

**CASE CLOSURE SUMMARY
TOXICS PROGRAM**

I. AGENCY INFORMATION

Date: 4/28/05

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567- 6765
Responsible Staff Person: Barney Chan	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: PG&E SUBSTATION E		
Site Facility Address: 408 Linda Ave., Piedmont, 94611		
RB Case No.: ---	Local Case No.: ---	SLIC Case No.: RO0002633
URF Filing Date: ---	SWEEPS No.: ---	APN: 050-4559-013-00
Responsible Parties	Addresses	Phone Numbers
Ms. Sally Goodin PG&E	P.O. Box 7640, Mail Code B24A San Francisco, CA 94120	510-301-2261

Tank I.D. No	Size in Gallons	Contents	Closed In Place/Removed?	Date
NA	---	---	---	---
Piping			NA	

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Lead from weathered paint from building		
Site characterization complete? Yes	Date Approved By Oversight Agency: ---	
Monitoring wells installed? No	Number: ---	Proper screened interval? ---
Highest GW Depth Below Ground Surface: ~7' bgs based upon 10/13/99 boring	Lowest Depth: --	Flow Direction: undetermined
Most Sensitive Current Use: Potential drinking water source.		

Summary of Production Wells in Vicinity: well survey not performed, risk to groundwater deemed insignificant	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Lake Merritt is approx. 7000' south of site
Off-Site Beneficial Use Impacts (Addresses/Locations): none	
Reports on file? Yes	Where are reports filed? Alameda County Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	---	---	--
Piping	---	---	---
Free Product	---	---	---
Soil	582 cy 56 cy	Disposed at Chem Waste Mgmt., Kettleman Hills, CA Disposed at Forward Landfill, Manteca	1991 1/18/05
Groundwater	---	---	---

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

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
TPH (Gas)	---	---	---	--
TPH (Diesel)	69	NA	NA	NA
TPH motor oil	67	NA	NA	NA
TPH mineral oil	<1	<1	---	---
Benzene	---	---	---	---
Toluene	---	---	---	---
Ethyl Benzene	---	---	---	---
Xylene	---	---	---	---
Heavy Metals- lead	1600	178	NA	NA
MTBE (if not analyzed, explain below)*	-	---	-	-
Other (8240/8270)- PCBs	0.14	NA	NA	NA

* Petroleum fuel was not considered a COC, therefore, MTBE, the other oxygenates and lead scavengers were not analyzed (NA)

Site History and Description of Corrective Actions:

The site is located within a mixed residential/commercial area in Piedmont. The site consists of a 5000 square foot building located on approximately 0.5 acre parcel. PG&E originally built the building, Substation "E", in 1926 to supply direct current power to the trolley line in the city of Piedmont and later supplied electric power to residents and businesses in the area from 1926-1991. The building commonly stored equipment, some of which contained the COCs, PCBs in insulating oil, lead in lead-based paint or asbestos. Although PG&E performed testing within the building for these contaminants, it is the soil surrounding the exterior of the building, which is the subject of this investigation and our agency's recommendation. See Attachment 1

Soil surrounding the building was contaminated by lead based paint, which weathered and came off the building over time. The exterior walls of the building have since been scraped, cleaned and coated and currently poses little risk.

On 10/19/99 nine surface soil samples (SESP-1 through SESP-9) were collected at the site. SESP-1 through SESP-8 were located on the outside of the building while SESP-9 was collected in a sump within the building. The exterior samples were collected from the unpaved surface soils. Up to 1600 mg/kg lead was detected in these samples. The samples were also analyzed for PCBs, TPH as motor oil, as mineral oil and as diesel. Up to 69 ppm TPHd (TEPH) and 67 ppm TPH as motor oil was detected. No mineral oil was detected in these samples. The highest concentration of PCB detected was 0.14 ppm, which is less than 0.22 ppm, the residential RWQCB ESL for shallow soils where groundwater is considered a drinking water source. See Attachment 2

On 11/23/99, four borings (B1 through B4) were advanced at the site. Soil samples were collected from each boring from surface to 30" in depth and analyzed for lead. The results indicated that lead concentrations decreased significantly with depth, with the highest lead concentration being 46 ppm in the deepest samples. See Attach 2

During the investigation of the interior of the building a boring (PGEPSSE) was advanced and logged. Silty sandy clay was encountered from the surface to 4' bgs. A one foot layer of clayey silty sandy gravel was observed from 4-5', then silty clay was encountered to the depth of the boring, 12'. Groundwater was encountered at 7' bgs. Soil and groundwater samples were not analyzed from this boring. See Attachment 3

Between January and March 2001, soils surrounding the exterior of the building were excavated ranging in depth from 6"-24". Twelve post-excavation samples (A-H) ranging from 6"-24" were taken for chemical analysis. The highest residual lead concentration was 178 ppm. Approximately 582 cy of soil was excavated and disposed at ChemWaste Management in Kettleman Hills. See Attachment 5

On June 28, 2004, four soil samples were taken from areas where lead analytical data was lacking. Two samples were taken from each location, one from 6-9" and the other from 12-15". The results indicated that an eastern strip of the property had lead concentrations exceeding the residential ESL of 200 ppm (shallow soils where groundwater is a potential drinking water source) and that the southwest corner of the site was below this ESL. See Attach 6

On January 11, 2005, the eastern section of the site was excavated to a depth of approximately 2'. On January 18, 2005 after the soils were deemed dry enough after recent rains, four post-excavation confirmation samples (EXC-Conf1 through EXC-Conf4) were collected for lead analysis. These samples ranged from 9.1-36 ppm lead. The pH of these soils were tested and ranged from 5.48-6.93. Approximately 56 cy of soil was excavated and transported to Forward Landfill for disposal. See Attachment 7

