

July 11, 1991

Project No. 020501446.020522

Mr. Peter H. Sher San Francisco French Bread Company 7801 Edgewater Drive Oakland, CA 94621

RE:

Report of Environmental Assessment Results for Work Performed at 580 Julie Anne Way, Oakland, California

Dear Mr. Sher:

This letter presents the results from the environmental assessment performed by Groundwater Technology, Inc. at the property located at 580 Julie Anne Way, Oakland, California (Colombo/Toscana facility). This investigation was conducted to determine whether petroleum hydrocarbon compounds had impacted the subsurface soils in the area of two underground storage tanks, one pump island and the associated product lines (Figure 1). The underground storage tanks are currently in place and are used for storage of gasoline and diesel fuel. Groundwater Technology was retained to conduct the following worksteps:

- Prepare a site-specific health and safety plan
- Conduct a utility sweep of the drilling area
- Advance six soil borings to approximately 10-feet below surface grade
- Collect soil samples from the soil borings for laboratory analyses
- Prepare a brief letter report

The results from these activities are provided as follows:

Site Safety Plan

A site-specific health and safety plan was prepared in accordance with OSHA standards and was in the possession of Groundwater Technology personnel working at the site.

Mr. Peter Sher July 11, 1991 Page 2

Utility Sweep

On June 6, 1991, Spectrum ESI conducted a utility sweep of the drilling area using ground-penetrating radar. A map of the underground utility locations is provided (attached Figure 2).

Soil Borings

On June 19, 1991, a total of six soil borings were drilled in the area of the two underground storage tanks and associated product lines. The soil borings were drilled by Powercore Soil Sampling, Inc. under the direct supervision of Groundwater Technology personnel. The boring locations are shown on Figure 3.

Each of the soil borings were advanced using hydraulically operated machinery to provide the force necessary to drive in and to extract the drill string and retrieve the soil samples. The drill string consisted of a 1-3/4-inch steel drill rod attached to a 2-inch outside diameter by 1-1/2-inch inside diameter by 24-inch long split-spoon sampler. After driving 2-feet deep, the drill string was extracted from the borehole, the sample was collected and the drill string was replaced in the hole to drive another 2-feet deep. This procedure was repeated for each boring to a completion depth of 10 feet. A continuous log of the soils encountered were recorded for each boring by Groundwater Technology's on-site geologist. These boring logs are provided with this report.

A photo-ionization detector (PID) was used to scan each soil core for the presence of volatile hydrocarbon compounds. Based on field observations and PID readings, specific samples were selected for laboratory analyses. Samples collected for laboratory analyses were stored in brass tubes, sealed on each end using aluminum foil, plastic end caps and duct tape. Each sample was immediately labeled, and placed on ice to be transported to the laboratory for analyses. Samples were accompanied at all times by a Chain-of-Custody Manifest.



Mr. Peter Sher July 11, 1991 Page 3

Laboratory Analytical Results

At least one sample was submitted for laboratory analyses from each of the borings described above. Selected samples were analyzed for the presence of benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH)-as-gasoline using U.S. Environmental Protection Agency (EPA) Methods 5030, 8020 and modified EPA Method 8015; for TPH-as-diesel fuel using modified EPA Methods 3550/8015; and for total oil and grease by APHA Method 5520C.

Results showed concentrations of benzene were detected in each of the six soil samples analyzed. The highest benzene concentration reported was detected in the sample from soil boring SB-F at 7-feet below grade (SB-F-7) at 28 milligrams per kilogram (mg/kg). The lowest benzene concentration was detected in sample SB-E-5 collected west of the pump island at 0.02 mg/kg. Similarly, TPH-as-gasoline was detected in each of the samples analyzed with the exception of SB-E-5, which was reported to have a concentration of less than 1 mg/kg. The highest concentrations of TPH-as-gasoline was reported for soil sample SB-B-5 at 4,800 mg/kg.

Concentrations of TPH-as-diesel fuel were found above the detection limit in two of the seven samples analyzed. Concentrations in sample SB-D-7 were reported at 2,300 mg/kg, while concentrations in sample SB-B-5 were reported at 600 mg/kg. TPH-as-diesel fuel in all other samples analyzed was reported with less than 10 mg/kg.

