Southern Pacific
Transportation Company

Southern Pacific Building • One Market Plaza • San Francisco, California 94105

MARK E. RANSOM
MANAGER ENVIRONMENTAL SERVICES
(415) 541-1495

January 30, 1990

Mr. Ariu Levi
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Program
80 Swan Way, Room 200
Oakland, California 94621

Dear Mr. Levi:

Southern Pacific Transportation Co.(SPTCo) is pleased to submit the enclosed report regarding the Phase II environmental assessment of the property at 744 High Street in Oakland. The work described in this report was conducted in response to comments received from you and Hossain Kazemi of the Bay Area Water Quality Control Board.

The Phase I and II assessment activities at the property included the analysis of 81 subsurface and surface soil samples and the installation and sampling of six groundwater monitoring wells. The Phase II results indicate the following:

- o No additional areas which will require remediation were identified during Phase II that were not already identified during Phase I. During Phase II sampling, PCBs were identified in surface soils from Area B at levels in excess of the action level of 50 ppm. These samples, however, were from an area where remediation was already recommended based on visible oil staining.

- o No TPH, TOG or PCBs were detected in any of the groundwater monitoring wells during Phase II sampling. Low levels of these constituents were detected during Phase I sampling, conducted on May 26, 1989.

Based on the Phase I and II results, the following remediation will be conducted:

- o Soil

  Surface and near surface soils that are visibly stained with oil, contain PCBs greater than 50 ppm, or contain TOG greater than 1000 ppm will be excavated and removed from the property. Three areas on the property were identified that meet these criteria. The areas are shown on Figure 5-1 of the Phase II report. The level of 1000 ppm TOG was selected based on the evidence that contamination is confined to surface and near surface locations, groundwater is not being impacted by the contamination, the groundwater is unusable in the area of the property, and the future use of the property will be industrial.

o Groundwater

The lack of PCBs, TPH, and TOG in the groundwater samples collected during Phase II, and the low yields of wells at the property indicate that groundwater remediation is not warranted. To complete groundwater monitoring for a full twelve month cycle, two additional sampling episodes will be conducted: March 1990 and June 1990. Unless PCB levels detected during these samplings exceed the EPA maximum contaminant level for drinking water of 1 ppb, sampling will not be conducted after June 1990. Results of each sampling episode will be supplied to both Alameda County Health and the Regional Board.

SPTCo believes that the remediation described above adequately addresses the environmental conditions at this property. As you are aware, both SPTCo and the potential purchaser of the property are anxious to go forward with the remediation. Please direct any comments or questions regarding this issue to John Moe of my staff at 541-2557.

Very truly yours,

Mark E. Ransom
Environmental Manager

cc: Hossain Kazemi, Regional Water Quality Control Board
Jay Hollander
J.F. Spisak
D.W. Long
R.E. Patterson

jcm

ENVIRONMENTAL ASSESSMENT
PHASE II CHARACTERIZATION RESULTS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
744 HIGH STREET
OAKLAND, CALIFORNIA

January 26, 1990

Prepared for:

SOUTHERN PACIFIC TRANSPORTATION COMPANY
One Market Plaza
San Francisco, California 94105

ecology and environment, inc.
160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811
International Specialists in the Environment

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1. INTRODUCTION

This report presents the results of Phase II characterization activities for the environmental assessment of the Southern Pacific Transportation Company's (SPTCo.'s). property located at 744 High Street in Oakland, California (see Figure 1-1). Phase II sampling activities were conducted by Ecology and Environment, Inc., (E & E) between November 21, 1989, and December 19, 1989. The objectives of Phase II activities were to further delineate the extent of soil contamination identified in Phase I that might require remediation, and to further assess the extent of polychlorinated biphenyls (PCBs) in groundwater. To accomplish these goals, E & E installed and sampled three additional groundwater monitoring wells and collected 38 discrete soil samples for PCB analysis; five discrete soil samples for total petroleum hydrocarbons (TPH), total oil and grease (TOG), and lead analysis; and one sample for volatile organic chemicals (VOCs), base-neutral-acid extractables (BNAs), and PCB analysis. The site layout is shown in Figure 1-2, with investigation areas A, B, and C identified.

Section 2 of this report presents the scope of work for Phase II investigations; the field activities and procedures are described in Section 3; investigation results are presented in Section 4; and conclusions and recommendations are presented in Section 5.

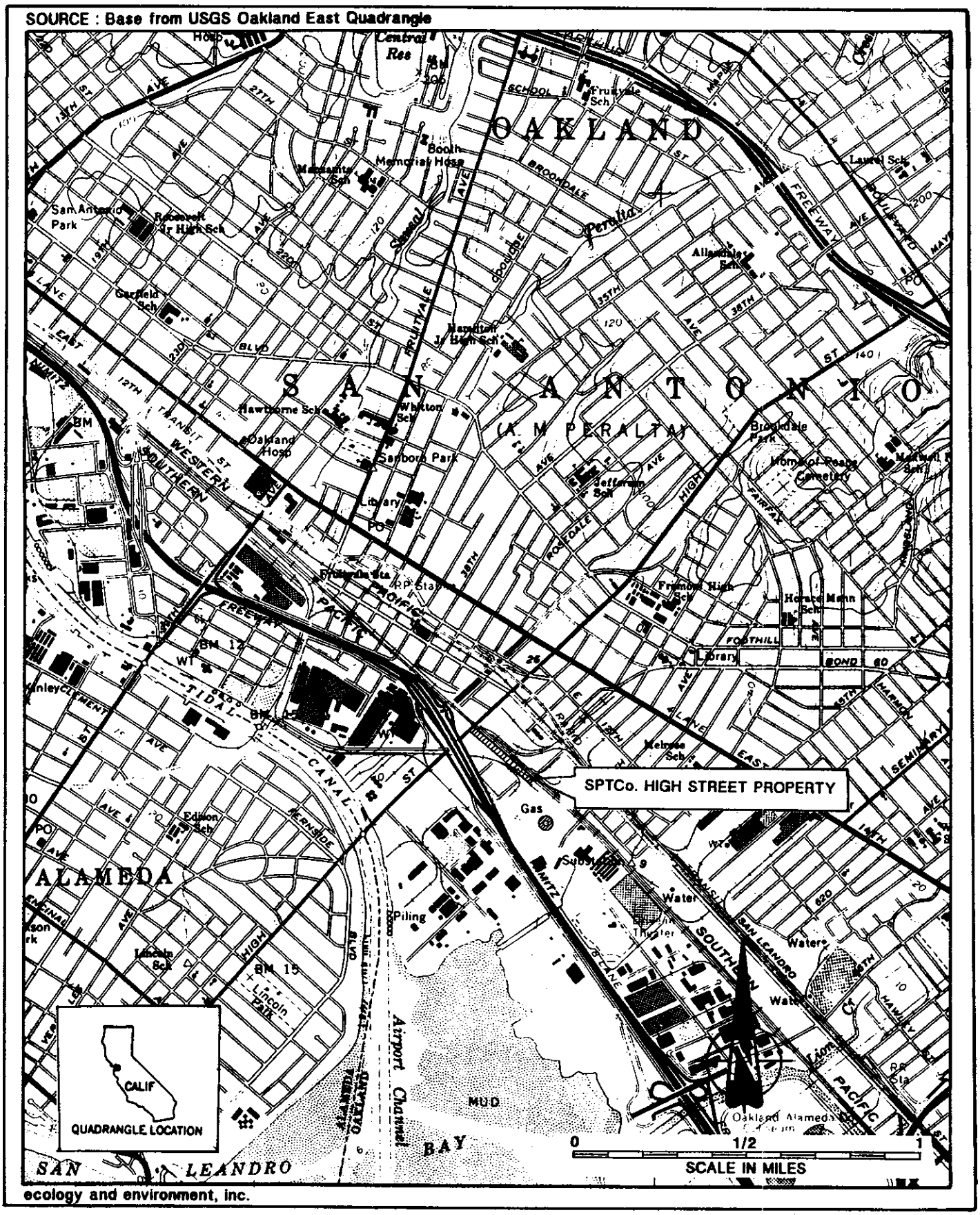


Figure 1-1 SOUTHERN PACIFIC TRANSPORTATION COMPANY
HIGH STREET PROPERTY LOCATION MAP

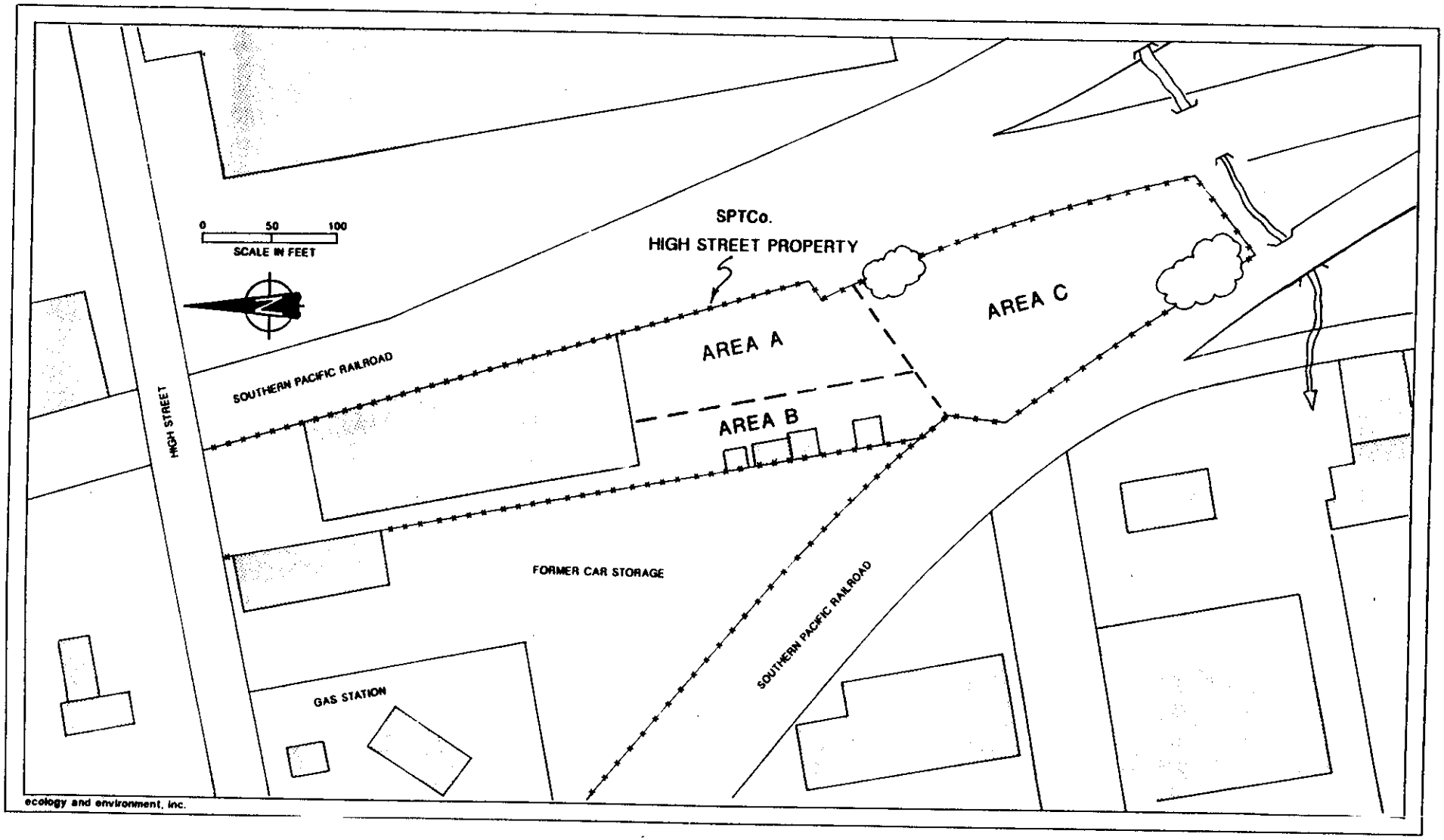


Figure 1-2 SPTCo. HIGH STREET PROPERTY
SITE LAYOUT

2. PHASE II SCOPE OF WORK

The Phase II scope of work was presented to the Alameda County Health Care Services Agency in a letter dated October 26, 1989. Consistent with the scope of work, field activities consisted of the following elements:

- In Area B, six surface soil samples were collected and analyzed for PCBs to delineate the extent of soils that might require remediation due to PCB levels above 50 ppm;
- In Area C, a total of 14 samples of clay that occurs immediately below the surface fill were collected and analyzed for PCBs to identify the extent of PCB levels in soils above 50 ppm;
- Near groundwater monitoring well C-2, four soil borings were drilled to depths of 4 feet, and samples were collected from depths of approximately 2 feet and 4 feet and analyzed for lead, TPH, and TOG to determine the extent of soils in this area that might require remediation;
- Three groundwater monitoring wells were installed so that the extent of PCBs in groundwater could be further delineated and the local groundwater flow direction could be more accurately determined;
- Groundwater samples were collected from the six on-site monitoring wells and analyzed for PCBs, TPH, and TOG. Water levels were also measured in each of the wells so that the local groundwater flow direction and gradient could be determined; and
- Four trenches were excavated surrounding soil sampling location C-12 in Area C, and a total of 15 soil samples were collected and analyzed for PCBs. The initial soil sample C-12 was obtained from clay from below the surface fill, and during the initial excavation, a naphthalene-like odor was noted emanating from the fill. Trenching and sampling was subsequently conducted to delineate the extent of soils containing the naphthalene-like odor. Fourteen samples were collected consisting of fill from the four trenches, and one sample was collected from fill from the original excavation for sample C-12. This sample was analyzed for VOCs, BNAs, and PCBs.

