presented in this letter, please contact Katherine Brandt at 510.596.9675 or Katherine.Brandt@arcadis-us.com.

Sincerely,
ARCADIS U.S., Inc.

Katherine Brandt, PG
Project Manager

Attachments:

Attachment 1	Summary of On-site and Off-Site Structures
Attachment 2	Revised Well Construction Data Table, MW-6 Boring Log, and Soil Boring Logs
Attachment 3	Revised Historical Groundwater Elevation and Free Product Data Table and Trend Graphs
Attachment 4	Revised Groundwater Flow Direction Map
Attachment 5	Revised Current and Historic Features Map

References:

Alisto Engineering Group, 1996a. Site Investigation Report, Port of Oakland, Building C-401, 2277 Seventh Street, Oakland, California. January.

Alisto Engineering Group, 1996b. Transmittal of Boring Log for MW-6. Oakland, California. October.

Groundwater Technology, Inc, 1995. Soil and Groundwater Assessment Report, Ringsby Terminals, Port of Oakland Lease, 2225 7th Street, Oakland, California. July.

Innovative Technical Solutions, Inc, 2002. Additional Site Characterization and Remedial Action Plan for 2225 and 2277 Seventh Street, Oakland, California. May.

IRIS Environmental, 2002. Expanded Environmental Site Assessment, Future Field Support Services Complex, Port of Oakland, California. February.

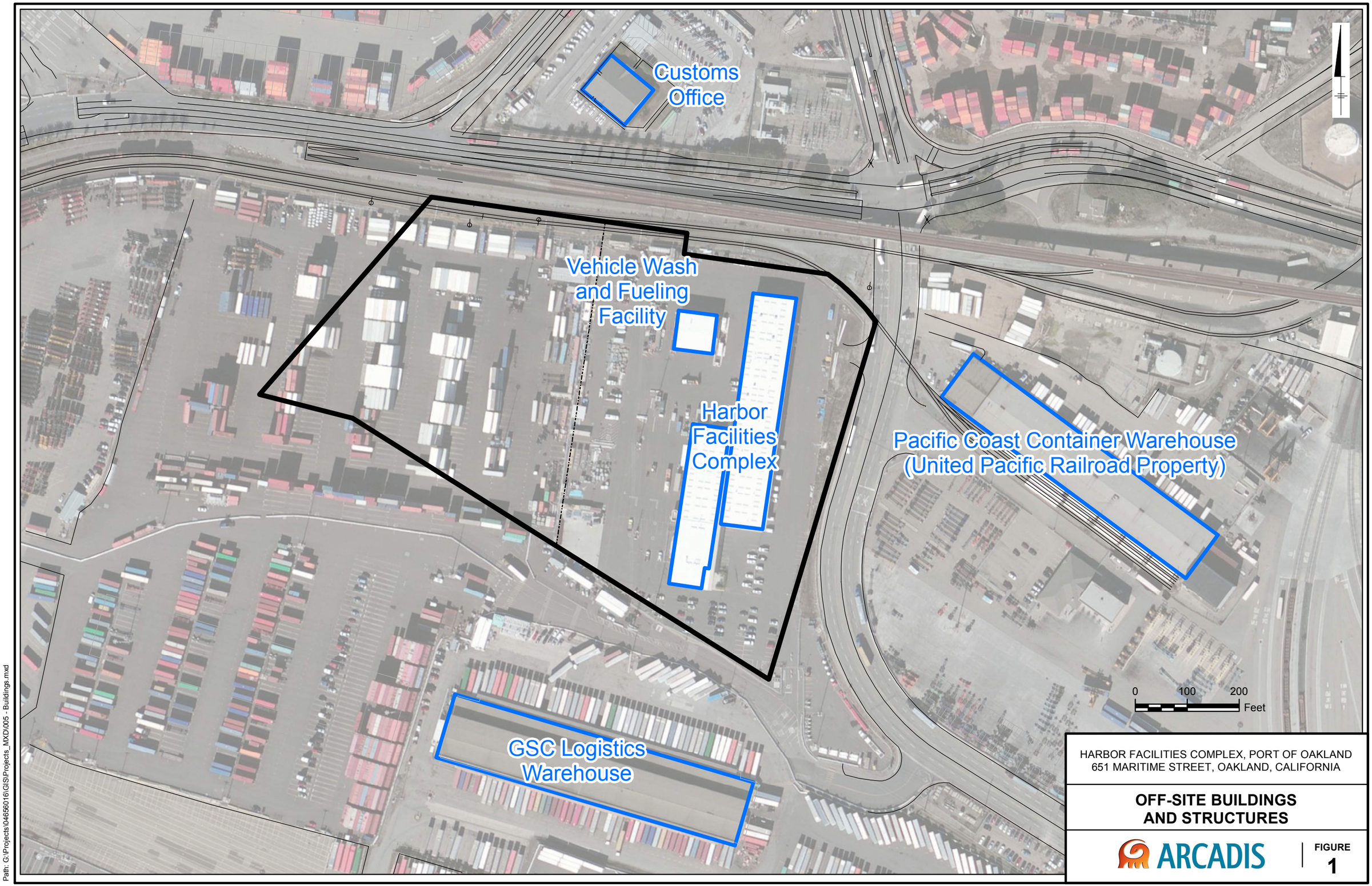
IRIS/Cambria, 2002. Phase II Environmental Site Assessment, Future Port Field Support Services Complex, 2225 and 2277 7th Street, Port of Oakland, Oakland, California, June.

RAMCON Engineering & Environmental Consulting, 1993. Soil and Groundwater Site Assessment: Dongary Investments – Oakland, 2225 7th Street, Oakland, California. March.

Uribe and Associates, 1994. Product Recovery from Wells at Building C-401, 2277 Seventh Street, Oakland, California. August.

Attachment 1

Summary of On-site and Off-site Structures



HARBOR FACILITIES COMPLEX, PORT OF OAKLAND
651 MARITIME STREET, OAKLAND, CALIFORNIA

OFF-SITE BUILDINGS AND STRUCTURES

ARCADIS

FIGURE
1

Path: G:\Projects\04656016\GIS\Projects_MXD\005 - Buildings.mxd

Attachment 2

Revised Well Construction Data Table, MW-6 Boring Log, and Soil Boring Logs

TABLE 1. Well Construction Details
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

								BEFORE RE-GRADE		AFTER RE-GRADE					
Well ID	Date Installed	Date Destroyed	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Sump	Diameter (inches)	Well Material	Top of Casing Elevation (ft amsl)	Date measured	Top of Casing Elevation (ft amsl)	Date measured	Depth to Top of Screen (ft bgs)	Depth to Bottom of Screen (ft bgs)	Top of Screen (ft amsl)	Bottom of Screen (ft amsl)
MW-1[1]	12/16/1992	2002 [2]	5	15	--	4	PVC	13.72	NA	--	--	--	--	8.72	-1.28
MW-2[1]	12/16/1992	2002 [2]	5	15	--	4	PVC	13.80	NA	--	--	--	--	8.80	-1.20
MW-3[1]	12/16/1992	2002 [2]	5	15	--	4	PVC	15.06	NA	--	--	--	--	10.06	0.06
MW-1	5/16/1994	--	5.5	15.5	--	2	PVC	13.65	1995	15.80	1/24/2009	7.65	17.65	8.15	-1.85
MW-2	5/16/1994	--	5.5	15.5	--	2	PVC	13.87	1995	16.43	1/24/2009	8.06	18.06	8.37	-1.63
MW-3	5/16/1994	--	5.5	15.5	--	2	PVC	13.73	1995	15.66	1/24/2009	7.43	17.43	8.23	-1.77
MW-4	8/25/1995	--	8	18	--	2	PVC	12.66	1995	15.91	1/24/2009	11.25	21.25	4.66	-5.34
MW-5	8/25/1995	--	8	18	--	2	PVC	13.00	1995	15.39	1/24/2009	10.39	20.39	5.00	-5.00
MW-6	8/25/1995	12/18/2002	8	18	--	2	PVC	13.51	1995	--	--	--	--	5.51	-4.49
MW-7	8/25/1995	12/18/2002	8	18	--	2	PVC	13.86	1995	--	--	--	--	5.86	-4.14
MW-8	8/25/1995	11/21/1998	8	18	--	2	PVC	12.45	1995	--	--	--	--	4.45	-5.55
MW-8A	10/2/2001	--	5	20	--	2	PVC	12.94	2002	14.99	1/24/2009	7.05	22.05	7.94	-7.06
MW-9	12/1/2008	--	15	25	--	2	PVC	--	--	16.33	1/24/2009	15	25	1.33	-8.67
MW-10	12/1/2008	--	15	25	--	2	PVC	--	--	15.65	1/24/2009	15	25	0.65	-9.35
MW-11	12/1/2008	--	15	25	--	2	PVC	--	--	15.47	1/24/2009	15	25	0.47	-9.53
MW-12	12/2/2008	--	15	25	--	2	PVC	--	--	16.79	1/24/2009	15	25	1.79	-8.21
RW-1	4/28/2004	--	5	15	15-18	4	PVC	14.04	2005	12.95	1/24/2009	3.91	13.91	9.04	-0.96
RW-2	4/28/2004	--	8	18	18-21	4	PVC	16.71	2005	15.56	1/24/2009	6.85	16.85	8.71	-1.29
RW-3	4/26/2004	--	8	18	18-21	4	PVC	16.55	2005	15.56	1/24/2009	7.01	17.01	8.55	-1.45
RW-4	4/26/2004	--	8	18	18-21	4	PVC	15.92	2005	14.92	1/24/2009	7.00	17.00	7.92	-2.08
RW-5	4/27/2004	--	8	18	18-21	4	PVC	15.82	2005	14.79	1/24/2009	6.97	16.97	7.82	-2.18
RW-6	4/27/2004	--	8	18	18-21	4	PVC	16.63	2005	15.75	1/24/2009	7.12	17.12	8.63	-1.37
RW-7	4/26/2004	--	8	18	18-21	4	PVC	16.02	2005	15.02	1/24/2009	7.00	17.00	8.02	-1.98
RW-8	4/28/2004	--	9	19	19-22	4	PVC	16.93	2005	15.91	1/24/2009	7.98	17.98	7.93	-2.07
RW-9	4/27/2004	--	9	19	19-22	4	PVC	17.58	2005	16.57	1/24/2009	7.99	17.99	8.58	-1.42

NOTES
ft bgs = feet below ground surface
ft amsl = feet above mean sea level
PVC = poly vinyl chloride
1 = offsite wells from 2255 7th Street (Ringsby Terminals Inc.)
2 = referenced in a March 2006 Request for Reduction in Groundwater Monitoring Frequency
NA = Not Available
-- = Not Applicable
-Site re-graded in 2006 (before 11/29/06)

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-6

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95

CLIENT: Port of Oakland

LOCATION: 2277 E. 7th Street, Oakland, CA.

DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler

DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 14.00 'MSL

LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							3" asphalt; 2.2' roadbase
7,11,14	2		5			SM	SAND: gray, damp to moist, medium dense; fine- to medium-grained sand.
8,8,11	10		10			CL	silty CLAY: gray black, wet, very stiff; wood fragments to appproximately 2%; sheen present.
12,14,15	3		15			SM	SAND: black, wet, medium dense; fine- to medium-grained sand.
4,7,12	8		20			CL	silty CLAY: gray green to gray, saturated, very stiff; medium-grained sand; 1/4"-diameter gravel to approximately 2%; organics as blebs to approximately 2%; sheen present.
			25				Stabilized water level measured on September 8, 1995.
			30				

WELL DIAGRAM: 2" Sch. 40 PVC; Neat Cement; Bentonite Seal; 0.010" Slotted PVC Screen; #2/12 Lonestar Sand

Boring: MFC-1

Surface Elev. 13.63 FT. POD
Coordinates: N 2,120,603.98; E 6,037,813.00
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
MFC-1-1.0-1.5	0.1	18/36		S	1		SW	VERY DARK GRAYISH BROWN GRAVELLY SAND (2.5Y 3/2), damp, loose to medium dense, fine to coarse subangular to subrounded gravel, well graded, (40% gravel, 45% sand, 15% fines)
MFC-1-2.0-2.5	16.4			S	2			moist to wet @ 1.5 – 2.0 ft
					3			
MFC-1-4.0-4.5	40.4	12/36		S	4		SP-SM	OLIVE BROWN SILTY SAND (2.5Y 4/3), damp, very loose, fine to medium sand, poorly to moderately graded, (0,85,15)
					5			
					6			
		34/36			7		SC	OLIVE CLAYEY SAND (5Y 5/3) moist to wet, loose to medium dense, fine to medium sand, poorly to moderately graded, (0,85,15)
					8			color changes to BLACK (2.5Y 2.5/1), fines fraction increases slightly
					9			color changes to OLIVE (5Y 5/3)
					10			

01201B-MFC-1.DWG

IRIS ENVIRONMENTAL
1615 Broadway, Suite 1003, Oakland, California 94612

Log of Boring Page 1 of 2
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure **A1**

Boring: MFC-1

Surface Elev. 13.63 FT. POD
Coordinates: N 2,120,603.98; E 6,037,813.00
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		30/36		10		sand fraction increases to 90%
				11		
				12		color changes to DARK GREENISH GRAY (GLEY 1 4/1) fine fraction increases to 15–20%
				13		

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 7.1 feet bgs during drilling.

01201B-MFC-1.DWG

Boring: MFC-2

Surface Elev. 13.29 FT. POD
Coordinates: N 2,120,623.67; E 6,038,062.33
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE AND BASEROCK
		6/12			1			
MFC-2-1.5-2.0	2.9	6/36		S	2		SW	VERY DARK GRAYISH BROWN GRAVELLY SAND (10Y 3/2), damp, loose, fine gravel, well graded, (30% gravel, 55% sand, 15% fines)
					3			
					4			
MFC-2-4.5-5.0	NA	24/36		S	5		SC	LIGHT OLIVE BROWN CLAYEY SAND (2.5Y 5/3), damp to wet, medium dense, fine to coarse sand, poorly graded, (0,90,10)
MFC-2-5.5-6.0	NA			S	6			sand fraction increases to 95% occasional thin light gray clay lenses 0.2 to 0.4 inches thick
					7			
		30/36			8			fines fraction increases to 10%
					9			
					10			

01201B-MFC-2.DWG

Boring: MFC-2

Surface Elev. 13.29 FT. POD
Coordinates: N 2,120,623.67; E 6,038,062.33
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
				10		

DRILLING NOTES:

1. Boring terminated at 10.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.25 feet bgs during drilling.

D1201B-MFC-2.DWG

IRIS ENVIRONMENTAL
1615 Broadway, Suite 1003, Oakland, California 94612

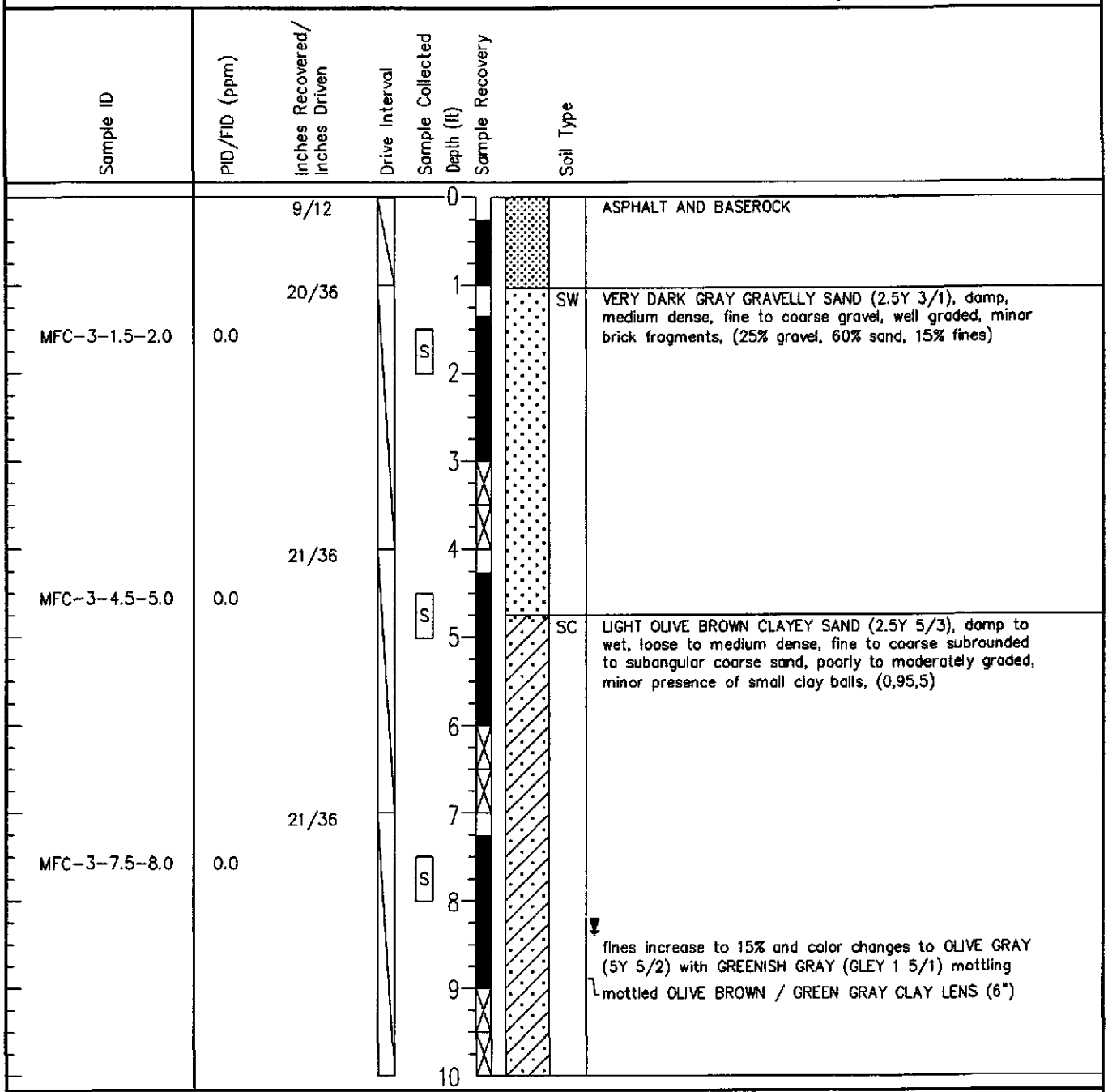
Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A2

Boring: MFC-3

Surface Elev. 14.70 FT. POD
Coordinates: N 2,120,628.08; E 6,038,212.64
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger



01201B-MFC-3.DWG

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Log of Boring
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Figure
A3

Boring: MFC-3

Surface Elev. 14.70 FT. POD
Coordinates: N 2,120,628.08; E 6,038,212.64
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		32/36		10		sand fraction increases to 90%
				11		color changes to DARK GREENISH GRAY (GLEY 1 4/1)
				12		color changes to LIGHT OLIVE BROWN (2.5Y 5/3)
				13		

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 8.35 feet bgs during drilling.

012018-MFC-3.DWG

Boring: MFC-4

Surface Elev. 17.67 FT. POD
Coordinates: N 2,120,583.84; E 6,037,918.24
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE
		12/12			1		GW	OLIVE SANDY GRAVEL (5Y 4/3), damp, loose, fine angular gravel, moderately graded, (85% gravel, 10% sand, 5% fines) [FILL]
		27/36			2			
					3			
					4		SP	OLIVE BROWN SAND (2.5Y 4/3), damp, very loose, fine to medium sand, poorly graded (0,95,5) [FILL]
		14/36			5		GW	BLACK SANDY GRAVEL (2.5Y 2.5/1), damp, very loose, subangular fine to coarse gravel, well graded, some brick fragments, (60,25,15) [FILL]
MFC-4-5.0-5.5	42.7			S				color change to LIGHT OLIVE GRAY (5Y 6/2)
					6		SM	BLACK SILTY SAND (2.5Y 2.5/1) damp, medium dense, fine to coarse gravel, moderately graded (5,70,25)
					7			
		14/36			8			color changes to LIGHT OLIVE BROWN (2.5Y 5/3) and sand fraction increases to (0,95,5)
MFC-4-8.5-9.0	0.4			S				
					9			
					10			

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Figure
A4

Boring: MFC-4

Surface Elev. 17.67 FT. POD
Coordinates: N 2,120,583.84; E 6,037,918.24
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
				10			
		27/36					
MFC-4-11.0-11.5	0.0			11		SC-SP	OLIVE BROWN SAND to CLAYEY SAND (2.5Y 4/3), moist to saturated, loose, fine to medium sand, poorly graded, (0% gravel, 75-90% sand, 10-25% fines)
				12			some black clay lenses (0.2 to 0.5-inches thick) and black mottling
				13			
		24/36					
				14		SC	GRAYISH BROWN CLAYEY SAND (2.5Y 5/2), moist, loose, fine sand, poorly graded, (0,55,45)
				15			color changes to DARK OLIVE GRAY (5Y 3/2), sand fraction increases to 85%, grain size up to medium sand
				16			

DRILLING NOTES:

1. Boring terminated at 16.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 11.8 feet bgs during drilling.

012018-MFC-4.DWG

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Figure **A4**

Boring: MFC-5

Surface Elev. 17.68 FT. POD
Coordinates: N 2,120,578.20; E 6,038,054.33
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE
		12/12			1		SM	GRAYISH BROWN SILTY SAND (2.5Y 5/2), damp, loose, fine gravel, poorly to moderately graded, (5% gravel, 70% sand, 25% fines)
		24/36			2			color changes to OLIVE BROWN (2.5Y 4/4) [FILL] 3" lens BLACK SANDY GRAVEL (7.5YR 2/0)
					3			
					4			
		12/36						brick fragments present
MFC-5-5.0-5.5	0.0			S	5		GW	BLACK SANDY GRAVEL (2.5Y 2.5/1) damp, very loose, fine to coarse subangular gravel, well graded, some brick fragments (60,25,15) [FILL]
					6			
					7			
		12/36					SP	DARK GRAYISH BROWN SAND (2.5Y 4/2) damp to wet, loose, fine to medium sand, poorly to moderately graded, (0,90,10)
MFC-5-8.0-8.5	0.0			S	8			
					9			
					10			

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Figure
A5

Boring: MFC-5

Surface Elev. 17.68 FT. POD
Coordinates: N 2,120,578.20; E 6,038,054.33
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type
					10		
		14/36					
MFC-5-11.0-11.5	0.0			S	11		
							sandy clay lens (6")
					12		
					13		
		36/36					
					14		color change to DARK GREENISH GRAY (GLEY 1 4/1)
					15		
					16		

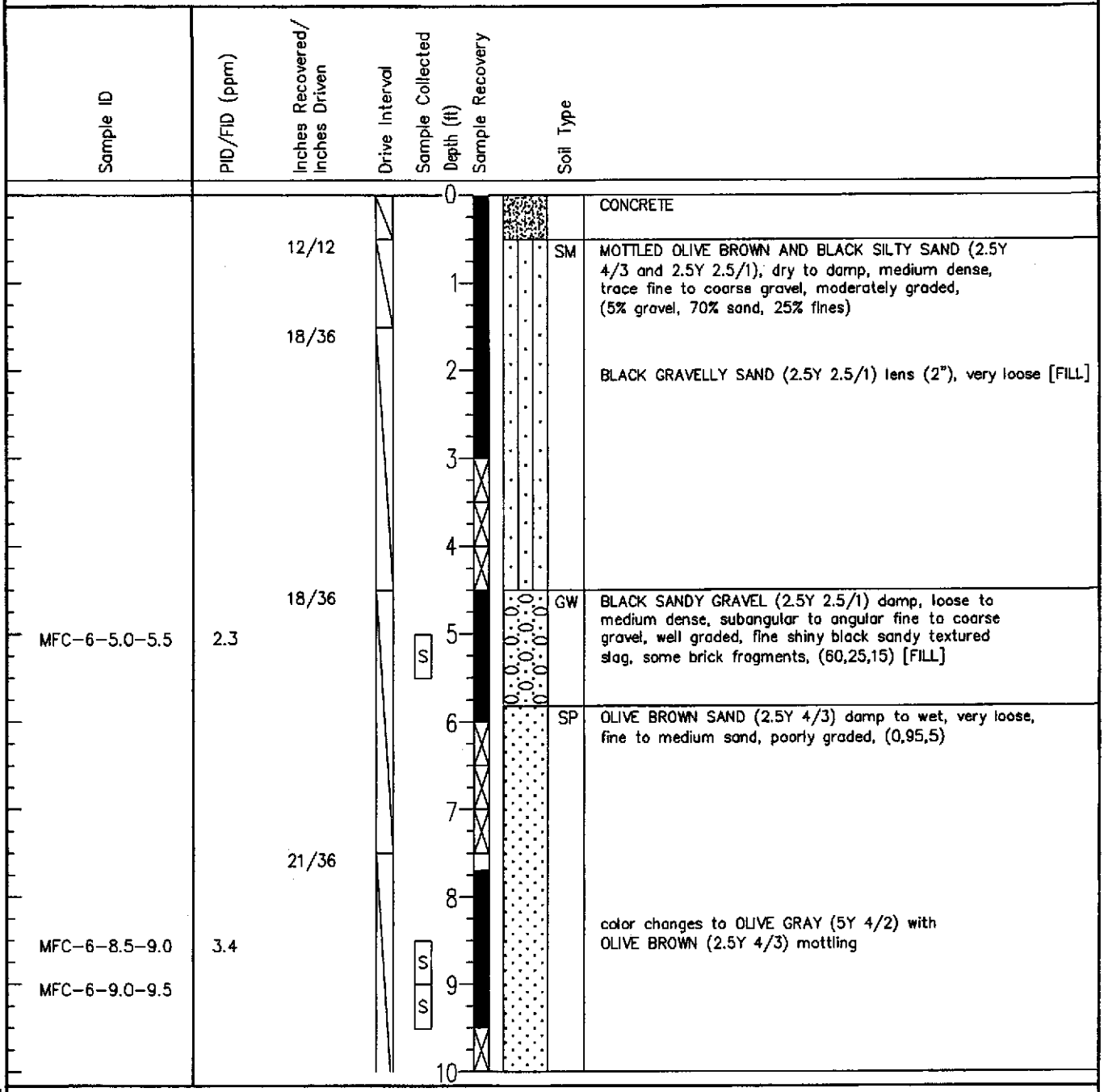
DRILLING NOTES:
1. Boring terminated at 16.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 12.0 feet bgs during drilling.

012018-MFC-5.DWG

Boring: MFC-6

Surface Elev. 17.67 FT. POD
Coordinates: N 2,120,510.92; E 6,038,087.11
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger



01201B-MFC-6.DWG

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Port of Oakland; Oakland, California

Figure
A6

Boring: MFC–6

Surface Elev. 17.67 FT. POD
Coordinates: N 2,120,510.92; E 6,038,087.11
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD–1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		21/36		10		becomes CLAYEY SAND (0,80,20), fine sand
				11		
				12		
				13		
		30/36		14		sand fraction increases to 90%
				15		
				16		

DRILLING NOTES:

1. Boring terminated at 16.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 11.0 feet bgs during drilling.

012018-MFC-5.DWG

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Figure
A6

Boring: MFC-7

Surface Elev. 17.66 FT. POD
Coordinates: N 2,120,518.85; E 6,038,132.80
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE AND BASEROCK
		6/12			1			
		20/36			2		GW	DARK GRAYISH BROWN SANDY GRAVEL (2.5Y 4/2), damp, loose to medium dense, subangular fine to coarse gravel, well graded, brick fragments, punched through PVC conduit without electrical wiring, gravel has an asphalt coating, (60% gravel, 25% sand, 15% fines) [FILL]
MFC-7-3.0-3.5	2.3			S	3			
		14/36			4			
MFC-7-5.0-5.5	1.4			S	5			
MFC-7-5.5-6.0	1.4			S	6			
		21/36			7			
					8			black vitrious sand-sized slag
MFC-7-8.5-9.0	3.0			S	9		SP	LIGHT OLIVE BROWN SAND (2.5Y 5/4), moist to wet, loose to very loose, fine to medium sand, poorly graded, (0,95,5)
MFC-7-9.0-9.5	3.0			S				
					10			

01201B-MFC-7.DWG

Boring: MFC-7

Surface Elev. 17.66 FT. POD
Coordinates: N 2,120,518.85; E 6,038,132.80
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		24/36		10		
				11		
				12		
				13		

DRILLING NOTES:

1. Boring terminated at 13.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 10.5 feet bgs during drilling.

D1201B-MFC-7.DWG

Boring: MFC-8

Surface Elev. 14.87 FT. POD
Coordinates: N 2,120,495.28; E 6,038,178.58
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Soil Type	
				CONCRETE AND BASEROCK
		12/12		
			GW	VERY DARK GRAYISH BROWN SANDY GRAVEL (2.5Y 3/2), damp, loose, angular to subrounded fine to coarse gravel, well graded, brick fragments, wood and plant debris, (60% gravel, 30% sand, 10% fines) [FILL]
		15/36		
MFC-8-2.0-2.5	4.6			bricks fragments present
		21/36		
MFC-8-5.0-5.5	1.7			
MFC-8-5.5-6.0	1.7			
			SP	OLIVE BROWN CLAYEY SAND (2.5Y 4/3), damp to wet, loose, fine to medium subangular to subrounded sand, moderately graded, (0,80,20)
		32/36		
MFC-8-8.0-8.5	1.7			occasional thin clay lenses, mottled.

01201B-MFC-8.DWG

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Figure **A8**

Boring: MFC-8

Surface Elev. 14.87 FT. POD
Coordinates: N 2,120,495.28; E 6,038,178.58
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
		33/36		10			
				11			
				12			
				13		SC	OLIVE GRAY CLAYEY SAND (5Y 5/2), wet, loose, fines to medium sand, poorly to moderately graded, (0,70,30) [NATIVE] color changes to DARK GRAY (5Y 4/1) and sand fraction increases to 80%

DRILLING NOTES:

1. Boring terminated at 13.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 8.2 feet bgs during drilling.

012018-MFC-8.DWG

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Figure
A8

Boring: MFC-9

Surface Elev. 14.58 FT. POD
Coordinates: N 2,120,462.68; E 6,038,173.88
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE AND BASEROCK
		12/12			1		GW	VERY DARK GRAYISH BROWN SANDY GRAVEL (2.5Y 3/2), damp, loose, fine to coarse subangular to subrounded gravel, well graded, brick fragments, wood and plant debris, (55% gravel, 35% sand, 10% fines) [FILL]
		15/36						
MFC-9-2.0-2.5	0.0			S	2			
					3		SC	OLIVE BROWN CLAYEY SAND (2.5Y 4/3), damp to wet, loose, fine to medium sand, moderately to poorly graded, (0,90,10)
		27/36			4			
MFC-9-5.0-5.5	0.0			S	5			
MFC-9-5.5-6.0				S	6			
					7			
		34/36			8			sand fraction increases to 95% sand fraction decreases to 85%
					9			
					10			

01201B-MFC-9.DWG

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Figure **A9**

Boring: MFC–9

Surface Elev. 14.58 FT. POD
Coordinates: N 2,120,462.68; E 6,038,173.88
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD–1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		24/36		10		color changes to DARK GRAY (5Y 4/1)
				11		
				12		sand fraction decreases to 80%
				13		

DRILLING NOTES:

1. Boring terminated at 13.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.5 feet bgs during drilling.

012018-MFC-9.DWG

Boring: MFC-10

Surface Elev. 14.41 FT. POD
Coordinates: N 2,120,517.44; E 6,038,285.55
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
		8/36			1			
MFC-10-1.5-2.0	0.0			S	2		GW	VERY DARK GRAY SANDY GRAVEL (2.5Y 3/1) dry to damp, loose to medium dense, fine to coarse subangular to angular gravel, well graded, red brick fragments present, (55% gravel, 35% sand, 10% fines) [FILL]
		15/36			3			
					4			
MFC-10-5.0-5.5	0.0			S	5		SP	OLIVE BROWN SAND (2.5Y 4/3), damp, loose, fine to medium sand, poorly graded, (0,95,5)
					6			
					7			

DRILLING NOTES:

1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

012018-MFC-10.DWG

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Figure **A10**

Boring: MFC-11

Surface Elev. 14.24 FT. POD
Coordinates: N 2,120,461.68; E 6,037,776.17
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		6/12			0			ASPHALT AND BASEROCK
		14/36			1			
MFC-11-1.5-2.0	0.0			S	2		SC	DARK YELLOWISH BROWN CLAYEY SAND (10YR 3/4), damp, loose to medium dense, fines to fine gravel, well graded (15% gravel, 65% sand, 20% fines)
					3		SP	OLIVE BROWN SAND (2.5Y 4/3), damp to wet, very loose, fine to medium sand, poorly graded, shell fragments present, (0,95,5)
MFC-11-4.0-4.5	0.0	30/36		S	4			
					5			
					6			
		36/36			7			DARK YELLOWISH BROWN CLAYEY SAND (10YR 3/4) lens (4") changes color to OLIVE GRAY (5Y 4/2)
					8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 4.5 feet bgs during drilling.

01201B-MFC-11.DWG

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Figure
A11

Boring: MFC-12

Surface Elev. 14.60 FT. POD
Coordinates: N 2,120,499.18; E 6,037,915.01
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		6/12			0			ASPHALT AND BASEROCK
		12/36			1		SM	OLIVE BROWN SILTY SAND (2.5Y 4/4), damp, very loose, fine gravel, moderately to poorly graded (5% gravel, 75% sand, 20% fines) [FILL]
MFC-12-1.5-2.0	3.3			S	2			
					3			
MFC-12-4.0-4.5	1.7	24/36		S	4		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, very loose, fine to medium sand, poorly graded, shell fragments present, (0,95,5)
					5			
					6			
		6/12			7			
					8			

DRILLING NOTES:

1. Boring terminated at 8.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 4.75 feet bgs during drilling.

012018-MFC-12.DWG

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Figure
A12

Boring: MFC–13

Surface Elev. 13.84 FT. POD
Coordinates: N 2,120,442.50; E 6,037,950.61
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD–1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
		27/36			1		GW	OLIVE BROWN SANDY GRAVEL (2.5Y 4/3), damp, loose, fine to coarse gravel, well graded (60% gravel, 30% sand, 10% fines) [FILL]
MFC–13–1.5–2.0	9.1			S	2		SM	BLACK SILTY SAND (2.5Y 2.5/1), damp, loose, fine gravel, moderately graded, red and yellow brick fragments, (10,70,20) [FILL]
MFC–13–3.0–3.5	0.0			S	3		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, loose, fine to medium sand, poorly graded (0,95,5)
		21/36			4			
					5			
					6			
		27/36			7			
					8			
					9		CH	OLIVE GRAY CLAY (5Y 5/2), wet, very soft, high dry strength, high plasticity, decayed plant staining, (0,5,95) [BAY MUD]
					10			

012018-MFC-13.DWG

DRILLING NOTES:
1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 4.5 feet bgs during drilling.

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Figure **A13**

Boring: MFC-14

Surface Elev. 13.98 FT. POD
Coordinates: N 2,120,426.30; E 6,038,062.04
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		8/12			0			ASPHALT AND BASEROCK
		33/36			1		SM	DARK OLIVE GRAY SILTY SAND (5Y 3/2), damp, loose, fine subrounded gravel, moderate to well graded (10% gravel, 60% sand, 30% fines)
MFC-14-1.5-2.0	13.5			S	2		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, loose, fine to medium subrounded to subangular sand, poorly graded (0,95,5)
MFC-14-3.0-3.5	2.9			S	3			
MFC-14-4.0-4.5	3.8	27/36		S	4			
					5			▼
					6			
		27/36			7			color change to OLIVE BROWN (2.5Y 4/3)
					8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.25 feet bgs during drilling.

01201B-MFC-11.DWG

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Figure
A14

Boring: MFC-15

Surface Elev. 14.12 FT. POD
Coordinates: N 2,120,417.24; E 6,038,131.19
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		6/12			0			ASPHALT AND BASEROCK
		26/36			1			
MFC-15-1.5-2.0	4.2			S	2		SM	BLACK SILTY SAND (2.5Y 2.5/1), damp, loose to medium dense, fine gravel, poorly to moderate graded, brick fragments present, some light iron oxide staining (5% gravel, 70% sand, 25% fines) [FILL]
MFC-15-3.0-3.5	7.2			S	3		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, loose, fine to medium subrounded sand, poorly graded, light petroleum odor, (0,95,5)
		32/36			4			
MFC-15-4.5-5.0	7.2			S	5			
MFC-15-4.5-5.0 DUP	7.2			S				
		6/12			7			clay lens (4")
					8			

DRILLING NOTES:
1. Boring terminated at 8.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.5 feet bgs during drilling.

012018-MFC-15.DWG

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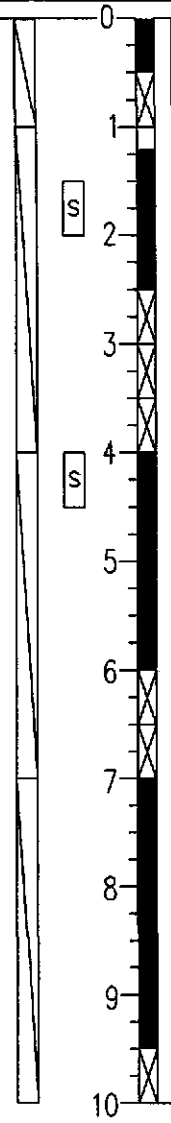
Figure
A15

Boring: MFC-16

Surface Elev. 14.20 FT. POD
Coordinates: N 2,120,415.16; E 6,038,253.69
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Soil Type	
		6/12		ASPHALT AND BASEROCK
		16/36	SM	OLIVE BROWN SILTY SAND (2.5Y 4/3) damp, loose, moderately graded, fine gravel, (15% gravel, 60% sand, 25% fines)
MFC-16-1.5-2.0	3.6		SM	GRAYISH BROWN SILTY SAND (2.5Y 5/2) damp, medium dense, fine gravel, moderately graded, (5,75,20)
MFC-16-4.0-4.5	21.3	24/36	SC	DARK GREENISH GRAY CLAYEY SAND (GLEY 1 4/1), damp to wet, loose, poorly graded, fine to medium sand, slight petroleum odor, (0,85,15)
				interbedded with mottled BLACK, LIGHT GRAY, AND OLIVE BROWN CLAYEY SILT (ML), firm, moderate plasticity (0,25,75)
		30/36		becomes less dense



DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 4.75 feet bgs during drilling.

012018-MFC-15.DWG

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Figure
A16

Boring: MFC-17

Surface Elev. 14.22 FT. POD
Coordinates: N 2,120,383.21; E 6,038,276.75
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
		14/36			1		GW	BLACK SANDY GRAVEL (2.5Y 2.5/1), damp, loose, fine to coarse rounded to subangular gravel, well graded, (60% gravel, 30% sand, 10% fines)
MFC-17-1.5-2.0	0.0			S	2			lens of very fine BLACK CLAYEY SAND (2.5Y 2.5/1) ~3"
					3			
					4			
MFC-17-4.5-5.0	279.2			S	5		SP	DARK GREENISH GRAY SAND (GLEY 1 4/1), moist to wet, loose, poorly graded, fine to medium sand, petroleum odor, (0,90,10)
					6			
		27/36			7			
					8			
					9			
					10			

012018-MFC-17.DWG

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Figure
A17

Boring: MFC–17

Surface Elev. 14.22 FT. POD
Coordinates: N 2,120,383.21; E 6,038,276.75
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP SD–1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type		
		30/36			10			CH	DARK GREENISH GRAY SANDY CLAY (GLEY 1 4/1), moist, soft, fine to medium sand, moderate to high plasticity (0,15,85)
					11				
					12			SP	DARK GREENISH GRAY SAND (GLEY 1 4/1), wet, loose, poorly graded, fine to medium sand, slight petroleum odor (0,90,10)
					13				

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.5 feet bgs during drilling.

01201B-MFC-17.DWG

Boring: MFC-18

Surface Elev. 13.99 FT. POD
Coordinates: N 2,120,339.81; E 6,038,163.15
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		10/12			0			ASPHALT AND BASEROCK
		27/36			1		SM	OLIVE BROWN SILTY SAND (2.5Y 4/4) damp, medium dense, moderately graded, petroleum odor, (15% gravel, 60% sand, 25% silt) [FILL]
MFC-18-1.5-2.0	5.8			S	2			color changes to DARK GREENISH GRAY (GLEY 1 4/1)
MFC-18-3.0-3.5	58.1			S	3			brick and charcoal/wood debris present
		30/36			4		SP	OLIVE GRAY SAND (5Y 5/2) damp to wet, loose, fine to medium grained subrounded sand, poorly graded, petroleum odor (0% gravel, 95% sand, 5% fines)
MFC-16-4.5-5.0	88.0			S	5			▼
					6			
		26/36			7			
					8			
					9			
					10			

01201B-MFC-15.DWG

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.0 feet bgs during drilling.

