

ALAMEDA COUNTY  
HEALTH CARE SERVICES

AGENCY  
DAVID J. KEARS, Agency Director



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

R00000214

June 14, 2001

Mr. Paul Douglass  
Dougco Metal Finishing  
48 Sanborn  
Orinda, CA 94563

Mr. Gary Fryer  
140 Las Vegas Road  
Orinda, CA 94563

**Re: Fuel Leak Site Case Closure for 1073 34<sup>th</sup> Street, Oakland, CA**

Dear Messrs. Douglass and Fryer:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]). The State Water Resources Control Board adopted this letter on February 20, 1997. As of March 1, 1997, the Alameda County Environmental Protection Division is required to use this case closure letter for all UST leak sites. We are also transmitting to you the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported release at the subject site. The subject fuel leak case is closed.

**SITE INVESTIGATION AND CLEANUP SUMMARY**

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

- up to 570ppm TPH as gasoline, 0.58ppm benzene, and 200ppm lead exist in soil beneath the site, and
- up to 130ppb TPHg and 3.9ppb benzene exist in groundwater beneath the site.

If you have any questions, please contact me at (510) 567-6762.

eva chu  
Hazardous Materials Specialist

enclosures: 1. Case Closure Letter 2. Case Closure Summary

c: Leroy Griffin, OFD  
files (dougco-6)

ALAMEDA COUNTY  
HEALTH CARE SERVICES

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**REMEDIAL ACTION COMPLETION CERTIFICATION**

**RO-214/StID 327 - 1073 34<sup>th</sup> Street, Oakland, CA  
(1-1000 gallon tank removed on December 7, 1989)**

June 14, 2001

Mr. Paul Douglass  
Dougco Metal Finishing  
48 Sanborn  
Orinda, CA 94563

Mr. Gary Fryer  
140 Las Vegas Road  
Orinda, CA 94563

Dear Messrs. Douglass and Fryer:

This letter confirms the completion of site investigation and corrective action for the underground storage tank formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

cc: Chuck Headlee, RWQCB  
Dave Deaner, SWRCB  
Leroy Griffin, OFD  
files-ec (dougco-5)



**Treatment and Disposal of Affected Material:**

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal w/destination)</u>	<u>Date</u>
Tank Soil	1 UST 20 cy	Disposed by H & H, in San Francisco, CA Aerated and reused onsite	Dec 1989

**Maximum Documented Contaminant Concentrations - - Before and After Cleanup**

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before<sup>1</sup></u>	<u>After<sup>2</sup></u>	<u>Before<sup>3</sup></u>	<u>After<sup>4</sup></u>
TPH (Gas)	1,830	570	53,000	130
TPH (Diesel)				
Benzene	40	0.58	12,000	3.9
Toluene	170	18	15,000	<0.5
Ethylbenzene	42	32	3,000	1.6
Xylenes	340	110	16,000	<0.5
MTBE	NA	NA	14	4.7
Other Lead	200 <sup>5</sup>	200 <sup>5</sup>	8.3	ND

- NOTE: 1 soil sample from excavation at time of tank removal, 12/89  
 2 soil sample from excavation after overexcavation, 4/90, or from Boring B2 at 9'bgs, 3/93  
 3 maximum concentrations detected from monitoring wells  
 4 recent groundwater data, 2/99  
 5 from soil boring B1 at 4'bgs, 5/93

**IV. CLOSURE**

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? \_\_\_\_\_

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? \_\_\_\_\_

Does corrective action protect public health for current land use? **YES**

Site management requirements: **A site safety plan must be prepared for construction workers in the event excavation/trenching is proposed in the vicinity of residual soil and groundwater contamination.**

Should corrective action be reviewed if land use changes? **YES**

Monitoring wells Decommissioned: **None, pending site closure**

Number Decommissioned: **0** Number Retained: **4**

List enforcement actions taken: **NOV issued 9/13/96**

List enforcement actions rescinded: **Currently in compliance**

**V. LOCAL AGENCY REPRESENTATIVE DATA**

Name: Eva Chu

Title: Haz Mat Specialist

Signature:



Date:

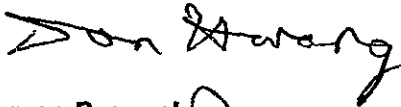
12/7/99

Reviewed by

Name: Don Hwang

Title: Haz Mat Specialist

Signature:



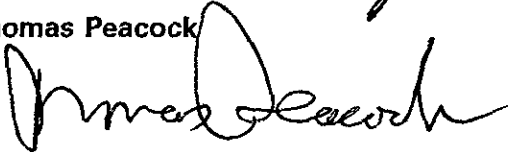
Date:

10/22/99

Name: Thomas Peacock

Title: Supervisor

Signature:



Date:

12-7-99

**VI. RWQCB NOTIFICATION**

Date Submitted to RB:

12/10/99

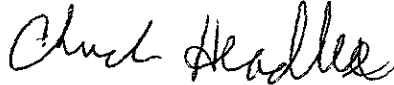
RB Response:

Concur

RWQCB Staff Name: Chuck Headlee

Title: AEG

Signature:



Date:

1/5/00

**VII. ADDITIONAL COMMENTS, DATA, ETC.**

The site currently consists of a metal finishing plant and a corrugate building used for storage. The two buildings are set on three parcels of land totaling 17,025 square feet.

In December 1989, a 1K-gallon gasoline UST was removed from the site. A soil sample, DC-1, collected beneath the fill-end of the tank (at 8' bgs) contained up to 1,830ppm TPHg, and 40, 170, 42, and 340ppm BTEX, respectively. The pit was excavated vertically to 10' bgs. Two confirmatory soil samples (PD-1 and PD-2) were collected at each end of the excavation. Considerably lower levels of petroleum hydrocarbons were detected in these samples (up to 1.7ppm TPHg, and 0.58, 0.25, ND, and 0.27ppm BTEX, respectively). ( See Figs 1, 2, 3, and Tables 1, 2)

In March 1993, six soil borings (B1 through B3, and MW-1 through MW-3) were drilled at the site to evaluate the vertical and lateral extent of hydrocarbon contamination. Three of the borings were converted into groundwater monitoring wells (MW-1 through MW-3). Groundwater was encountered at 9' to 10' bgs. Sediments were predominately clays or silty clays with discontinuous lens of sand and gravel. Groundwater flowed to the NNE at a gradient of 0.024 ft/ft. (See Fig 4, 5)

Soil from 7.5' to 9'bgs in boring B2 and MW-3 contained elevated hydrocarbon constituents. Soil from B1 and B3 also contained elevated lead (up to 200ppm) at 2.5' to 4'bgs. Groundwater from MW-1 and MW-3 contained up to 15,000ppb TPHg and 5,800, 18,000, 2,400, and 18,000ppb BTEX, respectively. Lead was not detected in groundwater from the monitoring wells. Residual lead in surficial soil (120ppm) does not exceed the PRG levels (130ppm) for residential soil. Although the maximum detected lead concentration in soil was at 200ppm, the average lead concentration in the vicinity of the former gasoline UST is well below the PRGs. Since lead was not detected in groundwater from wells MW-1 and MW-3, there is little risk that lead in soil would leach into groundwater. (See Table 3)

In May 1995, eight soil borings (SB-4 through SB-11) were drilled to further delineate the groundwater plume. Due to the low permeability of the clays encountered, grab water samples were only obtained from Boring SB-4 and SB-7. Unremarkable levels of petroleum hydrocarbons were identified in the soil samples collected at 5' to 8'bgs and at 9'bgs. (see Table 3). Grab groundwater from SB-4 contained up to 510ppb TPHg, and 10, 16, 0.9, and 29ppb BTEX, respectively. (See Fig 6, Table 4)

A fourth well, MW-4, was installed in November 1997 to delineate the downgradient edge of the plume. Groundwater has been sampled since October 1993. Elevated TPHg and BTEX continue to be detected in groundwater from wells MW-1 and MW-3. However, the plume appears to be stable and has not migrated offsite to well MW-4. Hydrocarbon levels continue to show a decreasing trend, indicating that natural attenuation processes are in effect at the site. (See Fig 7, Table 5)

A Tier 1 risk evaluation was conducted to evaluate potential risks associated with residual hydrocarbons in soil and groundwater onsite. Three potential exposure pathways evaluate include: inhalation of soil vapors to outdoor air; inhalation of soil vapors into an enclosed building; and leaching of hydrocarbons into groundwater. A risk level of  $10E-5$  (using the most recent groundwater data, 2/99) was not exceeded by each exposure pathway (see Table 6, 7). It appears residual hydrocarbon in soil and groundwater does not pose a risk to human health or the environment. Continued monitoring is not warranted.

