ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

December 14, 2010

Mr. Sean Svendsen (*Sent via E-mail to: sean@alamedamarina.net*)
Pacific Shops, Inc.
1801 Clement Avenue
Alameda, CA 94501

Subject: Case Closure for SLIC Case No. RO0002624 and Geotracker Global ID SLT2O00414, Pacific Shops, 1829 Clement Avenue, Alameda, CA 94501

Dear Mr. Svendsen:

This letter confirms the completion of site investigation and remedial actions for the soil and groundwater investigation at the above referenced site. We are also transmitting the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported releases at the subject site with the provision that the information provided to this agency was accurate and representative of existing conditions. The subject Spills, Leaks, Investigation, and Cleanup (SLIC) case is closed. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (http://geotracker.swrcb.ca.gov) and the Alameda County Environmental Health website (http://www.acgov.org/aceh/index.htm).

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- Soils beneath the building at 1829 Clement Avenue contain copper at concentrations up to 360 parts per million (ppm).
- Groundwater at the site contains cyanide at concentrations up to 16 parts per billion.

If you have any questions, please call Jerry Wickham at (510) 567-6791. Thank you.

Sincerely,

Donna L. Drogos, P.E.
LOP and Toxics Program Manager

Enclosure: Case Closure Summary

cc: Mr. Ed Conti, AMEC Geomatrix, 2101 Webster Street, 12th Floor, Oakland, CA 94612 (*Sent via E-mail to: ed.conti@amec.com*)

Mr. Darren Croteau, AMEC Geomatrix, 2101 Webster Street, 12th Floor, Oakland, CA 94612 (*Sent via E-mail to: darren.croteau@amec.com*)

Ariu Levi, ACEH (*Sent via E-mail to: ariu.levi@acgov.org*)
Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH *(Sent via E-mail to: jerry.wickham@acgov.org*)

Geotracker, File

CASE CLOSURE SUMMARY
SPILLS, LEAKS, INVESTIGATION, AND CLEANUP PROGRAM

I. AGENCY INFORMATION

Date: October 28, 2010

Agency Name: Alameda County Environmental Health	Address: 1131 Harbor Bay Parkway
City/State/Zip: Alameda, CA 94502-6577	Phone: (510) 567-6791
Responsible Staff Person: Jerry Wickham	Title: Senior Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: Pacific Shops, Inc.		
Site Facility Address: 1829 Clement Avenue, Alameda, CA 94501		
RB Case No.: NA	Local Case No.: NA	SLIC Case No.: RO0002624
URF Filing Date: NA	GeoTracker ID: SLT2O00414	APN: 71-288-1-2

Responsible Parties	Addresses	Phone Numbers
Mr. Lane Hill, Kem-Mil Co.	3468 Diablo Avenue, Hayward, CA 94545	520-785-2100
Mr. Sean Svendsen, Pacific Shops, Inc.	1815 Clement Avenue, Alameda, CA 94501	510-521-1133

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

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Spills and discharges of solutions containing metals and cyanide from two areas inside the building at 18290 Clement Avenue. The chemicals were discharged to the subfloor area beneath the building.	
Site characterization complete? Yes	Date Approved By Oversight Agency: -----

Monitoring wells installed? Yes	Number: 3	Proper screened interval? ---
Highest GW Depth Below Ground Surface: 2.42 feet bgs	Lowest Depth: 3.82 feet bgs	Flow Direction: Northwest
Most Sensitive Current Use: Potential Drinking Water Source and Discharge to Alameda Tidal Canal		

Summary of Production Wells in Vicinity: A detailed well survey was not conducted for the site. Shallow groundwater from the site discharges to the Alameda Tidal Canal, which is approximately 375 feet to the northeast. No water supply wells are known to be on site. Based on the location of the site adjacent to Alameda Tidal Canal, limited extent of impacted shallow groundwater from the site, and no known water supply wells between the site and point of groundwater discharge into Alameda Tidal Canal, no water supply wells are expected to be affected by residual contamination from the site.	
Are drinking water wells affected? No	Aquifer Name: East Bay Plain
Is surface water affected? No	Nearest SW Name: Alameda Tidal Canal is approximately 375 feet northeast of the 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
Tanks	NA	NA	NA
Piping	NA	NA	NA
Free Product	NA	NA	NA
Soil	30 cubic yards	Approximately 28 cubic yards of soil was removed from the site and transported to Envirosafe Services, Inc. in Idaho for disposal.	5/29/1990
Groundwater	NA	NA	NA

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

Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After
Arsenic	1,500	6.6	40(1)	1.4(1)
Copper	9,000	360	40(2)	<0.5(2)
Cyanide	28,000	2,300	2,400(3)	16(3)
Total Chromium	800	60	170(4)	<0.5(4)
Chromium VI	<0.05	<0.05	<10	<0.2
Lead	1,100	15	<30	<0.5
Molybdenum	980	23	<10	<0.5
Other VOCs (8240/8270)	Not detected at various reporting limits	Not detected at various reporting limits	Not analyzed	Not analyzed

(1) The maximum concentration before cleanup is from a groundwater sample collected from well MW-2 on 09/13/1990; the maximum concentration after cleanup is from a groundwater sample collected from well MW-2 during the most recent groundwater monitoring event on 03/16/2007.
(2) The maximum concentration before cleanup is from a groundwater sample collected from well MW-1 on 09/26/1990; the maximum concentration after cleanup is from groundwater samples collected during the most recent groundwater monitoring event on 03/16/2007.
(3) The maximum concentration before cleanup is from a groundwater sample collected from well MW-1 on 09/13/1990; the maximum concentration after cleanup is from a groundwater sample collected from well MW-1 during the most recent groundwater monitoring event on 03/16/2007.
(4) The maximum concentration before cleanup is from a groundwater sample collected from well MW-2 on 09/26/1990; the maximum concentration after cleanup is from groundwater samples collected during the most recent groundwater monitoring event on 03/16/2007.

Site History and Description of Corrective Actions:

This case closure for SLIC case RO0002624 applies only to the subfloor area beneath the building at 1829 Clement Avenue in Alameda, CA. This case did not evaluate historic use of other areas of the site nor the historic use of the site as a shipyard and World War II ship repair facility.

Two separate fuel leak cases (RO0000848 and RO0002951) address fuel leaks from UST systems in other areas of the site. Fuel leak case RO0000848 addressed leaks from former gasoline and diesel fuel USTs that were removed in July 1999. Case closure for fuel leak case RO0000848 was documented in Remedial Action Certification correspondence from ACEH dated October 5, 1999. Fuel leak case RO0002951 addressed leaks from two former Bunker oil USTs and a diesel UST that were removed in march 2007. Case closure for fuel leak case RO0002951 was documented in Remedial Action Certification correspondence from ACEH dated March 1, 2010.

Since 1990, the building at 1829 Clement Avenue has been used as commercial office space. Surrounding land use is mixed commercial and residential; the area north of Clement Avenue has industrial and commercial properties and the area south of Clement Avenue has mixed commercial and residential properties. From 1967 to 1986, the building at 1829 Clement Avenue was used as a photochemical machining shop. From 1986 until March 1990, Kem Mil performed photodeveloping and etching inside the building at 1829 Clement Avenue. Inspections by ACEH in 1990 found spills from drums and small tanks both on and through the subfloor of the building. Spills and discharges of liquids containing heavy metals as well as acids and bases to the subfloor and sewer were documented. The primary areas of contamination were the subfloor areas of the etch process room in the western end of the building and the treatment and storage areas in the eastern end of the building. Soil samples collected by Kem Mill from the subfloor on September 9, 1988 detected arsenic at 120 ppm, chromium at 1,000 ppm, copper at 6,400 ppm, molybdenum at 1,800 ppm, lead at 28 ppm, and zinc at 680 ppm.

On September 16, 1988, Blymyer Engineers collected three surface soil samples from portions of the building underlain by a dirt subfloor and one soil sample from a depth of 4 feet bgs beneath surface soil sample 002501. The soil samples contained elevated concentrations of heavy metals, cyanide, and other compounds. Based on these initial results, an additional field investigation consisting of 13 soil borings and 7 surface soil samples was conducted between February 11 and March 9, 1990 by Kaldveer Associates. Surface soil samples collected beneath the western portion of the building contained cyanide at concentrations ranging from 120 to 1,300 ppm. Soil samples collected at a depth of 0.5 feet in this area contained 2.1 to 7.8 ppm of cyanide. Soil samples collected from depths of 3.0 and 6.0 feet bgs contained less than 2 ppm of cyanide. One sample of dried sediment collected from the surface of the asphalt paving beneath the eastern portion of the building contained 1,100 ppm of cyanide, 800 ppm of chromium, and 2,900 ppm of copper. Soil samples collected from a depth of 0.5 feet below the asphalt beneath the treatment room contained 7.1 to 160 ppm of cyanide and soil samples collected from the 3.0 and 6.0 feet depth contained 1.5 to 24 ppm of cyanide.

The results of the 1988 and 1990 investigations indicated that significant quantities of cyanide and metals were generally within the upper 3 to 6 inches of soil beneath the former etch process area in the western portion of the building and in the dried sediment on top of asphalt paving located beneath the treatment area in the eastern portion of the building.

A clean-up program consisting of high-efficiency vacuuming of the asphalt pavement beneath the eastern portion of the building (treatment and storage areas) and hand removal of surface soils beneath the western portion of the building (etch process areas) was conducted between April 16 and May 24, 1990. Following the vacuuming beneath the eastern portion of the building, the pavement surface and concrete footings were sealed with three inches of cement slurry and stucco. Following soil removal beneath the western portion of the building, concrete footings were sealed with latex enamel paint. In addition to removal of the contaminated soil, all former process piping and stained wood flooring were removed from the building. Laboratory analysis

Site History and Description of Corrective Actions (Continued):

of nine surficial soil samples collected following clean-up reported cyanide concentrations ranging from less than 1.0 to 8.3 ppm. Residual concentrations of copper ranged from 5.6 to 360 ppm. Visual observation of staining and soil discoloration was used to guide clean-up and sampling activities.

Based on all post-cleanup soil sample results, cyanide exceeds the Environmental Screening Level (ESL) for residential land use and direct exposure to shallow soil of 34 ppm at two locations: sample 2502 (2,300 ppm) collected at a depth of four feet bgs beneath the west portion of the building and composite sample B1&B2 (160 ppm) collected at a depth of 0.5 feet bgs underneath the eastern portion of the building. Sample 2502, which was collected by Blymyer Engineers on September 15, 1988, is the only post-cleanup sample that had cyanide concentrations exceeding the ESL beneath the western portion of the building. A total of 18 post-cleanup soil samples collected in the surrounding area had cyanide concentrations below the ESL. The laboratory analytical report for sample 2502 indicates laboratory interference for this sample, which potentially may affect the reported concentration. Given the apparent limited extent of the soil represented by sample 2502, the depth of the sample, and likely effects of cyanide degradation over the extended period of time since sampling, further investigation or remediation beneath the western portion of the building does not appear to be warranted. Free cyanide in soil can be expected to undergo degradation, dissolution, and volatilization, which reduces the cyanide concentrations over time. Composite sample B1&B2 was the only post-cleanup soil sample with total cyanide concentrations exceeding the ESL beneath the eastern portion of the building. Based on the apparent limited extent of the area and the period of time that has passed since the sample was collected, further investigation or remediation beneath the eastern portion of the building does not appear to be warranted.

Arsenic was detected in post-cleanup soil samples at concentrations exceeding the ESL (0.39 ppm) in three soil samples collected beneath the eastern portion of the building and six soil samples collected beneath the western portion of the building. However, the reported concentrations of arsenic in the post-cleanup soil samples are below typical ambient concentrations.

Three groundwater monitoring wells were installed at the site on September 11, 1990. The wells were completed to 15 feet bgs. Groundwater samples were collected from the wells during three events in 1990: September 12, 1990, September 25, 19990, and October 9, 1990. Groundwater samples were analyzed for chromium, molybdenum, copper, lead, chromium VI, arsenic, and cyanide. During the three sampling events in 1990, total cyanide was detected in monitoring well MW-1 at concentrations ranging from 350 to 2,400 ppb but was not detected at concentrations above reporting limits in groundwater samples from wells MW-2 and MW-3. Following, re-development, groundwater samples were collected from the three wells on March 16, 2007. Cyanide was detected in groundwater from well MW-1 at a concentration of 16 ppb but was not detected in groundwater samples from the remaining two wells.

In order to assess potential vapor intrusion to indoor air by volatile organic compounds, soil vapor sampling was conducted in September 2010. Soil vapor samples were collected from four locations beneath the building on September 22, 2010. No volatile organic compounds were detected at concentrations exceeding ESLs for potential vapor intrusion under residential or commercial/industrial land use scenarios.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes		
Does corrective action protect public health for current land use? Alameda County Environmental Health staff does not make specific determinations concerning public health risk. However, based upon the information available in our files to date, it does not appear that the release would present a risk to human health based upon current land use and conditions.		
Site Management Requirements: None		
Should corrective action be reviewed if land use changes? No		
Was a deed restriction or deed notification filed? No		Date Recorded: --
Monitoring Wells Decommissioned: No	Number Decommissioned: ---	Number Retained: 3
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: ---		

V. ADDITIONAL COMMENTS, DATA, ETC.

Considerations and/or Variances:

This case closure for SLIC case RO0002624 applies only to the subfloor area beneath the building at 1829 Clement Avenue in Alameda, CA. This case did not evaluate historic use of other areas of the site nor the historic use of the site as a shipyard and World War II ship repair facility.