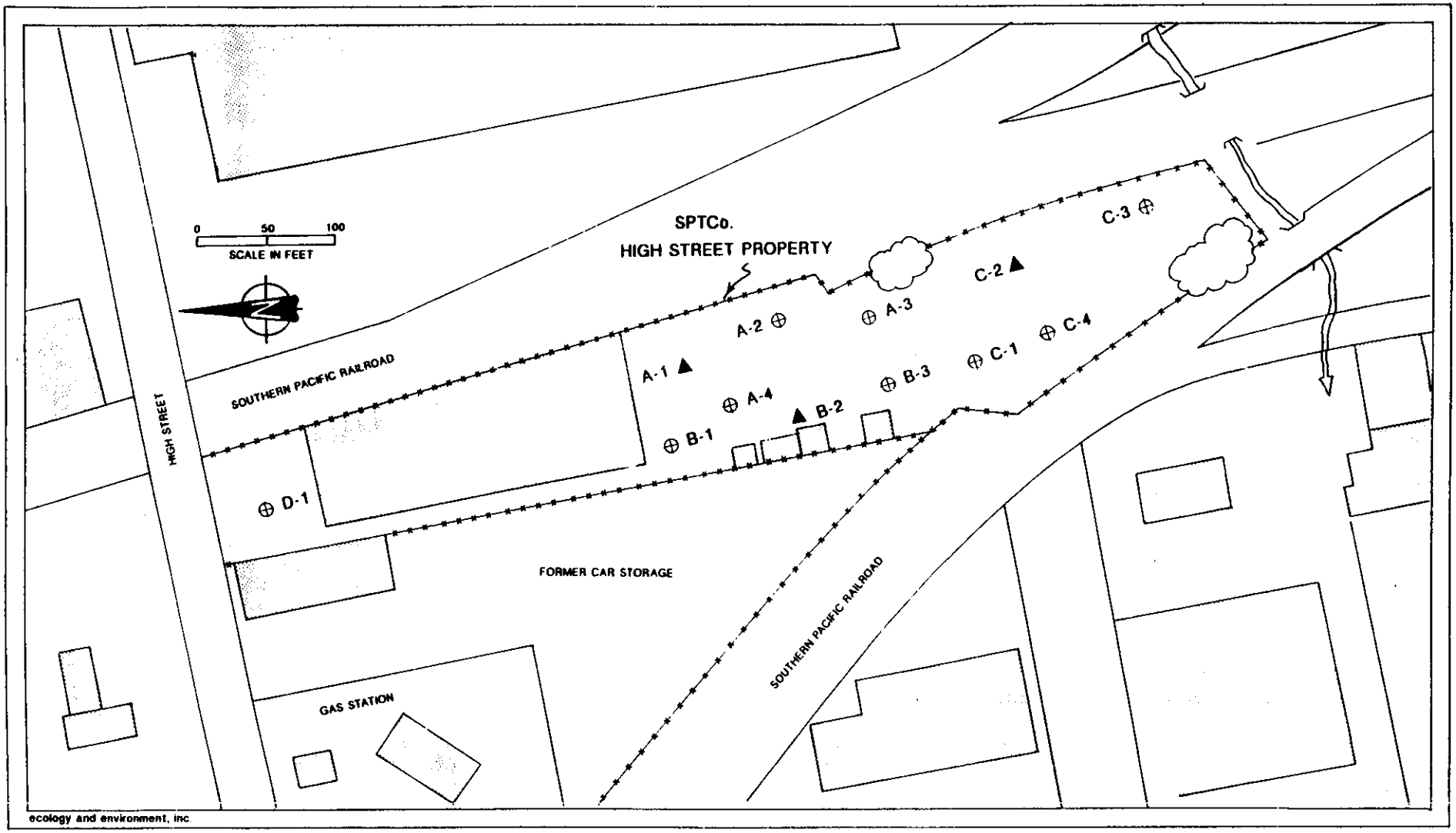
3. FIELD ACTIVITIES AND PROCEDURES

The scope of Phase II sampling activities was based on results of Phase I environmental assessment activities which were presented in E & E's report titled Environmental Assessment, Southern Pacific Transportation Company, 744 High Street, Oakland, California, dated September 5, 1989. The environmental assessment activities were implemented in response to a letter request by the Alameda County Health Care Services Agency (ACHCSA), dated March 2, 1989, for a Plan of Correction for the property. Phase I sampling locations are shown in Figure 3-1.

The scope of work for Phase II activities was presented to the ACHCSA in a letter dated October 26, 1989. Work included:

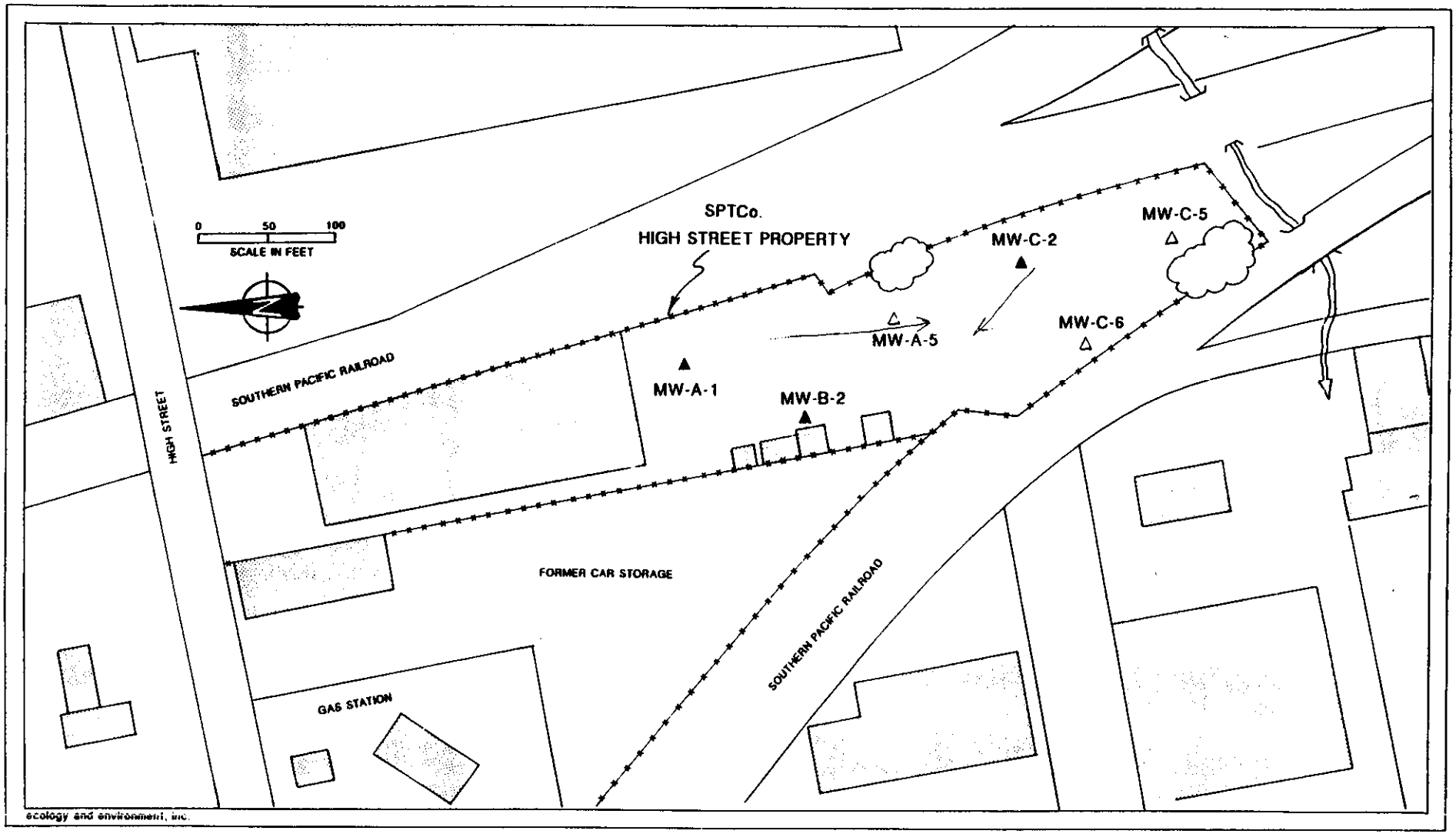
- Installing three groundwater monitoring wells (see Figure 3-2);
- Collecting groundwater samples from the six on-site monitoring wells (see Figure 3-2 for sample locations);
- Collecting 14 samples of clay from immediately below the surface fill throughout Area C (see Figure 3-3 for sample locations);
- Collecting eight surface soil samples (including two duplicates) from six locations in Area B (see Figure 3-3 for sample locations.
- Drilling and sampling four shallow boreholes surrounding Phase I boring C-2 (see Figure 3-4 for sample locations); and
- Excavating four trenches surrounding sample location C-12 and collecting 15 samples of fill material (see Figure 3-4 for trench locations).

Phase II field activities were conducted between November 21, 1989, and December 19, 1989.



⊕ SOIL BORING
▲ SOIL BORING AND MONITORING WELL

Figure 3-1 SPTCo. HIGH STREET
PHASE I SOIL BORING AND MONITORING WELL LOCATIONS



▲ PHASE I MONTORING WELL
△ PHASE II MONITORING WELL

Figure 3-2 SPTCo. HIGH STREET
PHASE II GROUNDWATER SAMPLING LOCATIONS

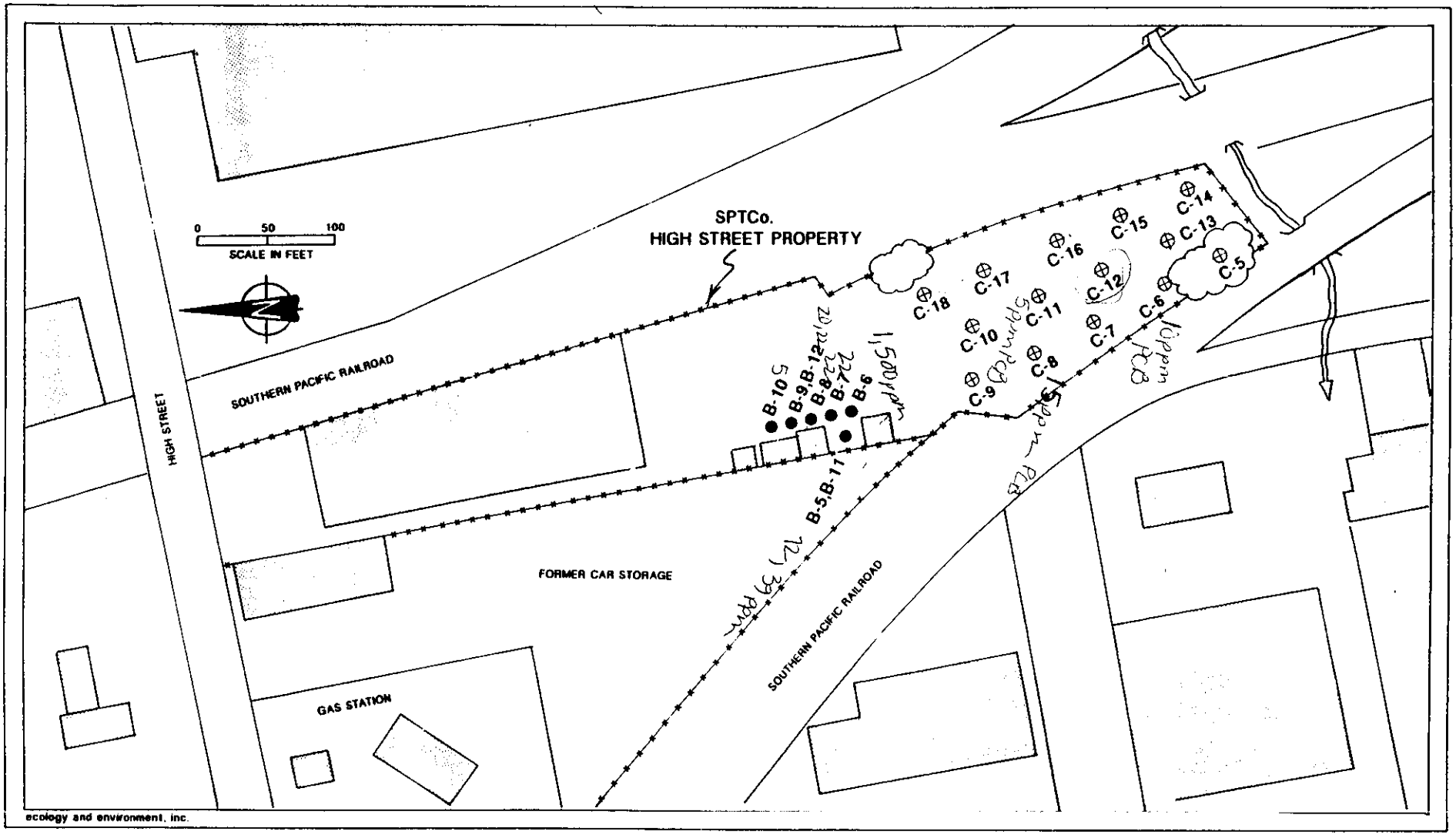
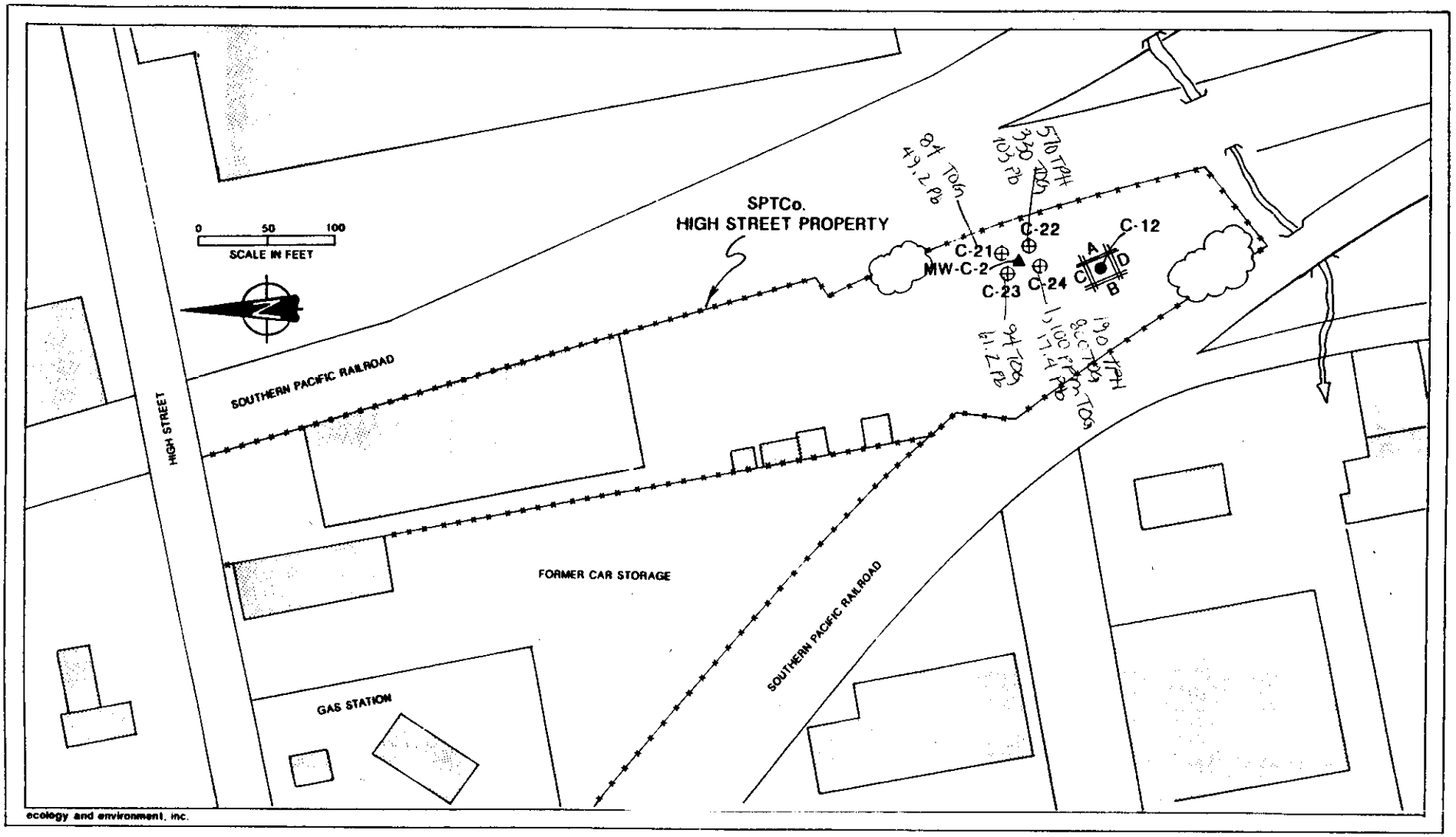


