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

June 2, 2000

STID 4462

REMEDIAL ACTION COMPLETION CERTIFICATION

Mr. Steven Chamberlin
Chamberlin Associates
5880 W. Las Positas Boulevard. Ste. 51
Pleasanton, CA 94588-8552

RE: Polvorosa Business Park, 1555 Doolittle Drive, San Leandro

Dear Mr. Chamberlin:

This letter confirms the completion of a site investigation and corrective action for the underground storage tanks 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 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, Environmental Health Services

c: Chuck Headlee, RWQCB
Dave Deaner, SWRCB **(w/attachment – Case Summary)**
Mike Bakaldin, San Leandro Hazardous Materials Program **(w/attachment – Case Summary)**
SOS/files

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Mr. Steven Chamberlin
Chamberlin Associates
5880 W. Las Positas Boulevard, Ste. 51
Pleasanton, CA 94588-8552

RE: Polvorosa Business Park, 1555 Doolittle Drive, San Leandro

Dear Mr. Chamberlin:

This letter transmits the enclosed underground storage tank (UST) case closure letter in accordance with Chapter 6.75 (Article 4, Section 25299.37[h]) of the California Health and Safety Code. The State Water Resources Control Board (SWRCB) has required since March 1, 1997 that this agency 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 this site.

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- Up to 21,000 micrograms per liter (ug/l) Total Petroleum Hydrocarbons as Gasoline (TPH-G) and 38,000 ug/l TPH-Diesel are present in groundwater beneath the site.
- Monitoring well MW-11, located on the adjoining property to the west, could not be located recently. Hence, well MW-11 was not destroyed during well destruction activities.

If you have any questions, please contact the undersigned at (510) 567-6783.

Sincerely,

Scott O. Seery, CHMM
Hazardous Materials Specialist

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

cc: Ariu Levi, Chief, Environmental Protection

CASE CLOSURE PACKET DISTRIBUTION

1)	Steve Chamberlin	COVER	*CERTIFICATE*	SUMMARY
2)	Chuck Headlee	*CERTIFICATE*		
3)	Dave Deaner	*CERTIFICATE*	SUMMARY	
4)	Mike Bakaldin	*CERTIFICATE*	SUMMARY	
5)	Arin	COVER		

pb#01-1189

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 01/13/99

Agency name: **Alameda County-EPD**
City/State/Zip: **Alameda, CA 94502**
Responsible staff person: **Scott Seery**
Address: **1131 Harbor Bay Pkwy #250**
Phone: **(510) 567-6700**
Title: **Haz. Materials Spec.**

II. CASE INFORMATION

Site facility name: **Polvorosa Business Park**
Site facility address: **1555 Doolittle Drive, San Leandro 94577**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.:**4462**
URF filing date: **09/23/86** SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
Chamberlin Associates	5880 W. Las Positas Bl., Ste. 51	(925) 227-0707
Attn: Steven Chamberlin	Pleasanton, CA 94588-8552	

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	10K	diesel	removed	09/19/86
2	10K	"	"	"
3	10K	"	"	"
4	10K	"	"	"
5	10K	gasoline	"	09/22/86
6	10K	"	"	"
7	5K	motor oil	"	"
8	3K	waste oil	"	"
9	3K	" "	"	"
10	UNK	motor oil	"	"

ENVIRONMENTAL PROTECTION
99 JUL 23 PM 4:03

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: UNK

Site characterization complete? YES

Date approved by oversight agency: January 22, 1999

Monitoring Wells installed? YES Number: 15 (plus 1 extraction well)

Proper screened interval? YES

Highest GW depth below ground surface: 6.72' Lowest depth: 12.46' (from 11/94 to 5/95)

Flow direction: north

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Most sensitive current use: Business park

Are drinking water wells affected: NO Aquifer name: San Leandro cone

Is surface water affected? NO Nearest affected SW name: NA

Off-site beneficial use impacts (addresses/locations): None

Report(s) on file? **YES** Where is report filed? **Alameda County**
1131 Harbor Bay Pkwy
Alameda CA 94502

San Leandro Fire Dept.
835 E. 14th Street
San Leandro, CA 94577

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank	6x10K; 2x3K; 1x5;1xUNK	Disposal? Destination?	9/86
Piping	UNK	UNK	
Free Product	≤300 gals	Recycle – Evergreen Env. Svc.	1990-1992
Soil	UNK	Portion placed into UST pit	!986
Groundwater	~760K gals.	Disposal – POTW	1989-1993

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)[1]		Water (ppb)	
	Before	After	Before[2]	After[3]
TPH (Gas)	NA	2800 ("mtr fuel")	NA	21,000
TPH (Diesel)	"	1600	34,000	38,000
TPH (oil)	"	NA	17,000	NA
Benzene	"	0.77	340	0.9
Toluene	"	0.27	400	<5.0
Xylene	"	1.2	500	<20
Ethylbenzene	"	NA	NA	<5.0
"Motor oil"	"	"	180,000	NA
"Waste oil"	NA	"	36,000	"
MtBE	"	"	NA	<1.3

Note:
1) No soil samples were collected during the 1986 UST closures. Hence, no "before" soil data are available. "After" soil data are from samples collected in October 1986 from borings SB-1 and MW-8 at depths of 5.5 and 10.5' BG.

2) "Before" water results are a compilation of the analytical results for water samples collected from the various UST excavations during the 1986 tank closures.

3) "After" water results are from samples collected during May 1995 from wells MW-3 and LF-14, except for MtBE, which was from a sample collected in 1997 from GeoProbe boring GP-4 on adjoining property to the north.

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Comments (Depth of Remediation, etc.):

This approximate 11.6-acre site operated between 1959 to 1986 as a commercial truck terminal. Ten (10) USTs supported the trucking business and were arranged in two distinct clusters – one cluster on the western portion of the site, and another cluster on the eastern portion. The truck-terminal and ancillary structures were demolished and the USTs removed in 1986. The site was subsequently divided and redeveloped. The western portion of the site is, again, a truck terminal, while the eastern portion was redeveloped as the Polvorosa Business Park (PBP). The PBP site is approximately 5.5 acres in size.

Under San Leandro Fire Department oversight, all ten tanks were removed from the site in two efforts during September 1986. In total, six 10,000-gallon tanks (4 diesel, 2 gasoline), two 3000-gallon waste oil tanks, one 5000-gallon virgin oil tank, and another virgin oil tank of "unknown" size were removed. Each tank was constructed of single-wall steel. The 6 fuel and one virgin oil USTs were located on the eastern portion of the site, while the remaining tanks (2 waste oil, 1 virgin oil) were on the western portion.

Shallow ground water was present in each of the UST excavations. Only groundwater samples were collected during tank closure operations. Up to 180,000-ug/l "motor oil", 34,000 ug/l TPH-D, and 340-ug/l benzene, among other target compounds, were identified in water samples collected from the eastern UST pits. Up to 36,000 ug/l "waste oil" (Method 3510 extraction, gravimetric analysis) was reportedly identified in the sample collected from the western UST pit. No other potential waste oil constituents (e.g., HVOC, BTEX, etc.) were sought at that time.

Ten soil stockpiles were reportedly generated during closure activities. Stockpile sizes have not been reported. Two stockpiles that were within "acceptable" contaminant levels (<1000 ppm "Total Hydrocarbons") were reportedly reintroduced to "the pit area." It is also reported that an attempt to aerate or land farm the remaining soil was made in late 1986; however, it is unknown what ultimately became of the remaining stockpiled soil.

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: Yes – "Risk Management Plan" in effect and on file with City of San Leandro

Should corrective action be reviewed if land use changes? YES

Monitoring wells Decommissioned: some

Leaking Underground Fuel Storage Tank Program

IV. CLOSURE (Continued)

Number Decommissioned: 7 (destroyed during site grading) Number Retained: 8 (pending case closure)

List enforcement actions taken: None

List enforcement actions rescinded: NA

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Scott Seery Title: Haz Mat Specialist
Signature: Date: 1-22-99

Reviewed by
Name: Tom Peacock Title: Supervising Haz Mat Specialist
Signature: Date: 2-3-99

Name: Don Hwang Title: Haz Mat Specialist
Signature: Date: 1/22/99

VI. RWQCB NOTIFICATION

Date Submitted to RB: 2-4-99 RB Response: Chuck Headlee
RWQCB Staff Name: Chuck Headlee Title: ~~San. Eng. Assoc.~~ Associate Engineering Geologist Date: July 20, 1999

VII. ADDITIONAL COMMENTS, DATA, ETC.

In preparation for eventual redevelopment of the site following demolition of the truck terminal, 10 geotechnical borings were emplaced about the contiguous site during July 1986. Two of these borings, EB-4 and EB- 6, reportedly encountered fuel odors within a saturated silty and/or clayey sand layer at depths between 8 and 11.5' BG.

During October 1986 and subsequent to UST closures, seven soil borings were advanced about the former fuel UST pit on the eastern portion of the site. A total of 9 monitoring wells (MW-1 through MW-9) were also installed during this two-day effort. Product odors ranging from slight-to-strong were noted in several borings during drilling. Slight-to-elevated concentrations of diesel-range compounds were identified in soil samples collected during boring advancement, found predominantly in the apparent capillary zone. The highest concentrations (up to 2800 ppm TPH-D; 0.77 ppm benzene) were found in those borings most proximal to the former UST cluster. The lab reportedly identified both diesel and gasoline signatures on various chromatograms. Free-phase product (FP) was identified in one or more of the completed wells. High concentrations of dissolved diesel-range compounds (up to 750,000 mg/l TPH-D), as well as detectable BTX, were identified in initial water samples collected from these wells.

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

Seven of these original wells were reportedly destroyed during grading operations shortly after they were initially sampled. Only wells MW-3 and –8 survived. The consultant indicated that the damaged wells would be properly abandoned (over-drilled and grouted). It is unknown if this, in fact, occurred. A concrete pad was subsequently poured in the area of the former eastern UST pit, apparently forming the slab for Building C of the PBP.

During July 1987, seven soil borings (EB-1 through EB-7) were drilled and two monitoring wells (MW-10 and –11) constructed. All soil borings and one well (MW-10) were advanced/constructed south of the former fuel UST complex on the eastern portion of the site. Well MW-11 was constructed on the western portion of the site. Product sheen was observed on groundwater encountered in four of six borings, and in MW-10. Product odors ranging from detectable-to-strong were likewise noted during boring advancement. FP was reported on augers in boring EB-4. No soil samples were retained for laboratory analysis.

Up to 7.5" of FP was measured in well MW-3 and 0.25" in well MW-8 in August 1987. Water samples collected from wells MW-10 and –11 revealed the presence of detectable concentrations of fuel hydrocarbons. All four wells were sampled again in November and December 1987. High concentrations of gasoline-range hydrocarbons (up to 2200 ug/l benzene, etc.) were identified in well MW-3 during the December event following the pumping of a reported 650 gallons of water from this well.

Aquifer tests were reportedly performed during June 1988 using well MW-3 as the pumping well. The consultant concluded the shallow water-bearing zone is confined, exhibits moderate transmissivity, and pumping resulted in a wide cone of depression around the pumping well. Extraction wells were recommended.

Four additional wells (LF-12 through LF-15) were installed on the contiguous site during August 1988. All but one well (LF-15) was installed on the eastern portion of the site. In addition, well LF-12 was installed through the floor of PBP Building C. As in the past, groundwater was encountered within a silty-sand to gravely-sand layer at depths ranging between approximately 8 and 15' BG. This sandy layer appears to "pinch out" towards the west and thicken in the area explored previously by well/boring MW-2. Soil samples were not collected during boring advancement.

Up to 60,000 ug/l TPH-D and 37-ug/l benzene were identified in initial water samples collected from well LF-12 during August 1988. However, ~21.5" of FP was measured in this well a month later.

Between March and July 1989 it is reported that a single-well product and groundwater extraction system was installed. An extraction well (LF-12A) was also constructed in close proximity to well LF-12 as the sole extraction point. Use of a single extraction point was reportedly based on aquifer modeling (MODFLOW) performed earlier. The system consisted of a total-fluids recovery pump and oil/water separator. FP was skimmed and directed to 55-gallon drums, while the resultant effluent was discharged to the local POTW.

Operation of the system began in August 1989. In March 1993 well LF-12 was later added to the system as an additional extraction point. After operating continuously since 1989, the system was taken off-line. It is reported that during its period of operation, 283 gallons of product was removed and 766,835 gallons of water processed through the system.

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

The record demonstrates that regular well sampling and monitoring did not begin again in earnest until September 1994. Only four events occurred between September 1994 and May 1995. Wells MW-3, -8, -10, LF-13, and –14 were swept into this effort. Well LF-15 was included during the March and May 1995 events. Concentrations of 38,000 ug/l TPH-D and 21,000 ug/l TPH-G were identified in water sampled from well MW-3 during the May 1995 event. Detectable benzene concentrations were also present in water sampled from well LF-14 during this same event. In addition, measurable (0.25") FP was still detected in well LF-12.

A Tier 2 Risk-Based Corrective Action (RBCA) evaluation was performed following ASTM 1739-95 guidance. Potential exposure pathways were determined. Only the groundwater-to-indoor and -outdoor air exposure pathways were considered potentially complete. Consequently, conservative site-specific target levels (SSTL) were calculated based on existing data derived from the various investigations performed at the site. Concentrations of target compounds at the site were well below the calculated SSTLs. Therefore, it was determined that an insignificant risk was posed at the site to commercial/industrial workers.

The property owner requested "case closure" in 1996. However, as the investigation had demonstrated the continued presence of FP on groundwater encountered beneath this site, the case did not fit into "standard" categories typical of petroleum hydrocarbon cases considered historically for case closure. FP was still present, suggesting the presence of a long-term (sorption/desorption) soil source beneath the site. Staff of the San Francisco Bay Regional Water Quality Control Board (RWQCB) agreed with this data interpretation. Consequently, this case was presented in August 1997 to the RWQCB "TPH Work Group." The "Group", following lengthy discussion, opined that additional consideration be given to: 1) an evaluation of the potential presence of preferential flow pathways that could contribute to eventual discharge of contaminants to San Francisco Bay, 2) better plume definition north of the former UST complexes, and 3) the development of a "free-product management plan."

Coincidentally, during September 1997, others advanced six (6) Geoprobe soil borings (GP-1 through GP-6) on property immediately north of the PBS side. Each soil boring was strategically placed so as to intercept potential groundwater contaminants from the UST releases at the PBS site. Groundwater was encountered at a reported depth of 7-8' BG in this series of Geoprobe borings. Soil encountered during boring advancement was predominantly sandy-silty-clay with occasional silty-sand stringers. Petroleum odors were noted in GP-4 at depths between 4 and 12' BG. No petroleum odors were reportedly detected in any of the other borings. As is standard practice, organic vapors were also measured in the field using a photo ionization detector (PID). PID deflections reportedly ranged between 50 and 200 ppm in boring GP-4. No organic vapors were reportedly detected in any of the other borings.

All groundwater samples were analyzed for the presence of TPH-G, TPH-fuel oil (diesel), and BTEX. Only one boring, GP-4, revealed the presence of detectable target compounds in sampled groundwater. TPH-fuel oil was detected at a concentration of 2000 ug/l, while TPH-G was detected at a concentration of 500 ug/l. BTEX were <u>not</u> detected in any samples.

Engineering maps for the PBP were scrutinized to determine whether utility line trenches (e.g., sanitary and storm sewers, etc.) presented preferential flow pathways for contaminated groundwater. None of the utility trenches are located at depths where groundwater is anticipated infiltrate them. Hence, preferential pathways appear to be absent.