The exterior surficial soils at the former PG&E Substation appears to have been contaminated by lead based paint, which had weathered off the outside walls of the building. Two excavations (2001 & 2005) and post-excavation samplings were performed and document the removal of lead to levels below the residential ESL of 200ppm. No further action is recommended for the soils on the exterior portion of the site.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes No		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes No		
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.		
Site Management Requirements: No further action is recommended for the exterior soil at the site. The interior of the site is not covered by this closure and its health risk status will require an evaluation by an appropriately registered professional. Should the building be demolished an appropriate health and safety plan must be followed to insure the protection of workers, the environment and nearby residents or commercial occupants.		
Should corrective action be reviewed if land use changes? Yes		
Monitoring Wells Decommissioned: NA	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"> • ACEH recommend no further action for the portion of this site outside the existing building. The exterior of the building still has lead based paint on it and inside the building, lead, asbestos, oil and PCBs have been identified. Appropriate health and safety measures must be taken if the building is to be demolished or occupied. No groundwater samples were taken to evaluate petroleum hydrocarbons (TPHd,TPHmo), lead and PCBs, all of which were identified in soil samples. However, given the low levels of the organic compounds and their concentrations being less than appropriate ESLs, their risk to groundwater appears to be insignificant. PG&E's consultant, Secor, has evaluated the potential lead leaching capability of soils at this site and concluded that little to no leaching is occurring in the sediments. • Lead at 11, 000 ppm remains in place in the motor room sump. This closure does not address residual contamination present in the area of the building's interior. • 0.91 ppm PBCs remains in place in the sink drain pipe within the interior of the building <p>Conclusion:</p> <p>Based upon the information available in our files to date, 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 current commercial land use. An appropriate Health and Safety Plan must be observed if the site's building is demolished or considered for occupancy.</p>
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VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Barney Chan	Title: Hazardous Materials Specialist
Signature: <i>Barney Chan</i>	Date: 5/2/05
Approved by: Donna L. Drogos, P.E.	Title: Supervising Hazardous Materials Specialist
Signature: <i>Donna L. Drogos</i>	Date: 04/29/05

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: <i>CHERIE M^CCAULOU</i>	Title: <i>ENGINEERING GEOLOGIST</i>
RB Response: Concur, based solely upon information contained in this case closure summary.	Date Submitted to RB: <i>5/11/05</i>
Signature: <i>Cherie McCaulou</i>	Date: <i>5/11/05</i>

Attachments:

1. Site Vicinity Map
2. Site Plan/Analytical for Samples SESP-1 through SESP-8, Borings B-1 through B-4
3. Boring Log for PGEPSE-1
4. Combined Site Plan with Analytical Data
5. Post-excavation (2001) Figure & Sample Results
6. Soil Investigation of Southwest & Eastern Site Areas
7. Post-excavation (2005) Figure & Sample Results

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

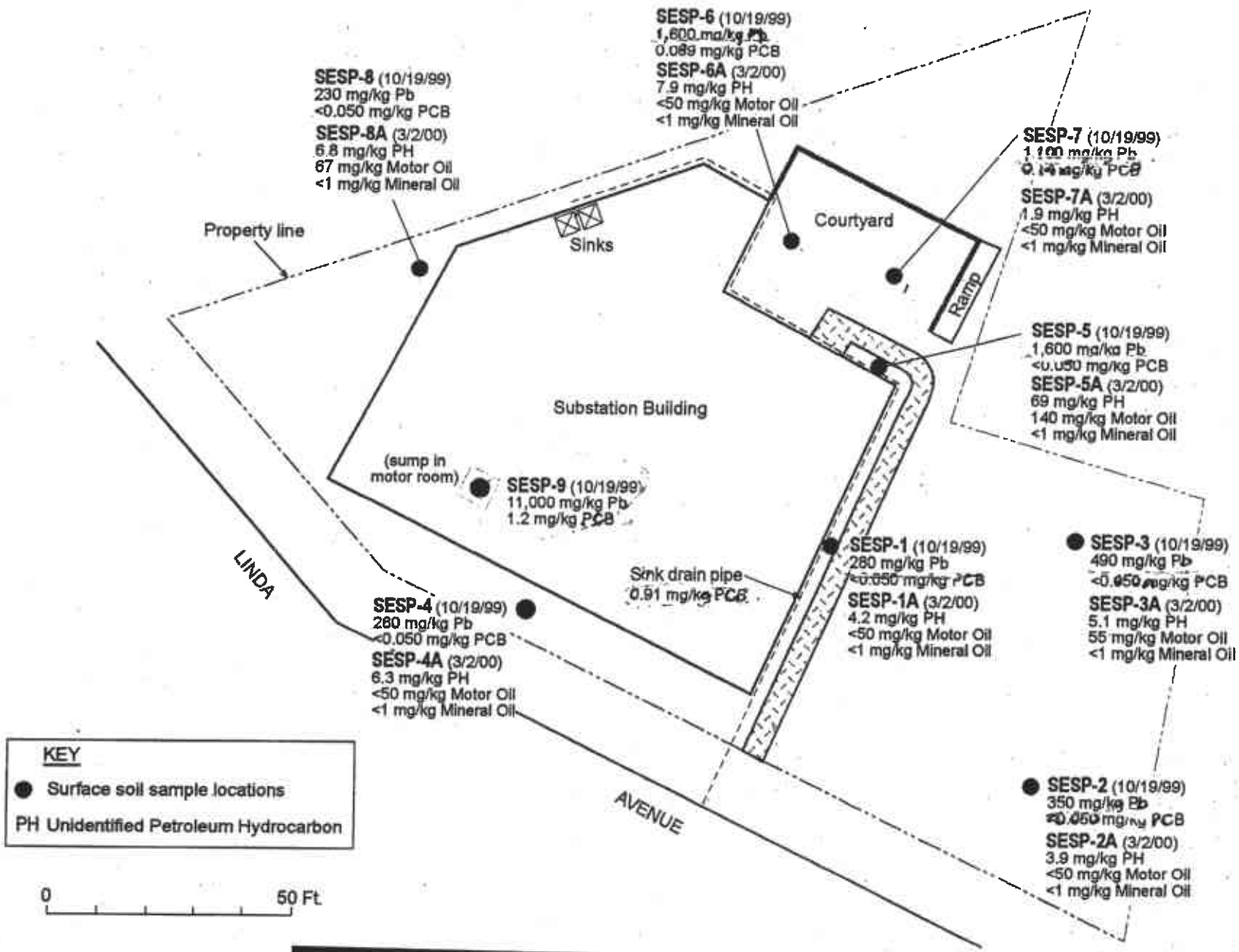
RE: PG+E Substation E.