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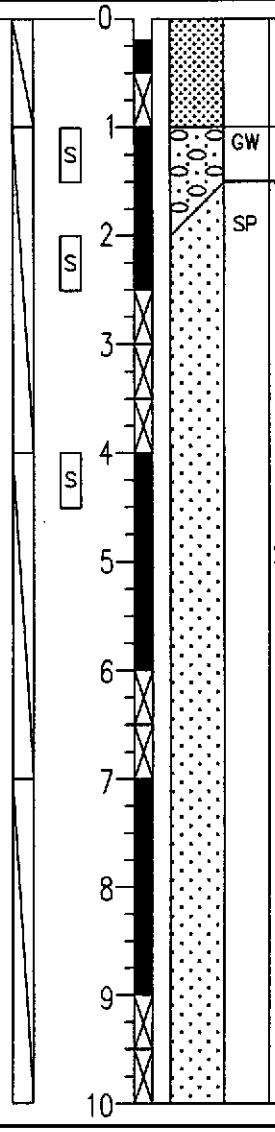
Figure **A18**

Boring: MFC-19

Surface Elev. 13.75 FT. POD
Coordinates: N 2,120,348.27; E 6,038,236.53
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by R. Ramirez
Reviewed by C. Alger

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Soil Type	
		4/12		ASPHALT AND BASEROCK
MFC-19-1.0-1.5	8.9	18/38	GW	OLIVE GRAY GRAVELLY SAND (5Y 5/2) damp, loose, fine gravel, moderately graded, petroleum odor (30% gravel, 60% sand, 10% fines)
MFC-19-2.0-2.5	22.3		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, loose, fine to medium grained subrounded to rounded sand, poorly graded, petroleum odor (0,95,5)
MFC-19-4.0-4.5	25.0	24/36		some black staining
		18/36		



DRILLING NOTES:
1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.0 feet bgs during drilling.

012018-MFC-15.DWG

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Figure **A19**

Boring: MFC-20

Surface Elev. 19.92 FT. POD
Coordinates: N 2,102,285; E 6,038,494.15
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
					0			CONCRETE
		35/36			1		SC	DARK GREENISH GRAY CLAYEY SAND (10Y 4/1), damp, dense, fine to coarse sand, brick and wood fragments present, (5% gravel, 70% sand, 25% fines) [FILL]
					2			interbedded clay lenses
		27/36			3			
MFC-20-4.0-4.5	24.5			S	4			some shell fragments present; Percent clay decreases
					5			
					6			
		11/36			7		SW	GREENISH BLACK GRAVELLY SAND (10Y 2.5/1), damp, loose, subangular to angular coarse gravel upto 2.5-inch diameter, (30,50,20) [FILL]
MFC-20-7.0-7.5				S	8			
					9			
		2/36			10			

012018-MFC-25.DWG

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Figure
A20

Boring: MFC-20

Surface Elev. 19.92 FT. POD
Coordinates: N 2,102,285; E 6,038,494.15
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		33/36			10			
					11			
					12			
MFC-20-13.0-13.5				S	13		SC	GREENISH GRAY CLAYEY SAND (5G 4/1), wet, loose, interbedded with common black sand lens, heavy petroleum odor and staining, (0,60,40)
					14			
					15		CL	GREENISH GRAY SANDY CLAY (5G 4/1), wet, soft, moderate to high plasticity, color grades to black (2.5Y 2.5/1) (0,10,90) [BAY MUD]

DRILLING NOTES:
1. Boring terminated at 15.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 13.0 feet bgs during drilling.

01201B-MFC-20.DWG

Boring: MFC-21

Surface Elev. 14.84 FT. POD
Coordinates: N 2,120,605.11; E 6,038,409.66
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		8/12			0			ASPHALT AND BASEROCK
		21/36			1			
MFC-21-1.5-2.0	0.0			S	2		SC	DARK GREENISH GRAY CLAYEY SAND (10Y 4/1), damp, dense, subangular fine to coarse gravel, fine to coarse sand, (15% gravel, 55% sand, 30% fines) [FILL]
MFC-21-1.5-2.0 DUP				S				
					3			
		16/36			4		SC	GREENISH GRAY CLAYEY SAND (10Y 5/1), damp, dense, fine to medium sand, some rust-colored staining (0,75,25)
MFC-21-4.5-5.0	0.0			S	5			
					6			
		22/36			7		CL	GREENISH GRAY SANDY CLAY (10Y 5/1), damp, medium stiff, (5,40,55)
MFC-21-8.0-8.5	0.0			S	8			
					9			
					10			

012018-MFC-21.DWG

Boring: MFC-21

Surface Elev. 14.84 FT. POD
Coordinates: N 2,120,605.11; E 6,038,409.66
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/36			10		SP	YELLOWISH BROWN SAND (10YR 5/4), wet, loose, medium sand, (0,90,10)
					11			
					12			
					13			

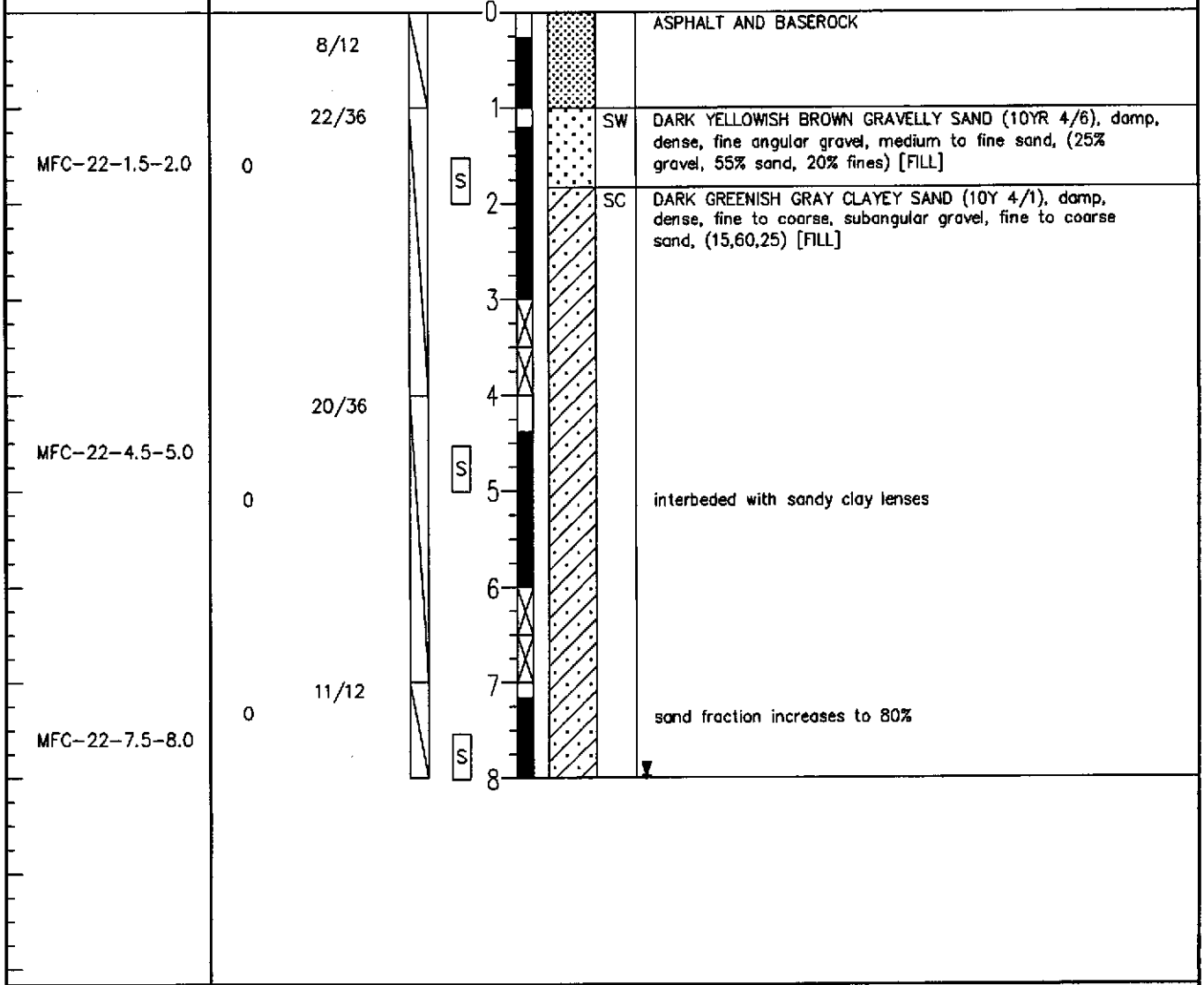
DRILLING NOTES:
1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 9.0 feet bgs during drilling.

012018-MFC-25.DWG

Boring: MFC-22

Surface Elev. 15.30 FT. POD
Coordinates: N 2,120,568.87; E 6,038,499.25
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez



DRILLING NOTES:

1. Boring terminated at 8.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 8.0 feet bgs during drilling.

01201B-MFC-25.DWG

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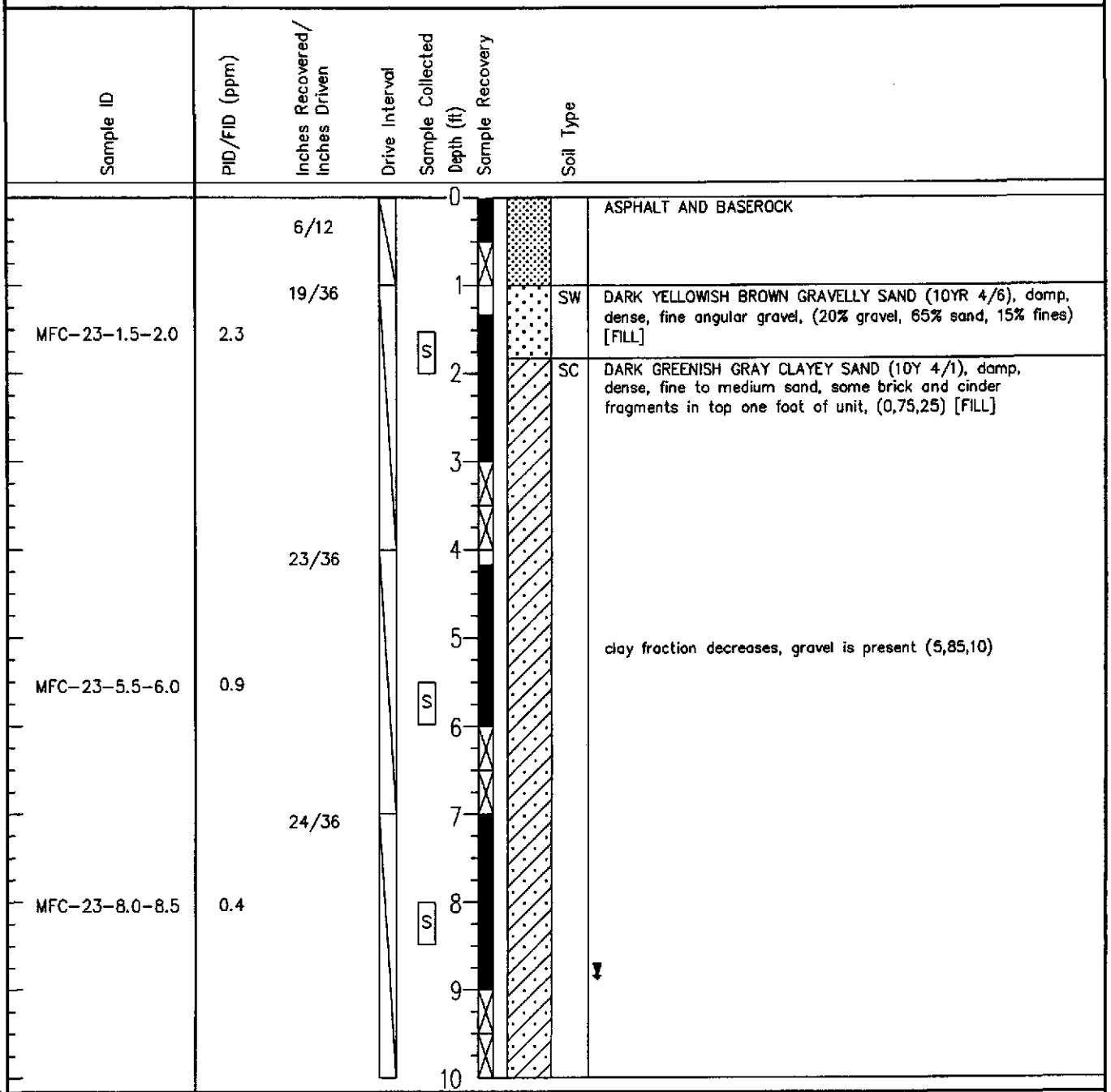
Figure **A22**

Boring: MFC-23

Surface Elev. 15.33 FT. POD
Coordinates: N 2,120,497.93; E 6,038,596.50
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez



012018-MFC-25.DWG

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Figure
A23

Boring: MFC–23

Surface Elev. 15.33 FT. POD
Coordinates: N 2,120,497.93; E 6,038,596.50
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD–1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		24/36		10		clay fraction increases
				11		
				12		
				13		

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 8.8 feet bgs during drilling.

01201B-MFC-23.DWG

Boring: MFC-24

Surface Elev. 15.32 FT. POD
Coordinates: N 2,120,532.26; E 6,038,332.66
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		9/12			0			ASPHALT AND BASEROCK
		16/36			1		SW	DARK YELOWISH BROWN GRAVELLY SAND (10YR 3/4), damp, loose, fine to coarse angular gravel, medium to coarse sand (35% gravel, 50% sand, 15% fines) [FILL]
MFC-24-1.5-2.0	0			S				some rusty staining
					2		SP	GRAY SAND (25Y 5/1), damp, loose, fine to medium sand (0,95,5)
					3			interbedded with sandy clay (0,35,65)
MFC-24-4.0-4.5	0	12/36		S	4			
MFC-24-4.0-4.5 DUP				S				
					5			
					6			
					7			

DRILLING NOTES:

1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

01201B-MFC-25.DWG

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Figure
A24

Boring: MFC-25

Surface Elev. 14.77 FT. POD
Coordinates: N 2,120,452.95; E 6,038,494.59
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Soil Type	
		6/12		ASPHALT AND BASEROCK
MFC-25-1.0-1.5		24/36	SW	DARK YELLOWISH BROWN GRAVELLY SAND (10YR 4/6), damp to moist, dense, fine angular gravel, (35% gravel, 50% sand, 15% fines) [FILL]
MFC-25-1.0-1.5 Dup	3.0			
	9.7		GW	GREENISH BLACK SANDY GRAVEL (10Y 2.5/1), damp, dense, rounded to angular coarse gravel, brick fragments, strong asphalt odor, (45,35,20) [FILL]
		13/36		
MFC-25-4.5-5.0			SC	DARK GREENISH GRAY CLAYEY SAND (10Y 4/1), damp, dense, fine sand (0,65,35)
		14/36		
	0.4			sand fraction increases to 80%
MFC-25-7.5-8.0				

Drive Interval; Sample Collected; Sample Recovery; Depth (ft): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

01201B-MFC-25.DWG

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Figure **A25**

Boring: MFC-25

Surface Elev. 14.77 FT. POD
Coordinates: N 2,120,452.95; E 6,038,494.59
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
		19/36		10		fines fraction increases to 40%
				11		
				12		
				13		

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 8.3 feet bgs during drilling.

012018-MFC-25.DWG

Boring: MFC-26

Surface Elev. 15.38 FT. POD
Coordinates: N 2,120,380.87; E 6,038,635.61
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		8/12			0			ASPHALT AND BASEROCK
		17/36			1		SW	YELLOWISH BROWN GRAVELLY SAND (10YR 5/4), moist, dense, coarse angular gravel, (35% gravel, 50% sand, 15% fines) [FILL]
MFC-26-1.5-2.0	3.0			S	2			DEGRADED ASPHALT PAVEMENT AND BASEROCK
	91.9				3			
		16/36			4		SC	GREENISH GRAY CLAYEY SAND (5G 5/1), moist, dense, fine to medium sand (0,75,25)
MFC-26-5.0-5.5	6.3			S	5			common clayey lenses
					6			
		17/36			7			
MFC-26-7.5-8.0				S	8			trace gravel
					9			
					10			

01201B-MFC-26.DWG

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Figure
A26

Boring: MFC-26

Surface Elev. 15.38 FT. POD
Coordinates: N 2,120,380.87; E 6,038,635.61
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type
	0.0	17/36		10		
				11		
				12		
				13		

DRILLING NOTES:

1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 10.1 feet bgs during drilling.

012018-MFC-26.DWG

Boring: MFC-27

Surface Elev. 13.84 FT. POD
Coordinates: N 2,120,409.59; E 6,038,353.48
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		10/12			0			ASPHALT AND BASEROCK
					1			clayey sand lens.
		8/36						DEGRADED ASPHALT PAVEMENT AND BASEROCK
MFC-27-1.5-2.0	0.0			S	2			
					3			
		15/36			4			
MFC-27-4.5-5.0	0.0			S	5		SC	GREENISH GRAY CLAYEY SAND (GLEY 1 5/1), damp, dense, fine to medium sand, (0% gravel, 85% sand, 15% silt)
MFC-27-5.5-6.0				S	6			
		28/36			7			
					8			intebedded with clayey silt, damp, firm, moderate plasticity (0,25,75)
					9			
					10			

012018-MFC-26.DWG

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

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Figure
A27

Boring: MFC-28

Surface Elev. 14.33 FT. POD
Coordinates: N 2,120,396.92; E 6,038,401.85
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Romirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		8/12			0			ASPHALT AND BASEROCK
							SC	GREENISH GRAY CLAYEY SAND (GLEY 1 5/1), damp, fine to coarse sand, angular fine gravel with rusty straining, (5% gravel, 75% sand, 20% fines) [FILL]
MFC-28-1.0-1.5	NA	6/36		S	1			DEGRADED ASPHALT PAVEMENT AND BASEROCK contains dense rock-hard slag
					2			
					3			
		18/36			4		SC	DARK GREENISH GRAY CLAYEY SAND (GLEY 1 4/1), damp, dense, fine to medium sand, brick and wood fragments in upper most 2-inches of unit [FILL]
MFC-28-5.0-5.5	1.3			S	5			
					6			
		18/36			7			intebedded with CLAYEY SILT, moist to wet, firm, moderate plasticity (0,25,75)
	0.0				8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 7.3 feet bgs during drilling.

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Figure
A28

Boring: MFC-29

Surface Elev. 15.81 FT. POD
Coordinates: N 2,120,361.05; E 6,038,532.73
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
MFC-29-1.0-1.5	0.0	18/36		S	1			
					2		SC	VERY DARK GRAY CLAYEY SAND (GLEY 1 4/1), damp, fine to medium sand, fine gravel, brick and cinder fragments (5% gravel, 70% sand, 25% fines) [FILL]
					3			
		24/36			4		SP	OLIVE GRAY SAND (5Y 5/2), moist, very loose, fine to medium sand (0,95,5)
MFC-29-4.5-5.0	0.0			S				
MFC-29-4.5-5.0 DUP				S	5			with alternating interbedded CLAYEY SILT lenses, moist, firm, moderate plasticity, (0,25,75)
MFC-29-5.5-6.0	0.0			S	6			
					7			

DRILLING NOTES:

1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.5 feet bgs during drilling.

012018-MFC-29.DWG

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Figure
A29

Boring: MFC-30

Surface Elev. 14.17 FT. POD
Coordinates: N 2,120,343.68; E 6,038,366.13
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		10/12			0			ASPHALT AND BASEROCK
							SC	DARK YELLOWISH BROWN CLAYEY SAND (10YR 3/4), damp, loose, medium to coarse sand, angular fine gravel, (15% gravel, 65% sand, 20% fines) [FILL]
		16/36			1			
MFC-30-1.5-2.0	13.6			S	2		SW	GREENISH BLACK GRAVELLY SAND (10Y 2.5/1), damp, fine to coarse sand, angular fine to coarse gravel (25,60,15) [DEGRADED PAVEMENT] [FILL]
					3			
		9/36			4			brick and glass fragments present.
MFC-30-4.5-5.0	35			S	5			
					6			
					7			

DRILLING NOTES:
1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

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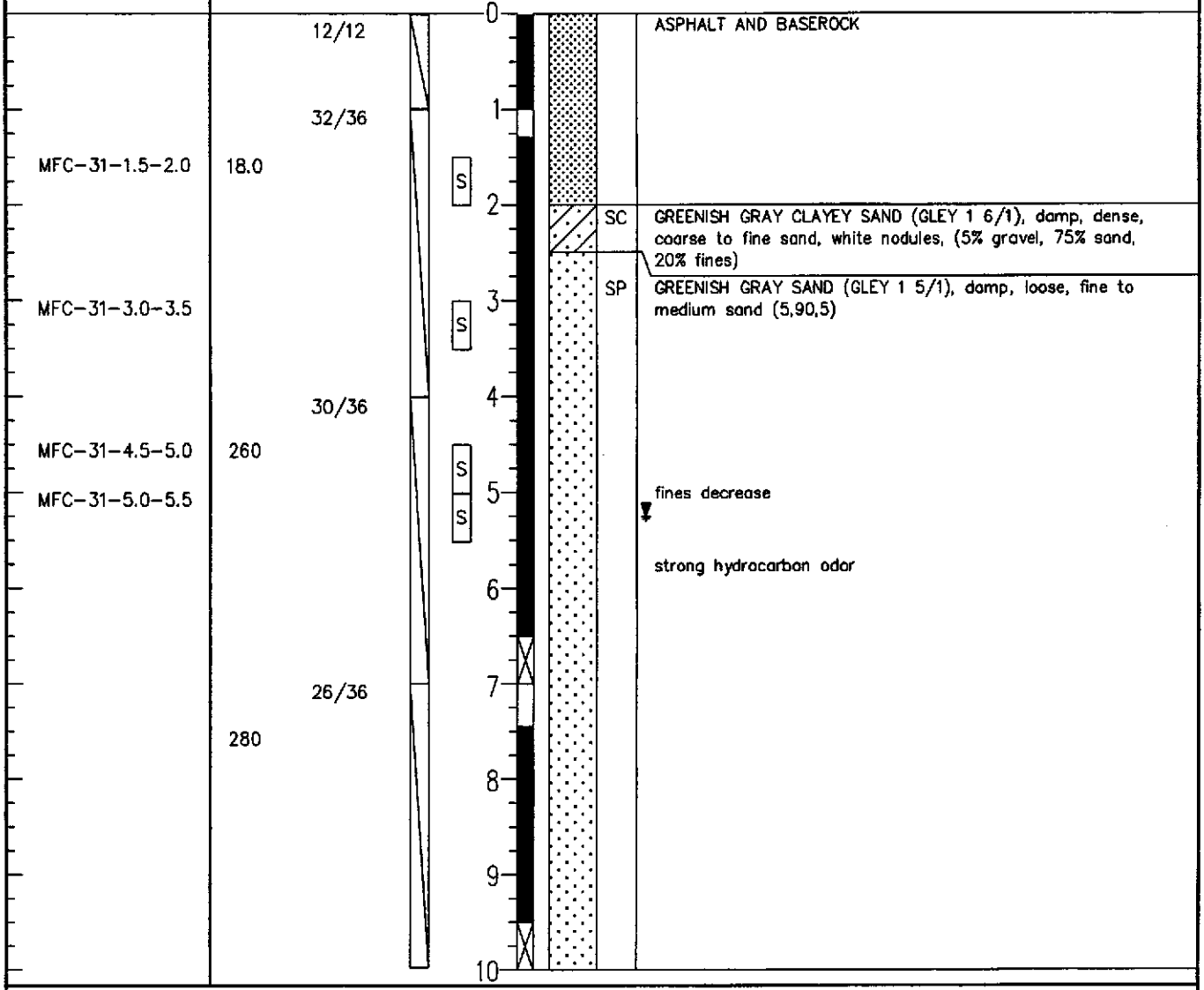
Figure **A30**

Boring: MFC-31

Surface Elev. 14.67 FT. POD
Coordinates: N 2,120,301.53; E 6,038,395.88
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez



DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.25 feet bgs during drilling.

01201B-MFC-31.DWG

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Figure
A31

Boring: MFC-32

Surface Elev. 14.40 FT. POD
Coordinates: N 2,120,245.29; E 6,038,606.03
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		4/12			0			ASPHALT AND BASEROCK
							SC	YELLOWISH BROWN CLAYEY SAND (10YR 5/4), damp, coarse to fine sand, angular gravel, (10% gravel, 55% sand, 35% fines)
		20/36			1			
MFC-32-1.5-2.0	15.3			S				
					2		SW	DARK GREENISH GRAY GRAVELLY SAND (GLEY 1 3/1), damp, coarse to fine sand, fine to coarse gravel, (30,50,20)
								3-inch lens of PALE GREEN CLAYEY SAND (GLEY 1 6/2)
					3			
		0/36			4			
					5			
					6			
					7			

DRILLING NOTES:

1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

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Figure **A32**

Boring: MFC-33

Surface Elev. 15.35 FT. POD
Coordinates: N 2,120,245.64; E 6,038,429.04
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		6/12			0			ASPHALT AND BASEROCK
		31/36			1			
MFC-33-1.5-2.0				S	2		SC	GREENISH GRAY CLAYEY SAND (GLEY 1 6/1), damp, dense, fine to coarse sand, white nodules, (5% gravel, 75% sand, 20% fines)
							SP	GREENISH GRAY SAND (GLEY 1 5/1), damp, loose, fine to medium sand (5,90,5)
MFC-33-3.0-3.5				S	3			
		30/36			4			
MFC-33-5.0-5.5				S	5			shell fragments present
MFC-33-5.5-6.0				S	6			
		27/36			7			strong hydrocarbon odor
								fines fraction decreases
					8			
					9			
					10			

01201B-MFC-31.DWG

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.5 feet bgs during drilling.

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Figure **A33**

Boring: MFC-34

Surface Elev. 15.11 FT. POD
Coordinates: N 2,120,198.05; E 6,038,531.81
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		3/12			0			ASPHALT AND BASEROCK
		28/36			1			
MFC-34-1.5-2.0	0.0			S	2		SC	DARK GREENISH CLAYEY SAND (GLEY 1 3/1), damp, dense, fine sand, cinders and brick fragments present (5% gravel, 75% sand, 20% fines) [FILL]
MFC-34-3.0-3.5	0.0			S	3		SP	OLIVE GRAY SAND (5Y 5/2), damp, very loose, fine to medium sand, shell fragments (0,95,5)
		26/36			4			
MFC-34-5.5-6.0	0.0			S	5			
MFC-34-6.0-6.5				S	6			
		17/36			7			▼
					8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 7.2 feet bgs during drilling.

01201B-MFC-31.DWG

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Figure
A34

Boring: MFC-35

Surface Elev. 14.44 FT. POD
Coordinates: N 2,120,192.04; E 6,038,351.92
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		5/12			0			ASPHALT AND BASEROCK
MFC-35-1.0-1.5	64.7	24/36		S	1		SM	VERY DARK GRAY SILTY SAND (5Y 3/1), damp, loose to dense, subangular fine gravel, rust staining on gravel, (15% gravel, 65% sand, 20% fines) [FILL]
MFC-35-2.0-2.5	63.0			S	2		SP	GREENISH GRAY SAND (GLEY 1 6/1), damp, very loose, fine to medium sand, (5,90,5)
					3			lens of BLACK SAND (GLEY 1 2.5/1)
		24/36			4			
MFC-35-5.0-5.5	257			S	5			
MFC-35-5.5-6.0				S	6			shell fragments present
		19/36			7			sand fraction becomes finer; strong hydrocarbon odor
					8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.0 feet bgs during drilling.

01201B-MFC-35.DWG

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Figure **A35**

Boring: MFC-36

Surface Elev. 14.31 FT. POD
Coordinates: N 2,120,117.37; E 6,038,568.05
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		6/12			0			ASPHALT AND BASEROCK
		23/36			1		SW	DARK OLIVE BROWN SILTY SAND (2.5Y 3/3), damp, dense, angular gravel to 1-inch, fine to medium sand, cinders and brick fragments (15% gravel, 65% sand, 20% fines) [FILL]
MFC-36-1.5-2.0	0.5			S	2			
MFC-36-1.5-2.0 DUP				S				
					3			color becomes BLACK
		19/36			4			
MFC-36-4.5-5.0	3.4			S	5		SP	DARK GREENISH BROWN SAND (10YR 4/2), damp to wet, loose, fine to medium sand, shell fragments (0,95,5)
					6			
		13/36			7			
					8			
					9			
					10			

01201B-MFC-36.DWG

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Figure
A36

Boring: MFC-36

Surface Elev. 14.31 FT. POD
Coordinates: N 2,120,117.37; E 6,038,568.05
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
		36/36		10		CL	DARK GREENISH GRAY CLAY (5GY 3/1), wet, soft, high plasticity, occasional fine to medium sand lenses that becomes increasingly finer and more infrequent with depth (0,10,90) [BAY MUD]
				11			
				12			
				13			

DRILLING NOTES:
1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.5 feet bgs during drilling.

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Boring: MFC-37

Surface Elev. 14.11 FT. POD
Coordinates: N 2,120,114.20; E 6,038,307.08
Drill Date: Start 3/25/02 Finish 3/25/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Romirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Soil Type	
		7/12		ASPHALT AND BASEROCK
		15/36	SC	VERY DARK GREY CLAYEY SAND (5Y 3/1), damp, fines to angular medium gravel, brick fragments, some rootlets, strong hydrocarbon odor, (15% gravel, 65% sand, 20% fines) [FILL]
	38.4			
		26/36	SM	GREENISH GRAY SILTY SAND (GLEY 1 6/1), damp, dense, fine to medium sand (5,85,10)
MFC-37-4.5-5.0	154			
MFC-37-4.5-5.0 DUP	191			shell fragments present, fines grade out
		18/36	SP	GREENISH GRAY SAND (GLEY 1 6/1), wet, loose, fine to medium sand (5,90,5)
				hydrocarbon sheen present

Drive Interval: S S
Sample Collected Depth (ft): 0 1 2 3 4 5 6 7 8 9 10
Sample Recovery

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.75 feet bgs during drilling.

0120IB-MFC-31.DWG

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Figure **A37**

Boring: MFC-38

Surface Elev. 15.35 FT. POD
Coordinates: N 2,120,102.85; E 6,038,387.09
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
MFC-38-1.0-1.5	0.0	24/36		S	1		SC	GREENISH BLACK CLAYEY SAND (10Y 2.5/1), damp, medium dense, fine to medium sand, some black lenses, faint hydrocarbon odor (5% gravel, 75% sand, 20% fines) [FILL]
MFC-38-2.5-3.0				S	2			
		23/36			3			DEGRADED ASPHALT PAVEMENT debris and brick fragments
MFC-38-5.0-5.5	0.0			S	4		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, very loose, fines to medium sand, poorly graded (0,90,10)
MFC-38-5.0-5.5 DUP				S	5			
		30/36			6			
					7			▼
					8			fine fraction decreases
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 7.25 feet bgs during drilling.

01201B-MFC-31.DWG

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Figure
A38

Boring: MFC-39

Surface Elev. 15.58 FT. POD
Coordinates: N 2,120,104.90; E 6,038,484.82
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		10/12			0			ASPHALT AND BASEROCK
		20/36			1		SC	PALE OLIVE CLAYEY SAND (5Y 6/3), damp, fine to coarse sand, some angular gravel, (5% gravel, 80% sand, 15% fines)
MFC-39-1.5-2.0	1.0			S	2		SC	DARK GREENISH GRAY CLAYEY SAND (GLEY 1 4/1), damp, dense, fine to medium sand, brick fragments, cinders, (5,65,30), [FILL]
		0/36			3			
					4			
					5			
					6			
		25/36			7			
	1.2				8		SP	OLIVE BROWN SAND (2.5Y 4/4), wet, medium dense, fine to medium sand, poorly graded (0,95,5)
					9			
					10			

DRILLING NOTES:
1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

012018-MFC-31.DWG

IRIS ENVIRONMENTAL
1615 Broadway, Suite 1003, Oakland, California 94612

Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A39

Boring: MFC-40

Surface Elev. 14.84 FT. POD
Coordinates: N 2,120,080.30; E 6,038,350.07
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered / Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type		
		12/12			0				ASPHALT
					1			SM	DARK YELLOW SILTY SAND (10YR 4/6), damp, medium dense, fines to coarse sand (10% gravel, 60% sand, 30% fines) [FILL]
		28/36							
MFC-40-1.5-2.0				S	2			SM	VERY DARK GRAY SILTY SAND (10YR 3/1), damp, medium dense, wood and brick fragments, (10,65,25) [DEGRADED ASPHALT PAVEMENT]
MFC-40-2.0-3.5				S	3			SP	OLIVE GRAY SAND (5Y 5/2), damp, very loose, poorly graded, (0,95,5)
		27/36			4				
MFC-40-4.5-5.0				S					
MFC-40-4.5-5.0 DUP				S	5				
					6				
		27/36			7				
					8				shell fragments present
					9				
					10				

DRILLING NOTES:
1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.0 feet bgs during drilling.

0120\B-MFC-40.DWG

IRIS ENVIRONMENTAL
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Log of Boring Page 1 of 1
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure **A40**

Boring: MFC-41

Surface Elev. 15.59 FT. POD
Coordinates: N 2,120,024.11; E 6,038,378.43
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		8/12			0			ASPHALT
							SC	STRONG BROWN CLAYEY SAND (7.5YR 5/8), damp, dense, rust-staining, (15% gravel, 60% sand, 25% fines)[FILL]
		23/36			1			
MFC-41-1.5-2.0				S	2			
							GW	DARK YELLOWISH BROWN SANDY GRAVEL (10YR 4/4), dry to damp, medium dense, fines to angular fine gravel, well graded, (50,40,10), [FILL]
MFC-41-2.5-3.0	0.0			S	3			
					4			
MFC-41-4.0-4.5	0.0	11/36		S				
MFC-41-4.0-4.5 DUP				S	5			
					6			
		27/36			7		SP	OLIVE GRAY SAND (5Y 5/2), wet, very loose, fine to medium sand, shell fragments, (0,95,5)
					8			
	0.0				9			occasional clay balls
					10			

012018-MFC-41.DWG

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.25 feet bgs during drilling.

IRIS ENVIRONMENTAL
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Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A41

Boring: MFC-42

Surface Elev. 15.75 FT. POD
Coordinates: N 2,120,012.05; E 6,038,455.82
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
		10/12		0			ASPHALT
		18/18		1		SM	PALE OLIVE SILTY SAND (6Y 6/3), damp, dense, fine to coarse sand, some angular gravel, (5,80,15), [FILL]
				2		SC	DARK GREENISH GRAY CLAYEY SAND (GLEY 1 4/1), damp, dense, fine to medium sand, degraded asphalt and plywood, (0,80,20), [FILL]
				3			OBSTRUCTION

DRILLING NOTES:

1. Boring terminated at 2.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

01201B-MFC-42.DWG

IRIS ENVIRONMENTAL
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Log of Boring Page 1 of 1
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure **A42**

Boring: MFC–43

Surface Elev. 14.26 FT. POD
Coordinates: N 2,120,006.03; E 6,038,534.58
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP XD–1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
		20/36			1			
MFC–43–1.5–2.0				S	2		SM	GREENISH BLACK SILTY SAND (10Y 2.5/1), damp, dense, coarse angular gravel, brick and shell fragments, wood debris (15% gravel, 65% sand, 20% fines) [FILL]
					3			
		18/36			4		SP	GREENISH GRAY SAND (10Y 5/1), damp, medium dense, some black, friable cinders (0,95,5) [FILL]
MFC–43–4.5–5.0				S	5			
					6			
					7			

DRILLING NOTES:

1. Boring terminated at 7.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 5.5 feet bgs during drilling.

01201B-MFC-43.DWG

IRIS ENVIRONMENTAL
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Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A43

Boring: MFC-44

Surface Elev. 15.65 FT. POD
Coordinates: N 2,119,961.88; E 6,038,381.37
Drill Date: Start 3/26/02 Finish 3/26/02

Drill Method: MC/DP XD-1
Driller: PSI / Jose
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		10/12			0			ASPHALT AND BASEROCK
		22/36			1			
MFC-44-1.5-2.0	26.0			S	2			degraded asphalt pavement debris
	70.1				3		SW	STRONG BROWN GRAVELLY SAND (7.5YR 5/8), damp, dense, fine to coarse sand, angular gravel, rust-staining (30% gravel, 55% sand, 15% fines). [FILL]
		15/36			4			
MFC-44-4.5-5.0	34.2			S	5		SP	OLIVE GRAY SAND (5Y 3/2), damp to wet, very loose, fine to medium, sand, poorly graded, shell fragments, ▼(0,95,5)
MFC-44-4.5-5.0 DUP				S				
					6			
					7			
					8			
					9			
					10			

DRILLING NOTES:

1. Boring terminated at 10.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was not encountered during drilling.

012018-MFC-44.DWG

IRIS ENVIRONMENTAL
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Log of Boring Page 1 of 1
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure **A44**

Boring: MFC-45

Surface Elev. 15.68 FT. POD
Coordinates: N 2,119,935.71; E 6,038,417.39
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected	Depth (ft)	Sample Recovery	Soil Type	
		12/12			0			ASPHALT AND BASEROCK
		15/36			1		SM	PALE OLIVE SILTY SAND (5Y 6/3), damp, medium density, fines to coarse sand, poorly to moderately graded, (0% gravel, 90% sand, 10% fines), [FILL]
MFC-45-1.5-2.0				S	2			ASPHALT AND BASEROCK (?) Debris
					3			
		21/36			4		GW	DARK YELLOWISH BROWN SANDY GRAVEL (10YR 4/4), dry to damp, medium dense, fines to angular fine gravel, well graded, (50% gravel, 40% sand, 10% fines)
MFC-45-5.0-5.5				S	5		SP	OLIVE GRAY SAND (5Y 5/2), damp to wet, very loose, fines to medium sand, poorly graded, (0,95,5)
					6			
		20/36			7			
					8			
					9			
					10			

012018-MFC-45.DWG

IRIS ENVIRONMENTAL
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Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A45

Boring: MFC-45

Surface Elev. 15.68 FT. POD
Coordinates: N 2,119,935.71; E 6,038,417.39
Drill Date: Start 3/28/02 Finish 3/28/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
		24/36		10			
				11		CH	OLIVE GRAY CLAY (5Y 5/2), wet, very soft, high dry strength, high plasticity, some organic staining, (trace sand, 95% fines)
				12			
				13			

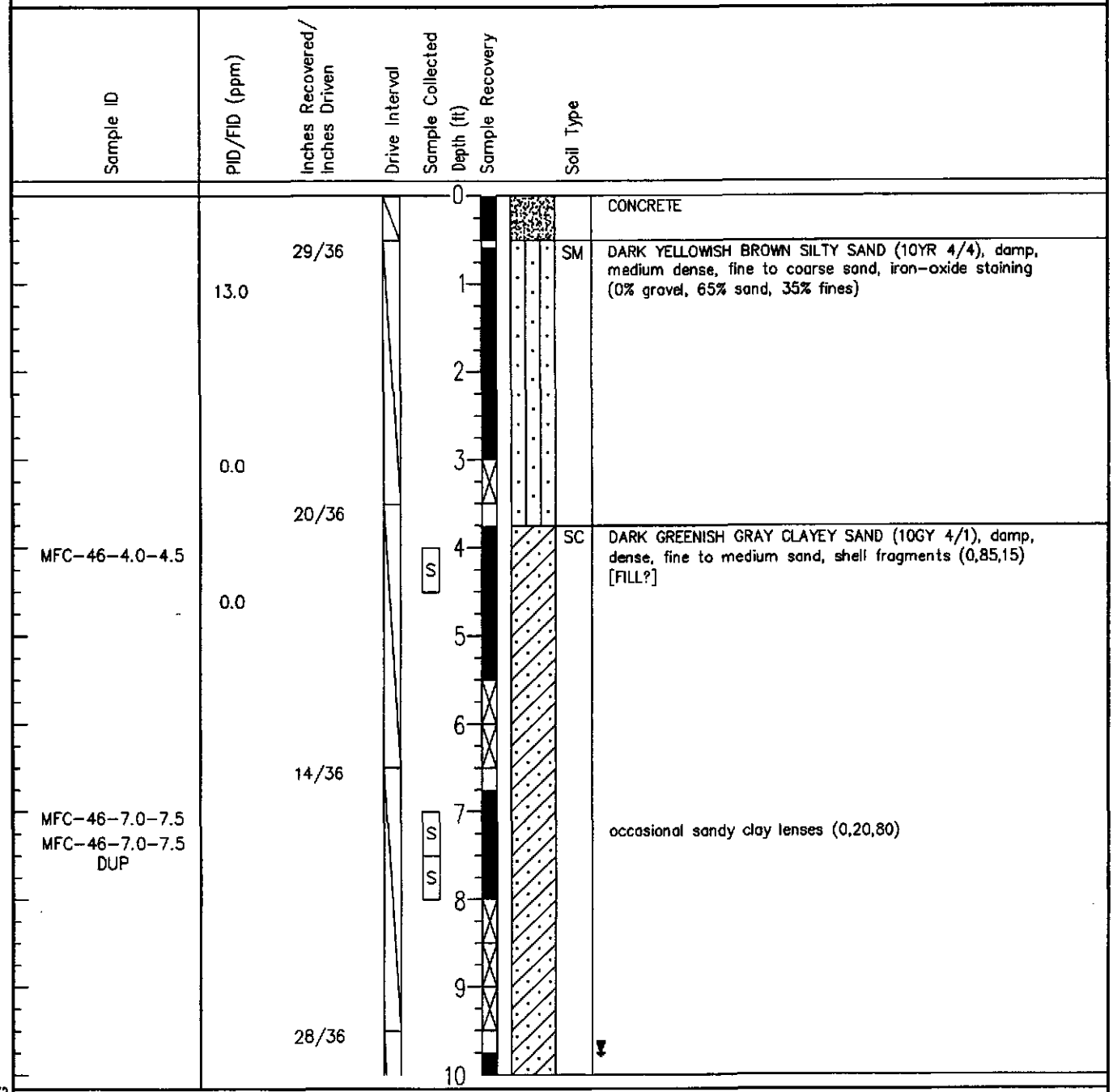
DRILLING NOTES:
1. Boring terminated at 13.0 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 6.0 feet bgs during drilling.

