



CH2MHILL

CH2M HILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833
Tel 916.920.0300
Fax 916.920.8463

March 30, 2006

184288

DOCKET 04-AFC-1	
DATE	MAR 30 2006
RECD.	MAR 30 2006

Mr. William Pfanner
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5504

RE: Draft Field Investigation Summary Report
San Francisco Electric Reliability Project (04-AFC-1)

Dear Bill:

Please find attached 12 copies and one original of the "Draft Field Investigation Summary Report." Copies of the plan are being filed both electronically and in hard copy.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

c: Project File
Proof of Service List

San Francisco Electric Reliability Project (SFERP) (04-AFC-1)

Draft Field Investigation Summary Report

Submitted by
The City and County of San Francisco

March 30, 2006



CH2MHILL

Draft Field Investigation Summary Report – SFERP Site

1.0 Introduction

This draft field investigation summary report presents the sampling results of an investigation conducted by CH2MHILL on behalf of the City and County of San Francisco (the City or CCSF) at the proposed San Francisco Electric Reliability Project (SFERP) site, in the Potrero District of the City of San Francisco, CA. The proposed power plant site is located between Cesar Chavez Street and 25th Street, southeast of the corner of Michigan and 25th Street in the Potrero District of the City of San Francisco.

The purpose of the investigation was to collect additional environmental samples to further characterize the soil, vadose zone and shallow groundwater at the site. Sixteen additional borings (see attached map) were drilled in which soil, soil gas, and/or groundwater samples were collected. The field investigation, sample analyses, and preparation of the subsequent summary report were supervised by a State of California Professional Geologist. Field work was conducted in accordance with the Final Field Sampling Plan approved by the involved regulatory agencies (CH2MHILL, 2005).

2.0 Local Geology

The entire site is underlain by artificial fill (of unknown source) that was formerly submerged beneath the San Francisco Bay. The fill is composed of a mixture of crushed serpentine bedrock, building debris, sand, silty sand, and silt typical of the San Francisco Bay area. Groundwater beneath the site was encountered during summer 2005 at a depth of approximately 11 feet below ground surface (bgs). Groundwater flow is generally northeastward toward the San Francisco Bay to the east, although it is likely under tidal influence and, as such, flow direction could be variable.

During drilling the subsurface conditions encountered were found to be highly variable. A significant amount of debris (concrete, bricks, rubble, rocks) as well as sand, clay/gravel mixtures were commonly observed. This material is consistent with typical “fill” material used in the area.

3.0 Background

Several previous investigations have been conducted in the project vicinity in support of a number of environmental assessments. Details of those previous investigations are summarized in the Final Human Health and Ecological Risk Assessment, Former Western Pacific Property, Port Site, San Francisco CA (Geomatrix, 2000). As summarized, total petroleum hydrocarbons (TPH) and metals contamination were identified as the primary contaminants of concern for the area.

In late July/early August of 2005, as part of a geotechnical investigation of the proposed power plant site, 15 borings were drilled (see attached plate 2 provided by GTC). In eight of the borings, environmental soil samples were collected. Samples were analyzed for TPH-diesel, TPH-motor oil, and TPH-Bunker C oil, arsenic, lead, asbestos, and pH. The focus of the sampling was the top 10 feet of soil, as this was determined to be the depth of disturbance during construction activities for the power plant. In addition to the boring-specific sampling that were conducted, composite soil samples were also collected to aid in profiling the drilling spoils for offsite disposal.

The results of July/August 2005 sampling showed that TPH-diesel was present, but all reported detections were below 1,000 mg/kg. Bunker C oil was reported in all samples up to a maximum concentration of 20,000 mg/kg in the southern part of the site from boring SB-13. The highest concentrations of arsenic were reported from samples collected in the northern part of the site. At a depth of 5 feet, arsenic was reported at a concentration of 460 mg/kg from boring SB-3. Lead in soil was reported at a wide range of concentrations that are not atypical of San Francisco soils. Concentrations ranged from 0.2 mg/kg to 2,100 mg/kg, the highest from boring SB-4 at a depth of 10 feet. Asbestos was not widely reported and where reported was only at a "trace" amount. Erosion from local serpentine bedrock is the likely source of the trace detections.

The California Energy Commission, Regional Water Quality Control Board, and the Department of Toxic Substances Control (DTSC) worked with the City and County of San Francisco to develop the Final Field Sampling Plan, which addressed the additional sampling and analysis needed to characterize the site prior to construction.

4.0 Field Activities

Prior to mobilization of the drilling crew, each of the 16 soil boring locations was staked and Underground Service Alert was notified. In addition, the locations were cleared for underground utilities by Precision Locating of Brentwood, CA. A City and County of San Francisco, Department of Public Health soil boring permit was obtained prior to initiation of intrusive activities. A copy of the permit is included as Attachment A.

On February 20, 2006, CH2M HILL field staff and drill crew from WDC Exploration and Wells (Zamora, CA) mobilized to the proposed SFERP site. Drilling and sampling was conducted via direct-push technology using a track-mounted Geoprobe drill rig and was completed on February 28, 2006. Soil samples were collected nominally at the surface, 5, and 10 feet below ground surface (bgs). All planned soil samples were collected. Soil gas samples for VOC analysis were collected at a nominal depth of 5 feet bgs prior to the collection of the 5-foot soil sample. Soil gas samples were collected via vacuum pump with single use Teflon tubing. Three soil gas samples were not collected due to wet soil conditions that hindered sample collection. All groundwater samples were collected as planned. Given the large number of groundwater samples that were collected, temporary wells were installed by placing 1-inch diameter PVC well screen and blank casing in each boring. A peristaltic pump was used to collect the groundwater samples. Water depth varied from approximately 13 feet bgs in the southern part of the site to 9 feet in the low-lying area to the north. At the completion of each boring's sampling activities, the PVC was

removed and the boring was grouted to the surface with neat cement per permit requirements. Boring logs are included as Attachment B.

Soil cuttings and decontamination water were placed into 2 drums and were labeled and disposed of as non-hazardous waste by the City.

Samples were submitted at the end of each sampling day under chain of custody to Curtis and Tompkins Laboratory, Berkeley, CA.

5.0 Sample Results

This section presents a summary of the results from the field investigation. The presentation of the data is divided into the three media that were sampled (soil, soil gas, and groundwater). Detected analytes for each sample are presented in Tables 5-1 through 5-5.

5.1 Soil

Soil samples were collected for the following analyses: TPH as diesel, -Motor Oil, -Bunker C oil, and -Gasoline by Method 8015; Volatile Organic Compounds (VOCs) by Method SW8260B; Semi-VOCs (SVOCs) by Method SW8270C; Polynuclear Aromatic Hydrocarbons (PAHs) by Method SW8310; Polychlorinated Biphenyls (PCBs) by Method SW8082; Total (CAM-17) metals by SW6000- or SW7000-series; Asbestos by PLM; pH; and a select number of samples were analyzed for chlorinated herbicides by Method SW8151A. Soil results are presented on Tables 5-1 through 5-3. Results were screened against the USEPA Region 9 Preliminary Remediation Goals (PRGs) for industrial sites (USEPA, 2004).

5.1.1 Total Petroleum Hydrocarbons

TPH as diesel, -MO, and Bunker C oil, were reported in essentially all samples across the project site. TPH-Gasoline was only reported in two samples. There is no established PRG for TPH.

5.1.1.1 TPD-Diesel

Detections of TPH-diesel ranged from one non-detect (ND) to 20,000 mg/kg. Reported detections greater than 1,000 mg/kg included: 2,500 mg/kg reported at SB-19, 10 feet, 2,500 mg/kg reported at SB-20, 10 feet bgs and 20,000 mg/kg reported from SB-24, 10 feet bgs. Borings SB-19 and SB-20 are located on the southern part of the site and boring SB-24 is located in the central part of the site. Most (45 of 48 samples) reported concentrations that were less than 1,000 mg/kg.

5.1.1.2 TPH-Motor Oil

TPH-MO was reported in all but two samples. Reported detections ranged from ND up to 9,500 mg/kg. There were 10 reported concentrations greater than 1,000 mg/kg. The highest reported concentration (9,500 mg/kg) was from SB-24, 10 feet bgs.

5.1.1.3 TPH-Bunker C Oil

TPH-Bunker C was similarly reported in all but 1 sample. There were 13 of 48 samples that had reported concentrations greater than 1,000 mg/kg. Concentrations ranged from ND up to a maximum of 57,000 mg/kg. This highest concentration was reported from SB-24, 10 feet bgs.

5.1.1.4 TPH-Gasoline

TPH-G was reported in only two of 48 samples. The reported concentrations were 3.2 mg/kg and 0.37 mg/kg, from SB--18, 5 feet bgs and SB-20, 10 feet bgs, respectively.