Post-It [®] Fax Note	7671	Date	<i>5/11/05</i>	# of pages	<i>1</i>
To	<i>Barney Chan</i>	From	<i>Cherie McCaulou</i>		
Co./Dept.	<i>ACEH</i>	Co.	<i>Water Board</i>		
Phone #	<i>510.587.6265</i>	Phone #	<i>510.622-2342</i>		
Fax #	<i>510-337-9335</i>	Fax #	<i>510-622-2164</i>		



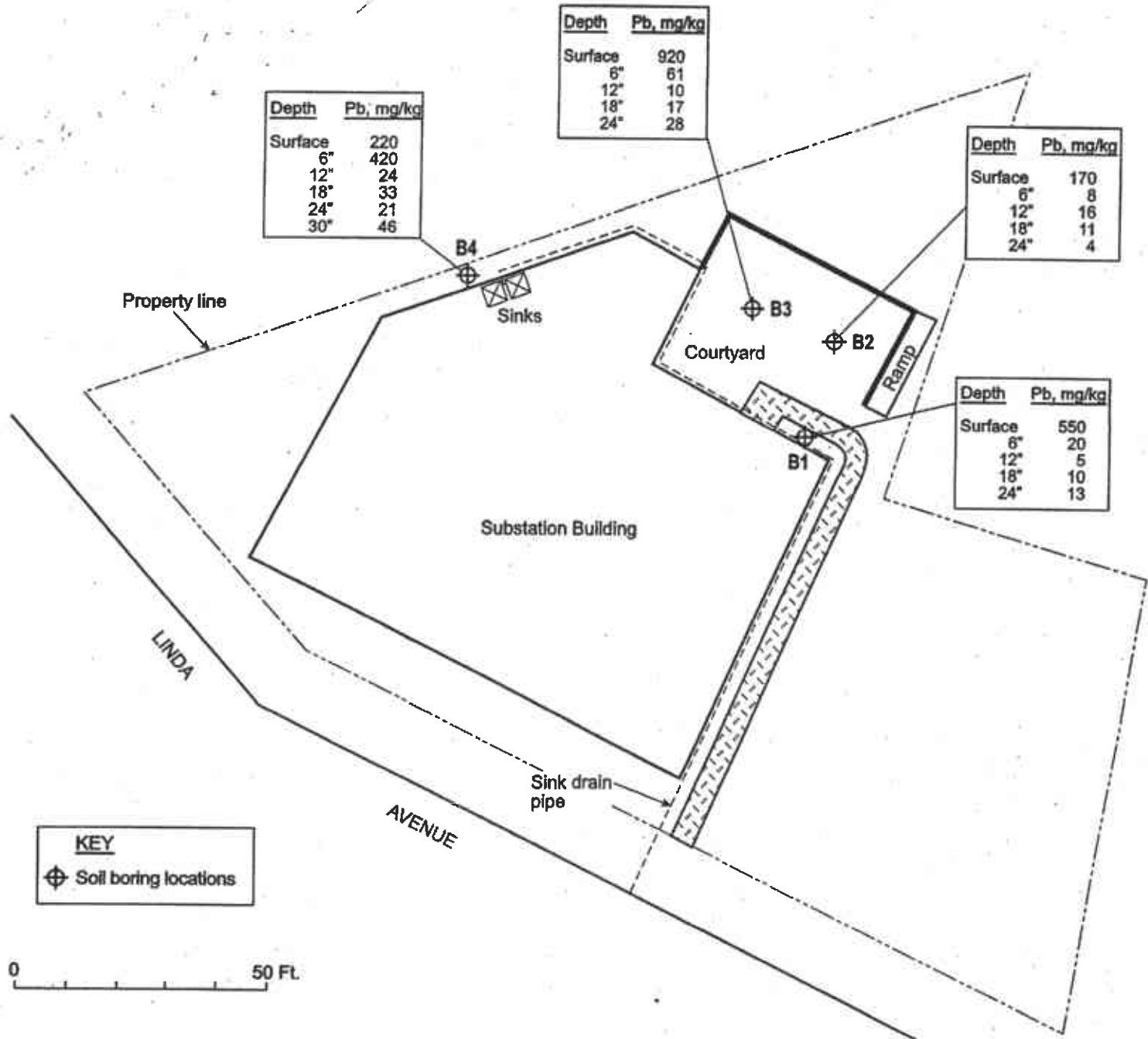
Adapted from USGS Oakland East, California, 7.5 minute topographic quadrangle map, 1959, photorevised 1980.





ATTACH 2

...s, sink drain pipe locations and analytical results, ...n "E", October 19, 1999 and March 2, 2000.