01201B-MFC-45.DWG

Boring: MFC-46

Surface Elev. 19.87 FT. POD
Coordinates: N 2,120,130.15; E 6,038,455.85
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez



01201B-MFC-46.DWG

IRIS ENVIRONMENTAL
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Log of Boring
Phase II Environmental Site Assessment
2225 & 2277 7th Street
Port of Oakland; Oakland, California

Figure
A46

Boring: MFC-46

Surface Elev. 19.87 FT. POD
Coordinates: N 2,120,130.15; E 6,038,455.85
Drill Date: Start 3/27/02 Finish 3/27/02

Drill Method: MC/DP SD-1
Driller: PSI / Valentin & Marcos
Logged by M. Montag
Reviewed by C. Alger / R. Ramirez

Sample ID	PID/FID (ppm)	Inches Recovered/ Inches Driven	Drive Interval	Sample Collected Depth (ft)	Sample Recovery	Soil Type	
	0.3			10			
				11		SP	DARK OLIVE GRAY SAND (5Y 5/2), wet, very loose, medium sand, degraded asphalt (?), (0,95,0) [FILL?]
				12			
				13			

DRILLING NOTES:

1. Boring terminated at 12.5 feet bgs.
2. Field estimates of percent gravel, sand and fines are shown in parentheses.
3. Boring log indicates subsurface conditions only at the location and time the boring was drilled.
4. Boring backfilled with bentonite grout to surface.
5. Groundwater was encountered at 9.75 feet bgs during drilling.

012018-MFC-46.DWG

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" Hollow Stem Auger

SAMPLING METHOD Cal. Mod. Split Spoon

BORING DEPTH 15.5' ± 0.2'

DATE BEGAN 1340 | 11 FEB 2002

DATE FINISHED 15 | 11 FEB 2002

LOGGED BY J. ANDERSON

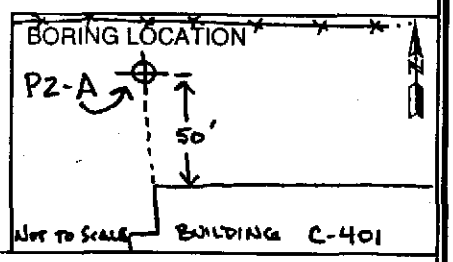
EDITED BY _____

CHECKED BY _____

BORING NO. PZ-A

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) Background/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0							AC	ASPHALT
			0.2	13/20	E.		GW	WELL GRADED GRAVEL WITH CLAY AND SAND (GW), OLIVE BROWN (2.5Y4/3), MOIST, MEDIUM DENSE, 45-55% FINE TO COARSE GRAVEL TO 2.5" (?), ANGULAR, 35-45% FINE TO COARSE SAND, ANGULAR TO SUBANGULAR, 5-15% CLAY, MEDIUM PLASTICITY.
							SC	@ ~1.5' CLAYEY SAND (SC), LIGHT OLIVE BROWN (2.5Y5/4), MOIST, MEDIUM DENSE, 55-65% FINE TO MEDIUM SAND, ANGULAR, 35-45% CLAY (MINOR SILT), MEDIUM PLASTICITY.
			0.1	4/8/10	E			TRACE MINOR FINE GRAVEL TO 3/8" (<1%) ANGULAR
								ZONES RICH IN SAND/CLAY INTERMIXED @ 4.3 - 4.4'
							SP	POORLY GRADED SAND WITH CLAY (SP), 85-95% F-M SAND, 5-15% CLAY.
5.0				4/7/9	G.T.		SC	@ 4.4' AS ABOVE: CLAYEY SAND (SC), CLAY IN NODULES AND INTERMIXED WITH SAND %. @ 5.5' CLAY % DECREASING: 70-80% FINE TO MEDIUM SAND, 20-30% CLAY
			0.1					
		▽		4/5/6	E.		SC	@ 7: @ ~7' WET, CLAY STILL PRESENT IN NODULES AND INTERMIXED WITH SAND %.
			0.1	4/5/5				
							SC	@ 8.9' OLIVE GRAY (5Y5/2)
			0.0				SC	~~@ 9' LIGHT OLIVE BROWN (2.5Y5/4)~~ JWC
				3/7/N.D.			SC	@ 9.2' DARK OLIVE GRAY (5Y3/2).
10.0			0.0				SP	@ 10.1' CLAY DECREASES: POORLY GRADED SAND (SP), DARK GRAY (5Y4/1), 85-95% F-M SAND, 5-15% FINES
				4/13/5			CH	@ 10.9' CLAY % INCREASING: SANDY FAT CLAY (CH), MOTTLED DARK GREENISH GRAY, VERY DARK GRAY & LIGHT GREENISH GRAY (10BG4/1, N3/, 10Y7/1), MOIST TO WET, 50-60% FAT CLAY, HIGH PLASTICITY, 10-20% SILT, 20-30% F-M SAND.
			0.0					@ 12' TRACE <1% PEAT
				4/4/5	G.T.		SC	@ 12.1' CLAYEY SAND (SC), DARK GREENISH GRAY (GGY3/1), 70-80% F-M SAND, 20-30% CLAY → POSSIBLE SLUFF @ 12.5' CLAY INCREASING - FAT CLAY (CH), 95-100% CLAY, HIGH PLASTICITY, 0-5% FINE SAND. BLACK (N2.5/), SOFT,
			0.0				CH	
							SC	@ 13.0' CLAYEY SAND (SC), MOTTLED DARK GREENISH GRAY, BLACK (10Y3/1, N2.5/), 70-80% F-M SAND, ANGULAR, 20-30% CLAY.
				4/7/7			SP	POORLY GRADED SAND LENS, 85-95% F-M SAND, 5-15% FINES
15.0							SC	CLAYEY SAND (SC) AS ABOVE AT 13'

(?) SIZE DETERMINED BY SAMPLER [2.5"]

E = ENVIRONMENTAL SAMPLE TAKEN

G.T. = GEOTECHNICAL SAMPLE TAKEN

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD CAL. MOD. SPLIT SPOON

BORING DEPTH 15'

DATE BEGAN 0725/0825/12 FEB 2002 GWC

DATE FINISHED 0910 12 FEB 2002

LOGGED BY J. ANDERSON

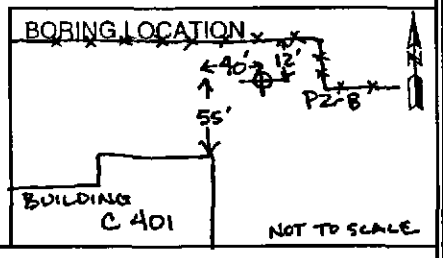
EDITED BY _____

CHECKED BY _____

BORING NO. PZ-B

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0						AC		ASPHALT
			0			GW/GC		WELL GRADED GRAVEL WITH CLAY & SAND (GW/GC) OLIVE BROWN (2.5Y4/4), MOIST, MEDIUM DENSE, 55-65% FINE TO COARSE GRAVEL TO 1.75", SUBANGULAR TO SUBROUNDED, 20-30% FINE TO COARSE SAND, ANGULAR, 10-20% CLAY, MEDIUM TO HIGH PLASTICITY, (BASE ROCK).
			2.6	42 48 46	E.	SC		@0.8' CLAYEY SAND WITH GRAVEL (SC) GREENISH BLACK (10Y2.5/1), MOIST, DENSE, 40-50% FINE TO COARSE SAND, ANGULAR TO SUBROUNDED, 15-25% FINE GRAVEL, SUBANGULAR TO SUBROUNDED, 20-30% CLAY, MEDIUM TO HIGH PLASTICITY.
						GC		@1.8' GRAVEL PERCENTAGE INCREASING: CLAYEY GRAVEL WITH SAND (GC), 2.0' 40-50% FINE TO COARSE GRAVEL TO 1.75" SUBANGULAR TO SUBROUNDED, 25-35% FINE TO COARSE SAND, ANGULAR TO SUBROUNDED, 20-30% CLAY.
						CH		@2.6'
			0.8	7 8 9	E.	SC		@3' CLAYEY SAND (SC), PALE OLIVE (5Y6/3), MOIST, LOOSE, 60-70% FINE TO MED. SAND, ANGULAR, 25-35% CLAY, MEDIUM PLASTICITY, 5-15% SILT, ZONES OF CLAY WITHIN SAMPLE.
						SP		@3.5' CLAY/SILT DECREASING - POORLY GRADED SAND (SP), 90-95% FINE TO MEDIUM SAND, 5-10% SILT AND CLAY.
						SC/MH		@4' SILT/CLAY INCREASING - INTERMIXED CLAYEY SAND AND SANDY ELASTIC SILT (SC/MH), PALE OLIVE (5Y6/3) AND DARK GRAY (5Y4/1), MOIST, LOOSE/SOFT, (SC) IS 70-80% F-M SAND, 10-20% CLAY, 5-10% SILT, (MH) IS 50-60% SILT, 20-30% CLAY, 20-30% FINE SAND, MEDIUM PLASTICITY.
5.0						CH		@4.5' SANDY FAT CLAY (CH), MOTTLED OLIVE GRAY, BLACK AND OLIVE (5Y4/2, 5Y2.5/1 & 5Y 4/4), MOIST, MEDIUM STIFF TO STIFF, 50-60% FAT CLAY, MEDIUM TO HIGH PLASTICITY, 15-25% SILT, 25-35% FINE TO MEDIUM SAND, ANGULAR, WITHIN SAME ZONES RICH IN CLAY, SILT AND SAND PRESENT.
			0.7	5 7 7	G.T.			
								@6' SAND % INCREASING 45-55% CLAY, 15-25 SILT, 35-45% FINE TO MEDIUM SAND
			0.3	6 6 7	E.			
						CH		@7.3-7.4' BLACK (5Y2.5/1)
								@7.4' MOTTLED AS ABOVE.
								@8.5-8.9' BLACK (5Y2.5/1)
								@8.9' MOTTLED AS ABOVE.
			17.2	5 8 11				@9.0' GRAVELLY FAT CLAY WITH SAND (CH) DARK GREENISH GRAY (10Y3/1), WET, MED. STIFF, 40-50% FAT CLAY, M-H PLASTICITY, 30-40% F-C GRAVEL TO 2.5", ANGULAR TO SUBROUNDED, 20-30% FINE TO COARSE SAND, ANGULAR TO SUB-ANGULAR, MODERATE TO STRONG HYDROCARBON ODOR.
10.0			13.0	13 28				OBSTRUCTION IN DRILLING AT 9.5-10' (ROCK) SAMPLER ONLY DRIVEN TO 10". SAMPLE RECOVERY ~5", COVERED WITH PRODUCT.
						GC		@10' CLAYEY GRAVEL WITH SAND (GC) DARK GREENISH GRAY (10Y3/1), WET DENSE, 45-55% FINE TO COARSE GRAVEL TO 2.5" (?) ANGULAR TO SUBANGULAR, 30-40% FINE TO COARSE SAND, ANGULAR, 15-25% CLAY, MEDIUM TO HIGH PLASTICITY, MEDIUM TO STRONG HYDROCARBON ODOR.
				50 N.D.				
				N.D.				
			15.3	22 50				(12-15') ✓ UPON SAMPLE RETRIVAL SAMPLER REMAINED IN THE BOREHOLE. NO SAMPLE RECOVERY - 12 TO 15' LOGGED FROM AUGER FLIGHTS UPON REMOVAL. CLAY % INCREASES WITH DEPTH, COLOR SAME, ODOR DECREASES. 35-45% F-C GRAVEL, 25-35% FINE - COARSE SAND, 30-40% CLAY.
15.0								BOTTOM OF BOREHOLE @ 15.0' (SAMPLER LOST INTO BOTTOM OF BORING).

E. = ENVIRONMENTAL SAMPLE TAKEN.
G.T. = GEOTECHNICAL SAMPLE TAKEN.

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

PZ-C

LOCATION: ~~PORT OF OAKLAND~~ PORT OF OAKLAND

BORING DEPTH: 15.5'

BORING NO. ~~PZ-2D~~ PZ-C (gua)

SURFACE ELEVATION:

DATE BEGAN: ~~0830~~ 0730 gua 11 FEB 2002

SHEET 1 OF 1

DRILLING METHOD: 8" HOLLOW STEM AUGER

DATE FINISHED: ~~0900~~ 0840 gua 11 FEB 2002

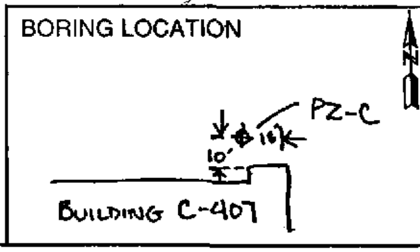
SAMPLING METHOD: CAL. MOD. SPLIT SPOON

LOGGED BY: J. ANDERSON

EDITED BY:

CHECKED BY:

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) ~~/~~sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY
0.0			0.0	(18)	■		
			N.D. gua	11 (30)			70-80
				21 (29)			
			0.2	25			
				10 (15)	■		
				12 (19)			
				19			
				4			
5.0			8.9	5			
				8			
		▼		7			
			40.6	10			
				15			
				6			
				7			
			13.0	10			
				5			
10.0				7			
			7.1	9			
				2			
			6.2	3			
				3			
				4			
				4			
				4			
			2.7	N.R.			
				N.R.			
15.0				N.R.			

DESCRIPTION

ASPHALT

@6" DARK GREENISH GRAY (10Y4/1), POORLY GRADED SAND (SP), MOIST, LOOSE, ~~70-80%~~ 75-85% FINE TO MEDIUM SAND, 0-5% COARSE GRAIN SAND, 5-10% FINE GRAVEL, 0-5% FINE GRAVEL SIZED CLAY NODULES, GRAVEL TO 10MM, SAND & GRAVEL ANGULAR TO SUBANGULAR, SAND IS 55-65% QUARTZ, 10-20% FELDSPAR & 25-35% LITHIC & MAFIC.

@1' WELL GRADED SAND WITH GRAVEL (SW), GREENISH BLACK (5GY2.5/1), 75-85% FINE TO COARSE SAND (80-90% F-M SAND, 10-20% C SAND), 15-25% FINE TO COARSE GRAVEL (90-100% F GRAVEL, 0-10% C GRAVEL), 0-5% FINES, SAND ANGULAR TO SUBROUNDED, GRAVEL SUBANGULAR TO SUBROUNDED.

GRAVEL DECREASING

POORLY GRADED SAND (SP), DARK GREENISH GRAY (10Y3/1), 95-100% FINE TO MEDIUM SAND (70-80% M SAND, 20-30% F SAND), ANGULAR, 60-70% QUARTZ, 5-15% FELDSPAR, 20-30% MAFIC & LITHIC, TRACE <2% FINE ANGULAR GRAVEL TO 15MM.

@4.5' SLIGHT HYDROCARBON ODOR, NO TRACE GRAVEL.

@5.0' (70-80% F SAND, 20-30% M SAND), STRONG HYDROCARBON ODOR.

GRAIN SIZE INCREASING

@5.8' GREENISH GRAY (5GY5/1), (60-70% M SAND, 30-40% F SAND).

@6.3' WET

@6.6' STRONG HYDROCARBON ODOR, CORE BOX STAINED FROM PRODUCT, TRACE <1% SEA SHELLS, SATURATED

@7.5' BOX SAMPLE HAS 34 PPM READING. BOX HAS NO STAINING BELOW 7.5'.

@8.7' TRACE <3% SEA SHELLS

FAT CLAY (CH), DARK GREENISH GRAY (10Y4/1), WET, SOFT, ~~85-95%~~ 95-100% FAT CLAY, ~~5-15%~~ 0-5% SILT, TRACE <1% FINE SAND, NO HYDROCARBON ODOR, HIGH PLASTICITY, HIGH DRY STRENGTH

TIP OF SHOE HAD GREENISH BLACK (5GY2.5/1) FAT CLAY (CH)

BOTTOM OF BOREHOLE AT 15.5'

ITSI Innovative Technical Solutions, Inc.

N.D. - NOT DETECTED ABOVE BACKGROUND
N.R. - NOT RECORDED
(15) - RESAMPLE ON 12 FEB. 2002

PROJECT: PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7th Street

SURFACE ELEVATION N/A

DRILLING METHOD 8" Hollow Stem Auger

SAMPLING METHOD California Mod. Split Spoon

BORING DEPTH 15.5 Feet

DATE BEGAN 0850 / 11 Feb 2002

DATE FINISHED 11 Feb 2002

LOGGED BY R. Leong

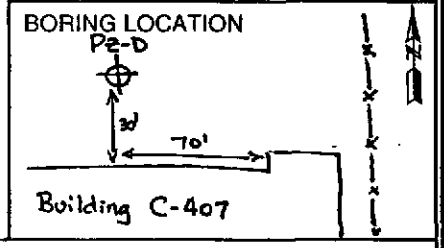
EDITED BY

CHECKED BY

BORING NO. Pz-D

SHEET 1 OF 1

BORING LOCATION



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0								Asphalt = 6 inches
			0.6	(18) 12/(24) 32/25 42		SP		Poorly graded clayey sand (SP), brownish yellow (10YR 6/6), sand is predominantly fine grained (75-80%), some coarse sand is subangular to subrounded (10-15%), clay is highly plastic (15-5%), moist, loose, and no hydrocarbon odor (base rock)
			0.9	42(13) 50(11)		SP		Poorly graded sand with gravel (SP), very dark gray (5Y 3/1), sand is mostly very fine to medium (60-70%), some coarse subangular to subrounded sand (20-15%), few predominantly fine gravel up to 1.5 inch size (20-10), Trace clay in nodules (0-5%), moist, loose, no hydrocarbon odor
			2.0	N.D.(14)		SW		Rock in borehole, sampler driven 9 inches Well graded sand with gravel (SW), olive gray (5Y 5/2), sand is fine to medium grained (75-85%), gravel is fine and subangular up to 1.5" size (20-10%) trace clay (0-5%) moist, loose, slight hydrocarbon odor
5.0			32.9	22/28 31		GW		Well graded gravel with sand (GW), very dark gray (5Y 3/1), gravel is fine, subangular to angular (60-70%) up to 1.5" size, sand is fine to medium grained (40-30%), moist, medium dense, no hydrocarbon odor.
			121.8	13/22 31		SP		Poorly graded sand (SP), light olive brown (2.5Y 5/4), sand is medium grained (95-100%), trace clay nodules (0-5%), moist to wet, loose, strong hydrocarbon odor (core sampler box has oil staining)
			71.1	7/8/10		SW		Well graded sand (SW) very dark gray (5Y 3/1), sand is very fine to medium grained (80-70%) gravel is fine, subrounded up to 1/4" size (15-5%), trace clay (0-5%), moist to wet, loose, strong hydrocarbon odor
			16.8	6/6/2		SP		Poorly graded sand (sp), dark gray (2.5Y 4/1), sand is medium grained (95-100%) trace clay (5-0%), wet, loose, very strong hydrocarbon odor (oil staining visible in core sampler box)
10.0				4/5/3				- Moderate hydrocarbon odor - Trace of fine subangular gravel (<1%) up to 1.5" size
			12.2	4/3/3		CH		Fat clay (CH), (95-100%) dark greenish gray (10GY 4/1), trace silt (0-5%), highly plastic, high dry strength, wet, soft, no hydrocarbon odor
			2.2					
15.0								

N.D. = Not driven

( ) = Resample on 12 Feb. 2002

ITSI Innovative Technical Solutions, Inc.

PROJECT Port of Oakland

PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET

SURFACE ELEVATION

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD DIRECT PUSH

BORING DEPTH 15'

DATE BEGAN 1230 | 13 FEB2002

DATE FINISHED 13FEB2002

LOGGED BY J. ANDERSON

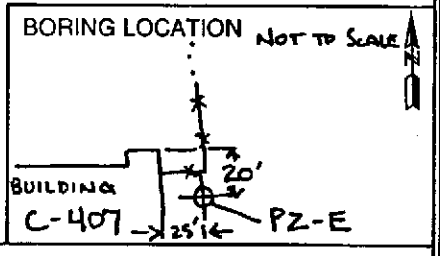
EDITED BY

CHECKED BY

BORING NO. PZ-E

SHEET 1 OF 1

BORING LOCATION NOT TO SCALE



DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) Based/Sterm/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0				DIRECT PUSH	E.		AC	ASPHALT
							SP	POORLY GRADED SAND WITH CLAY (SP), DARK GRAY (5Y4/1), LOOSE, MOIST, 85-95% FINE TO MEDIUM SAND, ANGULAR TO SUBANGULAR, 5-15% CLAY, TRACE <5% FINE GRAVEL AT CONTACT WITH ASPHALT. @ 1' CLAY % DECREASES - (SP), DARK OLIVE GRAY (5Y3/2), 95-100% FINE TO MEDIUM SAND, 0-5% FINES.
			1.0	D. P.	E.		SP SC SP SC SP	@3' SANDY CLAY/CLAYEY SAND NODULES TO 1/2" WITHIN POORLY GRADED SAND 5-15% SEA SHELLS 3-4', @ 4' OLIVE GRAY (5Y5/2).
			0.7	D. P.			SP	
5.0							SP	@5' STRONG HYDROCARBON ODOR
				D. P.	E.		SP	@6-7' 5-15% SEA SHELLS @6.8' WET
		▽	151.0					@7' SANDY CLAY/CLAYEY SAND NODULES NO LONGER PRESENT
			99.6	D. P.			SP	
			32.4	D. P.			SP	
10.0				D. P.			SP CH	CLAY INCREASING/SAND DECREASING FAT CLAY (CH), DARK GREENISH GRAY (10GY4/1), SOFT, WET, 90-100% CLAY, 0-5% SILT, 0-5% FINE SAND, HIGH PLASTICITY, LOW TOUGHNESS SLIGHT HYDROCARBON ODOR.
			0.5	D. P.	GT			HYDROCARBON ODOR NO LONGER PRESENT
				D. P.				@13' BLACK (N2.5/), HAND LENS VIEW REVEALS TINY FIBERS (PEAT)
				D. P.				SAND % INCREASING
15.0			0.0				SC	@14.8' CLAYEY SAND (SC) DARK GREENISH GRAY (10Y4/1), MEDIUM DENSE, WET, 70-80% FINE TO MEDIUM SAND, ANGULAR, 20-30% CLAY. BOTTOM OF BOREHOLE AT 15'

E = ENVIRONMENTAL SAMPLE TAKEN
GT = GEOTECHNICAL SAMPLE TAKEN

ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET

SURFACE ELEVATION _____

DRILLING METHOD 8" HOLLOW STEM AUGER

SAMPLING METHOD CAL. MOD. SPLIT SPOON

BORING DEPTH 15.5'

DATE BEGAN ~~1050~~ 1100 11 FEB 2002

DATE FINISHED 11 FEB 2002

LOGGED BY J. ANDERSON

EDITED BY _____

CHECKED BY _____

BORING NO. PZ-F

SHEET 1 OF 1

BORING LOCATION
BUILDING C
20'
162'
PZ-F
NOT TO SCALE

DEPTH (FEET)	WELL CONSTRUCTION	WATER LEVEL	PID (PPM) B-zone/stem/sample	BLOW COUNTS (BLOWS/FOOT)	SAMPLE TYPE	U.S.C.S.	LITHOLOGY	DESCRIPTION
0.0							AC	ASPHALT
			2.1	(13)	S.S.S.	GW	GW	WELL GRADED GRAVEL WITH SAND (GW), LIGHT OLIVE BROWN (2.5Y 5/4), MOIST, LOOSE, 45-55% FINE TO COARSE GRAVEL TO 3" SUBANGULAR TO SUBROUNDED, 35-45% FINE - MEDIUM, 0-5% COARSE SAND, SAND ANGULAR, 5-10% SILT, MAJORITY OF GRAVEL IS 1" TO 2".
				12 (22) 28 (9)		SW	SW	@ 0.8' WELL GRADED SAND WITH GRAVEL (SW), GREENISH BLACK (10Y 2.5/1), MOIST, LOOSE, 60-70% FINE TO COARSE SAND (85-95% FINE TO MEDIUM SAND), 5-15% COARSE, 10-20% FINE TO COARSE GRAVEL (95% FINE) TO 1.5", GRAVEL ANGULAR TO SUBROUNDED, SAND ANGULAR TO SUBROUNDED, 5-10% FINES.
			1.0	19	S.S.	qwa	SP	@ 2.3' POORLY GRADED SAND (SP), VERY DARK GRAY (5Y 3/1), MOIST, LOOSE, 85-95% FINE TO MEDIUM SAND, 0-5% COARSE SAND, 0-5% FINE GRAVEL, 0-5% FINES, SAND IN ANGULAR TO SUBROUNDED, GRAVEL SUBANGULAR TO SUBROUNDED.
				7 (3) 8 (4) 10 (5)	S.S.S.		CH	@ 3' (.1' THICK CLAY LENS) FAT CLAY (CH), DARK OLIVE GRAY (5Y 3/2), MOIST, SOFT, HIGH PLASTICITY, 90-100% CLAY, 0-5% SILT, 0-5% FINE SAND,
			0.9				SP	@ 3.1' POORLY GRADED SAND (SP), OLIVE GRAY (5Y 5/2), MOIST, LOOSE, 100% FINE TO MEDIUM SAND (70-80% FINE SAND, 20-30% MEDIUM SAND), ANGULAR, 60-70% QUARTZ, 5-10% FELDSPAR, 25-35% LITHIC & MAFIC.
5.0				(N) 38 (3)				@ 4.8-5.2' (CONTACT) 3 ATTEMPTS AT THIS DEPTH
				6 12 13	S.S.S.		CH	SANDY FAT CLAY WITH GRAVEL (CH), MOTTLED VERY DARK GRAY, DARK GREENISH GRAY & DARK OLIVE GRAY (N3/, 5GY 4/1 & 5Y 3/2), MEDIUM STIFF, MOIST, 65-75% HIGH PLASTICITY, 65-75% FAT CLAY, 5-15% SILT, 15-25% (10-20% SAND (FINE), 10-20% FINE TO 60-70% COARSE GRAVEL TO 2.5" SAND AND GRAVEL ANGULAR, TRACE <1% WOOD FRAGMENTS, SLIGHT HYDROCARBON ODOR, GRAVEL IS META-MORPHIC (GNEISSIC).
			3.0	N.D.[35]				@ 6.8 GRAVEL NO LONGER PRESENT / SAND AND CLAY CONTENTS VARY
				4 5 6			SC/CH	BETWEEN CLAYEY SAND / SANDY FAT CLAY (SC/CH), DARK GREENISH GRAY (10Y 4/1), WET, MEDIUM DENSE / SOFT MEDIUM STIFF, 40-60% FINE TO MEDIUM SAND, 95-55% FAT CLAY, 5-15% SILT, SAND ANGULAR, HIGH PLASTICITY, STRONG HYDROCARBON ODOR.
			41.2	4 5 7			SC	CLAY CONTENT DECREASING @ 7.5' CLAYEY SAND (SC), 65-75% FINE SAND, 0-5% MEDIUM SAND, ANGULAR, 25-35% CLAY, MEDIUM TO HIGH PLASTICITY, STRONG HYDROCARBON ODOR.
								@ 8' 70-80% F-M SAND & SILT, 15-25% CLAY & SILT, STRONG HYDROCARBON ODOR.
			23.0	8 2 6			CH	@ 8.5 CLAY INCREASING, SANDY FAT CLAY (CH), GREENISH GRAY (5GY 6/1), 55-65%, WET, SOFT, 60-70% FAT CLAY, 0-10% SILT, 15-25% FINE SAND
							SC	HIGH PLASTICITY
							SC	@ 8.8-8.9' CLAYEY SAND (SC) 70-80% FINE SAND, ANGULAR, 20-30% SILT & CLAY, MEDIUM PLASTICITY, DARK GREENISH GRAY (10Y 4/1), MEDIUM DENSE, STRONG HYDROCARBON ODOR.
10.0			2.6				CH	@ 8.9-9.0 (CH) SANDY FAT CLAY, MOTTLED VERY DARK GRAY, BLA WITH BLACK AND LIGHT GREENISH GRAY SPOTS (N3/, N2.5/ & 10Y 7/1), STIFF, MOIST, 60-70% CLAY, HIGH PLASTICITY, 20-30% FINE SAND, <1% MEDIUM TO COARSE SAND, 10-20% SILT.
			NO RECOVERY	NO MORE SAMPLES				@ 10' SILT & SAND DECREASING, MOTTLED BLACK AND DARK GREENISH GRAY (N2.5/ & 10GY 5/1) 70-80% CLAY, HIGH PLASTICITY, 10-20% FINE SAND, 0-10% SILT NO HYDROCARBON ODOR AT 10.5'
					GRAB			GRAB SAMPLE FROM SIDE OF AUGERS REVEALS SANDY FAT CLAY (CH), DARK GREENISH GRAY (10Y 4/1)
15.0								

(2) BLOW COUNTS 2ND ATTEMPT 4.5-6.0
(3) " " 3RD " " - "
(13) BLOW COUNTS FOR RESAMPLE 12 FEB 2002

Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

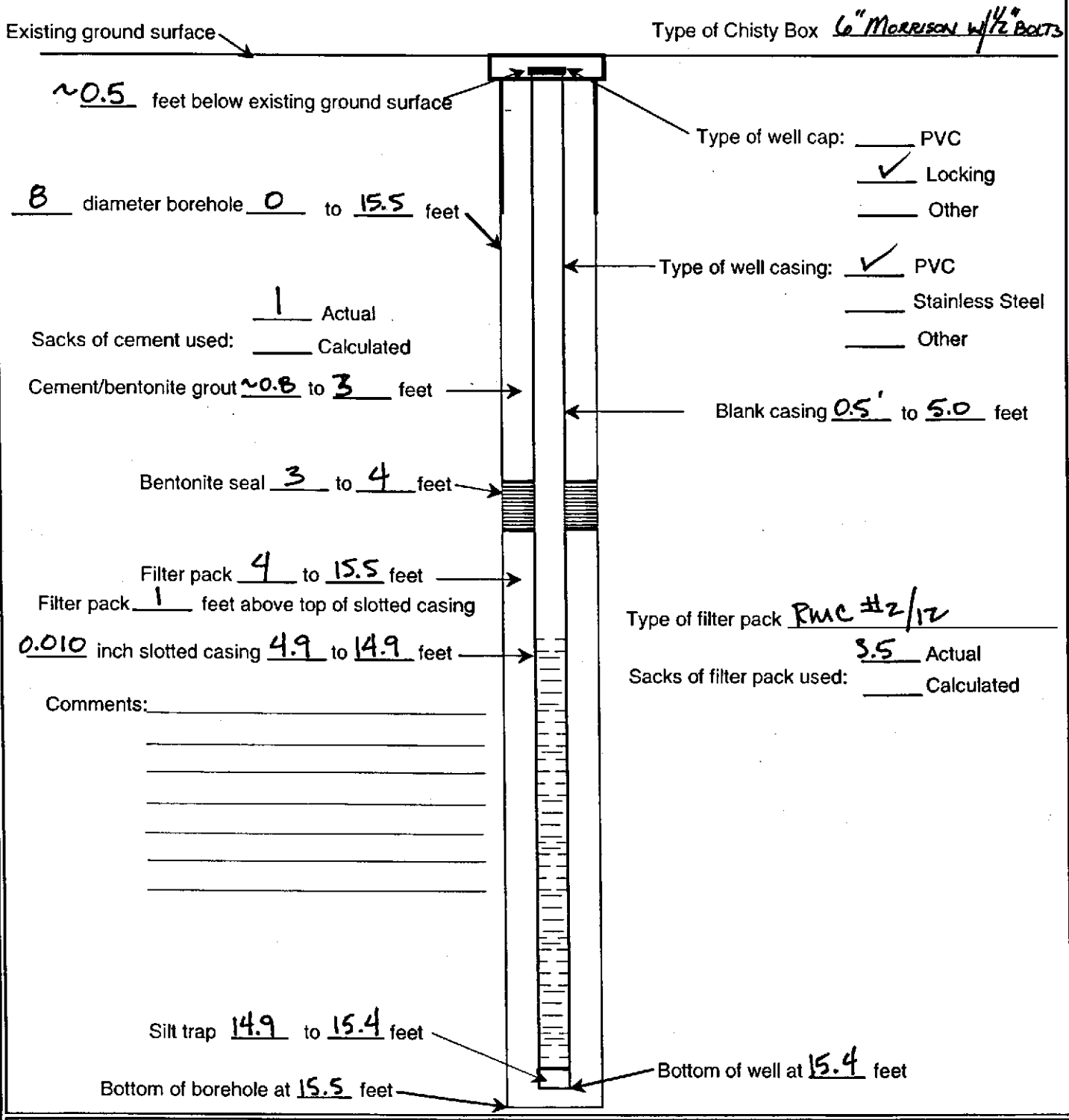
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET BORING DEPTH 15.5' **BORING NO. PZ-A**

SURFACE ELEVATION _____ DATE BEGAN 11 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 11 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

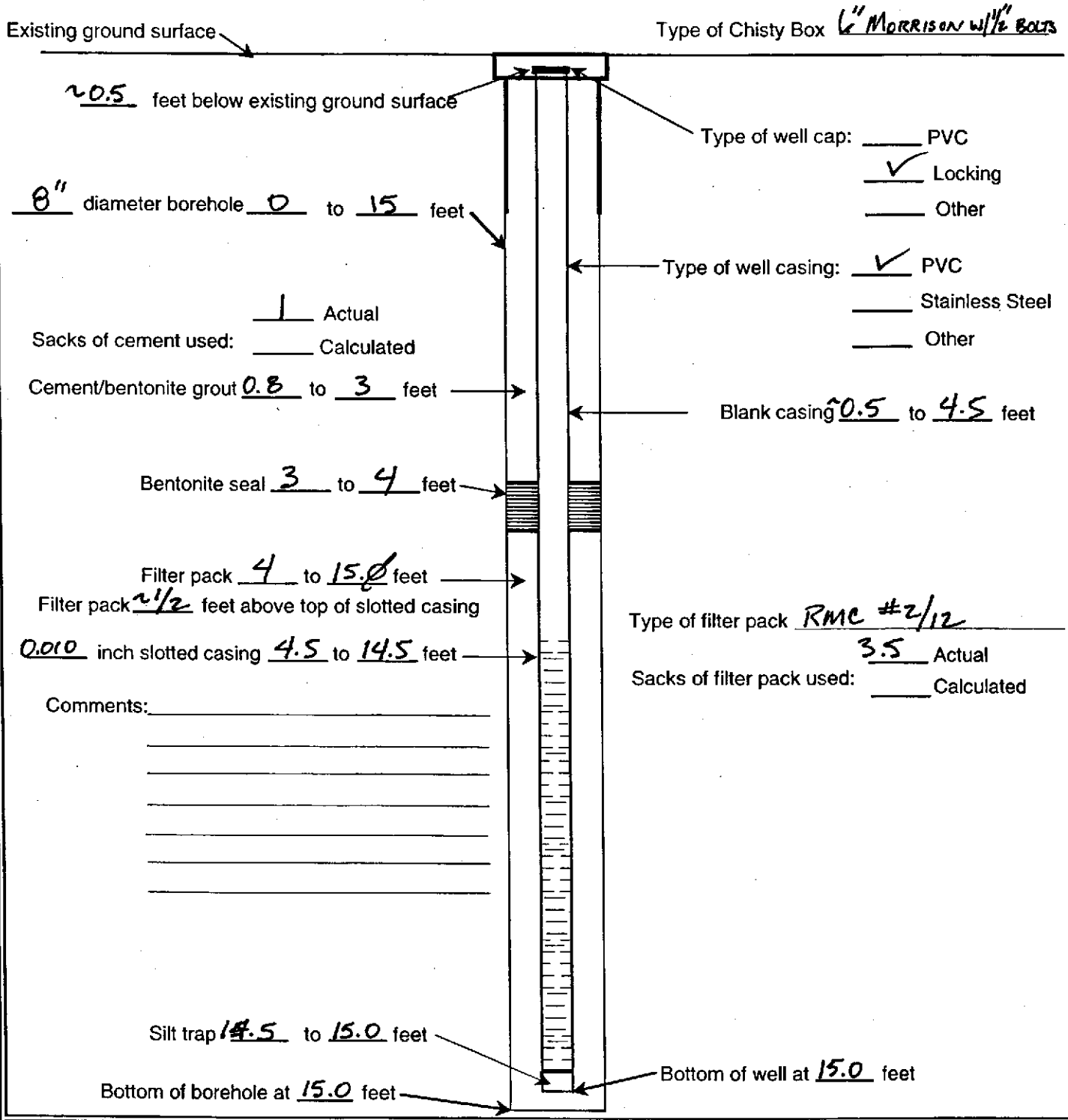
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET BORING DEPTH 15' **BORING NO. PZ-B**

SURFACE ELEVATION _____ DATE BEGAN 0725 12 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" Hollow Stem Auger DATE FINISHED 0910 12 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

PROJECT NO. 00-152.15

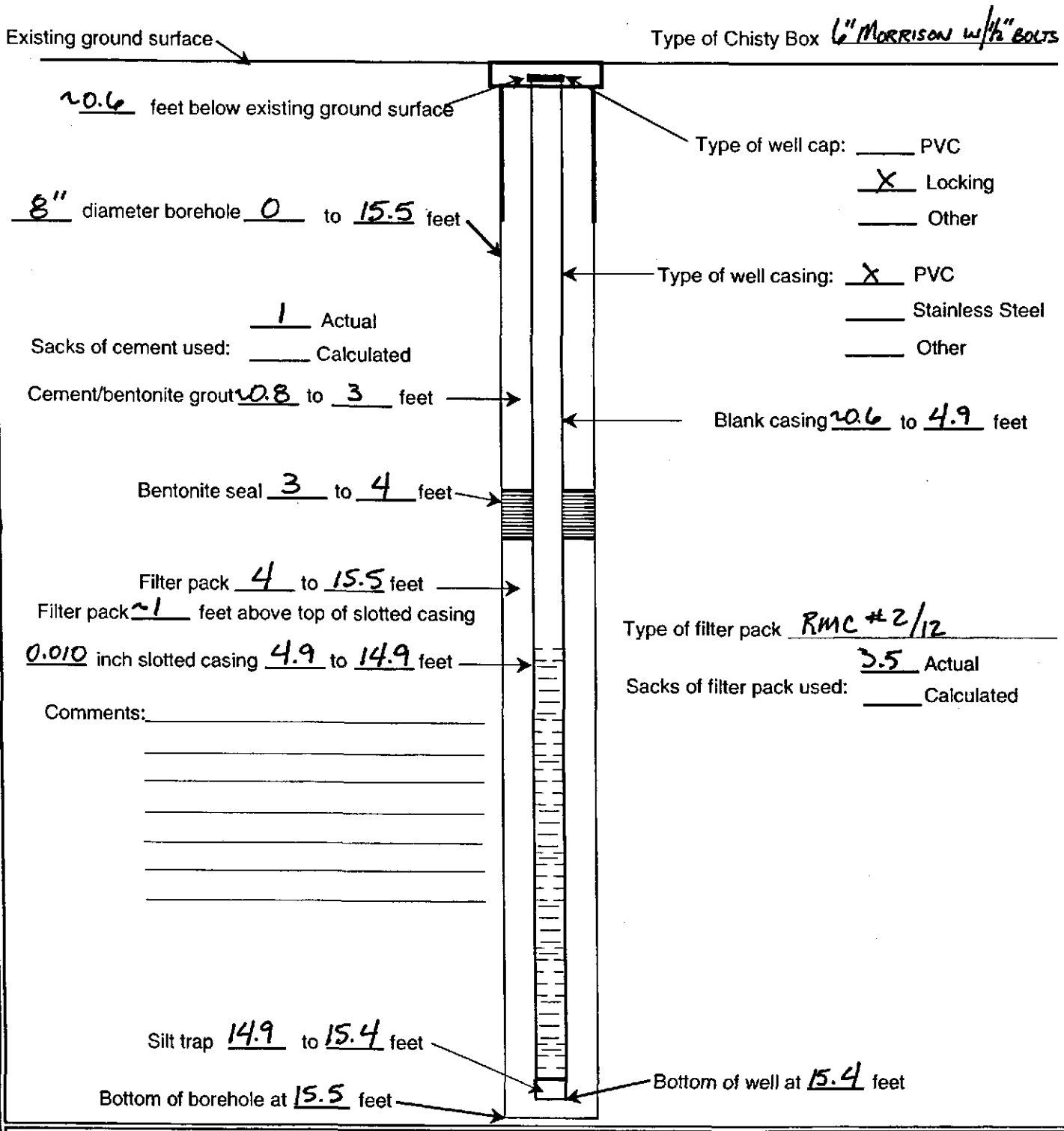
LOCATION 2225 7TH STREET BORING DEPTH 15.5' **BORING NO. PZ-C**

SURFACE ELEVATION _____ DATE BEGAN 0730 11FEB2002

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED ~~0900~~ 0840 11 FEB 2002 LOGGED BY J. ANDERSON

gwa

BELOW GROUND COMPLETION



ITSI **Innovative Technical Solutions, Inc.**

PROJECT PORT OF OAKLAND

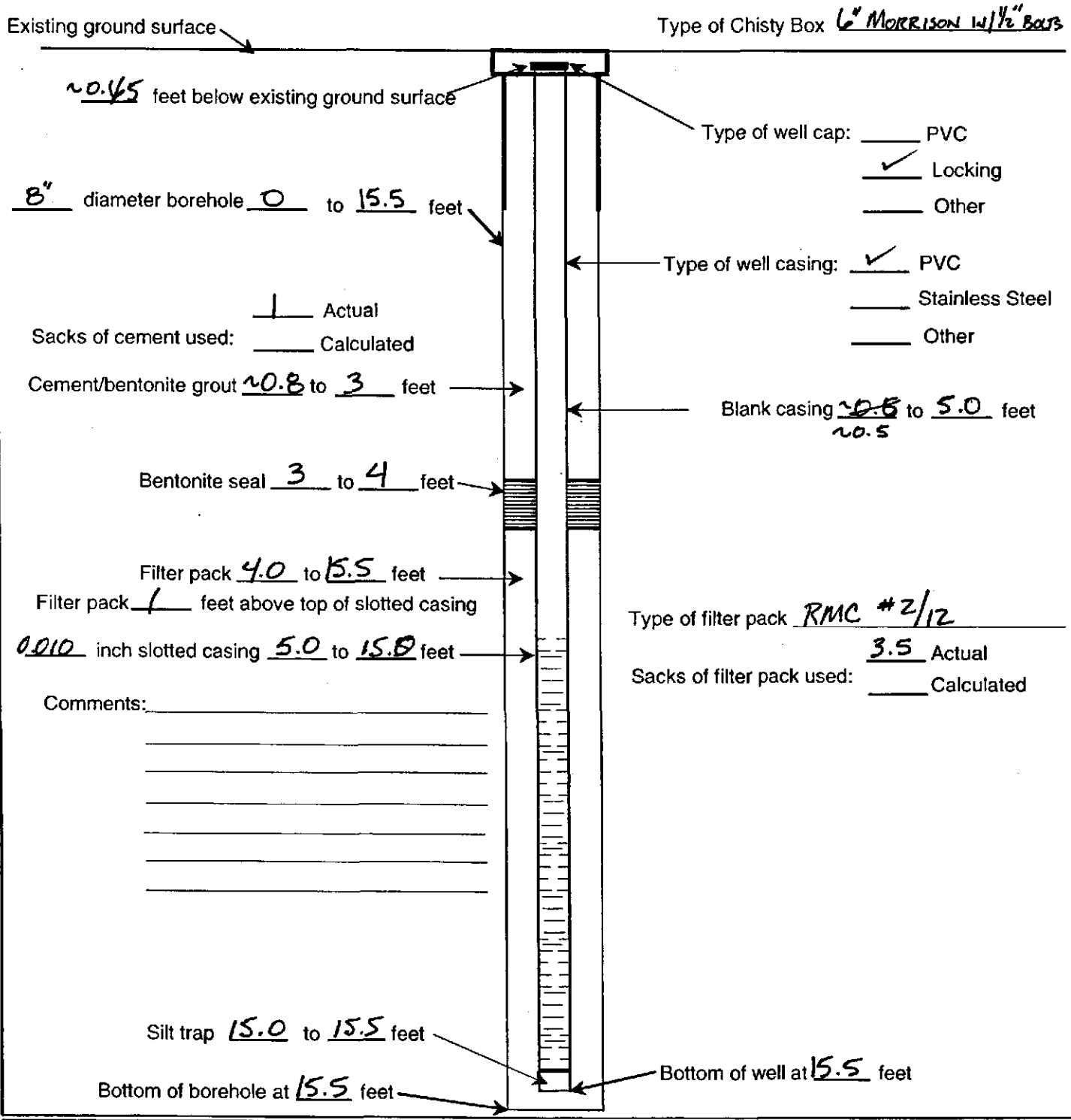
PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET BORING DEPTH 15.5' **BORING NO.** PZ-D