5.1.2 Volatile Organic Compounds

Volatile organic compounds (VOCs), including Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) constituents, were reported infrequently from samples collected at the site. VOCs were detected from 7 of the 16 borings. Concentrations ranged from ND to 1,400 µg/kg. However, several of the reported detections included acetone, which is a common laboratory contaminant and not a likely site contaminant. Other compounds reported include cis-1,2-Dichloroethene, Trans-1,2-Dichloroethene, Napthalene, trichloroethene, and 2-Butanone. Excluding acetone, VOCs were only reported from two borings, SB-17 and SB-24. Only one compound exceeded its respective PRG in soil. Trichloroethene (only one singlet detection) was reported at a concentration of 450 mg/kg. The PRG is 110 mg/kg. No other PRGs were exceeded for VOCs.

5.1.3 Semi-Volatile Organic Compounds

Semi-volatile organic compounds (SVOCs) were reported in half of the samples collected across the site and from 10 boring locations. In the northern part of the site, only boring SB-28, 5 feet bgs, had SVOCs reported that included benzo(b)fluoranthene and fluoranthene, both at concentrations less than 100 µg/kg. In the Southern part of the site, two borings, SB-17 and SB-18, had SVOCs reported from two depths in each boring. Nine separate SVOC analytes were reported in these two borings. In the central part of the site, SVOCs were reported at a similar frequency. Three borings contained SVOCs. In SB-21, 5 SVOC analytes were reported at relatively low concentrations (120 µg/kg or less). In SB-25, only butylbenzylphthalate was reported at 3,900 µg/kg in the 5-foot sample. In SB-24, numerous SVOC analytes were reported at elevated concentrations – all at the 10-foot depth. Concentrations ranged from 170,000 µg/kg as indeno(1,2,3-cd)pyrene, to 2,600,000 µg/kg as phenanthrene. PRGs were exceeded in only one sample (SB-24, 10 feet bgs).

5.1.4 Polynuclear Aromatic Hydrocarbons

Polynuclear Aromatic Hydrocarbons (PAHs) in soil were frequently reported from samples collected across the site. Of the 48 samples, 45 contained PAHs. Most concentrations were less than 1000 µg/kg. However, there were 4 samples (from 4 separate borings) that contained PAHs at concentrations greater than 1,000 µg/kg. Of these 4 samples, one sample (SB-24, 10 feet bgs) contained concentrations in excess of 100,000 µg/kg. The maximum concentration reported from this sample was 580,000 µg/kg as phenanthrene. PRGs were exceeded in 7 samples, but 5 of these exceedence were for only one compound [benzo(a)anthracene].

5.1.5 Polychlorinated Biphenyls

Seventeen of 48 samples from 11 borings contained polychlorinated biphenyls (PCBs). Arochlor-1254 was the most frequently reported congener with 10 detections (mostly from the central part of the site). Concentrations of Arochlor-1254 ranged from 18 µg/kg to 3,000 µg/kg – the highest reported from SB-26, 0 feet bgs. Arochlor -1260 was also reported in 9 samples and ranged in concentration from 14 µg/kg to 1,100 µg/kg – the highest from

SB-25, 10 feet bgs). There was a single reported detection of Arochlor-1242 at a concentration of 22 µg/kg from SB-26, 5 feet bgs. Also, a single reported detection of Arochlor-1248 was reported at 99 µg/kg from SB-16, 0 feet bgs. The PRG for PCBs is 740 mg/kg – this was exceeded in two samples (SB-25, 10 feet bgs and SB-26, 0 feet bgs).

5.1.6 Chlorinated Herbicides

Chlorinated herbicides were analyzed from four surface samples collected across the site from SB-19, SB-24, SB-28 and SB-29. No chlorinated herbicides were reported from any sample.

5.1.7 Metals

Metals were reported in all samples collected across the site. Metals are naturally occurring in the environment in a wide range of concentrations. Of the metals results that were reported from this investigation, only three were reported above their respective PRGs. Arsenic was reported above its PRG of 0.25 mg/kg in all 48 samples that were collected. Concentrations ranged from 0.56 mg/kg to 44 mg/kg. The highest being reported from SB-30, 10 feet bgs. Chromium was reported above its PRG of 450 mg/kg at 1,300 and 1,100 mg/kg from SB-16, 5 feet bgs and SB-21, 5 feet bgs, respectively. A single detection of lead above its PRG of 800 mg/kg was reported at SB-16, 10 feet bgs, at a concentration of 1,400 mg/kg. No other PRGs were exceeded.

5.1.8 Asbestos

Asbestos was reported in 10 of 48 samples collected. Only two of the 10 samples contained detections greater than “trace” concentrations. These included samples from boring SB-29 (5 feet bgs and 10 feet bgs) at concentrations of 3 percent and 2 percent, respectively. Pieces of serpentine were noted in the boring log for these two samples. The asbestos material was identified by the lab as Chrysotile.

5.1.9 pH

pH in soil reported from all samples collected across the site ranged in value from 7 to 12.6. The highest value, 12.6, was reported from SB-25, 5 feet bgs. Other values greater than pH of 10 were reported across at both surface and subsurface sample locations. The majority of the high pH values were reported at the surface or 5 feet bgs samples.

5.2 Soil Gas

Soil gas samples were collected in all but three boring locations. In borings SB-16, SB-19, and SB-26, samples could not be collected due to wet conditions that hindered sampling. In the 13 other borings, samples were collected. In each of these samples, both solvent- and fuel-related VOC compounds were reported. The majority of reported detections were trace-level or low-level concentrations (10 to 100 [parts per billion by volume] ppbv or less). In two borings, concentration exceeded 1,000 ppbv. SB-17 contained vinyl chloride and cis-1,2-dichloroethene at 1,100 ppbv and 1,600 ppbv, respectively. SB-23 contained hexane and propane, 2-methyl at 3,300 and 5,400 ppbv, respectively. Soil gas results are presented on Table 5-4.

5.3 Groundwater

Groundwater samples were collected in all borings at the site. Samples were collected via peristaltic pump directly into laboratory-prepared sample containers. Samples were collected for the same parameters as those for soil, with the exception of asbestos. Groundwater results are presented on Table 5-5. Results were screened against the SFBRWQCB Tier 1 Environmental Screening Levels for groundwater (RWQCB, 2005).

5.3.1 Total Petroleum Hydrocarbons

TPH as diesel, -MO, and Bunker C oil, were reported in essentially all groundwater samples across the project site. TPH-Gasoline was only reported in one groundwater sample location.

5.3.1.1 TPD-Diesel

TPH-diesel was reported in all samples collected across the site. Concentrations ranged from 140 µg/L to 3,500 µg/L. The highest reported concentration was from the sample collected at SB-18, in the southern part of the site. A concentration of 3,300 µg/L was reported from SB-27, located in the northern part of the site. The SFBRWQCB environmental screening level (ESL) for TPH-(middle distillates) is 640 µg/L. All but four samples, contained an exceedence of the ESL.

5.3.1.2 TPH-Motor Oil

TPH-MO was reported in all samples collected at the site. Concentrations ranged from ND to 2,500 µg/L. The ND was reported from SB-29, located in the northern part of the site and 2,500 µg /L was reported in two locations: SB-20 and SB-27. These two locations are along the eastern side of the site. The SFBRWQCB environmental screening level (ESL) for TPH-(middle distillates) is 640 µg/L. All but five samples, contained an exceedence of the ESL.

5.3.1.3 TPH-Bunker C Oil

TPH-Bunker C oil was reported in all samples. Concentrations ranged from 540 µg/L to 12,000 µg/L. All but the single 540 µg/L detection exceeded 1,000 µg/L. The highest concentration was reported from SB-27, located in the central part of the site on the eastern side. The SFBRWQCB environmental screening level (ESL) for TPH-(residual fuels) is 640 µg/L. All but one sample, contained an exceedence of the ESL.

5.3.1.4 TPH-Gasoline

TPH-gasoline was only reported from one sample location. SB-20 contained a concentration of 200 µg/L. All other samples were reported as ND. The SFBRWQCB environmental screening level (ESL) for TPH-(gasoline) is 500 µg/L.

5.3.2 Volatile Organic Compounds

VOCs were reported in 9 of 16 samples. Reported detections ranged from a few VOC analytes reported in a sample up to 14 analytes in a sample. Concentrations were typically very low – all 10 µg/L or less, except SB-18 had a reported detection of 24 µg/L for cis-1,2-Dichloroethene. Boring SB-20 contained the most reported VOC analytes with 14, followed by SB-18 with 8 analytes. None of the reported VOC detections exceeded the SFBRWQCB ESLs.

5.3.3 Semi-Volatile Organic Compounds

There were no reported detections of SVOCs from any groundwater sample collected at the site.