KEY
 ⊕ Soil boring locations

0 50 FT.



Results, Piedmont Substation "E", November 23, 1999.

**Analytical Results for TEPH and Mineral Oil in Surface Soil Samples
Piedmont Substation "E"
Results of Samples Collected on March 2, 2000**

Sample	Unidentified Petroleum Hydrocarbon (mg/kg)	Motor Oil (mg/kg)	Mineral Oil (mg/kg)
SESP-1A	4.2	<50	<1
SESP-2A	3.9	<50	<1
SESP-3A	5.1	55	<1
SESP-4A	6.3	<50	<1
SESP-5A	69	140	<1
SESP-6A	7.9	<50	<1
SESP-7A	1.9	<50	<1
SESP-8A	6.8	67	<1

3-10

**Analytical Results for Lead in Soil Samples
Piedmont Substation "E"**

Results for Samples Collected on October 19, 1999

Sample	Location (see Figure 7)	Lead Concentration (mg/kg)
SESP-1	Surface Soil around exterior of building	280
SESP-2	Surface Soil around exterior of building	350
SESP-3	Surface Soil around exterior of building	490
SESP-4	Surface Soil around exterior of building	280
SESP-5	Surface Soil around exterior of building	1,600
SESP-6	Surface Soil around exterior of building	1,600
SESP-7	Surface Soil around exterior of building	1,100
SESP-8	Surface Soil around exterior of building	220
SESP-9	Motor Room Sump	11,000

Results for Samples Collected on November 23, 1999

Sample	Location (See Figure 8)	Lead Concentration (mg/kg)
B1-1	Courtyard North Side Surface 6" 12" 18" 24"	550
B1-2		20
B1-3		5
B1-4		10
B1-5		13
B2-1	Courtyard South Side Surface 6" 12" 18" 24"	170
B2-2		8
B2-3		16
B2-4		11
B2-5		4
B3-1	Courtyard Next to wall 5 feet from door Surface 6" 12" 18" 24"	920
B3-2		61
B3-3		10
B3-4		17
B3-5		28
B4-1	North Side of Building Surface 6" 12" 18" 24" 30"	220
B4-2		420
B4-3		24
B4-4		33
B4-5		21
B4-6		46

3-7

LOG OF EXPLORATORY BORING

PROJECT NUMBER _____
 PROJECT NAME **PG E prebmont Substation E**
 BY **G. Hensch** DATE **10/13/08**

BORING NO. **PGEISE-1**
 PAGE **1**
 SURFACE ELEV. _____

Accessories (1/1)	DTS (1/1)	Penetration log (1/1)	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHO- GRAPHIC COLOR	DESCRIPTION
				1			CL Silty sandy clay, 40% clay w/ 10% silt/fine sand, very dark brown (5Y 2.5/1) poorly to moderately graded, plastic, moist, medium dense, no cementation
				2			as above but color change to medium brown (7.5Y 3/2)
				3			
				4			CL clayey silty sandy gravel, 50% gravel 25% sand, 20% clay, 5% silt, medium to light brown (10YR 4/3) moderately graded, non-plastic, medium dense, moist, no cementation
				5			CL silty clay 80% clay 20% silt, medium to light brown (10YR 4/2) poorly graded, plastic, moist, medium dense, no cementation
				6			
				7			as above but change to wet
				8			

4/14

4/14

REMARKS

ATTACH

LOG OF EXPLORATORY BORING

PROJECT NUMBER

BORING NO. PG 68-1

PROJECT NAME PG - 622nd St Substation E

PAGE 2

BY G. Reynolds DATE 10/13/60

SURFACE ELEV.