Based on all post-cleanup soil sample results, cyanide exceeds the Environmental Screening Level (ESL) for residential land use and direct exposure to shallow soil of 34 ppm at two locations: sample 2502 (2,300 ppm) collected at a depth of four feet bgs beneath the west portion of the building and composite sample B1&B2 (160 ppm) collected at a depth of 0.5 feet bgs underneath the eastern portion of the building. Sample 2502, which was collected by Blymyer Engineers on September 15, 1988, is the only post-cleanup sample that had cyanide concentrations exceeding the ESL beneath the western portion of the building. A total of 18 post-cleanup soil samples collected in the surrounding area had cyanide concentrations below the ESL. The laboratory analytical report for sample 2502 indicates laboratory interference for this sample, which potentially may affect the reported concentration. Given the apparent limited extent of the soil represented by sample 2502, the depth of the sample, and likely effects of cyanide degradation over the extended period of time since sampling, further investigation or remediation beneath the western portion of the building does not appear to be warranted. Free cyanide in soil can be expected to undergo degradation, dissolution, and volatilization, which reduces the cyanide concentrations over time. Composite sample B1&B2 was the only post-cleanup soil sample with total cyanide concentrations exceeding the ESL beneath the eastern portion of the building. Based on the apparent limited extent of the area and the period of time that has passed since the sample was collected, further investigation or remediation beneath the eastern portion of the building does not appear to be warranted.

Arsenic was detected in post-cleanup soil samples at concentrations exceeding the ESL (0.39 ppm) in three soil samples collected beneath the eastern portion of the building and six soil samples collected beneath the western portion of the building. However, the reported concentrations of arsenic in the post-cleanup soil samples are below typical ambient concentrations.

No analyses were performed for volatile organic compounds (VOCs) in groundwater. Based on the relatively low concentrations of VOCs in soil vapor and the absence of other information to indicate that VOCs were discharged from the site, VOCs are not expected to be a significant chemical of concern for the site. Therefore, further investigation for VOCs does not appear to be warranted.

The locations and depths of nine soil samples that were collected prior to site clean-up are unknown. The concentrations of arsenic, copper, cyanide, molybdenum, and vanadium in some of the nine soil samples exceeded ESLs. Based on the post-cleanup soil sampling results, further investigation or remediation does not appear to be warranted. It is possible that the soil represented by the nine soil samples was removed during clean-up.

Conclusion:

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 based upon the information available in our files to date. No further investigation or cleanup is necessary. ACEH staff recommend case closure for this site.

VI. LOCAL AGENCY REPRESENTATIVE DATA

Prepared by: Jerry Wickham	Title: Senior Hazardous Materials Specialist
Signature: Jerry Wickham	Date: 11/02/10
Approved by: Donna L. Drogos, P.E.	Title: Division Chief
Signature:	Date: 11/2/10

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

VII. REGIONAL BOARD NOTIFICATION

Regional Board Staff Name: Cherie McCaulou	Title: Engineering Geologist
Notification Date: 11/4/10	

VIII. MONITORING WELL DECOMMISSIONING

Date Requested by ACEH: 11/3/10	Date of Well Decommissioning Report: 12/9/10	
All Monitoring Wells Decommissioned: Yes	Number Decommissioned: 3	Number Retained: Ø
Reason Wells Retained: NA		
Additional requirements for submittal of groundwater data from retained wells: None		
ACEH Concurrence - Signature: Jerry Wickham		Date: 12/9/10

Attachments:
1. Site Location Map (1 page)
2. Site Plans and Boring Location Maps (7 pages)
3. Pre-Excavation and Post-Excavation Sample Results (2 pages)
4. Soil and Soil Vapor Analytical Data (7 pages)
5. Groundwater Analytical Data (1 page)
6. Boring Logs (16 pages)

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

Wickham, Jerry, Env. Health

From: Cherie MCcaulou [CMccaulou@waterboards.ca.gov]
Sent: Thursday, November 04, 2010 11:27 AM
To: Wickham, Jerry, Env. Health
Subject: Re: Case closure for RO2624 1829 Clement, Alameda

Jerry - The Regional Water Quality Control Board has no objection to the closure of the case at 1829 Clement in Alameda.

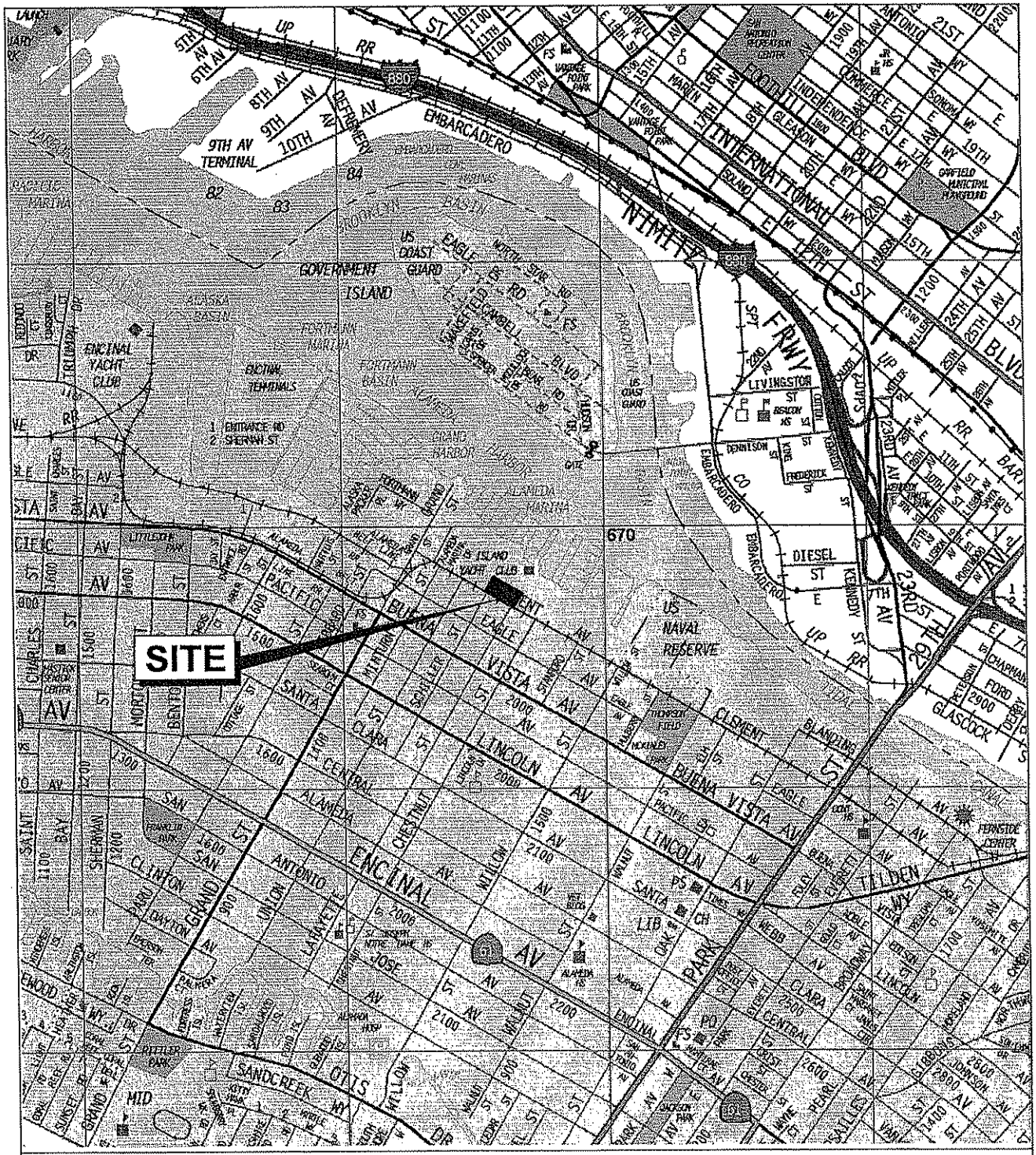
Sincerely,

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

>>> "Wickham, Jerry, Env. Health" <jerry.wickham@acgov.org> 11/2/2010 3:55 PM >>>
Hi Cherie,

This message provides notification of pending case closure for RO2624, 1829 Clement Avenue in Alameda.

Regards,
Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577
phone: 510-567-6791
jerry.wickham@acgov.org



Base map: The Thomas Guide
Alameda County
1999

0 1/4 1/2 Mile

Approximate scale

N

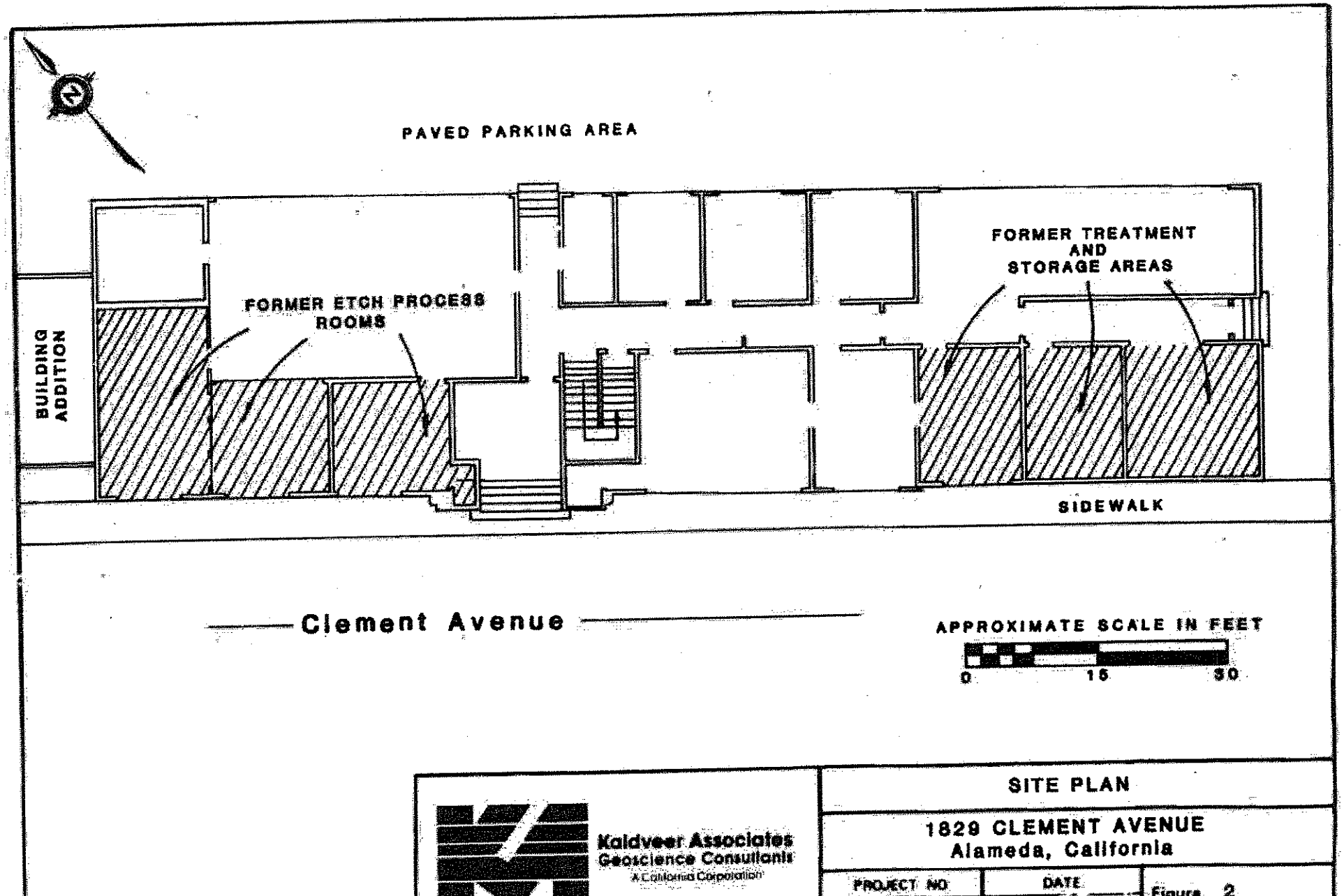
PACIFIC SHOPS
1829 CLEMENT AVENUE
Alameda, California