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

A "Risk Management Plan" was subsequently submitted during May 1998, later amended in October 1998, to address the remaining concerns raised by the RWQCB. The RMP address precautions that will be followed to mitigate any potential future risks to human health and the environment that may arise. These RMP precautions include, in summary:

- The City of San Leandro has reportedly established integrated administrative procedures to ensure that this RMP be reviewed *and implemented* before the issuance of any building, changes in use, or zoning permits to any owner of the site and for adjacent sites. Consequently, all permit applicants will be notified regarding potential hydrocarbon contamination and the provisions of the RMP.

- Workers engaged in subsurface excavation activities at the site will be required to prepare and implement site-specific health and safety plans consistent with state and federal OSHA standards (CCR, Title 8, § 5192 and 29 CFR Part 1910.120, respectively), and will address the potential for encountering petroleum hydrocarbons residuum.

- Groundwater at the site will not be used without first securing approval from the RWQCB and local agency.

.....

This case should be closed as it appears to meet the classification of a "Low Risk Groundwater Case", as described in the January 5, 1996 San Francisco Bay Regional Water Quality Control memorandum entitled *"Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites."* These criteria, and an explanation of how this site has satisfied each, follows:

1) **The leak has been stopped and ongoing sources, including free product, have been removed or remediated.**

The subject tanks were removed in 1986. FP has been removed from underlying groundwater to the extent practical. To whit, only <300 gallons of FP was recovered in the approximate 4 year operation of the recovery system. In addition, approximately 760,000 gallons of impacted groundwater was also extracted and discharged to the POTW.

2) **The site has been adequately characterized.**

A substantial network of wells was installed, monitored, and sampled in several stages over the course of several years. Numerous soil borings were also advanced and sampled in locations both on- and off-site. These points have allowed an adequate confirmation of underlying geology, groundwater flow, and contaminant extent. The hydrocarbon plume is substantially, but not completely, confined to the PBP site.

3) **The dissolved hydrocarbon plume is not migrating.**

The plume appears stable. The hydrocarbon plume is substantially confined to the PBP site.

Leaking Underground Fuel Storage Tank Program

VII. ADDITIONAL COMMENTS, DATA, ETC. (Continued)

4) **No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.**

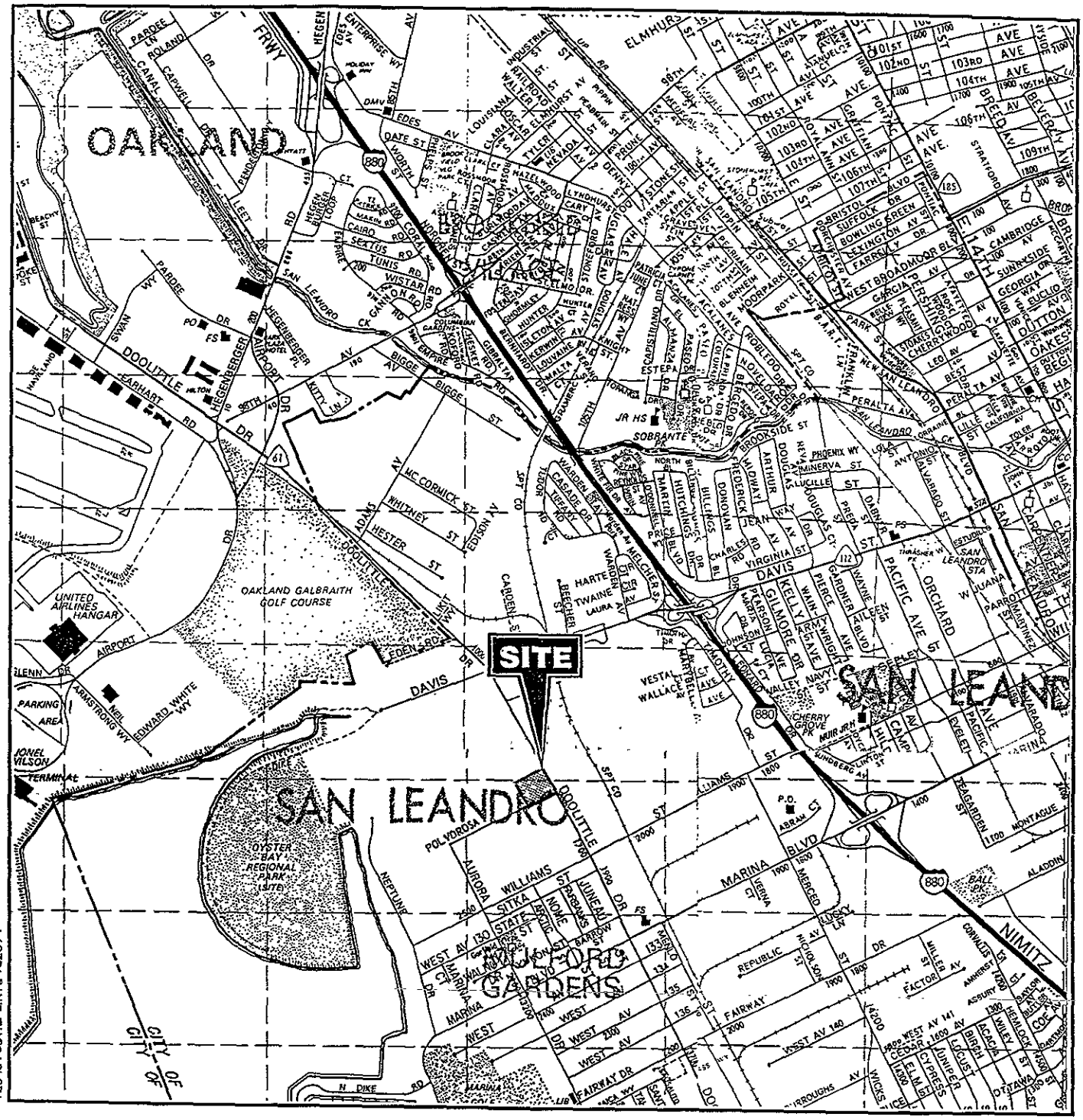
There are no known municipal or residential water wells or surface water bodies within 750' downgradient of the subject site that would be impacted by shallow groundwater from this site. No preferential flow pathways appear to be present that would contribute to plume migration in directions inconsistent with calculated groundwater flow.

5) **The site presents no significant risk to human health.**

A Tier II RBCA evaluation was performed. Potential exposure pathways were determined. SSTLs were calculated for these potential exposure pathways using conservative site-specific concentrations of target compounds. It was determined that an insignificant risk was posed at the site to commercial/industrial workers.

6) **The site presents no significant risk to the environment.**

No environmental receptors are known or expected to be proximal to the site.



Modified from:
Thomas Brothers Map
Alameda and Contra Costa Counties
1994 Edition

N

0 1/2 1 MILE

Figure 1 : SITE LOCATION MAP
POLVOROSA BUSINESS PARK, 1555 DOOLITTLE DRIVE, SAN LEANDRO, CALIFORNIA

Project No. 1204

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

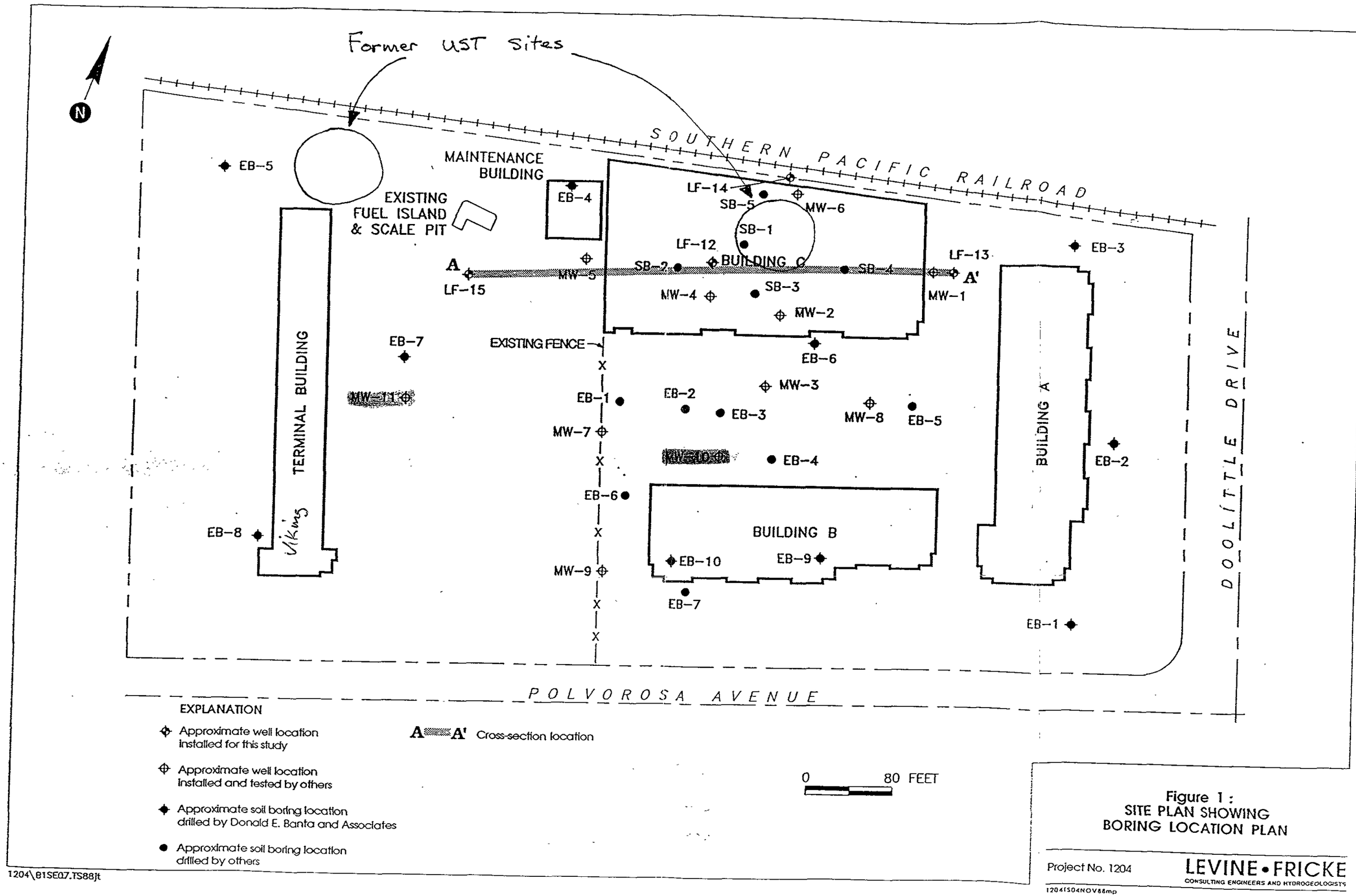


Figure 1 :
SITE PLAN SHOWING BORING LOCATION PLAN

Project No. 1204

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1204\B1SE07.TS88jt

1204\S04NOV88mp

116438

ELEVATION
(feet, msl)

40
30
20
10
0
-10

A
(Southwest)

A'
(Northeast)

Existing Building C

Ground Surface

LF-15
MW-5
LF-12
MW-2
LF-13

Silty Clay
Silt
Clayey Sand
Silty Clay

Sand and Gravel Fill
Organic Clay
Gravelly Sand
Silty Sand
Silty Clay

Gravelly Clay Fill
Silty Clay
Silty Sand
Silty Clay

Silty Clay
Silty Sand

Silty Clay
Clayey Sand
Silty Clay

?
?

40
30
20
10
0
-10

10
Scale in Feet
0
0 40

EXPLANATION

Clay
Silt
Sand
Gravel
Perforated interval
Ground-water level

LF-12 Well logged and constructed by Levine•Fricke, 21& 22 August 1988

MW-2 Well logged and constructed by Groundwater Technology, Inc., 13-27 October 1986.

Figure 6 :

SOUTHWEST - NORTHEAST
GEOLOGIC CROSS SECTION A-A'

Project No. 1204

LEVINE•FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

Excerpts from

Final Monitoring Report

Dated

August 7, 1995

Quarterly Ground-Water Monitoring Report
April 1 through June 30, 1995
Polvorosa Business Park
1555 Doolittle Drive
San Leandro, California

August 7, 1995
1204.00-001

LEVINE • FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

DRAFT

Table 2
Post-Remediation Ground-Water Elevation Data
Polvorosa Business Park
1555 Doolittle Drive
San Leandro, California

(all measurements in feet above mean sea level)

Well Number	Well Elevation	Ground-Water Elevation 28-Sep-94	Product Thickness 28-Sep-94 (feet)	Ground-Water Elevation 22-Nov-94	Product Thickness 22-Nov-94 (feet)	Ground-Water Elevation 01-Mar-95	Product Thickness 01-Mar-95 (feet)	Ground-Water Elevation 26-May-95	Product Thickness 26-May-95 (feet)
MW-3	12.18	3.15	NP	4.06	NP	4.10	NP	4.08	NP
MW-8	12.83	3.24	NP	3.97	NP	~~3.45~~ 4.10	NP	4.11	NP
MW-10	14.22	3.17	NP	4.08	NP	~~2.18~~ 4.14	NP	4.14	NP
LF-12	14.89	2.57 (1)	0.05	2.43 (1)	0.06	3.73 (1)	0.01	3.97 (1)	0.02
LF-13	14.58	3.10	NP	3.92	NP	~~1.57~~ 3.97	NP	3.97	NP
LF-14	10.76	2.98	NP	3.84	NP	~~5.46~~ 4.04	NP	3.96	NP
LF-15	11.20	NM	NM	NM	NM	~~4.98~~ 4.00	NP	3.89	NP

Data input by RCM/02-Jun-95. Data proofed by BCC.

Notes:

NP - No product detected

NM - Not measured

(1) Ground-water surface may be depressed due to the presence of floating product.