5.3.4 Polynuclear Aromatic Hydrocarbons

PAHs in groundwater were reported in 13 of 16 samples. Most reported detections were less than 1 µg/L. The maximum reported concentration was 12 µg/L (as Phenanthrene) from the sample from SB-24 – this sample had the most reported PAHs at the highest concentrations. Sample locations where PAHs were also frequently reported included were SB-16, SB-18, SB-19, SB-23, SB-25, and SB-31. Several exceedences of the ESLs were noted for PAHs. Sample locations with ESL exceedences were SB-16, SB-18, SB-19, SB-20, SB-23, SB-24, SB-25, SB-26, and SB-31.

5.3.5 Polychlorinated Biphenyls

There were no reported detections of PCBs from any groundwater sample collected at the site.

5.3.6 Chlorinated Herbicides

Only one groundwater sample (SB-29) was collected for chlorinated herbicides. SB-29 contained no reported detections of chlorinated herbicides.

5.3.7 Metals

Dissolved metals were reported in all groundwater samples. Barium was the most frequently reported (was present in all 16 samples). Concentrations for barium ranged from 13 µg/L up to 370 µg/L. The highest reported concentration was from SB-23. Arsenic was reported in 12 samples with a maximum reported concentration of 190 µg/L from SB-25. Lead was reported in 5 samples up to a maximum of 23 µg/L. Other metals detected are shown on the attached table. Several exceedences of ESLs for metals were reported across the site.

5.3.8 pH

The values of pH in groundwater ranged from 7.2 in SB-30 to a 10.7 reported from both SB-24 and SB-27.

6.0 Conclusions

The results of this study show that TPH is present in both soil and groundwater. TPH-Diesel, TPH-Bunker C Oil, and TPH-Motor Oil were all frequently detected across this site. TPH-Gasoline was rarely reported. VOCs in soil, soil gas, and groundwater were typically reported sporadically and at relatively low concentrations and were generally reported in the southern part of the site. Likewise, SVOCs were infrequently reported. The vicinity of SB-24, located in the central part of the site, contains SVOCs. PAHs were reported across the site, but only appear to be impacted in the vicinity of SB-24. No chlorinated Herbicides were reported at the site. PCBs were reported sporadically across the site in soil and were not reported in groundwater. Arsenic above PRGs in soil was reported across the

site. Sporadic detections of metals in groundwater were reported. Asbestos was reported up to 3 percent from boring SB-29 where serpentine was noted to be present during drilling.

7.0 References

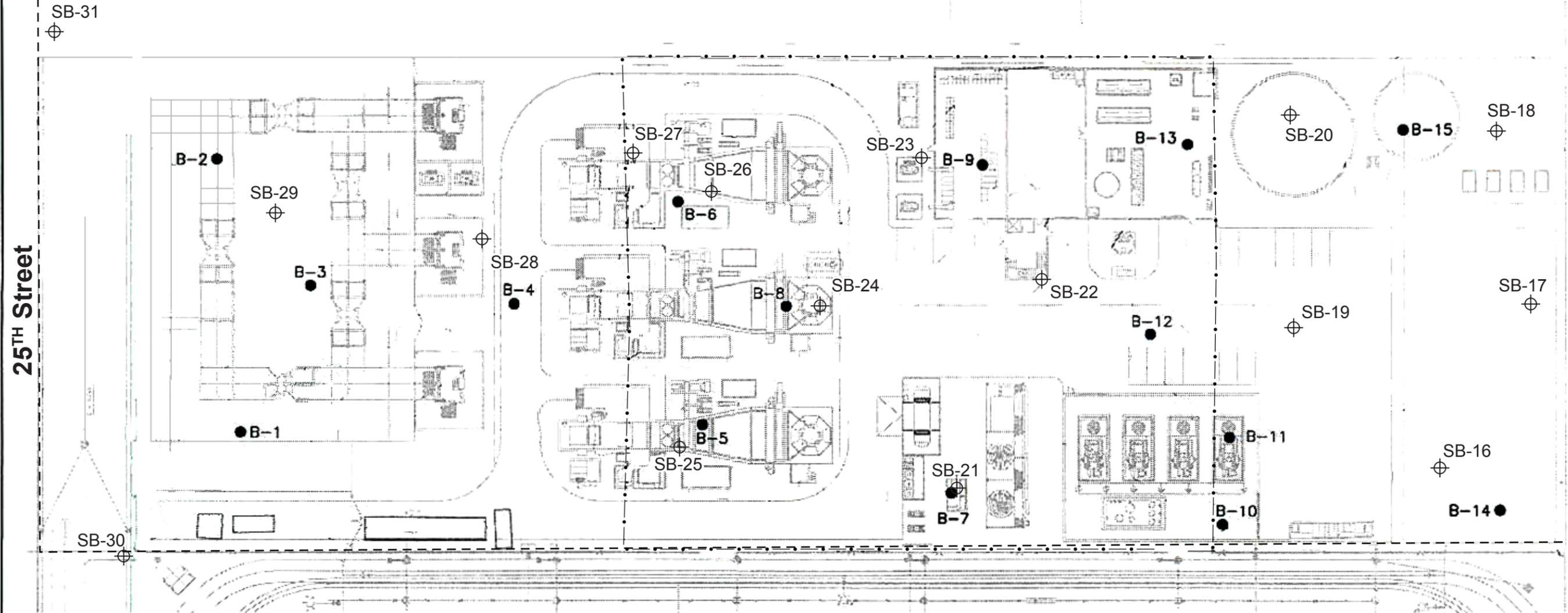
CH2MHILL. 2005. ***Field Sampling Plan, San Francisco Electrical Reliability Project.*** Prepared for San Francisco Public Utilities Commission. Final. February.

Geomatix. 2000. ***Final Human Health Ecological Risk Assessment, Former Western Pacific Property, Port Site, San Francisco CA.*** Prepared for the Port of San Francisco.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), 2005. ***Screening for Environmental Concerns at Sites with Contaminated Soil or Groundwater.*** Interim Final, February.

Approximate GW Flow Direction
June 1999 (AGS 1999)

Maryland Street



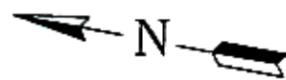
LEGEND:

- B-8 ● Borings by: GTC, July - August 2005
- SB-16 ⊕ Proposed February/March 2006 Soil Borings
- ⋯⋯⋯ Approximate Site Boundary

NOTE:

Base Map provided by BP POWER, Inc.
Reference: "MUNI SITE-PLOT PLAN-3 UNITS SIMPLE CYCLE",
SFERP, San Francisco, California
DRAWING NO. C1, Preliminary Issue

*Approximate Locations - Not To Scale



GTC
 GEOTECHNICAL CONSULTANTS, INC.
 500 Sansome Street, Suite 402
 San Francisco, CA 94111