Figure 3-3 SPTCo. HIGH STREET PHASE II. NEAR-SURFACE SOIL SAMPLES IN AREA C AND SURFACE SOIL SAMPLES IN AREA B



▲ MONITORING WELL
⊕ SOIL BORING
═══ TRENCH NEAR SURFACE
● SOIL SAMPLING LOCATION

Figure 3-4 SPTCo. HIGH STREET
PHASE II SOIL BORING LOCATIONS NEAR MONITORING WELL C-2
AND TRENCH LOCATIONS NEAR SOIL SAMPLING LOCATION C-12

3.1 SOIL SAMPLING

Soil samples were collected from the surface, from four boreholes, from four trenches, and from the base of shallow excavations through surface fill material.

Surface soil samples were collected using a stainless steel trowel. Samples were collected from the top 3 inches of soil. Soil was placed directly in 8-ounce glass sample jars with Teflon-lined caps. The trowels were cleaned between each use by washing with a phosphate-free detergent, rinsing with tap water, rinsing with deionized water, and rinsing with hexane.

Area B

Surface soil samples were collected from six locations in Area B and analyzed for PCBs (see Figure 3-3 for sample locations).

Area C

Soil borings were drilled to depths of about 4 feet at four locations surrounding boring C-2 (see Figure 3-4). Borings were located at a radius of about 12 feet from boring C-2 and were situated to form a rectangular grid pattern. The borings were drilled using 7-inch outside diameter hollow-stem augers. Samples were collected using a split-tube sampler lined with three 6-inch-long brass sleeves. Drive samples were obtained from depths of 2 feet and 4 feet from each boring. The middle brass sleeve was retained for analysis, except for samples C-24A and C-24B, which were replicates and were obtained from the common ends of two adjacent middle and bottom brass sleeves.

At 14 locations in Area C, samples were collected of clay that occurs immediately below surface fill debris (see Figure 3-3 for sampling locations). Locations were selected to form a grid pattern with rows approximately 30 feet apart and samples on a row spaced at approximately 40-foot intervals. Samples were collected by either excavating a hole

Clay was beneath fill in all C borings

through the surface fill to the clay using a pick and shovel or excavating a hole through the fill using a small backhoe. Nine holes were excavated by hand and five were excavated with a backhoe. The fill ranged in thickness from about 2 feet to about 4 feet. Samples of clay were obtained from the bottom of the hole using a stainless steel trowel. The trowels were cleaned after each use according to the procedure described above. Clay was placed directly in 8-ounce glass sample jars.

During soil sampling in Area C, a naphthalene-like odor was detected in borehole C-12. To determine the cause of the odor and to determine the potential correlation to the naphthalene-like odor, a sample of surface fill material was obtained from borehole C-12 for analysis for PCBs, VOCs, and SVOCs, and four trenches were excavated to the base of the fill surrounding borehole C-12. The trenches were excavated to form a rectangle centered on borehole C-12. The dimensions of the rectangle were approximately 12 feet by 15 feet. Along each 15 foot trench, four samples were obtained of fill material from a depth of about 1 foot below ground surface at equally spaced distances. A total of 16 samples of fill were collected, including one replicate sample. Samples were collected using stainless steel trowels. The trowels were cleaned according to the procedure described above after each use. Trench sample locations are shown in Figure 3-5.

3.2 MONITORING WELL INSTALLATION

As part of Phase II activities, three groundwater monitoring wells were installed, bringing the total number of monitoring wells on the property to six. The three additional wells were installed to assess the extent of PCBs in groundwater at the property and to further determine the local groundwater flow direction. Groundwater monitoring well locations are shown in Figure 3-2.

Groundwater monitoring wells were installed in 7-inch-diameter boreholes drilled using hollow stem augers. Monitoring well construction details are presented in Table 3-1 and a typical monitoring well construction

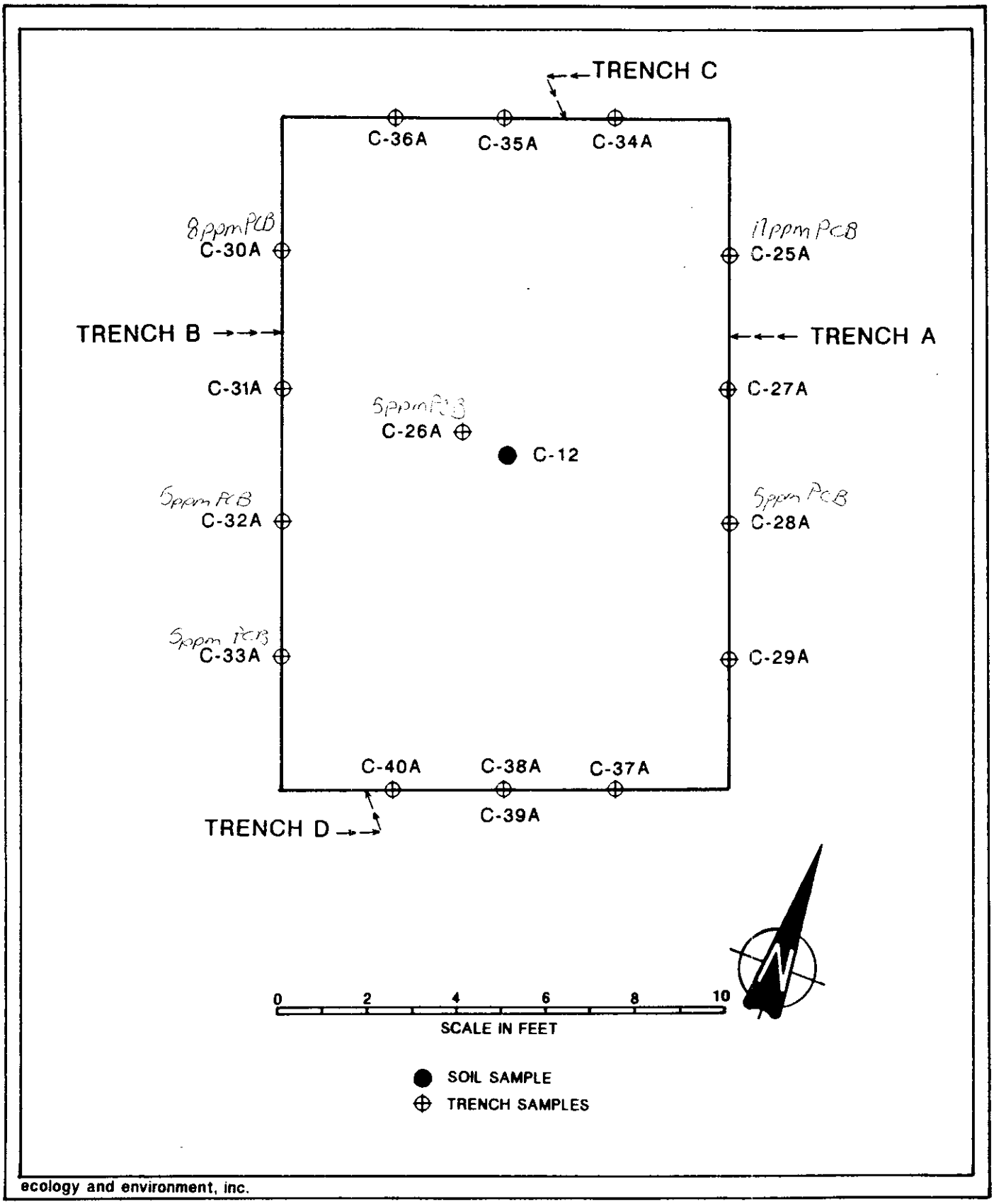


Figure 3-5 SPTCo. HIGH STREET
TRENCH SAMPLE LOCATIONS NEAR
SOIL SAMPLE LOCATION C-12

diagram is presented in Figure 3-6. Lithologic logs of individual wells showing well construction are presented in Appendix A. Monitoring wells were completed with 2-inch inside diameter, schedule 40 PVC casing and screen. Wells typically were about 25 feet deep and were screened for the bottom 15 feet with 0.020-inch factory manufactured slotted screen. Wells were equipped with bottom caps and were completed flush to the ground surface with the top of the PVC casing enclosed in a steel security casing. A filter pack consisting of coarse sand was placed in the annular space opposite the screen section so as to extend about 1 foot above the top of the screen. A bentonite seal about 1.5 feet thick was placed on top of the filter pack using bentonite pellets, and the remainder of the annular space was fitted with a cement-bentonite grout.

Following installation, each monitoring well was developed by bailing. Water quality parameters measured during development are presented in Table 3-2. The yields of the three monitoring wells were low and each well was bailed dry. Monitoring well A-5 was bailed dry after 7 gallons had been removed, monitoring well C-5 was bailed dry after 8 gallons had been removed, and monitoring well C-6 was bailed dry after 1 gallon had been removed. The recovery in monitoring well C-6 was too slow for the well to be adequately developed.

3.3 GROUNDWATER SAMPLING

Following development, groundwater samples were collected from the six monitoring wells on the property. Samples were collected on December 4, 1989. The sampling event consisted of initially measuring the water levels in all of the monitoring wells, then purging at least three wetted casing volumes of groundwater. A total of 5 gallons was purged from both monitoring wells A-5 and C-5. Due to its very slow recovery rate, monitoring well C-6 was not purged prior to sampling. Groundwater was evacuated and samples were collected with a Teflon bottom-loading bailer.

Table 3-1

PHASE II MONITORING WELL COMPLETION DETAILS

Well Number	Borehole Depth (feet)	Borehole[1] Diameter (inches)	Casing Depth (feet)	Screen Length (feet)	Top of Filter Pack (feet below ground surface)	Top of Bentonite Seal (feet below ground surface)
A-5	26	6	25.5	10.5 to 25.5	7	4
C-5	21	10 (0-15 feet) 6 (15-21 feet)	21	10 to 20	8	6.5
C-6	26.5	6	25	10 to 25	9	7.5

1. 10-inch diameter borehole drilled with hollow-stem auger to 15 foot depth; 6-inch-diameter borehole drilled with solid-stem auger below 15 foot depth.

