

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY

ALEX BRISCOE, Agency Director



DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

October 3, 2011

Noel and Meiling Yi
2756 Alvarado Street, #A-B
San Leandro, CA 94577

Subject: Subject: Spills, Leaks, Investigation and Cleanup Case, RO0002948, Yi Property / Gas Station, 557 Merrimac Avenue, Oakland, CA 94612

Dear Mr. and Mrs. Yi:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Health (ACEH) is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- Residual pollution remaining in soil beneath the site includes TPH as gas at a concentration of up to 20 ppm.
- Maximum concentrations of up to 220 ppb TPH as gas, 2,300 ppb TPH as diesel, and 11,000 ppb TPH as motor oil remain in groundwater beneath the site.

If you have any questions, please call Barbara Jakub at (510) 639-1287. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Donna L. Drogos".

Donna L. Drogos, P.E.
Division Chief

Enclosures:

1. Remedial Action Completion Certificate
2. Case Closure Summary

cc: Leroy Griffin (w/enc via electronic mail: lgriffin@oaklandnet.com), Oakland Fire Department
Barbara Jakub (w/ enc via e-mail), D. Drogos (w/ enc via e-mail), T. LeKhan (via e-mail and w/orig enc)
Geotracker

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October 3, 2011

Noel and Meiling Yi
2756 Alvarado Street, #A-B
San Leandro, CA 94577

REMEDIAL ACTION COMPLETION CERTIFICATE

Subject: Spills, Leaks, Investigation and Cleanup Case, RO0002948, Yi Property / Gas Station, 557 Merrimac Avenue, Oakland, CA 94612

Dear Mr. and Mrs. Yi:

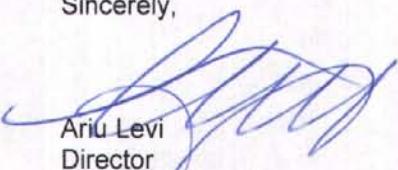
This letter confirms the completion of a site investigation and remedial action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the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

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

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

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

Sincerely,


Ariu Levi
Director
Alameda County Environmental Health

CASE CLOSURE SUMMARY
SPILLS, LEAKS, INVESTIGATION, CLEANUP - LOCAL OVERSIGHT PROGRAM

I. AGENCY INFORMATION

Date: August 22, 2011

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 639-1287
Responsible Staff Person: Barbara Jakub	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Yi Property / Gas Station		
Site Facility Address: 557 Merrimac Ave., Oakland, CA 94612		
RB Case No.: ----	STID Case No.: ----	LOP Case No.: RO0002948
URF Filing Date: ----	Geotracker ID: SLT19744041	APN: 9-689-40-1
Responsible Parties	Addresses	Phone Numbers
Noel and Meiling Yi	2756 Alvarado St. #A-B San Leandro, CA 94577-5728	510-381-3331

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
No tanks. This case re-evaluates RO0000891, which was closed with commercial land use restrictions, for the currently proposed residential land use.	----	----	----	----
Piping			----	----

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: No tanks. Releases from petroleum USTs in previously closed case RO0000891.		
Site characterization complete? Yes	Date Approved By Oversight Agency: ----	
Monitoring wells installed? No	Number: 0	Proper screened interval? NA
Highest GW Depth Below Ground Surface: 14.37*	Lowest Depth: 18.75*	Flow Direction:: South , southwest, southeast*
Most Sensitive Current Use: Potential drinking water source.		

* Groundwater MWs not installed, gradient from previous site at same location, RO0000891

Summary of Production Wells in Vicinity: No water supply wells were identified within ¼-mile of the subject site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Glen Echo Creek approximately 2000 ft to the WSW.
Off-Site Beneficial Use Impacts (Addresses/Locations): None	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health and City of Oakland Fire Department

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL			
Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	----	----	----
Piping	----	----	----
Free Product	----	----	----
Soil	----	----	----
Groundwater	----	----	----

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS BEFORE AND AFTER CLEANUP
 (Please see Attachments 1 through 6 for additional information on contaminant locations and concentrations)

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	20	20	220	220
TPH (Diesel)	<1.0	<1.0	2,300	2,300
TPH (Motor Oil)	<5.0	<5.0	11,000	11,000
Oil and Grease	---	---	---	---
Benzene	<0.010	<0.010	<0.5	<0.5
Toluene	0.0906	0.0906	<0.5	<0.5
Ethylbenzene	0.0192	0.0192	<0.5	<0.5
Xylenes	0.015	0.015	<0.5	<0.5
Heavy Metals (Cd, Cr, Pb, Ni, Zn)	---	---	---	---
MTBE	0.014*	0.014*	<5.0**	<5.0**
Other (8240/8270)	---	---	---	---

* 0.014 ppm MTBE. TBA, TAME, ETBE; DIPE, EtOH, EDB; and EDC all not analyzed

** <5.0 ppb MTBE. TBA, TAME, ETBE; DIPE, EtOH, EDB; and EDC all not analyzed

Site History and Description of Corrective Actions:

Site was operated as a gasoline station and was formerly an open case (RO0000891) from 1995 to January 29, 1997 when it was closed by ACEH for commercial use only. The site has had the previous addresses: 554 27th Street and 550 27th Street. The site was opened as RO2948 when proposed land use changed to residential. The proposed building is to be commercial use on the first floor along 27th Street and subgrade parking along Merrimac Street with a car ramp on the south side of the building for access to the parking. Residential units will be on the second floor.

A Preliminary Site Assessment was performed in February 2007. One soil boring was advanced near former well MW-3 which had previously contained the maximum benzene concentration in groundwater at the site. TPHg was detected at 20 ppm in soil at 10.3 feet, but no hydrocarbons were detected in the 11.5 foot sample. Up to 2,300 ppb TPHd, 11,000 ppb TPHmo were detected in groundwater. No TPHg or BTEX was detected in the groundwater sample.

Eight soil borings were advanced between February 14 and 18, 2008. Maximum concentrations were 220 ppb TPHg and 196 ppb TPHd and no benzene was detected. Four soil vapor samples were also collected during this investigation. Benzene was detected in only one sample at a concentration of 12 µg/m³ and is below the residential ESL for benzene. Gasoline was detected in two samples at a maximum concentration of 1,900 µg/m³. All other TO-15 analytes were either below the detection limits or at least 2 orders of magnitude below the respective ESL for each constituent.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
<p>Site Management Requirements: Case closure for this site is granted for the currently proposed construction configuration (as of 4/1/08) of a multistory residential building with the first floor comprised of commercial space and a subgrade parking garage.</p> <p>If the currently proposed construction configuration changes or any construction/excavation activities encounter contamination that is indicative of higher residual concentrations than reported in this closure summary's after columns of the Maximum Documented Contaminant Concentrations table, then ACEH must be immediately notified.</p>		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: ----
Monitoring Wells Decommissioned: ---	Number Decommissioned: 0	Number Retained: 0
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: None		

V. ADDITIONAL COMMENTS, DATA, ETC.

<p>Considerations and/or Variances:</p> <ul style="list-style-type: none"> Analysis for EDB and EDC on soil and water samples and TAME, ETBE, DIPE, and TBA on water samples in the vicinity of the former gasoline USTs was not performed. <p>Conclusion:</p> <p>Alameda County Environmental Health staff believe that the levels of residual contamination do not pose a significant threat to water resources, public health and safety, and the environment for the multistory residential building with first floor commercial space and subgrade parking, based upon the information available in our files to date. No further investigation or cleanup for the case is necessary. ACEH staff recommend case closure for this site.</p>
--

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Barbara Jakub, P.G.	Title: Hazardous Materials Specialist
Signature: <i>Barbara Jakub</i>	Date: 8/22/11
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature: <i>Donna L. Drogos</i>	Date: 08/25/11

This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions.

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 9/9/11	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: NA	Date of Well Decommissioning Report: ---	
All Monitoring Wells Decommissioned: ----	Number Decommissioned: 0	Number Retained: 0
Reason Wells Retained:----		
Additional requirements for submittal of groundwater data from retained wells:----		
ACEH Concurrence - Signature: <i>Barbara Jakub</i>	Date: 10/6/11	

Attachments:

1. Site Vicinity Map (2 pp)
2. Site Plans (3 pp)
3. Soil Analytical Data (2 pp)
4. Groundwater Analytical Data (2 pp)
5. Soil Vapor (1 pp)
6. Boring Logs (13 pp)
7. Cross Sections (3 pp)

This document and the related CASE CLOSURE LETTER & REMEDIAL ACTION COMPLETION CERTIFICATE shall be retained by the lead agency as part of the official site file.

Jakub, Barbara, Env. Health

From: Cherie McCaulou [CMccaulou@waterboards.ca.gov]
Sent: Tuesday, September 13, 2011 12:25 PM
To: Jakub, Barbara, Env. Health
Subject: Re: RO2948 Closure Summary

Barbara - The Regional Water Board has no objection to the ACEH's recommendation for case closure of this redevelopment site, formerly closed for leaking USTs under commercial land use. Thank you for the notification. Have a good day.