SURFACE ELEVATION _____ DATE BEGAN 0845 11FEB2002 LOGGED BY R. LEONG

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 1015 11FEB2002

BELOW GROUND COMPLETION



Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

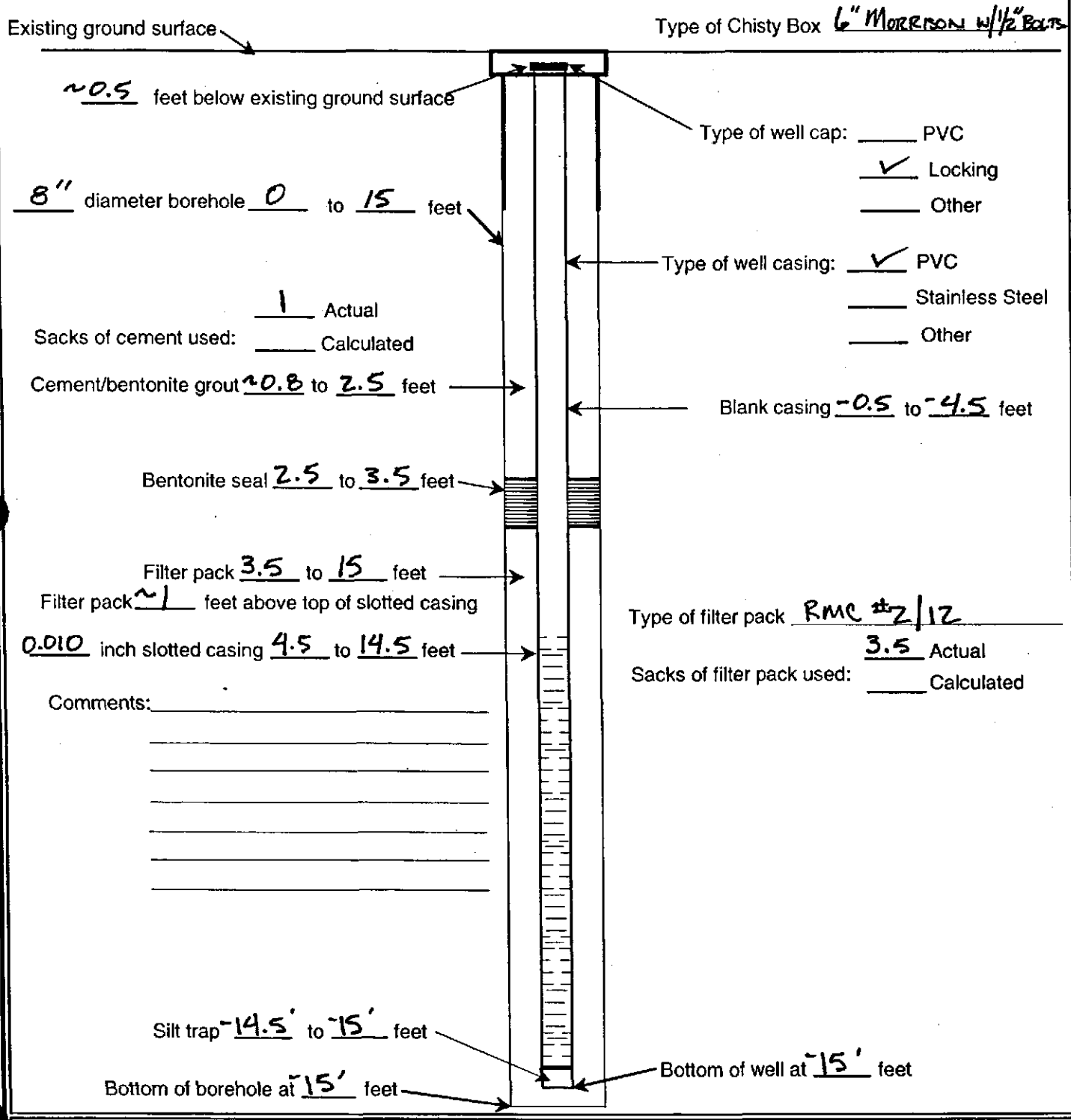
PROJECT NO. 00-152.15

LOCATION 2225 7TH STREET BORING DEPTH 15' **BORING NO.** PZ-E

SURFACE ELEVATION _____ DATE BEGAN 1230/13 FEB 2002 LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER DATE FINISHED 13 FEB 2002

BELOW GROUND COMPLETION



ITSI Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

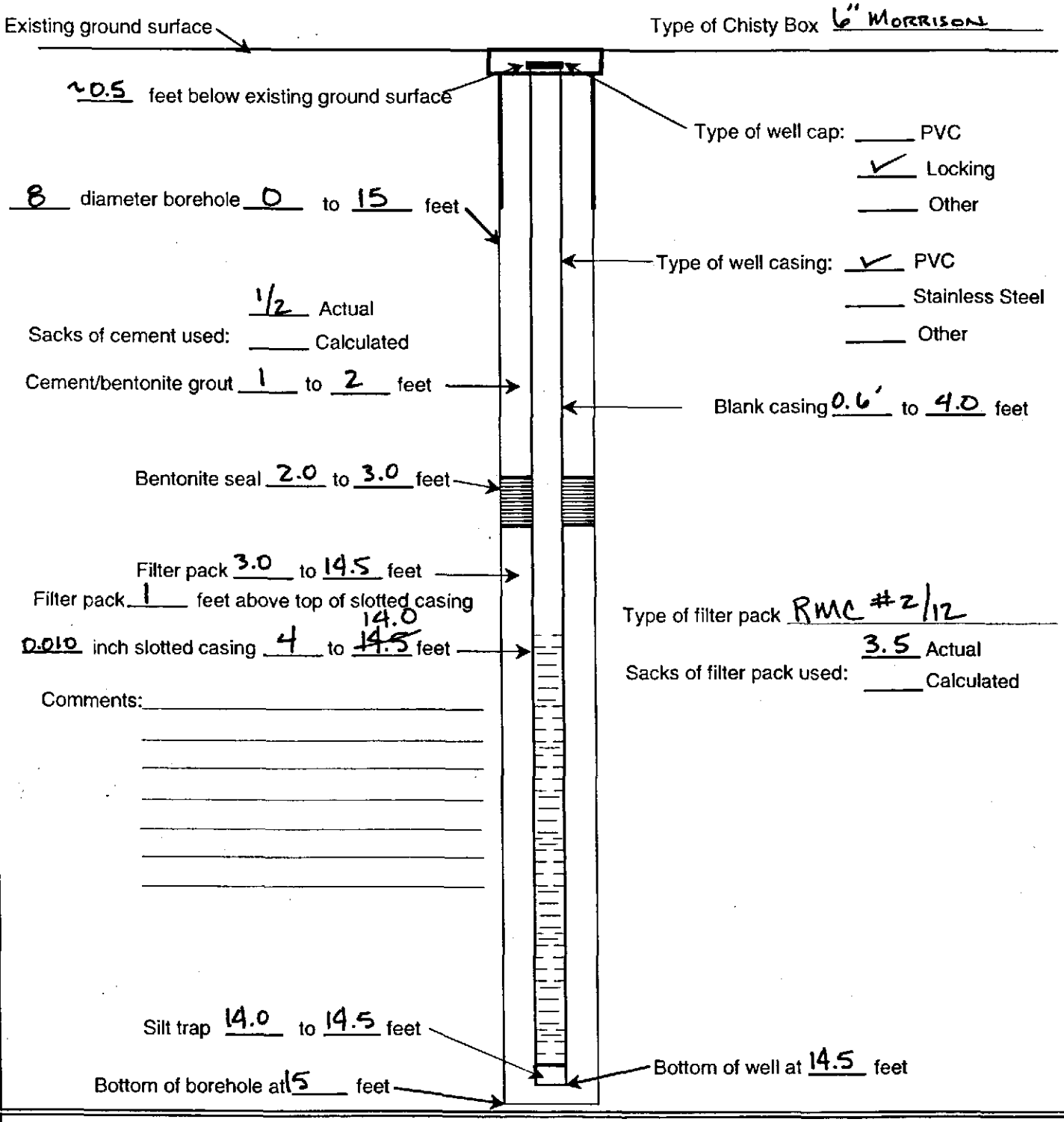
PROJECT NO. 00-152.15

LOCATION 2277 7TH STREET | BORING DEPTH 15' | **BORING NO. PZ-F**

SURFACE ELEVATION _____ | DATE BEGAN 11 FEB 2002 | LOGGED BY J. ANDERSON

DRILLING METHOD 8" HOLLOW STEM AUGER | DATE FINISHED 11 FEB 2002

BELOW GROUND COMPLETION



Innovative Technical Solutions, Inc.

PROJECT PORT OF OAKLAND

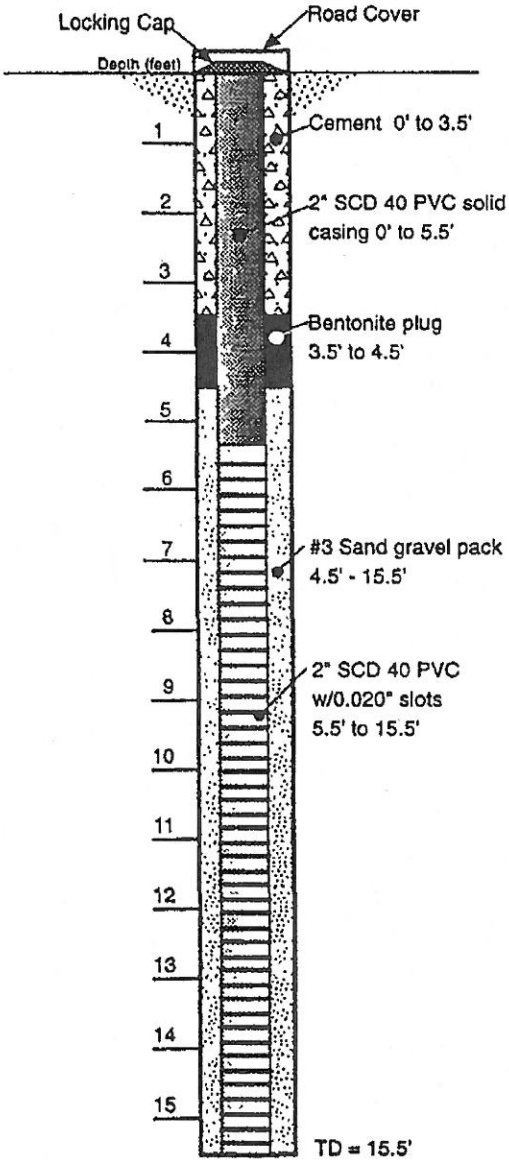
PROJECT NO. 00-152.15

Port of Oakland-2277 Seventh St.

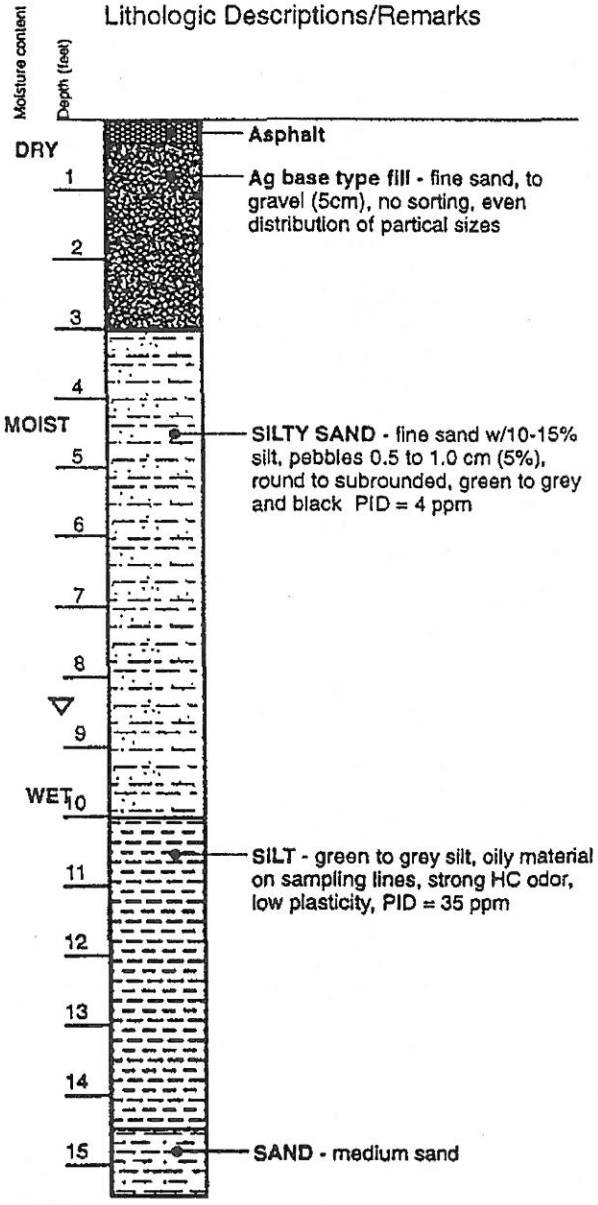
Bore Hole MW-1

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.38
Recorded By JC Borrego
Registered Geologist

Well As-Built



Lithologic Descriptions/Remarks



REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5028
STATE OF CALIFORNIA

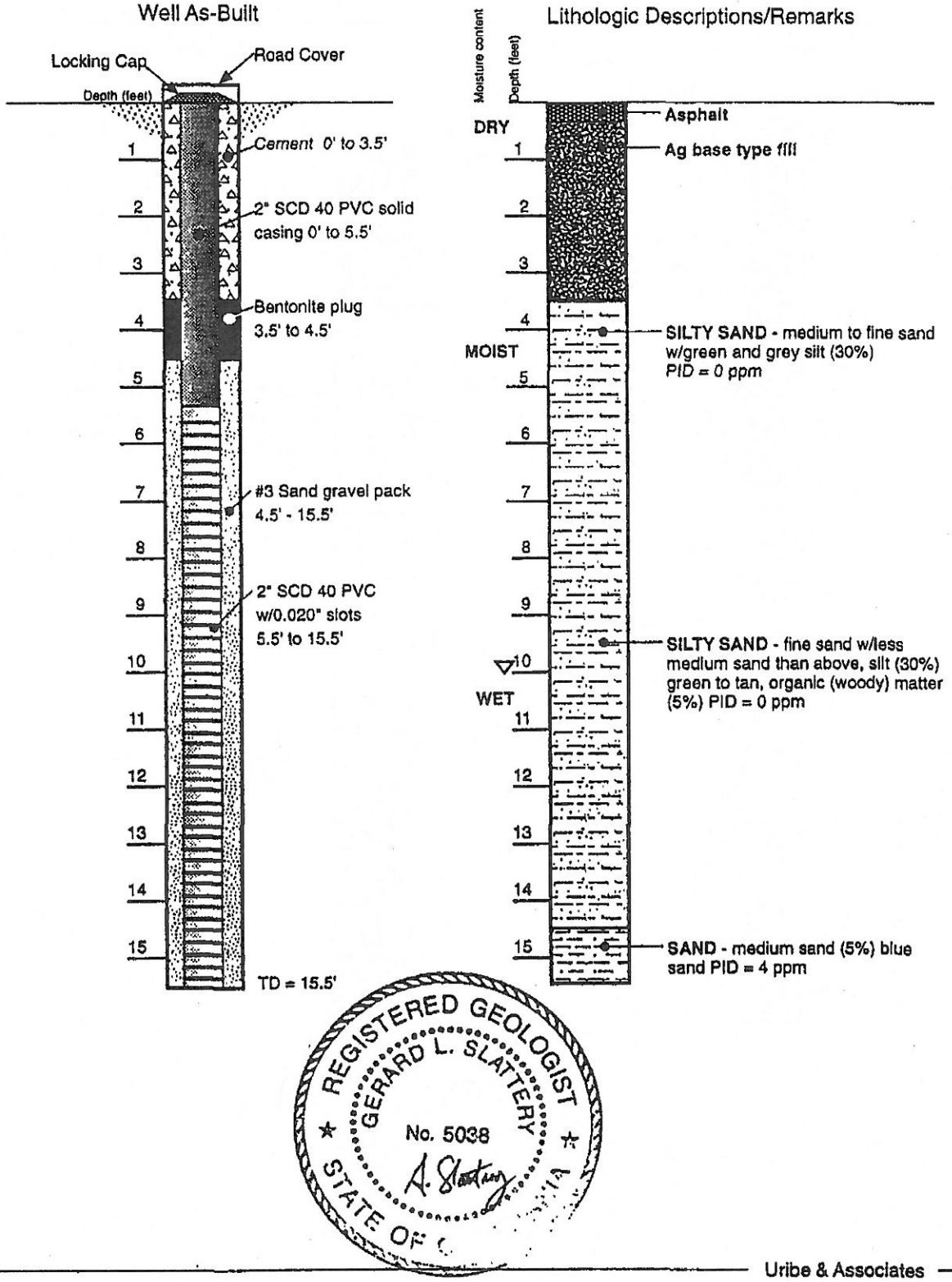
96-209 MW-1 11/10/94 DY FR

Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole MW-2

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.38
Recorded By JC Borrego
Registered Geologist



96-209 MW-2 9/27/94 DY FH

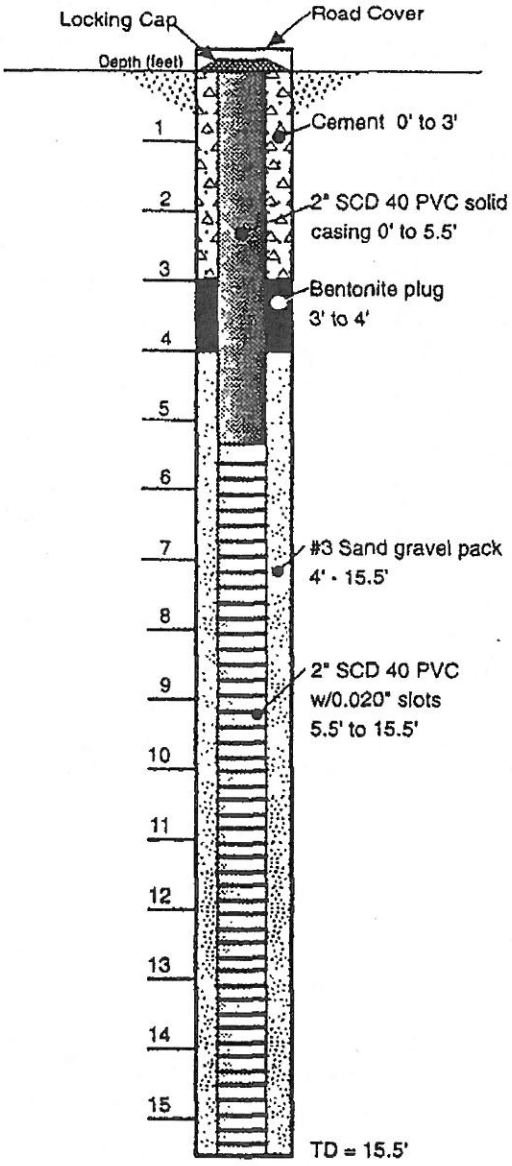
Uribe & Associates

Port of Oakland-2277 Seventh St.

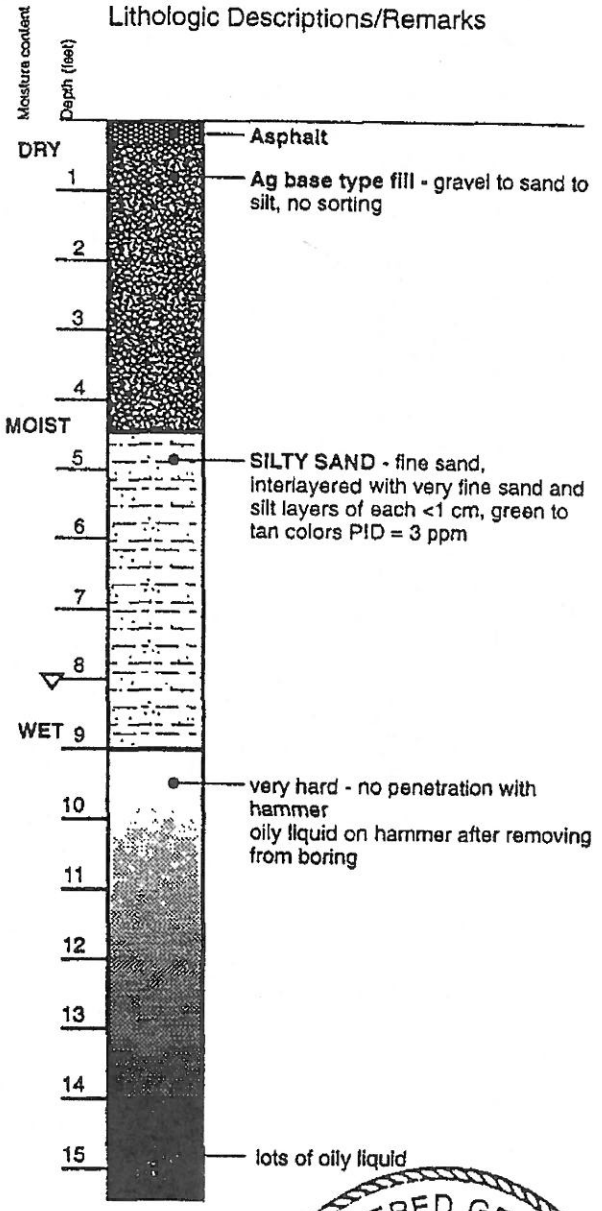
Bore Hole MW-3

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.24
Recorded By JC Borrego
Registered Geologist

Well As-Built



Lithologic Descriptions/Remarks



REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5028
STATE OF CALIFORNIA

Uribe & Associates

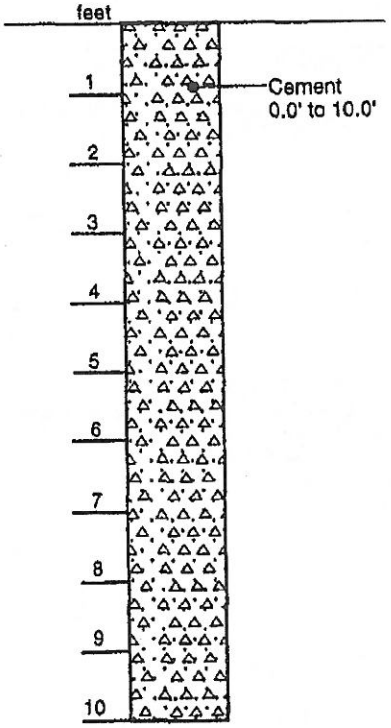
96-209 MW-3 9/27/94 DY FH

Port of Oakland-2277 Seventh St.

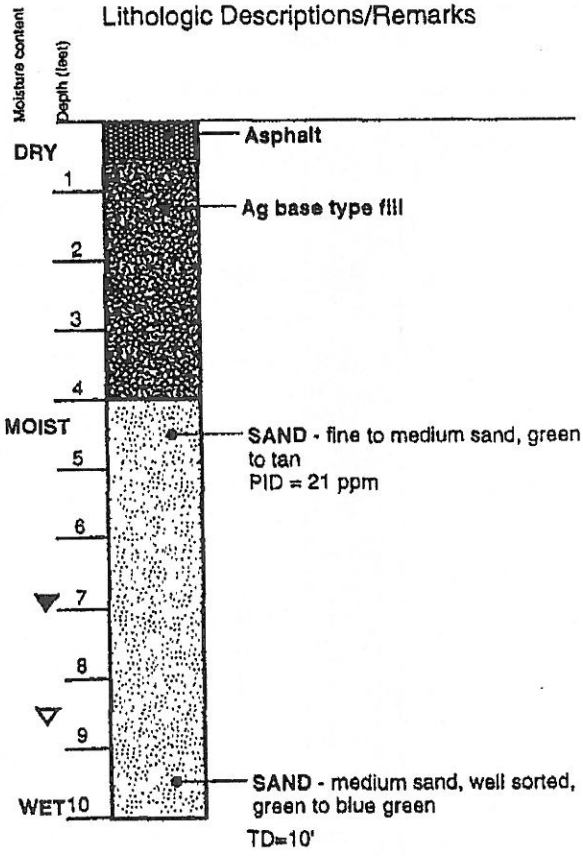
Bore Hole SB-1

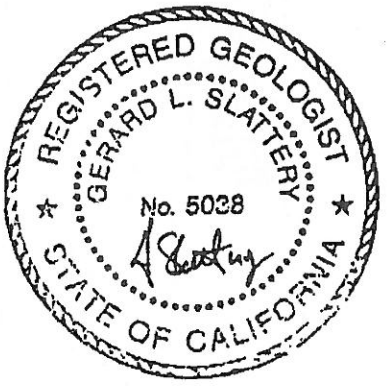
Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks





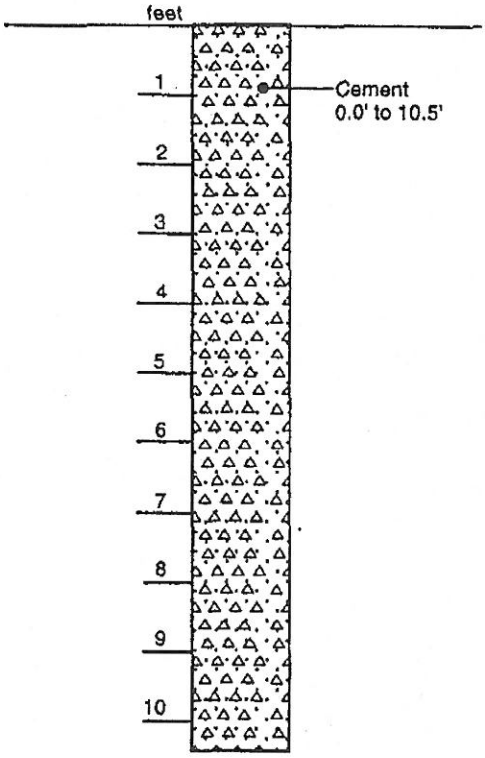
95-209 SB-1 9/27/94 DY RH

Port of Oakland-2277 Seventh St.

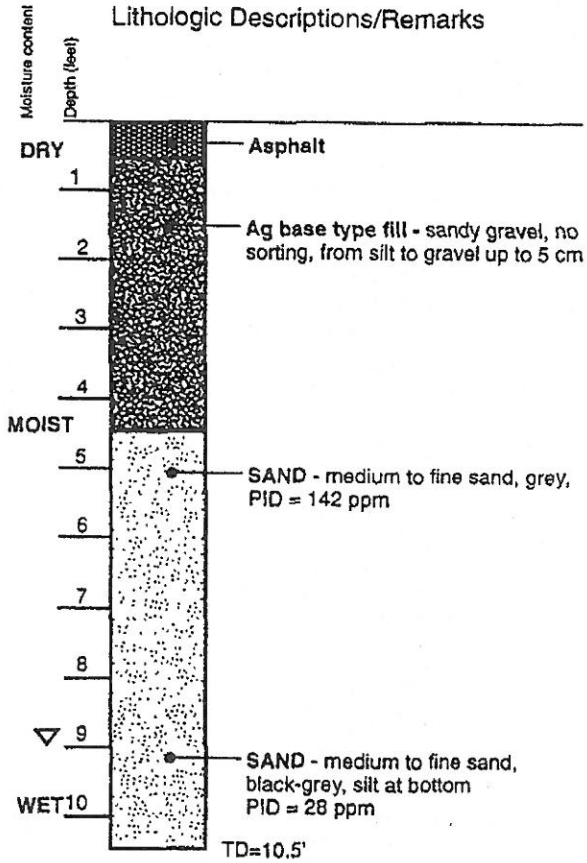
Bore Hole SB-2

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks



REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

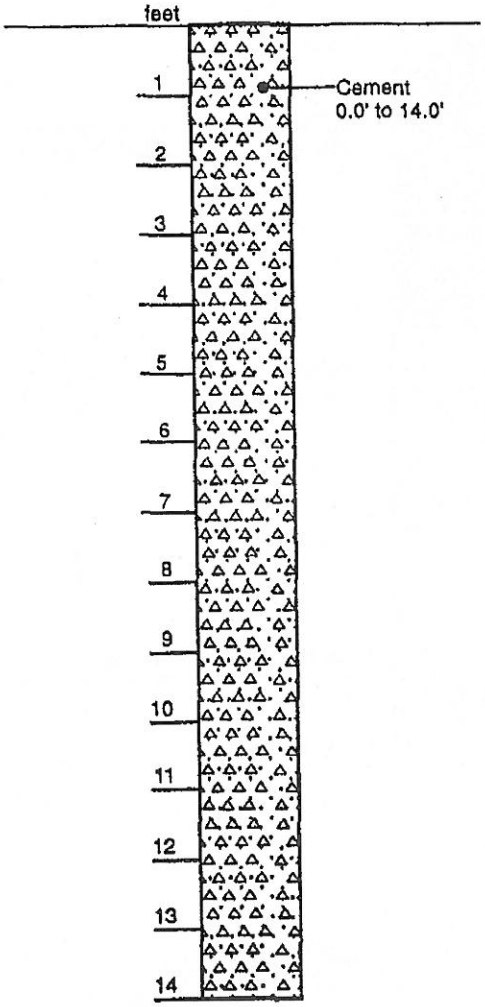
96-209 SB-2 11/10/94 GY FH

Port of Oakland-2277 Seventh St.

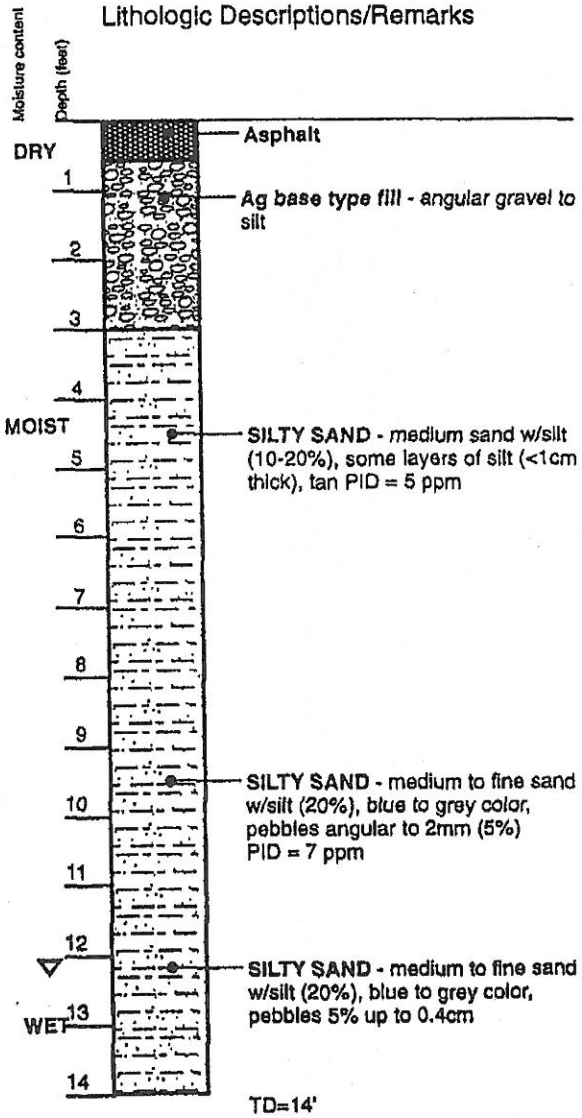
Bore Hole SB-3

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks



TD=14'

REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

96-209 SB-3 9/27/94 DY FH

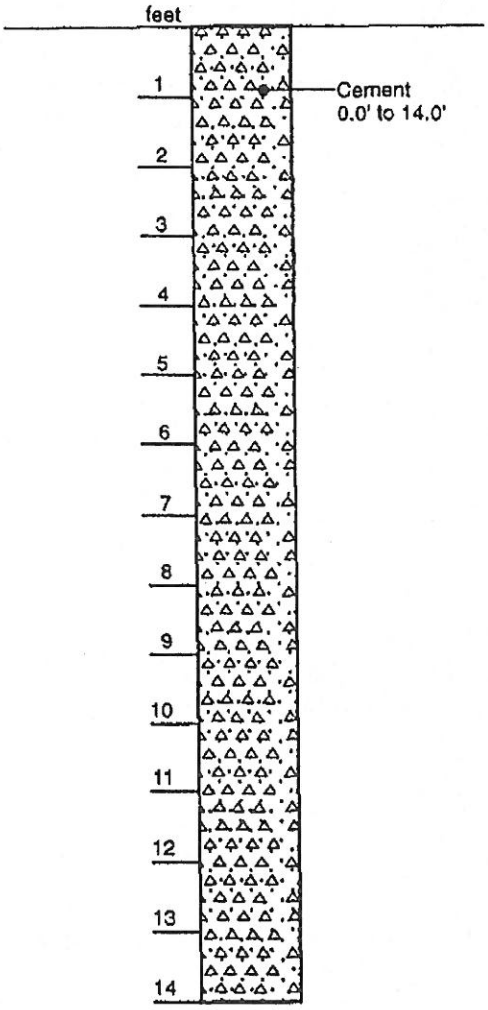
Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole SB-4

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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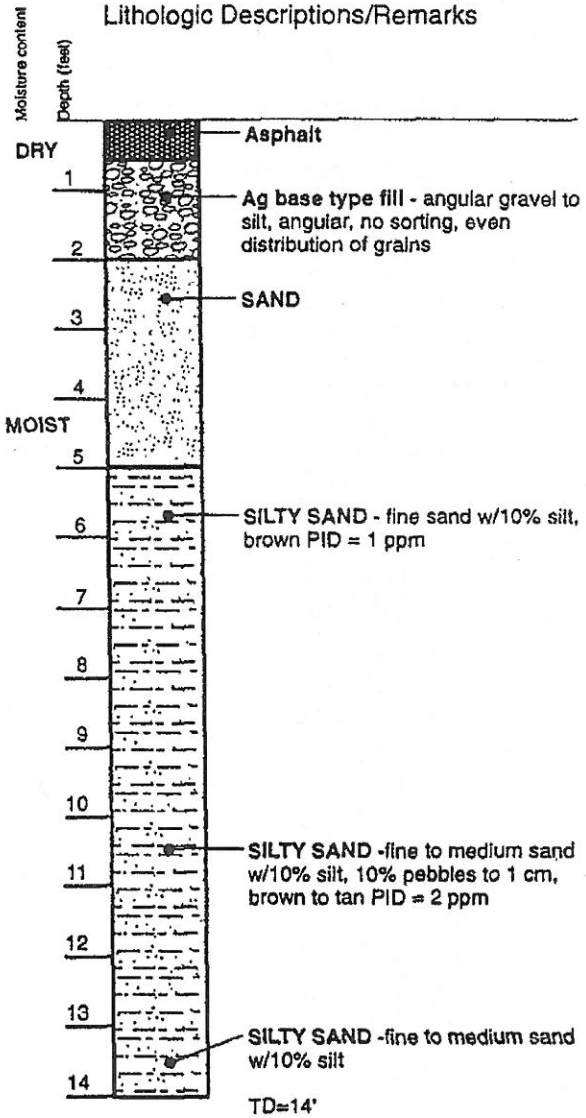


96-209 SB-4 11/10/94 DY FH

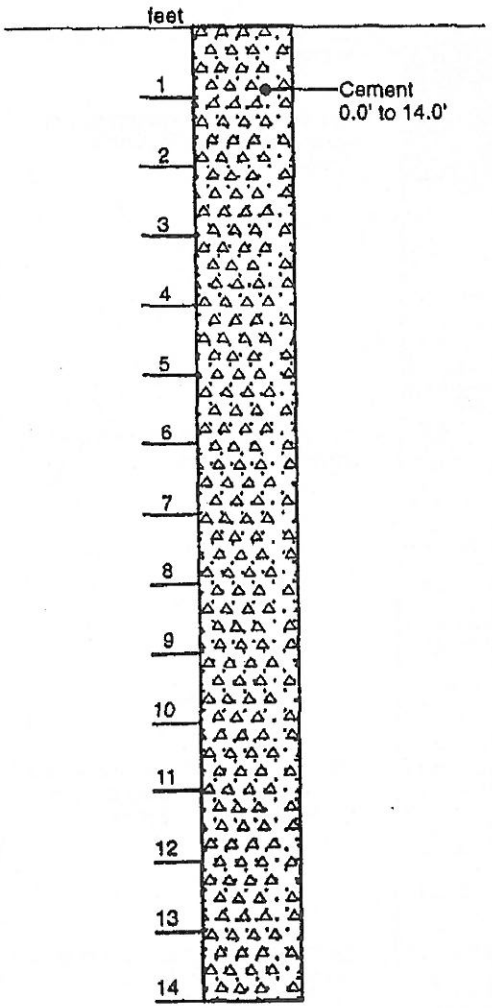
Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole SB-5