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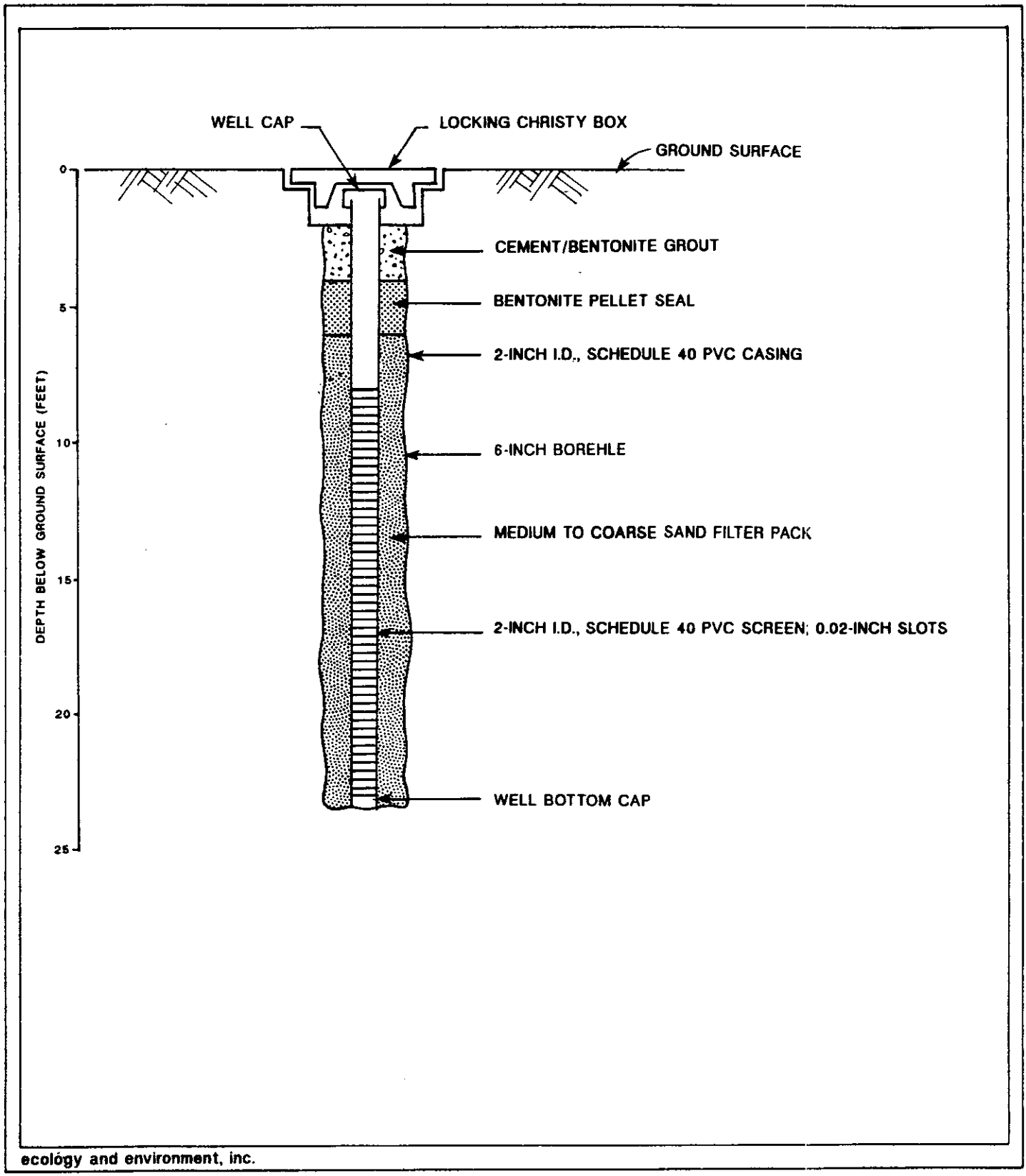


Figure 3-6 TYPICAL PHASE II MONITORING WELL CONSTRUCTION DIAGRAM

Table 3-2

WATER QUALITY PARAMETERS MEASURED DURING DEVELOPMENT AND SAMPLING

Well Number	Event	Date	Time	Depth to Water (feet)	Gallons Evacuated	Temp (°C)	EC (umhos/cm)	pH	Comments
A-5	Development	11/30/89	1110	11.75	--	--	--	--	start bailing
			1134	--	5	--	--	--	brown, turbid, not too silty
			1141	--	7	--	--	--	well bailed dry, water is brown, turbid
			1348	12	--	--	--	--	start bailing
			1400	--	5	--	--	--	well bailed dry
			1550	--	--	--	--	--	start bailing
			1606	--	5	--	--	--	slightly turbid, well bailed dry
			1640	--	--	--	--	--	start bailing
			1650	--	2.5	--	--	--	slightly turbid, well bailed dry
	Sampling	12/4/89	1120	11.29	--	18	1120	--	start bailing, clear
			1135		5	18.5	1150	--	slightly turbid
C-5	Development	11/30/89	1043	10.54	--	--	--	--	start bailing
			1052	--	5	--	--	--	brown, turbid, silty
			1101	--	8	--	--	--	well bailed dry
			1325	10.93	--	--	--	--	start bailing again
			1333	--	5	--	--	--	brown, turbid
			1337	--	7	--	--	--	well bailed dry
			1524	--	--	--	--	--	start bailing
			1539	--	5	--	--	--	very turbid

m/spphaseii/t3-2

Table 3-2 (Cont.)

Well Number	Event	Date	Time	Depth to Water (feet)	Gallons Evacuated	Temp (°C)	EC (umhos/ cm)	pH	Comments
C-5 (Cont.)			1547	--	7	--	--	--	well bailed dry, very turbid
			1629	--	--	--	--	--	start bailing
			1638	--	4	--	--	--	well bailed dry, turbid
	Sampling	12/4/89	1138	10.13	--	--	--	--	
			1145	--	--	17	910	--	begin bailing
			1200	--	5	17	905	--	stop bailing
C-6	Development	11/30/89	1015	>12	--	--	--	--	begin bailing
			1020	--	2	--	--	--	well bailed dry
			1315	--	--	--	--	--	begin bailing
			1320	--	1	--	--	--	well bailed dry
	Sampling	12/4/89	1136	16	--	--	--	--	
A-2	Sampling	12/4/89	0935	7.50	--	19	850	--	
			1005	--	5	18	850		turbid, brown
B-2	Sampling	12/4/89	1000	7.22	--	--	--	--	
			1015	--	--	--	--	--	begin bailing
			1020	--	--	18	750	--	
			1032	--	5	18	750	--	turbid, yellow brown
C-2	Sampling	12/4/89	1124	13.50	--	--	--	--	
			1200	--	--	18.5	870	--	start bailing
			1204	--	3	18	875	--	end bailing

m/spphaseii/t3-2

Following purging, the wells were allowed to recover to within 90 percent of the original water level prior to sampling. Samples were obtained using a Teflon bailer and groundwater was transferred directly to the appropriate sample container.

Samples were stored on ice and shipped to E & E's Analytical Services Center (ASC) the same day as they were collected. Samples were packaged and shipped according to standard United States Environmental Protection Agency's chain-of-custody protocol. Groundwater samples were analyzed for PCBs, TPH, and TOG.

3.4 WELL ELEVATION AND LOCATION SURVEY

An accurate determination of the well elevation is necessary so that water level measurements in the wells can be compared. The locations and elevations of the three Phase II groundwater monitoring wells were determined on December 29, 1989 by a surveyor licensed by the State of California. Elevations were determined to an accuracy of 0.01 feet; locations were determined to the nearest 0.1 foot.

4. RESULTS

4.1 GROUNDWATER

Groundwater samples were collected from the six on-site monitoring wells on December 4, 1989; samples were analyzed for PCBs according to EPA Method 608, TPH according to EPA Method 418, and TOG according to EPA Method 413. In conjunction with the sampling, water level elevations were measured in each well so that the local groundwater flow direction could be assessed.

Groundwater level elevations measured in the monitoring wells at the SPTCo. High Street property between late May 1989 and December 14, 1989, are presented in Table 4-1. Groundwater level elevations measured on December 4, 1989, ranged from 8.07 feet above mean sea level (MSL) in monitoring well A-1 to 2.24 feet below MSL in monitoring well C-6. The groundwater level elevations suggest that flow beneath the property may be to the south in the northern portion of the property (north of monitoring wells C-2 and C-6) and to the northwest in the southern portion of the property (south of monitoring wells C-2 and C-6).

The large difference in water levels across the property (approximately 10 feet over a distance of only about 300 feet), however, suggests that the wells may not all be screened in the same water-bearing zone, and the stratigraphy observed beneath the property supports this conclusion. The stratigraphy throughout most of the property is characterized by a near-surface layer of clay that is approximately 5 to 8 feet thick, which is underlain by a layer of clayey gravel approximately 4 to 10 feet thick, which in turn is underlain by a lower layer of clay. The lower clay was not penetrated in any of the boreholes. The stratigraphy described above was observed in all of the boreholes except C-3, C-5, and C-6, which are located in the extreme southern and western portions of the property. In borehole C-6, the strata consisted entirely of silts and clays; no sandy or gravelly strata was observed. In boreholes

Table 4-1

SP HIGH STREET GROUNDWATER LEVEL ELEVATIONS

(Referenced to Mean Sea Level)

Monitoring Well	May 26, 1989	July 28, 1989	November 22, 1989	December 4, 1989
A-1	8.47	7.27	7.39	8.07
A-5	--	--	--	3.05
B-2	8.00	6.36	6.23	7.15
C-2	4.06	0.58	-0.28	1.80
C-5	--	--	--	3.47
C-6	--	--	--	-2.24

C-3 and C-6, gravelly strata was not observed; however, a very fine grained sand strata was encountered at a depth of 8 feet in borehole C-3, and medium-grained sand strata was encountered at a depth of 7 feet in borehole C-5. Whether or not the clayey gravel strata grades laterally into these finer grained sandy strata in C-3 and C-5 is undetermined.

In monitoring wells A-1 and B-2, groundwater appears to be derived from the clayey gravel strata. In monitoring wells A-5 and C-2, groundwater appears to be derived from silty and clayey strata below the clayey gravel. Monitoring well C-5 draws water from the medium sand layer, which may be laterally connected to the clayey gravel, and groundwater in monitoring well C-6 appears to originate in silty and clayey strata at a depth of between 16 and 25 feet.

How did they determine this? looking at boring logs

Also question their screening

Groundwater samples collected on December 4, 1989 were analyzed for PCBs, TPH, and TOG. Results are presented in Table 4-2. None of the constituents analyzed for were detected in any of the samples. This contrasts with the earlier samplings on May 26, 1989 and July 28, 1989 when PCBs at 1 ppb or less were detected in well C-2, TOG was detected at less than 3 ppm in each of the three Phase I wells, and TPH was detected at less than 2 ppm in wells A-1 and B-2.

The analytical results indicate that PCBs, TPH, and TOG in groundwater beneath the property are intermittent and that PCBs are also localized. Because the groundwater yields from the monitoring wells are very low and because the clayey nature of the shallow water-bearing zone inhibits the flow of groundwater at the SPTCo. High Street property, shallow groundwater cannot be developed at usable rates. **The localized, intermittent, and low levels of PCBs, TPH, and TOG in groundwater are not considered to be environmentally significant.**

What happens to the PCBs that occasionally occur?

Table 4-2

PHASE II GROUNDWATER RESULTS

(December 4, 1989)

Monitoring Well	PCBs[1] (ppb)	TPH[2] (ppm)	TOG[3] (ppm)
A-1	ND	ND	ND
A-5	ND	ND	ND
B-2	ND	ND	ND
C-2	ND	ND	ND
C-5	ND	ND	ND
C-6	ND	ND	ND

1. PCB detection level = 0.5 ppb
2. TPH detection level = 1 ppm
3. TOG detection level = 1 ppm

RWQCB detection limits
TPH 5rd = 50 ppb
105 ppm
TOG = 5ppm
BTEX 0.5 ppb

4.2 SOIL

During Phase II activities, four types of soil samples were collected:

- In Area B, six samples of surface soils were collected for PCB analysis (see Figure 3-3);
- In Area C, 14 samples were collected of clay that underlies fill material and analyzed for PCBs (see Figure 3-3);
- Four borings were drilled and sampled and analyzed for TPH, TOG, and lead surrounding Phase I boring C-2 (see Figure 3-4); and
- Four trenches were excavated and 16 samples of fill material were collected surrounding Phase II soil sample location C-12 (see Figure 3-4).

4.2.1 Analytical Methodology

Phase II soil analyses included the following constituents: PCBs, TPH, TOG, and lead. TPH was analyzed for according to EPA Method 418; TOG was analyzed for according to EPA Method 9070; and lead was analyzed for according to EPA Method 6010.

PCB was analyzed according to a screening procedure, which consisted of extracting approximately 2 grams of soil with 10 milliliters of hexane and 1 milliliter of methanol. The sample was shaken for one minute and separated by centrifugation. The extract was cleaned with 1 milliliter of sulfuric acid, then analyzed by a gas chromatrograph.

4.2.2 Area B

PCBs were detected at each of the six sample locations in Area B, with total concentrations of Aroclors ranging from trace levels (detectable but not quantifiable) to 1,500 ppm. Area B soil sample PCB results are presented in Table 4-3. Aroclors 1242, 1254, and 1260 were identified, although Aroclors 1242 and 1254 were the most widespread. Concentrations that exceeded the action level of 50 ppm were detected in samples from locations B-5 and B-6. At location B-6, Aroclor 1254 was detected

Table 4-3

AREA B SOIL SAMPLE PCB RESULTS (ppm)

Sample Number	1242	1254	1260	Total PCBs[1]
B-5[2]	26	46	--	72
B-11[2]	20	19	--	39
B-6[3]	--	1,500	--	1,500
B-7	10	12	--	22
B-8	5.2	7.3	9.5	22
B-9[4]	10	--	10	20
B-12[4]	11	11	--	22
B-10	<5	--	<5	5

1. Aroclors 1221, 1232, 1248, and 1016 were analyzed for but were not detected in any sample.

2. Samples B-5 and B-11 are replicates.

3. The detection level of B-6 is 50 ppm; the detection level for other samples is 5 ppm.

4. Samples B-9 and B-12 are replicates.

m/spphaseii/t4-3

at 1,500 ppm. At location B-5, a replicate was collected and one analysis revealed total Aroclors at 72 ppm, while the other analysis revealed total Aroclors at 39 ppm. Aroclors 1242 and 1254 were detected in both replicate analyses.