Field Exploration Map	PLATE 2
Muni Site	Sept. 2005
SFPUC ERP Power Plant	SF05019

Table 5-1
Soil Detections
SFERP Power Plant Site

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Sample Method	Analyte	Units	US EPA Region 9	SB-16			SB-17			SB-18			SB-19			SB-20		
			Industrial PRGs	SB16-S0	SB16-S5	SB16-S10	SB17-S0	SB17-S5	SB17-S10	SB18-S0	SB18-S5	SB18-S10	SB19-S0	SB19-S5	SB19-S10	SB20-S0	SB20-S5	SB20-S10
EPA 6010B	Antimony	mg/Kg	NE	3.8		35			8.3									
EPA 6010B	Arsenic	mg/Kg	0.25	9.2	0.77	24	2.9	3.7	14	6.4	4.3	6.4	8.4	1.2	9.6	4.9	4.6	5.4
EPA 6010B	Barium	mg/Kg	67,000	130	14	290	68	180	250	160	160	140	130	29	100	240	75	130
EPA 6010B	Beryllium	mg/Kg	1,900	0.2		0.65		0.14	0.2	0.22	0.3	0.36	0.27		0.25	0.37	0.12	0.21
EPA 6010B	Cadmium	mg/Kg	450	0.7		1.8	0.34	0.48	0.58	0.4			0.47		0.46			
EPA 6010B	Chromium	mg/Kg	450	81	1300	58	430	390	41	71	61	55	120	97	200	220	30	21
EPA 6010B	Cobalt	mg/Kg	1,900	12	79	11	64	36	9.1	10	10	7.3	17	26	34	28	8.3	2.5
EPA 6010B	Copper	mg/Kg	41,000	75	32	200	40	47	160	36	29	41	42	110	57	37	12	3.6
EPA 6010B	Lead	mg/Kg	800	170	0.88	1400	20	67	340	85	180	93	96	33	93	56	21	13
EPA 6010B	Molybdenum	mg/Kg	5,100	3.7		4.2		1.1	0.96	1.6								
EPA 6010B	Nickel	mg/Kg	NE	120	1700	46	1300	650	37	93	39	31	220	52	580	360	43	15
EPA 6010B	Selenium	mg/Kg	5,100	0.3	1.2	1.4			0.6	0.34	0.75			0.94	0.74	1.9	0.87	
EPA 6010B	Thallium	mg/Kg	67	0.44		0.51				0.32		0.93	0.97	0.85	0.29		0.83	0.65
EPA 6010B	Vanadium	mg/Kg	1,000	38	42	47	44	65	53	48	80	59	51	78	63	49	27	26
EPA 6010B	Zinc	mg/Kg	100,000	230	32	1600	49	91	300	120	85	100	110	99	100	80	91	21
EPA 7471A	Mercury	mg/Kg	310	0.25	0.031	0.7	0.033	0.51	0.71	0.31	0.31	0.58	0.4	0.21	0.33	0.22	0.22	0.034
EPA 8015B	Bunker C C12-40	mg/Kg		570		500	160	700	130	460	1800	830	260	15000	47	140	59	10000
EPA 8015B	Diesel C10-C24	mg/Kg		40		110	16	92	12	38	170	100	20	2500	6.6	15	14	2500
EPA 8015B	Gasoline C7-C12	mg/Kg												0.37				3.2
EPA 8015B	Motor Oil C24-C36	mg/Kg		300		170	82	330	61	230	950	380	140	6500	21	68	18	3100
EPA 8082	Aroclor-1242	ug/Kg	740															
EPA 8082	Aroclor-1248	ug/Kg	740	99														
EPA 8082	Aroclor-1254	ug/Kg	740	64														
EPA 8082	Aroclor-1260	ug/Kg	740	66	15					17			120				15	
EPA 8260B	2-Butanone	ug/Kg	NE									95						
EPA 8260B	Acetone	ug/Kg	54,000,000						25					81				
EPA 8260B	cis-1,2-Dichloroethene	ug/Kg	150,000					1400	5.7									
EPA 8260B	Naphthalene	ug/Kg	NE					520										
EPA 8260B	trans-1,2-Dichloroethene	ug/Kg	150,000					880										
EPA 8260B	Trichloroethene	ug/Kg	110					450										
EPA 8270C	2-Methylnaphthalene	ug/Kg	NE															
EPA 8270C	4-Chloroaniline	ug/Kg	2,500,000															
EPA 8270C	Acenaphthylene	ug/Kg	29,000,000															
EPA 8270C	Anthracene	ug/Kg	100,000,000															
EPA 8270C	Benzo(a)anthracene	ug/Kg	2,100					76										
EPA 8270C	Benzo(a)pyrene	ug/Kg	210					120										
EPA 8270C	Benzo(b)fluoranthene	ug/Kg	2,100					99										
EPA 8270C	Benzo(g,h,i)perylene	ug/Kg	NE					95										
EPA 8270C	Benzo(k)fluoranthene	ug/Kg	21,000				99	120		220	590							
EPA 8270C	Butylbenzylphthalate	ug/Kg	NE															
EPA 8270C	Chrysene	ug/Kg	210,000					97										
EPA 8270C	Fluoranthene	ug/Kg	22,000,000				97	130				600						
EPA 8270C	Fluorene	ug/Kg	26,000,000															
EPA 8270C	Indeno(1,2,3-cd)pyrene	ug/Kg	2,100					78										
EPA 8270C	Naphthalene	ug/Kg	4,200															
EPA 8270C	Phenanthrene	ug/Kg	NE															
EPA 8270C	Pyrene	ug/Kg	29,000,000				120	180			260	810				180		

Table 5-1
Soil Detections
SFERP Power Plant Site

DRAFT

Sample Method	Analyte	Units	US EPA Region 9	SB-16			SB-17			SB-18			SB-19			SB-20		
			Industrial PRGs	SB16-S0	SB16-S5	SB16-S10	SB17-S0	SB17-S5	SB17-S10	SB18-S0	SB18-S5	SB18-S10	SB19-S0	SB19-S5	SB19-S10	SB20-S0	SB20-S5	SB20-S10
EPA 8310	Acenaphthylene	ug/Kg	100,000,000								140		500					
EPA 8310	Anthracene	ug/Kg	2,100	37	87	50	14	17		11	85	100	21	150	6.6	12		
EPA 8310	Benzo(a)anthracene	ug/Kg	210	160	330	340	65	110	23	33	77	550	140	300	36	72	6.4	
EPA 8310	Benzo(a)pyrene	ug/Kg	2,100	170	420	390	95	160	21	29	66	550	140	110	36	81	8.7	
EPA 8310	Benzo(b)fluoranthene	ug/Kg	NE	140	260	340	64	130	33	27	62	680	110	790	26	62	11	
EPA 8310	Benzo(g,h,i)perylene	ug/Kg	21,000	170	550	820	110	280	27	77	550	960	170	470	140	130	18	
EPA 8310	Benzo(k)fluoranthene	ug/Kg	NE	88	170	180	34	63	13	16	43	260	69	92	16	35		
EPA 8310	Chrysene	ug/Kg	210,000	260	390	420	72	140	74	64	89	600	180	850	51	81	7.8	
EPA 8310	Dibenz(a,h)anthracene	ug/Kg	21,000	150	410	400	130	200	24	32	160	580	150	170	31	88	14	
EPA 8310	Fluoranthene	ug/Kg	22,000,000	320	630	640	200	280	130	93	520	1500	250	900	76	140	11	
EPA 8310	Fluorene	ug/Kg	26,000,000	18	32								8.2	1000				
EPA 8310	Indeno(1,2,3-cd)pyrene	ug/Kg	2,100	130	320	270	83	140	24	24	270	450	70	100	99	53	7.4	
EPA 8310	Naphthalene	ug/Kg	4,200															
EPA 8310	Phenanthrene	ug/Kg	NE	160	340	230	120	110	27	71	380	1100	140	1400	51	78	4.4	
EPA 8310	Pyrene	ug/Kg	29,000,000	250	630	560	200	220	28	63	85	1400	230	1100	75	140	10	
PLM	Asbestos	%						trace			trace	trace	trace		trace			
EPA 9045C	pH	SU		10.3	8.2	8.5	10.4	8.6	9.7	11	8.1	9	9.7	9.1	8.4	7	7.7	