In summary, case closure is recommended because:

- the leak and ongoing sources have been removed;
- the site has been adequately characterized;
- the dissolved hydrocarbon plume is not migrating;
- no preferential pathways exist at the site;
- no water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted; and,
- the site presents no significant risk to human health or the environment.



Northwest Envirocon  
Environmental Consulting

Site/Vicinity Map  
1051 & 1073 34th Street  
Oakland, California

Plate **1**

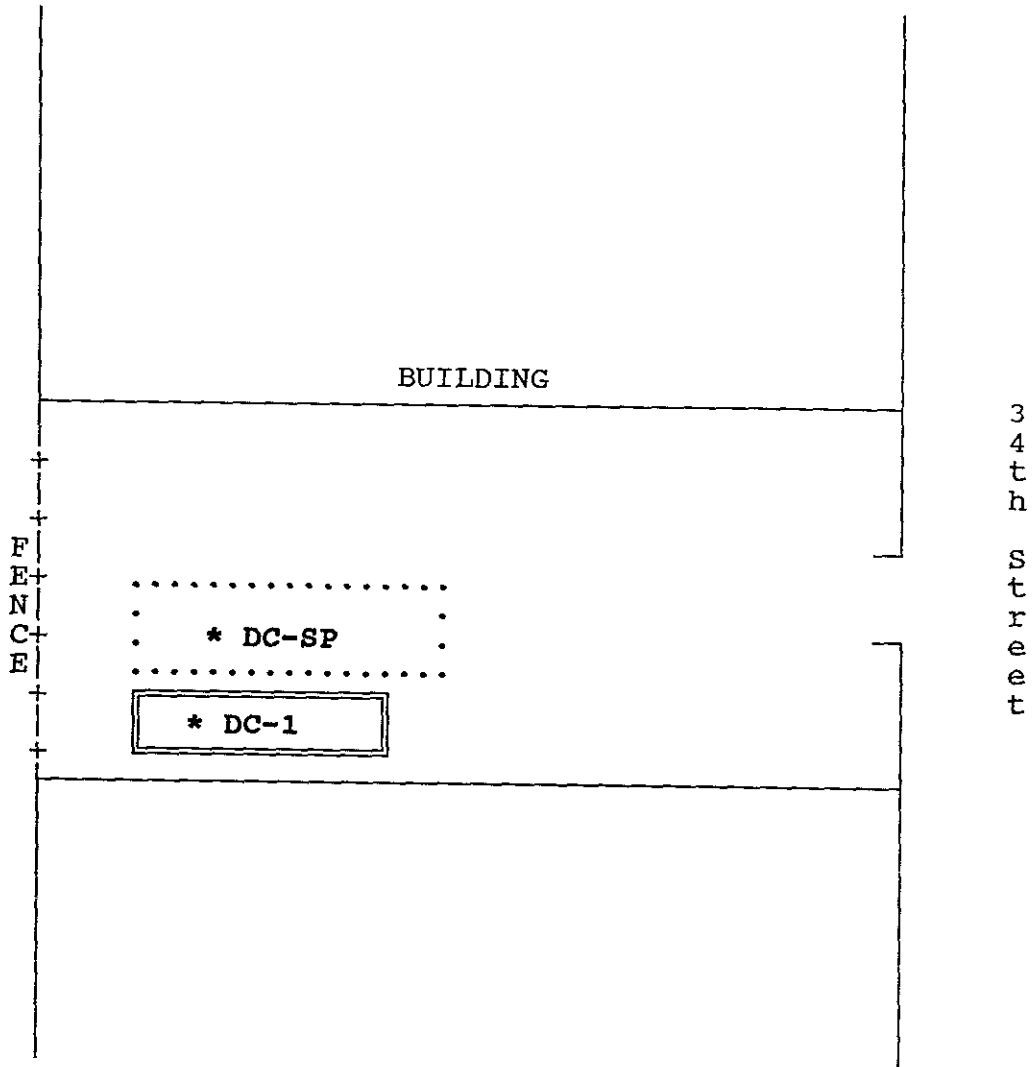
JOB NUMBER  
6409

DATE  
April 2, 1993


REVISED DATE

Fig 1

SITE PLAN  
DOUGCO. METAL FINISHING - 1073 34th St., OAKLAND



NOT TO SCALE

- \* - SAMPLING LOCATION
-  - FORMER UST LOCATION





3700 Lakeville Highway, Petaluma, CA 94954  
P.O. Box 808024, Petaluma, CA 94975-8024,  
Telephone: (707) 763-8245 FAX: (707) 763-4065

RECEIVED

DEC 12 1989

MILLER ENVIRONMENTAL CO.

Reinhard Ruhmke  
Miller Env. Co.  
631 Marina Way South  
Richmond, CA 94804

Client Code: MIEC1  
Survey # DOUG CO.  
Project/Release # 89-135

L A B O R A T O R Y   R E S U L T S

Page 1

Date Collected: 12/07/89  
Date Extracted: 12/08/89  
Date Analyzed: 12/08/89

Laboratory Job No.: 895665  
Date Received: 12/07/89  
Date Reported: 12/14/89

ASSAY: TPH/GASOLINE/BTEX (EPA 5020/8015/8020)  
MATRIX: SOIL

LABNO SMPLNO-ID	RESULTS	DET.LIM
60750 DC-1 GASOLINE	1,830 mg/kg	30.0 mg/kg
60751 DC-SP GASOLINE	1.8 mg/kg	1.2 mg/kg

THIS REPORT HAS BEEN REVIEWED  
AND APPROVED FOR RELEASE

Table 1



3700 Lakeville Highway, Petaluma, CA 94954  
P.O. Box 808024, Petaluma, CA 94975-8024  
Telephone: (707) 763-8245 FAX: (707) 763-4065