Sincerely,

Cherie McCaulou
Engineering Geologist
San Francisco Bay Regional Water Quality Control Board
cmccaulou@waterboards.ca.gov
510-622-2342

>>> "Jakub, Barbara, Env. Health" <barbara.jakub@acgov.org> 9/9/2011 4:57 PM >>>
Hello Cherie,

Attached is a closure summary for RO0002948; Yi Property located at 557 Merrimac Avenue in Oakland to comply with the RWQCB's 30-day review period. If no comments from the RWQCB are received within the 30-day review period, ACEH's will proceed with case closure.

Please contact me should you have any comments or questions regarding the subject site.

Regards,

Barbara Jakub, P.G.
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Pky.
Alameda, CA 94502
Direct: 510-639-1287
Fax: 510-337-9335

PDF copies of case files can be downloaded at:

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

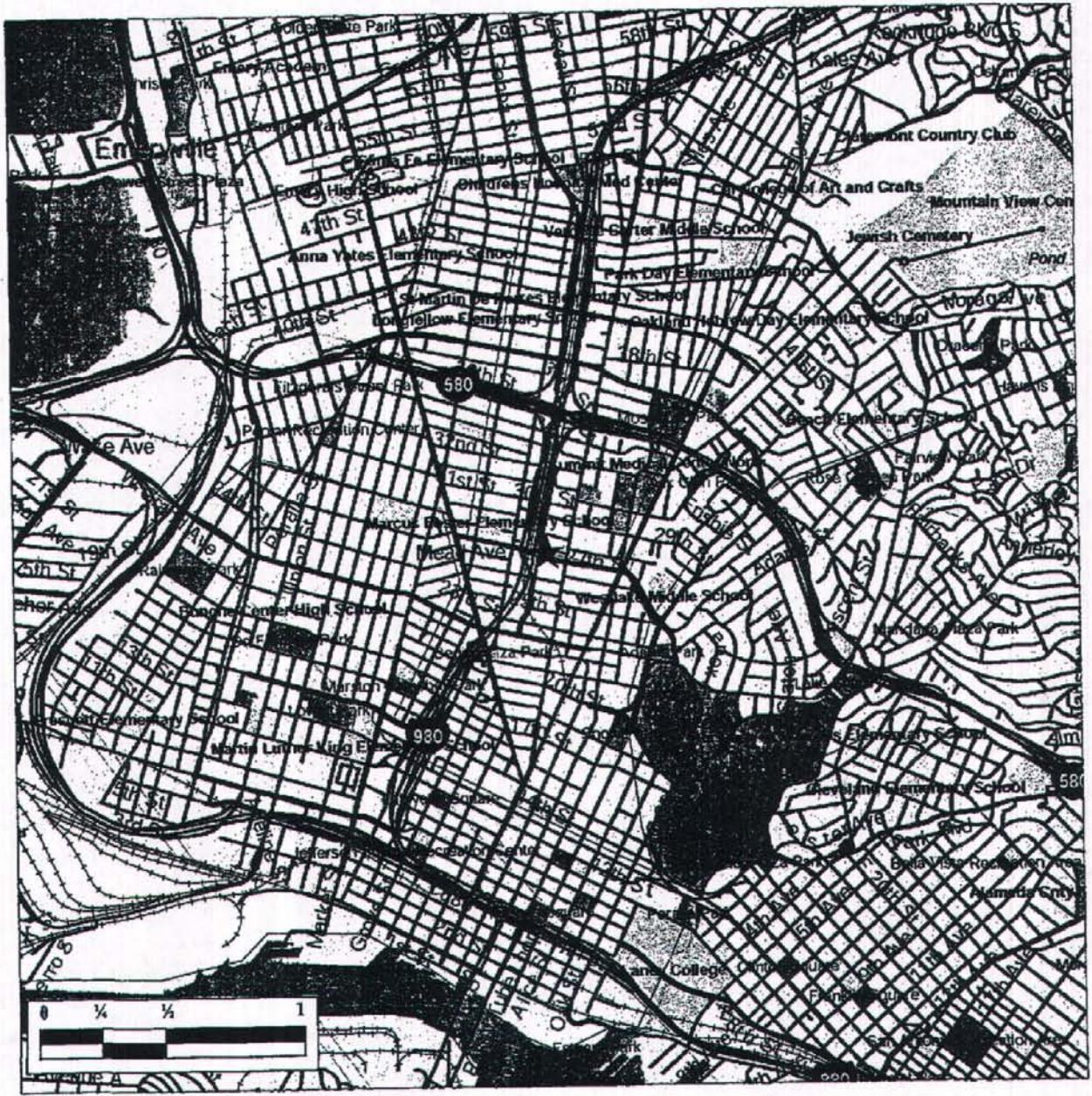


FIGURE 1
PROPERTY VICINITY MAP

557 Meritac St.
Oakland, CA 94612

29-Jan-07

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE. SUITE F, SAN JOSE, CA 95128
 PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM



approximate scale in feet
0 100 200

Figure 1: Site Vicinity Map

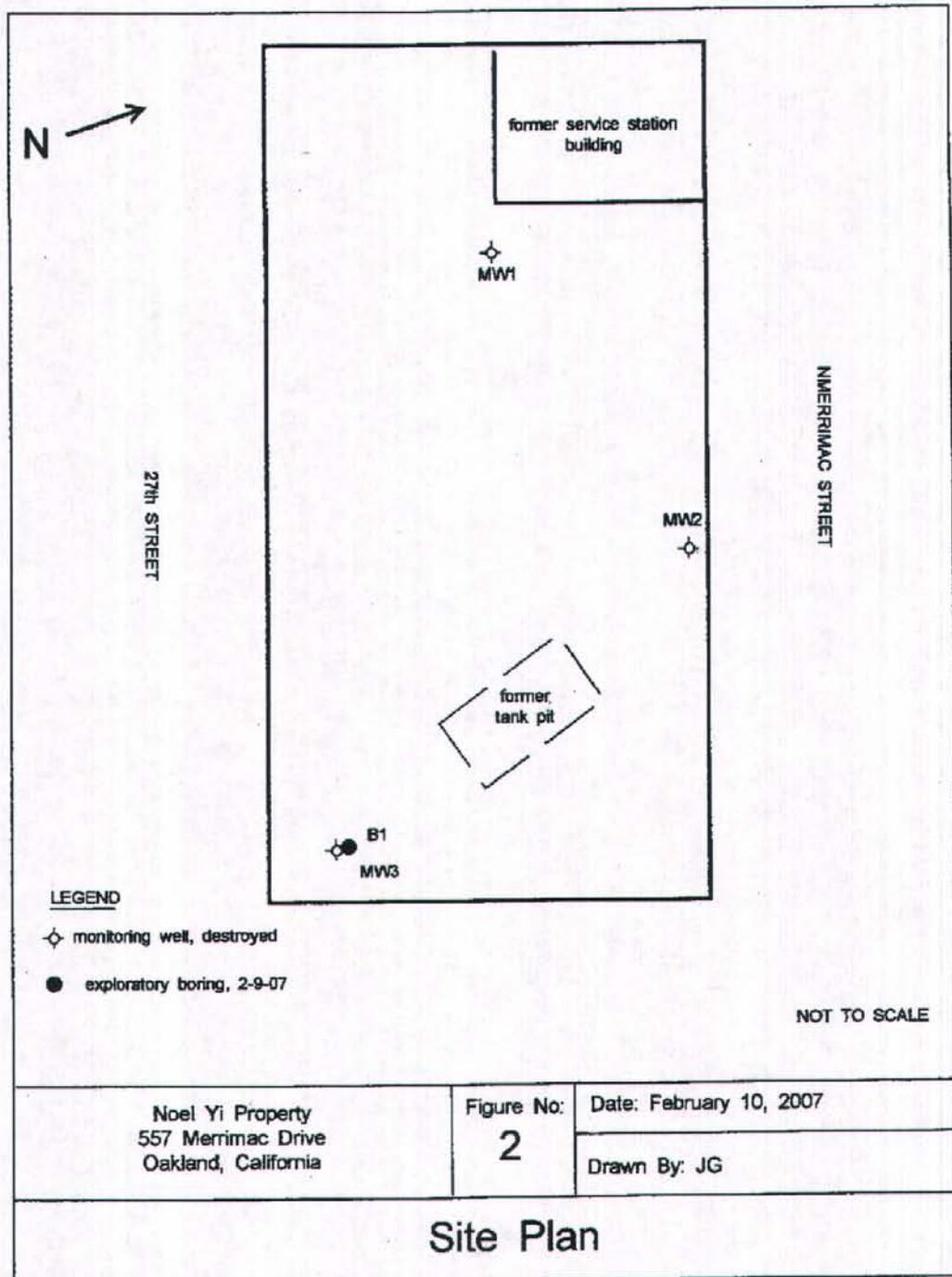


FIGURE 2
PROPERTY SITE PLAN

557 MERRIMAC STREET
OAKLAND, CALIFORNIA

JANUARY 2007
NOT TO SCALE

PIERS ENVIRONMENTAL SERVICES, INC. 1330 S. BASCOM AVE., SUITE F, SAN JOSE, CA 95128
PHONE: 408-559-1248 FAX: 408-559-1224 WWW.PIERSES.COM



Note: Stockpiles 2 and 3 contain spoils from the same area. Samples STKP-2, 1 and 2, and STKP-3, 1 were combined to form one lab sample.