SITE LOCATION MAP

Treadwell&Rollo

Date 04/27/07	Project No. 4511.01	Figure 1

ATTACHMENT 1



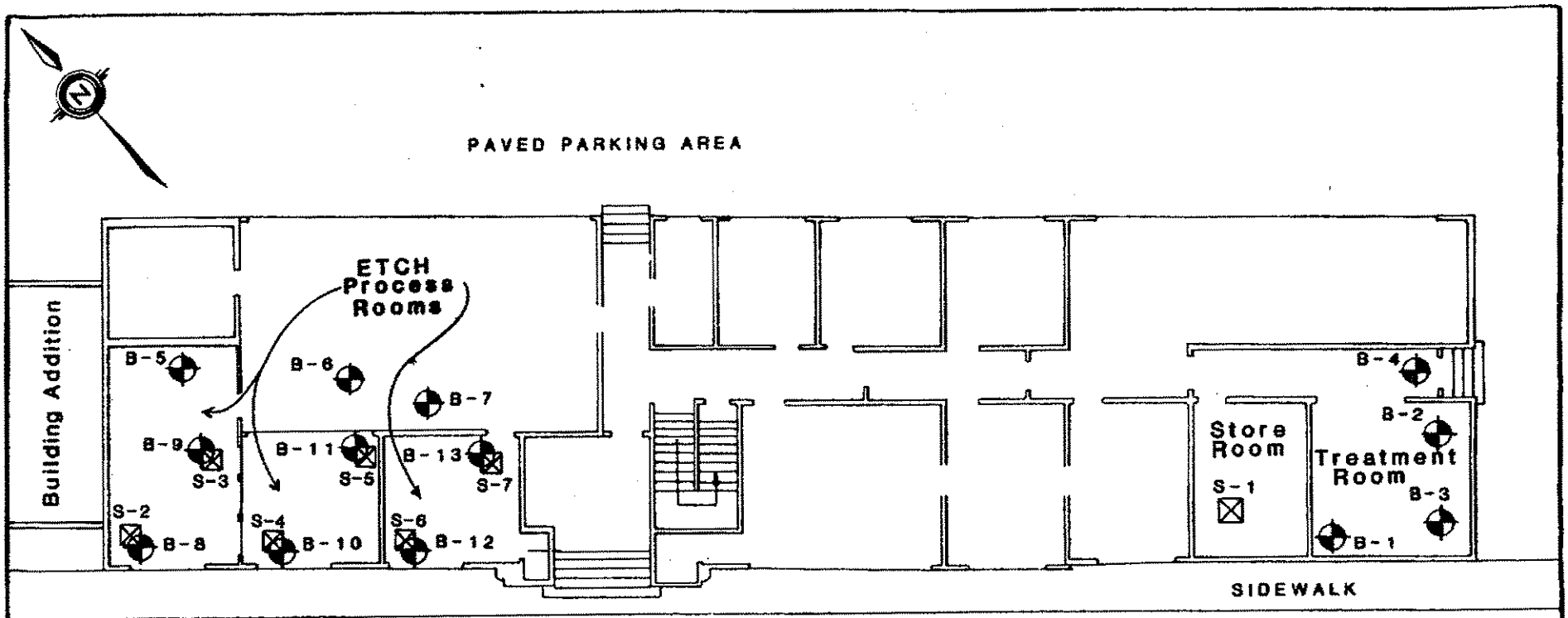
Kaldveer Associates
Geoscience Consultants
A California Corporation

SITE PLAN

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO	DATE	
KE1179-1	July 1990	Figure 2

ATTACHMENT 2



LEGEND

B-1 Approximate Location of Exploratory Boring

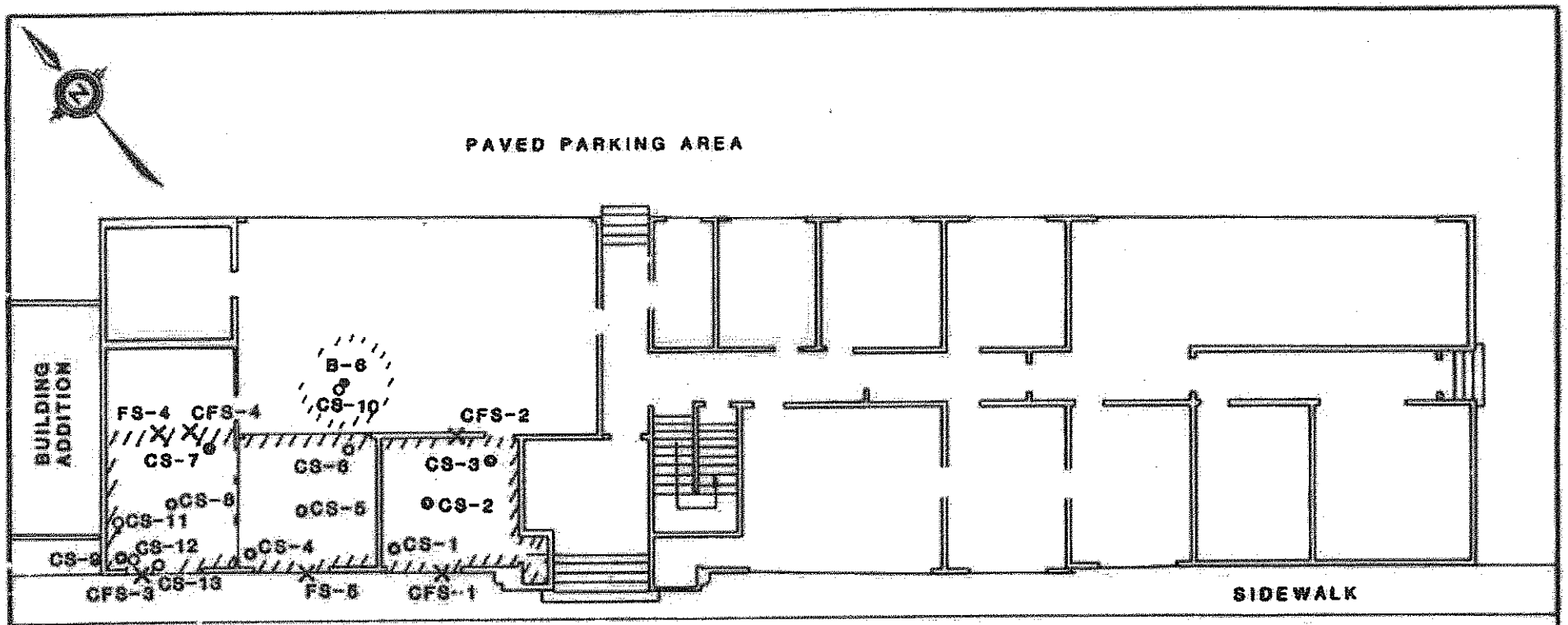
S-1 Surface Sample

Kaldveer Associates
Geoscience Consultants
A California Corporation

SITE PLAN

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO	DATE	Figure
KE1179-1	April 1990	2



Clement Avenue

APPROXIMATE SCALE IN FEET

0 15 30

LEGEND

SOIL REMOVAL AREA ENCLOSED BY CROSS- HATCHING

B-6 PREVIOUS BORING B-6

CS-5 LOCATION OF SURFACE SOIL SAMPLE

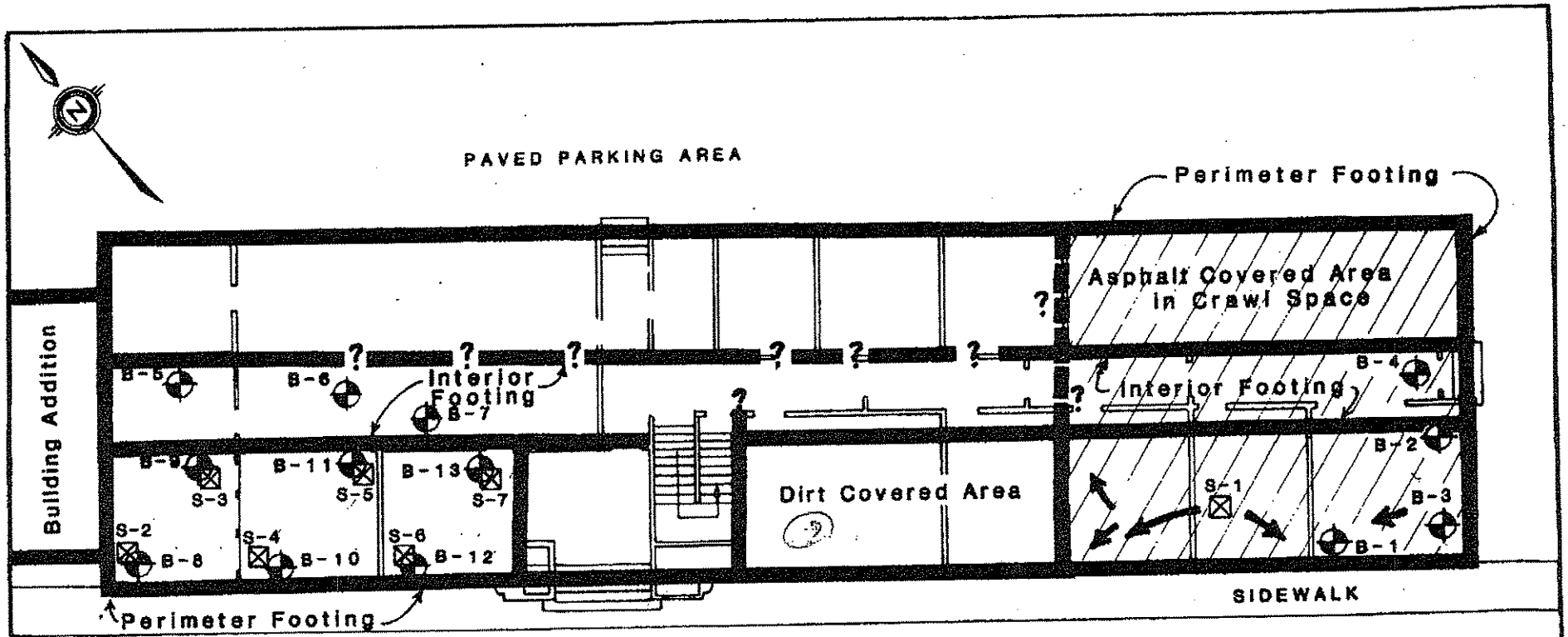
FS-3, CFS-3 FOOTING SURFACE WIPE SAMPLE LOCATIONS

Kaldveer Associates
Geoscience Consultants
A California Corporation

FORMER ETCH PROCESS ROOMS
SOIL REMOVAL AREA

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO	DATE	
KE1179-1	July 1990	Figure 3



LEGEND

- B-1 Approximate Location of Exploratory Boring
- S-1 Surface Sample
- Apparent Drainage Flow Pattern on Asphalt Covered Area

Kaldveer Associates
Geoscience Consultants
A California Corporation

CRAWL SPACE FEATURES

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO	DATE	Figure 3
KE1179-1	April 1990	

EBMUD

BUSINESS NAME

Part D - Building Layout

Wastewater Discharge Permit

Purpose – The **Building Layout** shows the wastewater generating operations which contribute to each side sewer. Ths building layout will also enable EBMUD and the applicant to select suitable sampling locations for determining and verifying wastewater strength.

EBMUD USE:
Permit No.

Building Layout – Draw to scale the location of each building on the premises. Show location of all water meters, storm drains numbered unit processes (from Part C), community sewers and each side sewer connected to the community sewers. Number each side sewer and show possible sampling locations.

An attached blue print or drawing of the facilities showing the above items may be substituted for a drawing on this sheet.