Well No.	9/94 Calculated Depth-to-Water (feet)	11/94 Depth-to-Water (feet)	3/95 Depth-to-Water (feet)	5/95 Depth-to-Water (feet)
MW-3	9.03	8.12	~~8.08~~	8.10
MW-8	9.59	8.86	8.73	8.72
MW-10	11.05	10.14	10.08	10.08
LF-12	12.32	12.46	11.16	10.92
LF-13	11.48	10.66	10.61	10.61
LF-14	7.78	6.92	6.72	6.80
LF-15	NM	NM	7.20	7.31

Table 3
Ground-Water Sample Analytical Results
Petroleum Hydrocarbon Compounds
Polvorosa Business Park
1555 Doolittle Drive
San Leandro, California
(results expressed in ppm)

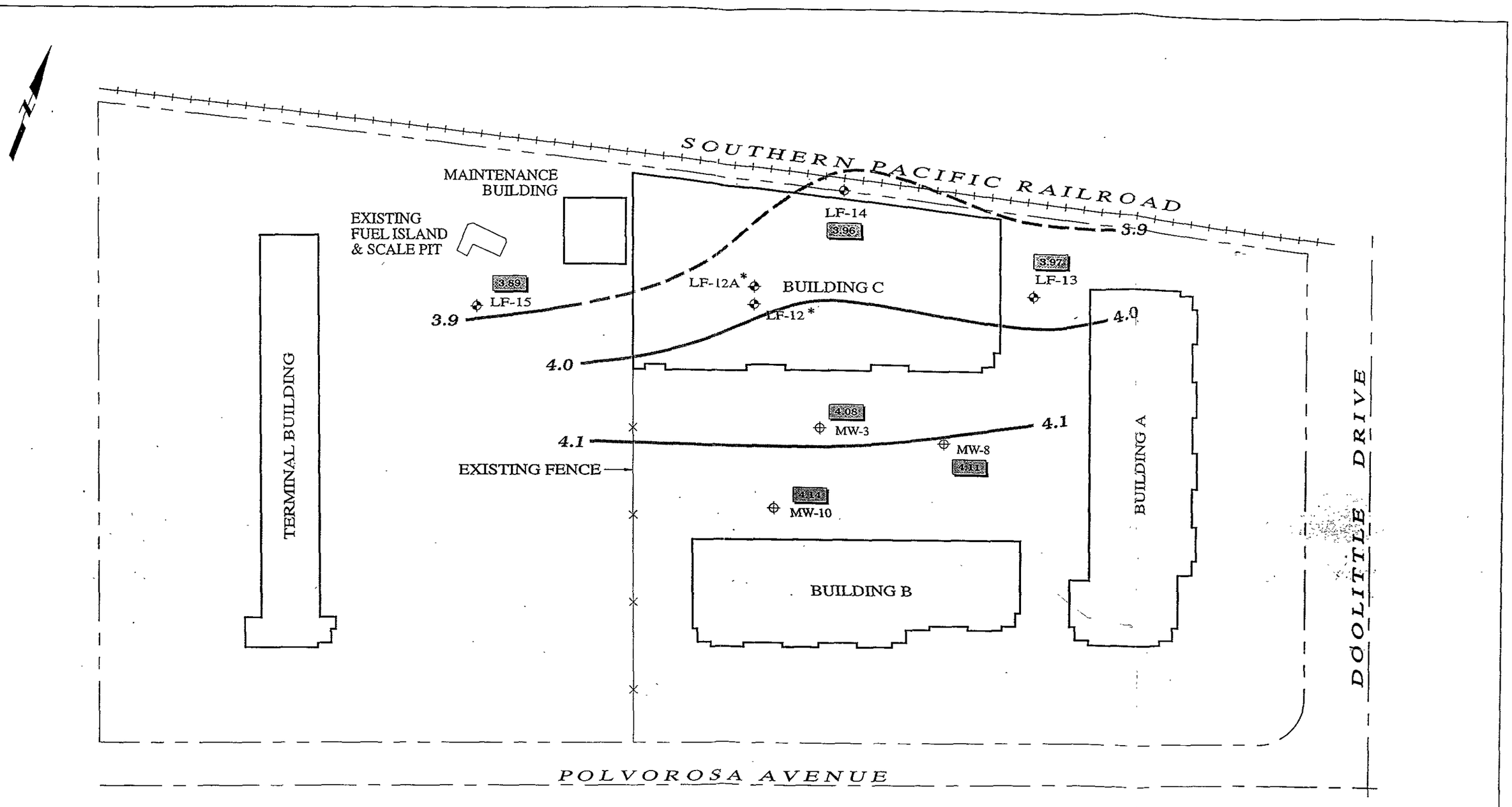
Sample ID	Date	Notes	Benzene	Toluene	Ethyl-benzene	Xylenes, Total	TPHg	TPHd
MW-3	28-Sep-94		<0.01	<0.01	<0.01	<0.04	58.0	87.0
	22-Nov-94		0.0005	0.001	0.0008	0.003	7.8	56.0
	22-Nov-94	Dup	0.0006	0.001	<0.0005	<0.002	2.6	67.0
	01-Mar-95		<0.005	<0.005	<0.005	<0.02	4.3	110.0
	26-May-95		<0.005	<0.005	<0.005	<0.02	21.0	34.0
	26-May-95	Dup	<0.005	<0.005	<0.005	<0.02	6.4	38.0
MW-8	28-Sep-94		<0.0005	<0.0005	<0.0005	<0.002	0.1	2.1
	28-Sep-94	Dup	<0.0005	<0.0005	<0.0005	<0.002	1.6	1.5
	22-Nov-94		<0.0005	<0.0005	<0.0005	<0.002	0.7	8.0
	01-Mar-95		<0.0005	<0.0005	<0.0005	<0.002	1.9	8.7
	26-May-95		<0.0005	<0.0005	<0.0005	<0.002	2.1	15.0
MW-10	28-Sep-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	23-Nov-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	01-Mar-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	26-May-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
LF-13	28-Sep-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	22-Nov-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	01-Mar-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	26-May-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
LF-14	28-Sep-94		0.0006	<0.0005	<0.0005	<0.002	1.7	13.0
	22-Nov-94		0.0008	<0.0005	<0.0005	<0.002	1.0	9.2
	01-Mar-95		0.0007	<0.0005	<0.0005	<0.002	0.7	7.8
	26-May-95		0.0009	<0.0005	<0.0005	<0.002	0.9	11.0
LF-15	01-Mar-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	0.05
	26-May-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	0.06
Blanks								
MW-8-FB	28-Sep-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
MW-8-FB	22-Nov-94		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
MW-8-BB	26-May-95		<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05

Data entered by RCM 07-Jul-95. Proofed by Cit.

NOTES:

TPHd = total petroleum hydrocarbons as diesel
TPHg = total petroleum hydrocarbons as gasoline

1204G002.AIK:DAT 071195



EXPLANATION

- Approximate well location (installed by Levine-Fricke)
- Approximate well location (installed by others)
- 414 Ground-water elevation (feet above mean sea level)
- 4.0 Ground-water elevation contour dashed where inferred (feet above mean sea level)
- * Water levels in these wells were not considered in the elevation contouring due to presence of floating product

0 40 80 FEET

Figure 2 :

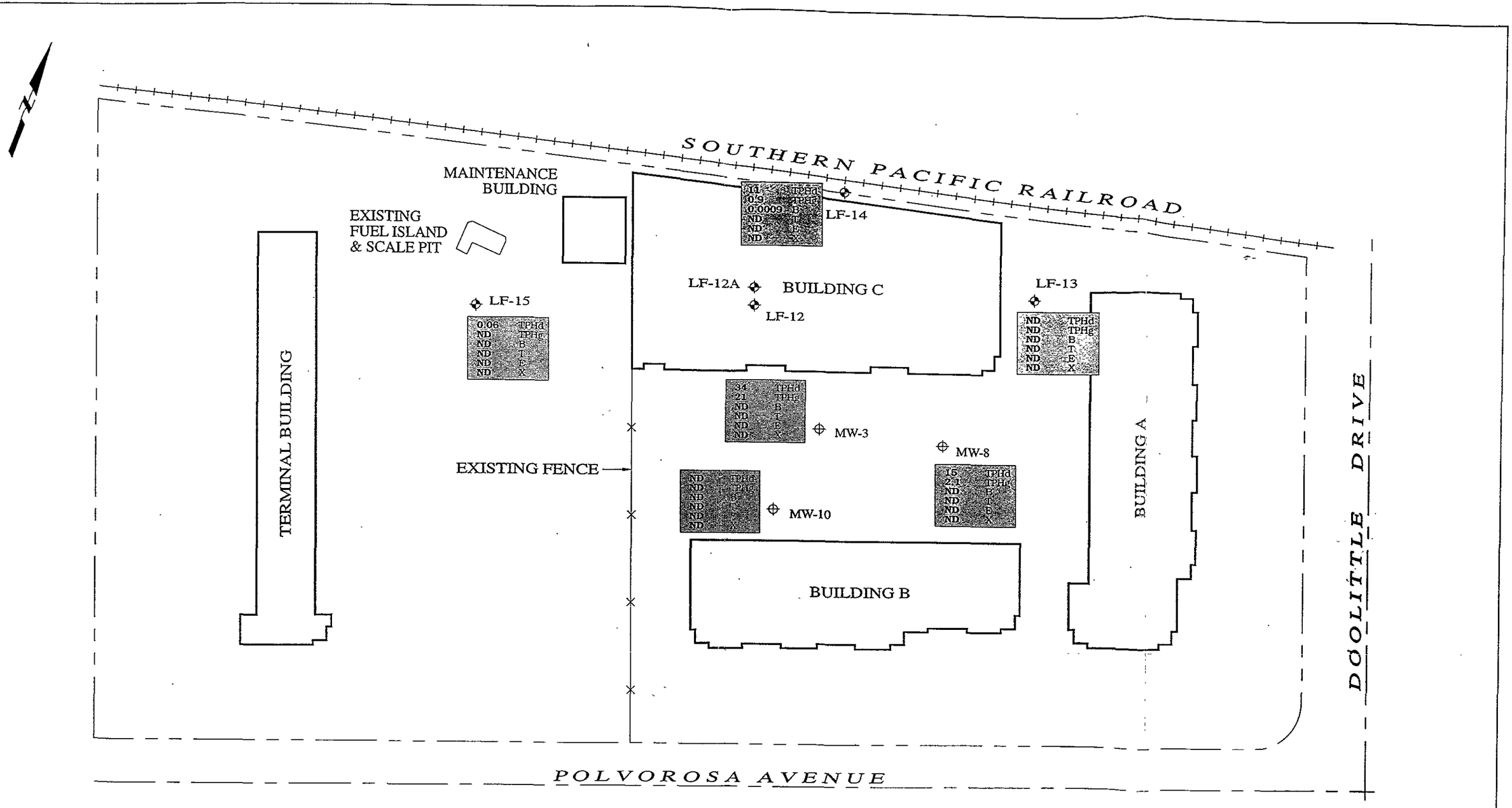
GROUND-WATER ELEVATION CONTOURS MAY 26, 1995

Project No. 1204

LEVINE·FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

1204B002.AIK:EM 122394

1204GC01.AIK:DAT 081095



EXPLANATION

- Approximate well location (installed by Levine-Fricke)
- Approximate well location (installed by others)

Wells LF-12 and LF-12A were not sampled

0.9 TPHg
- TPHg — Chemical compound
- 0.9 — Sample concentration (ppm)
- ND — Not detected

KEY TO ABBREVIATIONS

TPHd	Total petroleum hydrocarbons as diesel
TPHg	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethybenzene
X	Xylene

0 40 80 FEET

Figure 3 :

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER (ppm) MAY 26, 1995

Project No. 1204

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

12048002.AIK:EM 122394

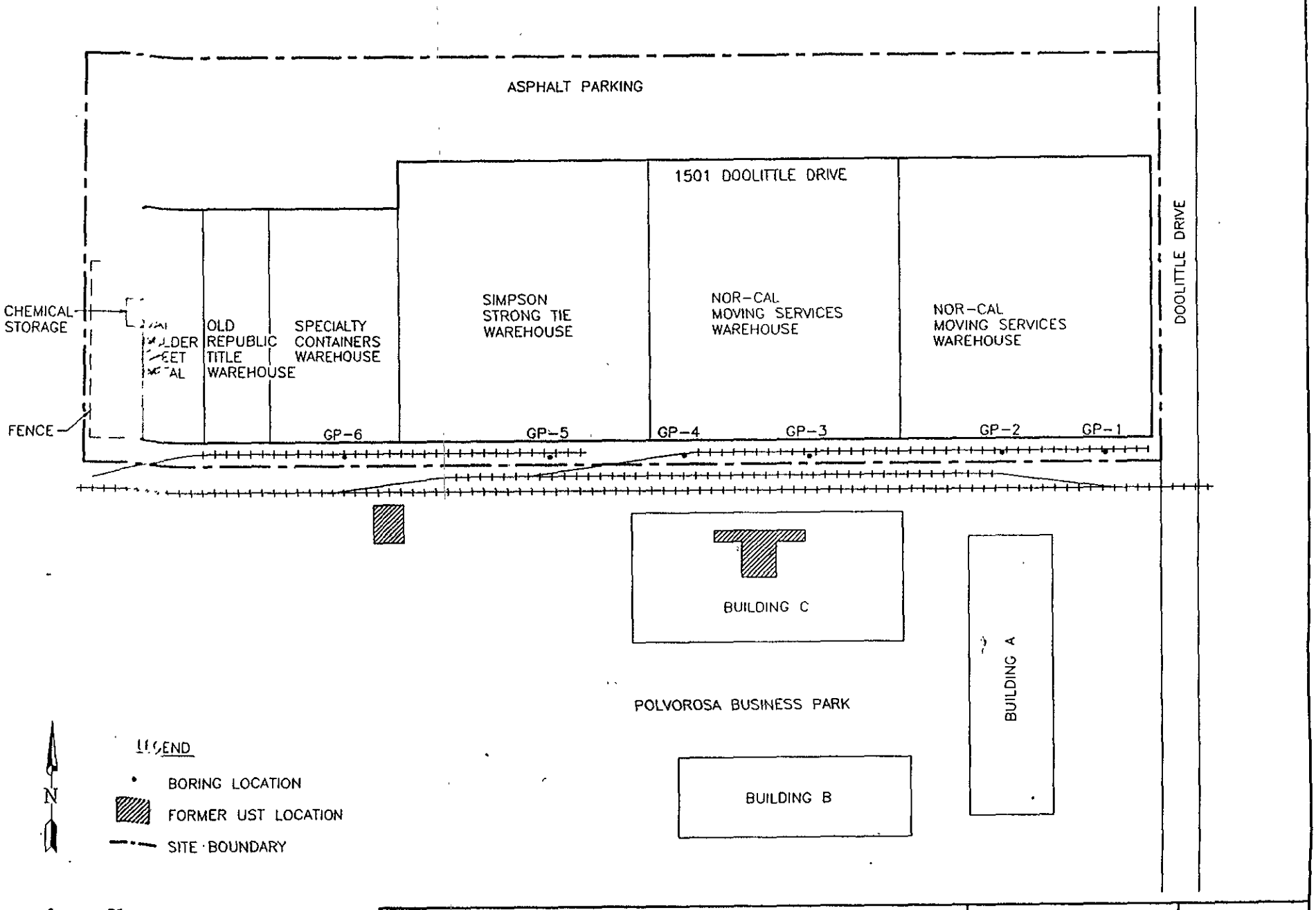
Excerpts from Report

Documenting Assessment on

Adjoining Property

Dated

October 10, 1997



SITE DIAGRAM
1501 DOOLITTLE DRIVE
SAN LEANDRO, CALIFORNIA

M1546/M7M-149

Nova Environmental Services, Inc.