L A B O R A T O R Y   R E S U L T S

Page 2

Date Collected: 12/07/89  
Date Extracted: 12/08/89  
Date Analyzed: 12/08/89

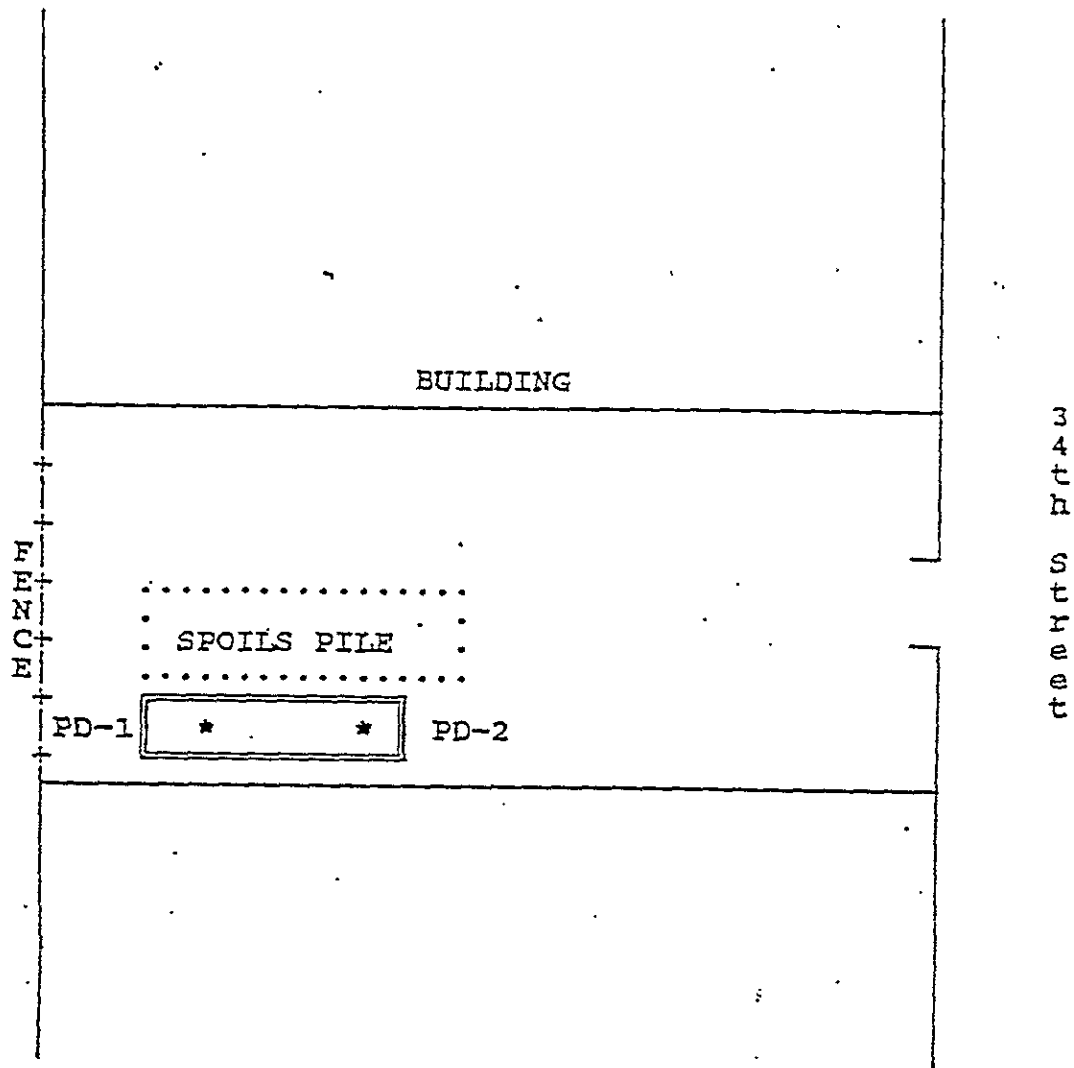
Laboratory Job No.: 895665  
Date Received: 12/07/89  
Date Reported: 12/14/89

ASSAY: TPH/GASOLINE/BTEX (EPA 5020/8015/8020)  
MATRIX: SOIL

<u>LABNO SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
60750 DC-1		
BENZENE	40 mg/kg	1.0 mg/kg
TOLUENE	170 mg/kg	1.0 mg/kg
ETHYLBENZENE	42 mg/kg	1.0 mg/kg
XYLENE	340 mg/kg	1.0 mg/kg
60751 DC-SP		
BENZENE	ND	0.040 mg/kg
TOLUENE	0.097 mg/kg	0.040 mg/kg
ETHYLBENZENE	ND	0.040 mg/kg
XYLENE	0.29 mg/kg	0.040 mg/kg

cont. Table 1

SITE PLAN  
DOUGCO. METAL FINISHING - 1073 34th St., OAKLAND



NOT TO SCALE

- \* - SAMPLING LOCATION
- ▭ - FORMER UST LOCATION

Fig 3

RECEIVED

MAY - 7 1990

MILLER ENVIRONMENTAL CO.



3700 Lakeville Highway, Petaluma, CA 94954,  
P.O. Box 808024, Petaluma, CA 94975-8024  
Telephone: (707) 763-4245 FAX: (707) 763-4065

Reinhard Ruhmke  
Miller Environmental Co.  
Environmental Engineering  
385 Pittsburg Ave  
Richmond, CA 94801

Client Code: MIEC1  
Survey # 90-1033

LABORATORY RESULTS

Page 1

Date Collected: 04/23/90  
Date Extracted: 04/26/90  
Date Analyzed: 04/26/90

Laboratory Job No.: 901937  
Date Received: 04/26/90  
Date Reported: 05/02/90

ASSAY: TPH/GASOLINE (EPA 5020/8015)  
MATRIX: SOIL

<u>LABNO</u> <u>SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
11131 PD-1 GASOLINE	1.7 mg/kg	1.0 mg/kg
11132 PD-2 GASOLINE	ND	1.0 mg/kg

THIS REPORT HAS BEEN REVIEWED  
AND APPROVED FOR RELEASE

Table 2



3700 Lakeville Highway, Petaluma, CA 94954  
P.O. Box 201024, Petaluma, CA 94975-0024  
Telephone: (707) 763-4245 FAX: (707) 763-4065

Page 2

## LABORATORY RESULTS

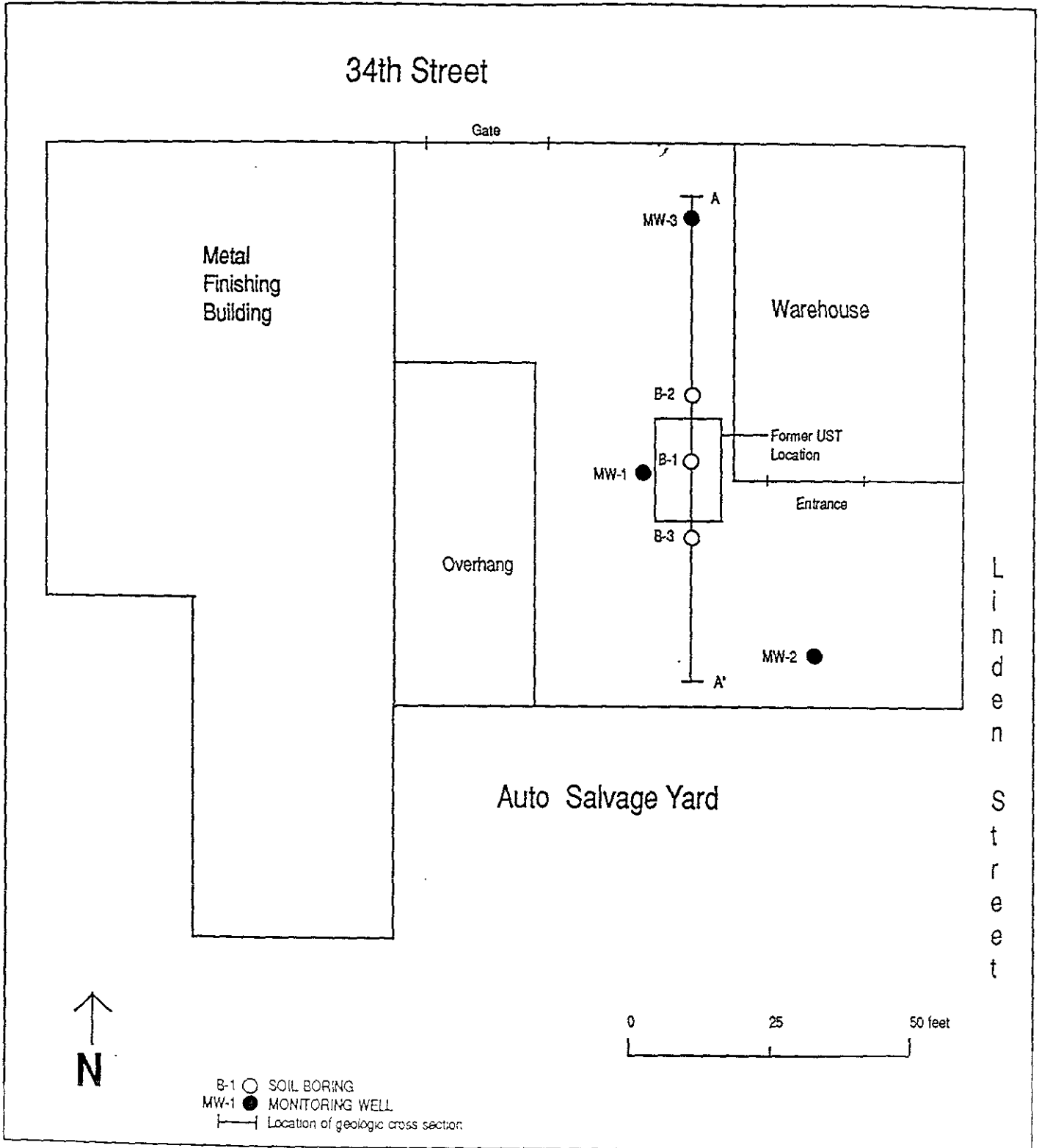
Date Collected: 04/23/90  
Date Extracted: 04/26/90  
Date Analyzed: 04/26/90