Due to staining in soil collected from soil boring SB-A, sample SB-A-5 was analyzed for the presence of total oil and grease. A concentration of 1,300 mg/kg of total oil and grease was reported for sample SB-A-5.

The laboratory analytical results are summarized in Table 1. Copies of the actual laboratory analytical reports are attached. The concentrations of the hydrocarbons detected at each soil boring location are shown on Figure 4.

Conclusions

Based upon the field observations, as recorded in the soil boring logs, along with results from the laboratory analyses results for the soil samples collected, there is petroleum hydrocarbon impact in the area of investigation. The area of highest impact by gasoline and diesel fuel constituents was found around the eastern-most storage tank. Total oil and grease was also detected in a significant concentrations in the northwestern area of investigation.

Groundwater was found in each of the borings at approximately 7-to 8-feet below grade. Due to the proximity of the observed impacted soil to the groundwater table, it is likely that groundwater has also been impacted by these petroleum hydrocarbon compounds.

Recommendations

It is Groundwater Technology, Inc.'s recommendation that the following work be conducted to further delineate the source and extent of the petroleum hydrocarbon compounds:

- The presence of the detected petroleum hydrocarbons in the soils warrants the San Francisco French Bread Company contacting the Regional Water Quality Control Board San Francisco Bay Region for further guidance at this site.
- 2) Review the history of the storage tanks. This shall include review of inventory records for the existing storage tanks along with possible pre-existing tanks.
- Determine the source of any current leakages and repair them or remove and replace the existing storage tank facilities.
- Determine the extent of the hydrocarbon impact to the subsurface soils and groundwater.
- 5) Source removal of petroleum impacted soils should also be considered to prevent further spread of petroleum hydrocarbons. This could be performed in conjunction with tank removal activities.



Mr. Peter Sher July 11, 1991 Page 5

Closure

Groundwater Technology, Inc. would like to thank the San Francisco French Bread Company for this opportunity to be of service. If there are any questions or comments, please contact our Concord office at (415) 671-2387.

Sincerely,

GROUNDWATER TECHNOLOGY, INC.

Kenneth P. Johnson

Project Manager/Geologist

Kevin M. Sullivan

Industrial Group Manager

KPJ:KMS:drg

Attachment

LR1446A1.KPJ

JULIE ANNE WAY U/G TANKS-FENCE SB-A⊕ ⊕SB-B PUMP ISLAND~ SB-E⊕ ⊕SB-F SB-C⊕ CONCRETE PAD SB-D⊕ LEGEND \oplus SOIL BORING FIGURE 3
SOIL BORING LOCATION MAP FEET GROUNDWATER SAN FRANCISCO FRENCH BREAD OAKLAND, CALIFORNIA TECHNOLOGY, INC. DRAWN BY: ML 7/91