4.2.3 Phase I Boring Location C-2

Phase I results revealed that lead, TPH, and TOG were present in the top 5 feet at boring C-2 at levels that may require remediation. To further determine the extent and concentrations of these constituents surrounding boring C-2, four borings were drilled in a rectangular pattern centered on boring C-2 with borings at a distance of about 12 feet from boring C-2 (see Figure 3-1). Samples were collected from depths of 2 and 4 feet. Samples from 2 feet were analyzed for lead, TPH, and TOG; samples from 4 feet were stored pending analytical results of the shallower samples. Results are presented in Table 4-4.

The highest concentration of lead detected was 103 ppm in sample C-22A from a depth of 2 feet.

TPH levels at 2 feet ranged from trace amounts in samples C-21A and C-23A to 570 ppm in sample C-22A. A replicate was collected at a depth of 2 feet from boring C-24 (consisting of samples C-24A and C-24B). In C-24A, TPH was identified but could not be quantified; in sample C-24B, TPH was detected at 190 ppm. This discrepancy in the replicate results is most likely due to sample heterogeneity as a result of the clayey nature of the soil and the difficulty in thoroughly mixing the samples.

TOG at a level above 1,000 ppm was identified in sample C-24A from a depth of 2 feet in boring C-24 (1,100 ppm) but below 1,000 ppm in a replicate from that depth (860 ppm in C-24B). TOG at levels that may require remediation were not detected in the other samples from a depth of 2 feet surrounding Phase I boring C-2. Because TOG was detected in one of two samples from a depth of 2 feet in boring C-24 at a level greater than 1,000 ppm, the sample collected at a depth of 4 feet (C-24C) from this boring was also analyzed for TOG. Results are

Table 4-4

SOIL SAMPLE RESULTS - BORINGS INSTALLED NEAR PHASE I BORING LOCATION C-2 (ppm)

Sample Number	TPH[1]	TOG[2]	Lead
C-21A[3]	--	84	49.2
C-22A	570	330	103
C-23A	--	94	61.2
C-24A[4]	9.6	[illegible]	17.4
C-24B[4]	190	860	20.3
C-24C[5]	30[6]	45[7]	--

1. TPH = Total petroleum hydrocarbons. Detection level = 5 ppm.
2. TOG = Total oil and grease. Detection level = 5 ppm.
3. All samples presented on this table were obtained from a depth of two feet below ground surface.
4. Samples C-24A and C-24B are replicates.
5. Sample C-24C was not analyzed for lead.
6. Average of 4 analyses. Clayey soil prevented thoroughly mixing sample. TPH results ranged from <5 ppm to 69 ppm.
7. Average of 4 analyses. Clayey soil prevented thoroughly mixing sample. TOG results ranged from 15 ppm to 120 ppm.

presented in Table 4-4 and show that TOG at a depth of 4 feet is less than 100 ppm. The results for the Phase II sampling in the vicinity of Phase I boring C-2 indicate that soil in this area with TOG greater than 1,000 ppm is restricted both laterally and vertically.

4.2.4 Area C

Analytical results for soil samples collected in Area C from immediately below the fill are presented in Table 4-5. PCBs were detected in only four samples and the highest concentration detected was 11 ppm for Aroclor 1260 in sample C-8. Other Aroclors detected were 1242 and 1248. PCB concentrations were generally below the quantifiable detection level of 5 ppm. Quantifiable concentrations were reported only for Aroclor 1260 in C-6 at 5.9 ppm and in C-8 at 11 ppm. Total Aroclors did not exceed the Alameda County Health Care Services Agency (ACHCSA) action level of 50 ppm in any sample. The results indicate that PCBs are not widely distributed throughout Area C and that migration into the substrate does not appear to be significant.

4.2.5 Phase II Sample Location C-12

During sampling, a naphthalene-like odor was noted in the borehole from which soil sample C-12 was collected. To determine what was causing the odor, and to determine the extent of the affected soil, soil samples were subsequently collected from the C-12 sample location and from four trenches that were excavated into the fill in a rectangular pattern that was centered on the C-12 sample location. A total of 16 samples of fill were collected on December 19, 1989, at locations shown in Figure 3-5. Samples from the trenches were analyzed for PCBs; the sample from the C-12 location (C-26A) was analyzed for PCBs, VOCs, and BNAs. PCB analytical results are presented in Table 4-6 and VOC and BNA results are presented in Table 4-7.

Two Aroclors (1242 and 1260) were detected in several samples of fill obtained from the trenches surrounding sample location C-12. Aroclor 1260 was detected in 10 of the 16 fill samples, while Aroclor 1242 was

Table 4-5

AREA C SOIL SAMPLE PCB RESULTS (ppm)

Sample Number	1242	1248	1260	Total PCBs[1]
C-5	--	--	--	--
C-6	<5	--	5.9	10
C-7	--	--	<5	<5
C-8	<5	--	11	15
C-9	--	--	--	--
C-10	--	--	--	--
C-11	--	<5	<5	5
C-12	--	--	--	--
C-13	--	--	--	--
C-14	--	--	--	--
C-15	--	--	--	--
C-16	--	--	--	--
C-17	--	--	--	--
C-18	--	--	--	--

1. Aroclors 1254, 1221, 1232, and 1016 were analyzed for but were not detected in any sample.

Note: A dash indicates the compound was not detected above the detection level of 5 ppm.

Table 4-6

PHASE II TRENCHING NEAR SAMPLE LOCATION C-12 - PCB RESULTS (ppm)

Sample Number	1242	1254	1221	1232	1248	1260	1016	Approximate Total PCBs
C-25A	<5	--	--	--	--	17	--	17
C-26A	<5	--	--	--	--	<5	--	5
C-27A	--	--	--	--	--	--	--	--
C-28A	<5	--	--	--	--	<5	--	5
C-29A	--	--	--	--	--	--	--	--
C-30A	<5	--	--	--	--	7.8	--	8
C-31A	--	--	--	--	--	<5	--	<5
C-32A	<5	--	--	--	--	<5	--	5
C-33A	<5	--	--	--	--	<5	--	5
C-34A	--	--	--	--	--	--	--	--
C-35A	--	--	--	--	--	--	--	--
C-36A	--	--	--	--	--	<5	--	<5
C-37A	--	--	--	--	--	<5	--	<5
C-38A	--	--	--	--	--	--	--	--
C-39A	--	--	--	--	--	<5	--	--
C-40A	--	--	--	--	--	--	--	--

Note: A dash indicates the compound was not detected above the detection level of 5 ppm.

m/spphaseii/t4-6

Table 4-7

SAMPLE C-26A VOC AND BNA RESULTS (ppm)

Volatile Organic Chemical	Concentration (ppm)
methylene chloride	<5
acetone	<10
carbon disulfide	<5
chloroform	<5
Base-Neutral Acid Extractables	
pyrene	<330
bis(2-ethylhexyl)phthalate	3,200

Note: Concentrations presented as "less than" indicate that the compound was present below the measurable detection limit.

detected in six of the 16 fill samples. All of the concentrations of Aroclor 1242 were less than the detection level of 5 ppm. Only two of the concentrations of Aroclor 1260 exceeded the detection level; 17 ppm in sample C-25A and 7.8 ppm in sample C-30A. Total PCBs did not exceed the action level of 50 ppm in any of the samples of fill collected from the vicinity of sample location C-12.

Sample C-26A was obtained from fill material from the east side of the hole that was excavated when sample C-12 was collected. In addition to analysis for PCBs, C-26A was also analyzed for VOCs and BNAs to identify the cause of the naphthalene-like odor that was detected when sample C-12 was collected. When sample C-26A was collected, no naphthalene--like odor was present.

Analysis of C-26A for VOCs and BNAs revealed that no listed EPA hazardous substance VOCs or BNAs were present that were not due to laboratory contamination. The laboratory, however, did report that an unidentified heavy molecular weight, long-chain hydrocarbon was present. Then why did they call it bis(2-Ethylhexyl) phthalate did this come from laboratory analyses method?

Field observations near C-12 and sampling results reveal that the source of the naphthalene-like odor was very localized and not persistent. The data obtained indicate that no additional characterization or remediation in the vicinity of sample location C-12 is necessary.

4.2.6 EPA Method 8080 and PCB Screen Comparison

To assess the reliability of the PCB results obtained using the screening procedure described in Section 4.2.1, the two samples with the highest PCB levels (B-5 and B-6), as determined by the screening procedure, were also analyzed for PCBs according to EPA Method 8080. A comparison of the PCB screen results and EPA Method 8080 results are presented in Table 4-8. The results show that there is a very good comparison between the two analytical methods with percent differences of 24 and 38 (less than 50% is generally acceptable for soil precision.)

Table 4-8

COMPARISON OF PCB SCREEN RESULTS AND
PCB EPA METHOD 8080 RESULTS (ppm)

	Sample B-5	
Aroclor	Screen Result[1]	EPA Method 8080 Result[2]
1242	26	48
1254	46	44
1221	ND	ND
1232	ND	ND
1248	ND	ND
1260	ND	ND
1016	ND	ND

1. Detection Level = 5 ppm

2. Detection Level = 10 ppm

	Sample B-6	
Aroclor	Screen Result[3]	EPA Method 8080 Result[4]
1242	ND	ND
1254	1,500	2,200
1221	ND	ND
1232	ND	ND
1248	ND	ND
1260	ND	ND
1016	ND	ND

3. Detection Level = 50 ppm

4. Detection Level = 200 ppm

m/spphaseii/t4-8

The same PCBs were detected with each method and the concentrations detected were very similar. The results indicate that the PCB screen results are an accurate determination of the types and concentrations of PCBs in a sample for a 50 ppm action limit.

5. CONCLUSIONS AND RECOMMENDATIONS

Phase II characterization activities at the SPTCo. High Street property were designed to determine the occurrence and extent of PCBs, TPH, TOG, and lead in soils, and PCBs, TPH, and TOG in groundwater at levels that may require remediation. Phase II activities augment soil and groundwater results obtained during Phase I and also include areas of investigation that were requested by the Alameda County Health Care Services Agency following the completion of Phase I activities.

At the conclusion of Phase I, remediation of surface and near-surface soils that were visibly stained with oil was recommended, and the following Phase II characterization activities were proposed:

- Analyzing six surface soil samples for PCBs in Area B;
- Drilling and sampling four borings surrounding Phase I monitoring well C-2 for analysis of TPH, TOG, and lead;
- Analyzing 14 subsurface samples from Area C for PCBs;
- Installing three additional groundwater monitoring wells and collecting samples from all six monitoring wells for analysis for PCBs, TPH, and TOG; and
- Excavating four shallow trenches surrounding sample location C-12 and collecting 16 samples for PCB analysis.

5.1 CONCLUSIONS

5.1.1 Soils

No additional areas which may require remediation were identified during Phase II that were not already identified during Phase I. During Phase II sampling, PCBs were identified in surface soils from Area B at levels in excess of the PCB action level of 50 ppm. These samples, however, were from an area where remediation was already recommended based on visible oil staining.

Phase II sample results indicate that remediation is not needed in Area C for either PCBs TPH, TOG, or lead.

5.1.2 Groundwater

No PCBs, TPH, or TOG were detected in any of the 6 monitoring wells on the property during the sampling on December 4, 1989. Low levels of these constituents were detected during the previous sampling on May 26, 1989. Groundwater levels were generally lower in December 1989 than in May 1989 throughout the property and probably reflect seasonal variations due to changing recharge rates. The clayey nature of the shallow water-bearing zone beneath the property results in low well yields and flow rates and precludes groundwater from being obtained in usable quantities. As a result, the localized, intermittent, and low levels of PCBs that have been detected in shallow groundwater at the property are not judged to be environmentally significant.

5.2 RECOMMENDATIONS

With the exception of the soil in the vicinity of Phase II boring C-24, E & E recommends that the following soil be remediated at the SPTCo. High Street property:

- Surface and near-surface soils that are visibly stained with oil;
- Soils that contain PCBs at 50 ppm or greater; and
- Soils that contain TOG at 1,000 ppm or greater.

A sample and its replicate from a depth of 2 feet at boring C-24 revealed TOG at 1,000 ppm and 860 ppm, respectively. [redacted] The TOG detected at two feet appears to be restricted laterally and does not appear to be migrating vertically in concentrations that could impact groundwater. Therefore, remediation in this area does not appear to be warranted.

Three separate areas were identified where soil remediation is recommended. [redacted] shown on Figure 5-1 and correspond to areas where oil-stained soils occur on the surface. Soil remediation Area C covers the area where Phase II investigations detected PCBs at levels greater than 50 ppm. The three areas delineated in Figure 5-1 total approximately 1,980 square feet and, assuming a remediation depth of 1.5 feet and a cleanup level of 1,000 ppm TOG, the volume of the three areas totals approximately 110 cubic yards.

The lack of PCBs, TPH, and TOG in groundwater samples collected during Phase II and the low yields of wells at the property indicate that groundwater remediation is not warranted. Because PCBs were detected at 1 ppb in well C-2 during the initial sampling on May 26, 1989 and confirmed at less than 1 ppb during the subsequent sampling on July 28, 1989, ongoing quarterly groundwater monitoring should be conducted to assess the variability of PCBs in shallow groundwater beneath the property. To complete groundwater monitoring for the period of 1 year, two additional sampling episodes are proposed, with the first sampling in March 1990 and the second sampling in June 1990. Unless PCB levels detected during these samplings exceed the EPA maximum contaminant level for drinking water of 1 ppb, sampling will not be conducted after June 1990.