Laboratory Job No.: 901937  
Date Received: 04/26/90  
Date Reported: 05/02/90

ASSAY: TPH/BTEX (EPA 5020/8020)  
MATRIX: SOIL

<u>LABNO SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
11131 PD-1		
BENZENE	0.58 mg/kg	0.040 mg/kg
TOLUENE	0.25 mg/kg	0.040 mg/kg
ETHYLBENZENE	ND	0.040 mg/kg
XYLENE	0.27 mg/kg	0.040 mg/kg
11132 PD-2		
BENZENE	0.10 mg/kg	0.040 mg/kg
TOLUENE	0.19 mg/kg	0.040 mg/kg
ETHYLBENZENE	ND	0.040 mg/kg
XYLENE	0.16 mg/kg	0.040 mg/kg

ref. Table 2



Northwest Envirocon  
Environmental Consulting

Borings & Well Locations  
1051 & 1073 34th Street  
Oakland, California

Plate

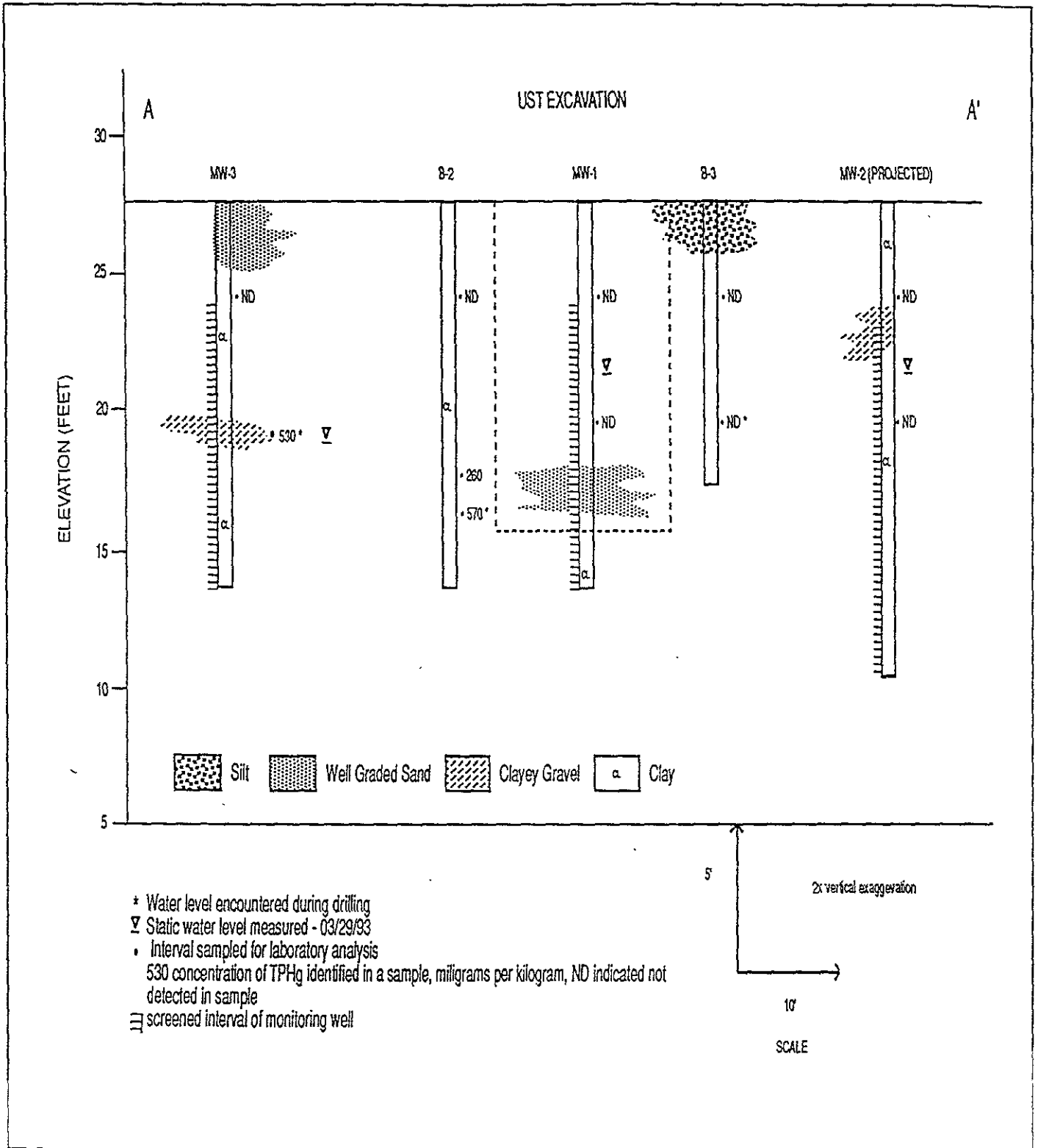
2

JOB NUMBER  
6409

DATE  
April 2, 1993

REVISED DATE

304



Northwest Envirocon  
Environmental Consulting

Geologic Cross Section  
1051 & 1073 34th Street  
Oakland, California

Plate

3

JOB NUMBER  
6409

DATE  
Apr. 12, 1993

REVISED DATE

Fig 5

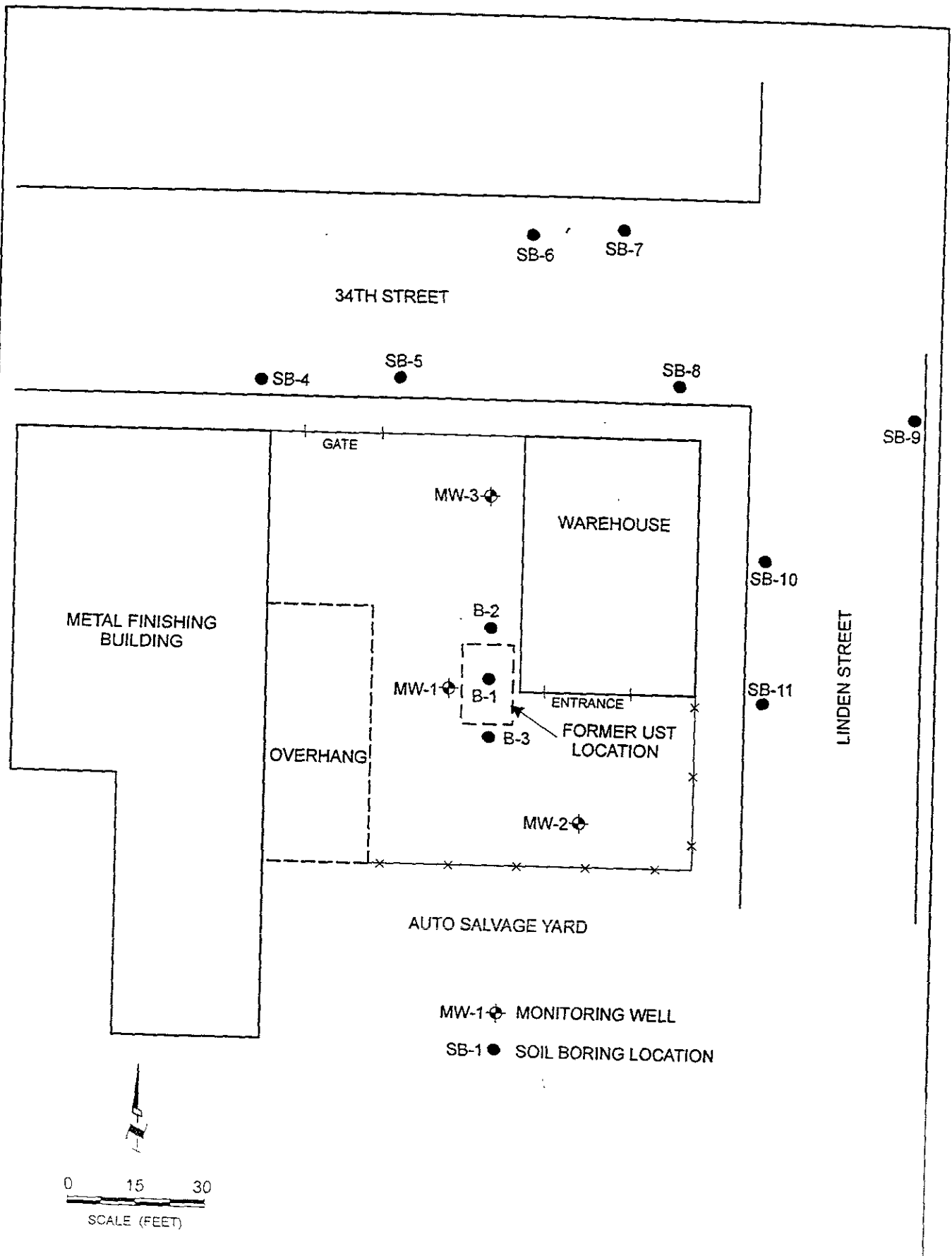


FIGURE 3.6  
MONITORING WELL AND BORING LOCATIONS  
DOUGCO METAL FINISHING  
1073 34TH STREET, OAKLAND, CALIFORNIA



**TABLE 3**  
**Summary of Soil Sample Analyses (ppm)**  
**Dougco Metal Finishing**

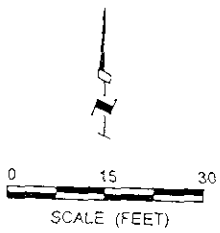
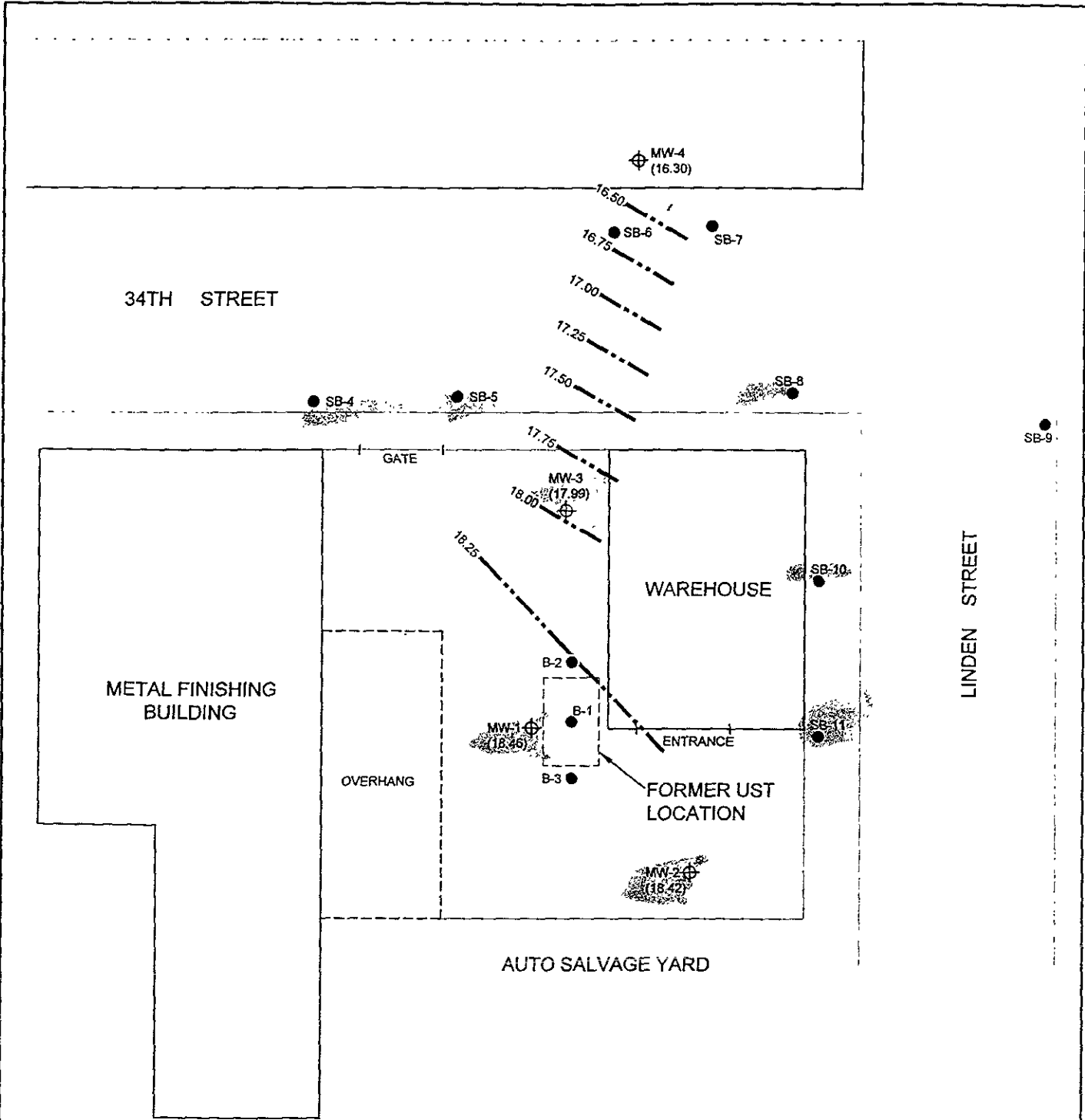
<u>Sample Location</u>	<u>Sample Depth (ft)</u>	<u>Sample Date</u>	<u>TPH-G</u>	<u>Benzene</u>	<u>Ethylbenzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Lead</u>
B1	2.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	8.1
B1	4	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	200
B1	7.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	9.8
B2	2.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	5.3
B2	7.5	5-Mar-93	260	<0.005	<0.005	0.81	31	5.5
B2	9	5-Mar-93	570	<0.005	18	32	110	6.7
B3	2.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	120
B3	7.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	8.5
SB-4	7	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	9
SB-4	9	16-May-95	13	0.01	0.034	0.14	0.077	5.2