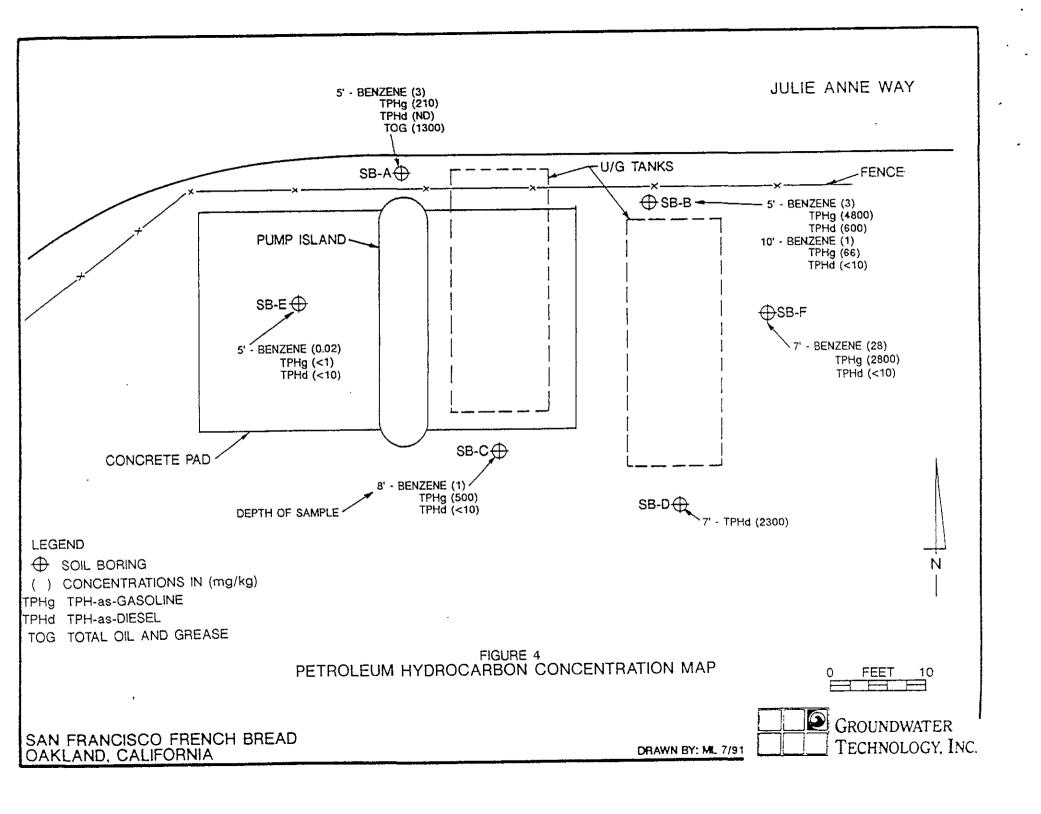


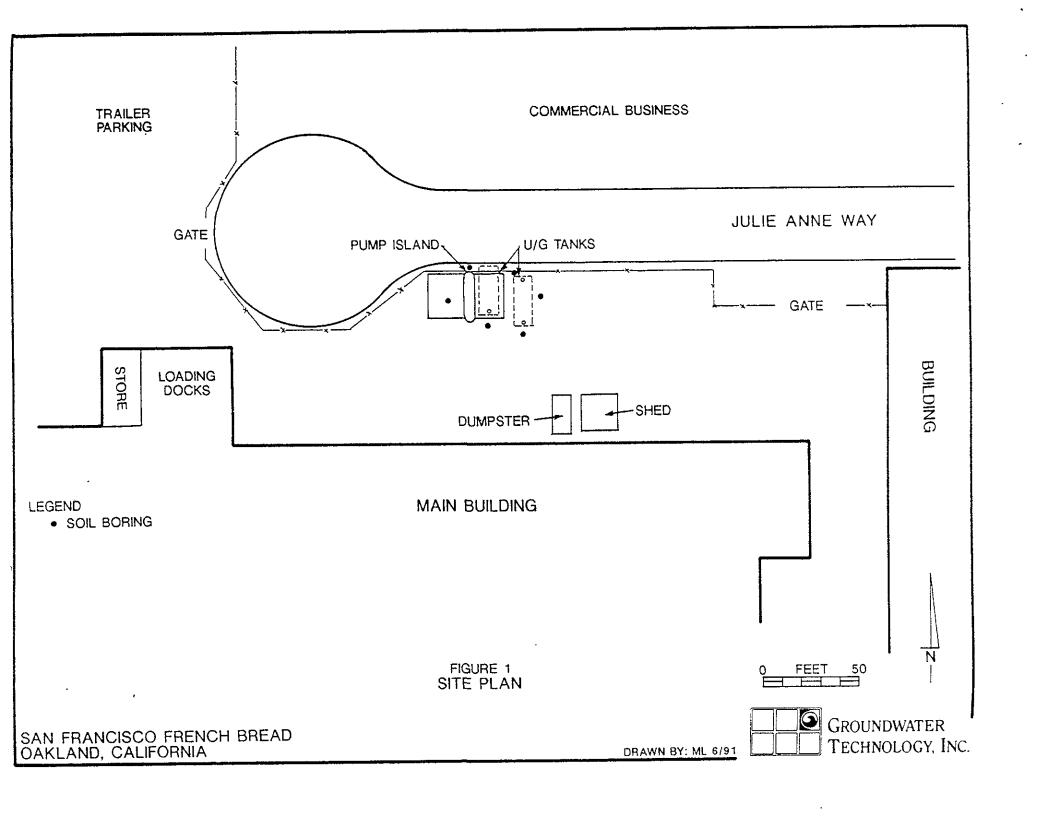
TABLE 1
SAN FRANCISCO FRENCH BREAD COMPANY
SUMMARY OF ANALYTICAL RESULTS FOR SOIL SAMPLES
(collected June 19, 1991)