Blank cells - Not detected above the reporting limit

SW8151A - Chlorinated Herbicides - All ND

Highlighted Cell - exceeds screening level

Table 5-2
Soil Detections
SFERP Power Plant Site

DRAFT

Sample Method	Analyte	Unit	US EPA Region 9 Industrial PRGs	SB-21			SB-22			SB-23			SB-24		SB-25			SB-26			SB-27		
				SB21-S0	SB21-S5	SB21-S10	SB22-S0	SB22-S5	SB22-S10	SB23-S0	SB23-S5	SB23-S10	SB24-S0	SB24-S10	SB25-S0	SB25-S5	SB25-S10	SB26-S0	SB26-S5	SB26-S10	SB27-S0	SB27-S5	SB27-S10
EPA 6010B	Antimony	mg/Kg	NE							5.5					4.4								
EPA 6010B	Arsenic	mg/Kg	0.25	4.7	0.57	8.2	4.6	4.1	4.1	5.1	6.2	18	3.8	3.6	6.3	11	26	4	5.5	1.5	3.9	5.1	0.56
EPA 6010B	Barium	mg/Kg	67,000	92	3.3	350	160	210	210	170	82	390	220	49	200	210	230	110	1200	80	67	160	64
EPA 6010B	Beryllium	mg/Kg	1,900	0.29		0.47	0.32	0.25	0.42	0.21	1.4	0.21	0.21	1.4	0.27	0.21	0.21	0.15	0.22	0.25	0.15	0.26	0.11
EPA 6010B	Cadmium	mg/Kg	450	0.32		0.95	0.36			0.32	0.3	1.5	0.3	0.39	0.35		1.2	0.29	0.64	0.15	0.26	0.65	
EPA 6010B	Chromium	mg/Kg	450	58	1100	22	39	57	220	44	4	50	29	48	26	51	45	40	50	120	37	39	78
EPA 6010B	Cobalt	mg/Kg	1,900	9.4	100	4.2	8.2	8.4	20	6.9	2.7	10	4.8	17	6.1	9.6	8.4	7.7	5.6	36	7.7	7.4	23
EPA 6010B	Copper	mg/Kg	41,000	20	6.4	13	30	32	27	23	4	180	12	81	22	23	100	19	20	91	13	25	70
EPA 6010B	Lead	mg/Kg	800	42		80	27	18	39	25	27	480	5.4	90	16	5.9	180	16	8.2	3.7	31	28	
EPA 6010B	Molybdenum	mg/Kg	5,100					1.1	2.2	1.1	2.6	1.5	1.2	1.4	1.3	7.9							
EPA 6010B	Nickel	mg/Kg	NE	90	2300	19	57	100	360	49	11	73	26	33	34	74	48	46	34	92	49	50	38
EPA 6010B	Selenium	mg/Kg	5,100	0.54	3.6	0.68				0.3			0.69	2.4		0.39	1	0.66	1.4	0.46	0.93	1.4	
EPA 6010B	Thallium	mg/Kg	67	0.5	0.64			0.41		0.47		0.82	0.59		0.48	0.77		0.4	0.61		0.41	0.28	0.64
EPA 6010B	Vanadium	mg/Kg	1,000	42	44	29	40	40	35	52	7	41	54	78	52	72	41	53	51	110	42	43	77
EPA 6010B	Zinc	mg/Kg	100,000	88	29	200	58	54	83	53	71	870	39	240	44	44	310	88	44	220	46	58	50
EPA 7471A	Mercury	mg/Kg	310	0.078	0.11	0.058	0.1	0.088	1.1	0.068				0.22	0.049		1.2	0.066	0.093	0.047	0.036	0.42	
EPA 8015B	Bunker C C12-40	mg/Kg		38	440	110	2200	550	140	1600	340	40	1100	57000	610	320	750	2200	380	12	3600	5600	6
EPA 8015B	Diesel C10-C24	mg/Kg		6.4	54	15	180	46	24	130	23	5.6	94	20000	38	37	130	270	73	1.9	230	670	1.3
EPA 8015B	Gasoline C7-C12	mg/Kg																					
EPA 8015B	Motor Oil C24-C36	mg/Kg		16	200	47	1100	290	51	800	170	18	570	9500	330	150	280	1300	210	6.3	1900	2700	
EPA 8082	Aroclor-1242	ug/Kg	740																				
EPA 8082	Aroclor-1248	ug/Kg	740																	22			
EPA 8082	Aroclor-1254	ug/Kg	740	50						140				540		18							
EPA 8082	Aroclor-1260	ug/Kg	740				30				14						1000	3000		30		130	310
EPA 8260B	2-Butanone	ug/Kg	NE																				
EPA 8260B	Acetone	ug/Kg	54,000,000						24											33			
EPA 8260B	cis-1,2-Dichloroethene	ug/Kg	150,000																				
EPA 8260B	Naphthalene	ug/Kg	NE										75										
EPA 8260B	trans-1,2-Dichloroethene	ug/Kg	150,000																				
EPA 8260B	Trichloroethene	ug/Kg	110																				
EPA 8270C	2-Methylnaphthalene	ug/Kg	NE											310000									
EPA 8270C	4-Chloroaniline	ug/Kg	2,500,000											450000									
EPA 8270C	Acenaphthylene	ug/Kg	29,000,000											380000									
EPA 8270C	Anthracene	ug/Kg	100,000,000											500000									
EPA 8270C	Benzo(a)anthracene	ug/Kg	2,100											420000									
EPA 8270C	Benzo(a)pyrene	ug/Kg	210			89								490000									
EPA 8270C	Benzo(b)fluoranthene	ug/Kg	2,100			120								430000									
EPA 8270C	Benzo(g,h,i)perylene	ug/Kg	NE											210000									
EPA 8270C	Benzo(k)fluoranthene	ug/Kg	21,000											170000									
EPA 8270C	Butylbenzylphthalate	ug/Kg	NE																				
EPA 8270C	Chrysene	ug/Kg	210,000			93								480000									
EPA 8270C	Fluoranthene	ug/Kg	22,000,000			98								1200000									
EPA 8270C	Fluorene	ug/Kg	26,000,000											470000									
EPA 8270C	Indeno(1,2,3-cd)pyrene	ug/Kg	2,100											170000									
EPA 8270C	Naphthalene	ug/Kg	4,200											1200000									
EPA 8270C	Phenanthrene	ug/Kg	NE											2600000									
EPA 8270C	Pyrene	ug/Kg	29,000,000			80	80							1400000									
EPA 8310	Acenaphthylene	ug/Kg	100,000,000											62000									
EPA 8310	Anthracene	ug/Kg	2,100			5.5		80	22	14	39	47		100000	13		16	71	44			26	
EPA 8310	Benzo(a)anthracene	ug/Kg	210	35	38	6.9	62	120	96	66	300		54	130000	24	7.3	60	130	66	8.8	100	53	27
EPA 8310	Benzo(a)pyrene	ug/Kg	2,100	25	65	7.9	28	120	170	38	290		44	88000	21	5.6	77	86	54	10	69	43	
EPA 8310	Benzo(b)fluoranthene	ug/Kg	NE			44	7.3	36	120	120	41	300		55000	28	9.4	63	100	42	8	98	61	33
EPA 8310	Benzo(g,h,i)perylene	ug/Kg	21,000	57	100	16	55	380	400	81	320		100	65000	51		83	230	46	22	220	91	60
EPA 8310	Benzo(k)fluoranthene	ug/Kg	NE			23	3.6	20	67	71	28	160		36000	14		36	64	35	4.7	45	26	10
EPA 8310	Chrysene	ug/Kg	210,000	110	40	9.7	160	190	170	210	360		250	110000	73	26	91	400	180	14	280	120	61
EPA 8310	Dibenz(a,h)anthracene	ug/Kg	21,000			110	16	13	140	160	310			67000	8.7		66	150	59	10		13	9.6
EPA 8310	Fluoranthene	ug/Kg	22,000,000	73	84	20	180	300	190	210	570		230	450000	86	29	160	470	260	18	420	170	48
EPA 8310	Fluorene	ug/Kg	26,000,000											110000									
EPA 8310	Indeno(1,2,3-cd)pyrene	ug/Kg	2,100	43	70	6.6	43	150	150	37	160		49	50000	23		56	160	50	10	170	38	44
EPA 8310	Naphthalene	ug/Kg	4,200							45				130000			55						
EPA 8310	Phenanthrene	ug/Kg	NE	43	40	18	90	120	110	110	280		120	580000	56	20	110	260	230	9.1	240	110	13
EPA 8310	Pyrene	ug/Kg	29,000,000	58	97	12	120	210	160	120	480		140	430000	59	16	120	310	160	13	270	100	37
PLM	Asbestos	%				trace					trace												
EPA 9045C	pH	SU		9.4	8.6	11.7	11	12.3	9	12	9.2	8.1	12.3	9.1	11.8	12.6	12.1	10.5	11.6	8.7	8.6	11.6	8.6

Blank cells - Not detected above the reporting limit
SW8151A - Chlorinated Herbicides - All ND

Highlighted Cell - exceeds screening level

Table 5-3
Soil Detections
SFERP Power Plant Site

DRAFT

Sample Method	Analyte	Units	US EPA Region 9	SB-28			SB-29			SB-30			SB-31		
			Industrial PRGs	SB28-S0	SB28-S5	SB28-S10	SB29-S0	SB29-S5	SB29-S10	SB30-S0	SB30-S5	SB30-S10	SB31-S0	SB31-S5	SB31-S10
EPA 8310	Acenaphthylene	ug/Kg	100,000,000												
EPA 8310	Anthracene	ug/Kg	2,100		1300	62	41				6.4	5.6			14
EPA 8310	Benzo(a)anthracene	ug/Kg	210	7.6	4200	160	56			24	35	30			81
EPA 8310	Benzo(a)pyrene	ug/Kg	2,100	5.4	5100	160	43	5.7		6.7	49	30			100
EPA 8310	Benzo(b)fluoranthene	ug/Kg	NE	12	5200	100	26	12		17	46	48			90
EPA 8310	Benzo(g,h,i)perylene	ug/Kg	21,000		4500	210	73	39		38	28	100	66		210
EPA 8310	Benzo(k)fluoranthene	ug/Kg	NE		2600	53	18	8.2		11	22	16			50
EPA 8310	Chrysene	ug/Kg	210,000	13	3800	180	75	15		100	22	66	110		150
EPA 8310	Dibenz(a,h)anthracene	ug/Kg	21,000		3500	140	34	43			12	38			150
EPA 8310	Fluoranthene	ug/Kg	22,000,000	22	7900	410	140			38	110	84	260		190
EPA 8310	Fluorene	ug/Kg	26,000,000			19	7.7								
EPA 8310	Indeno(1,2,3-cd)pyrene	ug/Kg	2,100	6	4400	130	27	52		50	31	40			95
EPA 8310	Naphthalene	ug/Kg	4,200												
EPA 8310	Phenanthrene	ug/Kg	NE	16	3100	290	100	12			15	49	33		92
EPA 8310	Pyrene	ug/Kg	29,000,000	18	2900	380	120	8.5			7.5	65	50		130
PLM	Asbestos	%	NE					3	2	trace					
EPA 9045C	pH	SU		12.1	9.7	8.3	12.3	8.3	9.3	8.4	11.9	7.8	11.7	12.4	11.8