SB-5	8	16-May-95	2	0.023	0.007	0.007	0.02	7
SB-5	9	16-May-95	4	0.092	0.11	0.12	0.59	6.3
SB-6	5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	30
SB-6	7	16-May-95	<1.0	<0.005	<0.005	<0.005	0.034	67
SB-7	7	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	11
SB-7	9	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	15

cont. TABLE 3  
 Summary of Soil Sample Analyses (ppm)  
 Dougco Metal Finishing

Sample Location	Sample Depth (ft)	Sample Date	TPH-G	Benzene	Ethylbenzene	Toluene	Xylenes	Lead
SB-8	5.5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	8.9
SB-8	7	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	4.3
SB-9	5.5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	5.8
SB-9	9.5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	5.6
SB-10	6	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	5.5
SB-10	9	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	5.9
SB-11	5.5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	6.5
SB-11	9.5	16-May-95	<1.0	<0.005	<0.005	<0.005	<0.005	8.7
MW1	2.5	9-Mar-93	<1.0	<0.005	<0.005	<0.005	0.23	7.3
MW1	7.5	9-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	13
MW2	2.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	12
MW2	7.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	6.5
MW2	9	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	5.5
MW3	2.5	5-Mar-93	<1.0	<0.005	<0.005	<0.005	<0.015	6.6
MW3	7.5	5-Mar-93	530	<0.005	14	15	94	5.9

**TABLE 4**  
**Summary of Groundwater Sample Analyses (ppb)**  
**Dougco Metal Finishing**

<u>Sample Location</u>	<u>Sample Date</u>	<u>TPH-G</u>	<u>Benzene</u>	<u>Ethylbenzene</u>	<u>Toluene</u>	<u>Xylenes</u>	<u>Lead</u>
MW1	3/11/93	15,000	3,800	560	1,200	13,000	<50
MW1	5/12/95	6,700	930	140	150	1,000	<5
MW2	3/11/93	<50	54	<0.3	<0.3	27	<50
MW2	5/12/95	280	31	9.8	7.2	44	<5
MW3	3/11/93	7,000	5,800	18,000	2,400	18,000	<50
MW3	5/12/95	74,000	3,900	3,500	2,900	17,000	<5
SB-4	5/17/95	510	10	16	0.9	29	<5
SB-7	6/26/95	233	5.8	35	<5.0	29.5	8.3