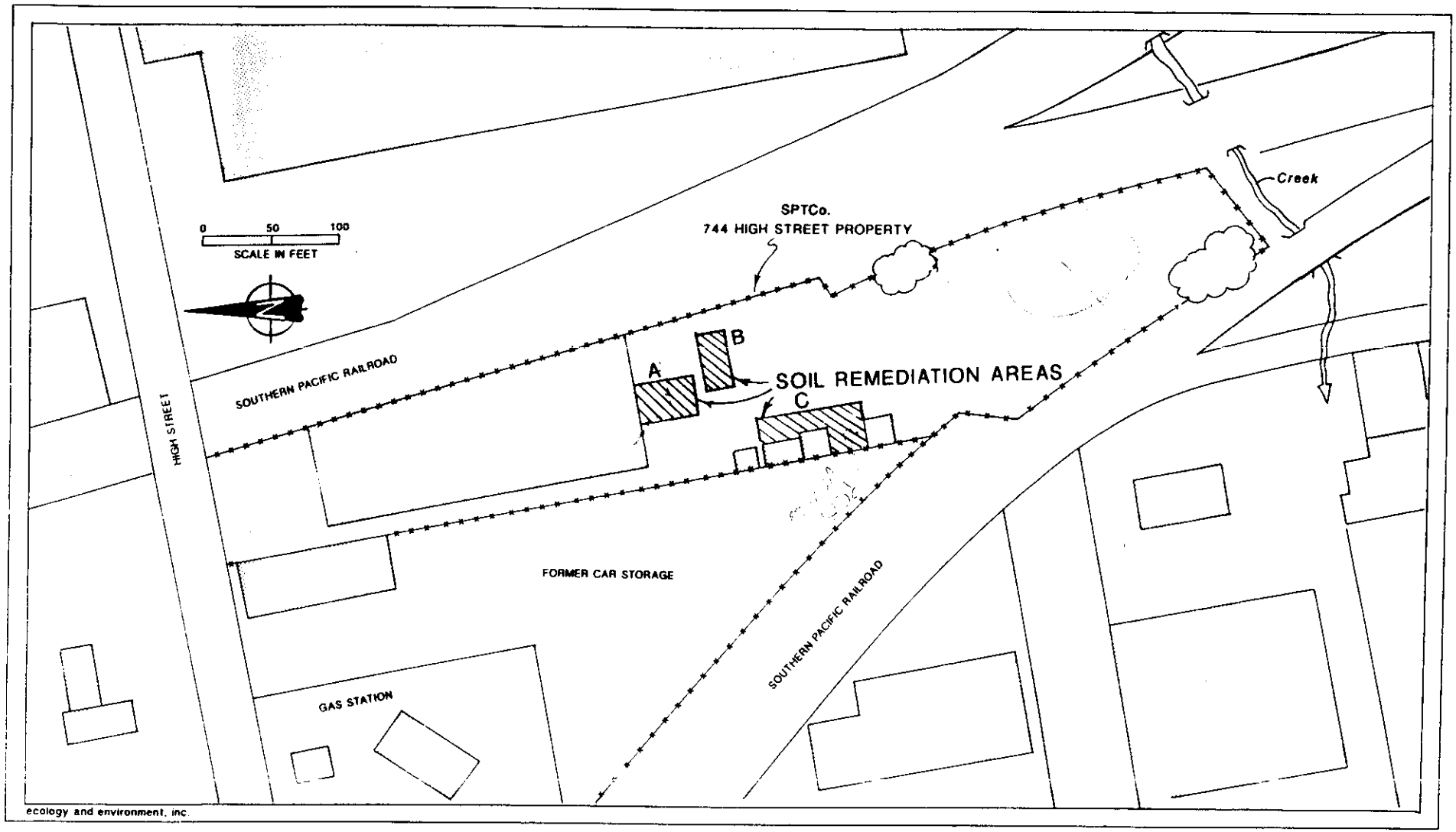


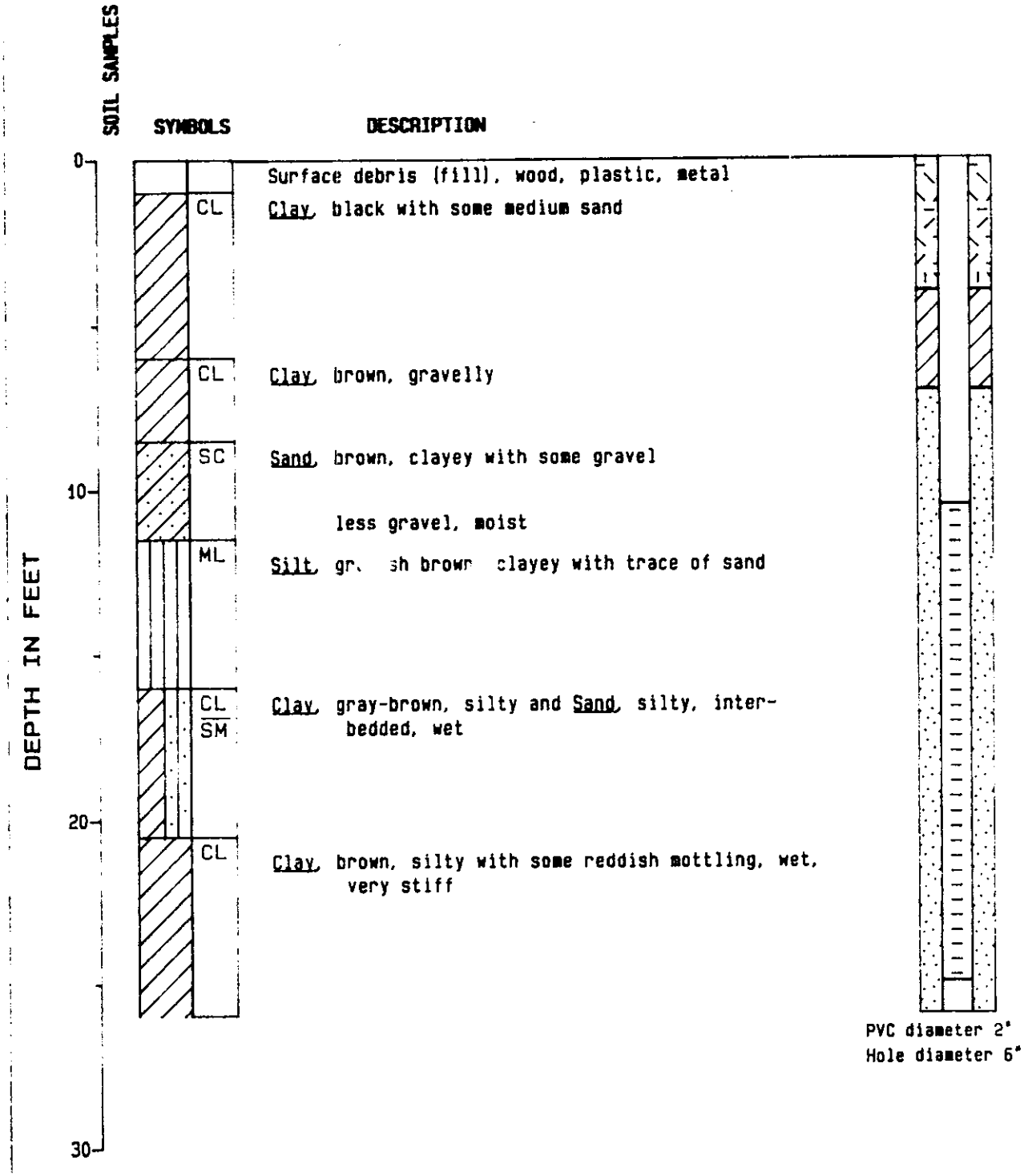
Figure 5-1 AREAS WHERE SOIL REMEDIATION IS RECOMMENDED

APPENDIX A

Soil Boring Lithologic Logs and
Monitoring Well Construction Diagrams

WELL A-5

DATE DRILLED: 11/22/89

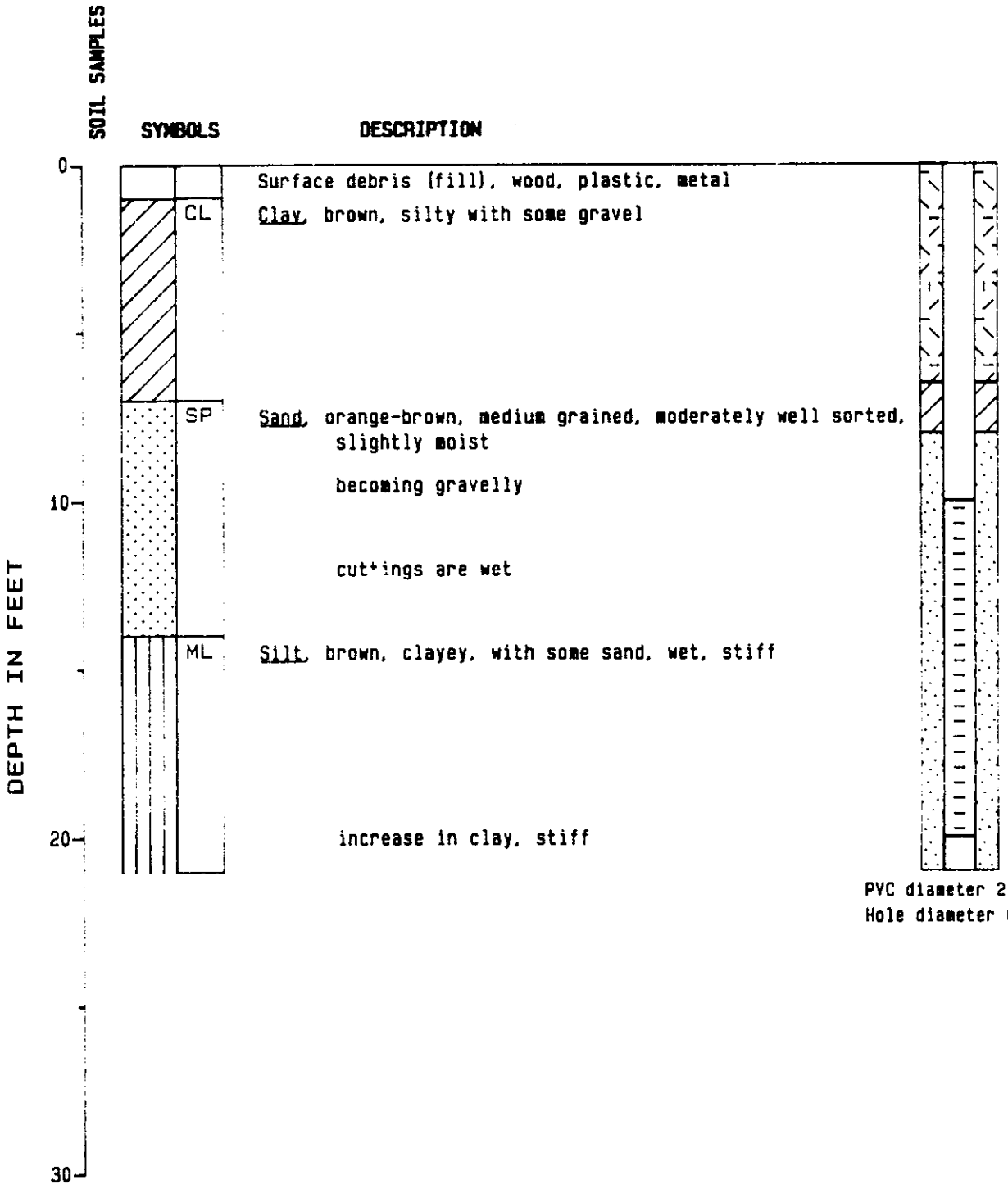


ecology and environment, inc.

SP-HIGH STREET
Oakland, California

WELL C-5

DATE DRILLED: 11/21/89

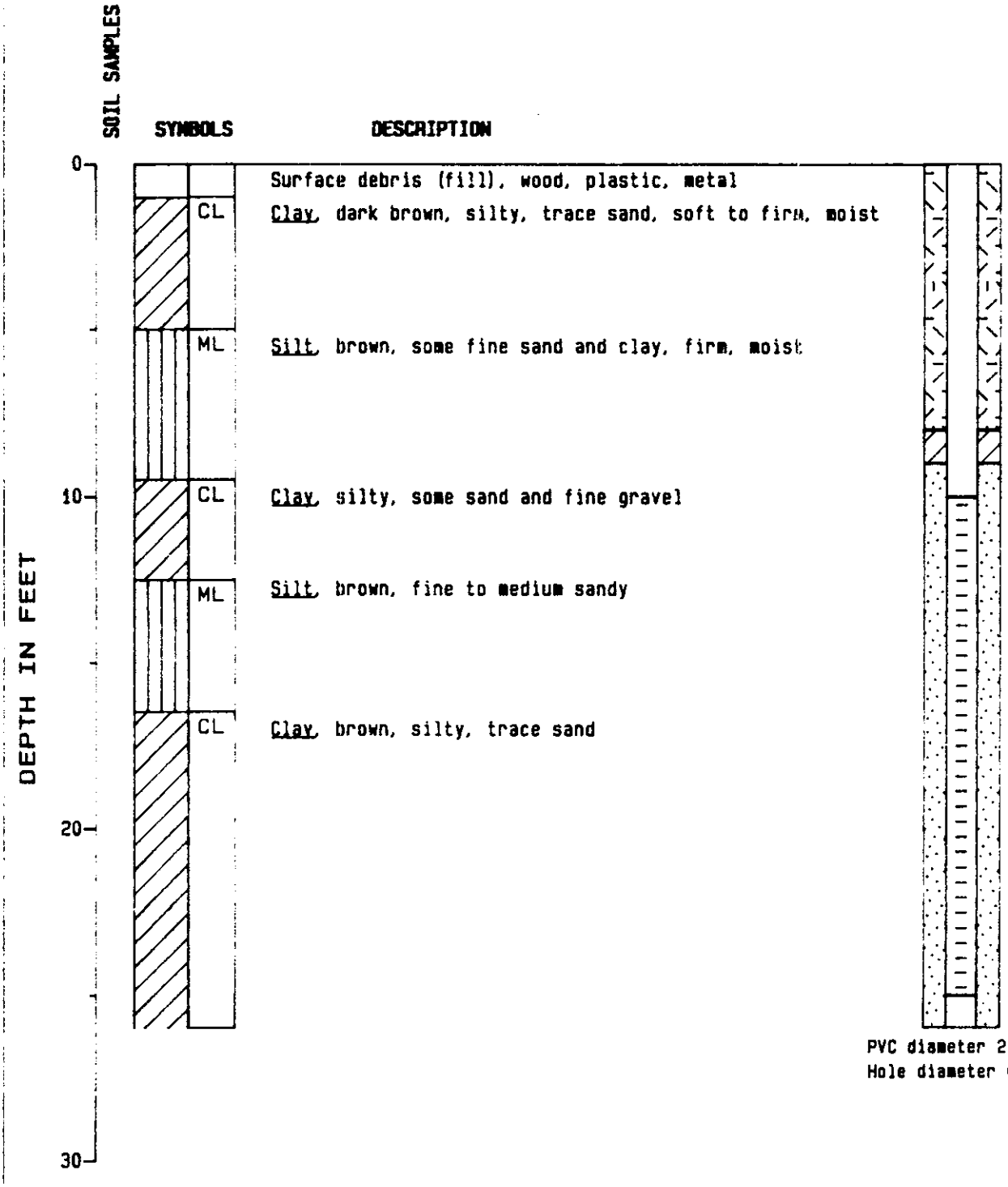


ecology and environment, inc.