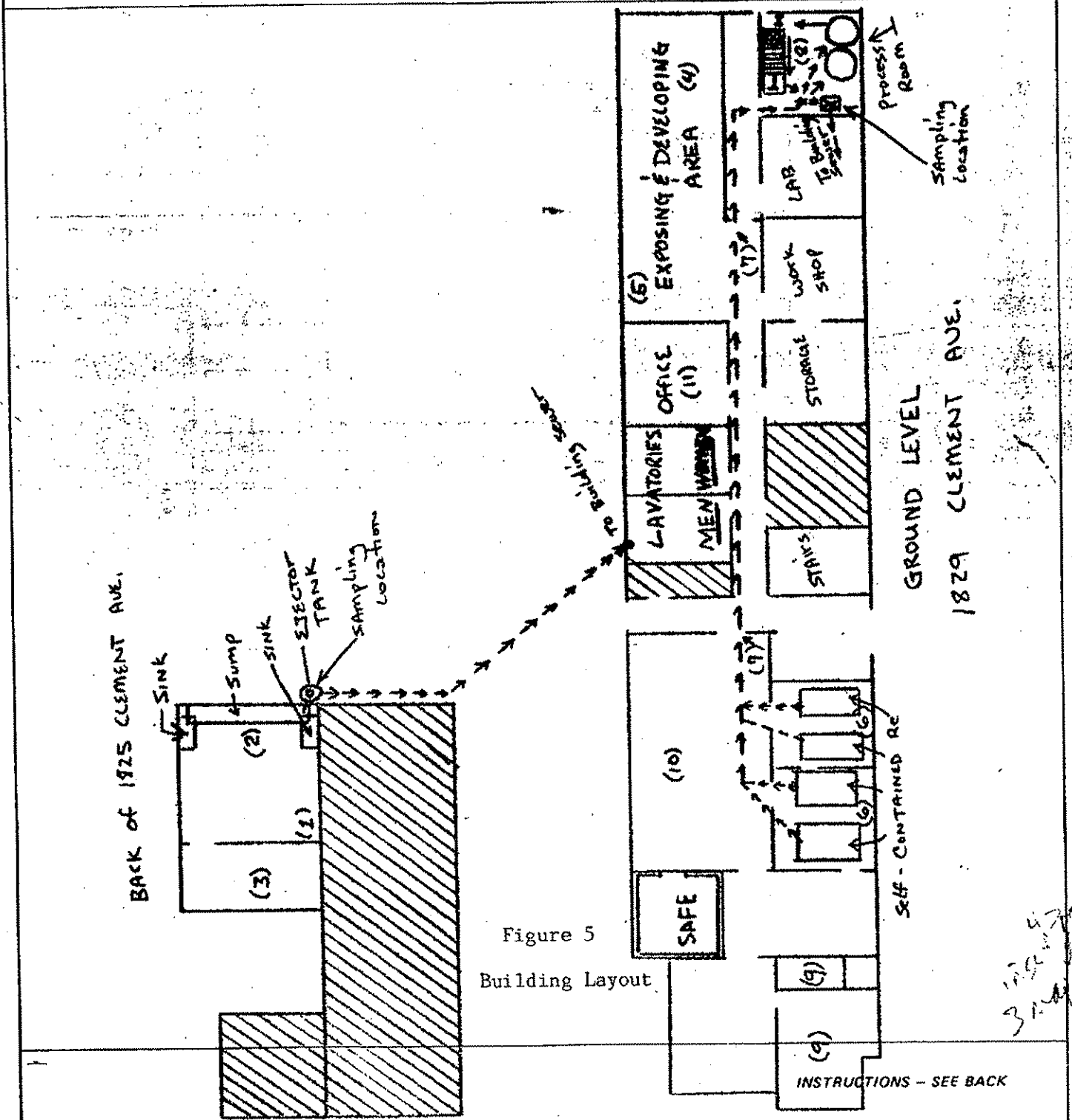


Figure 5

Building Layout

INSTRUCTIONS – SEE BACK

SD-33 • 2/76

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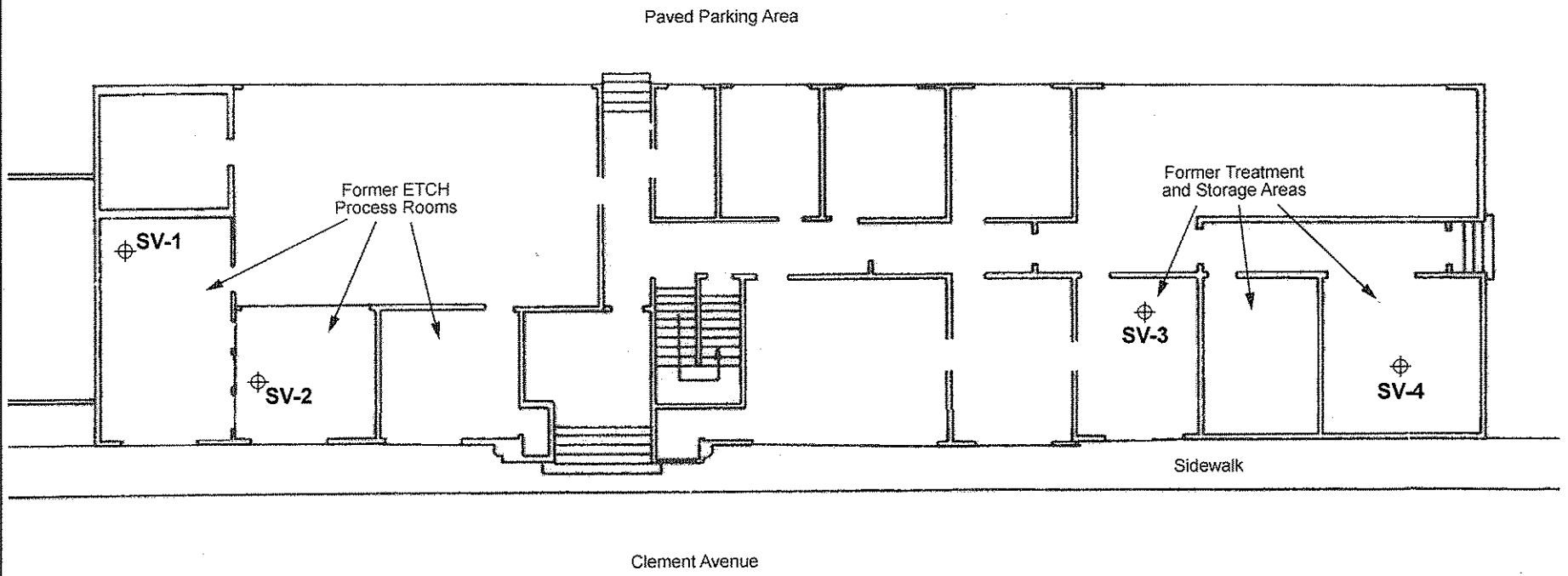


LEGEND

⊕ Approximate location of soil vapor sample

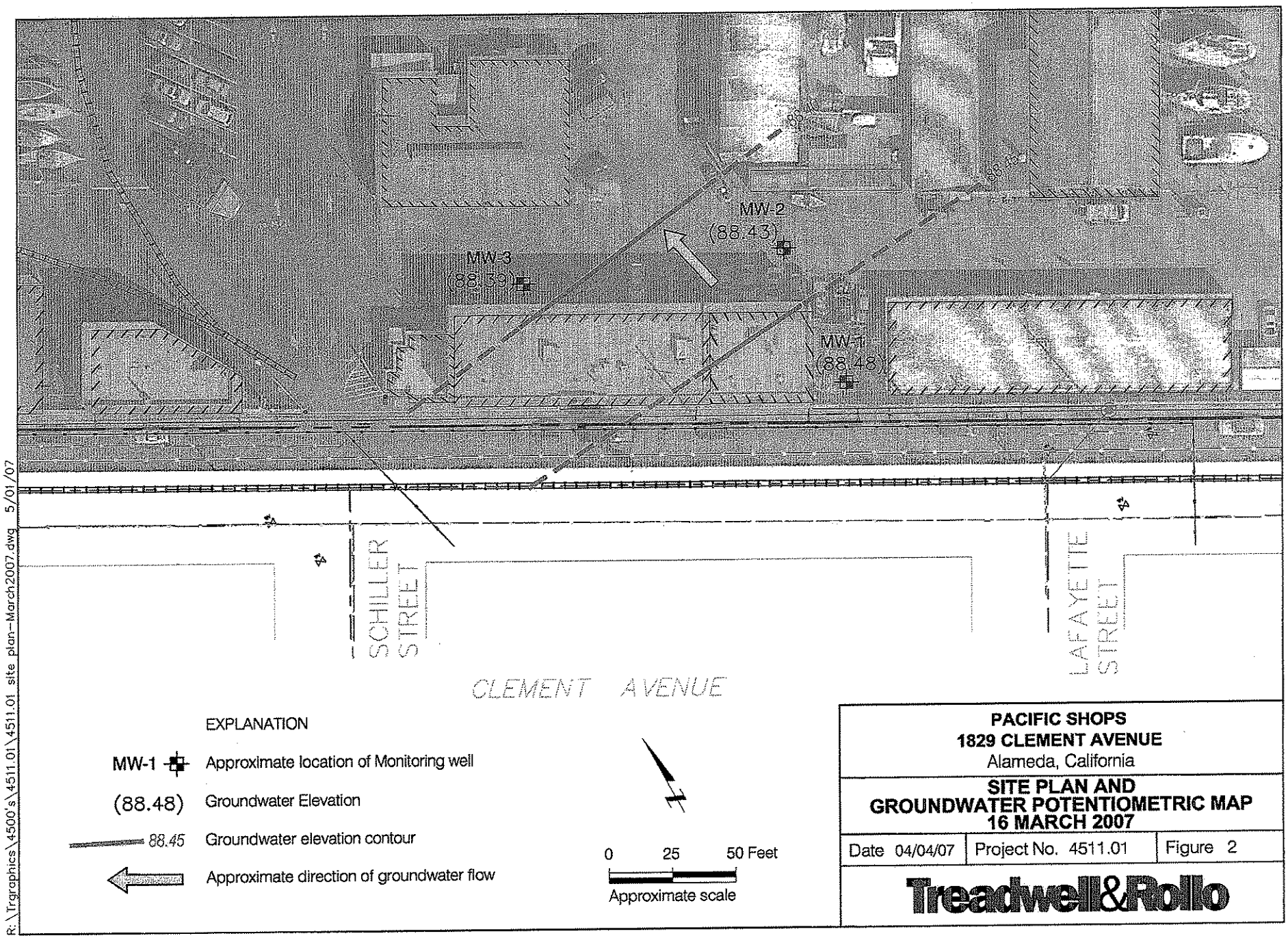
0 15 feet

Approximate scale

Note:
Base map from Kaldveer Associates, Soil Cleanup Report, dated July 18, 1990.

SITE PLAN AND SOIL VAPOR SAMPLE LOCATIONS
Pacific Shops, Inc.
1829 Clement Avenue
Alameda, California

By: AP	Date: 08/30/2010	Project No. 14740.000
AMEC Geomatrix		Figure 2



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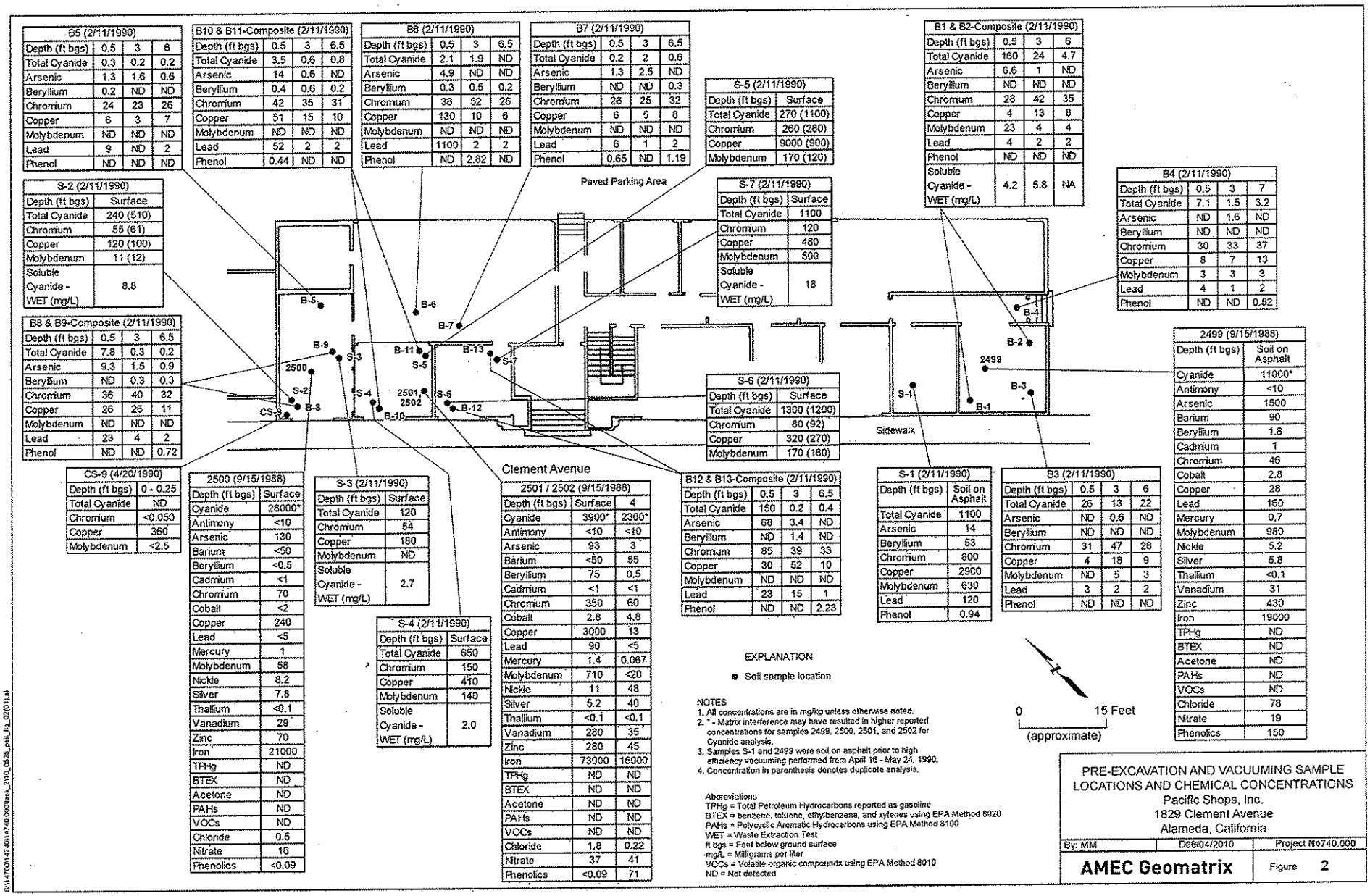
PACIFIC SHOPS
1829 CLEMENT AVENUE
Alameda, California

SITE PLAN AND GROUNDWATER POTENTIOMETRIC MAP 16 MARCH 2007

Date 04/04/07	Project No. 4511.01	Figure 2

Treadwell&Rollo



B5 (2/11/1990)			
Depth (ft bgs)	0.5	3	6
Total Cyanide	0.3	0.2	0.2
Arsenic	1.3	1.6	0.6
Beryllium	0.2	ND	ND
Chromium	24	23	26
Copper	6	3	7
Molybdenum	ND	ND	ND
Lead	9	ND	2
Phenol	ND	ND	ND

B10 & B11-Composite (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	3.5	0.6	0.8
Arsenic	14	0.6	ND
Beryllium	0.4	0.6	0.2
Chromium	42	35	31
Copper	51	15	10
Molybdenum	ND	ND	ND
Lead	52	2	2
Phenol	0.44	ND	ND