Blank cells - Not detected above the reporting limit

SW8151A - Chlorinated Herbicides - All ND

Highlighted Cell - exceeds screening level

Table 5-4
Method TO-14 Soil Gas Detections in ppbv
SFERP Power Plant Site

DRAFT

Sample Method	Analyte	Units	SB-16	Southern				Central					Northern				
				SB17-SG5	SB18-SG5	SB-19	SB20-SG5	SB21-SG5	SB22-SG5	SB23-SG5	SB24-SG5	SB25-SG5	SB-26	SB27-SG5	SB28-SG5	SB29-SG5	SB30-SG5
TO-14A	1,1,1-Trichloroethane	PPBV															
TO-14A	1,1-Dichloroethene	PPBV	N	10		N	2.8			3.1			N				
TO-14A	1,2,4-Trichlorobenzene	PPBV	O			O							O				
TO-14A	1,2,4-Trimethylbenzene	PPBV												12		1.9	
TO-14A	1,2-Dichloroethane	PPBV	S		1.3	S							S				
TO-14A	1,3,5-Trimethylbenzene	PPBV	A			A							A	4.8			
TO-14A	2,2,4-Trimethylpentane	PPBV	M		12	M			270				M	3.4	120		1.6
TO-14A	2-Butanone (Methyl Ethyl Ketone)	PPBV	P	33		P	6.1	2.8	4.3		1.8	6.8	P	2.1	5.2		18
TO-14A	2-Propanol	PPBV	L			L							L				11
TO-14A	4-Ethyltoluene	PPBV	E			E							E		8.9		1.2
TO-14A	Acetone	PPBV		17			39	15	51		18	60		8.9	27	7.7	100
TO-14A	Benzene	PPBV	C	130	22	C	23	3.1		350	2.8	5	C	3.6	9.2	1.8	10
TO-14A	Carbon Disulfide	PPBV	O			O	1.9	1.2	1.7		5.3	7.3	O		3.1		10
TO-14A	Chloroform	PPBV	L			L						2.7	L	21		15	
TO-14A	cis-1,2-Dichloroethene	PPBV	L	1600	21	L	57						L				
TO-14A	Cumene	PPBV	E			E	4.1						E				
TO-14A	Cyclohexane	PPBV	C	48	42	C	47	2.7	2.4	730	6.9	91	C	5.1	21	1.6	8.3
TO-14A	Ethanol	PPBV	T			T		4.3	13			5.3	T				6.1
TO-14A	Ethyl Benzene	PPBV	E			E	1.3						E		1.3		
TO-14A	Freon 11	PPBV	D			D			6.4		8.4	5.5	D			1.5	
TO-14A	Freon 12	PPBV									1.2						4.4
TO-14A	Heptane	PPBV		21			4.3	1.4		310	1.6	8		2.5	34		9.9
TO-14A	Hexane	PPBV		75	40		65	8.2	1.7	3300	6.3	22		5.1	18	1.4	19
TO-14A	m,p-Xylene	PPBV					1.5	1.2		58	1.4	1.9		5.7			3.4
TO-14A	Methylene Chloride	PPBV						10						1.5			
TO-14A	o-Xylene	PPBV													2.3		1.2
TO-14A	Propane, 2-methyl-	PPBV		700	870		820		90	5400	110	540		130	350	560	650
TO-14A	Propylbenzene	PPBV													3.4		380
TO-14A	Tetrachloroethene	PPBV									1.8	3.6				17	1.2
TO-14A	Tetrahydrofuran	PPBV						1.5						4.3	1.2		2.3
TO-14A	Toluene	PPBV		8.2			2.4	2.4		90	2.5	4.8		1.6	12	1.4	7.5
TO-14A	trans-1,2-Dichloroethene	PPBV		970	7.8		72										4.3
TO-14A	Trichloroethene	PPBV		46	2.8		12	7.8							2	66	1.8
TO-14A	Vinyl Chloride	PPBV		1100	180												

Blank cells - Not detected above the reporting limit

Table 5-5
Groundwater Detections in ug/L
SFERP Power Plant Site

DRAFT

Sample Method	Analyte	Units	RWQCB Tier 1 ESL		Southern					Central					Northern				
			Screening Levels	SB-16	SB-17	SB-18	SB-19	SB-20	SB-21	SB-22	SB-23	SB-24	SB-25	SB-26	SB-27	SB-28	SB-29	SB-30	SB-31
			SB16-W10	SB17-W10	SB18-W10	SB19-W10	SB20-W10	SB21-W10	SB22-W10	SB23-W10	SB24-W10	SB25-W10	SB26-W10	SB27-W10	SB28-W10	SB29-W10	SB30-W10	SB31-W10	
EPA 6010B	Arsenic	ug/L	36		9.5	25				13	8.9	190	7.2	18	5.4	17	13	16	
EPA 6010B	Barium	ug/L	1000	86	310	66	310	220	310	240	370	13	250	72	16	230	22	140	77
EPA 6010B	Chromium	ug/L	180								22								
EPA 6010B	Copper	ug/L	3.1								17								130
EPA 6010B	Lead	ug/L	2.5		5.1				6.9	23									9
EPA 6010B	Molybdenum	ug/L	240		20								30	78					33
EPA 6010B	Nickel	ug/L	8.2																36
EPA 6010B	Selenium	ug/L	5	9.3		8.7			6.7				5.1			12	12		
EPA 6010B	Vanadium	ug/L	19		150						18		81	30					
EPA 6010B	Zinc	ug/L	81	55											130		53	31	
EPA 7470A	Mercury	ug/L	0.012																0.87
EPA 8015B	Bunker C C12-40	ug/L	640	1200	5000	8800	4700	11000	3400	4300	3300	5700	4200	3500	12000	1300	590	2000	5300
EPA 8015B	Diesel C10-C24	ug/L	640	300	1800	3500	1700	2900	870	1200	880	1700	1100	1300	3300	340	140	560	790
EPA 8015B	Gasoline C7-C12	ug/L	500				200												
EPA 8015B	Motor Oil C24-C36	ug/L	640	420	980	1000	710	2500	830	940	780	1300	1000	570	2500	340		530	2200
EPA 8260B	1,2,4-Trimethylbenzene	ug/L	NE					7.5											
EPA 8260B	1,3,5-Trimethylbenzene	ug/L	NE					3											
EPA 8260B	1,2-Dichloroethane	ug/L	690		1.4														
EPA 8260B	Acetone	ug/L	1500								10								
EPA 8260B	Benzene	ug/L	46	2.8	4.5	1.1	4.8												
EPA 8260B	Carbon Disulfide	ug/L	NE		1.1														
EPA 8260B	Chlorobenzene	ug/L	25			0.7													
EPA 8260B	Chloroform	ug/L	62												0.5				
EPA 8260B	cis-1,2-Dichloroethene	ug/L	590	1.4	24	0.8	6.8												
EPA 8260B	Ethylbenzene	ug/L	290				1.3												
EPA 8260B	Isopropylbenzene	ug/L	NE				1.2												
EPA 8260B	m,p-Xylenes	ug/L	100				2.5												
EPA 8260B	MTBE	ug/L	1800		1.2												1.1	3.1	1.1
EPA 8260B	Naphthalene	ug/L	24				3.3												
EPA 8260B	o-Xylene	ug/L	100				2.2												
EPA 8260B	para-Isopropyl Toluene	ug/L	1300				1.1												
EPA 8260B	Propylbenzene	ug/L	NE				1.5												
EPA 8260B	sec-Butylbenzene	ug/L	NE				0.9												
EPA 8260B	trans-1,2-Dichloroethene	ug/L	590	1.5	2.9		2.1												
EPA 8260B	Trichloroethene	ug/L	360		0.6										1.6	1			
EPA 8260B	Vinyl Chloride	ug/L	13	0.8	6.1		3.4												
EPA 8310	Acenaphthene	ug/L	23				5.4												
EPA 8310	Anthracene	ug/L	0.73	0.11		0.39	0.7				2.1								
EPA 8310	Benzo(a)anthracene	ug/L	270	0.36	0.11	1.3	0.15			0.14	1.8	0.29							0.16
EPA 8310	Benzo(a)pyrene	ug/L	0.027	0.48		1.6				0.15	2	0.52	0.11						0.17
EPA 8310	Benzo(b)fluoranthene	ug/L	0.029	0.35		1.3					1.1	0.41							
EPA 8310	Benzo(g,h,i)perylene	ug/L	0.1	1.2	0.34	3.2				0.31	2	0.81	0.21						0.24
EPA 8310	Benzo(k)fluoranthene	ug/L	0.014	0.19		0.67					0.67	0.19							
EPA 8310	Chrysene	ug/L	0.35	0.43	0.19	1.4	0.16			0.18	1.7	0.29							0.34
EPA 8310	Dibenz(a,h)anthracene	ug/L	0.25	0.6	0.28	1.8				0.25	2.1	0.55							0.23
EPA 8310	Fluoranthene	ug/L	8	0.92	0.21	0.29	3	1.4		0.41	6.8	0.63					0.19	0.93	
EPA 8310	Fluorene	ug/L	3.9		0.44	0.56	1.2				3.2								
EPA 8310	Indeno(1,2,3-cd)pyrene	ug/L	0.029	0.36		1.1				0.14	1.6	0.46							0.23
EPA 8310	Naphthalene	ug/L	24				3.4				6.4								
EPA 8310	Phenanthrene	ug/L	4.6	0.42	0.28	0.69	2.1	2.8	0.14	0.18	12			0.11					0.13
EPA 8310	Pyrene	ug/L	2	0.9	0.11	0.3	2.9	1.2	0.13	0.27	6.7	0.83	0.13					0.17	0.29
EPA 9040B	pH	SU		7.3	8.1	9.7	8.3	9.2	7.8	8.2	8.1	10.7	8.1	8	10.7	7.4	8.1	7.2	7.8