- LEGEND**
- MONITORING WELL
  - SOIL BORING LOCATIONS
  - WATER TABLE CONTOUR  
FEET ABOVE MEAN SEA LEVEL
  - (23.77) WATER TABLE ELEVATION  
FEET ABOVE MEAN SEA LEVEL

NORTHWEST ENVIROCON, INC 1828 TRIBUTE ROAD, SUITE A, SACRAMENTO, CA 95815 (916) 649-3570 FAX (916) 649-3819		SITE		DATE	PROJECT#
		1073 34TH STREET OAKLAND, CALIFORNIA		JANUARY 13, 1998	05-000927
DRAWN		APPROVED		SCALE	DRAWING#
CEB		MAI		1" = 30'	2
CLIENT				DRAWING TITLE	
PAUL DOUGLASS				WATER TABLE CONTOUR MAP	

Flu7

**Table 5**  
**Cumulative Summary of Analytical Results**  
**1073 34th Street, Oakland, California**

Date	Concentration, microgram per liter						MtBE
	TPHg	Benzene	Toluene	Ethylbenzene	Xylene		
<b>MW-1</b>							
3/11/93	15,000	3,800	560	1,200	13,000		na
10/1/93	19,000	7,800	600	1,600	6,800		na
1/19/94	18,000	5,000	700	1,000	4,300		na
4/26/94	20,000	2,600	1,100	600	3,100		na
8/11/94	20,000	4,200	200	900	2,900		na
5/12/95	6,700	930	140	150	1,000		na
9/12/95	13,000	1,700	5.0	1,200	1,600		na
12/19/95	12,000	1,800	74	730	1,000		na
3/25/96	1,700	120	8.7	24	95		na
6/27/96	14,000	940	8.0	1,200	1,800		na
9/26/96	15,000	920	21	1,400	460		na
11/13/97	4,500	410	<5.0	640	79		<50
2/3/99	130	3.9	<0.5	1.6	<0.5		<2.5
<b>MW-2</b>							
3/11/93	<50	54	<0.3	<0.3	27		na
10/1/93	<50	2.0	<0.5	<0.5	<0.5		na
1/19/94	96	5.0	3.0	2.0	13		na
4/26/94	110	3.0	2.0	2.0	13		na
8/11/94	150	8.0	2.0	4.0	15		na
5/12/95	280	31	9.8	7.2	44		na
9/12/95	<50	<0.5	<0.5	<0.5	<0.5		na
12/19/95	<50	<0.5	<0.5	<0.5	<0.5		na
3/25/96	50	<0.5	<0.5	<0.5	1		na
6/27/96	<50	<0.5	<0.5	<0.5	<0.5		na
9/26/96	<50	<0.5	<0.5	<0.5	<0.5		na
11/13/97	<50	<0.50	<0.50	<0.50	<0.50		<5.0
2/3/99	<50	<0.5	<0.5	<0.5	<0.5		2.9/4.7 (1)
<b>MW-3</b>							
3/11/93	7,000	5,800	18,000	2,400	18,000		na
10/1/93	34,000	12,000	15,000	2,500	13,000		na
1/19/94	53,000	8,100	12,000	2,700	16,000		na
4/26/94	44,000	6,500	11,000	2,800	13,000		na
8/11/94	33,000	7,000	2,800	1,800	6,400		na
5/12/95	74,000	3,900	3,500	2,900	17,000		na
9/12/95	32,000	3,600	680	2,700	8,200		na
12/19/95	30,000	4,300	250	2,900	7,900		na
3/25/96	45,000	1,900	890	2,900	9,200		na
6/27/96	34,000	2,500	460	3,000	8,600		na
9/26/96	31,000	2,300	52	2,800	6,000		na
11/13/97	3,200	280	<5.0	430	330		<5.0
2/3/99	<50	<0.5	<0.5	<0.5	<0.5		<2.5
<b>MW-4</b>							
11/13/97	<50	<0.50	<0.50	<0.50	<0.50		14
2/3/99	<50	<0.5	<0.5	<0.5	<0.5		<2.5

Notes

- na sample was not analyzed for this constituent
- < indicates constituent was not detected at the detection limit indicated
- (1) second number indicates confirmation run

Table 6  
 Tier 1 Soil Risk-Based Screening Levels for Benzene

Exposure Pathway	Receptor Scenario	Unit	Target Risk Level	
			10 <sup>-4</sup>	10 <sup>-6</sup>
soil volatilization to outdoor air	residential	mg/kg	27.3	0.272
soil vapor intrusion from soil to buildings	residential	mg/kg	0.537	<u>0.00537</u>
soil leachate to protect groundwater	residential	mg/kg	1.72	<u>0.0172</u>
soil volatilization to outdoor air	commercial/industrial	mg/kg	45.7	0.457
soil vapor intrusion from soil to buildings	commercial/industrial	mg/kg	1.09	<del>0.019</del> * 0.0109
soil leachate to protect groundwater	commercial/industrial	mg/kg	5.78	<u>0.0578</u>

Note: The maximum detected concentration of benzene was 0.092 mg/kg detected in the soil sample from the 9 foot depth of boring SB-5.

Source: ASTM Standard E 1739-95, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*.

*Need to convert to CA #s*

Table 7  
Tier 1 Groundwater Risk-Based Screening Levels

Exposure Pathway	Receptor Scenario	Unit	Target Cancer Risk Level Benzene			ACDEH Accepted Risk Level <sup>1</sup>	Hazard Quotient		
			10 <sup>-4</sup>	10 <sup>-5</sup>	10 <sup>-6</sup>		Ethylbenzene	Toluene	Xylenes
groundwater volatilization to outdoor air	residential	mg/l	1100	110	11	31.9	>S <sup>1</sup>	>S	>S
groundwater ingestion	residential	mg/l	0.294 <sup>3</sup>	0.0294	<u>0.00294</u>	0.0085	3.65	7.3	73
groundwater vapor intrusion from groundwater to buildings	residential	mg/l	2.38	0.238	0.0238	0.069	77.5	32.8	>S
groundwater volatilization to outdoor air	commercial/industrial	mg/l	>S	184	18.4	53.4	>S	>S	>S
groundwater ingestion	commercial/industrial	mg/l	0.987	0.0987	0.00987	0.029	10.2	20.4	>S
groundwater vapor intrusion from groundwater to buildings	commercial/industrial	mg/l	7.39	0.739	0.0739	0.21	>S	85.0	>S
							0		
Maximum Contaminant Level		mg/l	0.005				0.7	1.0	1.0
Maximum Detected Concentration (3/2/99)		mg/l	0.0039				0.64	<0.005	0.330

Notes

- 1 The ACDEH accepted risk level is the ASTM 10<sup>-5</sup> Tier 1 Risk-Based Screening Level multiplied by a slope factor of 0.29.
- 2 Selected risk level is not exceeded for all possible dissolved levels.
- 3 Screening levels that are exceeded by the maximum benzene concentration detected in groundwater samples collected on February 3, 1999 sampling are underlined.

Source ASTM Standard E 1739-95, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*.











**NORTHWEST ENVIROCON INC.**  
**Field Log of Test Pit or Auger Hole**

<p style="font-size: small;">Site diagram showing a warehouse and an excavation pit labeled B-3 0-7'. A north arrow is present.</p>	Site Location <b>Douco Metal Finishing</b>		Boring # <b>8-3</b>
	Project # <b>6409</b>		Date <b>3/5/93</b>
	Drilling Contractor <b>Bayland</b>		Sheet <b>1</b> of <b>1</b>
	Driller <b>Roger Strong</b>		Logger <b>Mary McDonald</b>
	Start <b>9:15 am</b>	Finish <b>10:00 am</b>	Boring Diameter <b>6"</b>
	Drilling Method <b>Hollow Stem Auger</b>		
	Sampling Method <b>Modified California (brass or stainless steel sleeves)</b>		
	n/s	est. water depth	elev

Depth	Cas.	Annu.	Well Legend	Screening Results (ppm)	Sample #	# Rec.	Blow Ct.	USCS	Description of Material
1			backfilled with cement/bentonite mixture					ML	
2									
3				1	2.5				light olive silt with and gravel (ML)
4				0	4.0			CL	5Y 5/2, soft, fine sand, medium gravel, rust staining brownish black clay with sand (CL) 5YR 2/1
5									minor fine angular gravel slight odor, pieces of glass
6									dusky brown clay with sand and gravel (CL) 5YR 4/2
7									dry (wet where it breaks)
8							3		fine sand, angular gravel, rust staining
9							3		more gravel at 8 ft.
10							8		more clay at 8.5 ft.
11							10		water at 9 ft.
12									more gravel at 9 ft.
									Total Depth = 10.5 ft.