B6 (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	2.1	1.9	ND
Arsenic	4.9	ND	ND
Beryllium	0.3	0.5	0.2
Chromium	38	52	26
Copper	130	10	6
Molybdenum	ND	ND	ND
Lead	1100	2	2
Phenol	ND	2.82	ND

B7 (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	0.2	2	0.6
Arsenic	1.3	2.5	ND
Beryllium	ND	ND	0.3
Chromium	26	25	32
Copper	6	5	8
Molybdenum	ND	ND	ND
Lead	6	1	2
Phenol	0.65	ND	1.19

S-5 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	270 (1100)
Chromium	260 (280)
Copper	9000 (900)
Molybdenum	170 (120)

B1 & B2-Composite (2/11/1990)			
Depth (ft bgs)	0.5	3	6
Total Cyanide	160	24	4.7
Arsenic	6.6	1	ND
Beryllium	ND	ND	ND
Chromium	28	42	35
Copper	4	13	8
Molybdenum	23	4	4
Lead	4	2	2
Phenol	ND	ND	ND
Soluble Cyanide - WET (mg/L)	4.2	5.8	NA

B4 (2/11/1990)			
Depth (ft bgs)	0.5	3	7
Total Cyanide	7.1	1.5	3.2
Arsenic	ND	1.6	ND
Beryllium	ND	ND	ND
Chromium	30	33	37
Copper	8	7	13
Molybdenum	3	3	3
Lead	4	1	2
Phenol	ND	ND	0.52

S-2 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	240 (510)
Chromium	55 (61)
Copper	120 (100)
Molybdenum	11 (12)
Soluble Cyanide - WET (mg/L)	8.8

S-7 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	1100
Chromium	120
Copper	480
Molybdenum	500
Soluble Cyanide - WET (mg/L)	18

B8 & B9-Composite (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	7.8	0.3	0.2
Arsenic	9.3	1.5	0.9
Beryllium	ND	0.3	0.3
Chromium	36	40	32
Copper	26	26	11
Molybdenum	ND	ND	ND
Lead	23	4	2
Phenol	ND	ND	0.72

S-6 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	1300 (1200)
Chromium	80 (92)
Copper	320 (270)
Molybdenum	170 (160)

2499 (9/15/1988)	
Depth (ft bgs)	Soil on Asphalt
Cyanide	11000*
Antimony	<10
Arsenic	1500
Barium	90
Beryllium	1.8
Cadmium	1
Chromium	46
Cobalt	2.8
Copper	28
Lead	160
Mercury	0.7
Molybdenum	980
Nickle	5.2
Silver	5.8
Thallium	<0.1
Vanadium	31
Zinc	430
Iron	19000
TPHg	ND
BTEX	ND
Acetone	ND
PAHs	ND
VOCs	ND
Chloride	78
Nitrate	19
Phenolics	150

CS-9 (4/20/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	ND
Chromium	<0.050
Copper	360
Molybdenum	<2.5

2500 (9/15/1988)	
Depth (ft bgs)	Surface
Cyanide	28000*
Antimony	<10
Arsenic	130
Barium	<50
Beryllium	<0.5
Cadmium	<1
Chromium	70
Cobalt	<2
Copper	240
Lead	<5
Mercury	1
Molybdenum	58
Nickle	8.2
Silver	7.8
Thallium	<0.1
Vanadium	29
Zinc	70
Iron	21000
TPHg	ND
BTEX	ND
Acetone	ND
PAHs	ND
VOCs	ND
Chloride	0.5
Nitrate	16
Phenolics	<0.09

S-3 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	120
Chromium	54
Copper	180
Molybdenum	ND
Soluble Cyanide - WET (mg/L)	2.7

S-4 (2/11/1990)	
Depth (ft bgs)	Surface
Total Cyanide	650
Chromium	150
Copper	410
Molybdenum	140
Soluble Cyanide - WET (mg/L)	2.0

2501 / 2502 (9/15/1988)		
Depth (ft bgs)	Surface	4
Cyanide	3900*	2300*
Antimony	<10	<10
Arsenic	93	3
Barium	<50	55
Beryllium	75	0.5
Cadmium	<1	<1
Chromium	350	60
Cobalt	2.8	4.8
Copper	3000	13
Lead	90	<5
Mercury	1.4	0.067
Molybdenum	710	<20
Nickle	11	48
Silver	5.2	40
Thallium	<0.1	<0.1
Vanadium	280	35
Zinc	280	45
Iron	73000	16000
TPHg	ND	ND
BTEX	ND	ND
Acetone	ND	ND
PAHs	ND	ND
VOCs	ND	ND
Chloride	1.8	0.22
Nitrate	37	41
Phenolics	<0.09	71

B12 & B13-Composite (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	150	0.2	0.4
Arsenic	68	3.4	ND
Beryllium	ND	1.4	ND
Chromium	85	39	33
Copper	30	52	10
Molybdenum	ND	ND	ND
Lead	23	15	1
Phenol	ND	ND	2.23

S-1 (2/11/1990)	
Depth (ft bgs)	Soil on Asphalt
Total Cyanide	1100
Arsenic	14
Beryllium	53
Chromium	800
Copper	2900
Molybdenum	630
Lead	120
Phenol	0.94

B3 (2/11/1990)			
Depth (ft bgs)	0.5	3	6
Total Cyanide	26	13	22
Arsenic	ND	0.6	ND
Beryllium	ND	ND	ND
Chromium	31	47	28
Copper	4	18	9
Molybdenum	ND	5	3
Lead	3	2	2
Phenol	ND	ND	ND

EXPLANATION

● Soil sample location

NOTES
1. All concentrations are in mg/kg unless otherwise noted.
2. * - Matrix interference may have resulted in higher reported concentrations for samples 2499, 2500, 2501, and 2502 for Cyanide analysis.
3. Samples S-1 and 2499 were soil on asphalt prior to high efficiency vacuuming performed from April 16 - May 24, 1990.
4. Concentration in parenthesis denotes duplicate analysis.

Abbreviations
TPHg = Total Petroleum Hydrocarbons reported as gasoline
BTEX = benzene, toluene, ethylbenzene, and xylenes using EPA Method 8020
PAHs = Polycyclic Aromatic Hydrocarbons using EPA Method 8100
WET = Waste Extraction Test
ft bgs = Feet below ground surface
mg/L = Milligrams per liter
VOCs = Volatile organic compounds using EPA Method 8010
ND = Not detected

PRE-EXCAVATION AND VACUUMING SAMPLE LOCATIONS AND CHEMICAL CONCENTRATIONS
Pacific Shops, Inc.
1829 Clement Avenue
Alameda, California

By: MM	Date: 04/2010	Project No: 740.000
AMEC Geomatrix	Figure 2	

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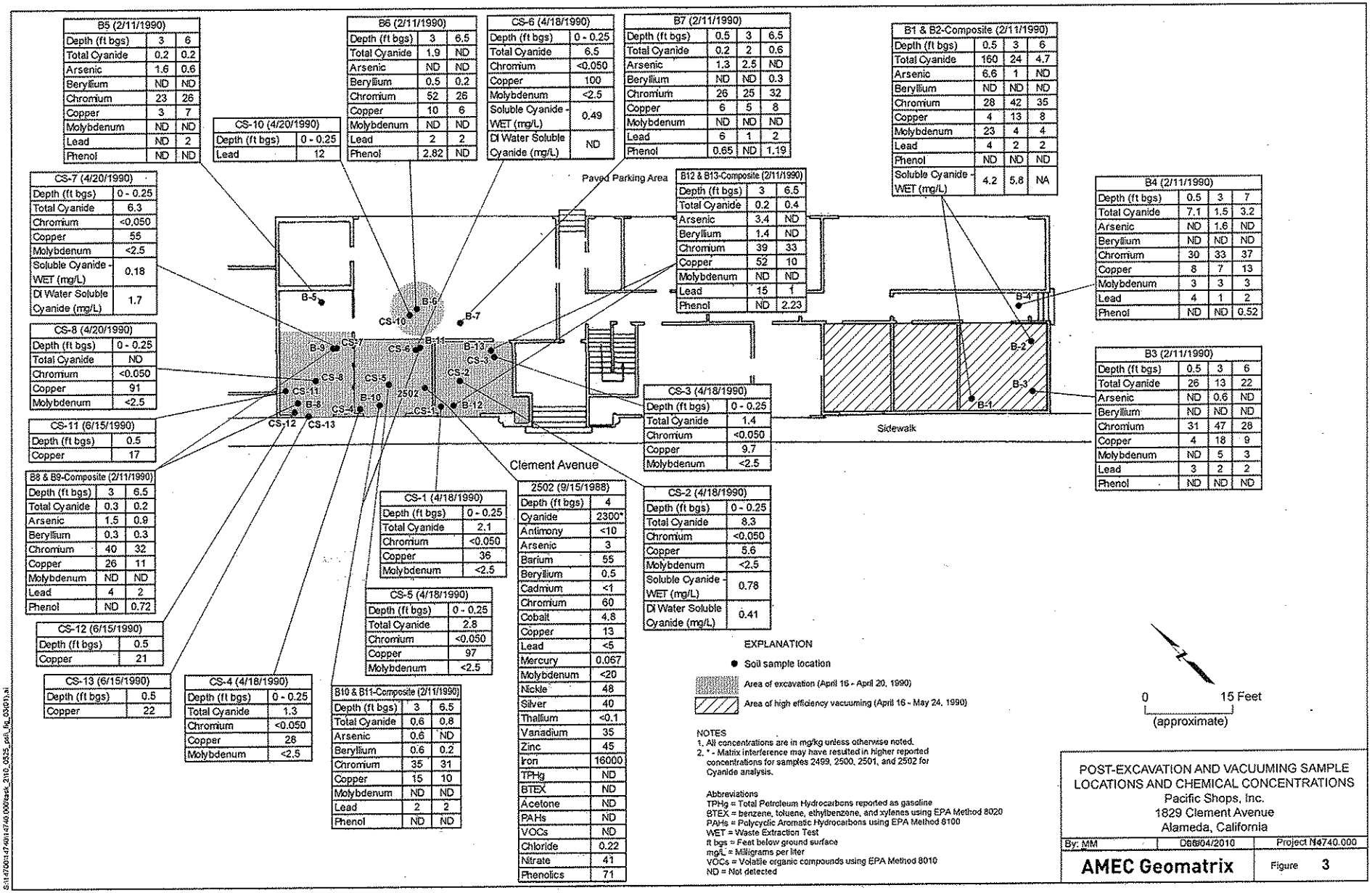
ATTACHMENT 3



B5 (2/11/1990)		
Depth (ft bgs)	3	6
Total Cyanide	0.2	0.2
Arsenic	1.6	0.6
Beryllium	ND	ND
Chromium	23	26
Copper	3	7
Molybdenum	ND	ND
Lead	ND	2
Phenol	ND	ND

B6 (2/11/1990)		
Depth (ft bgs)	3	6.5
Total Cyanide	1.9	ND
Arsenic	ND	ND
Beryllium	0.5	0.2
Chromium	52	26
Copper	10	6
Molybdenum	ND	ND
Lead	2	2
Phenol	2.82	ND

CS-6 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	6.5
Chromium	<0.050
Copper	100
Molybdenum	<2.5
Soluble Cyanide - WET (mg/L)	0.49
DI Water Soluble Cyanide (mg/L)	ND

B7 (2/11/1990)			
Depth (ft bgs)	0.5	3	6.5
Total Cyanide	0.2	2	0.6
Arsenic	1.3	2.5	ND
Beryllium	ND	ND	0.3
Chromium	26	25	32
Copper	6	5	8
Molybdenum	ND	ND	ND
Lead	6	1	2
Phenol	0.65	ND	1.19

B1 & B2-Composite (2/11/1990)			
Depth (ft bgs)	0.5	3	6
Total Cyanide	160	24	4.7
Arsenic	6.6	1	ND
Beryllium	ND	ND	ND
Chromium	28	42	35
Copper	4	13	8
Molybdenum	23	4	4
Lead	4	2	2
Phenol	ND	ND	ND
Soluble Cyanide - WET (mg/L)	4.2	5.8	NA

CS-10 (4/20/1990)	
Depth (ft bgs)	0 - 0.25
Lead	12

CS-7 (4/20/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	6.3
Chromium	<0.050
Copper	55
Molybdenum	<2.5
Soluble Cyanide - WET (mg/L)	0.18
DI Water Soluble Cyanide (mg/L)	1.7

B12 & B13-Composite (2/11/1990)		
Depth (ft bgs)	3	6.5
Total Cyanide	0.2	0.4
Arsenic	3.4	ND
Beryllium	1.4	ND
Chromium	39	33
Copper	52	10
Molybdenum	ND	ND
Lead	15	1
Phenol	ND	2.23

B4 (2/11/1990)			
Depth (ft bgs)	0.5	3	7
Total Cyanide	7.1	1.5	3.2
Arsenic	ND	1.6	ND
Beryllium	ND	ND	ND
Chromium	30	33	37
Copper	8	7	13
Molybdenum	3	3	3
Lead	4	1	2
Phenol	ND	ND	0.52

CS-8 (4/20/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	ND
Chromium	<0.050
Copper	91
Molybdenum	<2.5