Blank cells - Not detected above the reporting limit
 SW8151A - Chlorinated Herbicides - All ND
 SW8082 - PCBs - all ND
 SW8270C - SVOC - All ND

Highlighted Cell - exceeds screening level

Attachment A – City and County of SF Boring Permit



City and County of San Francisco
DEPARTMENT OF PUBLIC HEALTH

Gavin Newsom, Mayor
 Mitchell H. Katz, M.D.
 Director of Health

ENVIRONMENTAL HEALTH SECTION

**Application for Monitoring Well
 Construction/Destruction or Soil Borings**

Application Date: 2/6/06 Starting Date: 2/15/06 Completion Date: 2/16/06

Job Address/Location: 25th and Illinois St. at proposed SFPUC - Muni Power Plant site.

TO BE COMPLETED BY OWNER, CONSULTANT OR DRILLER

Property Owner <u>SAN FRANCISCO PORT</u>	Well Owner (If Different) <u>- SAME -</u>	Consultant /Engineer/Geologist Name <u>CH2M HILL / THOMAS LAE</u>
Address <u>PIER 1</u>	Address	Address <u>2485 NATHAN PK DR. #600</u>
City, State, Zip <u>SAN FRANCISCO, CA 94111</u>	City, State, Zip	City, State, Zip <u>SACRAMENTO, CA 95833</u>
Telephone Number <u>415 274 0256</u>	Telephone Number	Telephone Number <u>916 286 0246</u>

Please indicate Type and Number of Proposed Wells/Borings

- | | | |
|---|--|---|
| Geotechnical Investigation: | Environmental Investigation: | Monitoring Wells Construction |
| <input type="checkbox"/> Exploratory Wells | <input checked="" type="checkbox"/> Exploratory Holes | <input type="checkbox"/> Chemical Leaks |
| <input type="checkbox"/> Cathodic Wells | <input type="checkbox"/> Water /Vapor Extraction Wells | <input type="checkbox"/> Compliance Well |
| <input type="checkbox"/> Cone Penetrometer Test | <input type="checkbox"/> Hydropunch | <input type="checkbox"/> Baseline Study |
| <input type="checkbox"/> Shallow Anodes | <input type="checkbox"/> LOP Workplan | <input type="checkbox"/> Well Destruction |
| <input type="checkbox"/> Other | | <input type="checkbox"/> LOP Workplan |

16 SOIL BORINGS FOR ENVIRONMENTAL SITE CHARACTERIZATION

Topographic Features -Well is to be constructed:

- In a Public Sidewalk In a Public Road On Private Property On City Property

Construction Specifications:

Diameter of Well Casing: _____ Annular Seal Depth: _____

Gauge of Casing: _____ Annular Seal Material: _____

Casing Depth: _____ Other Information: _____

Destruction Specifications: Well Diameter: _____ Approximate Depth: _____

Materials and Procedures to be Used: 16 SOIL BORINGS TO APPROX 15 FEET WILL BE DRILLED

WITH DIRECT-PUSH (GEOPROBE) TECHNOLOGY. SOIL, SOIL GAS, & GU SAMPLES WILL BE COLLECTED IN EACH BORING. BORINGS WILL BE SEALED WITH NEAT CEMENT.

WELL LOCATION: On the following site plan accurately draw the well location. (Recommend Assessor's Map)

1. Sketch well location to scale, show dimensions to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named street, road or highway.
3. Show location of any existing wells.

WATER QUALITY
 monitoring wells

1390 Market Street, Suite 210
 San Francisco, CA 94102

Phone (415) 252-3841
 Fax (415) 252-3894

SITE PLAN

see attached map.

borings SB-16 through SB-31

CERTIFICATION BY WELL OWNER/AGENT AND DRILLER/AGENT:

I certify the information above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions this permit, the San Francisco Health Code and, if applicable, the Hazardous Materials Permit & Disclosure Ordinance of the City/County. It is my responsibility as the responsible party to notify this Section of any changes in the purpose of this well from that which is indicated on this application form.

If proposed well is to meet compliance with a Hazardous Materials Permit & Disclosure Ordinance, has the Hazardous Materials Unified Program been contacted: [] Yes [] No

WDC Exploration + well: P.O. Box 141, Zamora, CA 1-800-873-3073

283326 C-57 Driller's License Number

Name and Address of Well Driller/ Company

Signature of Responsible Professional: [Signature] Date: 2/16/06

P.G. 7099 Civil Engineer Registration Number or Engineering Geologist Certificate Number

(NO substitution of Signature will be accepted)

Based on information on the application and attachments(s) hereto (if any) and subject to approval noted below, permission is hereby granted to commence the described project. Permission to start may be withheld until a field check verifies all statements made on application by Permittee and is also subject to any "General" and "Special" conditions attached.

To be Completed by Well Section Staff: Project # 3347 Date Approved 2/17/06
Number of Wells: _____ Number of Soil Borings: 16+
This project to construct/destroy is APPROVED [checked]
This project to construct/destroy is DISAPPROVED [unchecked]
Inspector [Signature]

Attachment B – Boring Logs



CH2MHILL

PROJECT NUMBER:
184288.NS.HG

BORING NUMBER:
SB-18

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **SE corner of yard in front of blue Conex Box, cont below**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca. / 25' W of E Fence, 35' N of S Fence**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

12.7 feet, 2/22/2006

DRILLING START DATE & TIME:

02/22/06

DRILLING FINISH DATE & TIME:

02/22/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE SYMBOLIC LOG E.G. cuttings	CORE DESCRIPTION	WELL
					SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC DRILLING RATE, DRILLING FLUID LOSS LOG CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION
1						
2						
3						
4			2.0		WELL GRADED SAND WITH GRAVEL (SW) olive arav 5Y 4/2. moist. fine to coarse sand with fine angular gravel. serpentine clasts.	
5						
6					WELL GRADED SAND (SW) dark greenish arav 5GY 4/1. moist. fine to coarse sand.	soil gas sample SB18 - SG5
7						
8						
9			3.0			
10						
11					CLAYEY SAND (SC) very dark aravish brown 2.5Y 3/2. moist. fine to coarse sand with clay.	pieces of brick in core
12						
13						
14			2.5			
15						
16					Total depth 15 feet	
17						
18						
19						
20						
21						
22						
23						
24						
25						



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-22

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **100' N of S Fence to Mid'l Yard, con't below**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca. / 123' W of E Fence to Mid'l yard**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

12.7 feet, 2/22/2006

DRILLING START DATE & TIME:

02/22/06

DRILLING FINISH DATE & TIME:

02/22/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION	WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION
1_						WELL GRADED SAND WITH GRAVEL (SW) dark grayish brown 10YR 4/2, dry, fine to coarse sand with fine gravel.		found pieces of bent steel plate when hand augering
2_								
3_								
4_			1.5					
5_						WELL GRADED SAND WITH GRAVEL (SW) gray 10YR 6/1, dry, fine to coarse sand with fine gravel.		OVM = back ground
6_								soil gas sample SB22 - SG5
7_								
8_								
9_						POORLY GRADED GRAVEL (GP) olive 5Y 5/3, serpentine cobblestone in core barrel.		core driven through cobble of serpentine, difficulty getting it out
10_			0.3					
11_								
12_								soil sample taken at 11.5 ft SB22 - S11
13_						POORLY GRADED GRAVEL WITH SAND (GP) dark grayish brown 2.5Y 4/2, moist, fine gravel with sand.		
14_								
15_			2.0					large pieces of brick OVM = background
16_								
17_						POORLY GRADED SAND (SP) very dark gray 2.5Y 3/1, wet, fine to medium sand.		
18_								
19_								
20_								
21_								
22_								
23_								
24_								
25_								
						Total depth 15 feet		



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-23

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **50' W of Fence, 20' N of Gate, Central Yard**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca.**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

10.3 feet, 02/23/2006

DRILLING START DATE & TIME:

02/22/06

DRILLING FINISH DATE & TIME:

02/23/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION	
1_									
2_									
3_									
4_									
5_									
6_									
7_									
8_									
9_									
10_									
11_									
12_									
13_									
14_									
15_									
16_									
17_									
18_									
19_									
20_									
21_									
22_									
23_									
24_									
25_									

WELL GRADED SAND WITH GRAVEL (SW) grayish brown 10YR 5/2, dry, fine to coarse sand with fine gravel.