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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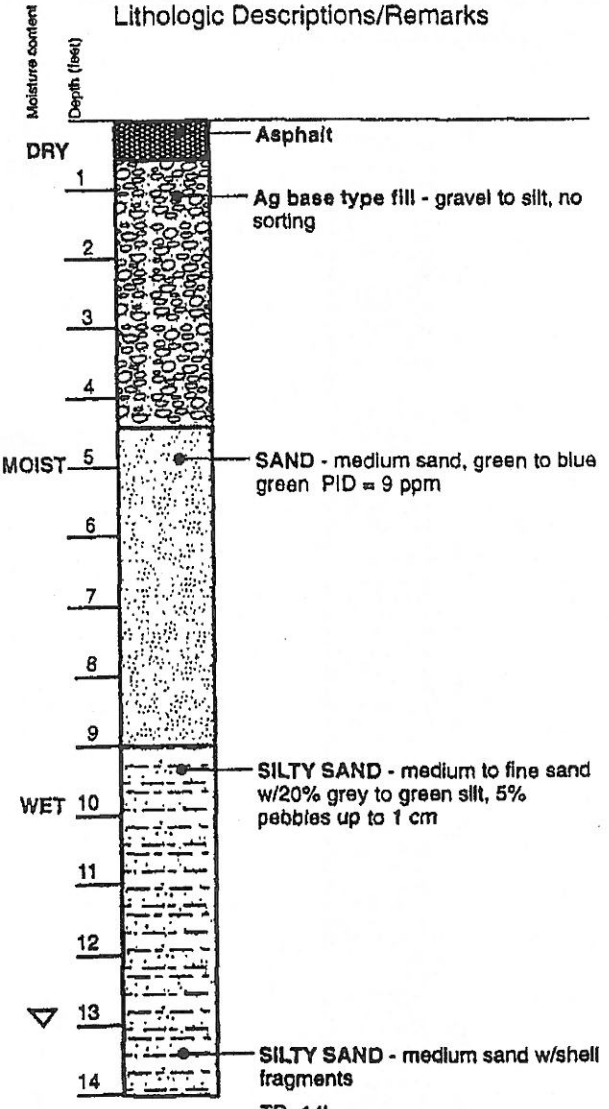
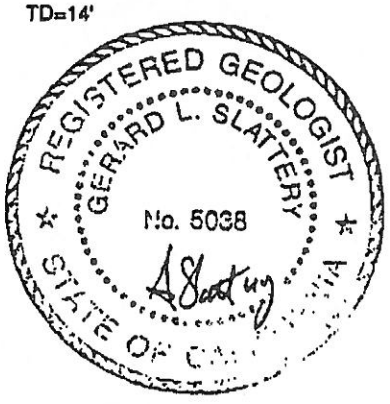


TD=14'



95-209 SB-5 9/27/94 DY FH

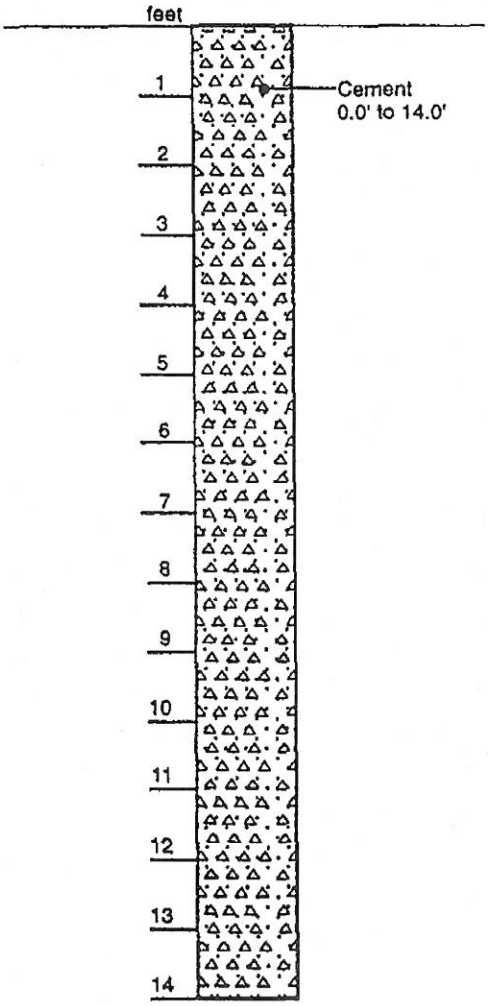
Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole SB-6

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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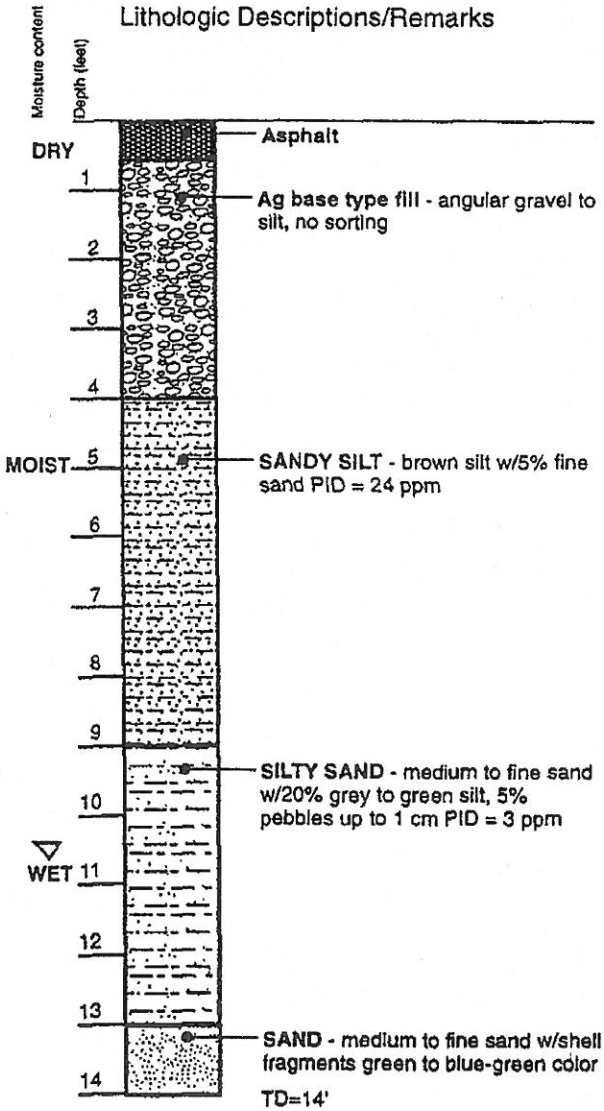
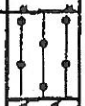
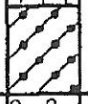
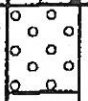


96-209 SB-6 9/27/94 DY FH

Uribe & Associates

GEOLOGIC LEGEND

COARSE-GRAINED SOILS	GRAVELS more than 1/2 of coarse fraction > No. 4 Sieve	LITTLE OR NO FINES		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures
		APPRECIABLE NO FINES		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS more than 1/2 of coarse fraction < No. 4 Sieve	LITTLE OR NO FINES		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sands, little or no fines
		APPRECIABLE NO FINES		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS	SILTS AND CLAYS Liquid limit < 50			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit > 50			MH	Inorganic silts, micaceous or diatomoceous fine sandy or silty soils, elastic silts
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				Pt	Peat and other highly organic soils

SYMBOL LEGEND:

- Cement
- Sand
- Bentonite
- Driven Interval of Soil Sample
- Sample preserved for possible analysis
- No sample recovered
- Stabilized water level
- Groundwater level encountered during drilling

LEGEND TO BORING LOGS

PORT OF OAKLAND
BUILDING C-401
2277 SEVENTH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-270

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10270 -- DWG 8-5-95 MAP 1-1

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-7

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

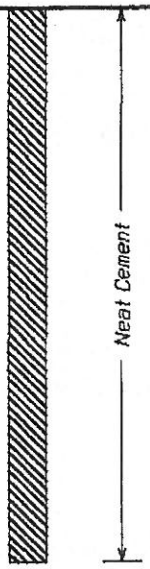
LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Solis Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
						SW	gravelly SAND: coarse-grained sand.
N/A	0		5			CL	sandy CLAY: moderate yellow/brown, damp, medium stiff; medium- to coarse-grained sand.
N/A	0					SC	clayey SAND: medium brown, damp, loose; medium- to coarse-grained sand.
N/A	0		10			SP	SAND: medium tan, wet, loose; medium- to coarse-grained sand; shell fragments to 2%.
N/A	NM		15			SC	clayey SAND: gray/black, wet; organics to 10%; shells to 2%; rare sand to 2%.
							Boring terminated at 15 feet.
			20				
			25				
			30				



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-8

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Solls Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
						GW	GRAVEL with sand-clay mixtures.
N/A	0		5			GC	clayey GRAVEL: dark brown, damp, hard; coarse-grained sand to 5%.
N/A	0					CL	silty CLAY: mottled tan and dark brown, damp, soft; root traces to 2%; gravel to 1 cm approximately 2%.
N/A	0.2	Neat Cement	10			SW	gravelly SAND: dark gray/black, moist to wet; organic fragments (wood) to 10%; oily residue on gravel.
N/A	NM		15			GW	GRAVEL-sand matrix: dark gray/black, wet; coarse-grained sand; oily globs. Sheen on samples.
							Boring terminated at 15 feet.
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-9

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Solls Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinhelmer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
						SW	sandy GRAVEL: medium tan, dry.
N/A	0					GC	clayey GRAVEL: dark gray/brown, damp to moist, dense; wood fragments present.
N/A	0.2		5			CL	silty CLAY: mottled dark brown and green/tan, damp; organics to 2%.
N/A	0.2		10				Same: moist.
N/A	NM		15			SP	SAND: gray, wet to saturated; fine- to medium-grained sand; shells to 2%.
							Boring terminated at 16 feet.
			20				
			25				
			30				

Neat Cement

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-11

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Soils Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
						SP	
N/A	0						SAND: medium gray, damp, loose; fine- to medium-grained sand.
N/A	0		5				Same: moist; shell fragments <2%.
N/A	0						Same: wet; no shell fragments.
N/A	NM		10				Same: sheen and globules. Brown free product.
			15				Boring terminated at 15 feet.
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-10

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Solls Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
N/A	0					SP	SAND: medium gray, damp to moist; fine- to medium-grained sand.
N/A	0		5			CL	silty CLAY: mottled light brown and gray/black, damp to moist; organics to 5%; gravel to 1 cm <5%.
N/A	0					CL	CLAY: mottled green/gray and black, moist, soft; organics to 10%.
N/A	3.1		10			SC	gravelly-clayey SAND: mottled tan and green/gray, moist; gravel to 1.5 cm approximately 10%.
			15				Boring terminated at 15 feet.
			20				
			25				
			30				

Neat Cement

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-12

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *06/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Soils Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinhelmer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
						GW	GRAVEL with sand matrix: medium tan gravel; glass, wood, and brick fragments present.
N/A	0					GC	GRAVEL with clay-sand matrix: dark brown, damp, loose; organics, brick, and wood fragments to 20%.
N/A	0		5			SP	SAND: medium gray, damp to moist; fine- to medium-grained; rare shell fragments <1%.
N/A	0		10				Same: wet.
N/A	NM		15			SC	clayey SAND: gray/black, wet to saturated; medium-grained sand; black clay blebs to 20%.
							Boring terminated at 15 feet.
			20				
			25				
			30				

WELL DIAGRAN: Neat Cement

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-13

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 05/11/95
CLIENT: Port of Oakland
LOCATION: 2277 Seventh Street, Oakland, California
DRILLING METHOD: Cuttingless
DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A
LOGGED BY: Chris Reinheimer APPROVED BY: Al Seville

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		Neat Cement					Asphaltic concrete/roadbase.
N/A	0		5	■		GC	GRAVEL with clay-sand matrix: gray black; brick and wood fragments present.
N/A	0			■		CL	sandy CLAY: mottled green/gray and gray/black, damp; organics to 5%; root traces present.
N/A	0.5		10	■			Same.
N/A	NM		15	■		SP	SAND: black, wet; medium-grained sand; silt-clay sand mixtures to <5%; shell fragments to 1%.
							Boring terminted at 15 feet.
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-14

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 05/11/95
CLIENT: Port of Oakland
LOCATION: 2277 Seventh Street, Oakland, California
DRILLING METHOD: Cuttingless
DRILLING COMPANY: Soils Exploration Srv. CASING ELEVATION: N/A
LOGGED BY: Chris Reinheimer APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		Neat Cement	0				Asphaltic concrete/roadbase.
N/A	0.8			■		SW	gravelly SAND: gray/black, damp; medium- to coarse-grained sand.
			5			SP	
N/A	3.1			■			SAND: gray, damp to moist; fine- to medium-grained.
							Auger refusal at 8 feet.
			10				Boring terminated at 8 feet.
			15				
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-15

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Soils Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
N/A	0.2		5			SW	gravelly SAND: gray/black, moist; wood and brick fragments present.
N/A	1.2					SP	SAND: green/gray, damp to moist; fine- to medium-grained; shells to 20%.
N/A	3.8		10			CL	CLAY: mottled gray/black and green/gray, wet; organics to 20%.
N/A	NM						Rock in shoe; sheen.
			15				Boring terminated at 14.5 feet.
			20				
			25				
			30				

Neat Cement

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-16

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Soils Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAN	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		Neat Cement					Asphaltic concrete/roadbase.
N/A	0.8			■		SW	gravelly SAND: black, damp; medium- to coarse-grained sand; gravel to 2"+; some clay blobs.
N/A	1.8		5	■		SP	SAND: green/gray, damp to moist; fine- to medium-grained; shells to 5%.
N/A	NM		10	■		CL	CLAY: gray, moist to wet; product on sampler.
N/A	NM		15	I		SC	clayey SAND: gray/black; fine- to medium-grained sand; shells to 5%; sheen on sample.
							Boring terminated at 15 feet.
			20				
			25				
			30				

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING SB-17

SEE SITE PLAN

ALISTO PROJECT NO: *10-270-01* DATE DRILLED: *05/11/95*

CLIENT: *Port of Oakland*

LOCATION: *2277 Seventh Street, Oakland, California*

DRILLING METHOD: *Cuttingless*

DRILLING COMPANY: *Soils Exploration Srv.* CASING ELEVATION: *N/A*

LOGGED BY: *Chris Reinheimer* APPROVED BY: *Al Sevilla*

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Asphaltic concrete/roadbase.
N/A	0.2					SW	gravelly SAND: medium gray/green, damp; fine- to medium-grained sand; gravel to 2" approximately 10%.
N/A	NM		5			SP	SAND: medium green/gray, moist to wet; fine- to medium-grained; shells to 2%.
N/A	NM					CL	CLAY: gray/black; organics to 10%; some medium-grained sand.
N/A	NM		10			SP	SAND: gray/black, wet to saturated; medium- to coarse-grained sand; shell fragments to approximately 1%.
			15				Boring terminated at 15 feet.
			20				
			25				
			30				

Neat Cement

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

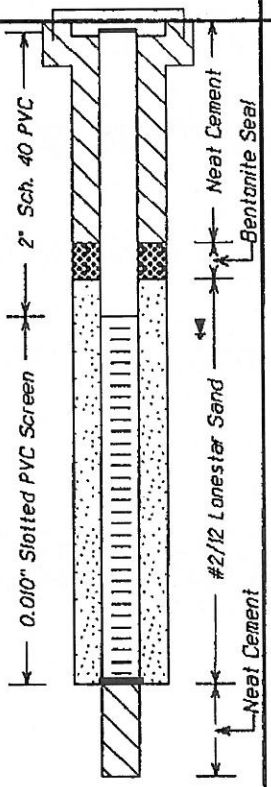
LOG OF BORING MW-4

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95
CLIENT: Port of Oakland
LOCATION: 2277 E. 7th Street, Oakland, CA.
DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler
DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 13.15 'MSL
LOGGED BY: Chris Reinhelmer APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						3" asphalt; 2.2' roadbase
7,7,7	0	5			SC	clayey SAND: mottled dark brown and medium tan; damp, medium dense; clayey blebs to approximately 10%; organics to approximately 5%.
8,8,11	0	10			SM	silty SAND: dark gray green, moist to wet, medium dense; silty clayey shell fragments to approximately 2%.
4,8,11	NM	15			CL	CLAY: dark gray black, moist to wet, very stiff; organics to approximately 20%; medium-grained sand to approximately 2%.
8,8,11	NM	20				Same: at 18 feet.
		25				Stabilized water level measured on September 8, 1995.
		30				

WELL DIAGRAM



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

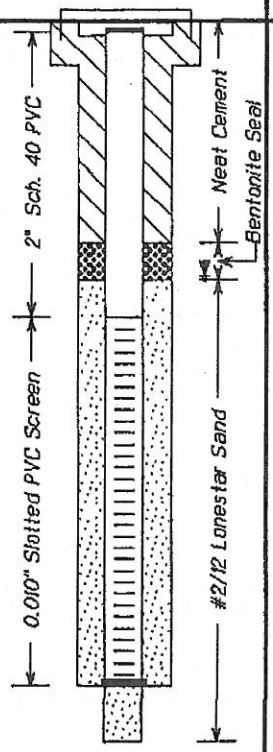
LOG OF BORING MW-5

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95
CLIENT: Port of Oakland
LOCATION: 2277 E. 7th Street, Oakland, CA.
DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler
DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 13.49 'MSL
LOGGED BY: Chris Reinhelmer APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				3" asphalt; 2.2' roadbase
6,8,12	3	5	SM	SAND: medium brown, damp, medium dense; clayey blebs to approximately 2%; shell fragments to approximately 2%.
11,11,18	1	10	SC	clayey SAND: dark gray black, wet, very stiff; organics to approximately 10%.
8,8,12	0	15		Same: at 15 feet.
8,8,4	0	20	SM	silty SAND: gray green mottled with Fe oxide stain, wet to saturated, medium dense; shells to approximately 5%; sand moderately well graded.
		25		Stabilized water level measured on September 6, 1995.
		30		

WELL DIAGRAM



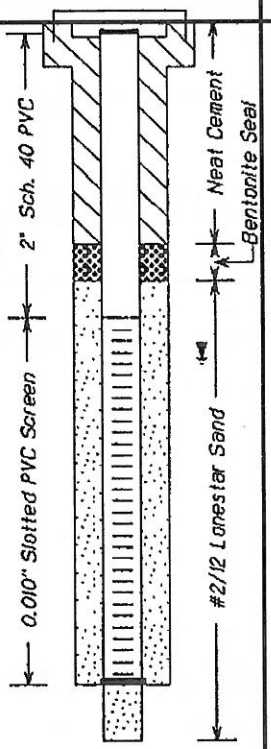
ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

LOG OF BORING MW-7

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95
CLIENT: Port of Oakland
LOCATION: 2277 E. 7th Street, Oakland, CA.
DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler
DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 14.35 'MSL
LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	WELL DIAGRAM	DEPTH feet	SAMPLES	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							4" asphalt
10,12,15	0		5			SM	SAND: gray, damp, medium dense; fine- to medium-grained sand; clayey blebs to 5%.
12,12,17	0		10			SC	sandy CLAY: brown to black gray, moist, very stiff; organics as blebs to appproximately 2%.
11,11,17	0		15			SP	SAND: black gray, wet, medium dense; fine- to medium-grained sand; shell fragments present to 3%.
12,14,20							Same: olive brown, wet, dense; fine- to medium-grained sand.
			20				Stabilized water level measured on September 6, 1995.
			25				
			30				



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

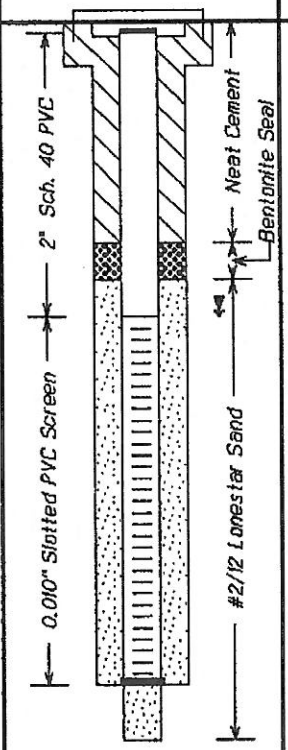
LOG OF BORING MW-8

SEE SITE PLAN

ALISTO PROJECT NO: 10-270-01 DATE DRILLED: 08/25/95
CLIENT: Port of Oakland
LOCATION: 2277 E. 7th Street, Oakland, CA.
DRILLING METHOD: Hollow-stem auger (7 3/4"); 2" split-spoon sampler
DRILLING COMPANY: Mitchell Drilling Envtl. CASING ELEVATION: 12.94 'MSL
LOGGED BY: C. Ladd APPROVED BY: Al Sevilla

BLOWS/6 IN.	PID VALUES	DEPTH feet	SOIL CLASS	GEOLOGIC DESCRIPTION
				4" asphalt
8,8,11	8	5	CL	gravelly CLAY: mottled greenish gray and olive brown, damp, very stiff; subrounded to angular gravel to 1"-diameter.
14,28,36	4	10	GW	sandy GRAVEL: grayish brown, wet, very dense; angular to subrounded gravels to 2"-diameter.
19,21,30	0	15	SW	gravelly SAND: gray, wet, very dense; subrounded gravel to 2"-diameter.
12,15,17	0		SP	SAND: blue gray, saturated, dense; medium-grained sand; well sorted; 1/4"-diameter subrounded gravel to approximately 1%.
		20		Stabilized water level measured on September 6, 1995.
		25		
		30		

WELL DIAGRAM



Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring **GP-1**

Project Ringsby Terminals-Oakland Owner Ringsby Terminals, Inc.
Location 2225 7th Street, Oakland, CA Proj. No. 02070.0061
Surface Elev. _____ Total Hole Depth 14 ft. Diameter 2.38 in.
Top of Casing _____ Water Level Initial 11 ft. Static _____
Screen: Dia 1.25 in. Length 10 ft. Type/Size 0.010 in.
Casing: Dia 1.25 in. Length 4 ft. Type PVC Sch. 40
Fill Material Neat Cement Rig/Core XD-1 Continous Core
Drill Co. Precision Sampling Method Direct Push Technology
Driller Mike Polkington Log By Terry James Date 05/23/95 Permit # 95255
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0					GC	Asphalt over base course.
2						Fine SAND: light brown-gray, dry, loose, well to moderate sorted, moderate hydrocarbon odor.
4	10	GP-1 -5'			SP	
6	556					(grades greenish gray, strong hydrocarbon odor)
8						(grades wet)
10	1544	GP-1 -10'			CL	CLAY: olive gray/dark gray, moist, soft, plastic, slight "organic" odor.
12						*Encountered water 05/23/95*
14						(grades black)
16						End of boring.
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring GP-2

Project Ringsby Terminals-Oakland   Owner Ringsby Terminals, Inc.

Location 2225 7th Street, Oakland, CA   Proj. No. 02070 0061

Surface Elev. ____   Total Hole Depth 14 ft.   Diameter 2.38 in.

Top of Casing ____   Water Level Initial 10 ft.   Static ____

Screen: Dia 1.25 in.   Length 10 ft.   Type/Size 0.010 in.

Casing: Dia 1.25 in.   Length 4 ft.   Type PVC Sch. 40

Fill Material Neat Cement   Rig/Core XD-1 Continous Core

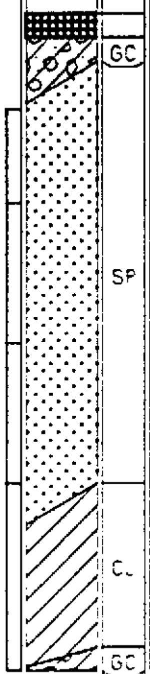
Drill Co. Precision Sampling   Method Direct Push Technology

Driller Mike Polkington   Log By Terry James   Date 05/23/95   Permit # 95255

Checked By Ed Simonis   License No. RG#4422

See Site Map For Boring Location

COMMENTS:



Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						6" asphalt over 6" base course.
					GC	Silty, fine SAND (10,90): dark brown gray, dry, loose, moderate sorted, subrounded, faint hydrocarbon odor.
2						
4	119	GP-2 -5'				
6					SP	(grades less soft, gray, damp)
	233					
8						(grades wet)
10	22	GP-2 -10'				*Encountered Water, 05/23/95*
						CLAY: olive gray/dark gray interlayered, moist/wet, soft, plastic, faint "organic" odor.
12					CL	
14					GC	Clayey, silty, sandy GRAVEL (15,15,15,55): dark gray, wet, loose. End of boring.
16						
18						
20						
22						
24						

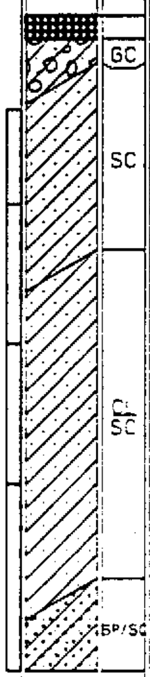
Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring GP-3

See Site Map For Boring Location	COMMENTS:

Project *Ringsby Terminals-Oakland* Owner *Ringsby Terminals, Inc.*
Location *2225 7th Street, Oakland, CA* Proj. No. *02070 0061*
Surface Elev. ______ Total Hole Depth *14 ft.* Diameter *2.38 in.*
Top of Casing ______ Water Level Initial *10 ft.* Static ______
Screen: Dia *1.25 in.* Length *10 ft.* Type/Size *0.010 in.*
Casing: Dia *1.25 in.* Length *4 ft.* Type *PVC Sch. 40*
Fill Material *Neat Cement* Rig/Core *XD-1 Continous Core*
Drill Co. *Precision Sampling* Method *Direct Push Technology*
Driller *Mike Polkington* Log By *Terry James* Date *05/23/95* Permit # *95255*
Checked By *Ed Simonis* License No. *RG#4422*



Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt over base course.
					GC	Gravelly, clayey, silty SAND (10,20,20,50): dark brown, damp, soft, no hydrocarbon odor.
2						
					SC	
4	15	GP-3 -5'				
						(grades variagated green-gray/brown-gray/dark gray/pale gray, CLAY/SILT/SAND (30,30,40) mixture)
6						
	24					
8					CL SC	(grades sandy CLAY (50,50))
10	57	GP-3 -10'				Encountered Water, 05/23/95
12						(grades with fine sand layers)
					SP/SC	
14						End of boring.
16						
18						
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring GP-4

Project: Ringsby Terminals-Oakland Owner: Ringsby Terminals, Inc.
Location: 2225 7th Street, Oakland, CA Proj. No.: 02070 0061
Surface Elev.: ______ Total Hole Depth: 14 ft. Diameter: 2.38 in.
Top of Casing: ______ Water Level Initial: 10 ft. Static: ______
Screen: Dia 1.25 in. Length: 10 ft. Type/Size: 0.010 in.
Casing: Dia 1.25 in. Length: 4 ft. Type: PVC Sch. 40
Fill Material: Neat Cement Rig/Core: XD-1 Continous Core
Drill Co.: Precision Sampling Method: Direct Push Technology
Driller: Mike Polkington Log By: Terry James Date: 05/23/95 Permit #: 95255
Checked By: Ed Simonis License No.: RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asphalt over base course.
					GC	Silty fine SAND (10,90): gray-brown, dry, loose, strong hydrocarbon odor.
4	N/A	GP-4 -5'				
6					SP	(grades no silt)
7	N/A					
10	N/A	GP-4 -10'				Encountered Water, 05/23/95
					SM	(grades silty fine SAND (20,80): gray, wet)
13					CL	CLAY: dark gray, moist, soft, plastic, faint hydrocarbon odor.
14						(grades black)
						End of boring.

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring GP-5

Project Ringsby Terminals-Oakland Owner Ringsby Terminals, Inc.
Location 2225 7th Street, Oakland, CA Proj. No. 02070.0061
Surface Elev. ____ Total Hole Depth 14 ft. Diameter 2.38 in.
Top of Casing ____ Water Level Initial 10 ft. Static ____
Screen: Dia 1.25 in. Length 10 ft. Type/Size 0.010 in.
Casing: Dia 1.25 in. Length 4 ft. Type PVC Sch. 40
Fill Material Neat Cement Rig/Core XD-i Continous Core
Drill Co. Precision Sampling Method Direct Push Technology
Driller Mike Polkington Log By Terry James Date 05/23/95 Permit # 95255
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asphalt over base course.
2					GC	Silty fine SAND (10,90): gray, damp, loose.
4	N/A	GP-5 -5'				
6					SP	(grades fine SAND: light brown gray)
8	N/A					
10	N/A	GP-5 -10'				(grades silty SAND (20,80): green gray, strong degraded hydrocarbon odor)
12						*Encountered Water, 05/23/95*
14					CL	CLAY: green gray, wet, soft, plastic.
16					CL	(grades silty CLAY (50,50))
18						End of boring.
20						
22						
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Soil Boring GP-8

Project Ringsby Terminals-Oakland Owner Ringsby Terminals, Inc.
Location 2225 7th Street, Oakland, CA Proj. No. 02070 0061
Surface Elev. _____ Total Hole Depth 14 ft. Diameter 2.38 in.
Top of Casing _____ Water Level Initial 10 ft. Static _____
Screen: Dia 1.25 in. Length 10 ft. Type/Size 0.010 in.
Casing: Dia 1.25 in. Length 4 ft. Type PVC Sch. 40
Fill Material Neat Cement Rig/Core XD-1 Continous Core
Drill Co. Precision Sampling Method Direct Push Technology
Driller Mike Polkington Log By Terry James Date 05/23/95 Permit # 95255
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						Asphalt over base course.
2					GM	Fine SAND: light brown, dry/damp, loose, well sorted, subrounded, weak hydrocarbon odor.
4	N/A	GP-8 -5'				
6					SP	
8	N/A					(grades wet)
10	N/A	GP-8 -10'				*Encountered Water, 05/23/95*
12					CL	CLAY: gray/green-gray, moist, soft, plastic, faint "organic" odor.
14						(grades black)
						End of boring.
16						
18						
20						
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Soil Boring GP-7

Project Ringsby Terminals-Oakland Owner Ringsby Terminals, Inc.
Location 2225 7th Street, Oakland, CA Proj. No. 02070 0061
Surface Elev. ____ Total Hole Depth 14 ft. Diameter 2.38 in.
Top of Casing ____ Water Level Initial ____ Static ____
Screen: Dia 1.25 in. Length 10 ft. Type/Size 0.010 in.
Casing: Dia 1.25 in. Length 4 ft. Type PVC Sch. 40
Fill Material Neat Cement Rig/Core XD-1 Continous Core
Drill Co. Precision Sampling Method Direct Push Technology
Driller Mike Polkington Log By Terry James Date 05/23/95 Permit # 95255
Checked By Ed Simons License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Asphalt over gravelly base.
2					GM	
					SW	Silty, fine SAND (20,80): gray-brown, dry/moist, loose.
4	N/A	GP-7 -5'				(grades hydrocarbon odor)
6	N/A					(grades no silt, well sorted, subrounded, strong hydrocarbon odor)
8					SP	(grades wet)
10	N/A	GP-7 -10'				
12						
14					CL	CLAY: gray/green-gray, moist, soft, plastic, weak "organic" odor. End of boring.
16						
18						
20						
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Soil Boring GP-6

Project Ringsby Terminals-Oakland Owner Ringsby Terminals, Inc.
Location 2225 7th Street, Oakland, CA Proj. No. 02070 0061
Surface Elev. _____ Total Hole Depth 14 ft. Diameter 2.38 in.
Top of Casing _____ Water Level Initial _____ Static _____
Screen: Dia 1.25 in. Length 10 ft. Type/Size 0.010 in.
Casing: Dia 1.25 in. Length 4 ft. Type PVC Sch. 40
Fill Material Neat Cement Rig/Core XD-1 Continous Core
Drill Co. Precision Sampling Method Direct Push Technology
Driller Mike Polkington Log By Terry James Date 05/23/95 Permit # 95255
Checked By Ed Simonis License No. RG#4422

See Site Map For Boring Location

COMMENTS:

Depth (ft.)	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0						6" asphalt over gravelly silty sand base.
2					GM	Heterogeneous mixture of clayey SAND (30,70) ranging to sandy CLAY (30,70): gray/brown-gray/green gray/pale gray, firm to stiff with softer sand zones (poor sample recovery).
4	N/A	GP-6 -5'				
6						(graces hydrocarbon odor)
8	N/A				SC/CL	
10	N/A	GP-6 -10'				
12					CL	CLAY: dark gray to black, moist/wet, soft, plastic, faint hydrocarbon odor.
14						End of boring.
16						
18						
20						
22						
24						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 1
LOCATION: 205' N & 40'W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC		RUSTY TAN GRAVEL & SAND. dry No Odor. Loose
2						
				SW		SAND. WELL SORTED. <5% CLAY. Medium Grain. Dry. No Odor Very Loose
4						-- GRAVEL. 1/2" diameter
	BH1-5	CC	5 ft to 10 ft Rec. 18"	SW		SAND. WELL SORTED. <5% CLAY Medium to Fine Grain Moist. Very Loose. No Odor
6						
						SAND & MINOR CLAY BEDS (Very Loose) Wet. No Odor
8						
						TOTAL DEPTH 10 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-2
LOCATION: 155' N & 50' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC		CLAYEY SAND, Greenish Gray No Odor, Loose
2						
4						
	BH2-5	CC	5 ft to 10 ft Rec. 36"	SW		SAND, WELL SORTED, <5% CLAY Medium to Fine Grain Moist, Very Loose, No Odor Clay Balls, Shell Fragments, & Burrows
6						
8	BH2-8	CC	Lost Core			
10						TOTAL DEPTH 10 FEET
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 3
LOCATION: 100' S & 80' E
DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
2				GC		CLAEY SAND. (30%). Greenish Gray Poorly sorted. Moist. soft. No Odor
4				GC		CLAYEY SAND. Black. (30 % clay) poorly sorted. moist. strong diesel odor
	BH3-5	CC	5 ft to 10 ft Rec. 24"	SW		SAND. WELL SORTED. <5% CLAY Medium to Fine Grain Moist. Very Loose. Stronng Diesel Odor
6						
	BH3-7"	CC				
8						SAND & MINOR CLAY BEDS Very Loose. Wet.
10						TOTAL DEPTH 10 FEET
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-4
LOCATION: 60' due East
DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						ASPHALT & GRAVEL BASE
				GC		
				GC		CLAYEY SAND. Greenish Gray No Odor. Loose
2						
				SW		SAND. WELL SORTED. <5% CLAY Medium to Fine Grain Moist. Very Loose. No Odor
4	BH4-4	CC	4 ft to 9 ft Rec. 24"	SW		SAND. WELL SORTED. <5% CLAY Medium to Fine Grain Moist. Very Loose. Strong Diesel Odor. slight saturation at 4' increasing to saturated- free diesel at 6'
6	BH4-6	CC	Lost Core			
8						
10	BH4-10'	SS				SAND & CLAY. alternating beds sand beds are fine grained and well sorted Clay bed is green & 6" thick
						TOTAL DEPTH 11 FEET
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-5
LOCATION: 100' S & 110' E
DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC		SAND. SILTY & CLAYEY. (30% clay). Dark Gray. soft. very slight diesel odor
2						
4	BH5-4	CC	4 ft to 9 ft Rec. 30"	SW		SAND. WELL SORTED. <5% CLAY Medium to Fine Grain Moist. Very Loose. Strong Diesel Odor. slight saturation at 4' increasing to saturated- free diesel at 6'
6	BH5-6.5	CC	Lost Core			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-6
LOCATION: 140' N & 85' E
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC		GRAVEL. SAND. and CLAY. Black. soft. moist. poorley sorted. Slight Diesel Odor.
2						
				SC		SILT & CLAY. Black. soft. moist. Slight Diesel Odor
4	BH6-4	CC	CORE FROM 4 feet to 9 feet	SC		CLAYEY SAND. Blue Green. fine to medium grained. poorly sorted. Plastic. no odor or stain.
			RECOVERED 45"	SW		SAND. Clayey. Blue Green. medium grained. mottled texture. soft. No Odor or stain.
6						
	BH6-7	CC		CH		CLAY. Blue Green. plastic. moist. No Odor or Stain.
			Lost Core			
8						
						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-7
LOCATION: 15' S & 50' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC		GRAVEL & CLAYEY SAND. Dark Gray. loose. medium to coarse grained. poorly sorted. No Odor or Stain.
2				SC		CLAYEY SAND. Greenish Gray. loose. medium grained. poorly sorted. Very Slight Odor.
4	BH7-4	CC	CORE FROM 4 feet to 9 feet	SC		CLAYEY SAND. Greenish Gray. medium grained. poorly sorted. loose. Diesel Odor.
			RECOVERED 36"	SW		SAND. Light Brown. medium grained. very loose. < 5 % clay. well sorted. Strong Diesel Odor Saturation increases with depth. Product flows from sand at 7 feet.
6						
	BH7-7	CC	Lost Core			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-8
LOCATION: 5' N & 50' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
2				SC		CLAYEY SAND. Greenish Gray. loose. medium grained. poorly sorted. No odor from 1-3 feet. Diesel Odor from 3 to 4 feet Strong Diesel Odor from 4 to 4.5 ft
4	BH8-4	CC	CORE FROM 4 feet to 9 feet RECOVERED 36"			
6	BH8-6	CC		SW		SAND. Light Brown. medium grained. very loose. < 5 % clay. well sorted. Strong Diesel Odor Saturation increases with depth. Sand satruated with product at 5.5 feet.
			Lost Core			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-9
LOCATION: 55' N & 170' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				SC		SAND, and CLAY. Dark Greenish Gray, soft, moist, poorley sorted. No Diesel Odor of Stain.
2						
				SC		SAND & CLAY. Greenish Gray, soft, moist No Diesel Odor or Stain.
4	BH9-4	CC	CORE FROM 4 feet to 9 feet RECOVERED 30"	SW		SAND. Greenish Gray, fine to medium grained. < 5% clay. Well Sorted. Very Loose. No Diesel Odor or Stain.
6	BH9-6	CC				
			Lost Core			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-10
LOCATION: 115' N & 75' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				GC	= clayey gravels	SAND. CLAY. GRAVEL. Black. moist. soft. Slight Diesel Odor.
2						
				GC		GRAVEL. SAND. & CLAY. Black. moist. soft. gravel 1" diameter. Slight Diesel Odor.
4				CH/GC		Green CLAY & Black fractured MUDSTONE or CHERT Hard. moist. Strong Diesel Odor.
	BH10-5	Bit	REFUSAL @ 5 ft			
6						TOTAL DEPTH 5 FEET
8						
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- II
LOCATION: 85' N & 80' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				SC		CLAYEY SAND. Light Green. Loose. Moist. medium to coarse grained. poorly sorted. No Odor or Stain.
2						
				SC		CLAYEY SAND. Blackish Gray. loose. Moist. medium grained. poorly sorted. No Diesel Odor.
4	BH II- 4	CC	CORE FROM 4 feet to 9 feet	SC		CLAYEY SAND. Greenish Gray. medium grained. poorly sorted. loose. Diesel Odor.
			RECOVERED 27"	SW		SAND. Greeish Gray. medium grained. very loose. < 5 % clay. well sorted. Strong Diesel Odor Saturation increases with depth. **Product flows from sand at 6 feet.**
6	BH II -6	CC	Lost Core			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 12
LOCATION: 160' N & 15' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-16-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
				SC		CLAYEY SAND. Light Green. Loose. Moist. medium to coarse grained, poorly sorted. No Odor or Stain.
2						
				CH		CLAY. Green. stiff, moist. No Diesel Odor or Stain.
4	BH12-4'	CC	CORE FROM 4 TO 9 Feet Recover 5 Feet	SM		SAND. SILTY & CLAYEY. Green, Stiff, Moist. Poorly Sorted. No Diesel Odor or Stain.
6				SC		CLAYEY SAND. Green. Moist. Stiff, Poorly Sorted. No Diesel Odor or Stain. 2 well sorted sand beds 2" & 3" thick.
	BH12-7'	CC				Boring remained opened overnight and no water Entered boring.
8						
	BH12-9'	CC				TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 13, (MW-3)
LOCATION: 15' S & 137' E
DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92 DATE COMPLETED: 12-16-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
				SC		CLAYEY SAND. Light Green. Loose. Moist. medium to coarse grained. poorly sorted. No Odor or Stain.
4	BH13-4'	CC	Core from 4 to 9 ft Recover 36"	CH		CLAY. Green. stiff. moist. No Diesel Odor or Stain.
	BH13-5'	CC		SW		SAND. Light Brown. dry to moist. loose. well sorted fine to medium grained. No Diesel Odor. Appears water saturated at 6 feet.
	BH13-7'	CC	LOST CORE 2 feet			
8						? SAND/CLAY contact estimated
				CL/SC		CLAY. Green & Black. soft. plactic. moist to wet. No Diesel Odor or Stain. CLAY has minor amounts of interbedded SAND. and CLAYEY SAND.
12						
						TOTAL DEPTH 15 feet.
16						
20						
24						

BORING CONVERTED TO 4" GROUNDWATER MONITOR WELL.
SCREEN from 5 to 15 feet
BLANK from 0 to 5 feet
BENTONITE from 3 to 4 feet
CEMENT from 0 to 3 feet

Attempt to recover hydropunch water from 12 to 14 failed.

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH-14
LOCATION: 20' S & 125' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
2				SC		SAND. CLAY. & GRAVEL. Light Brownish Green. moist. loose. poorley sorted. No Diesel Odor or Stain.
				SW		SAND. Light Brown. <15% Clay. soft. Dry. Well Sorted No Diesel Odor or Stain.
4	BH14-4'	CC	Core from 4 to 9 ft Recover 36"	SW		SAND. Greenish Gray. fine to medium grained. < 5% clay. Well Sorted. Very Loose. No Diesel Odor or Stain. Sand is dry from 4 to 5 feet and Saturated from 6 to 7 feet.
6						
	BH14-7'	CC	Lost Core 2 ft			
8						TOTAL DEPTH 9 FEET
10						
12						

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 15. (MW-1)
LOCATION: 115' S & 10' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92 DATE COMPLETED: 12-16-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
				SC		CLAYEY SAND & GRAVEL. Rusty Brown. Loose. moist. medium to coarse grained. Poorly sorted. No Odor or Stain.
4	BH15-5'	CC	Core from 4 to 9 ft Recover 24"	SW		SAND. Light Brown. dry to moist. loose. well sorted fine to medium grained. No Diesel Odor. Dry @ 4 ft. Appears water saturated at 5 ft.
			LOST CORE 3 feet			
8						? SAND/CLAY contact estimated
						CLAY. Green & Black. soft. plactic. moist to wet. No Diesel Odor or Stain.
12				CL/SC		CLAY has minor amounts of interbedded SAND. and CLAYEY SAND.
						TOTAL DEPTH 15 feet.
16						
20						
24						

BORING CONVERTED TO 4" GROUNDWATER MONITOR WELL.
SCREEN from 5 to 15 feet
BLANK from 0 to 5 feet

BENTONITE from 3 to 4 feet
SAND filter pack from 4 to 15 feet
CEMENT from 0 to 3 feet

DONGARY INVEST OAKLAND
RAMCON Job #476004
Logged by: J. Auchterlonie

BORE HOLE #: BH- 16. (MW-2)
LOCATION: 55' N & 180' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92 DATE COMPLETED: 12-16-92
APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.
Boring locations measured perpendicular from the N.E. corner of the Sea Land Car Wash.