CS-3 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	1.4
Chromium	<0.050
Copper	9.7
Molybdenum	<2.5

B3 (2/11/1990)			
Depth (ft bgs)	0.5	3	6
Total Cyanide	26	13	22
Arsenic	ND	0.6	ND
Beryllium	ND	ND	ND
Chromium	31	47	28
Copper	4	18	9
Molybdenum	ND	5	3
Lead	3	2	2
Phenol	ND	ND	ND

CS-11 (6/15/1990)	
Depth (ft bgs)	0.5
Copper	17

B8 & B9-Composite (2/11/1990)		
Depth (ft bgs)	3	6.5
Total Cyanide	0.3	0.2
Arsenic	1.5	0.9
Beryllium	0.3	0.3
Chromium	40	32
Copper	26	11
Molybdenum	ND	ND
Lead	4	2
Phenol	ND	0.72

CS-1 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	2.1
Chromium	<0.050
Copper	36
Molybdenum	<2.5

2502 (9/15/1988)	
Depth (ft bgs)	4
Cyanide	2300*
Antimony	<10
Arsenic	3
Barium	55
Beryllium	0.5
Cadmium	<1
Chromium	60
Cobalt	4.8
Copper	13
Lead	<5
Mercury	0.067
Molybdenum	<20
Nickle	48
Silver	40
Thallium	<0.1
Vanadium	35
Zinc	45
Iron	16000
TPHg	ND
BTEX	ND
Acetone	ND
PAHs	ND
VOCs	ND
Chloride	0.22
Nitrate	41
Phenolics	71

CS-2 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	8.3
Chromium	<0.050
Copper	5.6
Molybdenum	<2.5
Soluble Cyanide - WET (mg/L)	0.78
DI Water Soluble Cyanide (mg/L)	0.41

CS-12 (6/15/1990)	
Depth (ft bgs)	0.5
Copper	21

CS-5 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	2.8
Chromium	<0.050
Copper	97
Molybdenum	<2.5

CS-13 (6/15/1990)	
Depth (ft bgs)	0.5
Copper	22

CS-4 (4/18/1990)	
Depth (ft bgs)	0 - 0.25
Total Cyanide	1.3
Chromium	<0.050
Copper	28
Molybdenum	<2.5

B10 & B11-Composite (2/11/1990)		
Depth (ft bgs)	3	6.5
Total Cyanide	0.6	0.8
Arsenic	0.6	ND
Beryllium	0.6	0.2
Chromium	35	31
Copper	15	10
Molybdenum	ND	ND
Lead	2	2
Phenol	ND	ND

EXPLANATION

- Soil sample location
- Area of excavation (April 16 - April 20, 1990)
- Area of high efficiency vacuuming (April 16 - May 24, 1990)

NOTES
1. All concentrations are in mg/kg unless otherwise noted.
2. * - Matrix interference may have resulted in higher reported concentrations for samples 2499, 2500, 2501, and 2502 for Cyanide analysis.

Abbreviations
TPHg = Total Petroleum Hydrocarbons reported as gasoline
BTEX = benzene, toluene, ethylbenzene, and xylenes using EPA Method 8020
PAHs = Polycyclic Aromatic Hydrocarbons using EPA Method 8100
WET = Waste Extraction Test
ft bgs = Feet below ground surface
mg/L = Milligrams per liter
VOCs = Volatile organic compounds using EPA Method 8010
ND = Not detected

0 15 Feet
(approximate)

POST-EXCAVATION AND VACUUMING SAMPLE LOCATIONS AND CHEMICAL CONCENTRATIONS
Pacific Shops, Inc.
1829 Clement Avenue
Alameda, California

By: MM | 06/04/2010 | Project No. 4740.000

AMEC Geomatrix | Figure 3

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TABLE 1

ANALYTICAL RESULTS
TREATMENT ROOM AREA - EAST END OF BUILDING
(results reported in parts per million, mg/kg)

Sample Location and Depth	Constituent (1) CN	As	Be	Cr	Cu	Mo	Pb	pH	Phenol
S-1	1100	14	53	800	2900	630	120	9.0	0.94
B1,B2-0.5	160	6.6	ND	28	4	23	4	7.2	ND
B1,B2-3	24	1.0	ND	42	13	4	2	6.9	ND
B1,B2-6	4.7	ND	ND	35	8	4	2	7.7	ND
B3-0.5	26	ND	ND	31	4	ND	3	6.6	ND
B3-3	13	0.6	ND	47	18	5	2	8.7	ND
B3-6	22	ND	ND	28	9	3	2	7.8	ND
B4-0.5	7.1	ND	ND	30	8	3	4	5.4	ND
B4-3	1.5	1.6	ND	33	7	3	1	7.6	ND
B4-7	3.2	ND	ND	37	13	3	2	7.8	0.52
TTLC	--	500	75	500	2500	3500	1000	--	--

Notes:

(1) Constituents = CN-cyanide, As-arsenic, Be-beryllium, Cr-chromium, Cu-copper, Mo-molybdenum, Pb-lead.

ND = Not detected, see Appendix B for specific laboratory detection limits.

TTLC = Total Threshold Limit Concentration for designation as hazardous waste.

ATTACHMENT 4

TABLE 2

ANALYTICAL RESULTS - SURFACE SAMPLES
ETCH PROCESS ROOM AREA - WEST END OF BUILDING
(results reported in parts per million, mg/kg)

Sample Location	Constituent (1) CN	Cr	Cu	Mo
S-2	240	55	120	11
S-2D(2)	510	61	100	12
S-3	120	54	180	ND
S-4	650	150	410	140
S-5	270	260	9000	170
S-5D	1100	280	900	120
S-6	1300	80	320	170
S-6D	1200	92	270	160
S-7	1100	120	480	500
TTLC	--	500	2500	3500

Notes:

(1) Constituents = CN-cyanide, Cr-chromium, Cu-copper, Mo-molybdenum
(2) Sample designation S-2D denotes a duplicate of sample S-2
ND = Not detected, see Appendix B for specific laboratory detection limits
TTLC = Total Threshold Limit Concentration for designation as hazardous waste

TABLE 3

ANALYTICAL RESULTS - SUBSURFACE SAMPLES
ETCH PROCESS ROOM AREA - WEST END OF BUILDING
(results reported in parts per million, mg/kg)

Sample Location and Depth	Constituent (1) CN	As	Be	Cr	Cu	Mo	Pb	pH	Phenol
B5-0.5	0.3	1.3	0.2	24	6	ND	9	6.7	ND
B5-3	0.2	1.6	ND	23	3	ND	ND	7.9	ND
B5-6	0.2	0.6	ND	26	7	ND	2	7.8	ND
B6-0.5	2.1	4.9	0.3	38	130	ND	1100	6.2	ND
B6-3	1.9	ND	0.5	52	10	ND	2	7.1	2.82
B6-6.5	ND	ND	0.2	26	6	ND	2	7.9	ND
B7-0.5	0.2	1.3	ND	26	6	ND	6	7.0	0.65
B7-3	2.0	2.5	ND	25	5	ND	1	8.0	ND
B7-6.5	0.6	ND	0.3	32	8	ND	2	7.7	1.19
B8&9-0.5	7.8	9.3	ND	36	26	ND	23	2.4	ND
B8&9-3	0.3	1.5	0.3	40	26	ND	4	7.5	ND
B8&9-6.5	0.2	0.9	0.3	32	11	ND	2	7.6	0.72
B10&11-0.5	3.5	14	0.4	42	51	ND	52	3.6	0.44
B10&11-3	0.6	0.6	0.6	35	15	ND	2	6.3	ND
B10&11-6.5	0.8	ND	0.2	31	10	ND	2	8.0	ND
B12&13-0.5	150	68	ND	85	30	ND	23	3.3	ND
B12&13-3	0.2	3.4	1.4	39	52	ND	15	8.2	ND
B12&13-6.5	0.4	ND	ND	33	10	ND	1	8.2	2.23
TTLC	--	500	75	500	2500	3500	1000	--	--

Notes:

(1) Constituents = CN-cyanide, As-arsenic, Be-beryllium, Cr-chromium, Cu-copper, Mo-molybdenum, Pb-lead.

ND = Not detected, see Appendix B for specific laboratory detection limits.

TTLC = Total Threshold Limit Concentration for designation as hazardous waste.

Pb - TTLC

TABLE 1

SOIL SAMPLE ANALYTICAL RESULTS
FORMER ETCH PROCESS ROOM AREA - WEST END OF BUILDING

Sample Number	Copper (mg/kg)	Molybdenum (mg/kg)	Hexavalent Chromium (mg/kg)	Lead (mg/kg)	Total Cyanide (mg/kg)	Soluble Cyanide Title 22 - WET (mg/l)	Soluble Cyanide DI Water (mg/l)
CS-1	36	ND	ND	--	2.1	--	--
CS-2	5.6	ND	ND	--	8.3	0.78	0.41
CS-3	9.7	ND	ND	--	1.4	--	--
CS-4	28	ND	ND	--	1.3	--	--
CS-5	97	ND	ND	--	2.8	--	--
CS-6	100	ND	ND	--	6.5	0.49	ND
CS-7	55	ND	ND	--	6.3	0.18	1.7
CS-8	91	ND	ND	--	ND	--	--
CS-9	360	ND	ND	--	ND	27	--
CS-10	--	--	--	12	--	--	--
CS-11	17	--	--	--	--	--	--
CS-12	21	--	--	--	--	--	--
CS-13	22	--	--	--	--	--	--

TABLE 3

ANALYTICAL RESULTS - SOIL
METALS, ARSENIC AND CYANIDE
(Reported in parts per million, mg/kg)

Sample Location and Depth (Feet)	Constituent						
	As	Cr	CrVI	Cu	CN	Mo	Pb
DS-1							
0.5	12	31	ND	13	ND	ND	5.3
2.0	9.5	25	ND	15	1.1	ND	11
DS-2							
0.5	9.3	25	ND	15	5.1	ND	7.2
2.0	5.9	4.3	ND	9.3	1.3	ND	3.5
DS-3							
0.5	14	38	ND	13	2.3	ND	5.8
2.0	10	29	ND	9.9	ND	ND	14
TTLC	500	2500	500	2500	6*	3500	1000

Notes:

Samples analyzed by Sequoia Analytical Laboratory
ND = Not detected
TTLC = Total Threshold Limit Concentration
As = Arsenic
Cr = Chromium
CrVI= Hexavalent Chromium
Cu = Copper
CN = Cyanide
Mo = Molybdenum
Pb = Lead
* = Alameda County Department of Environmental Health specified limit for Title 22 WET Method (soluble cyanide)

TABLE 4
SUMMARY OF TOTAL vs. SOLUBLE CYANIDE TEST RESULTS

Sample Designation	Total Cyanide (mg/kg)	Soluble Cyanide+ (mg/l)
B1,B2-0.5*	160	4.2
B1,B2-3*	24	5.8
B3-0.5*	26	2.2
B3-6*	22	0.24
B4-0.5*	7.1	0.05
S-2**	510	8.8
S-3**	120	2.7
S-4**	650	2.0
S-7**	1100	18

Notes:

\+ = Soluble cyanide determined by Waste Extraction Test, CCR Title 22.
* = These soils left in-place beneath asphalt at east end of building.
** = These soils removed from the west end of building.

TABLE 1

ANALYTICAL RESULTS OF DETECTED VOLATILE ORGANIC COMPOUNDS IN SOIL VAPOR [1]

Pacific Shops
1829 Clement Avenue
Alameda, California

All concentrations reported in units of micrograms per cubic meter ($\mu g/m^3$)

Sample ID	Date	Depth (feet bgs)	Analytical Method	Acetone	Benzene	Bromo-methane	1,3-Butadiene	Carbon Disulfide	Chloro-form	Cyclo-hexane	Ethanol	Ethyl-benzene	4-Ethyl-toluene	Heptane	Hexane	Methylene chloride	Methyl Ethyl Ketone	4-Methyl-2-pentanone	2-Propanol	Tetra-chloro-ethene	Tetra-hydro-furan	1,2,4-Trimethyl-benzene	Toluene	o-Xylene	m,p-Xylene
SV-1	9/22/2010	3.0	TO-15	100	16	<4.3	11	7.6	<5.4	6.8	9.1	<4.8	<5.4	<4.5	5.6	<3.8	21	56	<11	10	<3.2	<5.4	8.8	<4.8	<4.8
SV-20	9/22/2010	3.5	TO-15	230	9.8	9.0	14	31	54	4.1	21	<4.7	<5.3	8.7	12	4.7	54	42	13	<7.3	<3.2	<5.3	7.5	<4.7	<4.7
SV-2	9/22/2010	3.5	TO-15	230	12	8.2	12	30	52	7.4	20	<4.7	<5.3	8.6	11	5.0	54	38	<11	<7.3	3.5	<5.3	12	<4.7	5.2
SV-3	9/22/2010	3.5	TO-15	75	10	<4.2	8.1	10	17	<3.7	47	<4.8	<5.4	<4.5	4.6	<3.8	14	29	<11	<7.5	<3.2	<5.4	7.8	<4.8	6.3
SV-4	9/10/2010	3.5	TO-15	110	11	8.7	22	19	280	8.4	15	5.9	9.2	12	17	5.1	23	70	<11	<7.6	3.6	11	25	7.1	19
Residential Exposure ESL (DTSC AF) [2]				3.30E+04	4.20E+01	5.20E+02	--	--	--	--	--	4.90E+02	--	--	--	2.60E+03	5.20E+05	--	--	2.10E+02	--	--	3.10E+04	1.00E+04	1.00E+04
Commercial/Industrial ESL (DTSC AF) [3]				9.20E+05	1.40E+02	1.50E+03	--	--	--	--	--	1.60E+03	--	--	--	8.70E+03	1.50E+06	--	--	6.90E+02	--	--	8.80E+04	2.90E+04	2.90E+04

Notes

1. Each soil vapor sample was collected into Summa™ canisters by AMEC Geomatrix, Inc., and analyzed using U.S. EPA Method TO-15 by Air Toxics.
2. Residential Exposure Environmental Screening Level (ESL). Update to Environmental Screening Levels for Sites with Impacted Soil and Groundwater, Water Board, May 2008,Table E-4 Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns using DTSC Attenuation Factors.
3. Commercial/Industrial Environmental Screening Level (ESL). Update to Environmental Screening Levels for Sites with Impacted Soil and Groundwater, Water Board, May 2008, Table E-4 Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns using DTSC Attenuation Factors.