SEP - 97

TABLE 1
GEOPROBE BORING RESULTS
1501 DOOLITTLE DRIVE

Boring	Depth (ft)	Soil Description	PID (ppm)
GP-1	1-4	Brown sandy silty CLAY, moist, no odor	ND
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	ND
	8-12	Dark brown silty sandy CLAY, moist, no odor	ND
GP-2	1-4	Grey/brown mottled sandy silty CLAY, moist, no odor	ND
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	ND
	8-12	Black silty sandy CLAY, moist, no odor	ND
GP-3	1-4	Brown sandy silty CLAY, moist, no odor	ND
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	ND
	8-12	Dark brown silty sandy CLAY, moist, no odor	ND
GP-4	1-4	Brown sandy silty CLAY, moist, no odor	50
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	200
	8-12	Black silty sandy CLAY, moist, no odor	200
GP-5	1-4	Grey/brown mottled sandy silty CLAY, moist, no odor	ND
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	ND
	8-12	Black silty sandy CLAY, moist, no odor	ND
GP-6	1-4	Brown sandy silty CLAY, moist, no odor	ND
	4-8	Brown silty CLAY, wet with silty sand seams, no odor	ND
	8-12	Black silty sandy CLAY, moist, no odor	ND

ND = Not Detected
PID = Photoionization detector
ppm = Parts per million

TABLE 2
GROUNDWATER LABORATORY ANALYTICAL RESULTS
1501 DOOLITTLE DRIVE

PARAMETER	SAMPLE LOCATION (Concentrations in Parts per Billion)					
	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6
Benzene	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND
TPH as fuel oil	ND	ND	ND	2,000	ND	ND
TPH as gasoline	ND	ND	ND	500	ND	ND
MtBE				<1.3		

ND = Not detected above the laboratory detection limits
TPH = Total petroleum hydrocarbons
MtBE = methyl tert butyl ether by EPA Method 8020

Excerpts from Report

Documenting 1988 Site Assessment

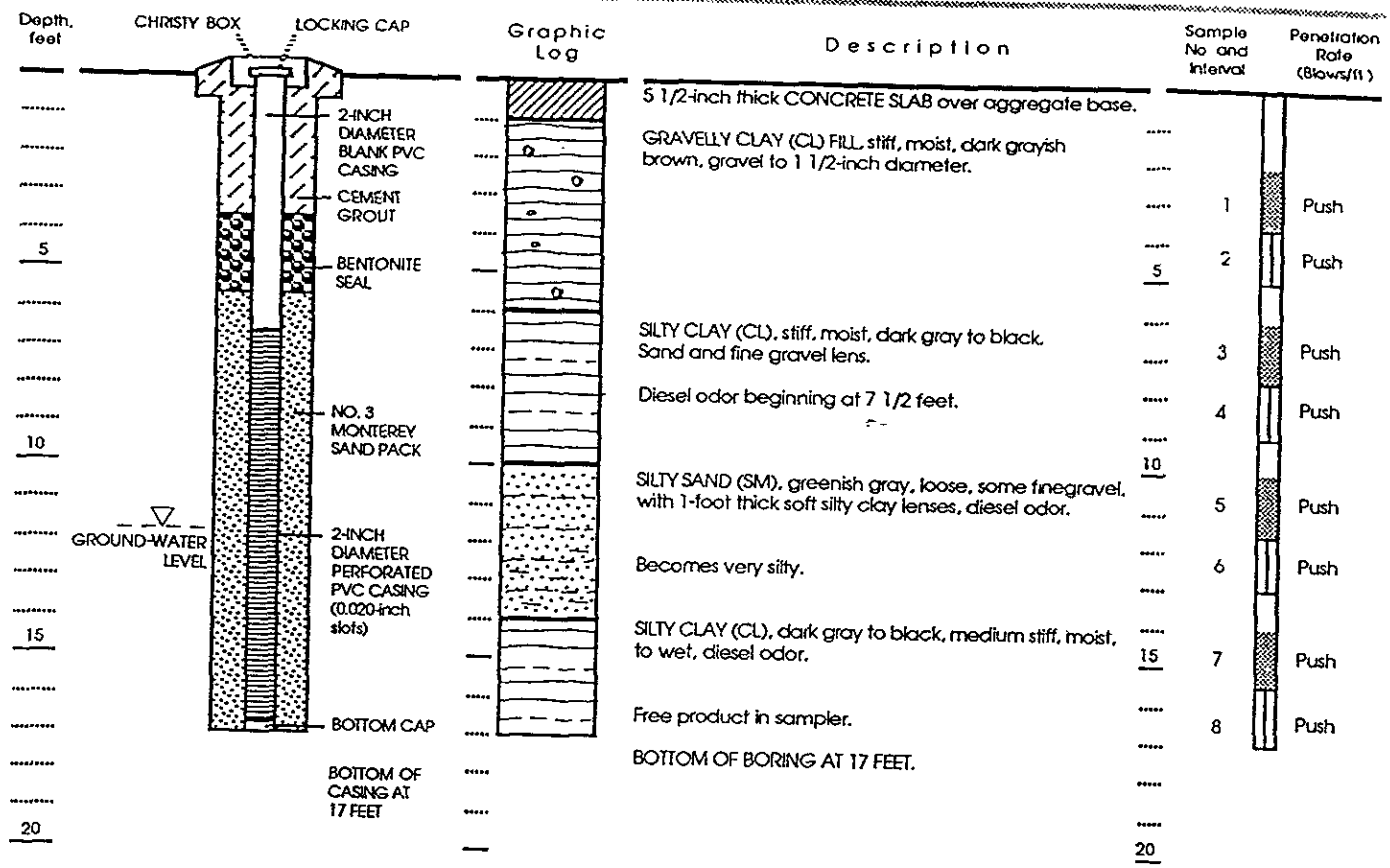
Report on Hydrogeologic Assessment
Polvorosa Business Park Site
San Leandro, California

November 1, 1988
1204

Prepared for:

Mr. Robert Malin
Rouse and Associates
1555 Doolittle Drive
San Leandro, California 94577

LEVINE·FRICKE



Well Permit No.	88400
Date well drilled:	19 August 1988
Date water level measured:	31 August 1988
Well elevation:	15.6 feet
LF Engineer:	Ted Splitter

EXPLANATION

- Clay
- Silt
- Sand or Sandstone
- Gravel
- 2" Modified California Sampler
- Split Spoon Sampler

Approved by:

Figure 2 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL LF-12

Project No. 1204

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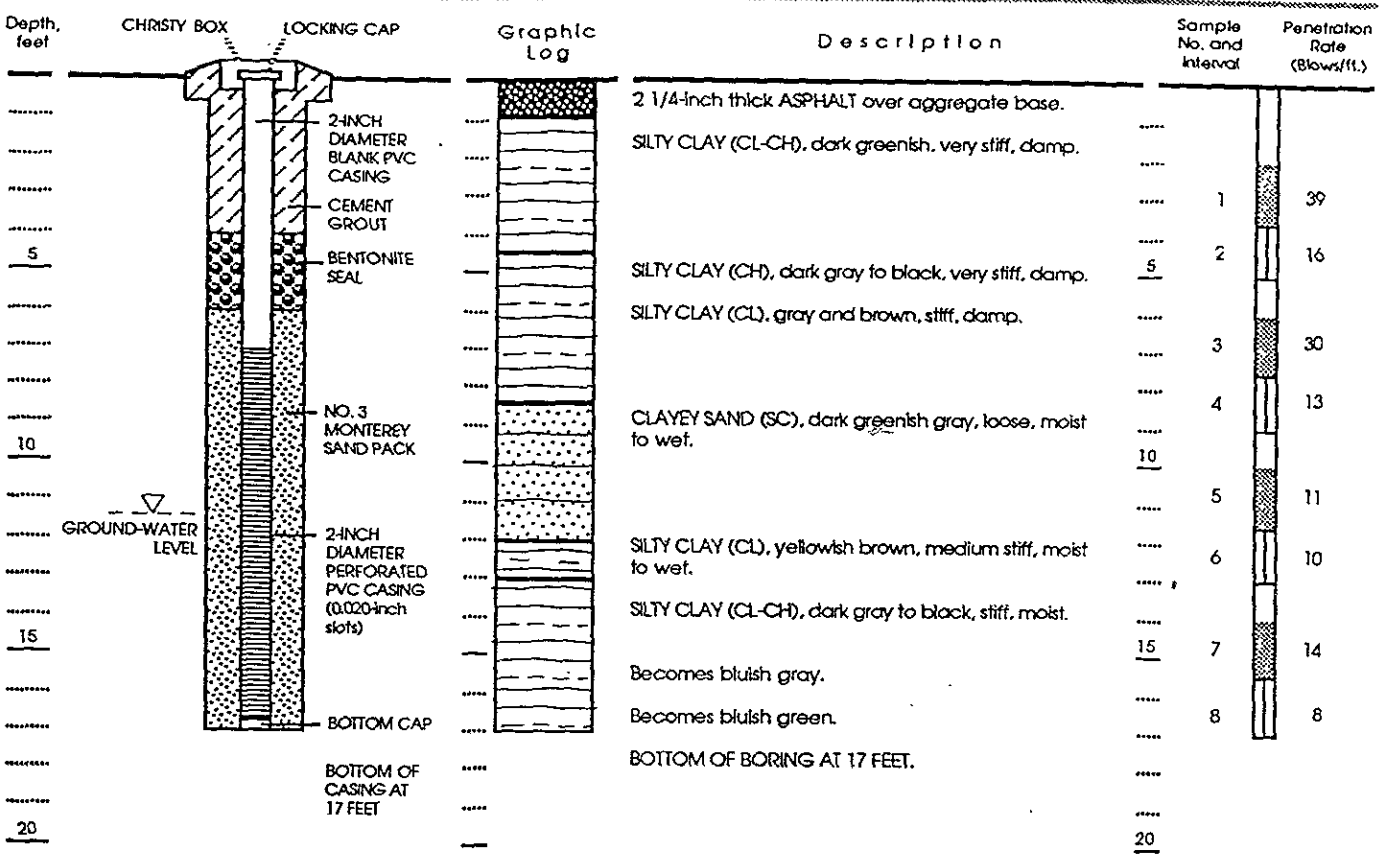
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1204fs04NOV88am



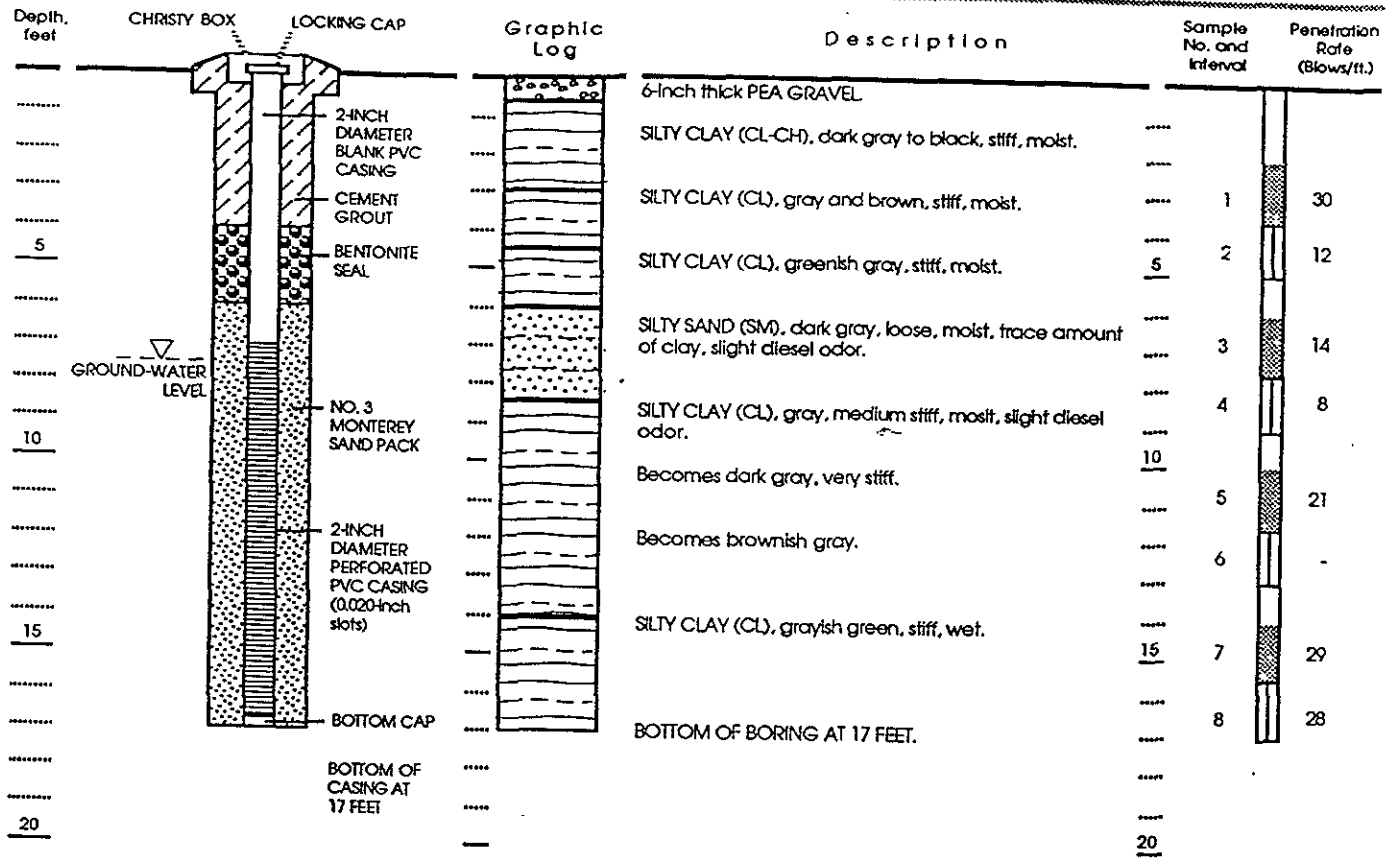
Well Permit No.	88400
Date well drilled:	22 August 1988
Date water level measured:	31 August 1988
Well elevation:	14.9 feet
LF Engineer:	Ted Splitter

EXPLANATION

- Clay
- Silt
- Sand or Sandstone
- 2" Modified California Sampler
- Split Spoon Sampler

Approved by:

Figure 3 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL LF-13



Well Permit No.	88400
Date well drilled:	22 August 1988
Date water level measured:	31 August 1988
Well elevation:	11.5 feet
LF Engineer:	Ted Splitter

EXPLANATION

- Clay
- Silt
- Sand or Sandstone
- Gravel
- 2" Modified California Sampler
- Split Spoon Sampler

Approved by:

Figure 4 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL LF-14

Project No. 1204

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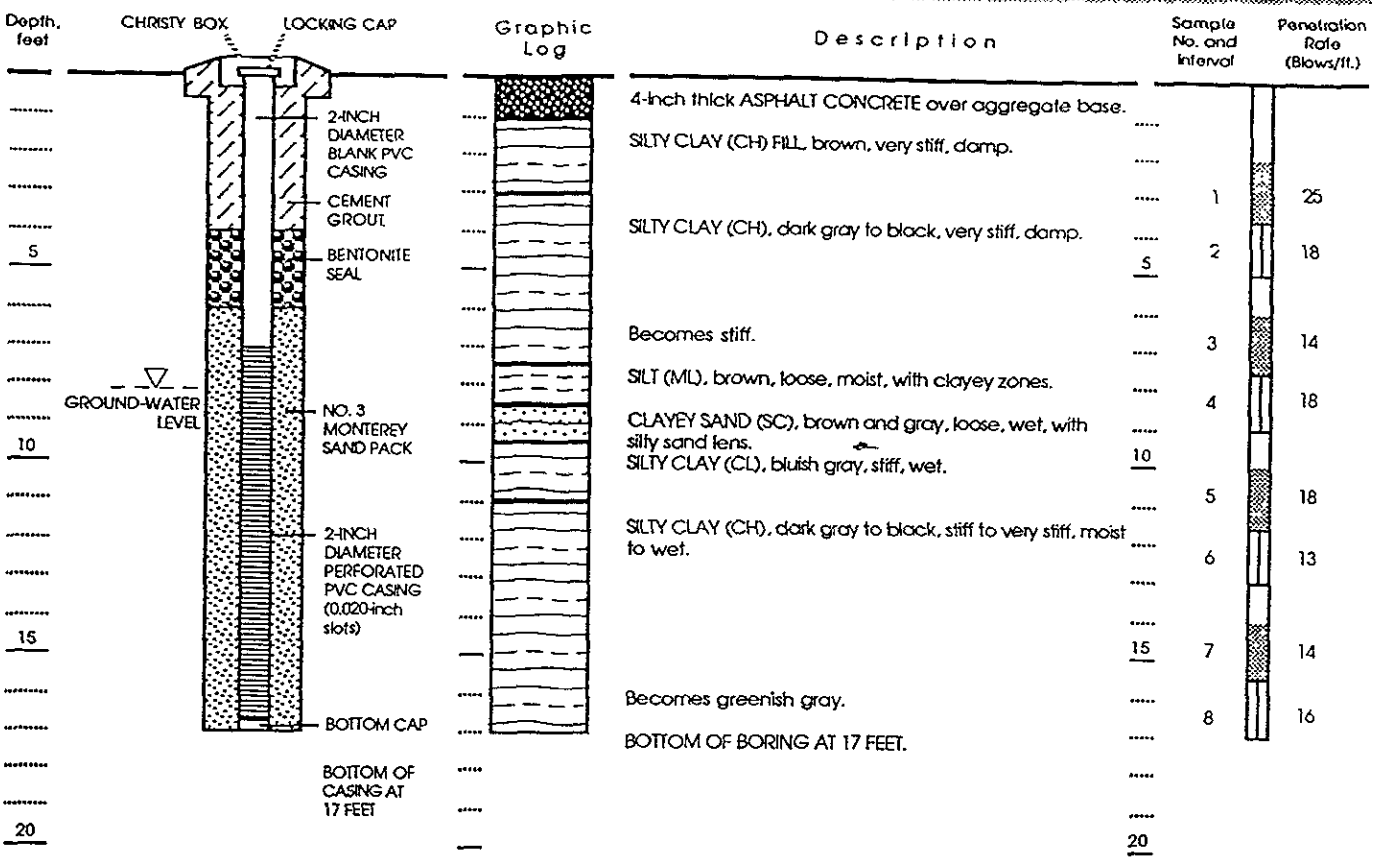
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1204TS04NOV88am