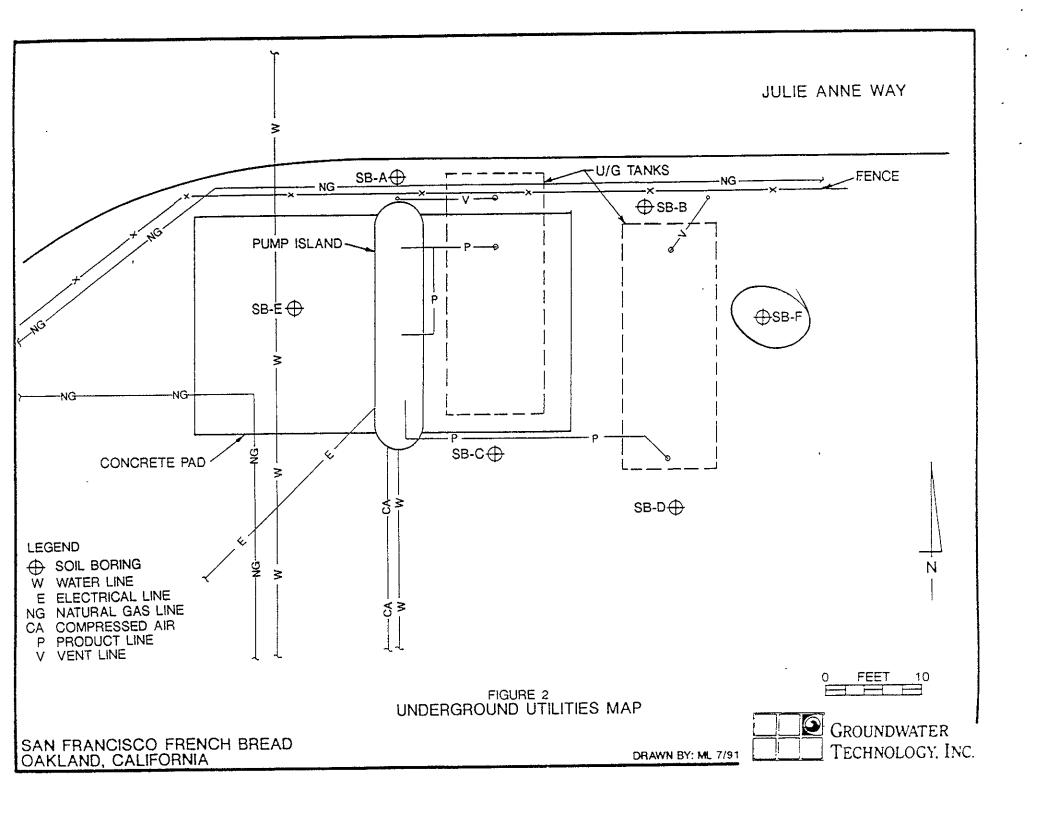
SAMPLE ID	DEPTH (ft)	BENZENE (mg/kg)	TPH-AS- GASOLINE (mg/kg)	TPH-AS- DIESEL (mg/kg)	TOTAL OIL AND GREASE (mg/kg)
SB-A-5	5	3	210	<10	1,300
SB-B-5	5	3	4,800	600	NA
SB-B-10	10	1	66	<10	NA
SB-C-8	8	1	500	<10	NA
SB-D-7	7	NA	NA	2,300	NA
SB-E-5	5	0.02	<1	<10	NA
SB-F-7	7	28	2,800	<10	NA

ft = Feet

mg/kg = Milligrams per kilogram

LR1446A1.KPJ





GROUNDWATER
GROUNDWATER TECHNOLOGY, INC.