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
				SC		CLAYEY SAND. Dark Greenish Gray. Soft. moist. medium to coarse grained. Poorly sorted. No Odor or Stain.
4			NO SAMPLES TAKEN See BH9 for core & samples.	SW		SAND. Greenish Gray. loose. well sorted. <5% Clay. fine to medium grained. No Diesel Odor. Dry @ 4 ft. Appears water saturated at 5 ft.
8						? SAND/CLAY contact estimated
12				CL/SC		CLAY. Green & Black. soft. plactic. moist to wet. No Diesel Odor or Stain. CLAY has minor amounts of interbedded SAND. and CLAYEY SAND.
16						TOTAL DEPTH 15 feet.
20						
24						

BORING CONVERTED TO 4" GROUNDWATER MONITOR WELL.
SCREEN from 5 to 15 feet
BLANK from 0 to 5 feet

BENTONITE from 3 to 4 feet
SAND filter pack from 4 to 15 feet
CEMENT from 0 to 3 feet

BH16 is located 10 feet West of BH9.

Since BH9 was cored and sampled: no samples were collected from BH16.

Attachment 3

Revised Historical Groundwater Elevation and Free Product Data Table and Trend Graphs

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-1										**5%**
	04/18/00	13.65	NM	8.21	0.0	5.44	5.5	8.15	0	
	05/22/00	13.65	NM	8.51	0.0	5.14	5.5	8.15	0	
	07/10/01	13.65	8.8	10.00	1.20	3.65	5.5	8.15	0	
	12/12/01	13.65	NM	NA	NA	NA	5.5	8.15	1	
	03/08/02	13.65	NM	NA	NA	NA	5.5	8.15	1	
	06/13/02	13.65	8.70	10.00	1.30	3.65	5.5	8.15	0	
	09/26/02	13.65	8.60	9.50	0.90	4.15	5.5	8.15	0	
	03/17/03	13.65	7.61	8.88	1.27	4.77	5.5	8.15	0	
	06/18/03	13.65	8.20	9.44	1.24	4.21	5.5	8.15	0	
	09/03/03	13.65	8.50	9.40	0.90	4.25	5.5	8.15	0	
	11/26/03	13.65	8.85	9.25	0.40	4.40	5.5	8.15	0	
	03/05/04	13.65	6.76	7.07	0.31	6.58	5.5	8.15	0	
	06/02/04	13.65	8.26	8.71	0.45	4.94	5.5	8.15	0	
	09/03/04	13.65	8.70	9.11	0.41	4.54	5.5	8.15	0	
	12/16/04	13.65	7.75	7.92	0.17	5.73	5.5	8.15	0	
	03/29/05	13.65	6.21	6.38	0.17	7.27	5.5	8.15	0	
	06/14/05	13.65	7.41	7.61	0.20	6.04	5.5	8.15	0	
	08/10/05	13.65	8.05	8.55	0.50	5.10	5.5	8.15	0	
	09/29/05	13.65	8.28	8.95	0.67	4.70	5.5	8.15	0	
	12/21/05	13.65	5.70	5.90	0.20	7.75	5.5	8.15	0	
	03/24/06	13.65	5.98	6.27	0.29	7.38	5.5	8.15	0	
	07/28/06	13.65	7.88	8.35	0.47	5.30	5.5	8.15	0	
	11/29/06	15.80	10.58	10.81	0.23	4.99	7.65	8.15	0	
	06/01/07	15.80	11.11	11.45	0.34	4.35	7.65	8.15	0	
	11/14/07	15.80	10.87	10.93	0.06	4.87	7.65	8.15	0	
	06/05/08	15.80	11.36	11.46	0.10	4.34	7.65	8.15	0	
	12/18/08	15.80	10.82	10.89	0.07	4.91	7.65	8.15	0	
	03/04/09	15.80	9.38	9.52	0.14	6.28	7.65	8.15	0	
	04/01/09	15.80	10.65	10.67	0.02	5.13	7.65	8.15	0	
	06/17/09	15.80	11.21	11.28	0.07	4.52	7.65	8.15	0	
	12/08/09	15.80	NP	10.79	0.00	5.01	7.65	8.15	0	
	06/17/10	15.80	10.79 [4]	10.79	0.00	5.01	7.65	8.15	0	
	12/14/10	15.80	9.42 [4]	9.42	0.00	6.38	7.65	8.15	0	
	06/07/11	15.80	NP	10.77	0.00	5.03	7.65	8.15	0	
	06/21/11	15.80	NP	10.37	0.00	5.43	7.65	8.15	0	
	09/26/11	15.80	11.23 [4]	11.23	0.00	4.57	7.65	8.15	0	
	12/05/11	15.80	11.15 [4]	11.15	0.00	4.65	7.65	8.15	0	
	02/06/12	15.80	10.89 [4]	10.89	0.00	4.91	7.65	8.15	0	
	06/19/12	15.80	11.01 [4]	11.01	0.00	4.79	7.65	8.15	0	
	09/19/12	15.80	11.40	11.41	0.01	4.39	7.65	8.15	0	
	12/04/12	15.80	NP	9.05	0.00	6.75	7.65	8.15	0	
	06/19/13	15.80	NP	11.34	0.00	4.46	7.65	8.15	0	
MW-2										**0%**
	12/31/97	13.87	NP	8.73	0.0	5.14	5.5	8.37	0	
	04/13/98	13.87	NP	7.72	0.0	6.15	5.5	8.37	0	
	11/06/98	13.87	NP	9.43	0.0	4.44	5.5	8.37	0	
	03/19/99	13.87	NP	8.21	0.0	5.66	5.5	8.37	0	
	06/24/99	13.87	NP	8.91	0.0	4.96	5.5	8.37	0	
	09/28/99	13.87	NP	9.42	0.0	4.45	5.5	8.37	0	
	11/12/99	13.87	NP	9.63	0.0	4.24	5.5	8.37	0	
	02/11/00	13.87	NP	8.54	0.0	5.33	5.5	8.37	0	
	05/22/00	13.87	NP	8.10	0.0	5.77	5.5	8.37	0	
	09/06/00	13.87	NP	8.79	0.0	5.08	5.5	8.37	0	
	12/19/00	13.87	NP	9.19	0.0	4.68	5.5	8.37	0	
	02/21/01	13.87	NP	7.99	0.0	5.88	5.5	8.37	0	
	04/03/01	13.87	NP	8.23	0.0	5.64	5.5	8.37	0	
	07/10/01	13.87	NP	8.70	0.0	5.17	5.5	8.37	0	
	12/12/01	13.87	NP	8.16	0.0	5.71	5.5	8.37	0	
	01/22/02	13.87	NP	7.64	0.0	6.23	5.5	8.37	0	
	03/08/02	13.87	NP	8.31	0.0	5.56	5.5	8.37	0	
	06/13/02	13.87	NP	8.64	0.0	5.23	5.5	8.37	0	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-2 (cont)	09/26/02	13.87	NP	8.95	0.0	4.92	5.5	8.37	0	
	12/12/02	13.87	NP	9.17	0.0	4.70	5.5	8.37	0	
	03/17/03	13.87	NP	7.77	0.0	6.10	5.5	8.37	0	
	06/18/03	13.87	NP	8.44	0.0	5.43	5.5	8.37	0	
	09/03/03	13.87	NP	8.98	0.0	4.89	5.5	8.37	0	
	11/26/03	13.87	NP	12.01	0.0	1.86	5.5	8.37	0	
	03/05/04	13.87	NP	9.75	0.0	4.12	5.5	8.37	0	
	06/02/04	13.87	NP	11.22	0.0	2.65	5.5	8.37	0	
	09/03/04	13.87	NP	11.62	0.0	2.25	5.5	8.37	0	
	12/16/04	13.87	NP	10.80	0.0	3.07	5.5	8.37	0	
	03/29/05	13.87	NP	9.67	0.0	4.20	5.5	8.37	0	
	06/14/05	13.87	NP	10.68	0.0	3.19	5.5	8.37	0	
	08/10/05	13.87	NP	11.05	0.0	2.82	5.5	8.37	0	
	09/29/05	13.87	NP	11.32	0.0	2.55	5.5	8.37	0	
	12/21/05	13.87	NP	9.57	0.0	4.30	5.5	8.37	0	
	03/24/06	13.87	NP	9.55	0.0	4.32	5.5	8.37	0	
	07/28/06	13.87	NP	10.85	0.0	3.02	5.5	8.37	0	
	11/29/06	16.43	NP	11.69	0.0	4.74	8.06	8.37	0	
	06/01/07	16.43	NP	11.72	0.0	4.71	8.06	8.37	0	
	11/14/07	16.43	NP	12.28	0.0	4.15	8.06	8.37	0	
	06/05/08	16.43	NP	12.01	0.0	4.42	8.06	8.37	0	
	12/18/08	16.43	NP	12.20	0.0	4.23	8.06	8.37	0	
	03/04/09	16.43	NP	10.19	0.0	6.24	8.06	8.37	0	
	04/01/09	16.43	NP	11.34	0.0	5.09	8.06	8.37	0	
	06/17/09	16.43	NP	11.90	0.0	4.53	8.06	8.37	0	
	12/09/09	16.43	NP	12.13	0.0	4.30	8.06	8.37	0	
	06/16/10	16.43	NP	11.57	0.0	4.86	8.06	8.37	0	
	12/14/10	16.43	NP	11.04	0.0	5.39	8.06	8.37	0	
	06/07/11	16.43	NP	10.70	0.0	5.73	8.06	8.37	0	
	06/21/11	16.43	NP	11.18	0.0	5.25	8.06	8.37	0	
	09/26/11	16.43	NP	11.87	0.0	4.56	8.06	8.37	0	
	12/05/11	16.43	NP	11.95	0.0	4.48	8.06	8.37	0	
	02/06/12	16.43	NP	11.50	0.0	4.93	8.06	8.37	0	
	06/19/12	16.43	NP	11.65	0.0	4.78	8.06	8.37	0	
	09/19/12	16.43	NP	12.03	0.0	4.40	8.06	8.37	0	
	12/04/12	16.43	NP	9.82	0.0	6.61	8.06	8.37	0	
	06/19/13	16.43	NP	12.03	0.0	4.40	8.06	8.37	0	
MW-3										**0%**
	11/06/98	13.73	8.84	9.94	1.10	3.79	5.5	8.23	0	
	03/19/99	13.73	7.52	8.05	0.53	5.68	5.5	8.23	0	
	06/24/99	13.73	8.38	8.56	0.18	5.17	5.5	8.23	0	
	11/12/99	13.73	9.14	9.23	0.09	4.50	5.5	8.23	0	
	02/11/00	13.73	7.97	8.37	0.40	5.36	5.5	8.23	0	
	03/01/00	13.73	6.59	7.24	0.65	6.49	5.5	8.23	0	
	03/21/00	13.73	6.50	6.56	0.06	7.17	5.5	8.23	0	
	05/22/00	13.73	7.51	8.05	0.54	5.68	5.5	8.23	0	
	06/26/00	13.73	7.82	8.20	0.38	5.53	5.5	8.23	0	
	07/25/00	13.73	7.90	8.92	1.02	4.81	5.5	8.23	0	
	08/31/00	13.73	8.15	9.50	1.35	4.23	5.5	8.23	0	
	09/06/00	13.73	8.21	9.42	1.21	4.31	5.5	8.23	0	
	09/21/00	13.73	8.30	8.88	0.58	4.85	5.5	8.23	0	
	12/19/00	13.73	8.60	9.65	1.05	4.08	5.5	8.23	0	
	02/22/01	13.73	6.36	8.15	1.79	5.58	5.5	8.23	0	
	04/03/01	13.73	7.48	8.88	1.40	4.85	5.5	8.23	0	
	04/23/01	13.73	7.85	9.10	1.25	4.63	5.5	8.23	0	
	05/30/01	13.73	7.75	9.10	1.35	4.63	5.5	8.23	0	
	07/10/01	13.73	8.10	9.60	1.50	4.13	5.5	8.23	0	
	03/08/02	13.73	7.80	8.00	0.20	5.73	5.5	8.23	0	
	04/03/02	13.73	7.60	7.70	0.10	6.03	5.5	8.23	0	
	04/23/02	13.73	7.90	8.40	0.50	5.33	5.5	8.23	0	
	04/25/02	13.73	7.90	8.80	0.90	4.93	5.5	8.23	0	
	05/10/02	13.73	8.10	8.20	0.10	5.53	5.5	8.23	0	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-3 (cont)	05/24/02	13.73	8.05	8.10	0.05	5.63	5.5	8.23	0	
	06/13/02	13.73	8.10	8.70	0.60	5.03	5.5	8.23	0	
	07/05/02	13.73	8.10	8.95	0.85	4.78	5.5	8.23	0	
	07/19/02	13.73	8.10	8.90	0.80	4.83	5.5	8.23	0	
	07/30/02	13.73	8.10	8.90	0.80	4.83	5.5	8.23	0	
	08/14/02	13.73	8.10	8.90	0.80	4.83	5.5	8.23	0	
	09/13/02	13.73	8.30	9.30	1.00	4.43	5.5	8.23	0	
	09/26/02	13.73	8.30	9.00	0.70	4.73	5.5	8.23	0	
	10/14/02	13.73	8.60	9.50	0.90	4.23	5.5	8.23	0	
	11/04/02	13.73	8.75	9.99	1.24	3.74	5.5	8.23	0	
	11/21/02	13.73	8.59	11.29	2.70	2.44	5.5	8.23	0	
	12/06/02	13.73	8.56	9.30	0.74	4.43	5.5	8.23	0	
	12/18/02	13.73	7.35	8.43	1.08	5.30	5.5	8.23	0	
	12/30/02	13.73	6.50	7.15	0.65	6.58	5.5	8.23	0	
	01/02/03	13.73	6.20	6.20	0.00	7.53	5.5	8.23	0	
	01/03/03	13.73	6.21	6.21	0.00	7.52	5.5	8.23	0	
	01/14/03	13.73	6.20	6.21	0.01	7.52	5.5	8.23	0	
	01/30/03	13.73	6.81	6.85	0.04	6.88	5.5	8.23	0	
	02/18/02	13.73	7.09	7.15	0.06	6.58	5.5	8.23	0	
	02/26/03	13.73	7.04	7.11	0.07	6.62	5.5	8.23	0	
	03/13/03	13.73	7.22	8.11	0.89	5.62	5.5	8.23	0	
	03/17/03	13.73	7.15	7.50	0.35	6.23	5.5	8.23	0	
	04/16/03	13.73	7.27	8.25	0.98	5.48	5.5	8.23	0	
	06/18/03	13.73	7.78	9.00	1.22	4.73	5.5	8.23	0	
	09/03/03	13.73	8.31	9.96	1.65	3.77	5.5	8.23	0	
	11/26/03	13.73	10.79	12.85	2.06	0.88	5.5	8.23	0	
	03/05/04	13.73	8.39	9.85	1.46	3.88	5.5	8.23	0	
	06/02/04	13.73	10.03	11.35	1.32	2.38	5.5	8.23	0	
	09/03/04	13.73	10.46	12.06	1.60	1.67	5.5	8.23	0	
	12/16/04	13.73	9.41	10.38	0.97	3.35	5.5	8.23	0	
	03/29/05	13.73	8.17	9.01	0.84	4.72	5.5	8.23	0	
	06/14/05	13.73	9.59	10.55	0.96	3.18	5.5	8.23	0	
	08/10/05	13.73	9.91	11.15	1.24	2.58	5.5	8.23	0	
	09/29/05	13.73	10.21	11.61	1.40	2.12	5.5	8.23	0	
	12/21/05	13.73	8.21	8.28	0.07	5.45	5.5	8.23	0	
	03/24/06	13.73	8.20	8.82	0.62	4.91	5.5	8.23	0	
	07/28/06	13.73	9.81	9.83	0.02	3.90	5.5	8.23	0	
	11/29/06	15.66	10.72	11.70	0.98	3.96	7.43	8.23	0	
	06/01/07	15.66	10.77	11.46	0.69	4.20	7.43	8.23	0	
	11/14/07	15.66	10.98	12.19	1.21	3.47	7.43	8.23	0	
	06/05/08	15.66	10.51	11.96	1.45	3.70	7.43	8.23	0	
	12/18/08	15.66	10.78	12.00	1.22	4.51	7.43	8.23	0	
	03/04/09	15.66	9.31	9.93	0.62	6.16	7.43	8.23	0	
	04/01/09	15.66	10.38	11.10	0.72	5.06	7.43	8.23	0	
	06/17/09	15.66	10.79	12.30	1.51	4.42	7.43	8.23	0	
	12/08/09	15.66	11.05	12.81	1.76	4.08	7.43	8.23	0	
	06/17/10	15.66	10.39	12.29	1.90	4.70	7.43	8.23	0	
	12/15/10	15.66	10.13	10.74	0.61	5.35	7.43	8.23	0	
	06/07/11	15.66	9.91	10.95	1.04	5.44	7.43	8.23	0	
	06/21/11	15.66	10.74	11.20	0.46	4.78	7.43	8.23	0	
	09/26/11	15.66	10.71	12.55	1.84	4.40	7.43	8.23	0	
	12/05/11	15.66	10.83	12.20	1.37	4.42	7.43	8.23	0	
	02/06/12	15.66	10.60	11.42	0.82	4.81	7.43	8.23	0	
	06/19/12	15.66	10.52	12.04	1.52	4.68	7.43	8.23	0	
	09/19/12	15.66	10.90	13.01	2.11	4.13	7.43	8.23	0	
	12/04/12	15.66	9.64	10.65	1.01	5.72	7.43	8.23	0	
	06/19/13	15.66	10.92	12.45	1.53	4.28	7.43	8.23	0	
MW-4										**38%**
	12/31/97	12.66	NP	7.09	0.0	5.57	8	4.66	1	
	04/13/98	12.66	NP	7.71	0.0	4.95	8	4.66	1	
	11/06/98	12.66	NP	8.69	0.0	3.97	8	4.66	0	
	03/19/99	12.66	NP	8.00	0.0	4.66	8	4.66	1	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-4 (cont)	06/24/99	12.66	NP	8.45	0.0	4.21	8	4.66	0	
	09/28/99	12.66	NP	8.73	0.0	3.93	8	4.66	0	
	11/12/99	12.66	NP	8.83	0.0	3.83	8	4.66	0	
	02/11/00	12.66	NP	7.71	0.0	4.95	8	4.66	1	
	05/22/00	12.66	NP	8.09	0.0	4.57	8	4.66	0	
	09/06/00	12.66	NP	8.32	0.0	4.34	8	4.66	0	
	12/19/00	12.66	NP	8.47	0.0	4.19	8	4.66	0	
	02/21/01	12.66	NP	7.51	0.0	5.15	8	4.66	1	
	04/03/01	12.66	NP	8.13	0.0	4.53	8	4.66	0	
	07/10/01	12.66	NP	8.12	0.0	4.54	8	4.66	0	
	12/12/01	12.66	NP	7.65	0.0	5.01	8	4.66	1	
	01/22/02	12.66	NP	7.60	0.0	5.06	8	4.66	1	
	03/08/02	12.66	NP	7.96	0.0	4.70	8	4.66	1	
	06/13/02	12.66	NP	8.20	0.0	4.46	8	4.66	0	
	09/26/02	12.66	NP	8.21	0.0	4.45	8	4.66	0	
	12/12/02	12.66	NP	8.38	0.0	4.28	8	4.66	0	
	03/17/03	12.66	NP	7.72	0.0	4.94	8	4.66	1	
	06/18/03	12.66	NP	8.02	0.0	4.64	8	4.66	0	
	09/03/03	12.66	NP	8.29	0.0	4.37	8	4.66	0	
	11/26/03	12.66	NP	8.69	0.0	3.97	8	4.66	0	
	03/05/04	12.66	NP	7.45	0.0	5.21	8	4.66	1	
	06/02/04	12.66	NP	8.25	0.0	4.41	8	4.66	0	
	09/03/04	12.66	NP	8.31	0.0	4.35	8	4.66	0	
	12/16/04	12.66	NP	7.96	0.0	4.70	8	4.66	1	
	03/29/05	12.66	NP	7.11	0.0	5.55	8	4.66	1	
	06/14/05	12.66	NP	7.90	0.0	4.76	8	4.66	1	
	08/10/05	12.66	NP	7.86	0.0	4.80	8	4.66	1	
	09/29/05	12.66	NP	8.00	0.0	4.66	8	4.66	1	
	12/21/05	12.66	NP	7.30	0.0	5.36	8	4.66	1	
	03/24/06	12.66	NP	7.05	0.0	5.61	8	4.66	1	
	07/28/06	12.66	NP	7.92	0.0	4.74	8	4.66	1	
	11/29/06	15.91	NP	11.63	0.0	4.28	11.25	4.66	0	
	06/01/07	15.91	NP	11.82	0.0	4.09	11.25	4.66	0	
	11/14/07	15.91	NP	11.88	0.0	4.03	11.25	4.66	0	
	06/05/08	15.91	NP	11.67	0.0	4.24	11.25	4.66	0	
	12/18/08	15.91	NP	11.20	0.0	4.71	11.25	4.66	1	
	03/04/09	15.91	NP	10.93	0.0	4.98	11.25	4.66	1	
	04/01/09	15.91	NP	11.63	0.0	4.28	11.25	4.66	0	
	06/17/09	15.91	NP	11.88	0.0	4.03	11.25	4.66	0	
	12/08/09	15.91	NP	12.03	0.0	3.88	11.25	4.66	0	
	06/16/10	15.91	NP	11.75	0.0	4.16	11.25	4.66	0	
	12/14/10	15.91	NP	11.62	0.0	4.29	11.25	4.66	0	
	06/07/11	15.91	NP	11.80	0.0	4.11	11.25	4.66	0	
	06/21/11	15.91	NP	11.42	0.0	4.49	11.25	4.66	0	
	09/26/11	15.91	NP	11.83	0.0	4.08	11.25	4.66	0	
	12/05/11	15.91	NP	12.03	0.0	3.88	11.25	4.66	0	
	02/06/12	15.91	NP	11.71	0.0	4.20	11.25	4.66	0	
	06/19/12	15.91	NP	11.73	0.0	4.18	11.25	4.66	0	
	09/19/12	15.91	NP	11.90	0.0	4.01	11.25	4.66	0	
	12/04/12	15.91	NP	10.95	0.0	4.96	11.25	4.66	1	
	06/19/13	15.91	NP	12.04	0.0	3.87	11.25	4.66	0	
MW-5										**98%**
	12/31/97	13.00	NP	6.38	0.0	6.62	8	5	1	
	04/13/98	13.00	NP	5.56	0.0	7.44	8	5	1	
	11/06/98	13.00	NP	6.59	0.0	6.41	8	5	1	
	03/19/99	13.00	NP	6.20	0.0	6.80	8	5	1	
	06/24/99	13.00	NP	6.73	0.0	6.27	8	5	1	
	09/28/99	13.00	NP	6.91	0.0	6.09	8	5	1	
	11/12/99	13.00	NP	7.06	0.0	5.94	8	5	1	
	02/11/00	13.00	NP	7.00	0.0	6.00	8	5	1	
	05/22/00	13.00	NP	6.21	0.0	6.79	8	5	1	
	09/06/00	13.00	NP	6.56	0.0	6.44	8	5	1	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-5 (cont)	12/19/00	13.00	NP	6.68	0.0	6.32	8	5	1	
	02/21/01	13.00	NP	6.08	0.0	6.92	8	5	1	
	04/03/01	13.00	NP	6.38	0.0	6.62	8	5	1	
	07/10/01	13.00	NP	6.58	0.0	6.42	8	5	1	
	12/12/01	13.00	NP	6.40	0.0	6.60	8	5	1	
	01/22/02	13.00	NP	6.10	0.0	6.90	8	5	1	
	03/08/02	13.00	NP	6.10	0.0	6.90	8	5	1	
	06/13/02	13.00	NP	6.31	0.0	6.69	8	5	1	
	09/26/02	13.00	NP	6.60	0.0	6.40	8	5	1	
	12/12/02	13.00	NP	6.75	0.0	6.25	8	5	1	
	03/17/03	13.00	NP	5.73	0.0	7.27	8	5	1	
	06/18/03	13.00	NP	6.10	0.0	6.90	8	5	1	
	09/03/03	13.00	NP	6.50	0.0	6.50	8	5	1	
	11/26/03	13.00	NP	6.70	0.0	6.30	8	5	1	
	03/05/04	13.00	NP	5.70	0.0	7.30	8	5	1	
	06/02/04	13.00	NP	6.27	0.0	6.73	8	5	1	
	09/03/04	13.00	NP	6.61	0.0	6.39	8	5	1	
	12/16/04	13.00	NP	6.02	0.0	6.98	8	5	1	
	03/29/05	13.00	NP	5.25	0.0	7.75	8	5	1	
	06/14/05	13.00	NP	5.82	0.0	7.18	8	5	1	
	08/10/05	13.00	NP	6.00	0.0	7.00	8	5	1	
	09/29/05	13.00	NP	6.26	0.0	6.74	8	5	1	
	12/21/05	13.00	NP	5.91	0.0	7.09	8	5	1	
	03/24/06	13.00	NP	NA[2]	NA[2]	NA	8	5	1	
	07/28/06	13.00	NP	6.08	0.0	6.92	8	5	1	
	11/29/06	15.39	NP	9.39	0.0	6.00	10.39	5	1	
	06/01/07	15.39	NP	10.60	0.0	4.79	10.39	5	0	
	11/14/07	15.39	NP	9.77	0.0	5.62	10.39	5	1	
	06/05/08	15.39	NP	9.74	0.0	5.65	10.39	5	1	
	12/18/08	15.39	NP	9.80	0.0	5.59	10.39	5	1	
	03/04/09	15.39	NP	8.78	0.0	6.61	10.39	5	1	
	04/01/09	15.39	NP	9.16	0.0	6.23	10.39	5	1	
	06/17/09	15.39	NP	9.51	0.0	5.88	10.39	5	1	
	12/08/09	15.39	NP	9.52	0.0	5.87	10.39	5	1	
	06/16/10	15.39	NP	9.31	0.0	6.08	10.39	5	1	
	12/14/10	15.39	NP	9.31	0.0	6.08	10.39	5	1	
	06/07/11	15.39	NP	9.06	0.0	6.33	10.39	5	1	
	06/21/11	15.39	NP	9.06	0.0	6.33	10.39	5	1	
	09/26/11	15.39	NP	9.30	0.0	6.09	10.39	5	1	
	12/05/11	15.39	NP	9.31	0.0	6.08	10.39	5	1	
	02/06/12	15.39	NP	9.32	0.0	6.07	10.39	5	1	
	06/19/12	15.39	NP	9.16	0.0	6.23	10.39	5	1	
	09/19/12	15.39	NP	9.39	0.0	6.00	10.39	5	1	
	12/04/12	15.39	NP	9.17	0.0	6.22	10.39	5	1	
	06/19/13	15.39	NP	9.32	0.0	6.07	10.39	5	1	
MW-6										**75%**
	06/24/99	13.51	NP	8.61	0.0	4.90	8	5.51	0	
	09/28/99	13.51	NP	9.26	0.0	4.25	8	5.51	0	
	11/12/99	13.51	NP	8.01	0.0	5.50	8	5.51	0	
	02/11/00	13.51	NP	7.20	0.0	6.31	8	5.51	1	
	05/22/00	13.51	NP	7.13	0.0	6.38	8	5.51	1	
	09/06/00	13.51	NP	7.12	0.0	6.39	8	5.51	1	
	12/19/00	13.51	NP	7.57	0.0	5.94	8	5.51	1	
	02/21/01	13.51	NP	7.50	0.0	6.01	8	5.51	1	
	04/03/01	13.51	NP	6.88	0.0	6.63	8	5.51	1	
	07/10/01	13.51	NP	7.15	0.0	6.36	8	5.51	1	
	12/12/01	13.51	NP	9.50	0.0	4.01	8	5.51	0	
	01/22/02	13.51	NP	6.69	0.0	6.82	8	5.51	1	
	03/08/02	13.51	NP	6.98	0.0	6.53	8	5.51	1	
	06/13/02	13.51	NP	7.45	0.0	6.06	8	5.51	1	
	09/26/02	13.51	NP	7.95	0.0	5.56	8	5.51	1	
	12/12/02	13.51	NP	7.71	0.0	5.80	8	5.51	1	
	12/18/02	Monitoring well was destroyed								

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-7										**10%**
	12/31/97	13.86	NP	8.88	0.0	4.98	8	5.86	0	
	04/13/98	13.86	NP	7.86	0.0	6.00	8	5.86	1	
	11/06/98	13.86	NP	9.55	0.0	4.31	8	5.86	0	
	03/19/99	13.86	NP	8.41	0.0	5.45	8	5.86	0	
	06/24/99	13.86	NP	9.08	0.0	4.78	8	5.86	0	
	09/28/99	13.86	NP	9.60	0.0	4.26	8	5.86	0	
	11/12/99	13.86	NP	9.77	0.0	4.09	8	5.86	0	
	02/11/00	13.86	NP	8.67	0.0	5.19	8	5.86	0	
	05/22/00	13.86	NP	8.43	0.0	5.43	8	5.86	0	
	09/06/00	13.86	NP	8.88	0.0	4.98	8	5.86	0	
	12/19/00	13.86	NP	9.21	0.0	4.65	8	5.86	0	
	02/21/01	13.86	NP	8.13	0.0	5.73	8	5.86	0	
	04/03/01	13.86	NP	8.45	0.0	5.41	8	5.86	0	
	07/10/01	13.86	NP	8.87	0.0	4.99	8	5.86	0	
	12/12/01	13.86	NP	8.39	0.0	5.47	8	5.86	0	
	01/22/02	13.86	NP	7.99	0.0	5.87	8	5.86	1	
	03/08/02	13.86	NP	8.51	0.0	5.35	8	5.86	0	
	06/13/02	13.86	NP	8.90	0.0	4.96	8	5.86	0	
	09/26/02	13.86	NP	9.00	0.0	4.86	8	5.86	0	
	12/12/02	13.86	NP	9.28	0.0	4.58	8	5.86	0	
	12/18/02	Monitoring well was destroyed								
MW-8 [3]										**0%**
	12/31/97	12.45	8.49	8.82	0.33	3.63	8	4.45	0	
	11/06/98	12.45	9.25	10.30	1.05	2.15	8	4.45	0	
	11/21/98	Monitoring well was destroyed and replaced with well MW-8A								
MW-8A										**0%**
	12/12/01	12.94	NP	7.20	0.0	5.74	5	20	0	
	01/22/02	12.94	NP	7.20	0.0	5.74	5	20	0	
	03/08/02	12.94	NP	7.70	0.0	5.24	5	20	0	
	06/13/02	12.94	NP	7.72	0.0	5.22	5	20	0	
	09/26/02	12.94	NP	7.91	0.0	5.03	5	20	0	
	12/12/02	12.94	NP	8.15	0.0	4.79	5	20	0	
	03/17/03	12.94	NP	7.28	0.0	5.66	5	20	0	
	06/18/03	12.94	NP	7.72	0.0	5.22	5	20	0	
	09/03/03	12.94	NP	8.18	0.0	4.76	5	20	0	
	11/26/03	12.94	NP	8.55	0.0	4.39	5	20	0	
	03/05/04	12.94	NP	6.92	0.0	6.02	5	20	0	
	06/02/04	12.94	NP	7.92	0.0	5.02	5	20	0	
	09/03/04	12.94	NP	8.16	0.0	4.78	5	20	0	
	12/16/04	12.94	NP	7.62	0.0	5.32	5	20	0	
	03/29/05	12.94	NP	6.63	0.0	6.31	5	20	0	
	06/14/05	12.94	NP	7.60	0.0	5.34	5	20	0	
	08/10/05	12.94	NP	7.50	0.0	5.44	5	20	0	
	09/29/05	12.94	NP	7.76	0.0	5.18	5	20	0	
	12/21/05	12.94	NP	6.90	0.0	6.04	5	20	0	
	03/24/06	12.94	NP	6.65	0.0	6.29	5	20	0	
	07/28/06	12.94	NP	7.34	0.0	5.60	5	20	0	
	11/29/06	14.99	NP	11.41	0.0	3.58	7.05	22.05	0	
	06/01/07	14.99	NP	11.26	0.0	3.73	7.05	22.05	0	
	11/14/07	14.99	NP	11.40	0.0	3.59	7.05	22.05	0	
	06/05/08	14.99	NP	11.45	0.0	3.54	7.05	22.05	0	
	12/18/08	14.99	NP	11.30	0.0	3.69	7.05	22.05	0	
	03/04/09	14.99	NP	10.07	0.0	4.92	7.05	22.05	0	
	04/01/09	14.99	NP	10.92	0.0	4.07	7.05	22.05	0	
	06/17/09	14.99	NP	11.40	0.0	3.59	7.05	22.05	0	
	12/08/09	14.99	NP	11.64	0.0	3.35	7.05	22.05	0	
	06/16/10	14.99	NP	11.75	0.0	3.24	7.05	22.05	0	
	12/14/10	14.99	NP	10.75	0.0	4.24	7.05	22.05	0	
	06/07/11	14.99	NP	10.51	0.0	4.48	7.05	22.05	0	
	06/21/11	14.99	NP	10.64	0.0	4.35	7.05	22.05	0	
	09/26/11	14.99	NP	11.21	0.0	3.78	7.05	22.05	0	
	12/05/11	14.99	NP	11.29	0.0	3.70	7.05	22.05	0	
	02/06/12	14.99	NP	10.75	0.0	4.24	7.05	22.05	0	
	06/19/12	14.99	NP	11.04	0.0	3.95	7.05	22.05	0	
	09/19/12	14.99	NP	11.38	0.0	3.61	7.05	22.05	0	
	12/04/12	14.99	NP	9.87	0.0	5.12	7.05	22.05	0	
	06/19/13	14.99	NP	11.44	0.0	3.55	7.05	22.05	0	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-9										**100%**
	12/18/08	16.33	NP	12.88	0.0	3.45	15	1.33	1	
	03/04/09	16.33	NP	11.04	0.0	5.29	15	1.33	1	
	04/01/09	16.33	NP	11.51	0.0	4.82	15	1.33	1	
	06/17/09	16.33	NP	11.95	0.0	4.38	15	1.33	1	
	12/08/09	16.33	NP	12.30	0.0	4.03	15	1.33	1	
	06/16/10	16.33	NP	11.75	0.0	4.58	15	1.33	1	
	12/14/10	16.33	NP	11.51	0.0	4.82	15	1.33	1	
	06/07/11	16.33	NP	11.32	0.0	5.01	15	1.33	1	
	06/21/11	16.33	NP	11.37	0.0	4.96	15	1.33	1	
	09/26/11	16.33	NP	11.92	0.0	4.41	15	1.33	1	
	12/05/11	16.33	NP	11.99	0.0	4.34	15	1.33	1	
	02/06/12	16.33	NP	11.70	0.0	4.63	15	1.33	1	
	06/19/12	16.33	NP	11.76	0.0	4.57	15	1.33	1	
	09/19/12	16.33	NP	12.03	0.0	4.30	15	1.33	1	
	12/04/12	16.33	NP	11.15	0.0	5.18	15	1.33	1	
	06/19/13	16.33	NP	12.12	0.0	4.21	15	1.33	1	
MW-10										**100%**
	12/18/08	15.65	NP	14.34	0.0	1.31	15	0.65	1	
	03/04/09	15.65	NP	9.78	0.0	5.87	15	0.65	1	
	04/01/09	15.65	NP	10.33	0.0	5.32	15	0.65	1	
	06/17/09	15.65	NP	10.79	0.0	4.86	15	0.65	1	
	12/08/09	15.65	NP	10.96	0.0	4.69	15	0.65	1	
	06/16/10	15.65	NP	10.62	0.0	5.03	15	0.65	1	
	12/14/10	15.65	NP	10.31	0.0	5.34	15	0.65	1	
	06/07/11	15.65	NP	10.11	0.0	5.54	15	0.65	1	
	06/21/11	15.65	NP	10.19	0.0	5.46	15	0.65	1	
	09/26/11	15.65	NP	10.79	0.0	4.86	15	0.65	1	
	12/05/11	15.65	NP	10.80	0.0	4.85	15	0.65	1	
	02/06/12	15.65	NP	10.51	0.0	5.14	15	0.65	1	
	06/19/12	15.65	NP	10.61	0.0	5.04	15	0.65	1	
	09/19/12	15.65	NP	10.57	0.0	5.08	15	0.65	1	
	12/04/12	15.65	NP	9.96	0.0	5.69	15	0.65	1	
	06/19/13	15.65	NP	10.90	0.0	4.75	15	0.65	1	
MW-11										**100%**
	12/18/08	15.47	NP	13.42	0.0	2.05	15	0.47	1	
	03/04/09	15.47	NP	9.57	0.0	5.90	15	0.47	1	
	04/01/09	15.47	NP	9.94	0.0	5.53	15	0.47	1	
	06/17/09	15.47	NP	10.40	0.0	5.07	15	0.47	1	
	12/09/09	15.47	NP	10.68	0.0	4.79	15	0.47	1	
	06/16/10	15.47	NP	10.02	0.0	5.45	15	0.47	1	
	12/01/10	15.47	NP	10.02	0.0	5.45	15	0.47	1	
	06/07/11	15.47	NP	10.00	0.0	5.47	15	0.47	1	
	06/21/11	15.47	NP	9.85	0.0	5.62	15	0.47	1	
	09/26/11	15.47	NP	10.33	0.0	5.14	15	0.47	1	
	12/05/11	15.47	NP	10.59	0.0	4.88	15	0.47	1	
	02/06/12	15.47	NP	10.59	0.0	4.88	15	0.47	1	
	06/19/12	15.47	NP	10.12	0.0	5.35	15	0.47	1	
	09/19/12	15.47	NP	10.54	0.0	4.93	15	0.47	1	
	12/04/12	15.47	NP	9.65	0.0	5.82	15	0.47	1	
	06/19/13	15.47	NP	10.53	0.0	4.94	15	0.47	1	
MW-12										**100%**
	12/18/08	16.79	NP	12.75	0.0	4.04	15	1.79	1	
	03/04/09	16.79	NP	10.60	0.0	6.19	15	1.79	1	
	04/01/09	16.79	NP	11.23	0.0	5.56	15	1.79	1	
	6/17/2009	16.79	NP	11.83	0.0	4.96	15	1.79	1	
	12/8/2009	16.79	NP	12.13	0.0	4.66	15	1.79	1	
	6/16/2010	16.79	NP	11.31	0.0	5.48	15	1.79	1	
	12/14/2010	16.79	NP	11.15	0.0	5.64	15	1.79	1	
	6/7/2011	16.79	NP	10.81	0.0	5.98	15	1.79	1	
	6/21/2011	16.79	NP	11.01	0.0	5.78	15	1.79	1	
	9/26/2011	16.79	NP	11.77	0.0	5.02	15	1.79	1	
	12/5/2011	16.79	NP	11.89	0.0	4.90	15	1.79	1	
	2/6/2012	16.79	NP	11.60	0.0	5.19	15	1.79	1	
	6/19/2012	16.79	NP	11.49	0.0	5.30	15	1.79	1	
	9/19/2012	16.79	NP	12.04	0.0	4.75	15	1.79	1	
	12/4/2012	16.79	NP	10.74	0.0	6.05	15	1.79	1	
	6/19/2013	16.79	NP	12.01	0.0	4.78	15	1.79	1	

TABLE 1. Historical Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)

Notes:
ft amsl = feet above mean sea level
ft bTOC = feet below top of casing
ft bgs = feet below ground surface
NP = no product detected with the interface probe
** = Ground elevation assumed to be approximately equal to casing elevation at time of install
(top of screen elevation does not change when grade elevation changes)
NA = Not Available