# SOIL DRILLING LOG

SB/MW #: SB-4  
 # D- 23488-89  
 Page 1 of 1  
 Geologist: C. Warwick



*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Dougco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EOPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ = First Water  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0				0 - 1' ASPHALT and ROADBASE	RB		
1				1 - 10.5' Brown (7.5YR4/4) SANDY CLAY:(10,30,25,35); medium plastic; slightly stiff; fine gravel; moist.	CL		
2.5							1.5-inch diameter borehole
4.5			0.0	4.5 - 7' Color change to Dark gray (7.5 YR4/1); gravel not present.			
5.0			0.0				
7.5		51458	68				
8			8				Portland cement with 5% bentonite
10.0		51459	16				
10.0			15				
10.5				10.5 - 15' CLAYEY SAND/SANDY CLAY:(10,40,20,30); fine to medium grained sand, fine gravel; medium dense; saturated.	SC CL		
12.5							
15.0							

DOUGC.7/13/95.AUGNBP5

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_

*C. Warwick*  
 SIGNATURE OF REVIEWER

TITLE \_\_\_\_\_

*Sp Geo*  
 TITLE

# SOIL DRILLING LOG



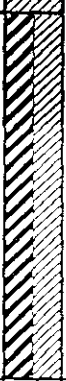
 SB/MW #: SB-5

 # D- 23490

 Page 1 of 1


 Geologist: C. Warwick
  
 SIGNATURE OF GEOLOGIST


PROJECT Douco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO \_\_\_\_\_  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 1.0				0 - 1' ASPHALT and ROADBASE	RB		
1.0 - 10.2				1 - 10.2' Strong brown (7.5YR4/6) SANDY CLAY: (5,35,30,30); low to medium plastic; slightly stiff to stiff; fine to coarse grained sand; fine gravel; moist.	CL		1.5-inch diameter borehole
10.2 - 15.0				10.2 - 15' Brown (7.5YR5/4) SANDY CLAY:(0,30,30,40); medium to high plastic; stiff to very stiff; fine grained sand; slightly moist to moist.	CH CL		Portland cement with 5% bentonite
15.0							15.0

DOUGC7113195.AUGNBP5

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER

  
 SIGNATURE OF REVIEWER

TITLE

  
 TITLE

# SOIL DRILLING LOG

SB/MW #: SB-6  
 # D- 23492  
 Page 1 of 1  
 Geologist: C. Warwick



*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Dougco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 8.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ = First Water  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 1'				0 - 1' ASPHALT and ROADBASE	RB		
1 - 7'				1 - 7' Brown (7.5YR4/4) CLAYEY SAND/SANDY CLAY:(10,40,30,20); fine to coarse sand, fine gravel; loose to medium dense; moist to very moist.	SC CL		1.5-inch diameter borehole
5.0		51464	2.3				
7.5		51465	0.0	7 - 8' Brown (7.5YR4/3) CLAYEY SAND: (5,60,20,15); fine to coarse sand, fine gravel; loose; saturated.	SC		Portland cement with 5% bentonite
8.0				Sampler refusal at 8.0'			

DOUGCO, 7/13/95, AUGNBPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_  
 TITLE \_\_\_\_\_

*[Signature]*  
 SIGNATURE OF REVIEWER \_\_\_\_\_  
 TITLE S.P. GREGG

# SOIL DRILLING LOG

SB/MW #: SB-7  
 # D- 23491  
 Page 1 of 1  
 Geologist: C. Warwick



*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Douco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 6/26/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO ∇ = First Water  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
				0 - 1' ASPHALT and ROADBASE	RB		
2.5				1 - 8.5' Brown (7.5YR4/3) SANDY CLAY/CLAYEY SAND: (10,40,20,30); fine to coarse grained sand, fine to coarse gravel; moist to very moist.	SC CL		1.5-inch diameter borehole
5.0							
7.5		51462	0.0	@ 8.0' Saturated			Portland cement with 5% bentonite
10.0		51463	8	8.5 - 9.2' Brown (7.5YR4/2) SANDY CLAY: (0,35,40,25); low plastic; soft; fine sand; saturated. 9.2 - 11' Brown (7.5YR4/3) CLAYEY SAND/SANDY CLAY: (10,40,30,20); fine to coarse sand, fine to coarse gravel; loose; saturated.	CL SC CL		
12.5							
15.0							15.0

DOUGC7/1493.AUGNBP5

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_

*[Signature]*  
 SIGNATURE OF REVIEWER \_\_\_\_\_

TITLE \_\_\_\_\_

*Sup Geo*  
 TITLE \_\_\_\_\_



# SOIL DRILLING LOG

SB/MW #: SB-8  
 # D- 23493  
 Page 1 of 1  
 Geologist: C. Warwick



*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Douco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO \_\_\_\_\_  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0.0				0 - 1' ASPHALT and ROADBASE	RB		
2.5				1 - 5.5' Brown (7.5YR4/4) CLAYEY SAND/SANDY CLAY: (10,40,30,20); fine to medium grained sand, fine gravel; medium dense; slightly moist.	SC CL		1.5-inch diameter borehole
5.0		51466	0.0	5.5 - 14' Strong brown (7.5YR4/6) SANDY CLAY: (0,40,30,30); low to medium plastic; stiff to very stiff; fine sand; moist.	CL		
7.5		51467	0.0	@ 7.5' CLAYEY SAND (SC) Lens; moist			Portland cement with 5% bentonite
10.0			0.0				
12.5			0.0				
15.0			0.0	@ 14' Increasing gravel			

DOUGC 7/13/95 AUGNPS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_

*John G. Sup. Geo*  
 SIGNATURE OF REVIEWER \_\_\_\_\_

TITLE \_\_\_\_\_

TITLE \_\_\_\_\_

# SOIL DRILLING LOG



SB/MW #: SB-9  
 # D- 23496  
 Page 1 of 1  
 Geologist: C. Warwick

*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Douco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO \_\_\_\_\_  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 1'				ASPHALT and ROADBASE	RB	[Solid black bar]	
1 - 6.5'				Strong brown (7.5YR4/6) CLAYEY SAND/SANDY CLAY: (10,40,30,20); fine to coarse sand; fine gravel, medium dense to dense; moist.	SC CL	[Diagonal hatching]	1.5-inch diameter borehole
6.5 - 15'				Yellowish brown (10YR5/4) SANDY CLAY: (0,30,35,35); medium plastic; slightly stiff to stiff; fine sand; moist.	CL	[Diagonal hatching]	Portland cement with 5% bentonite
@ 10.5 - 11'				CLAYEY SAND/SANDY CLAY (SC/CL) Lens; moist.			
15.0'							15.0

DOUGC,7/13/95,AUGN/BFS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_  
 TITLE \_\_\_\_\_

*[Signature]*  
 SIGNATURE OF REVIEWER \_\_\_\_\_  
 TITLE \_\_\_\_\_

# SOIL DRILLING LOG



SB/MW #: SB-10  
 # D- 23494  
 Page 1 of 1  
 Geologist: C. Warwick

*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Dougco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO \_\_\_\_\_  
 MEMO \_\_\_\_\_

Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 1'				ASPHALT and ROADBASE	RB		
1 - 7'		51468	0.0	Brown (7.5YR4/3) CLAYEY SAND/SANDY CLAY: (5,45,20,30); fine to coarse sand, fine gravel; medium dense; moist.	SC CL		1.5-inch diameter borehole
7 - 15'		51469	0.0	Yellowish brown (10 YR5/4) SANDY CLAY: (0,30,30,40); high plastic; very stiff to hard; fine sand; moist.	CH CL		Portland cement with 5% bentonite
15.0							15.0