DEPTH (FEET)	DIA. (IN)	CORRECTION (IN)	GROUT TYPE	TESTS RESULTS	WATER TABLE	SAMPLES	LITHO- GRAPHIC COLUMN	DESCRIPTION
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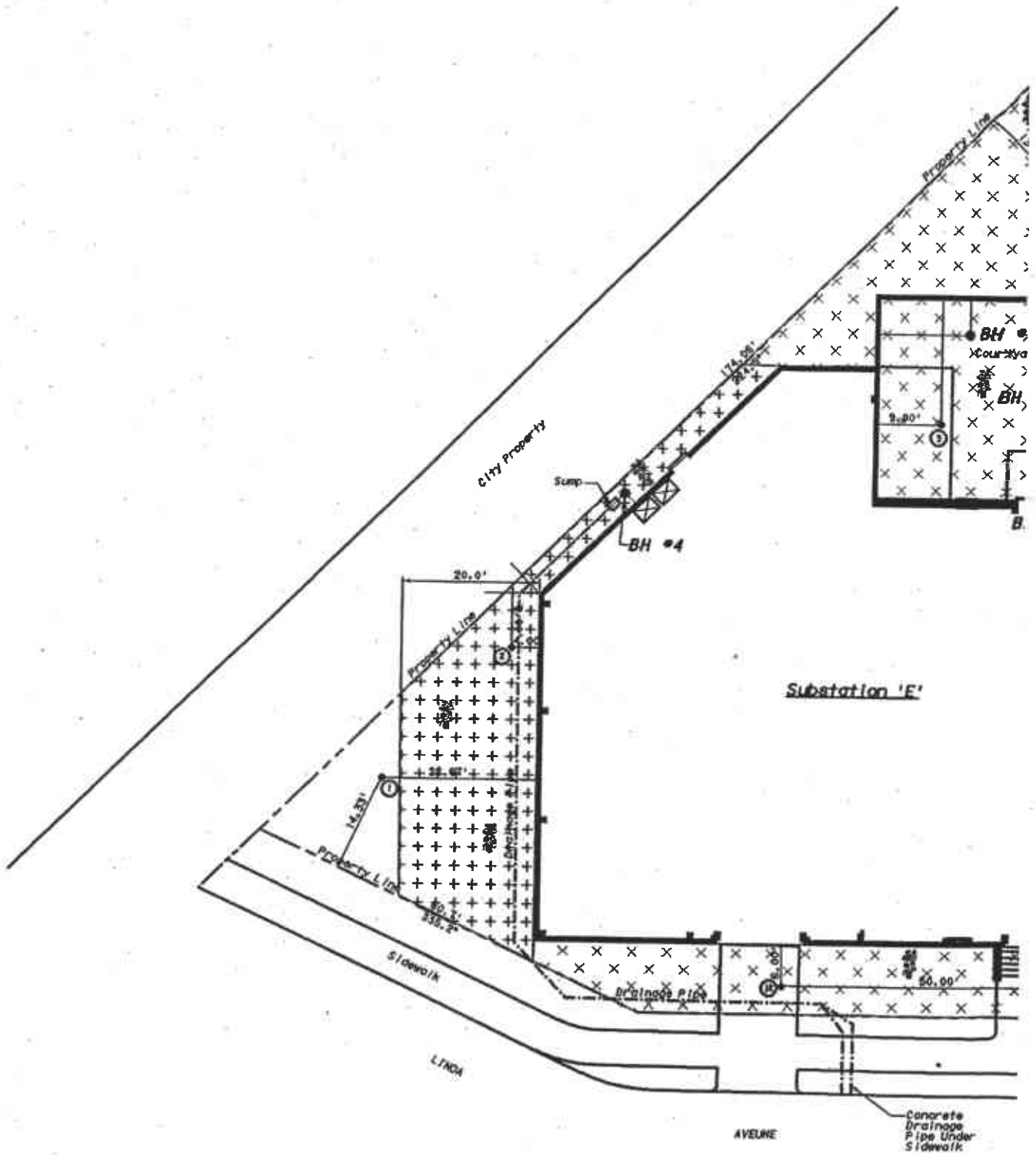
44								<p>not logged below 8' -> pebbles core saved for future analysis</p> <p style="text-align: center;">9</p> <p style="text-align: center;">10</p> <p style="text-align: center;">11</p> <p style="text-align: center;">12</p> <p style="text-align: center;">TD = 12ft bgs</p>
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REMARKS

1 4028448

2 3 4 5

C
T
D
C
B
A



SITE PLAN

SURFACE SOIL SAMPLES

Number	Sample	Date	Pb	PCB	Sample	Date	pH	Motor Oil	Mineral Oil
①	001031-3	10/31/00	55mg/kg						
②	SESP-8	10/18/99	250mg/kg	10.00mg/kg	SESP-8A	3/2/00	6.2mg/kg	87mg/kg	<1mg/kg
③	SESP-6	10/18/99	1000mg/kg	0.480mg/kg	SESP-6A	3/2/00	7.2mg/kg	130mg/kg	<1mg/kg
④	001031-4	10/31/00	200mg/kg						
⑤	SESP-7	10/18/99	1100mg/kg	0.14mg/kg	SESP-7A	3/2/00	1.2mg/kg	100mg/kg	<1mg/kg
⑥	SESP-5	10/18/99	1600mg/kg	0.050mg/kg	SESP-5A	3/2/00	87mg/kg	140mg/kg	<1mg/kg
⑦	SESP-3	10/18/99	490mg/kg	0.050mg/kg	SESP-3A	3/2/00	5.1mg/kg	55mg/kg	<1mg/kg
⑧	001031-3	10/31/00	14mg/kg						
⑨	SESP-1	10/18/99	280mg/kg	0.050mg/kg	SESP-1A	3/2/00	4.2mg/kg	100mg/kg	<1mg/kg
⑩	SESP-2	10/18/99	350mg/kg	0.050mg/kg	SESP-2A	3/2/00	3.2mg/kg	100mg/kg	<1mg/kg
⑪	SESP-4	10/18/99	280mg/kg	0.050mg/kg	SESP-4A	3/2/00	4.2mg/kg	100mg/kg	<1mg/kg

SOIL BORING LOCATIONS

Boring Hole #1	Boring Hole #2	Boring Hole #3	Boring Hole #4				
Depth	Pb, mg/kg	Depth	Pb, mg/kg	Depth	Pb, mg/kg	Depth	Pb, mg/kg
Surface	850	Surface	170	Surface	320	Surface	220
6"	20	6"	0	6"	81	6"	420
12"	0	12"	16	12"	10	12"	34
18"	10	18"	11	18"	17	18"	33
24"	13	24"	4	24"	28	24"	21
				30"		30"	46

LEGEND:

BH # = Boring Hole #



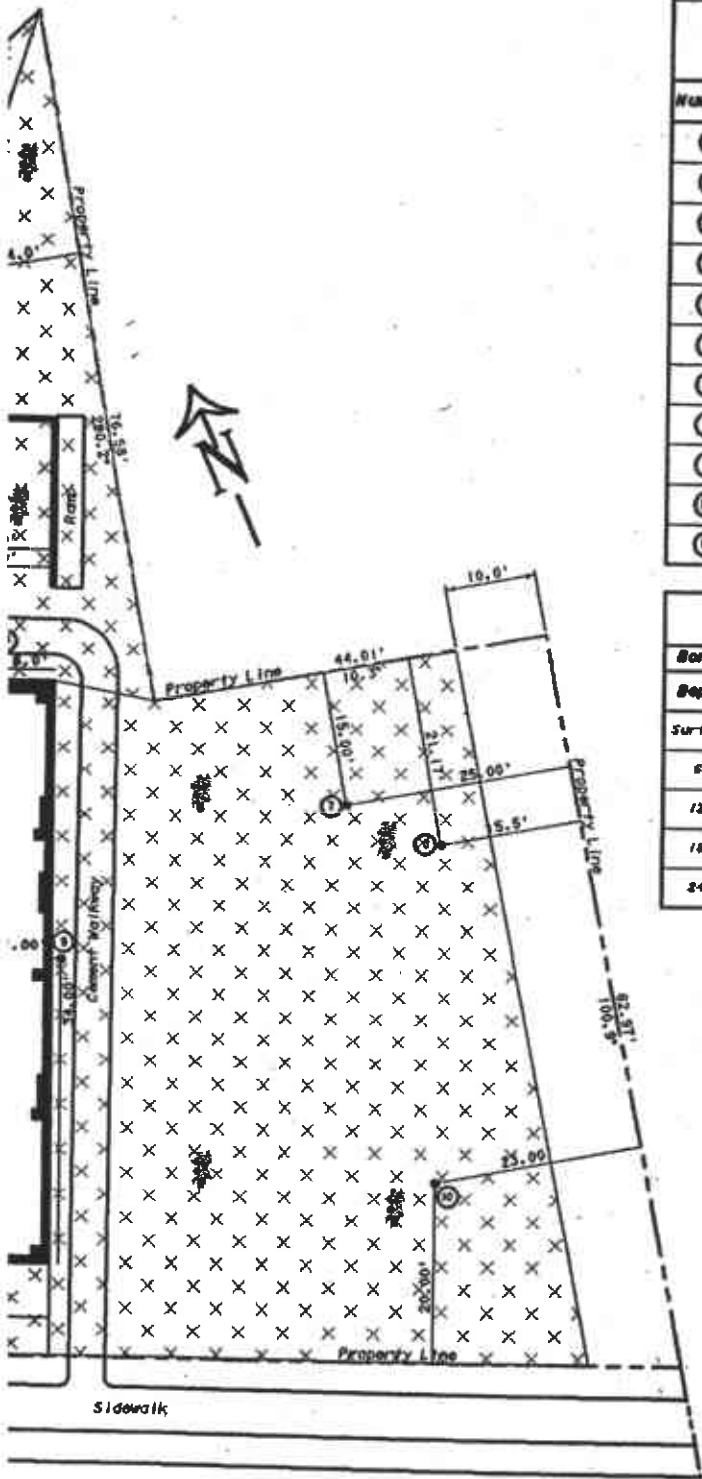
= PROPOSED CONFIRMATION SAMPLE LOCATION



= CUT 10" OF TOP SOIL

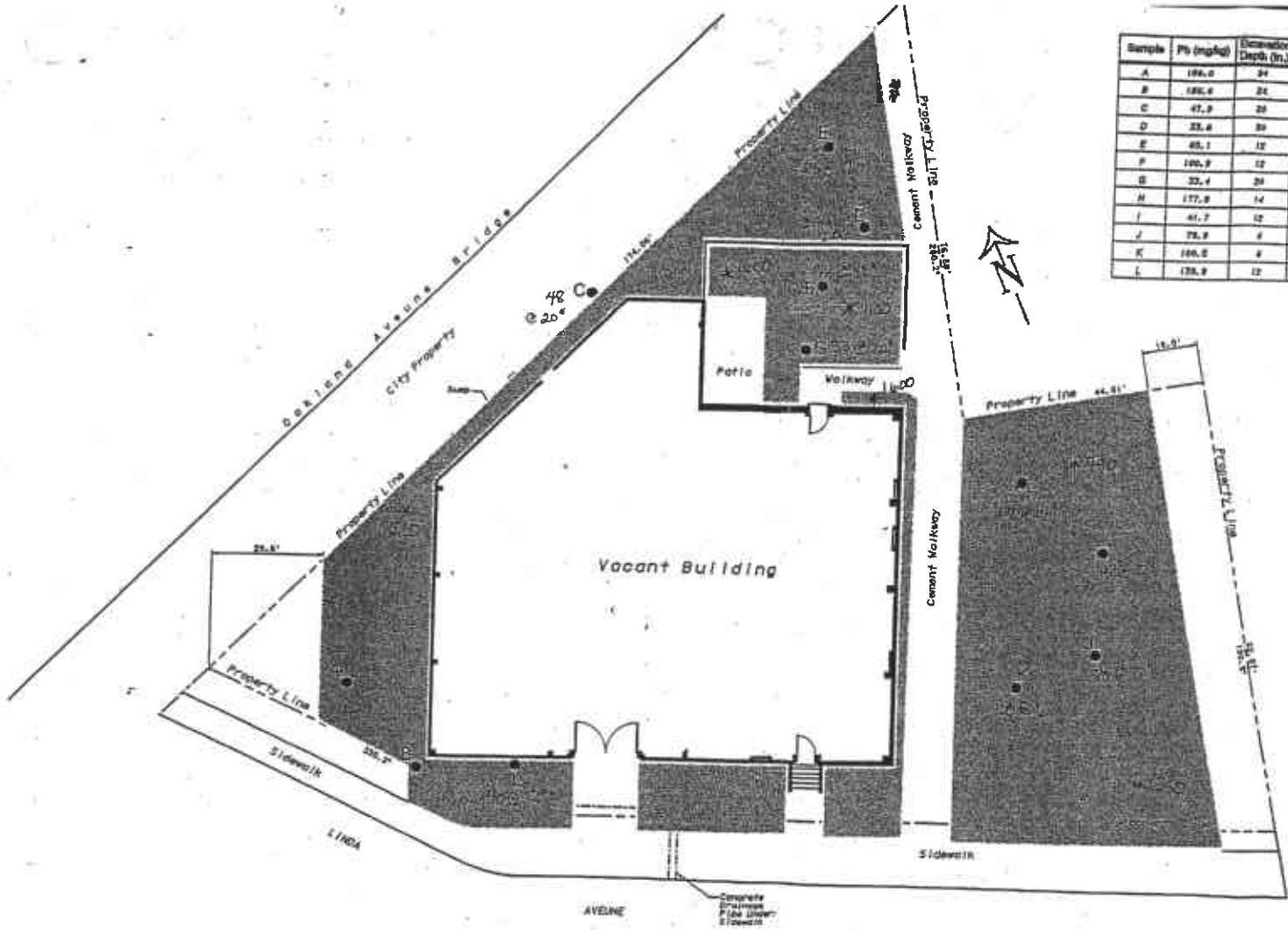


= CUT 6" OF TOP SOIL



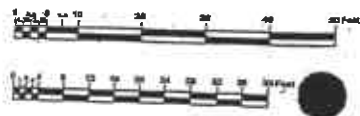
Sample	Pb (mg/kg)	Excavation Depth (in.)	Lab I.D.'s
A	186.0	24	888-4
B	186.0	24	888-8
C	47.9	20	81822J-2