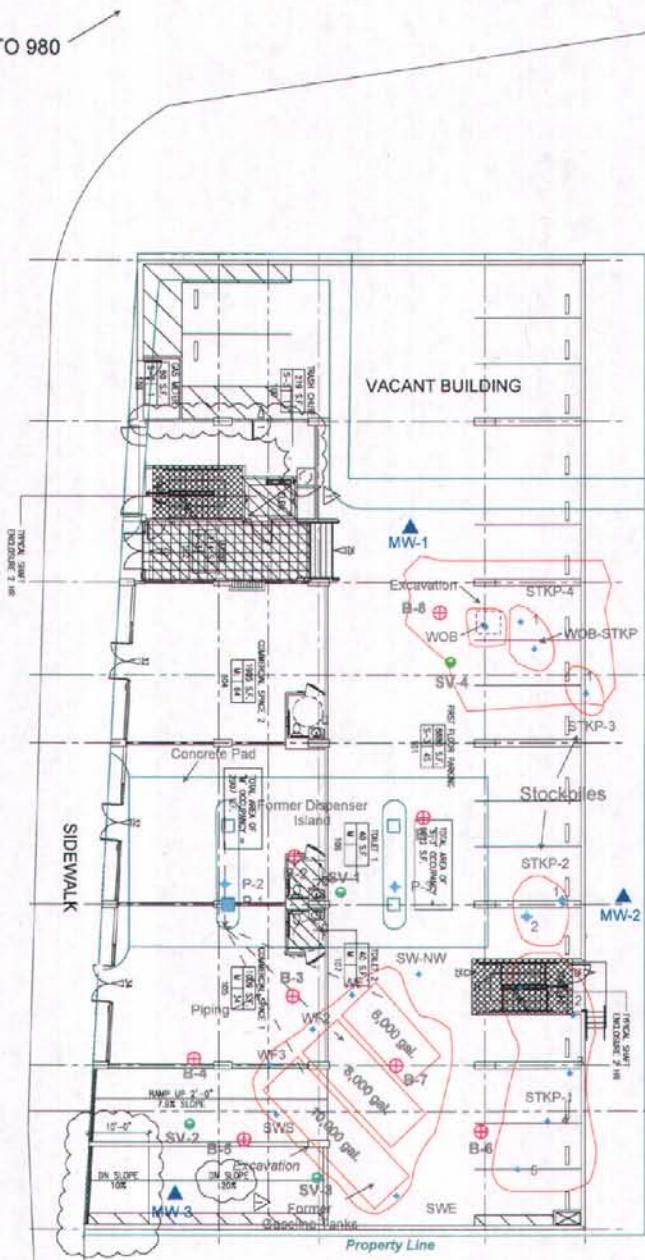
Figure 2: Site Map Showing Locations of Utility Conduits, Proposed Residential Development, Former Groundwater Monitoring Wells and Current Borings





ON-RAMP TO 980

27th STREET



Merrimac Street

Residential Buildings

Residential Buildings

-  Soil and Groundwater Boring
-  Soil Gas Sampling Location
-  FORMER MONITORING WELL LOCATION

Note: Stockpiles 2 and 3 contain spoils from the same area.
 Samples STKP-2, 1 and 2, and STKP-3, 1 were combined to form one lab sample.

approximate scale in feet

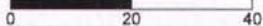


Figure 2A: Site Map Showing the Footprint of the Proposed Residential Building



Table 1
Soil Analytical Results
557 Merrimac Street, Oakland CA

Sample	Date	TPH-g (µg/Kg)	TPH-d (mg/Kg)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethylbenz ene (µg/Kg)	Total Xylenes (µg/Kg)	MtBE (µg/Kg) EPA 8260B
B1-5	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B1-10	2/14/08	1,090	<50.0	<10.0	90.6	19.2	15.0	14.8
B1-20	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B2-5	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B2-10	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B2-15	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B2-20	2/15/08	100	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B3-5	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B3-10	2/15/08	643	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B3-15	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B3-20	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B4-5	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B4-10	2/14/08	4,290	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B4-15	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B4-20	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B5-5	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B5-10	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B5-15	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B5-20	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B5-25	2/14/08	Hold						
B6-5	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B6-10	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B6-15	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B6-20	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B7-5	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B7-10	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B7-15	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B7-20	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B8-5	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B8-10	2/15/08	1,860	<50.0	<0.500	<2.00	<0.500	0.860	<0.500
B8-15	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B8-20	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
ESL Residential GW non drinking source		100,000	100	120	29,000	33,000	31,000	8400

Notes:

Note 1: Laboratory reporting limit for m&p-Xylene is 2.00 µg/Kg; for o-xylene it is 0.500 µg/Kg.

< : Not detected at or above laboratory reporting limit (shown)

NA: Not Analyzed; Not Applicable

ESL = environmental screening level, "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" prepared by the CRWQCB San Francisco Bay Region (Interim Final November 2007), soils less than 3 meters depth, groundwater is a current or potential drinking water source, residential land use

TABLE 2
GROUNDWATER ANALYTICAL RESULTS - HYDROCARBONS
557 Merrimac Street, Oakland, CA

Sample No	TPH-g (ppb)	TPH-d (ppb)	TPH-mo (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	MTBE (ppb)
B1	<50	2300	11,000	<0.5	<0.5	<0.5	<0.5	<5.0
	100/400	100/500	100/640	1.0/46	40/130	30/290	13	5.0/1800

EXPLANATION:

ppb = parts per billion

TPHg/d/motor oil = Total Petroleum Hydrocarbons as gasoline/diesel/motor oil.

ESL - Environmental Screening Level - groundwater is/is not considered a resource.

Table 2
Groundwater Analytical Results
557 Merrimac Street, Oakland CA

Sample	Date	TPH-g (µg/L)	TPH-d (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MtBE (µg/L) EPA 8260B
B1-W	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B2-W	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B3-W	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B4-W	2/14/08	220	196	<0.500	<2.00	<0.500	<2.00	<0.500
B5-W	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B6-W	2/15/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B7-W	2/14/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
B8-W	2/19/08	<50.0	<50.0	<0.500	<2.00	<0.500	<2.00	<0.500
ESL Residential GW for vapor intrusion		use soil gas	use soil gas	540 (7.0*)	380000	170000	160000	24000.0
ESL Residential GW non drinking		5,000	2,500	540	400	300	5,300	1,800

Notes:

Note 1: Laboratory reporting limit for m&p-Xylene is 2.00 µg/L; for o-xylene it is 0.500 µg/L.

< : Not detected at or above laboratory reporting limit (shown)

NA: Not Analyzed; Not Applicable

ESL = environmental screening level, "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" prepared by the CRWQCB San Francisco Bay Region (Interim Final November 2007), soils less than 3 meters depth, groundwater is a current or potential drinking water source, residential land use

*RBSL = Risk Based Screening Level: Enclosed Space Vapor Inhalation pathways Residential exposure; Building Present

TABLE 1
SOIL ANALYTICAL RESULTS - HYDROCARBONS
557 Merrimac Street, Oakland, CA

Sample No	Depth (feet)	TPH-g (ppm)	TPH-d/mo (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	MTBE (ppm)
B1	d10.3	20	<1.0/<5.0	<0.005	0.065	<0.005	0.0081	<0.05
B1	d11.5	<1.0	<1.0/<5.0	<0.005	<0.005	<0.005	<0.005	<0.05
	ESL - >3m	100/400	1000	0.044/0.18	2.9/9.3	3.3/4/7	1.5	0.023/2.0

EXPLANATION:

ppm = parts per million

TPHg/d = Total Petroleum Hydrocarbons as gasoline/diesel.

ESL - Environmental Screening Level - residential, Tables C/D (> 3 meters, groundwater is/is not a resource).