DOUGC711395 AUGNBP5

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_

SIGNATURE OF REVIEWER \_\_\_\_\_

TITLE \_\_\_\_\_

TITLE \_\_\_\_\_

*[Signature]*  
*Sep Geo*

# SOIL DRILLING LOG

SB/MW #: SB-11  
 # D- 23495  
 Page 1 of 1  
 Geologist: C. Warwick



*C. Warwick*  
 SIGNATURE OF GEOLOGIST

PROJECT Dougco Metal Finishing LOCATION 1073 34th Street Oakland, CA 94607  
 TOC ELEVATION NA (MSL) DATE(S) 5/16/95 TOTAL DEPTH 15.0'  
 MONITORING DEVICE OVM SCREENED INTERVAL NA  
 SAMPLING METHOD Geoprobe-Direct Push SUBCONTRACTOR & EQPT Gregg Drilling/Geoprobe  
 PERCENTAGE ORDER: (GRAVEL,SAND,SILT,CLAY) MEMO \_\_\_\_\_  
 MEMO \_\_\_\_\_

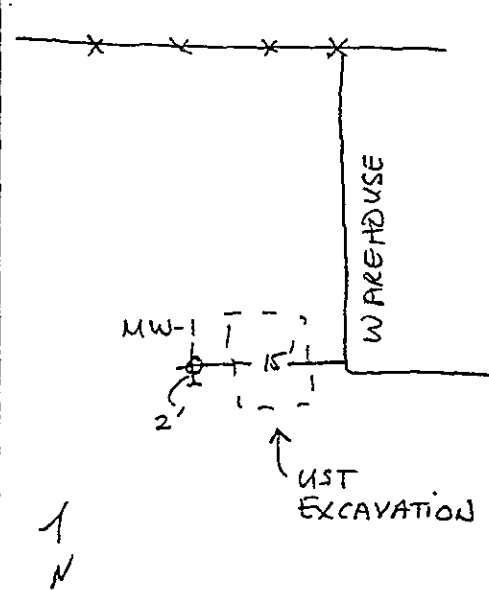
Depth Below Surface (ft.)	Sampler Interval/ Recovery	Sample ID #	PID Reading (ppm)	Soil Description Color, Texture, Moisture, Etc.	Unified Classification	Graphic Log	Borehole Abandonment/ Well Construction Details
0 - 1'				0 - 1' ASPHALT and ROADBASE	RB		
1 - 15'				1 - 15' Yellowish brown (10YR5/4) SANDY CLAY: (0,30,35,35); medium plastic; slightly stiff to stiff; fine to medium sand; moist.	CL		1.5-inch diameter borehole
2.5							
5.0		51470	0.0				
7.5			0.0				
10.0		51471	1.4				Portland cement with 5% bentonite
12.5			0.0				
15.0							15.0

DOUGC, 7/13/95, AUGN/BFS

SIGNATURE OF FIELD SUPERVISOR AND REVIEWER \_\_\_\_\_  
 TITLE \_\_\_\_\_

*A. Wiley*  
 SIGNATURE OF REVIEWER \_\_\_\_\_  
 TITLE Sup Geo

**NORTHWEST ENVIROCON INC.**  
**Field Log of Test Pit or Auger Hole**



The diagram shows a rectangular 'WAREHOUSE' on the right. To its left is a dashed line representing a 'UST EXCAVATION'. A well 'MW-1' is located within this excavation, with a depth of 15 feet indicated. A north arrow points upwards.

Site Location <i>Douco Metal Finishing</i>		Boring # <i>MW-1</i>
Project # <i>6409</i>	Date <i>3/9/93</i>	Sheet <i>1 of 2</i>
Drilling Contractor <i>Bayland</i>		
Driller <i>Roger Strong</i>		Logger <i>Mary McDonald</i>
Start <i>8:35am</i>	Finish <i>11:50 am</i>	Boring Diameter <i>12"</i>
Drilling Method <i>Hollow Stem Auger</i>		
Sampling Method <i>Modified California / Brass or stainless steel sleeves</i>		
n/s	est. water depth	elev

Depth	Cas.	Annu.	Well Legend	Screening Results (ppm)	Sample #	# Rec.	Blow Ct.	USCS	Description of Material		
1			Casing: 4" sch 40 PVC 0-4'2"  Screen 4" sch 40 PVC 4'2"-12'2" 0.020" slots					CL			
2											
3					0	2.5			3		brownish black silty clay (CL) 5YR2/1, stiff,
4									4		trace fine sand and angular gravel, mottled with dark brown, contains piece
5					0	4.0			2		of brick and clay pipe
6									11		at 5.5 ft grayish brown clay with sand and
7									14		gravel (CL) 5YR 3/2
8											stiff, fine sand and fine angular gravel, 1/4 to 1/2" sandstone clasts-rust
9									3		colored
10					36	9.0			11		moderate brown sandy clay (CL) 5YR 3/4
11					226				22	SC	stiff, stringers of brown clay, mottled with olive, rust staining
12					590				24	CL	at 9.5 feet clayey sand with gravel, medium dense



**NORTHWEST ENVIROCON INC.**  
Field Log of Test Pit or Auger Hole

	Site Location <i>Douco Metal Finishing</i>		Boring # <i>MW-2</i>
	Project # <i>6409</i>	Date <i>3/5/93</i>	Sheet <i>1 of 2</i>
	Drilling Contractor <i>Bayland</i>		
	Driller <i>Roger Strong</i>		Logger <i>Mary McDonald</i>
	Start <i>11:45 am</i>	Finish <i>2:15 pm</i>	Boring Diameter <i>12"</i>
	Drilling Method <i>Hollow Stem Auger</i>		
	Sampling Method <i>Modified California / brass or stainless steel sleeves</i>		
n/s		est. water depth	elev

Depth	Cas.	Annu.	Well Legend	Screening Results (ppm)	Sample #	# Rec.	Blow Ct.	USCS	Description of Material
1			Casing: 4" sch 40 PVC 0-5'						
2									
3					2.5		3	CL	Brownish black clay with sand (CL) 5YR2/1
4			Screen 4" sch 40 PVC 5-15' 0.020" slots		4.0		7		stiff, fine sand, small brick inclusion
5							9	GC	dark yellowish brown clayey gravel (GC)
6							10		10YR4/2, medium dense, rust staining
7							10		
8					7.5		5	CL	dark yellowish brown silty clay with sand and gravel (CL) 10YR4/2
9							12		very stiff, fine sand, angular gravel
10					9.0		2		more sand, no gravel at 8.5 ft
11							7		less sand, rust staining at 9.0 ft
12							7		light olive gray at 10 ft





**NORTHWEST ENVIROCON INC.**  
**Field Log of Test Pit or Auger Hole**

	Site Location <i>Douco Metal Finishing</i>		Boring # <i>MW-3</i>	
	Project # <i>6409</i>		Date <i>3/5/93</i>	
	Drilling Contractor <i>Bayland</i>			
	Driller <i>Roger Strong</i>		Logger <i>Mary McDonald</i>	
	Start <i>2:30 pm</i>		Finish <i>4:15 pm</i>	Boring Diameter <i>12"</i>
	Drilling Method <i>1/2 hollow stem Auger</i>			
	Sampling Method <i>Modified California / brass or stainless steel sleeves</i>			
	n/s		est. water depth	elev

Depth	Cas.	Annu.	Well Legend	Screening Results (ppm)	Sample #	# Rec.	Blow Ct.	USCS	Description of Material		
1		↑ cement	Casing 4" sch 40 PVC 0-4'					SW	light olive gray sand with gravel (SW), fine gravel, piece of glass		
2		↓ bentonite									
3		↑			0	2.5	2		CL	grayish brown sandy clay with gravel (CL)	
4						4		5YR3/2 stiff fine angular gravel			
5			Screen: 4'-14' 4" sch 40 PVC 0.020" slots			5				more gravel, color change to brownish gray 5YR4/1 at 3.3 ft.	
6					0	4.0	7				grayish brown 5YR3/2 with rust staining at 4 ft.
7							7				
8				44	7.5	3	8		color change to moderate		
9		# 2/14 sand				8		GC	brown 5YR3/4 brick inclusion at 7.8ft		
10				18	9.0	3	8		CL	grayish brown clayey gravel (GC) 5YR3/2	
11						7				loose, wet, angular moderate brown sandy clay with gravel (CL)	
12										10YR5/4 stiff fine gravel	