TABLE 2. Free Product Recovery System Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-1										**0%**
	5/11/2004	14.04	NP	6.60	NP	7.44	5	9.04	0	
	10/5/2004*	14.04	NP	8.45	NP	5.59	5	9.04	0	
	2/10/2005	14.04	--	--	--	--	5	9.04	--	
	5/6/2005	14.04	--	--	--	--	5	9.04	--	
	9/12/2005*	14.04	NP	7.85	NP	6.19	5	9.04	0	
	11/2/2005	14.04	NP	8.12	NP	5.92	5	9.04	0	
	2/3/2006	14.04	--	--	--	--	5	9.04	--	
	4/23/2006*	14.04	--	--	--	--	5	9.04	--	
	8/18/2006	14.04	--	--	--	--	5	9.04	--	
	11/2/2006	12.95	--	--	--	--	3.91	9.04	--	
	2/1/2007	12.95	--	--	--	--	3.91	9.04	--	
	5/3/2007	12.95	--	--	--	--	3.91	9.04	--	
	8/2/2007	12.95	--	--	--	--	3.91	9.04	--	
	11/2/2007	12.95	--	--	--	--	3.91	9.04	--	
	2/1/2008	12.95	--	--	--	--	3.91	9.04	--	
	5/2/2008	12.95	--	--	--	--	3.91	9.04	--	
	8/1/2008	12.95	--	--	--	--	3.91	9.04	--	
	11/7/2008	12.95	--	--	--	--	3.91	9.04	--	
	2/4/2009	12.95	--	--	--	--	3.91	9.04	--	
	5/4/2009	12.95	--	--	--	--	3.91	9.04	--	
	8/5/2009	12.95	--	--	--	--	3.91	9.04	--	
	11/4/2009	12.95	--	--	--	--	3.91	9.04	--	
	2/3/2010	12.95	--	--	--	--	3.91	9.04	--	
	5/5/2010	12.95	--	--	--	--	3.91	9.04	--	
	8/11/2010	12.95	--	--	--	--	3.91	9.04	--	
	11/3/2010	12.95	--	--	--	--	3.91	9.04	--	
	Well inaccessible; product and water levels not measured.									
RW-2										**0%**
	5/11/2004	16.71	NP	9.10	NP	7.61	8	8.71	0	
	10/5/2004*	16.71	--	--	--	--	8	8.71	--	
	2/10/2005	16.71	--	--	--	--	8	8.71	--	
	5/6/2005	16.71	--	--	--	--	8	8.71	--	
	9/12/2005*	16.71	NP	10.23	NP	6.48	8	8.71	0	
	11/2/2005	16.71	NP	10.50	NP	6.21	8	8.71	0	
	2/3/2006	16.71	NP	7.66	NP	9.05	8	8.71	--	
	4/23/2006*	16.71	--	--	--	--	8	8.71	--	
	8/18/2006	16.71	--	9.93	--	6.78	8	8.71	0	
	11/2/2006	15.56	--	--	--	--	6.85	8.71	--	
	2/1/2007	15.56	--	--	--	--	6.85	8.71	--	
	5/3/2007	15.56	--	--	--	--	6.85	8.71	--	
	8/2/2007	15.56	--	--	--	--	6.85	8.71	--	
	11/2/2007	15.56	--	--	--	--	6.85	8.71	--	
	2/1/2008	15.56	--	--	--	--	6.85	8.71	--	
	5/2/2008	15.56	--	--	--	--	6.85	8.71	--	
	8/1/2008	15.56	--	--	--	--	6.85	8.71	--	
	11/7/2008	15.56	--	--	--	--	6.85	8.71	--	
	2/4/2009	15.56	--	--	--	--	6.85	8.71	--	
	5/4/2009	15.56	--	--	--	--	6.85	8.71	--	
	8/5/2009	15.56	--	--	--	--	6.85	8.71	--	
	11/4/2009	15.56	--	--	--	--	6.85	8.71	--	
	2/3/2010	15.56	--	--	--	--	6.85	8.71	--	
	5/5/2010	15.56	--	--	--	--	6.85	8.71	--	
	8/11/2010	15.56	--	--	--	--	6.85	8.71	--	
	11/3/2010	15.56	--	--	--	--	6.85	8.71	--	
	06/07/11	15.56	NP	7.19	0.00	8.37	6.85	8.71	0	
	06/21/11	15.56	NP	9.02	0.00	6.54	6.85	8.71	0	
	12/05/11	15.56	NP	9.44	0.00	6.12	6.85	8.71	0	
	02/06/12	15.56	NP	9.22	0.00	6.34	6.85	8.71	0	
	06/20/12	15.56	NP	9.80	0.00	5.76	6.85	8.71	0	
	09/19/12	15.56	NP	10.35	0.00	5.21	6.85	8.71	0	
	12/04/12	15.56	NP	6.89	0.00	8.67	6.85	8.71	0	
	06/19/13	15.56	NP	10.13	0.00	5.43	6.85	8.71	0	

TABLE 2. Free Product Recovery System Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-3										**0%**
	5/11/2004	16.55	NP	8.90	NP	7.65	8	8.55	0	
	10/5/2004*	16.55	10.81	10.84	0.03	5.71	8	8.55	0	
	2/10/2005	16.55	9.26	10.66	1.40	5.89	8	8.55	0	
	5/6/2005	16.55	8.99	9.88	0.89	6.67	8	8.55	0	
	9/12/2005*	16.55	10.11	11.11	1.00	5.44	8	8.55	0	
	11/2/2005	16.55	10.57	10.82	0.25	5.73	8	8.55	0	
	2/3/2006	16.55	8.35	8.70	0.35	7.85	8	8.55	0	
	4/23/2006*	16.55	8.85	8.97	0.12	7.58	8	8.55	0	
	8/18/2006	16.55	--	9.89	--	6.66	8	8.55	0	
	11/2/2006	15.56	10.65	10.67	0.02	4.89	7.01	8.55	0	
	2/1/2007	15.56	10.65	10.66	0.01	4.90	7.01	8.55	0	
	5/3/2007	15.56	10.71	10.81	0.10	4.75	7.01	8.55	0	
	8/2/2007	15.56	11.00	11.05	0.05	4.51	7.01	8.55	0	
	11/2/2007	15.56	--	--	--	--	7.01	8.55	--	
	2/1/2008	15.56	10.77	11.91	1.14	3.65	7.01	8.55	0	
	5/2/2008	15.56	10.64	11.66	1.02	3.90	7.01	8.55	0	
	8/1/2008	15.56	10.75	11.05	0.30	4.51	7.01	8.55	0	
	11/7/2008	15.56	10.22	10.90	0.68	4.66	7.01	8.55	0	
	2/4/2009	15.56	11.20	11.32	0.12	4.24	7.01	8.55	0	
	5/4/2009	15.56	10.82	11.41	0.59	4.15	7.01	8.55	0	
	8/5/2009	15.56	11.10	11.14	0.04	4.42	7.01	8.55	0	
	11/4/2009	15.56	10.83	11.24	0.41	4.32	7.01	8.55	0	
	2/3/2010	15.56	9.51	12.20	2.69	3.36	7.01	8.55	0	
	5/5/2010	15.56	10.07	10.9	0.83	4.66	7.01	8.55	0	
	8/11/2010	15.56	10.81	11.19	0.38	4.37	7.01	8.55	0	
	11/3/2010	15.56	10.99	11.72	0.73	3.84	7.01	8.55	0	
	01/12/11	15.56	9.87	11.04	1.17	4.52	7.01	8.55	0	
	01/26/11	15.56	10.28	10.43	0.15	5.13	7.01	8.55	0	
	02/10/11	15.56	10.45	10.90	0.45	4.66	7.01	8.55	0	
	02/24/11	15.56	9.42	12.13	2.71	3.43	7.01	8.55	0	
	03/09/11	15.56	9.45	13.04	3.60	2.52	7.01	8.55	0	
	03/23/11	15.56	8.63	12.18	3.55	3.38	7.01	8.55	0	
	04/06/11	15.56	9.10	11.49	2.39	4.07	7.01	8.55	0	
	04/20/11	15.56	9.70	10.88	1.18	4.68	7.01	8.55	0	
	05/04/11	15.56	10.05	10.47	0.42	5.09	7.01	8.55	0	
	05/18/11	15.56	9.95	10.17	0.22	5.39	7.01	8.55	0	
	06/07/11	15.56	9.73	13.52	3.79	2.04	7.01	8.55	0	
	06/21/11	15.56	10.10	11.20	1.10	4.36	7.01	8.55	0	
	09/26/11	15.56	10.63	12.66	2.03	2.9	7.01	8.55	0	
	10/05/11	15.56	10.48	10.98	0.50	4.58	7.01	8.55	0	
	10/19/11	15.56	10.64	11.91	1.27	3.65	7.01	8.55	0	
	12/05/11	15.56	10.75	12.67	1.92	2.89	7.01	8.55	0	
	02/06/12	15.56	10.32	12.54	2.22	3.02	7.01	8.55	0	
	06/20/12	15.56	10.38	12.56	2.18	3.00	7.01	8.55	0	
	09/19/12	15.56	10.87	13.07	2.20	2.49	7.01	8.55	0	
	12/04/12	15.56	9.35	13.54	4.19	2.02	7.01	8.55	0	
	06/19/13	15.56	10.75	13.62	2.87	1.94	7.01	8.55	0	
RW-4										**7%**
	5/11/2004	15.92	7.70	7.75	0.05	8.17	8	7.92	1	
	10/5/2004*	15.92	10.06	10.11	0.05	5.81	8	7.92	0	
	2/10/2005	15.92	8.30	8.41	0.11	7.51	8	7.92	0	
	5/6/2005	15.92	8.10	8.15	0.05	7.77	8	7.92	0	
	9/12/2005*	15.92	1.00	9.74	8.74	6.18	8	7.92	0	
	11/2/2005	15.92	9.76	9.99	0.23	5.93	8	7.92	0	
	2/3/2006	15.92	7.73	7.75	0.02	8.17	8	7.92	1	
	4/23/2006*	15.92	7.52	7.52	0.00	8.40	8	7.92	1	
	8/18/2006	15.92	8.03	8.04	0.01	7.88	8	7.92	0	
	11/2/2006	14.92	--	9.71	--	5.21	7.00	7.92	0	
	2/1/2007	14.92	Sheen	9.84	0.00	5.08	7.00	7.92	0	
	5/3/2007	14.92	--	--	--	--	7.00	7.92	--	
	8/2/2007	14.92	10.29	10.38	0.09	4.54	7.00	7.92	0	
	11/2/2007	14.92	--	--	--	--	7.00	7.92	--	
	2/1/2008	14.92	9.79	9.95	0.16	4.97	7.00	7.92	0	
	5/2/2008	14.92	10.09	10.23	0.14	4.69	7.00	7.92	0	

TABLE 2. Free Product Recovery System Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-4 (cont)	8/1/2008	14.92	10.80	11.30	0.50	3.62	7.00	7.92	0	
	11/7/2008	14.92	10.50	11.20	0.70	3.72	7.00	7.92	0	
	2/4/2009	14.92	10.29	10.83	0.54	4.09	7.00	7.92	0	
	5/4/2009	14.92	9.83	11.44	1.61	3.48	7.00	7.92	0	
	8/5/2009	14.92	10.31	10.88	0.57	4.04	7.00	7.92	0	
	11/4/2009	14.92	10.06	10.78	0.72	4.14	7.00	7.92	0	
	2/3/2010	14.92	9.12	9.33	0.21	5.59	7.00	7.92	0	
	5/5/2010	14.92	9.37	9.69	0.32	5.23	7.00	7.92	0	
	8/11/2010	14.92	10.08	10.56	0.48	4.36	7.00	7.92	0	
	11/3/2010	14.92	10.38	10.44	0.06	4.48	7.00	7.92	0	
	01/12/11	14.92	9.12	9.20	0.08	5.78	7.00	7.92	0	
	01/26/11	14.92	9.39	9.89	0.50	5.38	7.00	7.92	0	
	02/10/11	14.92	9.52	10.54	1.02	5.09	7.00	7.92	0	
	02/24/11	14.92	8.80	9.10	0.30	6.03	7.00	7.92	0	
	03/09/11	14.92	8.93	8.96	0.03	5.98	7.00	7.92	0	
	03/23/11	14.92	8.39	8.43	0.04	6.52	7.00	7.92	0	
	04/06/11	14.92	8.46	8.50	0.04	6.45	7.00	7.92	0	
	04/14/11	14.92	8.88	8.91	0.03	6.03	7.00	7.92	0	
	05/04/11	14.92	9.13	9.17	0.04	5.78	7.00	7.92	0	
	05/18/11	14.92	9.18	9.20	0.02	5.73	7.00	7.92	0	
	06/07/11	14.92	NP	8.95	0.00	5.97	7.00	7.92	0	
	06/21/11	14.92	9.33 [2]	9.33	0.00	5.59	7.00	7.92	0	
	09/26/11	14.92	9.82	10.41	0.59	4.92	7.00	7.92	0	
	10/05/11	14.92	9.68	10.17	0.49	5.09	7.00	7.92	0	
	10/19/11	14.92	9.60	10.26	0.66	5.12	7.00	7.92	0	
	12/05/11	14.92	9.70	10.00	0.30	5.13	7.00	7.92	0	
	02/06/12	14.92	9.10	10.66	1.56	5.35	7.00	7.92	0	
	06/20/12	14.92	9.20	9.27	0.07	5.70	7.00	7.92	0	
	09/19/12	14.92	9.62	14.21	4.59	3.92	7.00	7.92	0	
	12/04/12	14.92	8.37	11.69	3.32	5.55	7.00	7.92	0	
	06/19/13	14.92	9.94	14.27	4.33	3.68	7.00	7.92	0	
RW-5										**33%**
	5/11/2004	15.82	NP	7.10	NP	8.72	8	7.82	1	
	10/5/2004*	15.82	NP	8.04	NP	7.78	8	7.82	0	
	2/10/2005	15.82	--	--	--	--	8	7.82	--	
	5/6/2005	15.82	--	--	--	--	8	7.82	--	
	9/12/2005*	15.82	NP	7.83	NP	7.99	8	7.82	1	
	11/2/2005	15.82	--	--	--	--	8	7.82	--	
	2/3/2006	15.82	NP	6.88	NP	8.94	8	7.82	1	
	4/23/2006*	15.82	--	--	--	--	8	7.82	--	
	8/18/2006	15.82	--	--	--	--	8	7.82	--	
	11/2/2006	14.79	--	--	--	--	6.97	7.82	--	
	2/1/2007	14.79	--	--	--	--	6.97	7.82	--	
	5/3/2007	14.79	--	--	--	--	6.97	7.82	--	
	8/2/2007	14.79	--	--	--	--	6.97	7.82	--	
	11/2/2007	14.79	--	--	--	--	6.97	7.82	--	
	2/1/2008	14.79	8.00	8.17	0.17	6.62	6.97	7.82	0	
	5/2/2008	14.79	--	--	--	--	6.97	7.82	--	
	8/1/2008	14.79	9.05	9.30	0.25	5.49	6.97	7.82	0	
	11/7/2008	14.79	--	--	--	--	6.97	7.82	--	
	2/4/2009	14.79	--	--	--	--	6.97	7.82	--	
	5/4/2009	14.79	8.45	8.94	0.49	5.85	6.97	7.82	0	
	8/5/2009	14.79	--	--	--	--	6.97	7.82	--	
	11/4/2009	14.79	--	--	--	--	6.97	7.82	--	
	2/3/2010	14.79	sheen	6.60	0.00	8.19	6.97	7.82	1	
	5/5/2010	14.79	--	--	--	--	6.97	7.82	--	
	8/11/2010	14.79	--	--	--	--	6.97	7.82	--	
	11/3/2010	14.79	6.41	9.54	3.13	5.25	6.97	7.82	0	
	04/14/11	14.79	6.74	9.72	2.98	7.16	6.97	7.82	0	
	05/18/11	14.79	6.78 [2]	6.78	0.00	8.01	6.97	7.82	1	
	06/07/11	14.79	7.38	7.47	0.09	7.38	6.97	7.82	0	
	09/26/11	14.79	8.95	9.75	0.80	5.60	6.97	7.82	0	
	10/05/11	14.79	8.66	9.09	0.43	6.00	6.97	7.82	0	
	02/06/12	14.79	8.47	12.01	3.54	5.26	6.97	7.82	0	

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Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-5 (cont.	06/20/12	Well not accessible.								
	09/19/12	Well not accessible.								
	12/04/12	Well not accessible.								
	06/19/13	Well not accessible.								
RW-6										**11%**
	5/11/2004	16.63	NP	7.35	NP	9.28	8	8.63	1	
	10/5/2004*	16.63	8.79	8.82	0.03	7.81	8	8.63	0	
	2/10/2005	16.63	7.78	8.47	0.69	8.16	8	8.63	0	
	5/6/2005	16.63	7.66	7.92	0.26	8.71	8	8.63	1	
	9/12/2005*	16.63	8.26	8.79	0.53	7.84	8	8.63	0	
	11/2/2005	16.63	8.52	8.81	0.29	7.82	8	8.63	0	
	2/3/2006	16.63	7.35	7.39	0.04	9.24	8	8.63	1	
	4/23/2006*	16.63	7.25	7.80	0.55	8.83	8	8.63	1	
	8/18/2006	16.63	--	7.88	--	8.75	8	8.63	1	
	11/2/2006	15.75	8.75	8.84	0.09	6.91	7.12	8.63	0	
	2/1/2007	15.75	8.85	8.89	0.04	6.86	7.12	8.63	0	
	5/3/2007	15.75	8.82	8.92	0.10	6.83	7.12	8.63	0	
	8/2/2007	15.75	9.10	9.48	0.38	6.27	7.12	8.63	0	
	11/2/2007	15.75	8.89	9.90	1.01	5.85	7.12	8.63	0	
	2/1/2008	15.75	8.24	8.41	0.17	7.34	7.12	8.63	0	
	5/2/2008	15.75	8.33	9.17	0.84	6.58	7.12	8.63	0	
	8/1/2008	15.75	8.75	10.30	1.55	5.45	7.12	8.63	0	
	11/7/2008	15.75	9.00	10.50	1.50	5.25	7.12	8.63	0	
	2/4/2009	15.75	9.00	10.98	1.98	4.77	7.12	8.63	0	
	5/4/2009	15.75	8.45	10.06	1.61	5.69	7.12	8.63	0	
	8/5/2009	15.75	8.73	10.93	2.20	4.82	7.12	8.63	0	
	11/4/2009	15.75	8.93	10.92	1.99	4.83	7.12	8.63	0	
	2/3/2010	15.75	8.55	9.81	1.26	5.94	7.12	8.63	0	
	5/5/2010	15.75	8.62	8.94	0.32	6.81	7.12	8.63	0	
	8/11/2010	15.75	8.78	10.14	1.36	5.61	7.12	8.63	0	
	11/3/2010	15.75	8.84	10.61	1.77	5.14	7.12	8.63	0	
	01/12/11	15.75	8.51	9.68	1.17	6.89	7.12	8.63	0	
	01/26/11	15.75	8.65	9.55	0.90	6.83	7.12	8.63	0	
	02/10/11	15.75	8.44	9.74	1.30	6.92	7.12	8.63	0	
	02/24/11	15.75	8.15	9.82	1.67	7.10	7.12	8.63	0	
	03/09/11	15.75	8.25	9.37	1.12	7.16	7.12	8.63	0	
	03/23/11	15.75	8.18	8.96	0.78	7.34	7.12	8.63	0	
	04/06/11	15.75	8.19	8.95	0.76	7.33	7.12	8.63	0	
	04/20/11	15.75	8.43	8.54	0.11	7.29	7.12	8.63	0	
	05/04/11	15.75	8.51	8.62	0.11	7.21	7.12	8.63	0	
	05/18/11	15.75	8.53	8.70	0.17	7.17	7.12	8.63	0	
	06/07/11	15.75	8.82	9.05	0.23	6.86	7.12	8.63	0	
	06/21/11	15.75	8.89	9.20	0.31	6.77	7.12	8.63	0	
	09/26/11	15.75	8.86	10.20	1.34	6.49	7.12	8.63	0	
	10/05/11	15.75	9.05	9.72	0.67	6.50	7.12	8.63	0	
	10/19/11	15.75	8.99	10.16	1.17	6.41	7.12	8.63	0	
	12/05/12	15.75	9.05	10.62	1.57	6.23	7.12	8.63	0	
	02/06/12	15.75	8.95	10.82	1.87	6.24	7.12	8.63	0	
	06/20/12	15.75	8.92	9.99	1.07	6.51	7.12	8.63	0	
	09/19/12	15.75	9.10	10.83	1.73	6.13	7.12	8.63	0	
	12/04/12	15.75	8.83	10.79	1.96	6.33	7.12	8.63	0	
	06/19/13	15.75	8.86	10.35	1.49	6.44	7.12	8.63	0	
RW-7										**17%**
	5/11/2004	16.02	NP	7.2	NP	8.82	8	8.02	1	
	10/5/2004*	16.02	8.41	8.67	0.26	7.35	8	8.02	0	
	2/10/2005	16.02	7.51	7.7	0.19	8.32	8	8.02	1	
	5/6/2005	16.02	7.28	7.42	0.14	8.6	8	8.02	1	
	9/12/2005*	16.02	7.85	8.04	0.19	7.98	8	8.02	0	
	11/2/2005	16.02	8.05	8.21	0.16	7.81	8	8.02	0	
	2/3/2006	16.02	7.02	7.09	0.07	8.93	8	8.02	1	
	4/23/2006*	16.02	6.85	6.86	0.01	9.16	8	8.02	1	
	8/18/2006	16.02	7.40	7.50	0.10	8.52	8	8.02	1	
	11/2/2006	15.02	--	8.20	--	6.82	7.00	8.02	0	
	2/1/2007	15.02	NP	8.28	NP	6.74	7.00	8.02	0	
	5/3/2007	15.02	--	--	--	--	7.00	8.02	1	

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Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-7 (cont.	8/2/2007	15.02	--	--	--	--	7.00	8.02	1	
	11/2/2007	15.02	8.32	9.24	0.92	5.78	7.00	8.02	0	
	2/1/2008	15.02	8.12	8.45	0.33	6.57	7.00	8.02	0	
	5/2/2008	15.02	7.75	7.81	0.06	7.21	7.00	8.02	0	
	8/1/2008	15.02	8.17	9.4	1.23	5.62	7.00	8.02	0	
	11/7/2008	15.02	8.45	9.2	0.75	5.82	7.00	8.02	0	
	2/4/2009	15.02	8.31	10.92	2.61	4.10	7.00	8.02	0	
	5/4/2009	15.02	7.2	7.94	0.74	7.08	7.00	8.02	0	
	8/5/2009	15.02	8.26	10.26	2.00	4.76	7.00	8.02	0	
	11/4/2009	15.02	8.02	10.51	2.49	4.51	7.00	8.02	0	
	2/3/2010	15.02	7.85	8.33	0.48	6.69	7.00	8.02	0	
	5/5/2010	15.02	7.95	8.23	0.28	6.79	7.00	8.02	0	
	8/11/2010	15.02	7.87	9.85	1.98	5.17	7.00	8.02	0	
	11/3/2010	15.02	7.65	9.48	1.83	5.54	7.00	8.02	0	
	01/12/11	15.02	7.86	7.91	0.05	7.15	7.00	8.02	0	
	01/26/11	15.02	7.55	7.64	0.09	7.44	7.00	8.02	0	
	02/10/11	15.02	7.50	7.68	0.18	7.47	7.00	8.02	0	
	02/24/11	15.02	7.82	8.92	1.10	6.87	7.00	8.02	0	
	03/09/11	15.02	7.42	7.53	0.11	7.57	7.00	8.02	0	
	03/23/11	15.02	NP	7.24	0.00	7.78	7.00	8.02	0	
	04/06/11	15.02	7.73	7.73	0.00	7.29	7.00	8.02	0	
	04/20/11	15.02	7.54	7.56	0.02	7.47	7.00	8.02	0	
	05/04/11	15.02	7.68	7.74	0.06	7.32	7.00	8.02	0	
	05/18/11	15.02	7.35 [2]	7.35	0.00	7.67	7.00	8.02	0	
	06/07/11	15.02	7.98 [2]	7.98	0.00	7.04	7.00	8.02	0	
	06/21/11	15.02	8.07	8.09	0.00	6.93	7.00	8.02	0	
	09/26/11	15.02	8.29	8.90	0.61	6.55	7.00	8.02	0	
	10/05/11	15.02	8.19	8.45	0.26	6.75	7.00	8.02	0	
	10/19/11	15.02	8.24	8.90	0.66	6.58	7.00	8.02	0	
	12/05/11	15.02	8.26	9.77	1.51	6.31	7.00	8.02	0	
	02/06/12	15.02	8.18	9.86	1.68	6.34	7.00	8.02	0	
	06/20/12	15.02	8.35	8.41	0.06	6.65	7.00	8.02	0	
	09/19/12	15.02	8.45	11.44	2.99	5.67	7.00	8.02	0	
	12/04/12	15.02	8.25	8.33	0.08	6.75	7.00	8.02	0	
	06/19/13	15.02	8.25	13.75	5.50	5.12	7.00	8.02	0	
RW-8										**13%**
	5/11/2004	16.93	NP	7.65	NP	9.28	9	7.93	1	
	10/5/2004*	16.93	9.09	9.17	0.08	7.76	9	7.93	0	
	2/10/2005	16.93	8.54	8.55	0.01	8.38	9	7.93	1	
	5/6/2005	16.93	8.22	8.23	0.01	8.70	9	7.93	1	
	9/12/2005*	16.93	8.62	9.26	0.64	7.67	9	7.93	0	
	11/2/2005	16.93	8.81	9.42	0.61	7.51	9	7.93	0	
	2/3/2006	16.93	7.92	8.00	0.08	8.93	9	7.93	1	
	4/23/2006*	16.93	7.63	7.63	0.00	9.30	9	7.93	1	
	8/18/2006	16.93	--	8.21	--	8.72	9	7.93	1	
	11/2/2006	15.91	9.04	9.06	0.02	6.85	7.98	7.93	0	
	2/1/2007	15.91	9.15	9.23	0.08	6.68	7.98	7.93	0	
	5/3/2007	15.91	9.25	9.31	0.06	6.60	7.98	7.93	0	
	8/2/2007	15.91	9.25	9.57	0.32	6.34	7.98	7.93	0	
	11/2/2007	15.91	9.40	9.71	0.31	6.20	7.98	7.93	0	
	2/1/2008	15.91	9.71	10.00	0.29	5.91	7.98	7.93	0	
	5/2/2008	15.91	8.89	9.16	0.27	6.75	7.98	7.93	0	
	8/1/2008	15.91	9.35	10.85	1.50	5.06	7.98	7.93	0	
	11/7/2008	15.91	9.30	10.80	1.50	5.11	7.98	7.93	0	
	2/4/2009	15.91	9.30	11.16	1.86	4.75	7.98	7.93	0	
	5/4/2009	15.91	9.23	9.93	0.70	5.98	7.98	7.93	0	
	8/5/2009	15.91	9.60	10.90	1.30	5.01	7.98	7.93	0	
	11/4/2009	15.91	9.54	10.41	0.87	5.50	7.98	7.93	0	
	2/3/2010	15.91	9.26	9.84	0.58	6.07	7.98	7.93	0	
	5/5/2010	15.91	9.14	9.33	0.19	6.58	7.98	7.93	0	
	8/11/2010	15.91	9.20	9.76	0.56	6.15	7.98	7.93	0	
	11/3/2010	15.91	9.53	10.49	0.96	5.42	7.98	7.93	0	
	01/12/11	15.91	9.07	9.21	0.14	6.80	7.98	7.93	0	
	01/26/11	15.91	9.23	9.31	0.08	6.66	7.98	7.93	0	
	02/10/11	15.91	9.13	9.33	0.20	6.72	7.98	7.93	0	

TABLE 2. Free Product Recovery System Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-8 (cont.	02/24/11	15.91	8.86	9.23	0.37	6.94	7.98	7.93	0	
	03/09/11	15.91	8.78	9.01	0.23	7.06	7.98	7.93	0	
	03/23/11	15.91	8.42	8.70	0.28	7.41	7.98	7.93	0	
	04/06/11	15.91	8.55	8.80	0.25	7.29	7.98	7.93	0	
	04/20/11	15.91	8.92	9.14	0.22	6.92	7.98	7.93	0	
	05/04/11	15.91	9.04	9.20	0.16	6.82	7.98	7.93	0	
	05/18/11	15.91	8.85	9.10	0.25	6.99	7.98	7.93	0	
	06/07/11	15.91	10.23	10.34	0.11	5.65	7.98	7.93	0	
	06/21/11	15.91	9.27	9.41	0.14	6.60	7.98	7.93	0	
	09/26/11	15.91	9.23	9.62	0.39	6.56	7.98	7.93	0	
	10/05/11	15.91	9.28	9.40	0.12	6.59	7.98	7.93	0	
	10/19/11	15.91	9.54	9.77	0.23	6.30	7.98	7.93	0	
	12/05/11	15.91	9.62	10.19	0.57	6.12	7.98	7.93	0	
	02/06/12	15.91	9.21	10.22	1.01	6.40	7.98	7.93	0	
	06/20/12	15.91	9.36	10.28	0.92	6.27	7.98	7.93	0	
	09/19/12	15.91	10.55	11.45	0.90	5.09	7.98	7.93	0	
	12/04/12	15.91	9.29	11.32	2.03	6.01	7.98	7.93	0	
	06/19/13	15.91	9.42	11.11	1.69	5.98	7.98	7.93	0	
RW-9										**0%**
	5/11/2004	17.58	NP	9.40	NP	8.18	9	8.58	0	
	10/5/2004*	17.58	10.24	10.26	0.02	7.32	9	8.58	0	
	2/10/2005	17.58	--	--	--	--	9	8.58	--	
	5/6/2005	17.58	--	--	--	--	9	8.58	--	
	9/12/2005*	17.58	NP	10.27	NP	7.31	9	8.58	0	
	11/2/2005	17.58	NP	10.42	NP	7.16	9	8.58	0	
	2/3/2006	17.58	NP	9.21	NP	8.37	9	8.58	0	
	4/23/2006*	17.58	--	--	--	--	9	8.58	--	
	8/18/2006	17.58	--	--	--	--	9	8.58	--	
	11/2/2006	16.57	--	--	--	--	7.99	8.58	--	
	2/1/2007	16.57	--	--	--	--	7.99	8.58	--	
	5/3/2007	16.57	--	--	--	--	7.99	8.58	--	
	8/2/2007	16.57	--	--	--	--	7.99	8.58	--	
	11/2/2007	16.57	--	--	--	--	7.99	8.58	--	
	2/1/2008	16.57	10.71	11.05	0.34	5.52	7.99	8.58	0	
	5/2/2008	16.57	8.34	9.41	1.07	7.16	7.99	8.58	0	
	8/1/2008	16.57	10.05	11.25	1.20	5.32	7.99	8.58	0	
	11/7/2008	16.57	9.90	11.10	1.20	5.47	7.99	8.58	0	
	2/4/2009	16.57	9.88	11.70	1.82	4.87	7.99	8.58	0	
	5/4/2009	16.57	9.87	10.64	0.77	5.93	7.99	8.58	0	
	8/5/2009	16.57	9.95	10.59	0.64	5.98	7.99	8.58	0	
	11/4/2009	16.57	9.91	10.5	0.59	6.07	7.99	8.58	0	
	2/3/2010	16.57	9.46	9.52	0.06	7.05	7.99	8.58	0	
	5/5/2010	16.57	9.57	9.63	0.06	6.94	7.99	8.58	0	
	8/11/2010	16.57	9.78	10.02	0.24	6.55	7.99	8.58	0	
	11/3/2010	16.57	9.86	10.16	0.30	6.41	7.99	8.58	0	
	01/12/11	16.57	9.26	9.45	0.19	7.25	7.99	8.58	0	
	01/26/11	16.57	9.32	9.53	0.21	7.19	7.99	8.58	0	
	02/10/11	16.57	9.42	9.63	0.21	7.09	7.99	8.58	0	
	02/24/11	16.57	9.24	9.43	0.19	7.27	7.99	8.58	0	
	03/09/11	16.57	9.16	9.35	0.19	7.35	7.99	8.58	0	
	03/23/11	16.57	9.07	9.23	0.16	7.45	7.99	8.58	0	
	04/06/11	16.57	9.00	9.16	0.16	7.52	7.99	8.58	0	
	04/20/11	16.57	9.10	9.29	0.19	7.41	7.99	8.58	0	
	05/04/11	16.57	9.19	9.40	0.21	7.32	7.99	8.58	0	
	05/18/11	16.57	9.26	9.46	0.20	7.25	7.99	8.58	0	
	06/07/11	16.57	9.35	9.56	0.21	7.16	7.99	8.58	0	
	06/21/11	16.57	9.30	9.50	0.20	7.21	7.99	8.58	0	
	09/26/11	16.57	9.67	9.85	0.18	6.85	7.99	8.58	0	
	10/05/11	16.57	9.70	9.81	0.11	6.84	7.99	8.58	0	
	10/19/11	16.57	9.67	9.78	0.11	6.87	7.99	8.58	0	
	12/05/11	16.57	9.75	10.14	0.39	6.70	7.99	8.58	0	
	02/06/12	16.57	9.88	10.37	0.49	6.54	7.99	8.58	0	
	06/20/12	16.57	9.49	10.40	0.91	6.81	7.99	8.58	0	
	09/19/12	16.57	9.81	11.04	1.23	6.39	7.99	8.58	0	

TABLE 2. Free Product Recovery System Groundwater Elevation and Free Product Data
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

Recovery Well	Date Measured	Top of Casing (ft amsl)	Depth to Product (ft bTOC)	Depth to Water (ft bTOC)	Product Thickness (ft)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
RW-9 (cont.	12/04/12	16.57	9.50	11.06	1.56	6.60	7.99	8.58	0	
	06/19/13	16.57	9.68	10.76	1.08	6.57	7.99	8.58	0	

Notes:
From April 2004 to November 2010, only data from the second month of each quarter reported in this table. All available data provided as attachment
ft amsl = feet above mean sea level
ft bTOC = feet below top of casing
ft bgs = feet below ground surface
NP = no product detected with the interface probe
* = data from second month of quarter not available, first or third month shown instead
** = Ground elevation assumed to be approximately equal to casing elevation at time of install
(top of screen elevation does not change when grade elevation changes)
-- = not measured/not applicable

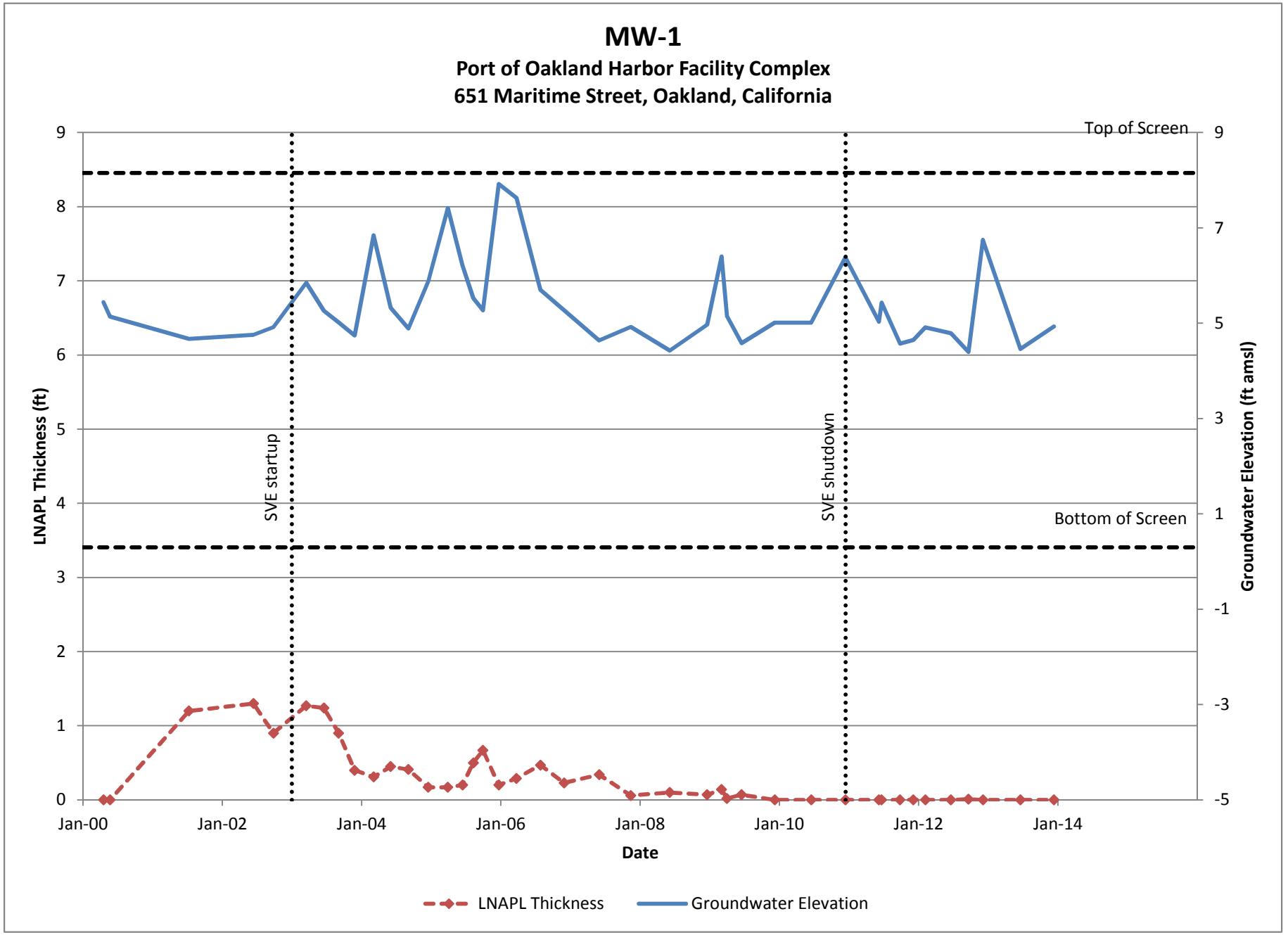
TABLE 3. Historical Groundwater Elevation and Free Product Data
Former 2225 7th Street Wells
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

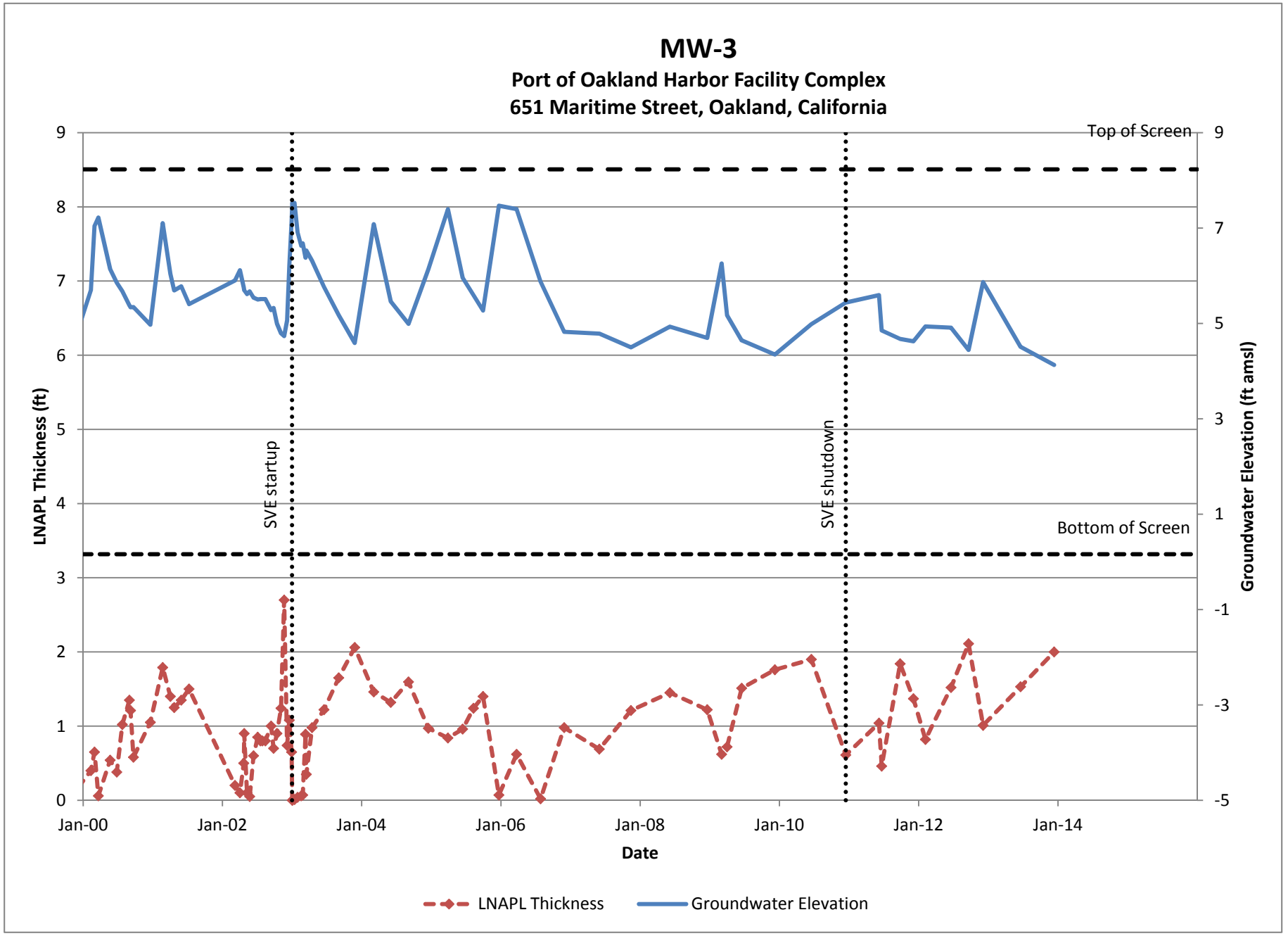
Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Water (ft bTOC)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-1								**4%**
	01/15/93	13.72	5.21	8.51	5	8.72	0	
	09/12/94	13.72	6.37	7.35	5	8.72	0	
	11/30/94	13.72	5.76	7.96	5	8.72	0	
	03/29/95	13.72	4.57	9.15	5	8.72	1	
	05/25/95	13.72	5.14	8.58	5	8.72	0	
	06/21/95	13.72	5.41	8.31	5	8.72	0	
	06/23/95	13.72	5.44	8.28	5	8.72	0	
	11/20/95	13.72	6.28	7.44	5	8.72	0	
	12/27/95	13.72	5.86	7.86	5	8.72	0	
	03/25/96	13.72	5.21	8.51	5	8.72	0	
	06/26/96	13.72	5.58	8.14	5	8.72	0	
	10/14/96	13.72	6.22	7.50	5	8.72	0	
	03/19/97	13.72	5.48	8.24	5	8.72	0	
	06/26/00	13.72	5.19	8.53	5	8.72	0	
	09/06/00	13.72	5.62	8.10	5	8.72	0	
	12/19/00	13.72	5.57	8.15	5	8.72	0	
	04/03/01	13.72	5.03	8.69	5	8.72	0	
	07/10/01	13.72	5.57	8.15	5	8.72	0	
	12/12/01	13.72	5.60	8.12	5	8.72	0	
	01/22/02	13.72	5.19	8.53	5	8.72	0	
	03/08/02	13.72	5.17	8.55	5	8.72	0	
	06/13/02	13.72	5.60	8.12	5	8.72	0	
	09/26/02	13.72	6.05	7.67	5	8.72	0	
MW-2								**0%**
	01/15/93	13.80	6.21	7.59	5	8.8	0	
	09/12/94	13.80	6.47	7.33	5	8.80	0	
	11/30/94	13.80	6.34	7.46	5	8.80	0	
	03/29/95	13.80	5.51	8.29	5	8.80	0	
	05/25/95	13.80	5.60	8.20	5	8.80	0	
	06/21/95	13.80	5.72	8.08	5	8.80	0	
	06/23/95	13.80	5.72	8.08	5	8.80	0	
	09/28/95	13.80	6.15	7.65	5	8.80	0	
	11/20/95	13.80	6.42	7.38	5	8.80	0	
	12/27/95	13.80	6.31	7.49	5	8.80	0	
	03/25/96	13.80	5.74	8.06	5	8.80	0	
	06/26/96	13.80	5.85	7.95	5	8.80	0	
	10/14/96	13.80	6.36	7.44	5	8.80	0	
	03/19/97	13.80	5.90	7.90	5	8.80	0	
	06/26/00	13.80	5.37	8.43	5	8.80	0	
	09/06/00	13.80	5.62	8.18	5	8.80	0	
	12/19/00	13.80	5.81	7.99	5	8.80	0	
	04/03/01	13.80	5.38	8.42	5	8.80	0	
	07/10/01	13.80	5.80	8.00	5	8.80	0	
	12/12/01	13.80	10.00	3.80	5	8.80	0	
	01/22/02	13.80	5.45	8.35	5	8.80	0	
	03/08/02	13.80	5.49	8.31	5	8.80	0	
	06/13/02	13.80	5.79	8.01	5	8.80	0	
	09/26/02	13.80	8.15	5.65	5	8.80	0	
MW-3								**0%**
	01/15/93	15.06	6.44	8.62	5	10.06	0	
	09/12/94	15.06	7.35	7.71	5	10.06	0	