TABLE 3
Soil Vapor Analytical Results
557 Merrimac Street, Oakland CA

Analyte	Units	Date	Sample ID					ESLs (Residential)
			SV1	SV1-DUP	SV2	SV3	SV4	
2-Butanone (MEK)	($\mu\text{g}/\text{m}^3$)	2/15/2008	<1.48	8.7	410	<1.48	<1.48	1,000,000
Acetone	($\mu\text{g}/\text{m}^3$)	2/15/2008	9.9	48	600	17	42	660,000
Benzene	($\mu\text{g}/\text{m}^3$)	2/15/2008	<1.6	<1.6	12	<1.6	<1.6	84
Ethyl Benzene	($\mu\text{g}/\text{m}^3$)	2/15/2008	<2.17	<2.17	16	<2.17	<2.17	210,000
Total Xylenes	($\mu\text{g}/\text{m}^3$)	2/15/2008	<2.17	<2.17	107	<2.17	14	21,000
Toluene	($\mu\text{g}/\text{m}^3$)	2/15/2008	2.0	<1.89	62	2.8	12	63,000
trans-1,2-Dichloroethene	($\mu\text{g}/\text{m}^3$)	2/15/2008	<1.98	<1.98	11	<1.98	<1.98	15,000
Gasoline	($\mu\text{g}/\text{m}^3$)	2/15/2008	<352	<352	630	1,900	<352	10,000

Notes:

< Less Than Laboratory Reporting Limit

NA Not Analyzed (Not Applicable)

ESL: Environmental Screening Levels SF Bay RWQCB-Interim Final (Table E-2: Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns, lowest residential exposure scenario)



GEOLOGIC LOG OF BOREHOLE B-7

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Direct Push
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: L. Hightower

Date Drilled: February 14, 2008
 Casing Elevation: NA
 Depth to Groundwater: 7.7 ft
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED	
				split spoon	Core
			3 1/2" Cement		
			SANDY GRAVEL: Light brown, firm, wet, medium to coarse-grained sand		
			SAND: Light brown, dry, loose, fine to coarse-grained sand, with some fine gravel		
			SANDY GRAVEL: Light brown, loose dry, medium to coarse-grained sand, fine-grained gravel		
5			SAND: Light brown, wet, firm, fine to medium-grained sand 1" lense of dark gray sand and gravel @ 5.5'	X	
			Fill(from UST tank) : Light gray, loose dry, fine to coarse-grained gravel with fine to medium-grained sand		
			Fill(from UST tank) : Light gray, loose, fine to coarse-grained gravel with fine to medium-grained sand, saturated		
10			SAND: Light brown, wet, firm, fine to medium-grained sand, saturated Becomes dark gray@11.5'. PHC odor	X	
			SAND: Olive, gray, firm, wet, fine to coarse-grained sand, some fine-grained gravel with bits of shell		
15			SANDY CLAY: Light brown, stiff moist, medium-grained sand with some fine gravel. No PHC	X	
			GRAVELLY CLAY: Light brown,hard,dry, fine-grained gravel.		
			SAND: Olive gray, firm, wet, fine to coarse-grained sand with some fine-grained gravel		
			GRAVELLY CLAY: Light brown,hard, fine-grained gravel. Wet from 16.5' to 17'		
20				X	
25					

COMMENTS: TD 20 ft.
 Continuous Core, 4ft sections
 * Soil samples Sample liner cut & sealed with Teflon end caps



GEOLOGIC LOG OF BOREHOLE B-8

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: R. McKinney

Date Drilled: February 15, 2008
 Casing Elevation: NA
 Depth to Groundwater:
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED split spoon Core	WELL DIAGRAM
				6" concrete asphalt gravel		
	0.5			SILTY CLAY: Light brown, hard, dry, with medium to coarse-grained gravel		
	5			Poor recovery 4'-8' - 1Ft of fill Coarse gravel and clay - reddish brown	x	
250						
	10		SW	Gray, soft, moist, m PHC odor	x	
	15			GRAVELLY CLAY: Light brown, hard, dry, fine to coarse-grained gravel. No PHC		
	15			SILTY CLAY: Light brown, very hard, dry, with medium to coarse-grained gravel		
	15			GRAVELLY CLAY: Light brown, hard, dry, fine to coarse-grained gravel, increase gravel to 16'	x	
	20			SILTY CLAY: Light brown, firm, <10% dry, fine to coarse-grained gravel No PHC		
	20			SILTY CLAY: Light brown with yellowish orange mottling, hard, moist, some fine-grained gravel. No PHC	x	
	25			Stop 20' per scope		
				Dry - Set 1" PVC Screen Left screen in place over weekend		

COMMENTS: Continuous core, 4ft sections
 x Soil samples Sample liner cut & sealed with Teflon end caps

PROJECT: 3022

DATE DRILLED: 02/15/08

SITE LOCATION: 557 Merrimac Street
Oakland

CASING ELEVATION: NA

DRILLING COMPANY: Fisch Environmental

DEPTH TO GW: NA

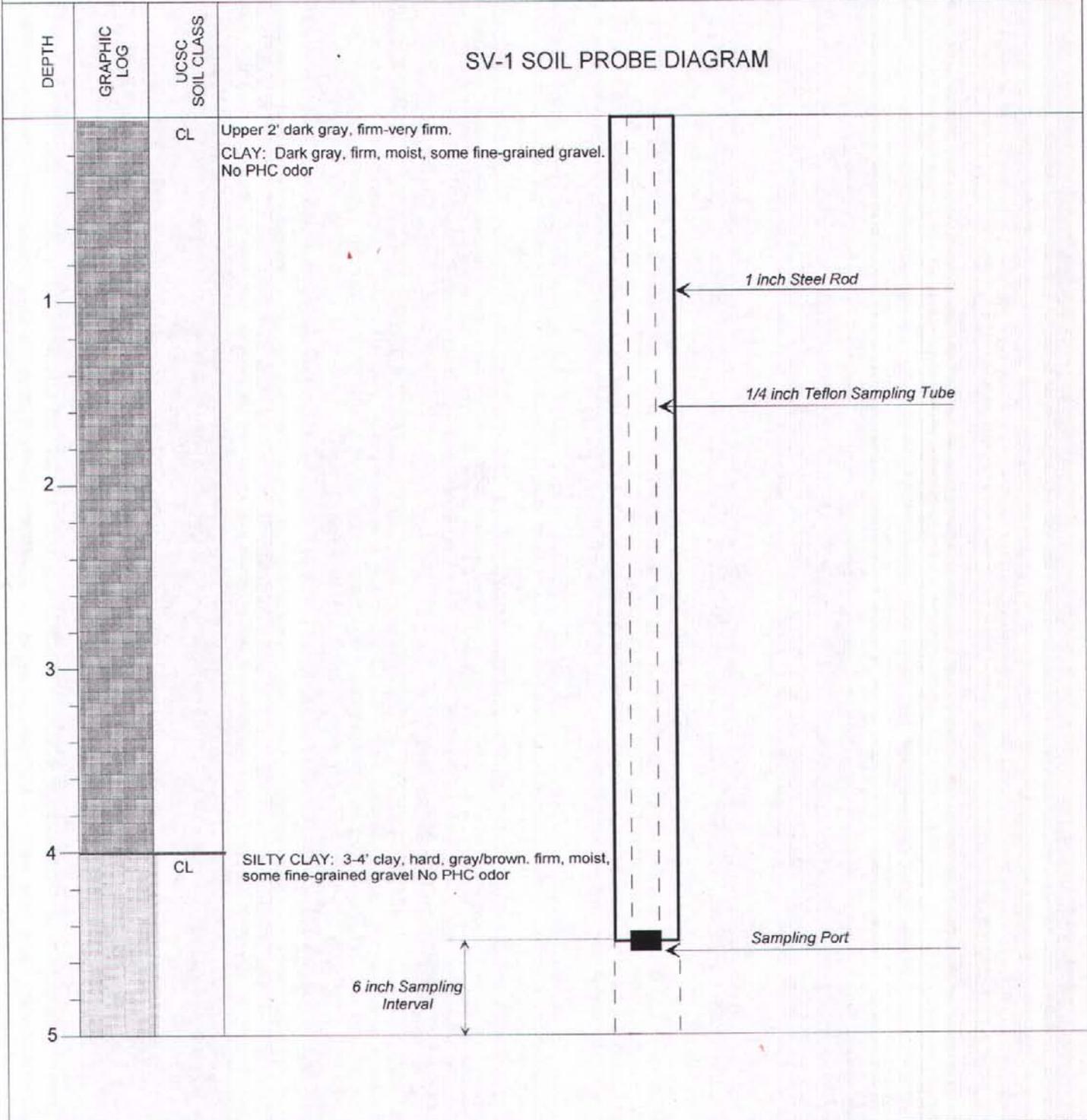
DRILLING METHOD: Direct Push

T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

NOTES: Lithology is extrapolated from B-2 (2/15/08)

APPROVED BY: M. Sepehr, Ph. D., P.E.