WELL GRADED SAND WITH GRAVEL (SW) brown 10YR 4/3, moist, fine to coarse sand with fine gravel.

WELL GRADED SAND WITH GRAVEL (SW) dark greenish gray 5GY 4/1, moist, fine to coarse sand with fine gravel, pieces of serpentine.

Total depth 15 feet

small pieces of brick
soil gas sample SB23 - SG5

water sample taken, 02/23/2006



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-26

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **40' S of N Fence to Cement Plant, 73' W of E Fence**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca.**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

9.6 feet, 02/22/2006

DRILLING START DATE & TIME:

02/22/06

DRILLING FINISH DATE & TIME:

02/22/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION	
1_									
2_									
3_									
4_			2.0						
5_									
6_									
7_									
8_									
9_			2.5						
10_									
11_									
12_									
13_									
14_			3.0						
15_									
16_									
17_									
18_									
19_									
20_									
21_									
22_									
23_									
24_									
25_									

WELL GRADED SAND WITH GRAVEL (SW) dark grayish brown 2.5Y 4/2, dry, fine to coarse sand with fine gravel.

WELL GRADED SAND (SW) grayish brown 10YR 5/2, moist, fine to coarse sand.

WELL GRADED SAND WITH GRAVEL (SW) brown 10YR 4/3, moist, fine to coarse sand with fine gravel.

Total depth 15 feet

soil gas sample attempt
brought up water
perched zone
no sample taken



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-28

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **93' W of E Fence line of Central yard, 61' N of N con't below**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca. / Fence line to Central yard**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

9 feet, 02/20/2006

DRILLING START DATE & TIME:

02/20/06

DRILLING FINISH DATE & TIME:

02/20/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6"-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL		
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION		
1_						WELL GRADED SAND WITH GRAVEL (SW) dark grayish brown 10YR 4/2, moist, fine to coarse sand with fine gravel.		auger to 5 ft then drive soil gas probe		
2_										
3_										
4_			3.5				FILL - WELL GRADED SAND WITH GRAVEL AND CLAY (SW/SC), small pieces of brick serpentine, some clayey material		soil gas sample SB28 - SG5, 11:45	
5_										
6_										
7_										
8_			2.3					WELL GRADED SAND (SW) pale brown 10YR 6/3, moist, fine to coarse subangular sand.		
9_										
10_										
11_						WELL GRADED SAND WITH GRAVEL (SW) very dark grayish brown 2.5Y 4/2, moist, fine to very coarse sand with fine gravel.				serpentine in drive shoe.
12_										
13_										
14_										
15_										
16_										
17_										
18_										
19_										
20_										
21_										
22_										
23_										
24_										
25_										

Total depth 11.5 feet



PROJECT NUMBER: 184288.NS.HG	BORING NUMBER: SB-29	SHEET 1 OF 1
--	--------------------------------	----------------------------

SOIL BORING LOG

PROJECT NAME: San Francisco Electric Reliability Project	LOCATION: by Cement Box, app. 175 ft N of S fence, 170' E of W fence
---	---

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca.**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME: 8.7 feet, 2/20/2006	DRILLING START DATE & TIME: 02/20/06	DRILLING FINISH DATE & TIME: 02/20/06	LOGGER: Rob Pexton PG
---	--	---	---------------------------------

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6"-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION	
1_						WELL GRADED SAND WITH GRAVEL (SW) dark grayish brown 10YR 4/2, moist, fine to coarse sand with fine gravel.			
2_									
3_									
4_									
5_									
6_									
7_									
8_									
9_									
10_									
11_									
12_									
13_						WELL GRADED SAND WITH GRAVEL AND CLAY (SW/SC) dark greenish gray 10GY 4/1, moist fine to coarse sand with serpentine clasts.			
14_									
15_									
16_									
17_									
18_									
19_									
20_									
21_									
22_									
23_									
24_									
25_									
						WELL GRADED SAND WITH GRAVEL (SW) greenish gray 10GY 6/1, wet, fine to coarse sand with serpentine clasts.			
						Total depth 11.5 feet			

soil gas sample SB29 - SG5



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-30

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **6' N of Fence corner at NW corner, con't below**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca / at cement yard at 25th St.**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

13.3 feet, 02/21/2006

DRILLING START DATE & TIME:

02/21/06

DRILLING FINISH DATE & TIME:

02/21/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION	
1_						WELL GRADED SAND WITH GRAVEL (SW) grayish brown 10YR 5/2, moist, fine to coarse sand with fine gravel and some clay.			
2_									
3_									
4_			2.0			WELL GRADED SAND WITH GRAVEL (SW) grayish brown 10YR 5/2, moist, fine to coarse sand with fine gravel.			
5_									
6_						SANDY LEAN CLAY (CL) olive gray 5Y 4/2, moist clay with fine to medium sand.			soil gas sample SB30 - SG5
7_									
8_						WELL GRADED SAND WITH GRAVEL (SW) dark gray 5Y 4/1, moist, fine to coarse sand with fine gravel.			
9_			2.5						
10_						SILTY SAND (SM) dark reddish brown 5YR 3/4, moist, dense, fine sand with silt.			
11_									
12_									
13_			2.0			POORLY GRADED SAND (SP) black 5Y 2.5/1, wet, fine subangular sand.			
14_									
15_						Total depth 15 feet			
16_									
17_									
18_									
19_									
20_									
21_									
22_									
23_									
24_									
25_									



CH2MHILL

PROJECT NUMBER:

184288.NS.HG

BORING NUMBER:

SB-31

SHEET **1** OF **1**

SOIL BORING LOG

PROJECT NAME: **San Francisco Electric Reliability Project**

LOCATION: **60' S of N Building and Fence, 275' E of W con't below**

DRILLING CONTRACTOR: **WDC Exploration & Wells, Zamora, Ca. / Fence to Cement plant yard**

DRILLING METHOD AND EQUIPMENT: **Direct push Geoprobe Model 7730T track mounted coring unit**

WATER LEVELS, DATE, AND TIME:

11.2 feet, 2/21/2005

DRILLING START DATE & TIME:

02/21/06

DRILLING FINISH DATE & TIME:

02/21/06

LOGGER:

Rob Pexton PG

DEPTH BELOW SURFACE (FEET)	SPT BLOW COUNT 6'-6"(N)	SAMPLE INTERVAL DEPTH (FEET)	LENGTH OF RECOVERY OF CORE (FEET)	SAMPLE NAME & TYPE E.G.cuttings	SYMBOLIC LOG	CORE DESCRIPTION		WELL	
						SOIL NAME, (USCS SYMBOL), COLOR (STAINING), MOISTURE CONTENT, RELATIVE DENSITY, CONSISTENCY, SOIL STRUCTURE, MINERALOGY, ODOR, PRESENCE OF NON AQUEOUS PHASE LIQUID, OTHER CONTAMINANTS	SYMBOLIC LOG	DRILLING RATE, DRILLING FLUID LOSS CIRCULATION ZONES, TESTS CONDUCTED WATER LEVELS, WELL INSTRUMENTATION	
1_						WELL GRADED SAND WITH GRAVEL (SW) grayish brown 10YR 5/2, dry, fine to very coarse sand with fine gravel.			
2_									
3_						WELL GRADED SAND WITH GRAVEL (SW) grayish brown 10YR 5/2, moist, fine to very coarse sand with fine gravel.			
4_			2.0						
5_									soil gas sample SB31 - SG5
6_									
7_									
8_			1.0						
9_									
10_						FILL - SAND AS ABOVE WITH PIECES OF CLAYEY GRAVEL (GC) very dark grayish brown 10YR 3/2, moist, fine gravel with coarse sand and app. 30-40% clay.			small pieces of brick in clay
11_									
12_			2.0			GRAVELLY CLAY (CL) black 2.5Y 2.5/1, moist clay with fine gravel and sand.			drilled to 11.5 ft had to push to 14 ft to set 1" screen to get water sample
13_									
14_						POORLY GRADED GRAVEL WITH SAND (SP) dark gray 5Y 4/1, wet, angular, fine gravel with coarse sand.			
15_									
16_						Total depth 14 feet			
17_									
18_									
19_									
20_									
21_									
22_									
23_									
24_									
25_									