Well Permit No.	88400
Date well drilled.	22 August 1988
Date water level measured:	31 August 1988
Well elevation:	11.7 feet
LF Engineer:	Ted Splitter

EXPLANATION

- Clay
- Silt
- Sand or Sandstone
- 2" Modified California Sampler
- Split Spoon Sampler

Approved by:

Figure 5 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL LF-15

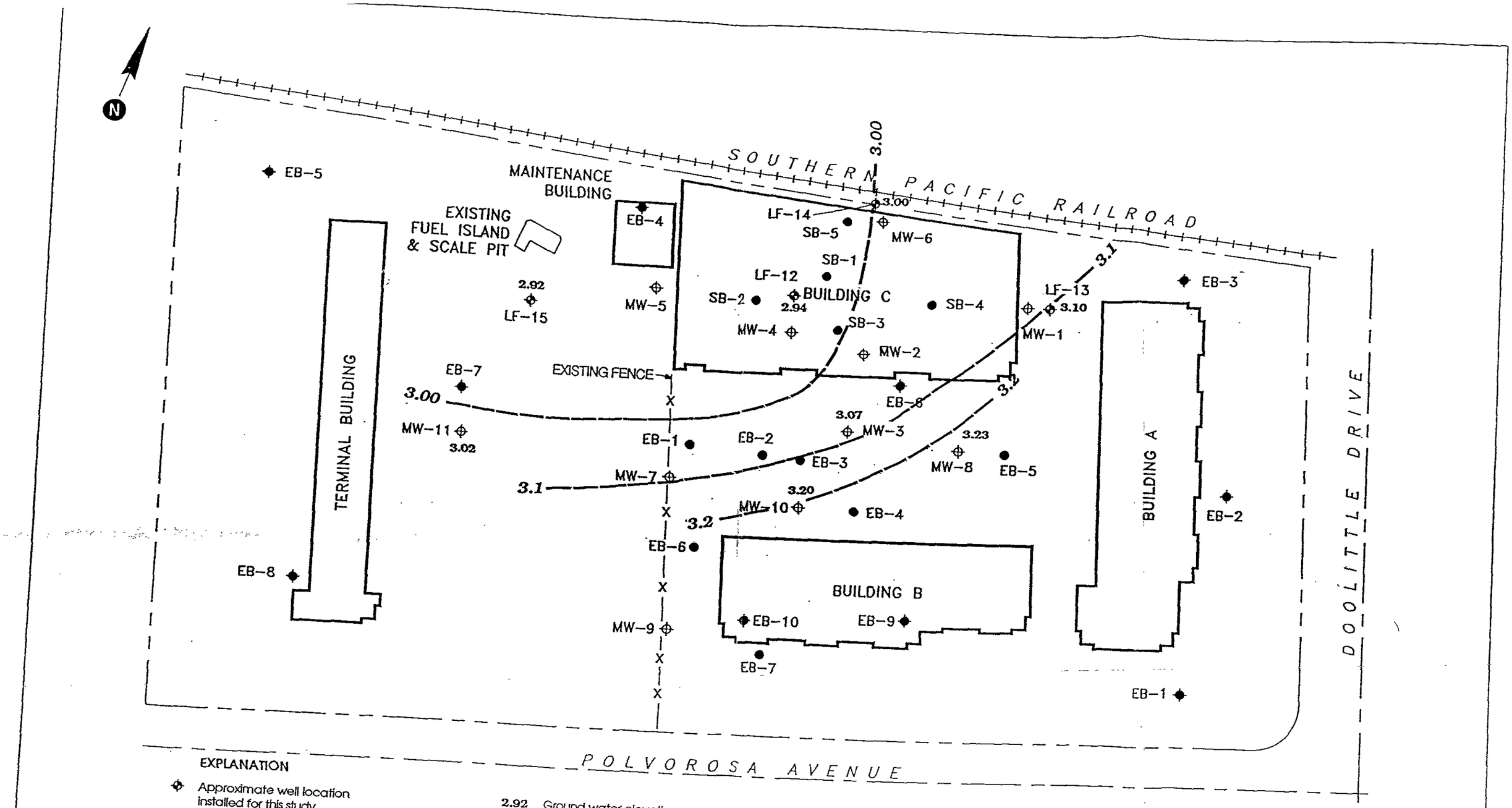


Figure 7 :
GROUND-WATER ELEVATION CONTOURS
ON 29 SEPTEMBER 1988

Project No. 1204

LEVINE • FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1204\B1SE07.TS88jt

1204fs31OCT88mp

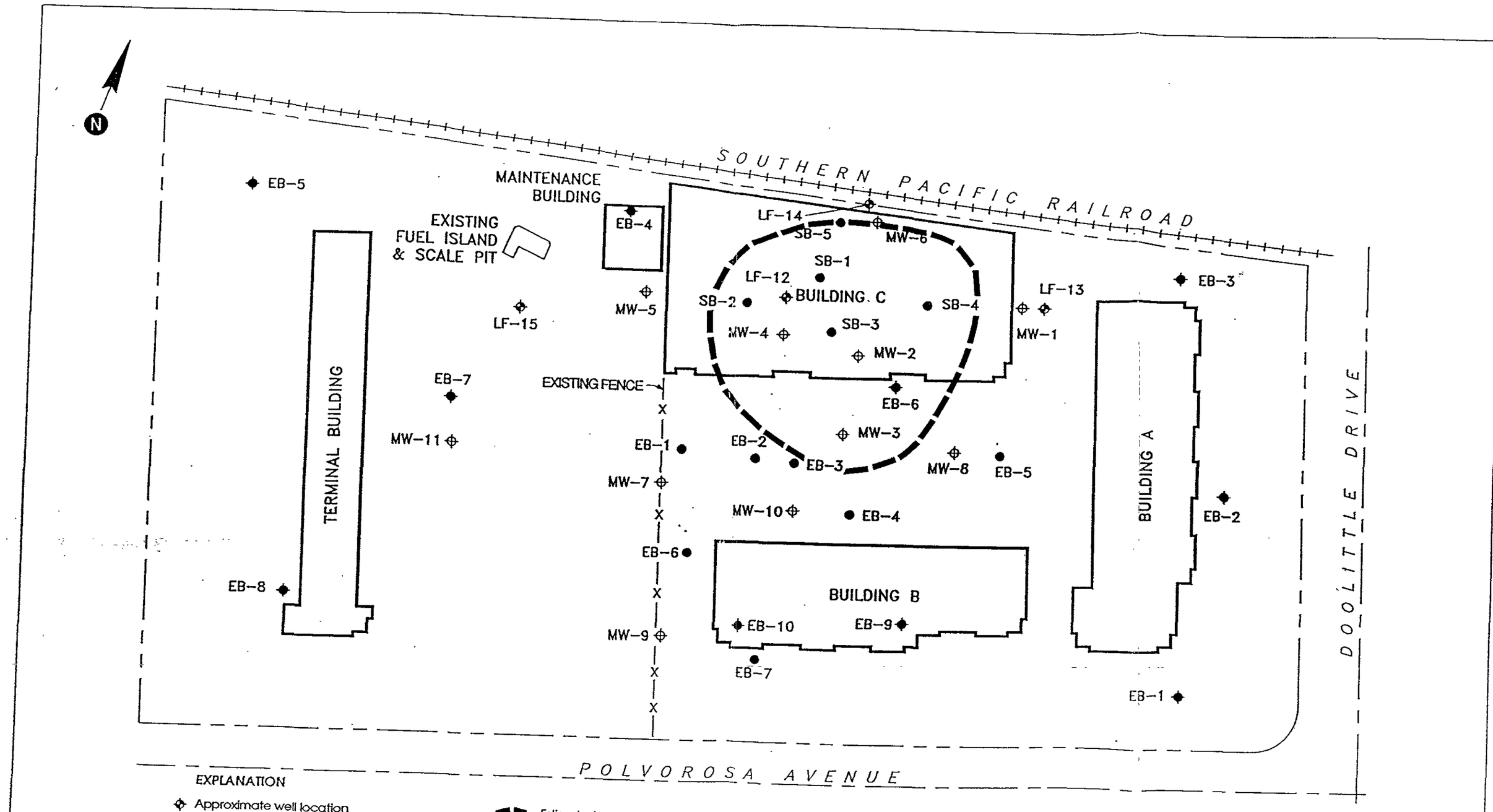


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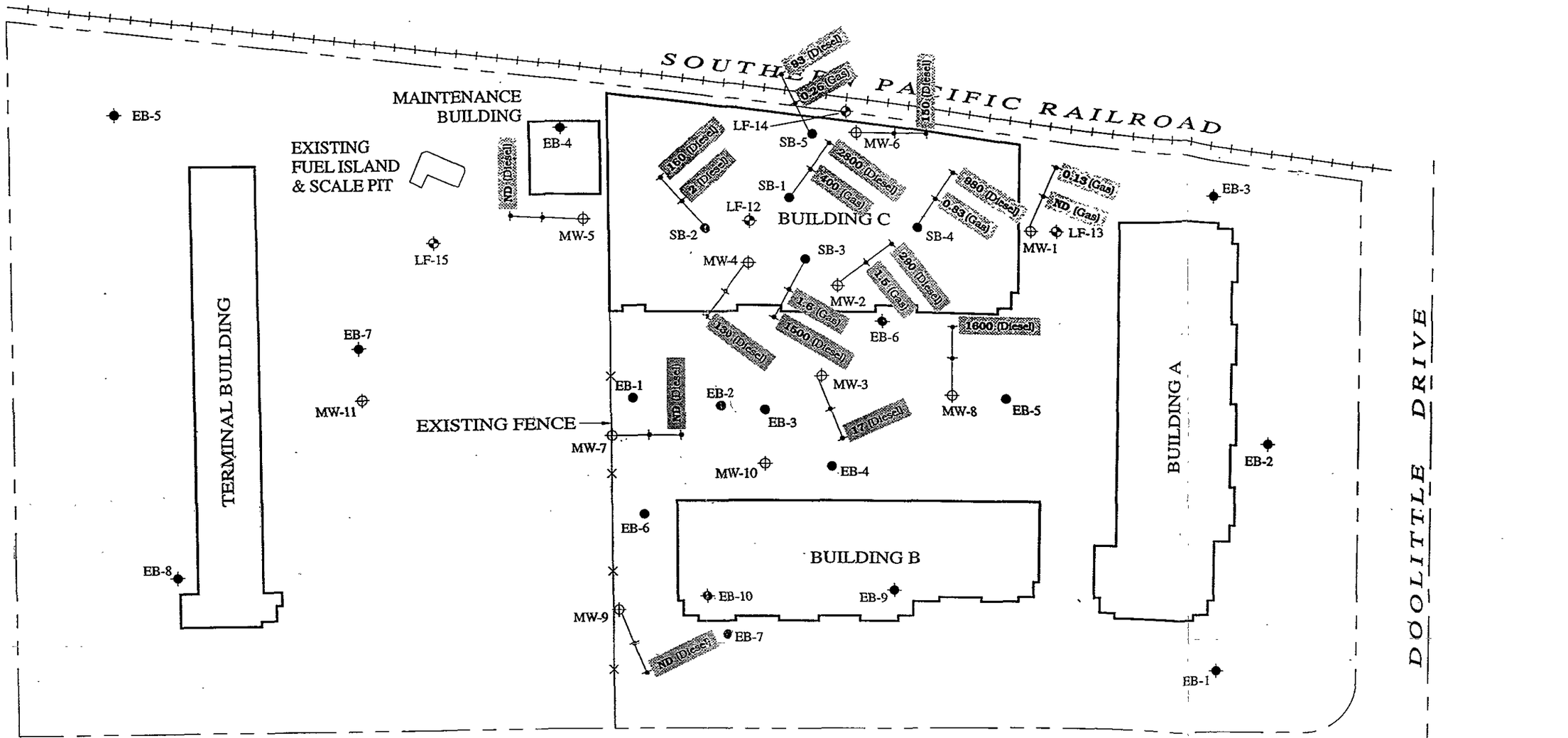
Figure 8 :
ESTIMATED EXTENT OF FLOATING DIESEL PRODUCT GREATER THAN 1/4-INCH THICKNESS

Project No. 1204

LEVINE • FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

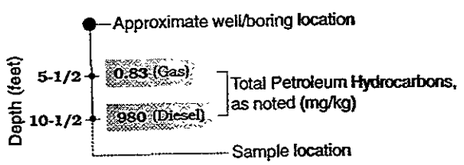
1204ES4NOV88mp-f8

1204C003.CDR 041498

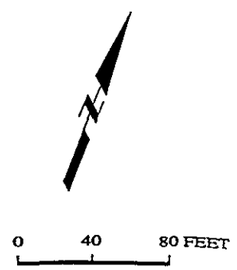


EXPLANATION

- Approximate well location installed for this study
- Approximate well location installed and tested by others
- Approximate soil boring location drilled by Donald E. Banta and Associates
- Approximate soil boring location drilled by others



Note: Ground-water level during soil sample collection was at 10 feet bgs. Soil samples collected were all at 5.5 and 10.5 feet bgs.
Samples taken on 14 October 1986