PROJECT: 3022

DATE DRILLED: 02/15/08

SITE LOCATION: 557 Merrimac Street
Oakland

CASING ELEVATION: NA

DRILLING COMPANY: Fisch Environmental

DEPTH TO GW: NA

DRILLING METHOD: Direct Push

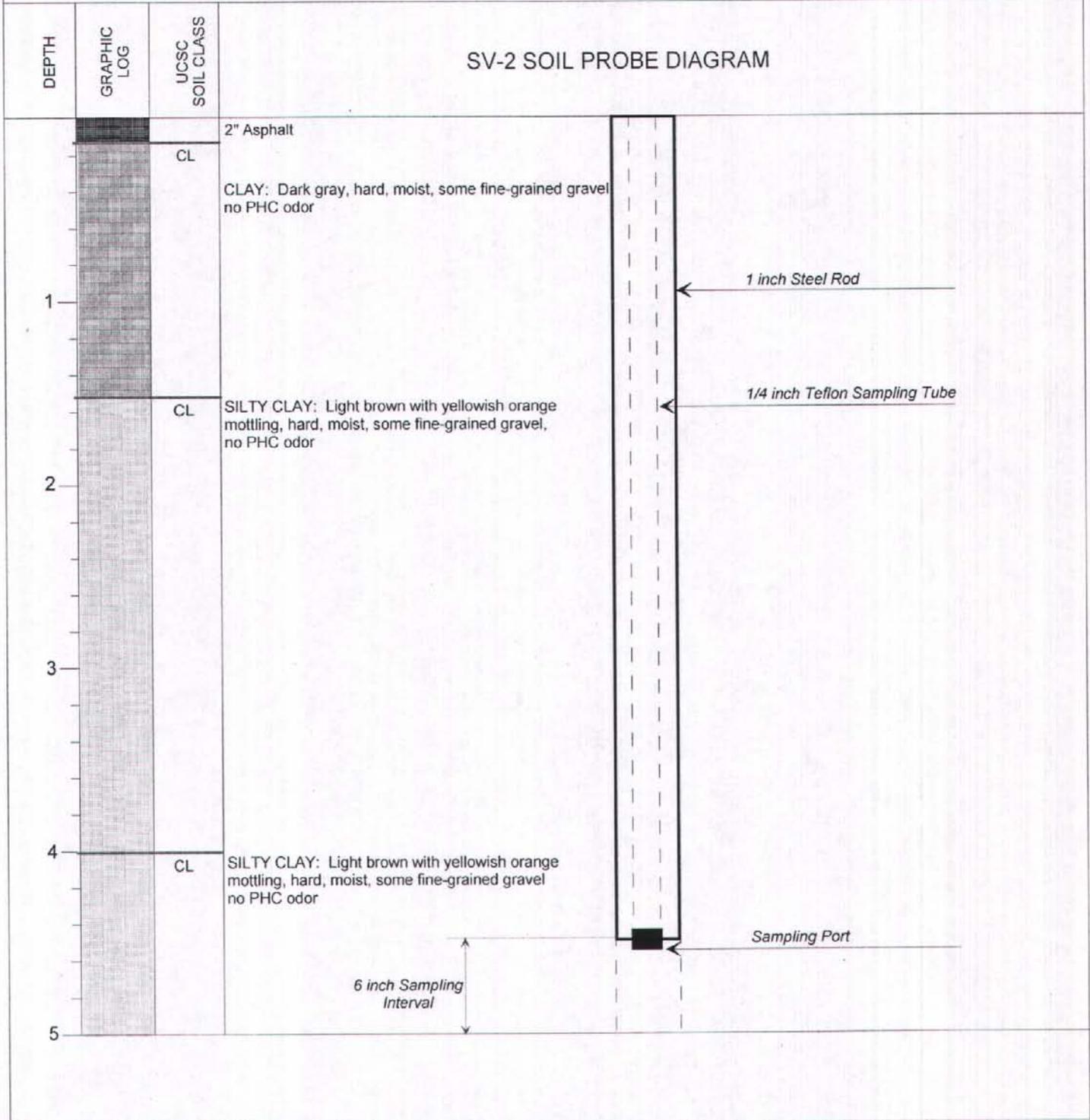
T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

NOTES: Lithology is extrapolated from B-5 (2/15/08)

APPROVED BY: M. Sepehr, Ph. D., P.E.

SV-2 SOIL PROBE DIAGRAM



PROJECT: 3022

DATE DRILLED: 02/15/08

SITE LOCATION: 557 Merrimac Street
Oakland

CASING ELEVATION: NA

DRILLING COMPANY: Fisch Environmental

DEPTH TO GW: NA

DRILLING METHOD: Direct Push

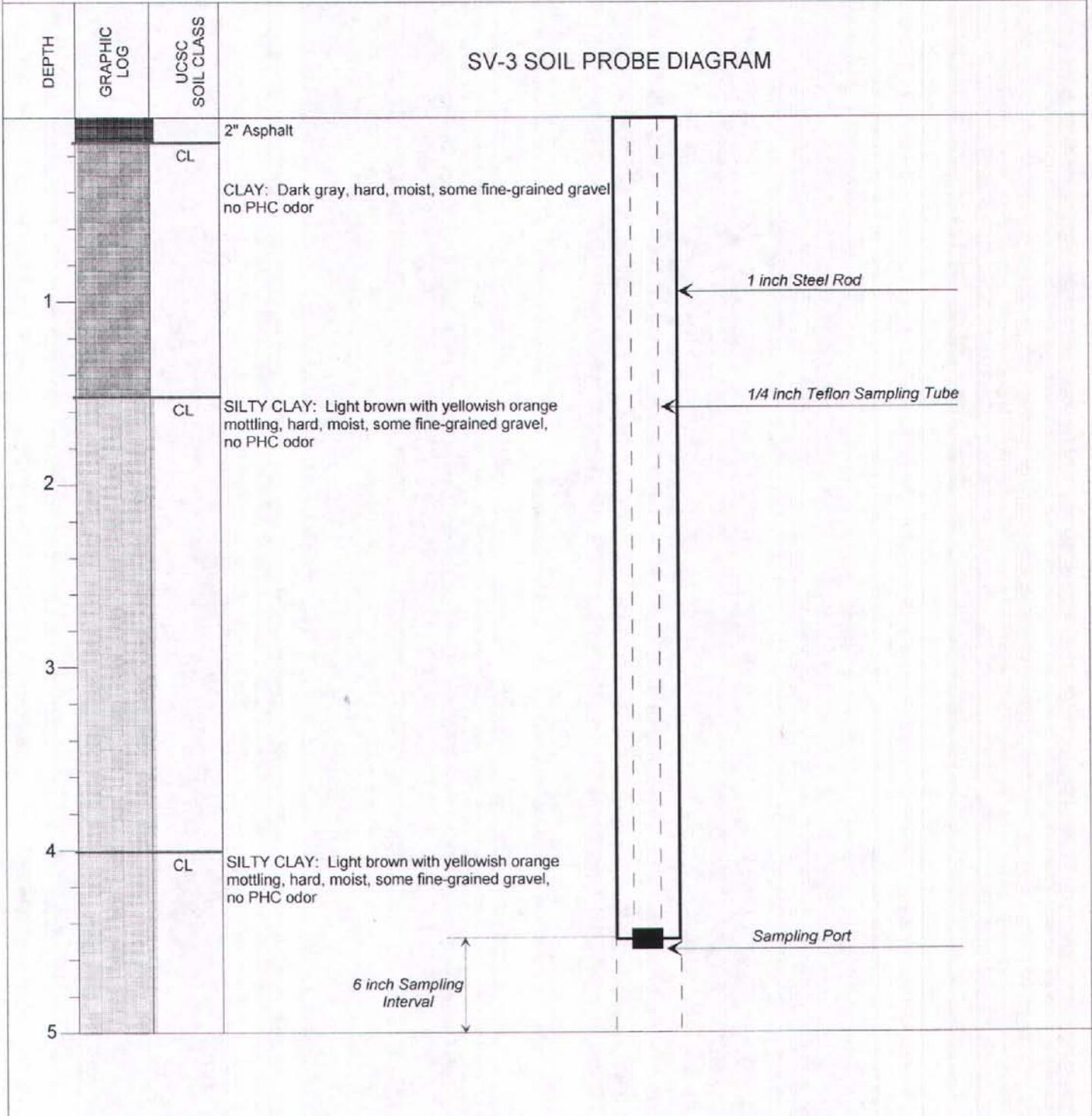
T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

NOTES: Lithology is extrapolated from B-5 (2/15/08)

APPROVED BY: M. Sepehr, Ph. D., P.E.