Soil Boring SB-A

Project 🚅	FF8/580	wie Anne	···		_ O	mer <u>San Francisco Frenc</u>	n Bread	Urilling Log
Location _	Location Oakland, CA		_ Pr	oject Number <u>020501446.</u>	<u> </u>	See Site Map		
Date Dried 6/19/91 Total Depth o		f Hol	e <u>10.0 ft.</u> Diame	Diameter <u>2.0 in.</u>	For Rogor Location			
Surface E	levation _		Wat	er Level I	vitiai .	<i>5.5 ft.</i> 24-h	our	
Screen: Di	ia		Len	gth		Slot S	szĕ	NOTES:
						Type		
Filter Pack	k Material .					0.044		
Dritting Cor	iipany <u>Po</u>	wercore			_ Dr	Ting Method <u>Solid stem pu</u>	<u>snroa</u>	
						g by <u>William L. Hughes</u>		
Geologist/	Engineer		····		n .	License No		
Depth (feet)	. Well Completion	PID (mcq)	Sample ID Blow Count	Graphic Log	Soll Class		Descr (Color, Textu	ription re, Structure)
- 0 - - 2 -		18			CL	BASE coarse Greenish gray CLAY (grades to dark gra		ium coarse grained sand (damp)
-					SP			ne gravet (dry, very loose)
-4-		32 .	SBA5	7777	}	1	rare gravel (1	0%), some sand (20%)
					CL	4		
- 6 -		175			GC	Dark gray sandy cla	yey GRAVEL((loose, saturated, wood fragments)
- 8 -		,		868		Fine SAND with some	: coarse sand	(saturated, wood fragments)
		319			SP			
10 -		364		_		End of boring at 10.0) feet. Backfille	ed with neat cement grout.
- 12 -				 				
- 14 -								
16 -				-				
- 18 -			:-					
- 20 -								
22 -				-				
- 24 -							•	
- 26 -	1							

2--- 1---

G	GROUNDWATER
	TECHNOLOGY, INC.

Soil Boring SB-B

Project SFFE/580 Wife Anne					_ 0>	Owner <u>San Francisco French Bread</u> Drilling Lo				
ocation <u>Cakland, CA</u>			_ Pro	piect Number <u>020501446.020503</u>	San Sila Man					
Date Dr i e	d <u>6/19/9</u>	1	Tot	al Depth o	f Hok	<u>10.0 ft.</u> Diameter <u>2.0 n.</u>	See Site Map For Boning Location			
Surface E	Jevation		Wat	er Level Ir	vitial .	6.0 ft. 24-hour				
Screen: Dia Length						Slot Size	NOTES:			
Casing: Dia	3		Ler	gth		Type				
Filter Pack	k Material						<u> </u>			
Drilling Con	mpany <u>Po</u>	wercore			_ Or	illing Method Solid stem pushrod				
Driller _ <i>G</i> e	eorae Evar	75			_ Lo	g by <u>William L. Hughes</u>				
Geologist/	Engineer.					License No				
Depth (feet)	Well Completion	PIO (ppm)	Sample ID Blow Count	Graphic Log	Soil Class	Descri (Color, Textur	ption e, Structure)			
- 0 -				000.		BASE cóarse				
				0.0.0]					
[__]]]	0.0.0	$\parallel \perp \mid$	Dark brown silty CLAY (damp)				
<u> </u> 2		25	∥		1 a	•				
-				1.1.1	}—{	Brownish gray fine grained poorly so	orted SAND			
- 4 -]					
- 		14.4	1 [SP					
} -			SBB5]					
- 6 -		185	-			Dark greenish gray medium to fine g (medium stiff, saturated, sheen,	rained Sand with subangular graver			
						Encountered water at 6.0 feet on 6				
- T	1	331			SW	Encountered water at 6.0 feet on 6) 19/91			
- 8 -	1			╁						
ļ				 	╢					
- 10 -			SBB10	<i>ZZZ</i>	CL	Dark greenish gray CLAY (very sof strong hydrocarbon odor)	t, very moist to saturated,			
		257	1				d with post compat grout			
-	1			·		End of boring at 10.0 feet. Backfille	J With heat cement grout.			
- 12 -	1			 - -	\parallel					
1 _				L .						
Ī ¯]	İ								
 - 14 −	1		1	-	1					
} -	4		1	 	\parallel					
- 16 -	_			L -	1					
† -	1			1	1					
- 18 -	4			├ -						
					_					
[1							
- 20 -	1			├ -	1					
-	4			-	-					
- 22 -				L _	1					
T 22 -										
†	1	1		1	1					
- 24 -	1			├ -	\dashv	,				
				_						
[7	1								
- 26 -	-	1		├ -	1					