D	23.8	20	81822J-3
E	85.1	12	81827J-4
F	180.9	12	81827J-2
G	22.4	20	81822J-1
H	177.9	14	81822L-5
I	41.7	12	81822L-2
J	78.9	4	101190-2
K	180.0	8	101190-1
L	178.9	12	81827J-8

* prior sampling



LEGEND

- Excavation Area
- Verification Soil Sample Location



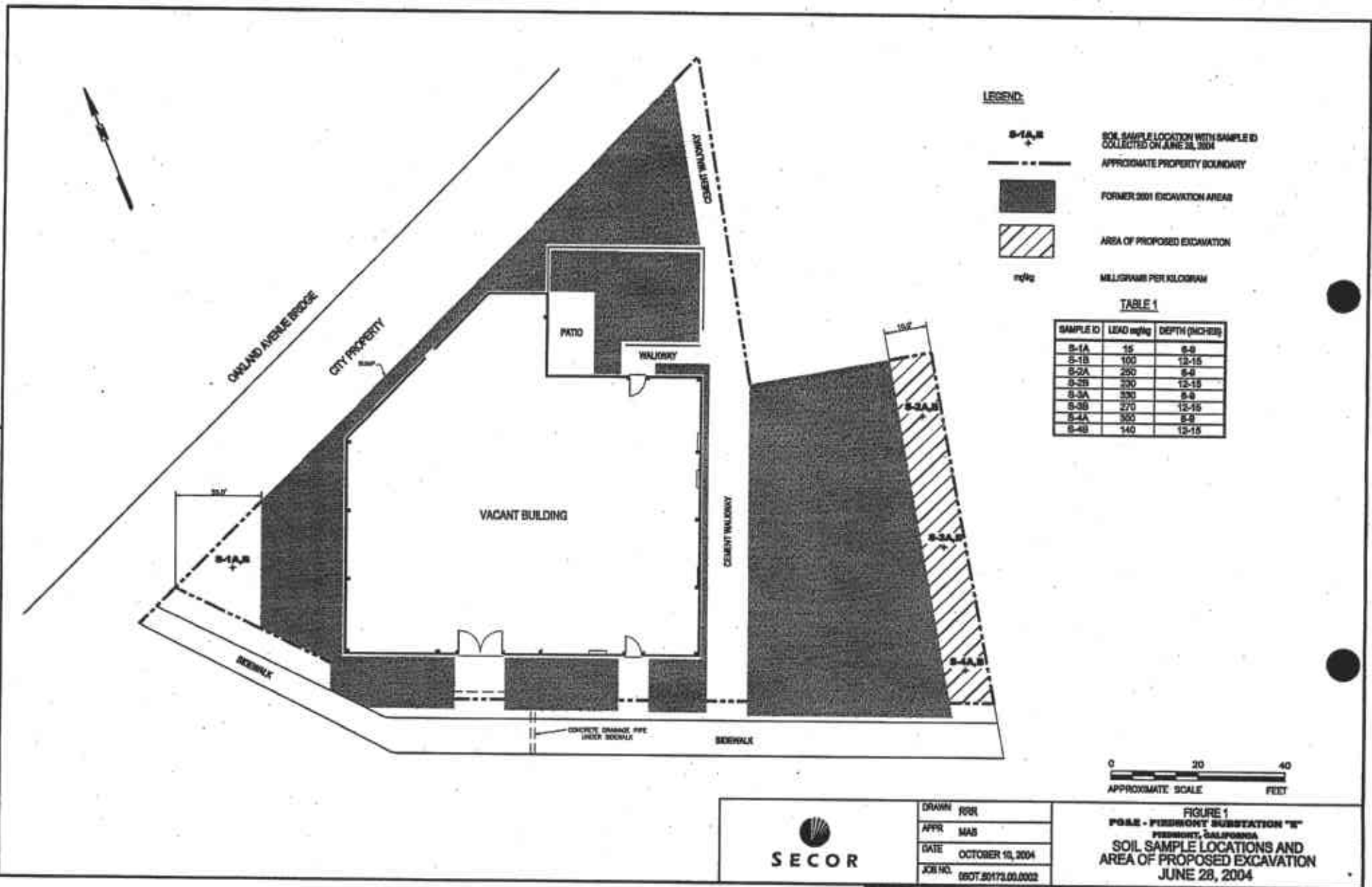
PG&E POWER GENERATION
PACIFIC GAS & ELECTRIC CO.