SV-3 SOIL PROBE DIAGRAM



PROJECT: 3022

DATE DRILLED: 02/15/08

SITE LOCATION: 557 Merrimac Street
Oakland

CASING ELEVATION: NA

DRILLING COMPANY: Fisch Environmental

DEPTH TO GW: NA

DRILLING METHOD: Direct Push

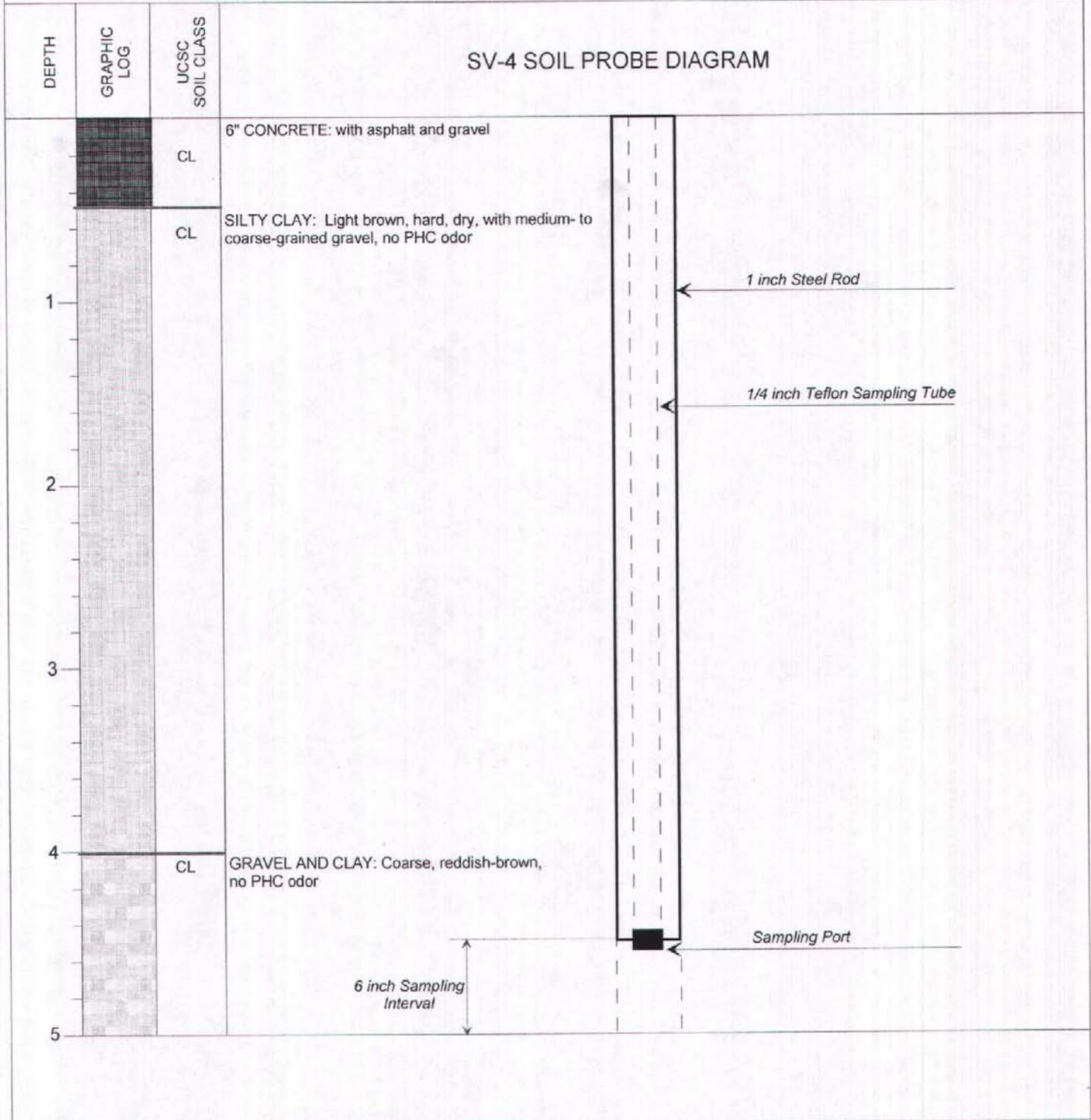
T.O.C. TO SCREEN: NA

SCREEN LENGTH: NA

NOTES: Lithology is extrapolated from B-8 (2/15/08)

APPROVED BY: M. Sepehr, Ph. D., P.E.

SV-4 SOIL PROBE DIAGRAM





GEOLOGIC LOG OF BOREHOLE B-6

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: R. McKinney

Date Drilled: February 15, 2008
 Casing Elevation: NA
 Depth to Groundwater: 8.2 ft
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED split spoon Core	WELL DIAGRAM
	0.0			Appx. 6" concrete asphalt sand		
				CLAY: Dark gray, firm, moist, TR gravel		
	5			SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, TR gravel	x	
				SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, some fine-grained gravel		
	10			SILTY CLAY: Light brown, hard, dry, medium to coarse-grained gravel		
				SAND: Light brown, wet, firm, fine to medium-grained sand, ~ 9ft, ~1.5 ft silty	x	
				SANDY CLAY: Light brown, stiff moist, medium-grained sand, with some fine gravel.		
				SANDY CLAY: Light brown, stiff moist, medium-grained sand, with some fine gravel.		
	15			SANDY CLAY: Light brown, stiff moist, medium-grained sand, cse gravel, silt, clay.		
				SILTY CLAY: Light brown, hard, dry, medium to coarse-grained gravel	x	
	20			GRAVELLY CLAY: Light brown, very hard, dry, with gravel,	x	
				Stop 1000		
				Bore B6 2-15-08 Fri		

COMMENTS: Continuous core to 20 ft per scope
 x Soil samples Sample liner cut & sealed with Teflon end caps

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Direct Push
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: L. Hightower

Date Drilled: February 14, 2008
 Casing Elevation: NA
 Depth to Groundwater: 6.4 ft
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED split spoon Core	WELL DIAGRAM
				3 1/2" concrete, 1" sand fill.		
	2.5		CL	CLAY: Dark gray, firm, moist, some fine-grained gravel		
	5		CL	SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, some fine-grained gravel Becomes wet @ 5ft.	X	
	4.5		CL	SILTY CLAY: Light brown, hard, dry, with medium to coarse-grained gravel		
	10		CL	SANDY CLAY: Olive gray, hard, dry, fine to medium-grained gravel, with some fine-grained gravel		
			SW	SAND: Olive gray, firm, wet, fine to coarse-grained sand with some fine-grained gravel	X	
				SAND: Light brown, wet, firm, fine to medium-grained sand		
	0			GRAVELLY CLAY: Light brown, hard, dry, fine to coarse-grained gravel		
				SANDY CLAY: Light brown, stiff moist, medium-grained sand, with some fine gravel. NO PHC		
	15			GRAVELLY CLAY: Light brown, hard, moist, fine to coarse-grained gravel. No PHC		
				SAND: Light brown, loose, saturated, fine to medium-grained, NO PHC		
	0.7			GRAVELLY SAND: Light brown, loose, saturated, fine-grained gravel, medium-grained sand, NO PHC		
				GRAVELLY CLAY: Light brown, hard, dry, fine-grained gravel, NO PHC		
	20				X	
	25					

COMMENTS: Continuous Borings-Log 4ft sections
 All except B5 (28') temporary well screens 1"PVC, 5' Screen, 20'-15', 15' blank
 * Soil samples Sample liner cut & sealed with Teflon end caps
 No soil 15' saturated



GEOLOGIC LOG OF BOREHOLE B-2

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: R. McKinney

Date Drilled: February 15, 2008
 Casing Elevation: NA
 Depth to Groundwater: 11'2"
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED		WELL DIAGRAM
					split spoon	Core	
				Direct push soil & grab GW sample			
	1.2			Upper 2' dark gray, firm-very firm.			
				CLAY: Dark gray, firm, moist, some fine-grained gravel. No PHC odor			
	5			SILTY CLAY: 3-4' clay, hard, gray/brown, firm, moist, some fine-grained gravel No PHC odor	x		
	0.8						
	10			Gray, wet sand, silty, soft with silt/clay	x		
				Wet sand/gravel, red brown- SW/GW with silty clay, soft, No PHC			
	0.5			SANDY CLAY: Light brown, stiff moist, medium-grained sand, with some fine gravel, hard			
				GRAVELLY CLAY: Light brown, hard, moist, fine to coarse-grained gravel.			
	15			GRAVELLY CLAY: Light brown, hard, moist, fine to coarse-grained gravel. Clayey gravel and gravelly clay sand, CSE gas	x		
				GRAVELLY SAND: Brown, loose, saturated, fine-grained gravel, medium-grained sand, moist			
	0.8			GRAVELLY CLAY: Light brown, hard, dry, fine to coarse-grained gravel. Cse gravelly clay. No PHC			
	20			GRAVELLY CLAY: Brown, hard- very hard gravelly clay, dry, fine-grained gravel, NO PHC	x		
				Stop @ 20'			
				Low production Left well screen in place			
	25						

COMMENTS: Continuous core-4ft sections
 x Soil samples Sample liner cut & sealed with Teflon end caps