<u> </u>	TECH	NDWA7	SY, INC				Soil Boring SB-C
Project _S	FF9/580 .	XIE Anne			. O _Y	mer San Francisco French Bread	Drilling Log
Date Drille	Location Oakland, CA Date Onlied 6/19/91 Total Depth of Surface Slevation Water Level Init					bject Number 020501446.020503 bject Number 020501446.020503 bject Number 20 n. bject Number	1
Screen: Dia Casing: Dia	ð		Len	gth gth		Slot Size	NOTES: Rig refusal encountered at 2 feet. Pig was moved 8 inches west. Sampling was resumed
Oriller <u>Ge</u>	ipany <u>Poi</u> orge Evani	wercore s			. Dr . Lo	uling Method <u>Solid stem pushrod</u> g by <u>William L. Hughes</u> License No	at 2 feet below grade.
Geologist/					Т		<u></u>
Depth (feet)	Well Completion	PID (ppm)	Sample ID Blow Count	Graphic Log	Soll Class	Descript (Color, Texture,	ion Structure)
- 0 - 2 - 4 - 6 - 8 -		10.6 19 177 145	SBC5		GC CL	BASE coarse —Green mottled black CLAY with angular (stiff to very stiff, damp to dry) Light brown to white coarse grained Gf traces of dark gray to black clay a hydrocarbon odor) Figure Encountered water at 8.0 feet on 6/18. Black to dark gray sandy CLAY (very	RAVEL with fine grained sand and and and silt (loose, dry,
- 10 -		98			CL.		
- 12 - - 14 - - 16 -		30				End of boring at 10.0 feet. Backfilled w	nti neat cement grout.