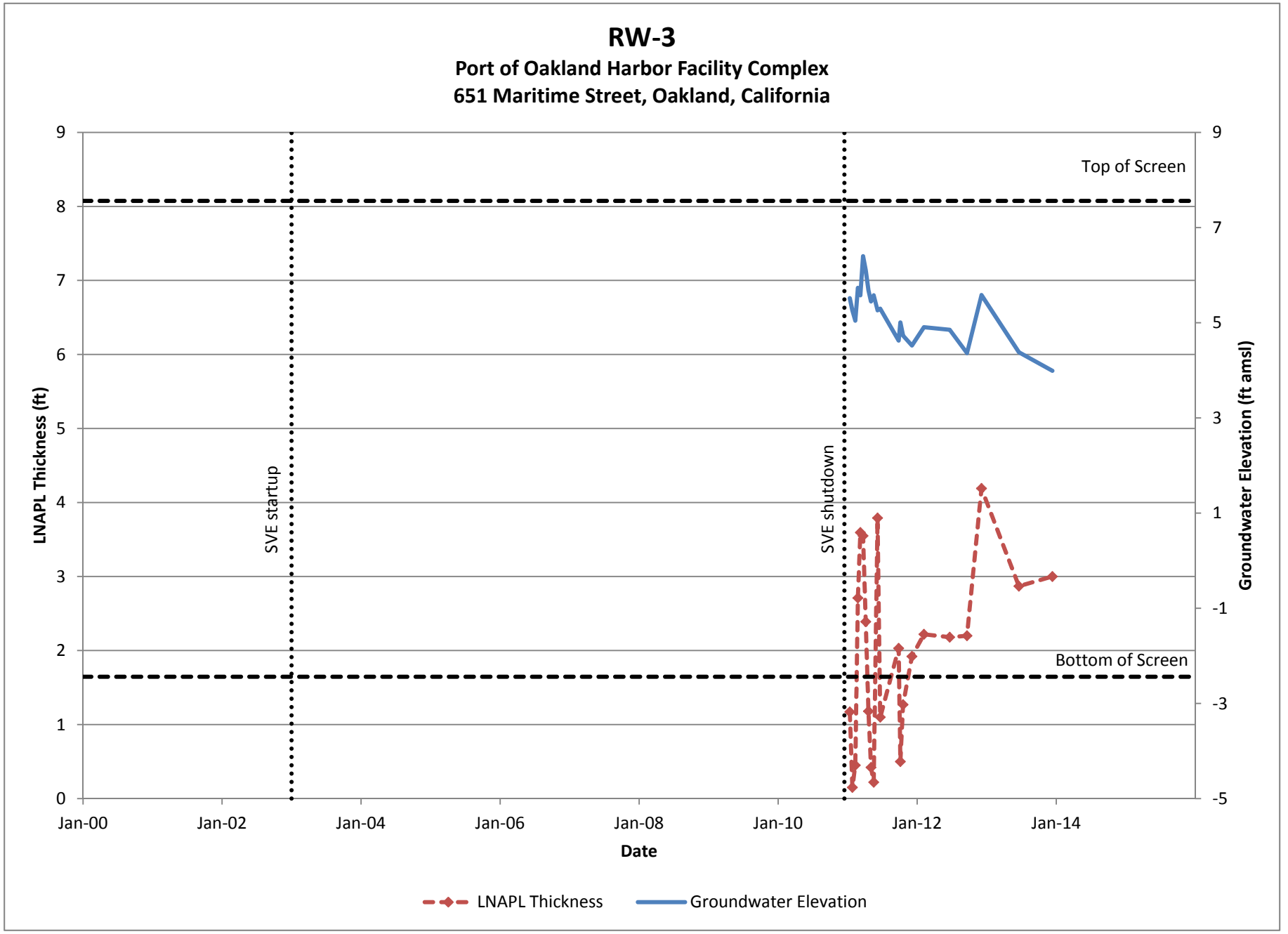
TABLE 3. Historical Groundwater Elevation and Free Product Data
Former 2225 7th Street Wells
Port of Oakland's Harbor Facilities Complex Site
555 - 651 Maritime Street, Oakland, California

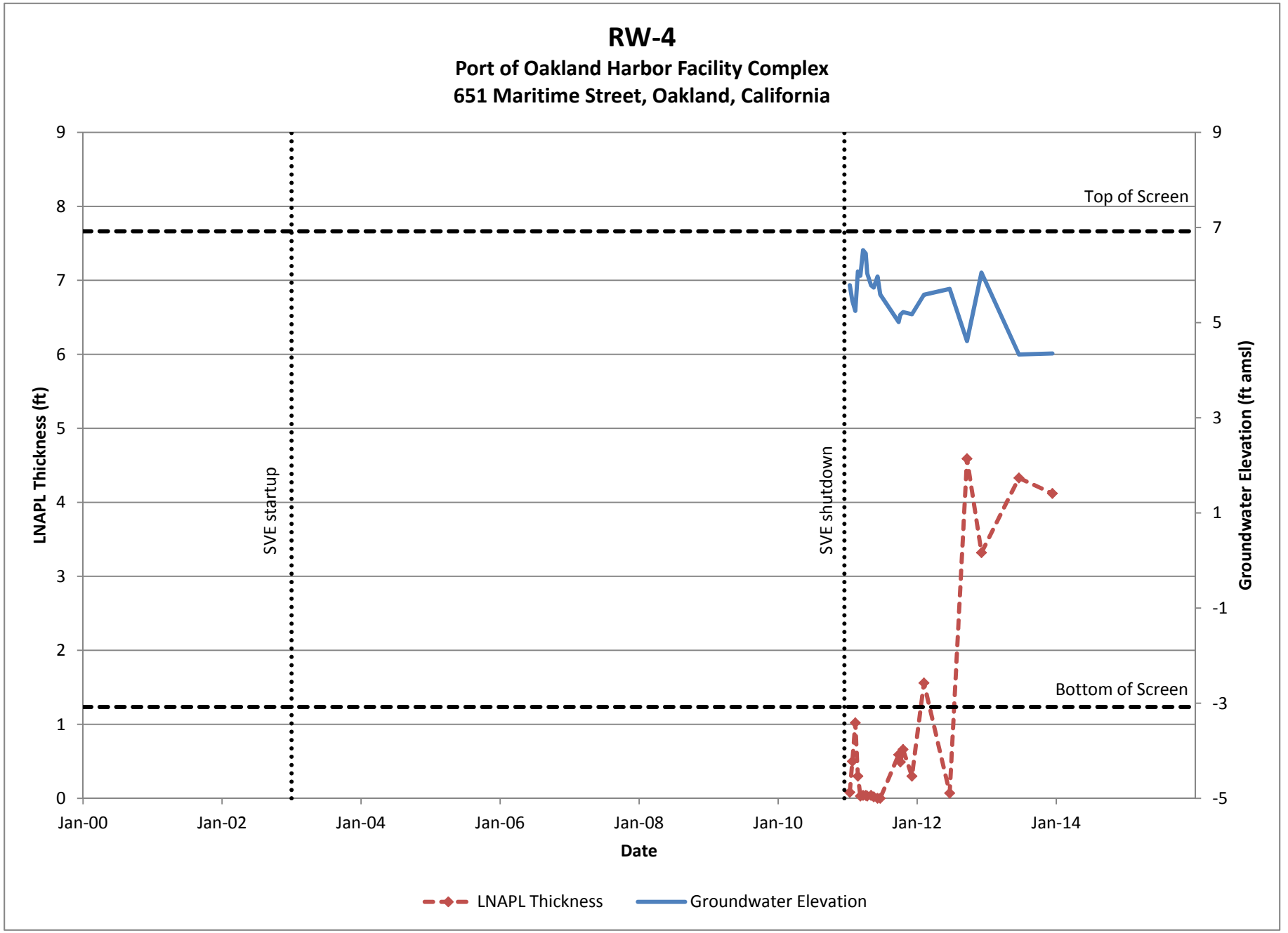
Monitoring Well	Date Measured	Top of Casing (ft amsl)	Depth to Water (ft bTOC)	Groundwater Elevation (ft amsl)	Top of Screen (ft bgs)	Top of Screen** (ft amsl)	Submerged (1=Y/0=N)	Historically Submerged (%)
MW-3 (cont.)	11/30/94	15.06	7.12	7.94	5	10.06	0	
	03/29/95	15.06	6.31	8.75	5	10.06	0	
	05/25/95	15.06	6.75	8.31	5	10.06	0	
	06/21/95	15.06	6.87	8.19	5	10.06	0	
	06/23/95	15.06	6.88	8.18	5	10.06	0	
	09/28/95	15.06	7.28	7.78	5	10.06	0	
	11/20/95	15.06	7.51	7.55	5	10.06	0	
	12/27/95	15.06	7.20	7.86	5	10.06	0	
	03/25/96	15.06	6.64	8.42	5	10.06	0	
	06/26/96	15.06	6.98	8.08	5	10.06	0	
	10/14/96	15.06	7.47	7.59	5	10.06	0	
	03/19/97	15.06	6.99	8.07	5	10.06	0	
	06/26/00	15.06	6.82	8.24	5	10.06	0	
	09/06/00	15.06	6.82	8.24	5	10.06	0	
	12/19/00	15.06	7.10	7.96	5	10.06	0	
	04/03/01	15.06	6.66	8.40	5	10.06	0	
	07/10/01	15.06	7.00	8.06	5	10.06	0	
	12/12/01	15.06	7.04	8.02	5	10.06	0	
	01/22/02	15.06	6.67	8.39	5	10.06	0	
	03/08/02	15.06	6.86	8.20	5	10.06	0	
	06/13/02	15.06	7.00	8.06	5	10.06	0	
	09/26/02	15.06	7.40	7.66	5	10.06	0	

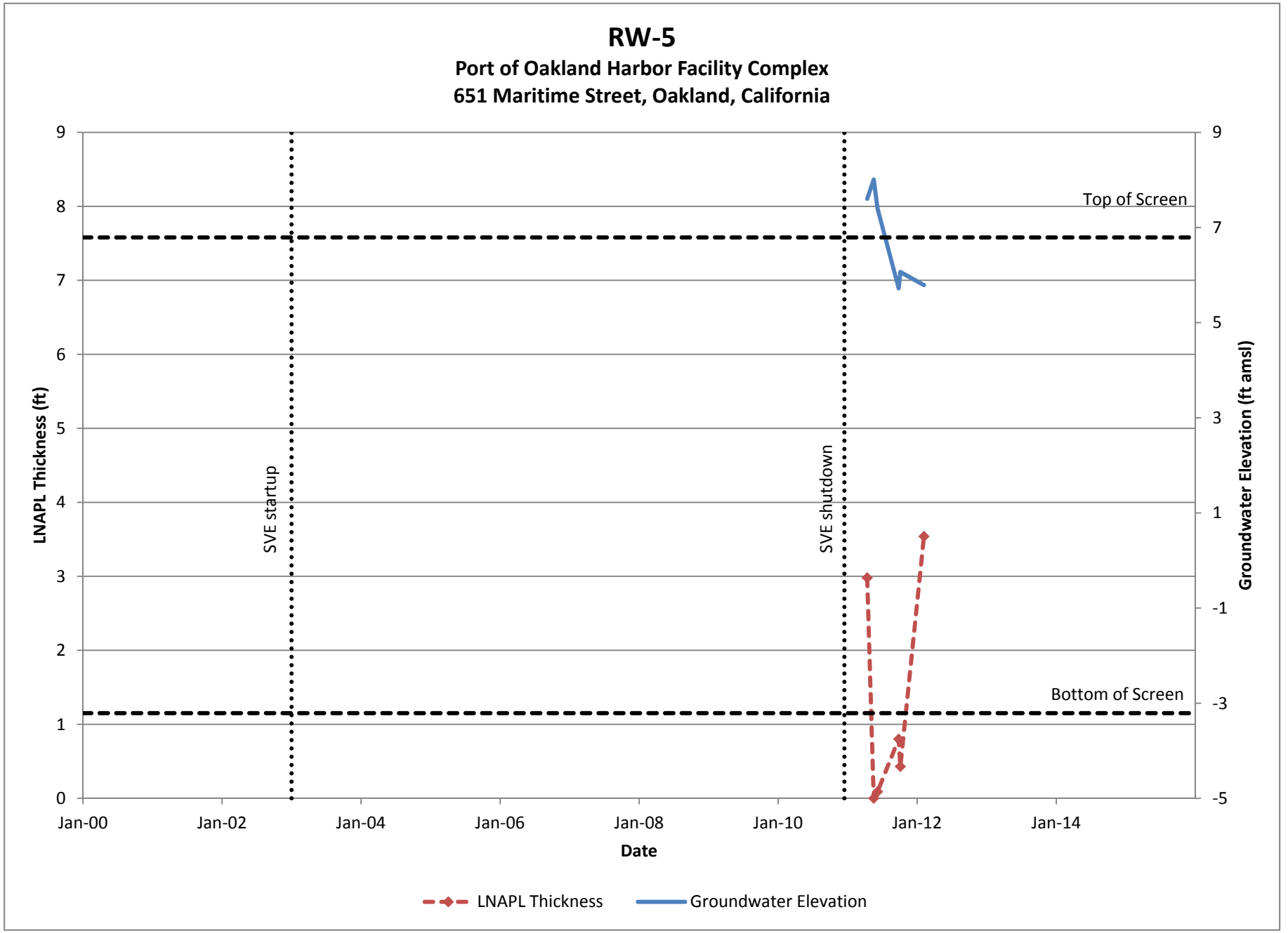
Notes:
ft amsl = feet above mean sea level
ft bTOC = feet below top of casing
ft bgs = feet below ground surface
Depth to Product data not available

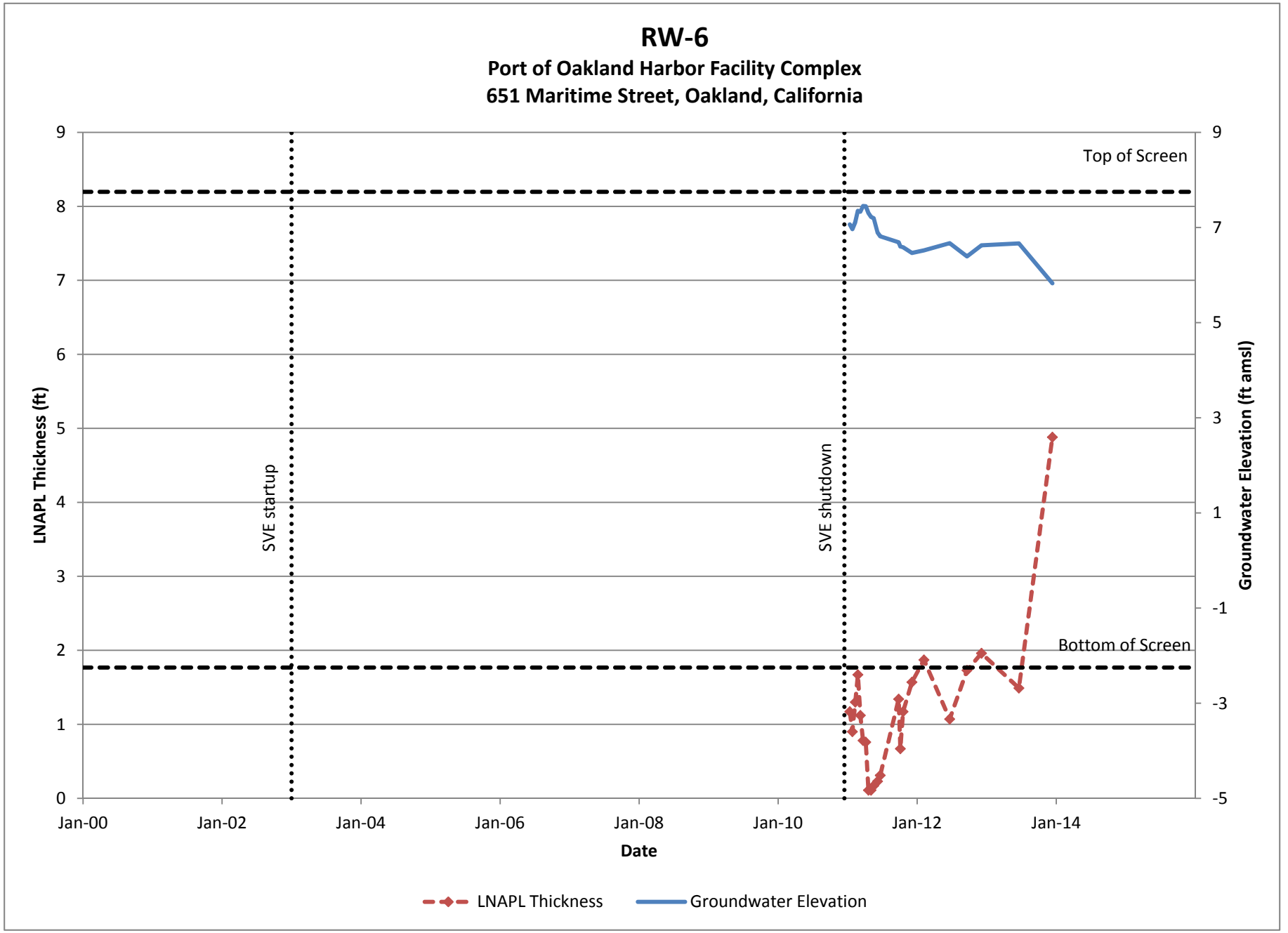

MW-1
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
9
8
7
6
5
4
3
2
1
0
-1
-3
-5
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Date
LNAPL Thickness
Groundwater Elevation

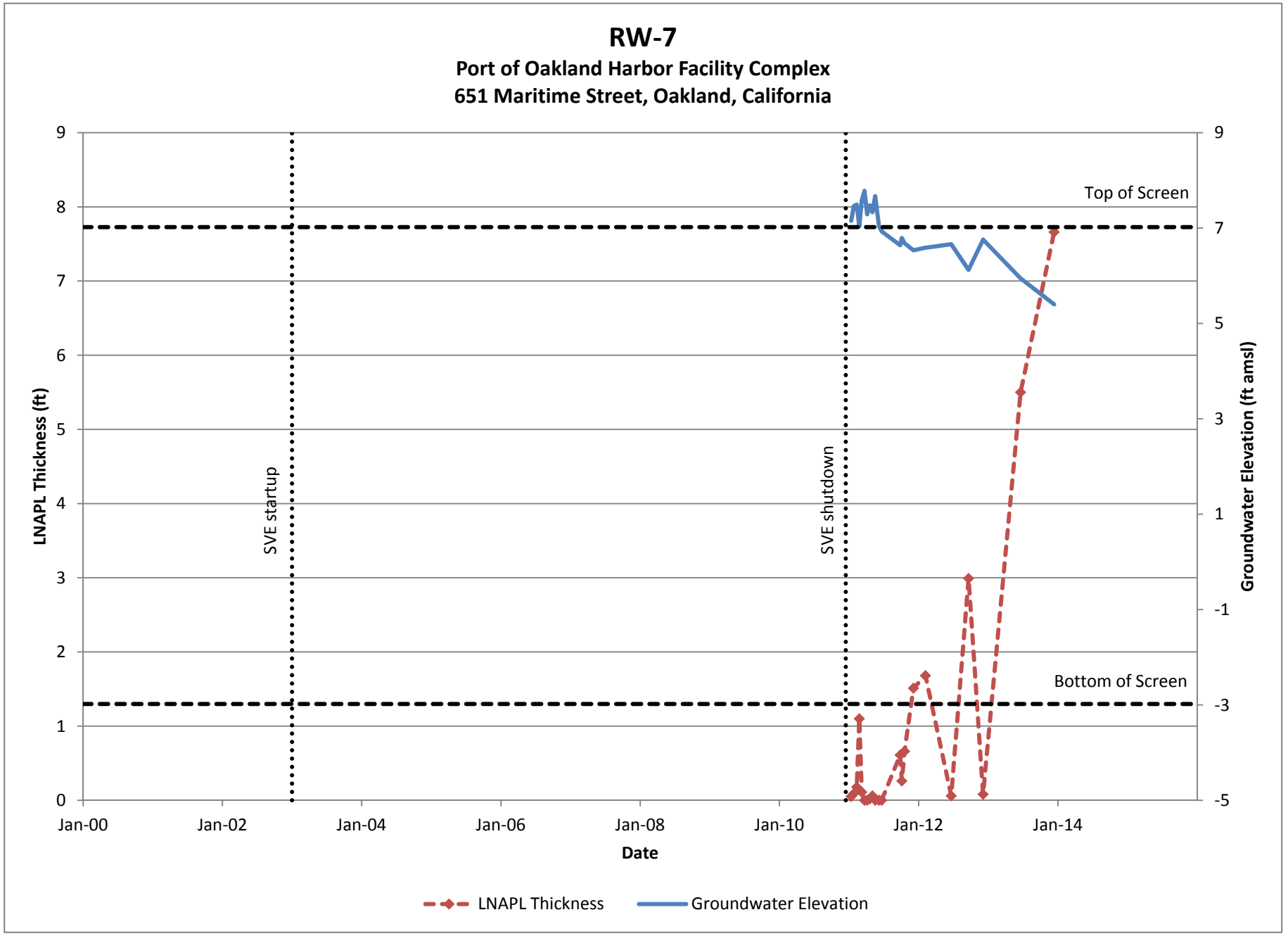

MW-3
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
9
8
7
6
5
4
3
2
1
0
-1
-3
-5
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Date
LNAPL Thickness
Groundwater Elevation

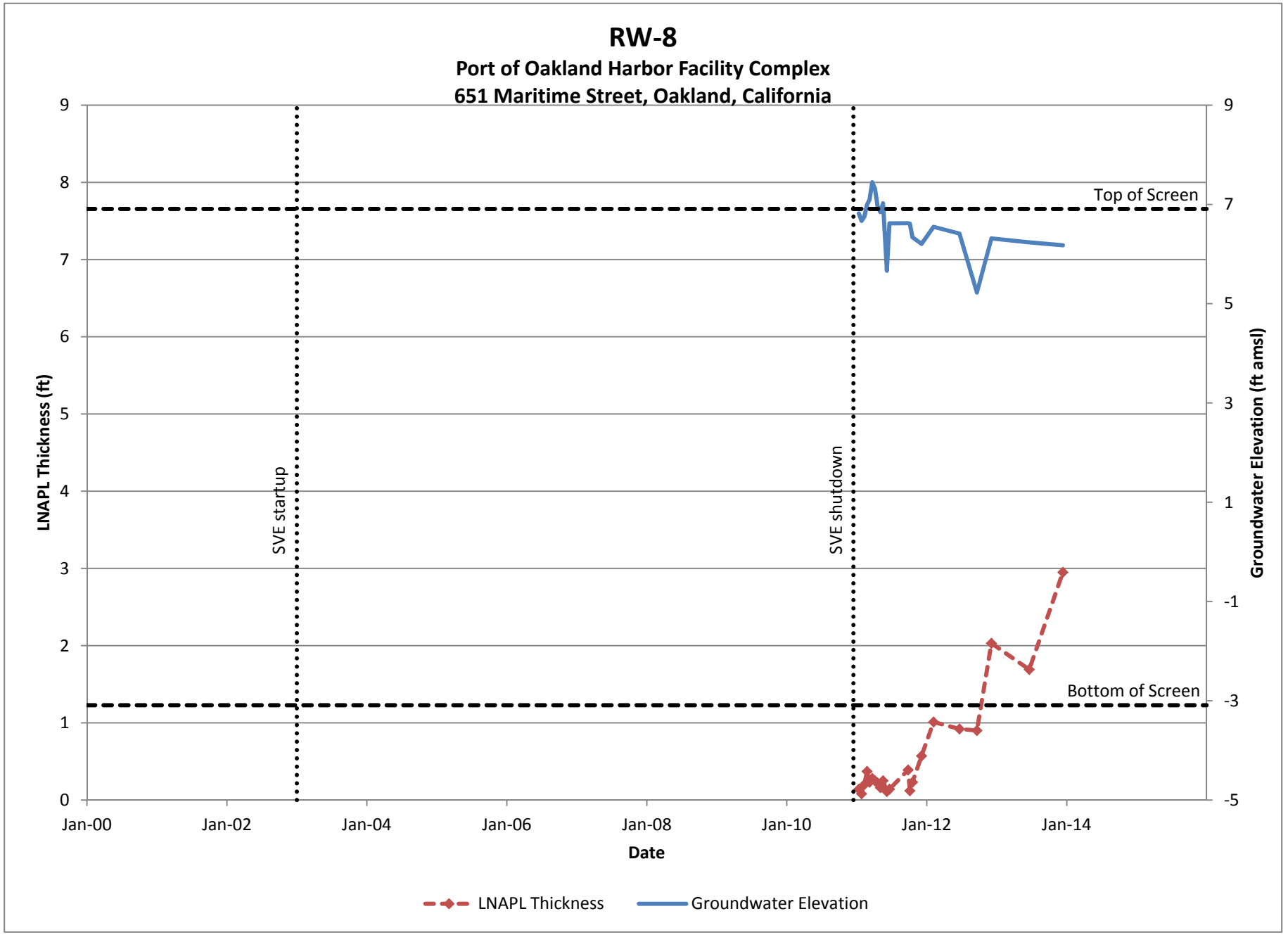

RW-3
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
Date
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
LNAPL Thickness
Groundwater Elevation

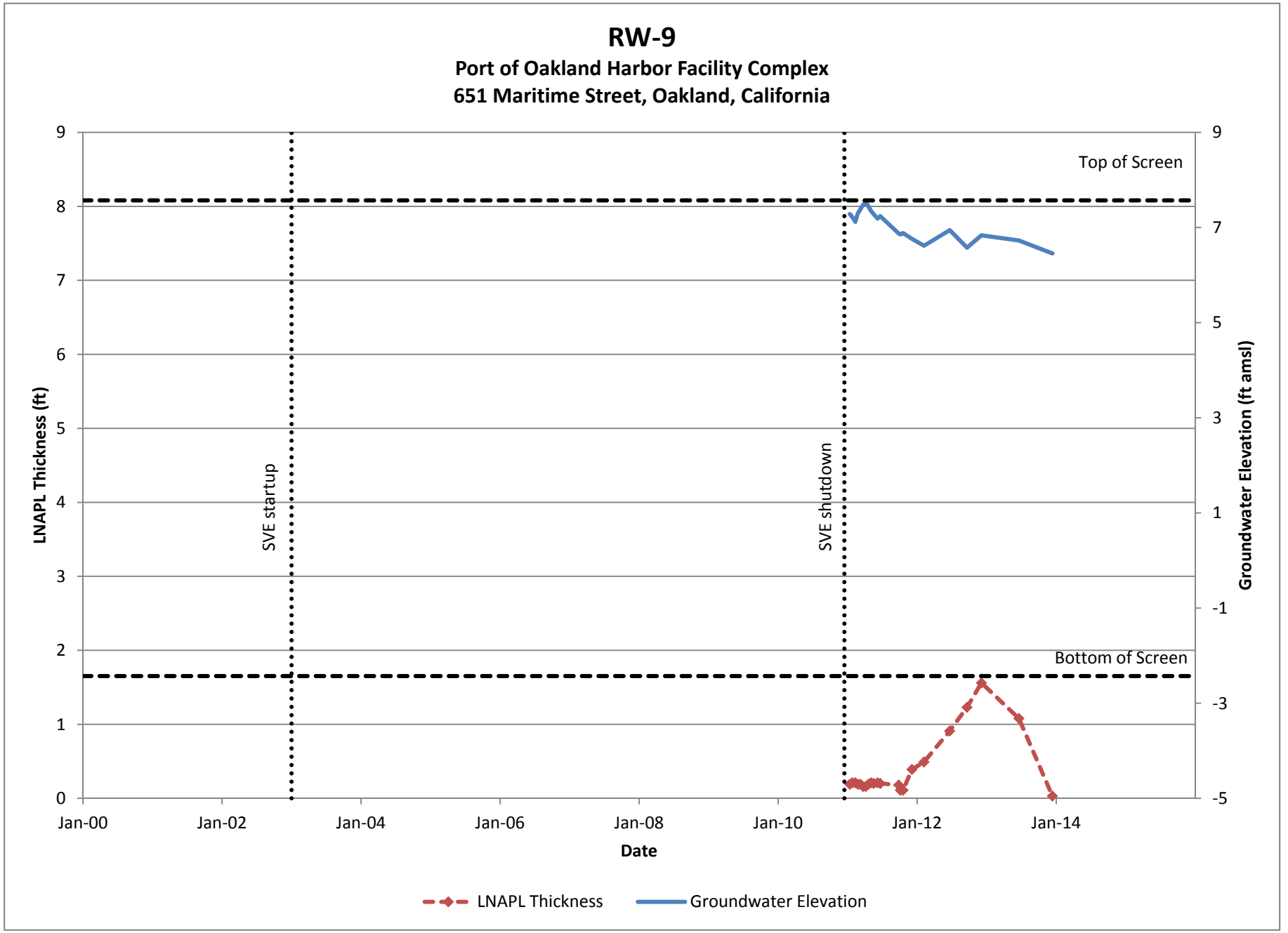

RW-4
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
Date
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
LNAPL Thickness
Groundwater Elevation


RW-5
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Date
SVE startup
SVE shutdown
Top of Screen
Bottom of Screen
9
8
7
6
5
4
3
2
1
0
-1
-3
-5
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
LNAPL Thickness
Groundwater Elevation


RW-6
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
Date
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
LNAPL Thickness
Groundwater Elevation


RW-7
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
SVE startup
SVE shutdown
Top of Screen
Bottom of Screen
Date
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
LNAPL Thickness
Groundwater Elevation


RW-8
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Date
LNAPL Thickness
Groundwater Elevation

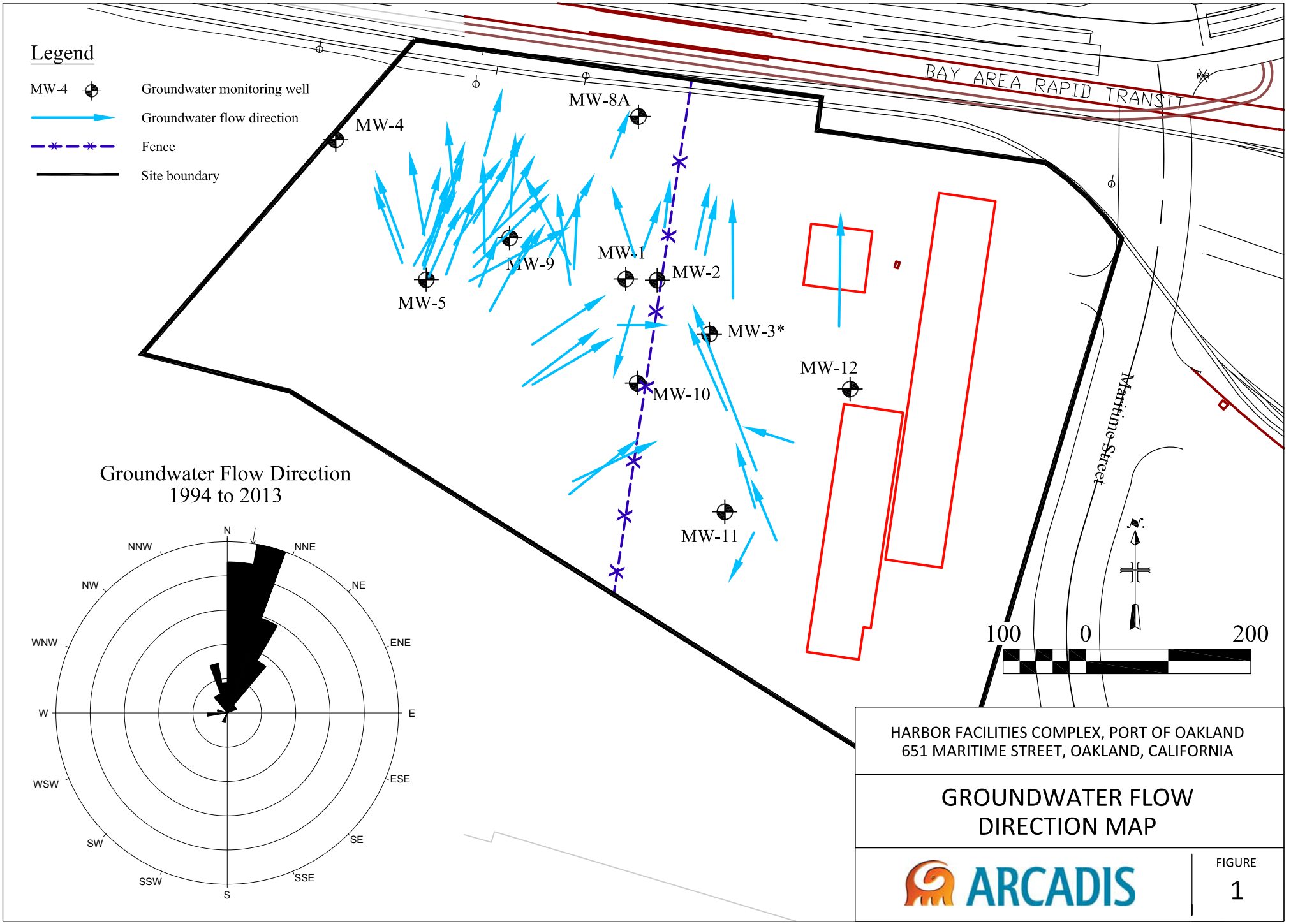

RW-9
Port of Oakland Harbor Facility Complex
651 Maritime Street, Oakland, California
LNAPL Thickness (ft)
Groundwater Elevation (ft amsl)
Top of Screen
Bottom of Screen
SVE startup
SVE shutdown
9
8
7
6
5
4
3
2
1
0
9
7
5
3
1
-1
-3
-5
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Jan-14
Date
LNAPL Thickness
Groundwater Elevation

Attachment 5

Revised Current and Historic Features Map

Attachment 4

Revised Groundwater Flow Direction Map



HARBOR FACILITIES COMPLEX, PORT OF OAKLAND
651 MARITIME STREET, OAKLAND, CALIFORNIA

GROUNDWATER FLOW DIRECTION MAP

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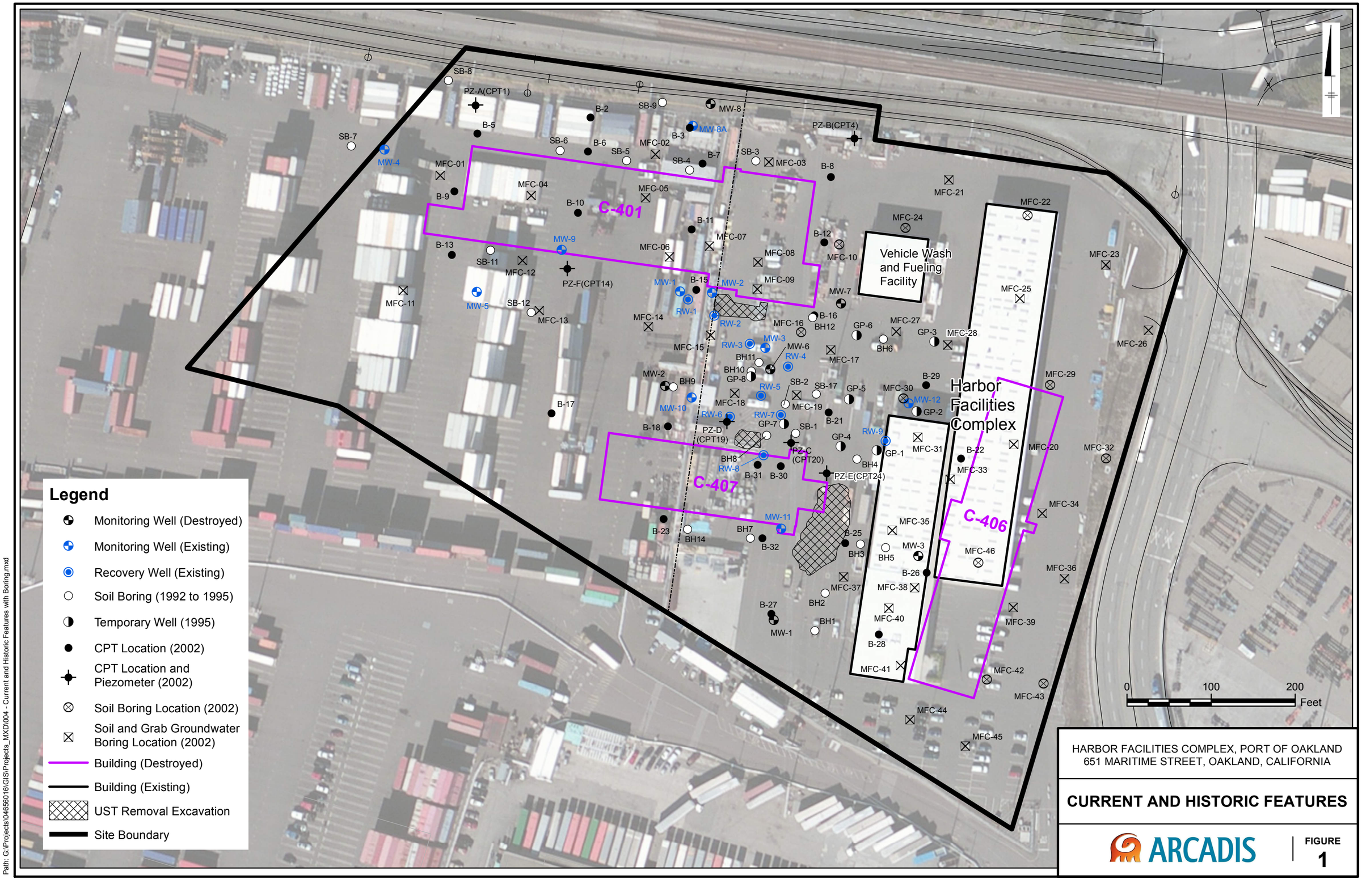
FIGURE 1

User:Orsi Spec:PIRNIE STANDARD File:G:\Projects\Projects\4656\016\acad\GW Flow Map.DWG



Legend

- Monitoring Well (Destroyed)
- Monitoring Well (Existing)
- Recovery Well (Existing)
- Soil Boring (1992 to 1995)
- Temporary Well (1995)
- CPT Location (2002)
- CPT Location and Piezometer (2002)
- Soil Boring Location (2002)
- Soil and Grab Groundwater Boring Location (2002)
- Building (Destroyed)
- Building (Existing)
- UST Removal Excavation
- Site Boundary

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CURRENT AND HISTORIC FEATURES

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FIGURE
1

Path: G:\Projects\04656016\GIS\Projects_MXD\004 - Current and Historic Features with Boring.mxd