By S.V. Everett November 5, 2001

**ENVIRONMENTAL
SITE PLAN
CLEAN CONFIRMATION SAMPLE RESULTS
PIEDMONT SUBSTATION 'E'**

ATTACH 5

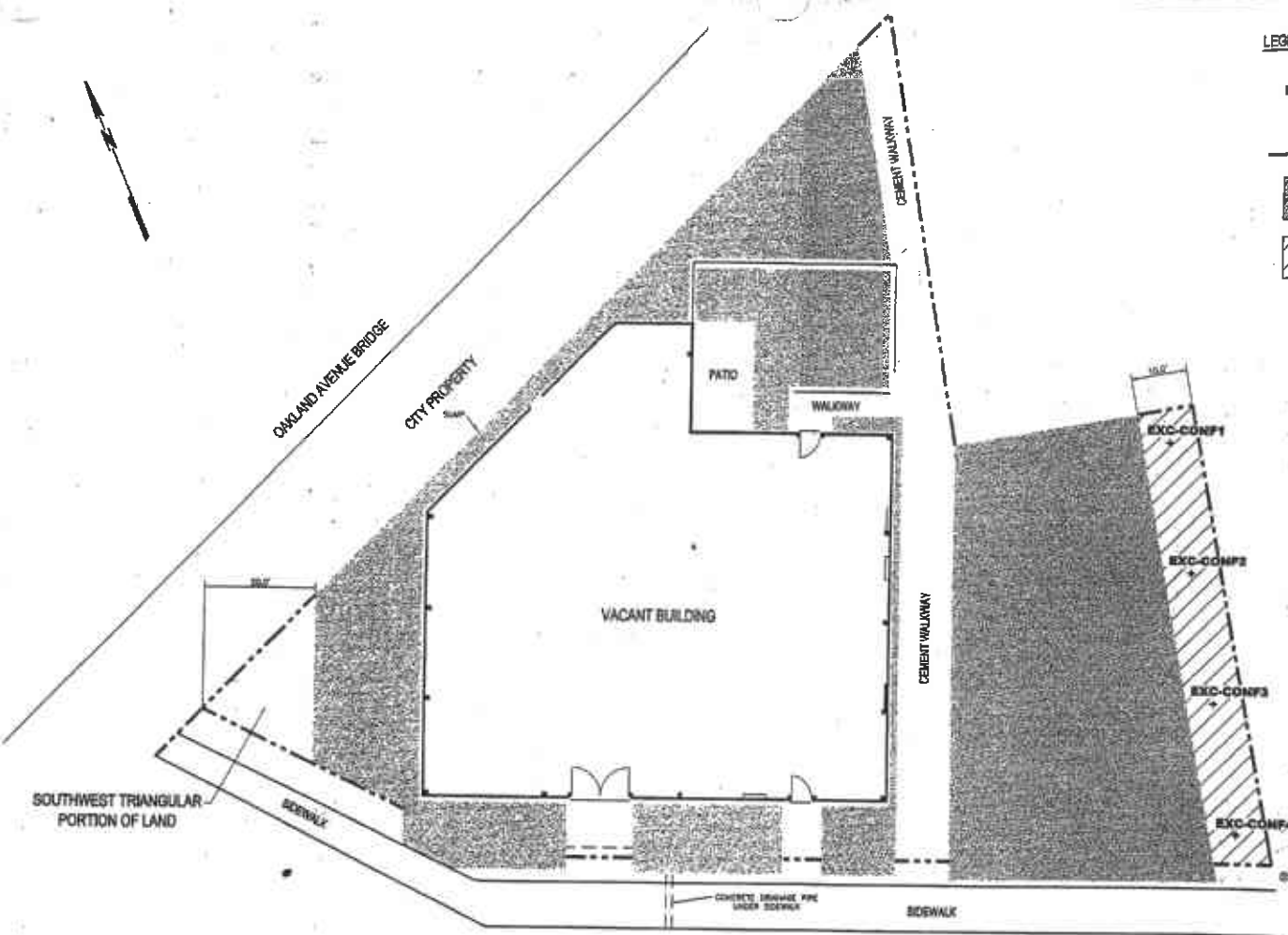
20041011.1420727_K:\P045\PC045 - Piedmont Substation E - FIGURE 1.dwg



DRAWN FOR
 APPR. MAS
 DATE OCTOBER 10, 2004
 JOB NO. 0507.50173.00.0002

ATTACHING

20050213.18402087 81/PCS/E/PG&E - Piedmont Substation E/PG&E - Final and Extension and Confirmation FIGURE 1 and 2.dwg



LEGEND:

- EXC-COMP1 CONFIRMATION SOIL SAMPLE LOCATION WITH SAMPLE ID COLLECTED ON JANUARY 11, 2005
- AIR SAMPLING LOCATION
- APPROXIMATE PROPERTY BOUNDARY
- PREVIOUS 2001 EXCAVATION AREA
- AREA OF JANUARY 2005 EXCAVATION
- mg/kg MILLIGRAMS PER KILOGRAM

TABLE 1

SAMPLE ID	DEPTH (INCHES)	LEAD mg/kg	pH
EXC-COMP1	24	35	6.53
EXC-COMP2	24	11	6.38
EXC-COMP3	24	20	6.44
EXC-COMP4	24	9.1	6.72



	DRAWN RRR APPR MAB DATE FEB 3, 2005 JOB NO. 0607.E0173.01	FIGURE 2 PG&E - PIEDMONT SUBSTATION "E" PIEDMONT, CALIFORNIA EXCAVATION AREA AND CONFIRMATION SOIL SAMPLE LOCATIONS JANUARY 2005
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ATTACHMENT