SP-HIGH STREET
Oakland, California

WELL C-6

DATE DRILLED: 11/22/89



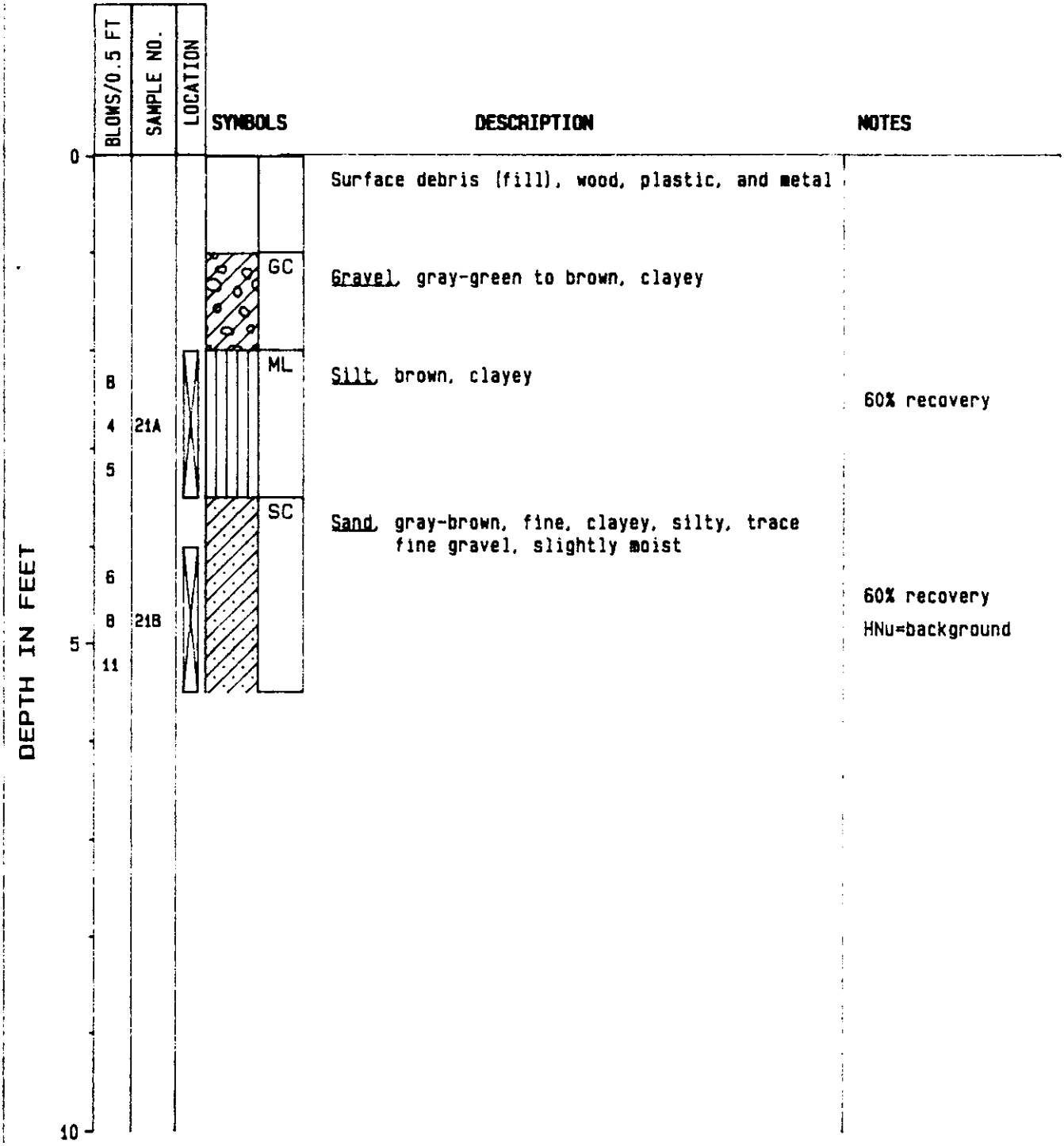
ecology and environment, inc.

SP-HIGH STREET
Oakland, California

BORING C-21

DATE DRILLED: 11/21/89

DRILL METHOD: Hollow Stem Auger
SAMPLING METHOD: Split Spoon



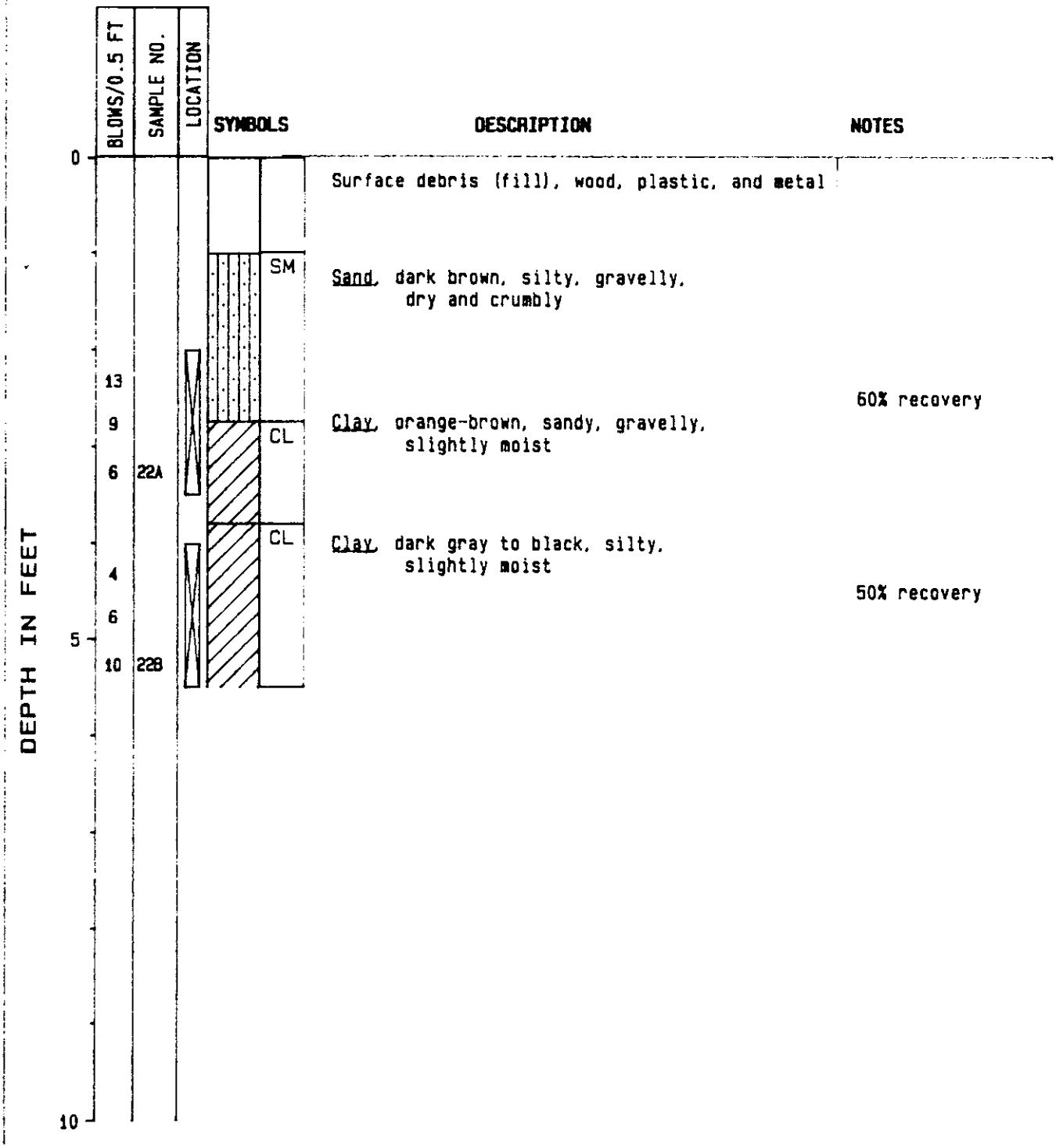
ecology and environment, inc.

SP--HIGH STREET
Oakland, California

BORING C-22

DATE DRILLED: 11/21/89

DRILL METHOD: Hollow Stem Auger
SAMPLING METHOD: Split Spoon



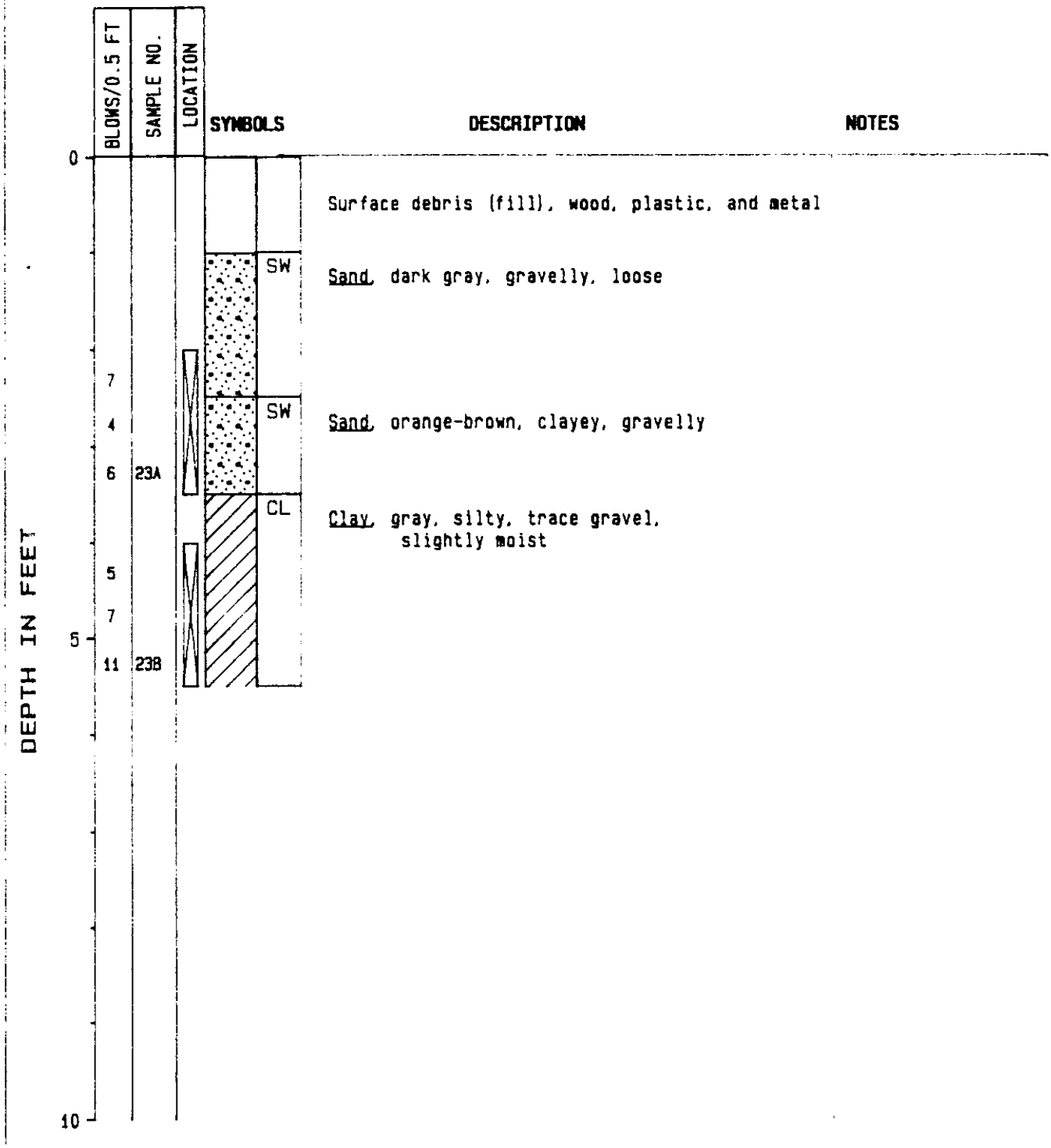
ecology and environment, inc.