POLVOROSA BUSINESS PARK

Total Petroleum Hydrocarbons in Soil from Hydrogeologic Assessment

Levine-Fricke-Recon Figure 2

Project No. 1204

1204B001.CDR 031396

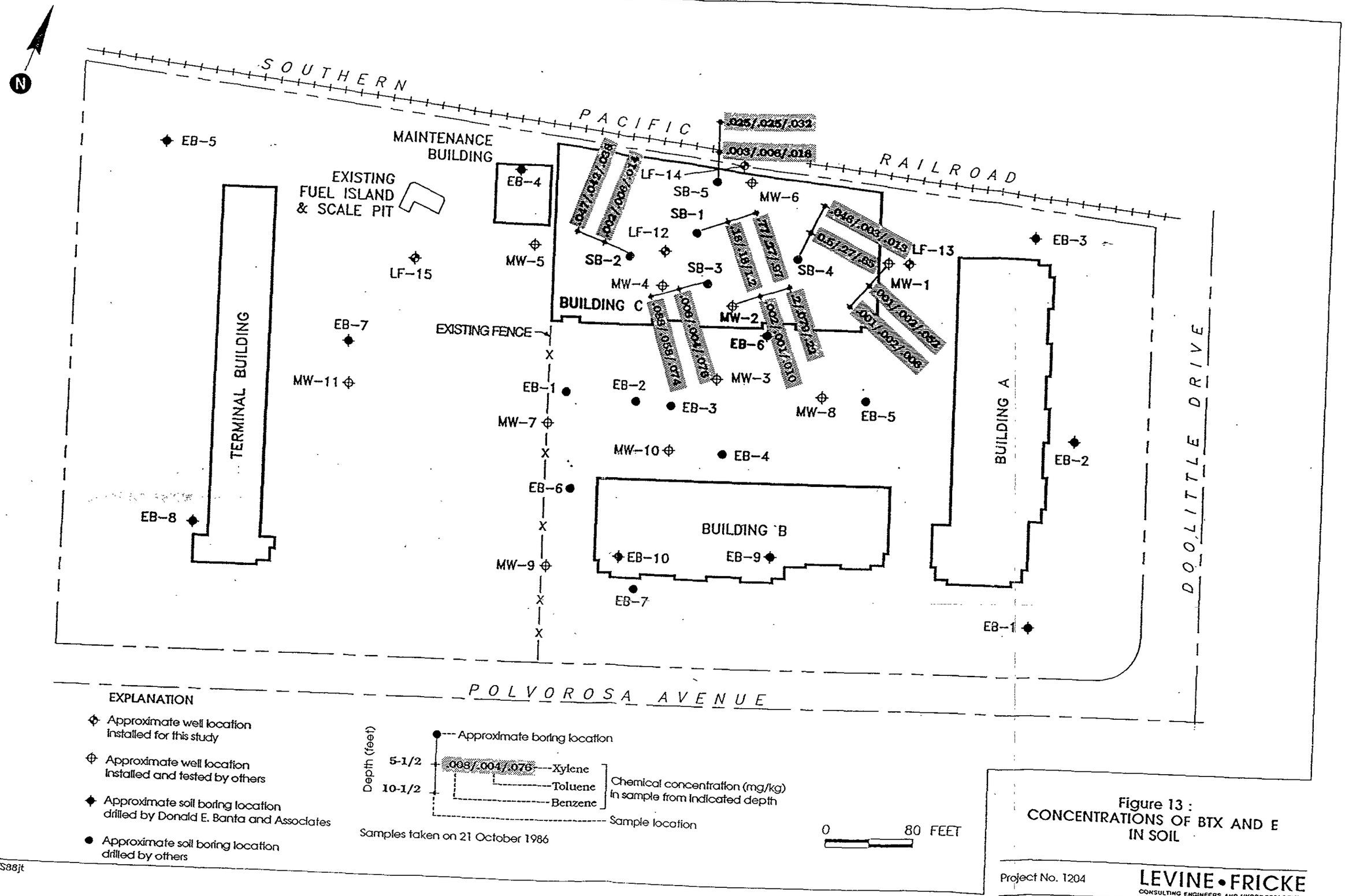


Figure 13 :
CONCENTRATIONS OF BTX AND E IN SOIL

1204\B1SE07.TS88jt

Project No. 1204

LEVINE • FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1204f531OCT88mp

Excerpts from Report

Documenting 1987 Site Assessment

HAZARDOUS
MATERIALS
MITIGATION
PROFESSIONALS
INCORPORATED

August 11, 1987

Project No. H223-01

Mr. Craig Mayfield
Alameda County Flood Control and
Water Conservation District
5997 Parkside Drive
Pleasanton, CA 94566

RE: CONTAMINATION STUDY
1555 DOOLITTLE DRIVE
SAN LEANDRO, CALIFORNIA

well MW-10
MW-11

Dear Mr. Mayfield:

In accordance with your Permit No. 87155, condition A-3, I am enclosing the available data that has been generated from the above referenced project. Subsurface descriptions for seven exploratory borings and two ground-water monitoring wells, along with the construction details for each well are included on the attached Exploratory Boring Logs. The Site Plan, Figure 1 presents the locations of the borings and wells. Please advise me if you will require a copy of the final report once it is completed.

If you have any questions regarding this project, please do not hesitate to call.

Very truly yours,

HMMP, INC.

John K. Hofer
Engineering Geologist, EG-1065

JKH:sng

(H223-01.1)

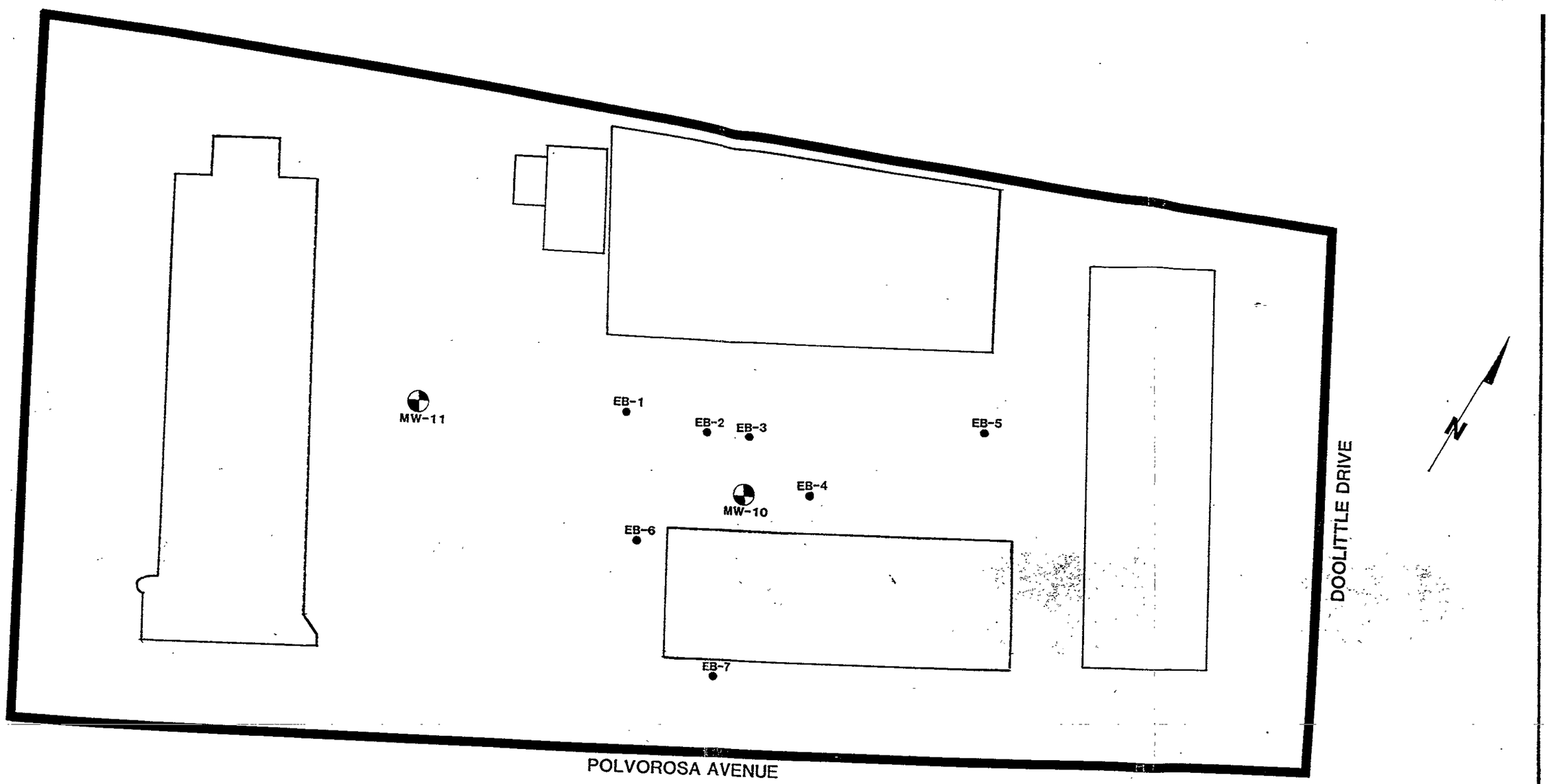
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

WATER ANALYSES

Well No.	Date	Total Diesel Hydro-carbons (ppb)	Total Gas Hydro-carbons (ppb)	Benzene (ppb)	Toluene (ppb)	Xylenes (ppb)
MW-3	8/11/87		7.50 inches free product			
MW-8	8/11/87		0.25 inches free product			
MW-10	8/11/87	< 1.000	-	< 0.5	1.9	0.93
MW-11	8/11/87	< 1,000	-	< 0.5	0.51	0.69
MW-3	11/23/87	10.000	-	< 0.5	< 0.5	5.3
MW-8	11/23/87	330	-	13	1.3	8.6
MW-10	11/23/87	< 50	-	0.61	1.4	16
MW-11	11/23/87	1,200	-	< 0.5	1.5	11
MW-3	12/31/87	84,000	7,400	2,200	1,800	1,500
MW-8	12/32/87	7,500	370	< 0.5	< 0.5	14
MW-10	12/31/87	390	100	< 0.5	< 0.5	< 0.5
Tank	12/31/87	-	110,000	6,100	19,000	17,000

In order to evaluate the shallow aquifer characteristics, we propose to conduct a pilot program of aquifer testing at the subject site. The primary purpose of these tests is to determine the transmissivity (permeability) of the shallow aquifer, and to assess the effects of the local tidal patterns. Once this has been determined, we can confirm the presence of gasoline contamination and better analyze ground-water remediation alternatives, if deemed necessary.

We hope to perform all of the tasks outlined below as part of this study. However, it is important to note that the possibility exists that all or some of these tasks may have to be eliminated if it is determined that the aquifer cannot support such a pumping program.



- EB – Exploratory Boring

MW – Monitoring Well

Not to scale

SITE PLAN

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS INCORPORATED
1450 Koll Circle, Suite 114
San Jose, California 95112
Telephone: (408) 286-7868

H223-01

8/87

FIGURE 1

DRILL RIG	Hollow Stem	SURFACE ELEVATION	-----	LOGGED BY	JKH
DEPTH TO GROUNDWATER	As NOted	BORING DIAMETER	8"	DATE DRILLED	7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC						
SILTY CLAY, moist	black	stiff	CL	5					
Some gravel									
SILTY SAND, medium grained, no product odor	gray brown	medium dense	SM	10			▽		
				15					
				20					

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Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	MW-11

DRILL RIG	Hollow Stem	SURFACE ELEVATION	----	LOGGED BY	JKH
DEPTH TO GROUNDWATER	As Noted	BORING DIAMETER	8"	DATE DRILLED	7/20/87

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
SILTY SAND, CONT'D. Increasing gravel	gray brown	medium dense	SM	25					
TOTAL DEPTH = 25.0 feet Water level at 9.0 feet following well completion. No product sheen on water									

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EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	MW-11

DRILL RIG Hollow Stem	SURFACE ELEVATION ----	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC						
SILTY CLAY, moist	black	stiff	CL	5					
Softer Strong product odor	light brown blue-gray			10					
Stiffer				15					
	soft			20					

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle; Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	MW 10

DRILL RIG Hollow Stem	SURFACE ELEVATION ----	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
SILTY CLAY, CONT'D.		soft	CL	25					
TOTAL DEPTH = 25.0 feet Water level at 12.0 feet following well completion. Product sheen on water.									

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Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	MW-10

DRILL RIG Hollow Stem	SURFACE ELEVATION ----	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL	brown	medium dense	GC						
	green-gray			5					
SILTY CLAY, damp	black	stiff	CL						
Shell fragments									
Product odor Softer	blue-gray			10			▽		
				15					
TOTAL DEPTH = 15.0 feet									
Product sheen on water									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-1

DRILL RIG Hollow Stem	SURFACE ELEVATION _____	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL	dark brown	medium dense	GC						
				5					
SILTY CLAY, damp	black	stiff	CL						
Product odor Softer	blue-gray						▽		
				10					
				15					
TOTAL DEPTH = 15.0 feet Product sheen on water									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-2

DRILL RIG	Hollow Stem	SURFACE ELEVATION	- - - -	LOGGED BY	JKH
DEPTH TO GROUNDWATER	As Noted	BORING DIAMETER	8"	DATE DRILLED	7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	dark brown	medium dense	GC	5					
SILTY CLAY, moist	black	stiff	CL				▽		
Very moist, strong product odor, softer	blue-gray			10					
				15					
TOTAL DEPTH = 15.0 feet Product sheen on water									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-3

DRILL RIG Hollow Stem	SURFACE ELEVATION ------	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC						
SILTY CLAY, moist	black	stiff	CL	5					
Softer, very moist, strong product odor	blue-gray								
Free product on augers				10			▽		
				15					
TOTAL DEPTH = 15.0 feet Water level at 10.5 feet. Product sheen on water.									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-4

DRILL RIG	Hollow Stem	SURFACE ELEVATION	-----	LOGGED BY	JKH
DEPTH TO GROUNDWATER	As Noted	BORING DIAMETER	8"	DATE DRILLED	7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC						
SILTY CLAY, moist	black	stiff	CL	5					
Product odor	light brown								
Softer, no visible product on augers	blue-gray			10			▽		
TOTAL DEPTH = 15.0 feet				15					
No product sheen on water									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-5

DRILL RIG Hollow Stem	SURFACE ELEVATION ----	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC	5					
				10					
SILTY CLAY, moist	black	stiff	CL						
Softer	blue-gray						▽		
				15					
TOTAL DEPTH = 15.0 feet									
No product sheen on water.									

DESCRIPTION AND CLASSIFICATION

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-6

DRILL RIG Hollow Stem	SURFACE ELEVATION ----	LOGGED BY JKH
DEPTH TO GROUNDWATER As Noted	BORING DIAMETER 8"	DATE DRILLED 7/20/87

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	UNCONFINED COMPRESSIVE STRENGTH (KSF)	WATER CONTENT (%)	DRY DENSITY (PCF)	PENETRATION RESISTANCE (BLOWS/FT.)
ASPHALT AND BASE ROCK									
CLAYEY, SILTY GRAVEL, damp	brown	medium dense	GC						
SILTY CLAY, damp, no product odor	black	stiff	CL	5					
Softer	blue-gray			10					
				15					
TOTAL DEPTH = 15.0 feet									
No product sheen on water.									