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: Rich McKinney

Date Drilled: February 15, 2008
 Casing Elevation: NA
 Depth to Groundwater: 11.01 ft
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED	WELL DIAGRAM
				See borings B-1,2 for soil description		
				3 1/2" asphalt & gravel		
	2.2		CL	CLAY: Dark gray, dry, hard, some fine-grained gravel, No PHC		
	5			SILTY CLAY: Light brown with yellowish orange mottling, firm-hard, dry, some fine-grained gravel No PHC	X	
	2.0		CL	SILTY CLAY: Molding clay, light brown with yellowish orange mottling, firm, increase gravel		
	10			SANDY CLAY: Olive gray, hard, dry, fine to medium-grained gravel, with some fine-grained gravel		
				Sand: Gray, wet, firm to medium grained sand, SP, soft. m- PHC	X	
	1.0			GRAVELLY CLAY: Greenish-gray, hard, dry, fine to coarse-grained gravel		
	15			GRAVELLY SAND: Light brown, loose, saturated, fine-grained gravel, medium-grained sand	X	
	0.0		SW	Wet SW, brown, gravel Silt/Clay loose ~ 1 Foot thick zone No PHC		
	20		CL	GRAVELLY CLAY: Light brown, very hard, dry, fine-grained gravel.	X	
				GW sample ~ 11.0 ft bgs		
	25					

COMMENTS: Continuous Core 4ft lengths
 X Soil samples Sample liner cut & sealed with Teflon end caps



GEOLOGIC LOG OF BOREHOLE B-4

Project: 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: L. Hightower

Date Drilled: February 14, 2008
 Casing Elevation: NA
 Depth to Groundwater: 7.91 ft
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED split spoon Core	WELL DIAGRAM
				2" asphalt		
	3.1			SILTY CLAY: Dark brown, hard, dry, some coarse-grained gravel		
	5			SILTY CLAY: Light brown, stiff, moist, no gravel	∞	1539
				SILTY CLAY: Light brown with yellowish orange mottling, hard, moist, medium-grained sand, no gravel		
	11.1			SILTY CLAY: Greenish brown, hard, dry, with medium-grained gravel, PHC odor	∞	1549
	10			SILTY CLAY: Light brown with gray mottling, hard, dry, medium to coarse-grained gravel		
	6.3			SILTY CLAY: Light brown, hard, dry, with medium to coarse grained gravel	∞	1603
	15			SILTY CLAY: Light brown, hard, dry, no gravel		
	5.3			GRAVELLY SAND: Light brown, loose, saturated, fine-grained gravel, medium-grained		
				SILTY CLAY: Light brown, hard, dry, no gravel		
				GRAVELLY CLAY: Light brown, hard, dry, fine-grained gravel.	∞	1624
	4.0					
	20					
	25					

COMMENTS: Continuous Coring, 4ft sections
 ∞ Soil samples Sample liner cut & sealed with Teflon end caps



GEOLOGIC LOG OF BOREHOLE B-5

Project : 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: L. Hightower

Date Drilled: February 14, 2008
 Casing Elevation: NA
 Depth to Groundwater: See notes
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	GEOLOGIC DESCRIPTION	SAMPLED		WELL DIAGRAM
					split spoon	Core	
				2" Asphalt			
				CLAY: Dark gray, hard, moist, some fine-grained gravel			
				SILTY CLAY: Light brown with yellowish orange mottling, hard, moist, some fine-grained gravel			
1.8	5			SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, some fine-grained gravel		X	
2.4				SILTY CLAY: Light brown, soft, moist, no gravel			
	10			SANDY CLAY: Olive gray, hard, dry, fine to medium-grained gravel, with some fine-grained gravel		X	
3.1				SANDY CLAY: Greenish gray, very stiff, moist, has green mottling, with fine gravel, becomes brown @ 11.5'. PHC odor			
				SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, some fine-grained gravel			
	15			GRAVELLY CLAY: Light brown, hard, dry, fine-grained gravel.		X	
				SILTY CLAY: Light brown, hard, dry, medium to coarse-grained gravel, medium-grained sand			
				SILTY CLAY: Light brown with yellowish orange mottling, hard, dry, some fine-grained gravel			
1.9	20			SILTY CLAY: Light brown with yellowish orange mottling, firm, moist, some fine-grained gravel		X	
				SILTY CLAY: Light brown, hard, moist, medium to coarse-grained gravel			
1.4	25			SILTY CLAY: Light brown, hard, dry, no gravel			

COMMENTS: Continuous Core, 4ft sections
 X Soil samples Sample liner cut & sealed with Teflon end caps



Project : 3022
 Site Location: 557 Merrimac St.
 Oakland
 Drilling Method: Geoprobe
 Driller: Fisch Environmental
 Boring Diameter: 2"
 Logged By: L. Hightower

Date Drilled: February 14, 2008
 Casing Elevation: NA
 Depth to Groundwater: See Notes
 T.O.C. To Screen: NA
 Screen Length: NA
 Approved By: R. McKinney

PID ppm	DEPTH	GRAPHIC LOG	SOIL CLASS.	SAMPLING METHOD	WELL DIAGRAM
			SILTY CLAY: Light brown, hard, dry, no gravel		
	0.8				
	30		<p>Stop @ 28 ft. Tried to find GW- moist at ~ 24 - left well screen sit ~ 2 hrs, ~ 2 ft bw in screen - enough to sample. Source may be shallow ~ 9ft-10ft sand lense or deeper-not sure</p> <p>B5 near former MW-3, South corner of site, GW reported 2007 @ 9-10 ft bgs</p>		

COMMENTS: Continuous Core, 4ft sections
 5' of 1" PVC well screen set at ~28 ft - 23'-blank to surface



ON-RAMP TO 980

27th STREET

SIDEWALK

VACANT BUILDING

Merrimac Street

Residential Buildings

- ⊕ Soil and Groundwater Boring
- Soil Gas Sampling Location
- ▲ FORMER MONITORING WELL LOCATION

Note: Stockpiles 2 and 3 contain spoils from the same area. Samples STKP-2, 1 and 2, and STKP-3, 1 were combined to form one lab sample.

approximate scale in feet

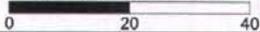
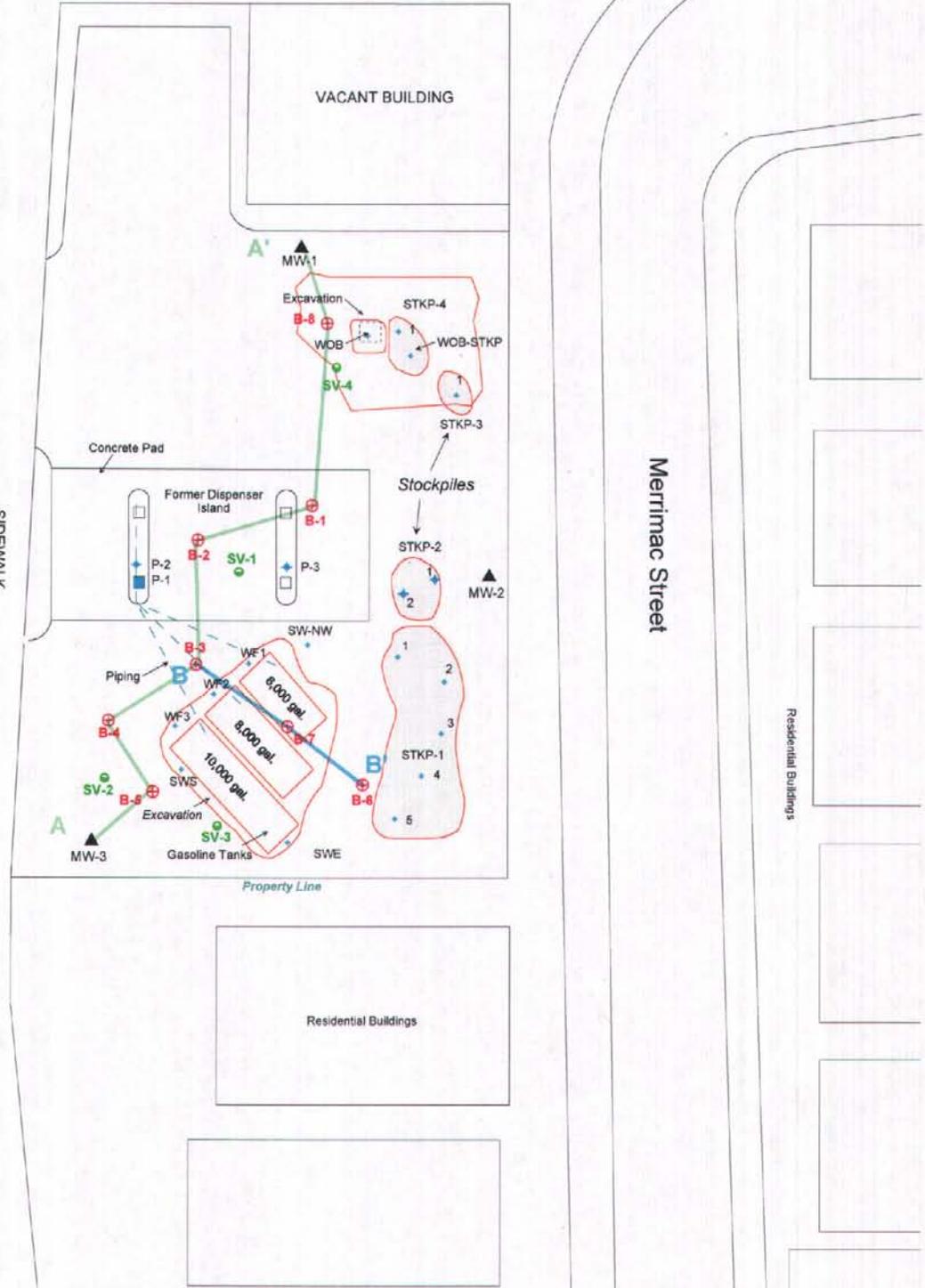