- 18

20

22 -

24 -

26

Date Drad		TECH	INDWAT	SY, INC			S-n Evenousen	Eranon Braad	Soil Boring SB-D Drilling Log
Date Date of 1991 Strace Bevalon Nater Level Initial 85 /1. Sold Size Length Sold Size Pipe Park Material Drilling Company Desercate Driller George Evans Coelogist/Engineer Driller George Evans Drilling Method Sold stee outshod Drilling Company Desercate Drilling Comp	Project SFE/SOU WILL AFFIE						wher <u>san Francisco</u>	01446 020503	
Surface Bevalton Nater Level Initial 85 ft. 24-hour Screen Dia Length Soft Size National Control of the provided at 5 feet below grown gro	Location Oakland, CA						oject Number <u> </u>	01440.020303	See Site Map
Screen Da Length Sot Size Note Classing Dis Length Type Page Pack Material Type Dising Company Page Pack Material Dising Company Page Pack Material Dising Company Page Page Page Dising Company Page Page Page Dising Company Page Page Dising Material Training Without Lindings (Color, Texture, Structure) O	Date Drited 6/19/91 Total Depth of						le <u>10.0 11.</u>	Ulameter _2.0 til	For Boring Location
Casteg Dia Fiter Pack Naterial Orling Company Powercore Driller George Evans Ceclogist Engineer Ceclogist	Surface Elevation Water Level Init						8.5 N.	24-hour	-
Filter Pack Naterial Oriting Company Powercore Oriting Company Powercore Cody Milliam I. Huches Description (Color, Texture, Structure) BASE coarse Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and sit) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SBD7 Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) End of borring at 10.0 feet. Backfilled with neat cement grout.	Screen: Nia Length							Slot Size	NOTES
Drilling Company Powercore Driller George Evans Ceologist/Engineer Ceologist/Engineer Ceologist/Engineer Ceologist/Engineer Ceologist/Engineer Ceologist/Engineer Cigno Color, Texture, Structure) BASE coarse Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and sitt) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SBD7 SBD7 SBD7 SBD7 SBD7 SBD7 SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout.	Casing: Dia			Len	gth			Туре	Fig refusal occured at 5 feet below grade. Pig was moved 8 inches closer to the tank
Geologist/Engineer Log by Milliam I. Promiss License No Description (Color, Texture, Structure) BASE coarse Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and sitt) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SP Encountered water at 8.5 feet on 6/19/91 End of boring at 10.0 feet. Backfilled with neat cement grout.	Filter Pack	: Material _							
Geologist/Engineer License No Description (Color, Texture, Structure) BASE coarse Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and sitt) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SBD7 Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid)	Drilling Corr	ipany <u>Po</u>	wercore			. Dr	rilling Method <u>Sullus</u>	ess	-
Description (Color, Texture, Structure) Color	Driller <u>Ge</u>	orge Evan	S			. Lo	og by <u>William L. Hoon</u>	<u>es</u>	
BASE coarse Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and silt) Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout.	Geologist/	Engineer .					License No .		
Black CLAY with some gravel (very stiff, damp) (grades dark green, increasing sand and silt) 5	Depth (feet)	Well Completion	OId (mdd)	Sample 1D Blow Count	Graphic Log	Soil Class		Descrip (Color, Textur	otion e, Structure)
Calc	- 0 -			Г	0.707.07		ll .		
SBDS SBDS SBDS SBDS SBDS SBDS SBDS SBDS			1		7///		Black CLAY wit	th some gravel (very s	stiff, damp)
SBDS SBDS SBDS SBDS SBDS SBDS SBDS SBDS									
Ca SBD5 SBD5 Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SP Encountered water at 8.5 feet on 6/19/91 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 SBD	ト2 ー		34	l f	7///		(orades da	ark green, increasing s	and and silt)
SBD7 SBD7 Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SP Encountered water at 8.5 feet on 6/19/91 End of boring at 10.0 feet. Backfilled with neat cement grout.						CL.	(9.0000 0.	a g. 56., 5 g	
SBD7 SBD7 Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SP Encountered water at 8.5 feet on 6/19/91 End of boring at 10.0 feet. Backfilled with neat cement grout.						-			
Fine to medium grained, poorly sorted SAND (very loose, grains coated with dark liquid) SP	F 4 7		209	opp.					
SBD7 SBD7 With dark liquid) SP Encountered water at 8.5 feet on 6/19/91 SP End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 End of boring at 10.0 feet. Backfilled with neat cement grout. SBD7 SBD				2802			1		
327 SBD7 Final	Lal			ļ ļ	<u> </u>				d SANU (very loose, grains coated
327				SBDZ			With dark III	daia)	
Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout. Find of boring at IO.0 feet. Backfilled with neat cement grout.	<u></u>	Í	327	000.			ii		
38 68 End of boring at IO.0 feet. Backfilled with neat cement grout. - 12	L 8 -					SP			40.404
- 10 - 68 End of boring at 10.0 feet. Backfilled with neat cement grout. - 12 - - 14 -						'	‡ Encountered v	vater at 8.5 feet on 6.	/19/91
- 12			38						
- 12	<u> </u> - 10 -		68	ן נ	 · · · · · · · · · · · · · · · · · · 		End of boring	at IOO feet Backfilled	With neat cement grout.
- 14					<u> </u> -		Lid of boiling	G(10.0 100t. B00ttmet	
- 14		<u> </u> 							
- 16	<u> </u>	()			_				
- 16	-				├ -				
- 16	14				L _				
- 18	T 14 -								
- 18	-	((-	II .			
- 18	L 16 -	ll .			<u> </u>				
						1			
	† -				Ţ -				
	- 18 -	1	1		├ -	1			
	-	1			<u> </u> -		1		
	F 20 -	1		1		1			
- 22	-	-			 - -	1			
	- 22 -				<u> </u>				