HAZARDOUS MATERIALS MITIGATION PROFESSIONALS, INC.
1450 Koll Circle, Suite 114, San Jose, CA 95112
Telephone: (408) 286-7868

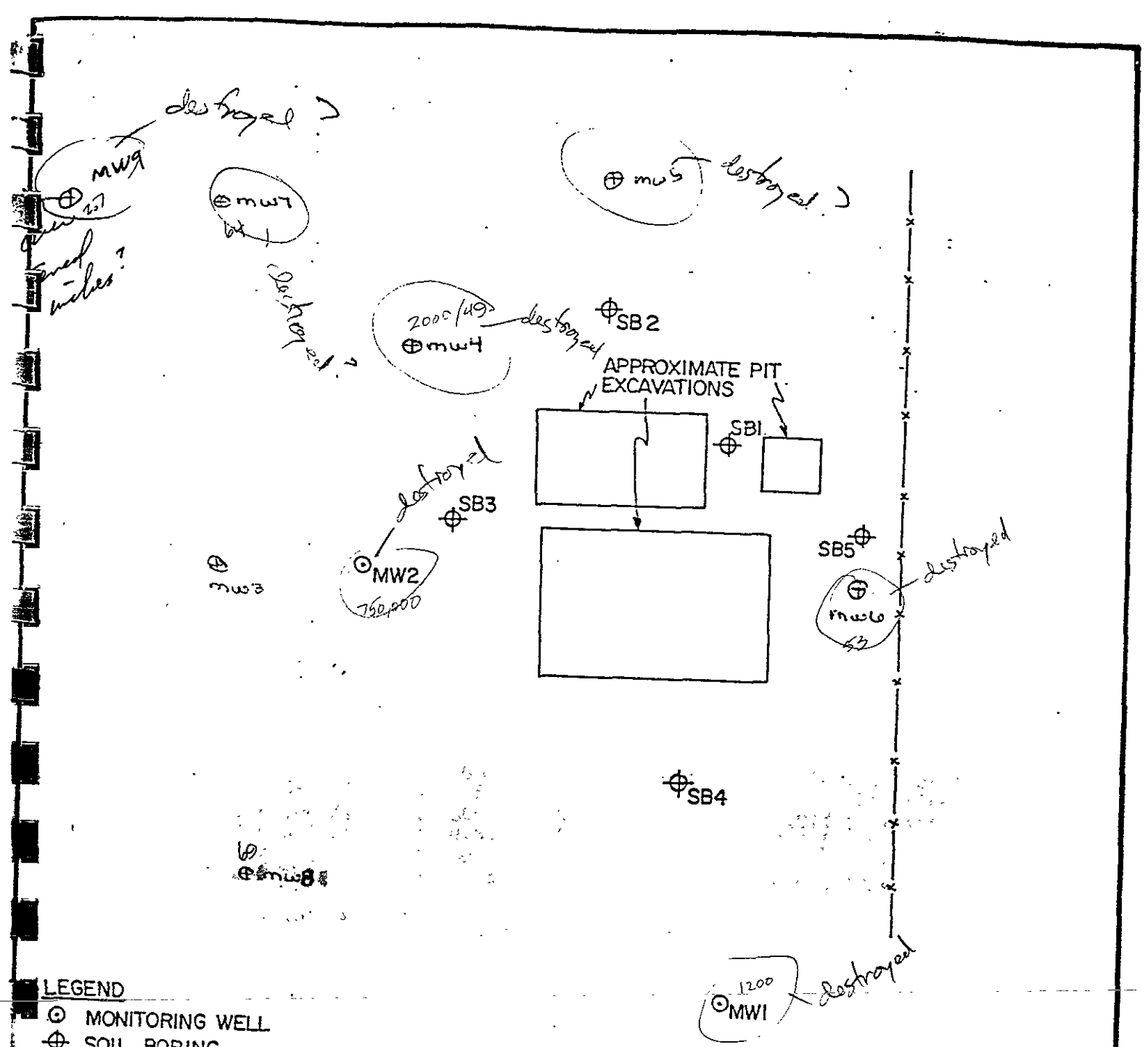
EXPLORATORY BORING LOG

ROUSE AND ASSOCIATES

PROJECT NO.	DATE	BORING NO.
H223-01	8/87	EB-7

Excerpts from Report

Documenting 1986 Site Assessment



FIELD SKETCH

EAST TANK PIT AREA

BLYMYRE / DOOLITTLE
SAN LEANDRO, CALIFORNIA

NO SCALE

GROUNDWATER TECHNOLOGY

WESCO Laboratories

Date: October 17, 1986

Client: Groundwater Technology

Submitted by: Dennis Bane

Report to: Dennis Bane

WESCO Job #: GWT 8629

Client Job/P.O. #: Blymyer/Doolittle 0801

Date collected: 10-14-86

Date submitted: 10-14-86

& type of sample(s): 1 Water
14 Soil

Lab No.	Client ID	Motor Fuels (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Xylene (mg/l)	Fuel Type	
5701	Water Pit 10/13	17	0.002	0.004	0.001	Diesel	
	Detection Limit	0.050	0.001	0.001	0.001		

Lab No.	Client ID	Motor Fuels (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Xylene (mg/kg)	Fuel Type	
5702	Soil 1A @ 5-1/2'	400	0.18	0.18	1.2	Gasoline	
5703	Soil 1B @ 10-1/2'	2800	0.77	0.27	0.97	Diesel	
5704	Soil 2A @ 5-1/2'	2.0	0.002	0.006	0.014	Diesel	
5705	Soil 2B @ 11'	160	0.047	0.042	0.038	Diesel	
5706	Soil 3A @ 5-1/2'	1.6	0.008	0.004	0.076	Gasoline	
5707	Soil 3B @ 10-1/2'	1500	0.088	0.058	0.074	Diesel	
5708	Soil 4A @ 5-1/2'	0.83	0.046	0.003	0.013	Gasoline	
5709	Soil 4B @ ( )'	980	0.50	0.27	0.65	Diesel	
5710	Soil 5A @ 5-1/2'	0.26	0.003	0.006	0.018	Gasoline	
5711	Soil 5B @ 10-1/2'	93	0.025	0.025	0.032	Diesel	
5712	Soil MW 1A @ ( )'	0.13	0.001	0.002	0.052	Gasoline	
5713	Soil MW 1B @ 10-1/2'	< 0.050	0.001	0.002	0.006	Gasoline	
5714	Soil MW 2A @ 5-1/2'	1.5	0.002	0.001	0.010	Gasoline	
5715	Soil MW 2B @ 10-1/2'	290	0.20	0.079	0.22	Diesel	
	Detection Limit	0.050	0.001	0.001	0.001		
	METHOD(S):	Note 1					

NOTES:

Note 1 - EPA Method 5020/8015/8020.

Analytical Supervisor

ATTACHMENT "A"

14 Galli Drive, Suite A
Novato, California 94947 415 883-6425
A Division of Western Ecological Services Company

WESCO Laboratories

Date: November 07, 1986

Client: Groundwater Technology

Submitted by: Joyce Miley

Report to: Robert Juncal

WESCO Job #: GWT 8647

Client Job/P.O. #: Blymyer, Doolittle I.D.# 20-8183

Date collected: 10-28-86

Date submitted: 10-29-86

& type of sample(s): 7 Soil

Lab No.	Client ID	Diesel Fuel (mg/kg)
5912	Soil MW-3B @ 10.5'	17
5913	Soil MW-4B @ 10.5'	130
5914	Soil MW-5B @ 10.5'	< 5
5915	Soil MW-6B @ 10.5'	150
5916	Soil MW-7B @ 10.5'	< 5
5917	Soil MW-8B @ 10.5'	1600
5918	Soil MW-9B @ 10.5'	< 5
	METHOD(S):	Note 1

NOTES:

Note 1 - EPA Method 3550/8015.

Analytical Supervisor

14 Galli Drive, Suite A
Novato, California 94947 415 883-6425
A Division of Western Ecological Services Company

ATTACHMENT I

WESCO Laboratories

Date: November 07, 1986

Client: Groundwater Technology

Submitted by: Dennis Bane

Report to: Robert Juncal

WESCO Job #: GWT 8639

Client Job/P.O. #: Blymyer/Doolittle

Date collected: 10-21-86

Date submitted: 10-21-86

& type of sample(s): 4 Water
9 Soil

Lab No.	Client ID	Motor Fuel (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Xylene (mg/l)	Fuel Type	
5794	Water MW-1	1200	< 0.10	< 0.010	< 0.020	Diesel	
5795	Water MW-2, Free Product	750000*	-----	-----	-----	Diesel	
5796	Water MW-3	11600	< 0.050	0.64	0.51	Diesel	
5797	Water MW-4	2000	< 0.050	< 0.010	< 0.020	Diesel	

Lab No.	Client ID	Motor Fuel (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Xylene (mg/kg)	Fuel Type	
	Soil Piles						
5798	Soil #100	70000	0.006	0.017	< 0.001	Diesel	
5799	Soil #101	2300	0.008	0.032	< 0.001	Diesel	
5800	Soil #102	8700	0.008	0.015	< 0.001	Diesel	
5801	Soil #103	130	0.004	0.059	0.014	Gasoline	
5802	Soil #104	8800	< 0.001	0.006	< 0.001	Diesel	
5803	Soil #105	3100	0.004	0.003	0.030	Diesel	
5804	Soil #106	2900	0.013	0.097	0.27	Diesel	
5805	Soil #107	660	0.010	0.035	0.014	Diesel	
5806	Soil #108	4700	0.003	0.022	0.025	Diesel	
	METHOD(S):	Note 1					

NOTES:

Note 1 - EPA Method 5020/8015/8020; 3550/8015.
* Volumetric Measurement

Analytical Supervisor

14 Galli Drive Suite A 6100
Novato, California 94947 415 883-6425
A Division of Western Ecological Services Company

ATTACHMENT "B"

WESCO Laboratories

Date: November 13, 1986

Client: Groundwater Technology /8

Submitted by: Joyce Miley

Report to: Robert Juncal

WESCO Job #: GWT 8648

Client Job/P.O. #: Blymer/Doolittle
I.D.# 20-8183

Date collected: 10-28-86

Date submitted: 10-29-86

& type of sample(s): 7 Water

Lab No.	Client ID	Motor Fuel (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Xylene (mg/l)	Fuel Type	
5919	Water MW-3	120	0.033	<0.010	<0.010	Diesel	
5920	Water MW-4	49	0.004	0.011	0.017	Diesel	
5921	Water MW-5	15	0.004	0.023	0.018	Diesel	
5922	Water MW-6	53	<0.001	0.023	0.010	Diesel	
5923	Water MW-7	64	0.016	<0.003	0.028	Diesel	
5924	Water MW-8	69	<0.006	<0.006	<0.006	Diesel	
5925	Water MW-9	2.7	0.002	0.011	0.004	Diesel	
	Detection Limit	0.50	0.010	0.010	0.010		
	METHOD(S):	Note 1					

NOTES:

Note 1 - EPA Method 5020/8015/8020.

Analytical Supervisor

ATTACHMENT "C"

14 Galli Drive, Suite A
Novato, California 94947 415 883-6425
A Division of Western Ecological Services Company

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

IWO Maher / 8669 (004)

Monitoring Well MW - 1

Drilling

Project: Blymyer Doolittle Owner Rouse and Associates

Location San Leandro Project Number 20-8183

Date Drilled 10-13-86 Total Depth of Hole 20 ft Diameter 7.5 inch

Surface Elevation ____ Water Level, Initial 10 ft 24-hrs 11.12 ft

Screen: Dia. 2 in. Length 15 ft. Slot Size 0.020 in.

Casing: Dia. 2 in. Length 6 ft. Type PVC

Drilling Company Kvilhaug Drilling Method Hollow Stem Auger

Driller C. Pruner Log by D. Bane

Sketch Map

Notes

Depth (Feet)	Well Construction	PID Notes (ppm)	Sample Number / blows	Graphic Log	Description/Soil Classification
0					Asphalt.
2				SM	Brown silty sand with gravel, (moist, no odor.)
4		10	MW1A		Brown - black silty clay with sand, (stiff, moist, no odor.)
6			6 3 8	CL	
8					Green - brown silty clay with sand, (stiff, moist, no odor.)
10			MW1B		▽
12		35	6 2 2		Green sandy silts, (soft, wet, no odor.)
14				CL	
16					
18					
20					
22					
24					

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GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well MW - 2

Drilling

Project: Blymyer Doolittle Owner: Rouse and Associates

Location: San Leandro Project Number: 20-8183

Date Drilled: 10-13-86 Total Depth of Hole: 20 ft Diameter: 7.5 inch

Surface Elevation: ---- Water Level, Initial: 10 ft 24-hrs: 11.61 ft

Screen: Dia. 2 in. Length: 15 ft. Slot Size: 0.020 in.

Casing: Dia. 2 in. Length: 6 ft. Type: PVC

Drilling Company: Kvilhaug Drilling Method: Hollow Stem Auger

Driller: C. Pruner Log by: D. Bane

Sketch Map

Notes

Depth (Feet)	Well Construction	PID (ppm)	Sample Number & Blows	Graphic Log	Description/Soil Classification
0					Asphalt.
2					
4					
6		279	MW2A 9 6	OL	Green- brown silty clay with sand, (very stiff, moist, slight diesel odor.)
8					
10		290	MW2B 5 9	SM	Green silty sand medium to coarse, (medi dense, wet, strong diesel odor.)
12					
14					
16					
18					
20					
22					
24					

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 3

Drilling

Project: Blumver/Doolittle Owner: Rouse & Associates

Location: San Leandro Project Number: 20 8183

Date Drilled: 10/27 Total Depth of Hole: 20 ft. Diameter: 7.5 in

Surface Elevation: Water Level Initial: 24-hrs: 10.48

Screen: Dia. 2 in. Length: 15 ft. Slot Size: 0.02 in

Casing: Dia. 2 in. Length: 5 ft. Type: PVC

Drilling Company: D. Kvilhaug Drilling Method: hollow stem auger

Driller: D. Kvilhaug Log by: J. Miley

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes PID	Sample Number	Graphic Log	Description/Soil Classification
0				GW	Brown, gravel and crushed asphalt (disturbed, dry no odor)
2					
4				OH	Black, organic clay, some shell fragments (pliabl moist, slight hydrocarbon odor)
6		25	3 5 7	SP	Green, gravelly sand (loose, moist, slight diesel odor)
8					(Increasing gravel)
10			6 7	CL	Green gray, silty clay (stiff, moist, slight dies odor)
12		12	6		
14				SP	Green brown, medium sand (moist, moderate diesel odor)
16					
18				CL	Gray green, silty clay (pliable, moist, moderate hydrocarbon odor)
20					
22					
24					

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 4

Drillin

Project: Blumver/Doolittle — Owner: Rouse & Associates

Location: San Leandro — Project Number: 20 8183

Date Drilled: 10/27 — Total Depth of Hole: 20 ft. — Diameter: 7.5 in.

Surface Elevation: ____ — Water Level, Initial: ____ — 24-hrs: 11.28 ft.

Screen: Dia. 2 in. — Length: 15 ft. — Slot Size: 0.02 in.

Casing: Dia. 2 in. — Length: 5 ft. — Type: PVC

Drilling Company: D. Kvilhaug — Drilling Method: hollow stem auger

Driller: D. Kvilhaug — Log by: J. Mibey

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes PID	Sample Number	Graphic Log	Description/Soil Classification
0					
2					Brown, gravel and crushed asphalt (disturbed, dry no odor)
4				SM	Green brown, silty sand, some clay (moist, slight hydrocarbon odor)
6		3	3 5 7	CH	Black, organic clay, some shells (pliable, moist, slight hydrocarbon odor)
8					(Increasing gravel)
10		50	2 5 10	SP	Dark gray, gravelly sand (loose, moist, moderate hydrocarbon odor)
12					Gray green, silty sand, some gravel (medium dense moist, strong hydrocarbon odor)
14				SM	
16					Gray green, silty clay (pliable, moist, slight hydrocarbon odor)
18				CL	
20					
22					
24					

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 5

Drilling

Project: Blumver/Doolittle Owner: Rouse & Associates

Location: San Leandro Project Number: 20 8183

Date Drilled: 10/27 Total Depth of Hole: 20 ft. Diameter: 7.5 in.

Surface Elevation: ____ Water Level Initial: ____ 24-hrs: 9.08 ft.

Screen: Dia. 2 in. Length: 15 ft. Slot Size: 0.02 in.