Abbreviations

-- = No ESL available
< = Not detected at or above the laboratory reporting limit shown
AF = Attenuation Factor
Air Toxics = Air Toxics, Limited, of Folsom, California
bgs = below ground surface
DTSC = Department of Toxic Substances Control
U.S. EPA = U.S. Environmental Protection Agency
Water Board = California Regional Water Quality Control Board, San Francisco Bay Region

Table 2
Groundwater Analytical Results
Former Chem-Mil-Co Site
1829 Clement Avenue
Alameda, CA

Sample ID	Sampling Date	As	Total Cr	Cr VI	Cu	Total CN	Mo	Pb
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	16-Mar-2007	1.4	<0.5	<0.2	<0.5	16 (i)	<0.5	<0.5
	9-Oct-1990	--	--	--	--	950	--	--
	26-Sep-1990	<10.0	<5.0	<10.0	40	350	<10.0	<30.0
	13-Sep-1990	5.0	7.0	<10.0	20	2,400	<10.0	<30.0
MW-2	16-Mar-2007	0.57	<0.5	<0.2	<0.5	<2.0	<0.5	<0.5
	9-Oct-1990	--	--	--	--	<20.0	--	--
	26-Sep-1990	<5.0	170	<10.0	30	<20.0	<10.0	<30.0
	13-Sep-1990	40	83	<10.0	10	<20.0	<10.0	<30.0
MW-3	16-Mar-2007	0.83	<0.5	<0.2	<0.5	<2.0	<0.5	<0.5
	9-Oct-1990	--	--	--	--	<20.0	--	--
	26-Sep-1990	<5.0	<5.0	<10.0	20	<20.0	<10.0	<30.0
	13-Sep-1990	5.0	<5.0	<10.0	<10.0	<50.0	<10.0	<30.0
Regulatory Agency Screening Levels								
ESLs		36	180	11	3.1	None[1]	35	2.5
MCL		10	100	None	1,300	200	None	15

Notes:

As = Arsenic using Method 200.8

Cr = Total Cromuim using EPA Method 200.8

Cr VI = Cromium VI using EPA Method 218.6

Cu = Copper using EPA Method 200.8

CN = Toal cyanide using EPA Method 335.3

Mo = Molybdenum using EPA Method 200.8

Pb = Lead using EPA Method 200.8

µg/L = Micrograms per liter

<10.0 = Not detected at or above the laboratory reporting limit

-- = Analysis not requested

ESLs = California Regional Water Quality Control Board Environmental Screening Levels, Table B

MCL = United States Environmental Protection Agency Maximum Contaminant Level (MCL) for drinking water

1 = There is no ESL for total cyanide, but there is one for free cyanide.

Laboratory Notes:

i = Liquid sample contains greater than ~ 1 vol. % sediment

ATTACHMENT 5

DRILL RIG	CME 45	SURFACE ELEVATION	N.S.	LOGGED BY	G. Fiedler
DEPTH TO GROUNDWATER	3.8 feet	BORING DIAMETER	8-inch	DATE DRILLED	9/11/90

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Asphalt and base rock, some tar-like material **SAND (SP)**, dusky brown, damp, loose, poorly graded (fill)							
SAND (SW), pale to moderate yellowish brown, damp, firm, well graded, with moderately plastic clay		5		9			
grading pale yellowish brown, wet, loose, trace clay		10		7			
grading moist		15		15			
Bottom of boring 15.5 feet Notes: Well Construction Details - 2-inch PVC, Schedule 40, solid and slotted (0.010-inch) casing - 2/12 washed sand filter pack - bentonite pellets seal - cement grout surface seal with steel stovepipe locking cover N.S.- Not surveyed							

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
		MW-1

ATTACHMENT 6

DRILL RIG	CME 45	SURFACE ELEVATION	N.S.	LOGGED BY	G. Fiedler
DEPTH TO GROUNDWATER	3.7 feet	BORING DIAMETER	8-inch	DATE DRILLED	9/11/90

DESCRIPTION AND CLASSIFICATION		DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
DESCRIPTION AND REMARKS	SOIL TYPE						
Asphalt and fill							
SAND (SP), yellowish brown, dry, loose, fine to medium							
grading dusky brown, moist, moderate plasticity							
SAND (SW), light brown, moist, very loose, fine to medium							
CLAYEY SAND (SC), pale to moderate yellowish brown, moist, firm, moderate to low plasticity, moderately weathered, moderate dusky brown oxidation mottling		5		9			
SILTY SAND (SM), medium bluish gray, moist, loose, minor yellowish brown oxidation staining, trace carbonized rootlets				6			
		10		9			
grading yellowish brown, wet, loose, well graded							
		15		19			

Total Depth = 16 Feet

Notes:

Well Construction Details

- 2-inch PVC, Schedule 40, solid and slotted (0.010-inch) casing
- 2/12 washed sand filter pack
- bentonite pellets seal
- cement grout surface seal with steel stovepipe locking cover

N.S.- Not surveyed

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO
KE1179-1A-272	November 1990	MW-2

DRILL RIG	CME 45	SURFACE ELEVATION	N.S.	LOGGED BY	G. Fiedler
DEPTH TO GROUNDWATER	3.2 feet	BORING DIAMETER	8-inch	DATE DRILLED	9/11/90

DESCRIPTION AND CLASSIFICATION	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	PID READING	REMARKS	WELL CONSTRUCTION
Asphalt							
SILTY SAND (SM), dusky yellowish brown, moist, soft, fine to medium, poorly graded, (FILL)							
SAND (SW), light brown, moist, loose, medium grained, well graded				5			
CLAYEY SAND (SC), pale to moderate yellowish brown, moist, firm, moderate plasticity, minor dusky brown oxidation mottling		5		6			
SILTY SAND (SM), light brown, moist, firm, well graded, rootlets, some clay, moderate oxidation mottling							
SAND (SW), light brown, wet, loose, trace clay		10		10			
		15		16			

Total Depth = 16.5 Feet

Notes:

Well Construction Details
- 2-inch PVC, Schedule 40, solid and slotted (0.010-inch) casing
- 2/12 washed sand filter pack
- bentonite pellets plug
- cement grout surface seal with steel stovepipe locking cover

N.S.- Not surveyed

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO
KE1179-1A-272	November 1990	MW-3

DRILL RIG	Soil Probe Auger (1")	SURFACE ELEVATION	2' Below Floor	LOGGED BY	PBH
DEPTH TO GROUNDWATER	±6 Feet	BORING DIAMETER	2"	DATE DRILLED	2/11/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)
1.5" asphaltic tar covering				
Silty sandy BASE MATERIAL, minor gravel and clay, damp to moist	brown	medium dense	SM	1
SAND, minor silt,(fine grained sand) slight blue/green discoloration in sample, dry to damp	black	loose	SM	2
Silty SAND (fine-to-medium grained) damp to moist	brown	medium dense	SM	3
Clayey SAND (fine grained sand), moist to very moist	brown	firm-stiff	SC	4
Silty SAND with clay (fine- to medium-grained sand) clayey zones	brown	loose to medium dense	SM	5 6
Total Depth = 6.5 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				7 8 9 10

SAMPLER | PENETRATION RESISTANCE (BLOWS/FT.) | WATER CONTENT (%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSI)

▼ After 4 hrs.

▼ First Water

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-1

DRILL RIG Hand Auger	SURFACE ELEVATION 2' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 5'6"	BORING DIAMETER 2-1/2 inches	DATE DRILLED 2/11/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
Silty sand BASE MATERIAL below 1.5 inch Asphalt	brown		SM						
Silty SAND, (fine, poorly sorted sand), discolored green, moist	black	medium dense	SM	1					
Silty SAND, (fine sand), very moist to wet	brown	loose to medium dense	SM	2 3 4			After 3.5 hrs.		
increasing silty clay									
Silty, clayey, SAND, (medium-to-coarse grained sand) poorly sorted, very moist to wet	brown	medium dense	SC	5 6			First Water		
Total Depth = 6.5 Feet				7 8 9 10					

Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-2

DRILL RIG Hand Auger 2.5"	SURFACE ELEVATION 2' below floor	LOGGED BY DML
DEPTH TO GROUNDWATER 5 Feet	BORING DIAMETER 2½ inches	DATE DRILLED 2/11/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
1.5" Asphalt type tar covering									
Silty sandy BASE MATERIAL with gravel and clay	brown		SM						
Slightly silty SAND, fine-medium-grained, moist	dark brown	loose	SM	1					
Silty SAND, fine-medium-grained, wet. no recovery in driven sample tube. Sample obtained with hand auger and placed in tube.	brown	loose to medium dense	SM	2 3	G				
Clayey SAND, to sandy clay medium-grained sand, very moist to wet grading to less clay with depth	brown	medium dense to stiff	SC	4 5			▽ First Water		
Silty SAND, fine-medium-grained sand, saturated. No recovery in driven sample tube.	brown	loose		6	G				
Sample placed in tube from hand auger. Total Depth = 6.5 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				7 8 9 10					

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-3

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 7 Feet	BORING DIAMETER 3"	DATE DRILLED 2/11/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
1.5 inches Asphaltic Tar covering									
Silty sandy BASE MATERIAL, minor gravel and clay, damp to moist	brown		SM	1					
SAND, minor silt, fine grained sand, blue-green discoloration in sample, damp	black	loose to medium dense	SM	2					
Silty SAND, (fine-to-medium grained) damp to moist. No recovery in sampler. Sample taken from hand auger and placed in brass tube.	brown	loose-	SM	3	C				
Clayey SAND (fine-to-medium grained) moist	brown	firm stiff	SC	4			▽	After 3 hrs.	
Silty SAND with clay (fine-to-medium grained sand)	brown	loose to medium dense	SM	5					
possible clayey zone				6					
				7	G		▽	First Water	
Total Depth = 7 Feet				8					
Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				9					
				10					

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-4

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSI)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Silty SAND, (fine-to-coarse sand), damp trace orgainic material	dark brown black	loose	SM	1 2					
Silty SAND with minor clay, very moist to damp, rust discoloration in vertical veins	brown	medium dense	SM	3 4 5			▽	After 2 hrs.	
Silty, clayey SAND (fine-to-medium) slight rust discoloration, very moist to wet	brown	medium dense	SC/SM	6 7			▽	First Water	
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				8 9 10					

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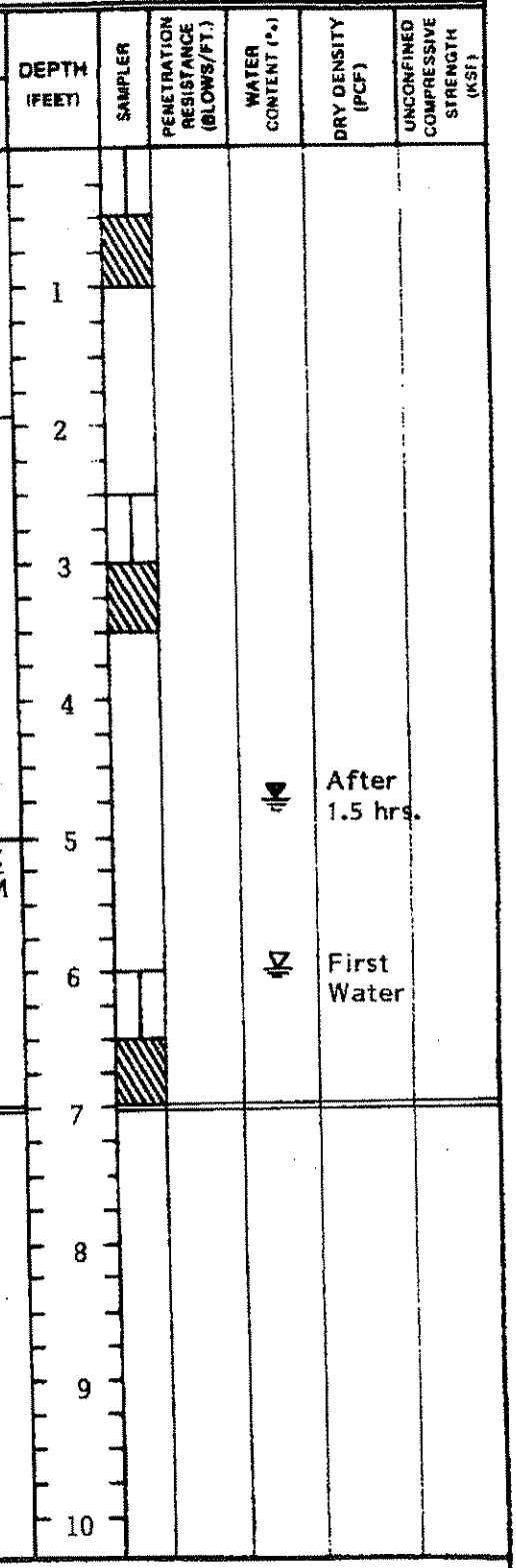
EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-5

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Silty SAND, trace organic debris, damp	black with some brown	loose	SM
Silty SAND with minor clay (fine-to-coarse grained sand), moist to very moist, rust colored sand in veritcal veins	brown	medium dense	SM
Silty clayey SAND (fine-to-coarse sand) slight discoloration in seams (seam filled with clayey silt), very moist to saturated	brown	medium dense	SC/SM
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.			