Figure 3: Site Map Showing Locations of Geologic Cross-Sections AA' and BB'



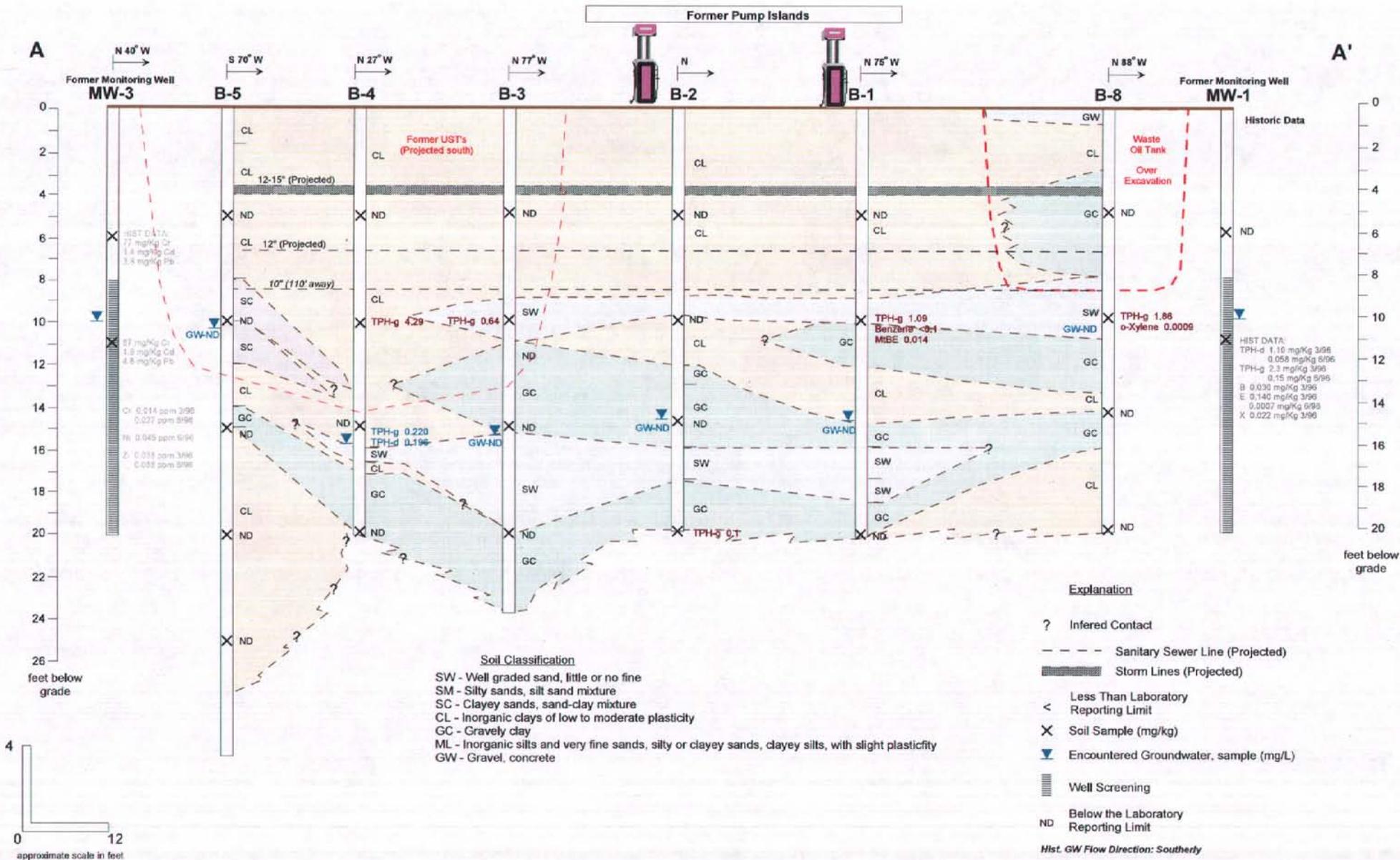


Figure 4: Geologic Cross-Section AA'

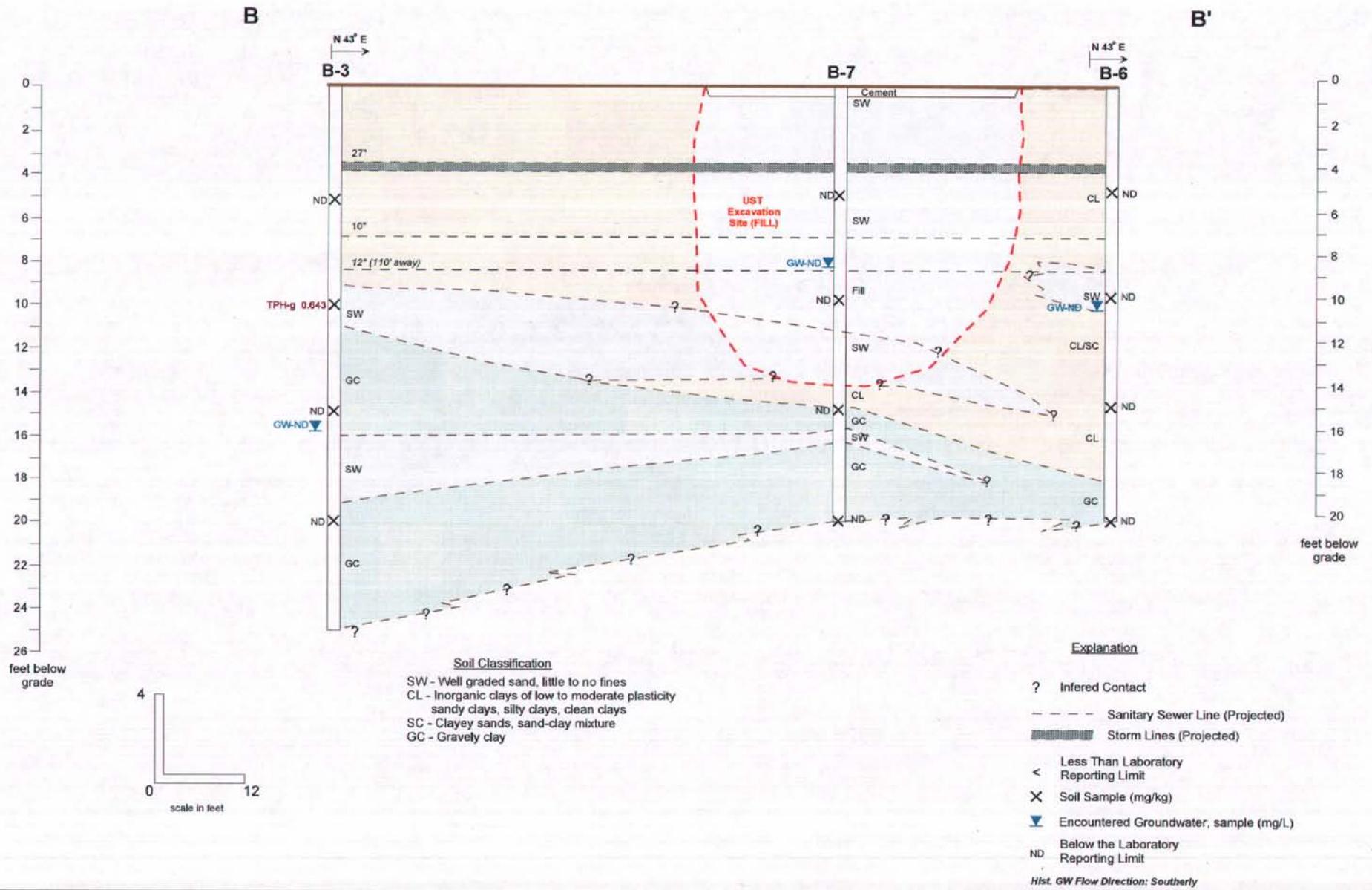


Figure 5: Geologic Cross-Section BB'