- 24 -

- 26 -

	TECH	INDWAT INOLOG	Y, INC			G. G. C.	Soil Boring SB-E
Project _S	FF3/580	wie Anne			. Oh	iner San Francisco Francis Bread	Drilling Log
Location Oakland, CA					_ Pro	piect Number 020301220.020303	See Site Map
Date Drilled 6/19/91 Total Depth of H					t Hok	75.# 04 hour	For Boring Location
Surface Elevation Water Level Initia					. ISITI	Slot Size	
Screen: Dia Length Casing: Dia Length						Type	MOTES.
Casing: Dia Filter Pack							
Patter Pack	Material _–	wercore			nr	illing Method Solid stem pushrod	
Driller George Evans						d by William L. Hughes	
Geologist/	Engineer _					License No	
					П		
Depth (feet)	Well Completion	PID (ppm)	Sample 1D Blow Count	Graphic Log	Soil Class	Descripti (Color, Texture, S	on Structure)
- 0 -			r	000		BASE coarse	
ļ .				10000		Sandy clayey GRAVEL (mottled dark gi diameter, very stiff, damp, hydrocart	
L 2 -]	٠, ا	<u> </u>	2000	GC		
		3.1				Dark green to black CLAY with some gra hydrocarbon odor)	avel (medium stiff, damp,
4 -			ļ			•	
T 4]	1	4.8	SBE5			, , , , , , , , , , , , , , , , , , , ,	
† †					CL	(grades to black)	
F 6 -		3.1	l (1//			
	1					(grades decreasing gravel)	
	}	}	} }			Encountered water at 7.5 feet on 6/19/	/91
8				1//	-	Dark gray to black interbedded SAND v	
· -]	4.0	SBE9	(F	SP	sand beds, dry sand-gravel beds, s	
- 10 -l			L	7727	Ċ,	Black sandy CLAY (soft, saturated)	
				<u>l</u> .		End of boring at 10.0 feet. Backfilled wi	th neat cement grout.
ا ا]	1			
- 12 -				_	1		
} -			l	}-	1		
- 14 -				⊩ –	1		
		j			┈		
 16 				├ -	1		
		ľ		╟ -	╢		
- 18 -							
F 10 -							
-				-	1		
- 20 -				⊩ -	\parallel		
		[L -	1		
000							
- 22 -	1			_	7		
-				⊩ ·	╢		
- 24 -]]]		4	<u> </u>	
]	1				\parallel		

26 -

I G	GROUNDWATER
	GROUNDWATER TECHNOLOGY, INC.

Soil Boring SB-F

Location Oakland CA Project Number 020501446.020503 Date Drilled 6/19/91 Total Depth of Hole 10.0 ft. Diameter 2.0 n. For Boning Location	
Uate Urined Original Total Depth of Hole 10.07. Uralliete 2.07. For Bering Location	
Surface Elevation Water Level Initial 24-hour	
Screen: Dia Length Slot Size NOTES	
Casing: Dia Length Type	
Filter Pack Material	
Drilling Company Powercore Drilling Method Solid stem pushrod	
Driller George Evans Log by William L. Hughes	
Geologist/Engineer License No	
Completion (Color, Texture, Structure)	
- 0 - BASE coarse	
Dark gray to black CLAY with some gravel (medium stiff, damp, red	
brick fragments)	
(2 inch diameter wood fragments)	
220 SAND with some gravel	
SBF5 Dark gray to black CLAY with some gravel	
CL (3 inch diameter wood fragments)	
SBF7 ight gray to white GRAVEL with some sand (loose dry)	
CLAY with some gravel	
220 (grades decreasing gravel)	
(grades to dark gravish black)	
- 10 - SBF 10 -	
End of boring at 10.0 feet. Backfilled with neat cement grout.	
- 18	
├- 20 -	
<u>- 22 - </u>	
├- 24 -	
	_