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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-6

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
Silty, SAND (fine- to coarse-grained) organic debris, damp	damp brown black	loose	SM	0–3					
Silty SAND (fine sand) moist to very moist	brown	medium	SM	3–5			▼	After 1 hr.	
Silty, clayey SAND (fine- to coarse sand) discoloration in clay seam around tree root, (green to black), very moist to saturated	brown	medium dense	SC	5–7			▽	First Water	
Total Depth = 7 Feet				7–10					

Note:- The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B_7

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Silty SAND (fine grained sand) damp, slight green-brown discoloration	dark brown black	loose	SM
Silty SAND, minor clay (fine-to-coarse grained sand), moist to very moist, rust discoloration in veins	brown	medium dense	SM
Silty, clayey SAND (fine-to-coarse grained sand) very moist to wet. Green brown discoloration in clay filled seams	brown	medium dense	SC
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.			

DEPTH (FEET): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

SAMPLER | PENETRATION RESISTANCE (BLOWS/FT.) | WATER CONTENT (%) | DRY DENSITY (PCF) | UNCONFINED COMPRESSIVE STRENGTH (KSF)

After 2 hrs.

First Water

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-8

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Silty SAND, (fine grained sand), trace organic debris, damp, green discoloration in sample	black dark brown	loose	SM	1					
Silty SAND with minor clay, (fine to coarse grained sand), green-brown discoloration in clay seams, moist to very moist	brown	medium dense	SM	2 3 4 5			▼ After 2 hrs.		
Silty, clayey SAND, (fine to coarse sand) very moist to wet	brown	medium dense	SC	6			▼ First Water		
Total Depth = 7 Feet Note: Stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				7 8 9 10					

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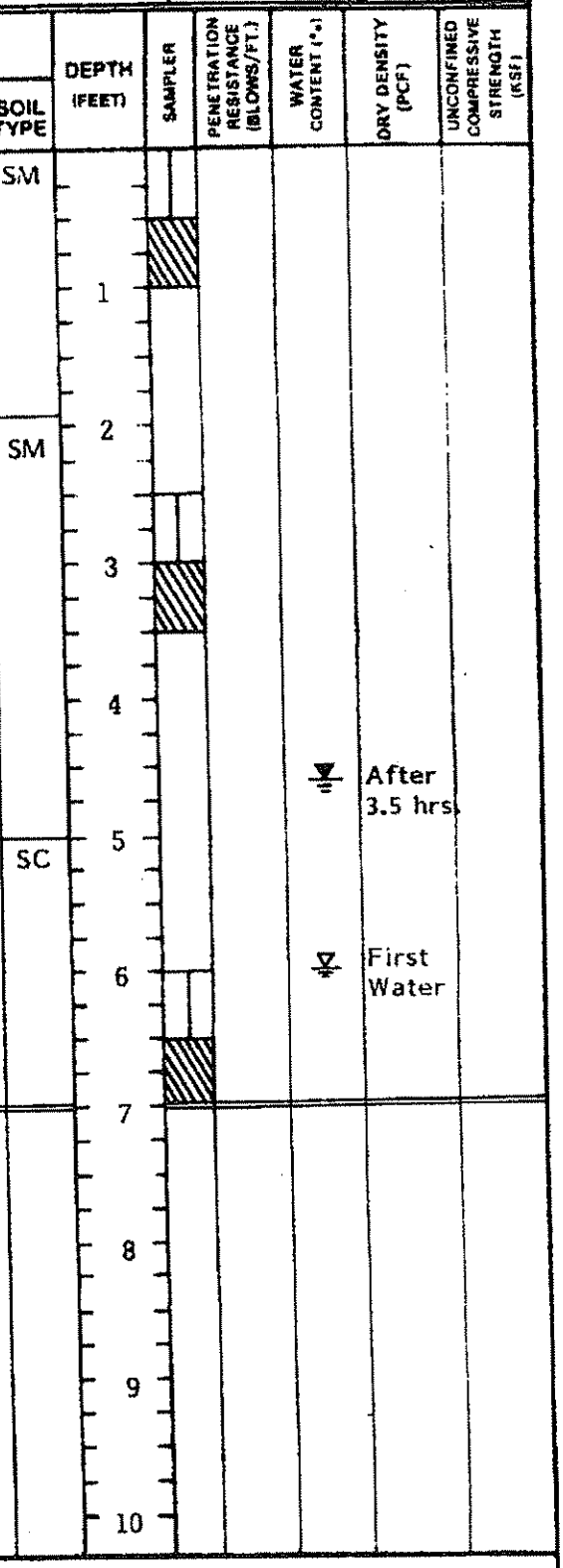
EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-9

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Silty SAND, (fine-to-coarse grained sand), traces organic material, dry to damp, green-blue discoloration in sample	brown black	loose	SM
Silty SAND with minor clay, (fine-to-medium grained sand), moist to very moist	brown	loose-medium dense	SM
Silty, clayey SAND (fine-to-coarse grained sand), wet to saturated, green-blue discoloration in clay-filled seams	brown	medium dense	SC
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.			



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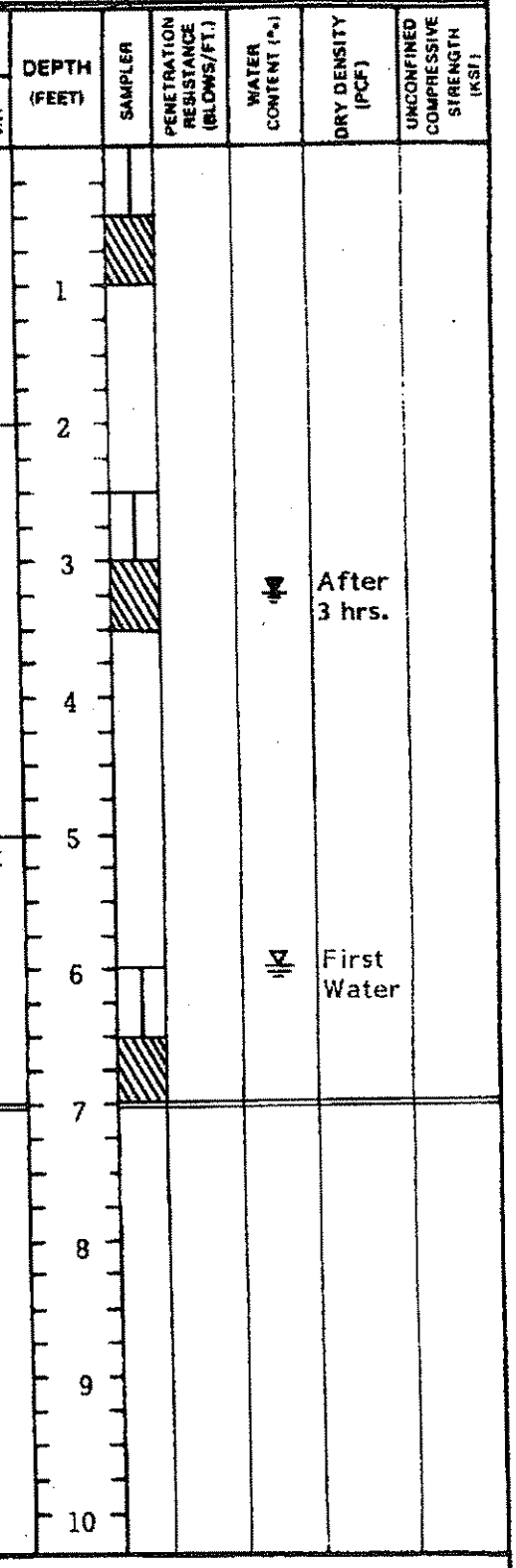
EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-10

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 7 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Silty SAND, (fine-to-coarse sand), trace organic debris, dry to damp, green/blue discoloration	dark brown to black	loose	SM
Silty SAND with minor clay (fine-to-coarse grained grained sand), moist to very moist	brown	medium dense	SM
Silty, clayey SAND, (fine grained sand) very moist to wet, rust colored sandy silt filled veins	brown	medium dense	SC
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.			



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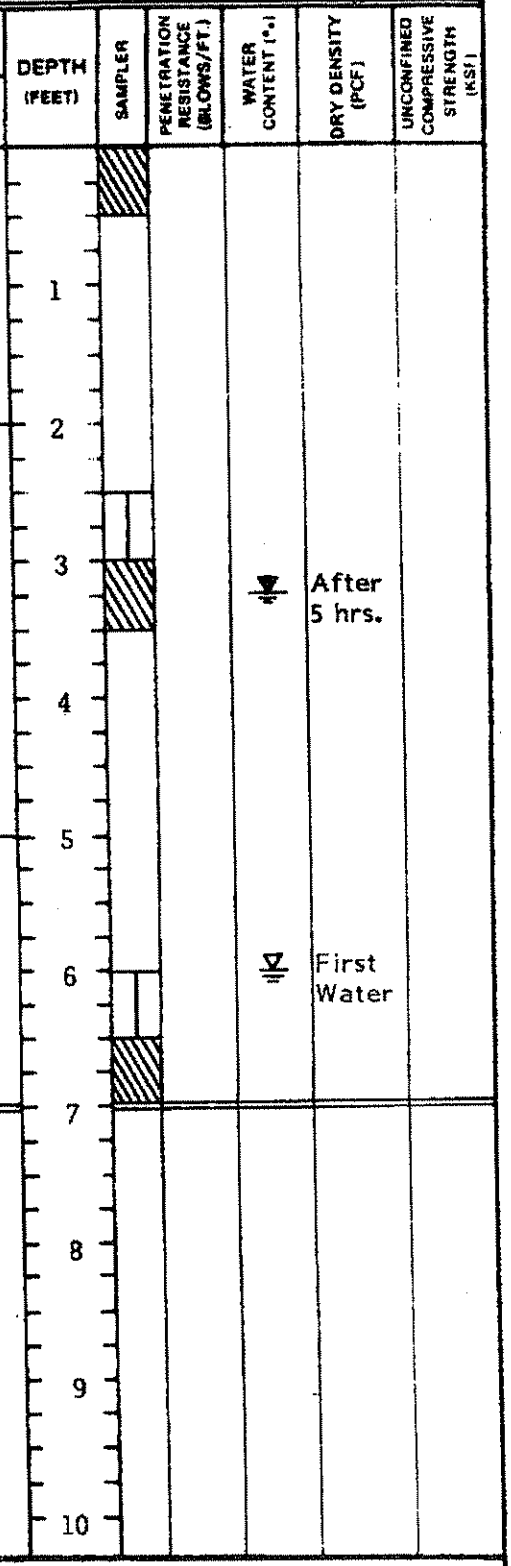
EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-11

DRILL RIG	Minute Man	SURFACE ELEVATION	3' Below Floor	LOGGED BY	PBH
DEPTH TO GROUNDWATER	6 Feet	BORING DIAMETER	3"	DATE DRILLED	2/17/90

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE
Silty SAND, (fine sand) damp to moist, green discoloring in sample	black	loose-medium dense	SM
Silty SAND, (fine sand), moist to very moist	brown	medium dense	SM
Clayey silty SAND, (fine sand), moist to wet	brown	medium dense	SC
Total Depth = 7 Feet Note:. The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.			



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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-12

DRILL RIG Minute Man	SURFACE ELEVATION 3' Below Floor	LOGGED BY PBH
DEPTH TO GROUNDWATER 6 Feet	BORING DIAMETER 3"	DATE DRILLED 2/17/90

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	UNCONFINED COMPRESSIVE STRENGTH (KSI)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Silty SAND (fine-to-coarse grained sand) minor organic material, dry to damp, slight green-blue discoloration	black	loose	SM	1					
Silty, clayey SAND, (fine sand), very moist to wet	brown	medium dense	SC	2, 3, 4			After 4 hrs.		
Clayey SAND with minor silt, (fine-to-coarse grained sand), wet to saturated, slight green-blue discoloration in clay filled veins	brown	medium dense	SC	5, 6			First Water		
Total Depth = 7 Feet Note: The stratification lines represent the approximate boundaries between soil types and the transition may be gradual.				7, 8, 9, 10					

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EXPLORATORY BORING LOG

1829 CLEMENT AVENUE
Alameda, California

PROJECT NO.	DATE	BORING NO.
KE1179-1	April 1990	B-13