SP-HIGH STREET
Oakland, California

BORING C-23

DATE DRILLED: 11/21/89

DRILL METHOD: Hollow Stem Auger
SAMPLING METHOD: Split Spoon



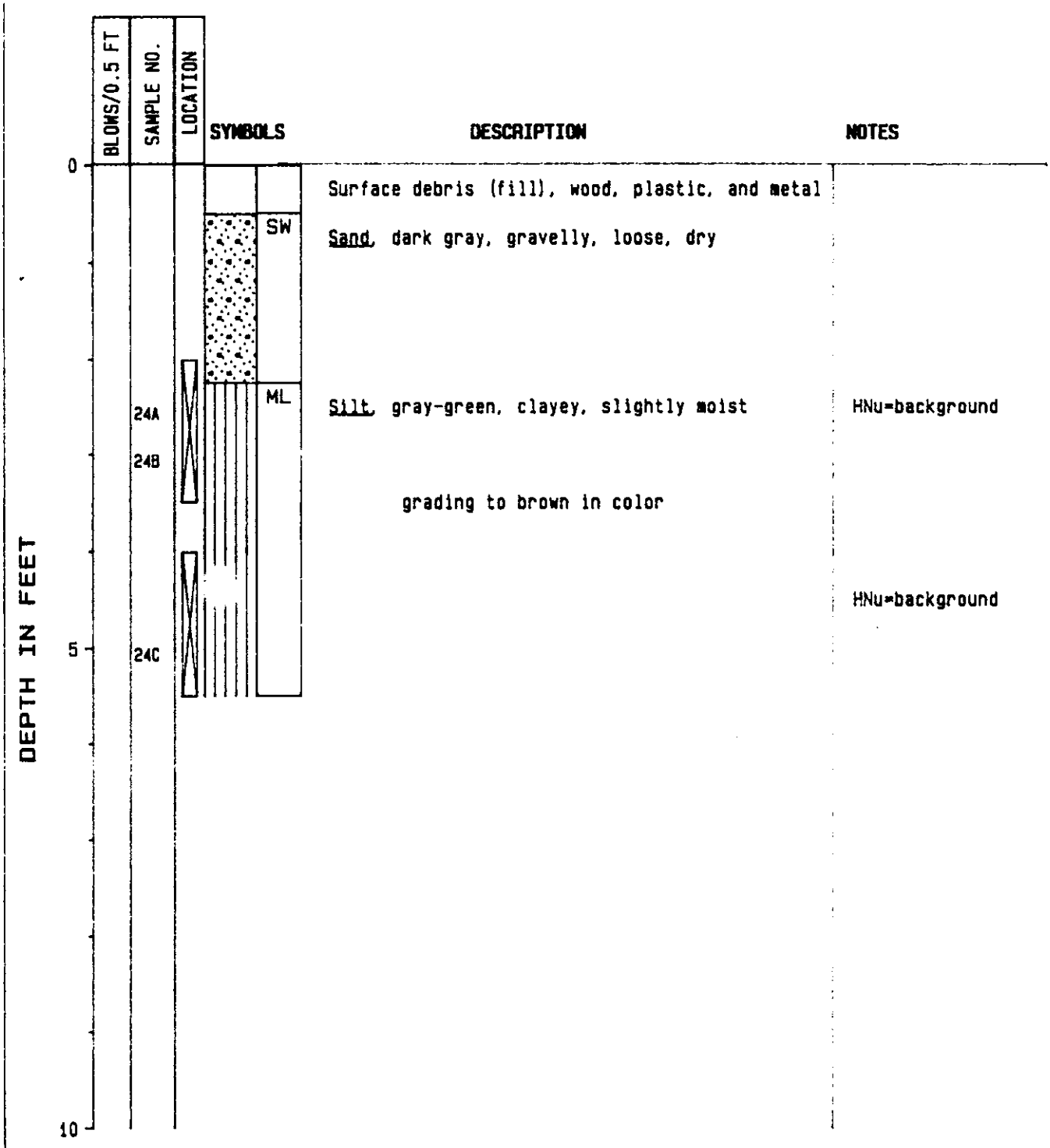
ecology and environment, inc.

SP-HIGH STREET
Oakland, California

BORING C-24

DATE DRILLED: 11/21/89

DRILL METHOD: Hollow Stem Auger
SAMPLING METHOD: Split Spoon



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SP-HIGH STREET
Oakland, California

APPENDIX B

ASC Laboratory Analytical Results

Laboratory reports are
currently being prepared and
will be forwarded to SPTCo.
when available.

ecology and environment, inc.
International Specialists in the Environment

LABORATORY REPORT

FOR
SOUTHERN PACIFIC TRANSPORT

JOB NO.: 927.003 RE: SP8030

SAMPLE DATE: 11/21/89 P.O. NO.:

DATE RECEIVED: 11/22/89 SAMPLED BY: E & E, Inc.

SAMPLE TYPE: Solid DELIVERED BY: Federal Express

E & E Lab No. 89-	58135	58137	58139	58141	58142
Customer No.	C-21A	C-22A	C-23A	C-24A	C-24B
Sample Identity					
Results in: mg/kg as received unless noted					
Lead	49.2	103	61.2	17.4	20.3
Oil & Grease	84	330	94	1100	860
Total Recoverable Petroleum Hydrocarbons	<5.0	570	<5.0	9.6	190
Total Solids, %	82	83	83	84	82

Analytical References: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

Supervising Analyst: Mary Hakel EC

Date: 1/8/90

QUALITY CONTROL FOR PRECISION
RESULTS OF ANALYSIS OF REPLICATE
ANALYSES OF SOIL SAMPLES

927.003

(mg/kg)

Parameter	E & E Laboratory No. 89-	Original Analysis	Replicate Analysis	Relative Percent Difference (RPD)
Lead	58142	20.3	27.7	31

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SAMPLES

927.003

Parameter	E & E Laboratory	Original Value	Amount Added	Amount Determined	Percent Recovery
		(mg/kg)			
Lead	58142	20.3	50	68.2	96

ecology and environment, inc.
International Specialists in the Environment

LABORATORY REPORT

FOR

Southern Pacific Transport

JOB NO.: 927.004 RE: SP8030

SAMPLE DATE: 11/29-30/89 P.O. NO.:

DATE RECEIVED: 12/02/89 SAMPLED BY: E & E, Inc.

SAMPLE TYPE: Solid DELIVERED BY: Federal Express

E & E Lab No. 89-	58524	58525	58526	58527	58528	58529
Customer No.	C5	C6	C7	C8	C14	C15
Sample Identity						
			Results in: %			
Total Solids, %	93	92	85	89	87	83

Analytical References: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

Supervising Analyst: Gary Hahn/EC

Date: 1/4/90

ecology and environment, inc.
International Specialists in the Environment

LABORATORY REPORT

FOR

Southern Pacific Transport

JOB NO.: 927.004 RE: SP8030

SAMPLE DATE: 11/29-30/89 P.O. NO.:

DATE RECEIVED: 12/02/89 SAMPLED BY: E & E, Inc.

SAMPLE TYPE: Solid DELIVERED BY: Federal Express

E & E Lab No. 89-	58530	58531	58532	58533	58534	58535
Customer No.	C16	C17	C18	B5	B6	B7
Sample Identity						
			Results in: %			
Total Solids, %	83	82	69	90	84	84

Analytical References: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

Supervising Analyst: Gary Hahn/EC

Date: 1/4/90

ecology and environment, inc.
International Specialists in the Environment

LABORATORY REPORT

FOR

Southern Pacific Transport

JOB NO.: 927.004 RE: SP8030

SAMPLE DATE: 11/29-30/89 P.O. NO.:

DATE RECEIVED: 12/02/89 SAMPLED BY: E & E, Inc.

SAMPLE TYPE: Solid DELIVERED BY: Federal Express

E & E Lab No. 89-	58536	58537	58538	58539	58540
Customer No.	B8	B9	B10	B11	B12
Sample Identity					
		Results in: %			
Total Solids, %	87	91	95	88	91

Analytical References: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846, Third Edition, U.S. EPA, 1986.

Supervising Analyst: Gary Hahn/EC

Date: 1/4/90

RESULTS OF SOIL SCREEN ANALYSIS FOR PRIORITY POLLUTANT POLYCHLORINATED BIPHENYLS

(all results in mg/kg as received)

927.004

	E & E Lab. No. 89-	58524	58525	58526	58527	58528
Compound	Sample Identity	C5	C6	C7	C8	C14
PCB-1242		<5.0	<5.0*	<5.0	<5.0*	<5.0
PCB-1254		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1221		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1232		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1248		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1260		<5.0	5.9	<5.0*	11	<5.0
PCB-1016		<5.0	<5.0	<5.0	<5.0	<5.0

* Compound present below measurable detection limit.

RESULTS F SOIL SCREEN ANALYSIS FOR PRIORITY POLLUTANT
POLYCHLORINATED BIPHENYLS

(all results in mg/kg as received)

927.004

	E & E Lab. No. 89-	58529	58530	58531	58532	58533
Compound	Sample Identity	C15	C16	C17	C18	B5
PCB-1242		<5.0	<5.0	<5.0	<5.0	26
PCB-1254		<5.0	<5.0	<5.0	<5.0	46
PCB-1221		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1232		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1248		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1260		<5.0	<5.0	<5.0	<5.0	<5.0
PCB-1016		<5.0	<5.0	<5.0	<5.0	<5.0

RESULTS OF SOIL SCREEN ANALYSIS FOR PRIORITY POLLUTANT POLYCHLORINATED BIPHENYLS

(all results in mg/kg as received)

927.004

	E & E Lab. No. 89-	58534	58535	58536	58537	58538
Compound	Sample Identity	B6	B7	B8	B9	B10
PCB-1242		<50	10	5.2	10	<5.0*
PCB-1254		1500	12	7.3	<5.0	<5.0
PCB-1221		<50	<5.0	<5.0	<5.0	<5.0
PCB-1232		<50	<5.0	<5.0	<5.0	<5.0
PCB-1248		<50	<5.0	<5.0	<5.0	<5.0
PCB-1260		<50	<5.	9.5	10	<5.0*
PCB-1016		<50	<5.0	<5.0	<5.0	<5.0

* Compound present below measurable detection limit.

RESULTS OF SOIL SCREEN ANALYSIS FOR PRIORITY POLLUTANT
POLYCHLORINATED BIPHENYLS

(all results in mg/kg as received)

927.004

	E & E Lab. No. 89-	58539	58540	Method Blank
Compound	Sample Identity	B11	B12	
PCB-1242		20	11	<5.0
PCB-1254		19	11	<5.0
PCB-1221		<5.0	<5.0	<5.0
PCB-1232		<5.0	<5.0	<5.0
PCB-1248		<5.0	<5.0	<5.0
PCB-1260		<5.0	<5.0	<5.0
PCB-1016		<5.0	<5.0	<5.0

* Compound present below measurable detection limit.

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SCREEN SAMPLES

927.004

(mg/kg)

Parameter	E & E Laboratory No. 89-58527	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242		Could not be calculated due to the presence of other PCB's			

TEST CODE :SPCB 1 JOB NUMBER : 927.004

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : SOUTHERN PACIFIC TRANSPORT (SP-8030)
RESULTS IN WET WEIGHT
TEST NAME : PCB-SOIL UNITS : MG/KG
SAMPLE ID LAB : EE-89-58533 MATRIX : SOLID
SAMPLE ID CLIENT: B5

PARAMETER	RESULTS	Q	DET. LIMIT
PCB-1016	ND		10
PCB-1242	48		10
PCB-1254	44		10
PCB-1221	ND		10
PCB-1232	ND		10
PCB-1248	ND		10
PCB-1260	ND		10

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPCB 1 JOB NUMBER : 927.004

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : SOUTHERN PACIFIC TRANSPORT (SP-8030)
RESULTS IN WET WEIGHT
TEST NAME : PCB-SOIL UNITS : MG/KG
SAMPLE ID LAB : EE-89-58534 MATRIX : SOLID
SAMPLE ID CLIENT: B6

PARAMETER	RESULTS	Q	DET. LIMIT
PCB-1016	ND		200
PCB-1242	ND		200
PCB-1254	2200		200
PCB-1221	ND		200
PCB-1232	ND		200
PCB-1248	ND		200
PCB-1260	ND		200

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPCB 1 JOB NUMBER : 927.004

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : SOUTHERN PACIFIC TRANSPORT (SP-8030)
RESULTS IN WET WEIGHT
TEST NAME : PCB-SOIL UNITS : MG/KG
SAMPLE ID LAB : METHOD BLANK 1 MATRIX : SOLID

PARAMETER	RESULTS	Q	DET. LIMIT
PCB-1016	ND		0.02
PCB-1242	ND		0.02
PCB-1254	ND		0.02
PCB-1221	ND		0.02
PCB-1232	ND		0.02
PCB-1248	ND		0.02
PCB-1260	ND		0.02

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

TEST CODE :SPCB 1 JOB NUMBER : 927.004

Ecology and Environment, Inc.
Analytical Services Center

CLIENT : SOUTHERN PACIFIC TRANSPORT (SP-8030)
RESULTS IN WET WEIGHT
TEST NAME : PCB-SOIL UNITS : MG/KG
SAMPLE ID LAB : METHOD BLANK 2 MATRIX : SOLID

PARAMETER	RESULTS	Q	DET. LIMIT
PCB-1016	ND		0.02
PCB-1242	ND		0.02
PCB-1254	ND		0.02
PCB-1221	ND		0.02
PCB-1232	ND		0.02
PCB-1248	ND		0.02
PCB-1260	ND		0.02

QUALIFIERS: C = COMMENT ND = NOT DETECTED
J = ESTIMATED VALUE B = ALSO PRESENT IN BLANK
L = PRESENT BELOW STATED DETECTION LIMIT

QUALITY CONTROL FOR ACCURACY: PERCENT RECOVERY
FOR SPIKED SOIL SAMPLES

927.004

(mg/kg)

Parameter	E & E Laboratory No. 89-	Original Value	Amount Added	Amount Determined	Percent Recovery
PCB-1242	Method Blank	<0.02	1.7	2.0	118