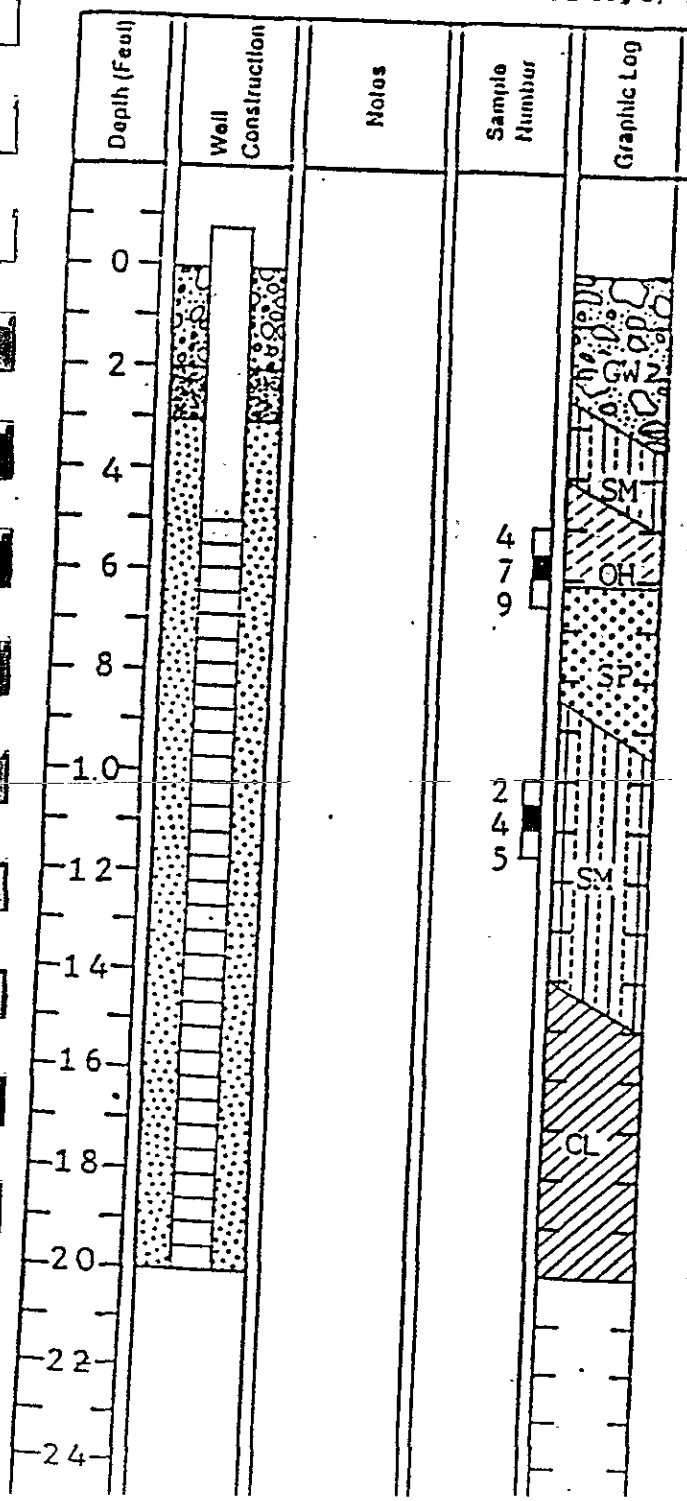
Casing: Dia. 2 in. Length: 5 ft. Type: PVC

Drilling Company: D. Kvilhaug Drilling Method: hollow stem auger

Driller: D. Kvilhaug Log by: J. Mihay

Sketch Map

Notes



Description/Soil Classification

Brown gravel and crushed asphalt (disturbed, dry, no odor)

Green gray, silty sand, some gravel (moist, no od

Black, organic clay, some shells and silt (stiff, moist, very slight hydrocarbon odor)

Gray, gravelly sands, some silt (well graded, medium dense, moist, no odor)

(Increasing gravels)

Brown, silty sands (loose, moist, no odor)

(Decreasing grain size)

Gray green, silty clay (pliable, moist, slight hydrocarbon odor)

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 6

Drilling

Project: Bivmver/Doolittle Owner: Rouse & Associates

Location: San Leandro Project Number: 20 8183

Date Drilled: 10/27 Total Depth of Hole: 20 ft. Diameter: 7.5 in.

Surface Elevation: Water Level Initial: 24-hrs: 9.93 ft.

Screen: Dia. 2 in. Length: 15 ft. Slot Size: 0.02 in.

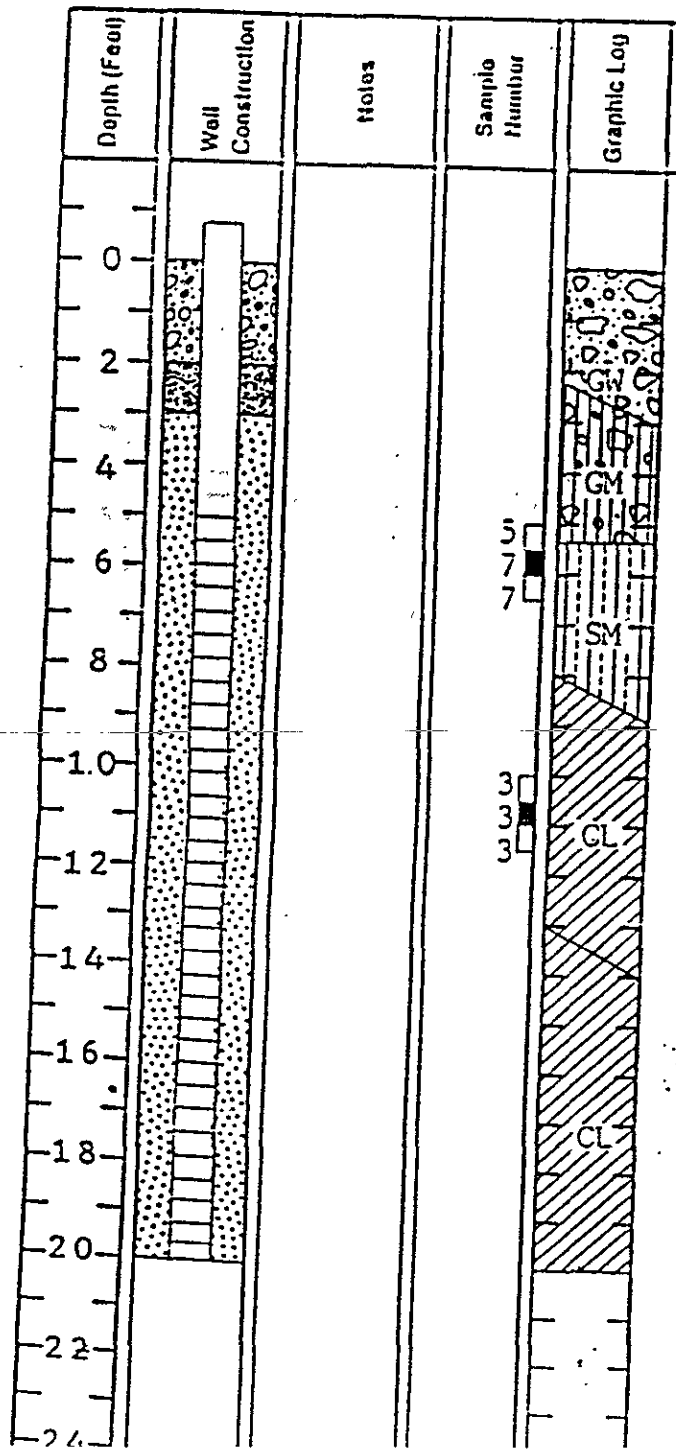
Casing: Dia. 2 in. Length: 5 ft. Type: PVC

Drilling Company: D. Kvilhaug Drilling Method: hollow stem auger

Driller: D. Kvilhaug Log by: J. Mibey

Sketch Map

Notes



Description/Soil Classification

Brown gravel and crushed asphalt (disturbed, dry no odor)

Gray brown, silty gravel (moist, no odor)

Gray green, silty fine sand (medium dense, moist very slight odor)

Gray green, sandy clay (pliable, moist, moderate hydrocarbon odor)

Gray green, silty clay, some sand (pliable, mois: moderate hydrocarbon odor)

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 7

Drillin

Project: Blumver/Doolittle — Owner: Rouse & Associates

Location: San Leandro — Project Number: 20 8183

Date Drilled: 10/28 — Total Depth of Hole: 20 ft. — Diameter: 7.5 in.

Surface Elevation: — Water Level, Initial: — 24-hrs: 9.66 ft.

Screen: Dia. 2 in. — Length: 15 ft. — Slot Size: 0.02 in.

Casing: Dia. 2 in. — Length: 5 ft. — Type: PVC

Drilling Company: D. Kvilhaug — Drilling Method: hollow stem auger

Driller: D. Kvilhaug — Log by: J. Miley

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0				GW	Brown gravel and crushed asphalt (disturbed, dry no odor)
2			2		
4			4		Black, organic silty clay (pliable, moist, no od
6			6	OH	
8					(Increasing clay)
10			10		
12			9	SM	Green gray, silty fine sands (medium dense, mois slight hydrocarbon odor)
14			6		
16					Gray green, silty clay (pliable, wet, moderate hydrocarbon odor)
18				CL	
20					(Increasing clay)
22					
24					

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 8

Drillin

Project: Blumver/Doolittle Owner: Rouse & Associates

Location: San Leandro Project Number: 20 8183

Date Drilled: 10/28 Total Depth of Hole: 20 ft. Diameter: 7.5 in.

Surface Elevation: ____ Water Level Initial: ____ 24-hrs: 11.34 ft.

Screen: Dia. 2 in. Length: 15 ft. Slot Size: 0.02 in.

Casing: Dia. 2 in. Length: 5 ft. Type: PVC

Drilling Company: D. Kvilhaug Drilling Method: hollow stem auger.

Driller: D. Kvilhaug Log by: J. Miley

Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0				GW	Brown gravel and cursned asphalt (disturbed, dry, no odor)
2					
4				OH	Black, organic silty clay, some shells (pliable, moist, no odor)
6			5 6 8	SM	Green gray, silty fine sands (medium dense, moist very slight hydrocarbon odor)
8					
10				SM	Gray, silty sands (moist, slight hydrocarbon odor
12			6 6 3	SP	Gray green, coarse sands and gravel (loose, wet, moderate hydrocarbon odor)
14				SM	Green gray, silty sands (moist, strong hydrocarbc odor)
16					
18				CL	Gray green, silty clays (pliable, moist, strong hydrocarbon odor)
20					
22					
24					

GROUNDWATER TECHNOLOGY, INC.
OIL RECOVERY SYSTEMS

Monitoring Well 9

Drilling

Project: Blymyer/Doolittle Owner Rouse & Associates

Location San Leandro Project Number 20 8183

Date Drilled 10/28 Total Depth of Hole 20 ft. Diameter 7.5 in.

Surface Elevation ____ Water Level Initial ____ 24-hrs. 9.39 ft.

Screen: Dia. 2 in. Length 15 ft. Slot Size 0.02 in.

Casing: Dia. 2 in. Length 5 ft. Type PVC

Drilling Company D. Kvilhaug Drilling Method hollow stem auger

Driller D. Kvilhaug Log by J. Miley

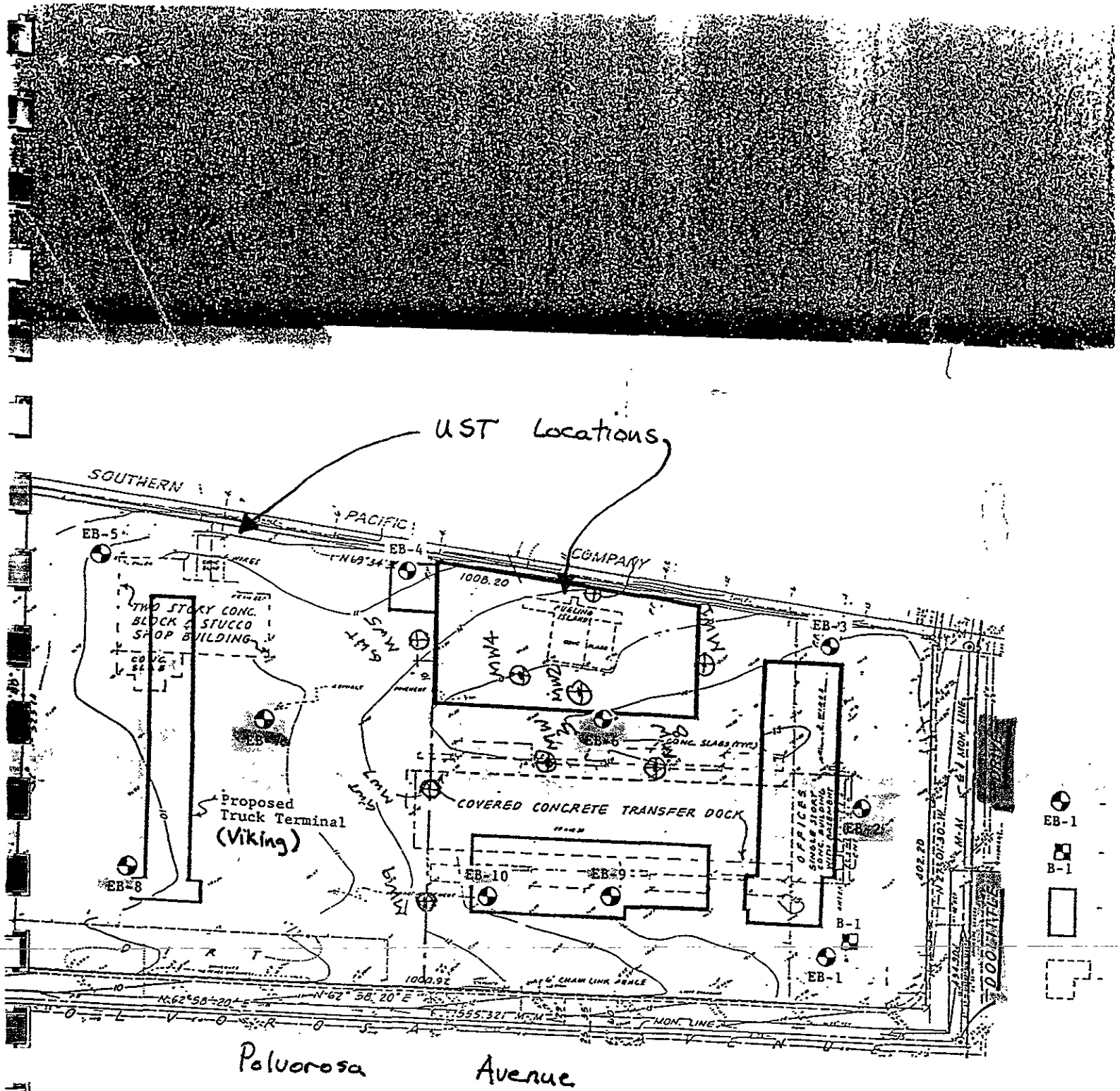
Sketch Map

Notes

Depth (Feet)	Well Construction	Notes	Sample Number	Graphic Log	Description/Soil Classification
0				GW	Brown gravel and crushed asphalt (disturbed, dry, no odor)
2					
4			2	OH	Black, organic clay, some silt and shells (soft, moist, no odor)
6			1		
8			2		(Increasing moisture and organics)
10				CL	Green gray, silty clay (pliable, moist, slight hydrocarbon odor)
12			3		
14			7	SM	Green brown, silty sand (medium dense, moist, sli hydrocarbon odor)
16			6		
18				CL	Tan, silty clay (pliable, moist, slight hydrocarb odor)
20					(Grades green gray, increasing moisture)
22					
24					

Excerpts from

1986 Geotechnical Report



Greiner Engineering, print titled "Topographic Survey, 1555 Doolittle Drive, City of San Leandro, Alameda County, California," Sheet 1, dated July 1986.

Donald E. Banta & Associates
Consulting Geotechnical Engineers

INDUSTRIAL DI
Sa

PROJECT NO
370-3A

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	14 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	11.4 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE
1½ inches of Asphaltic Concrete									
SANDY CLAY - CLAYEY SAND, with rock fragments FILL	yellow brown	medium dense-v.stiff	SC-CL	1			13		
SILTY CLAY, with sand 1* - Plasticity Index = 30% Liquid Limit = 48% Passing #200 Sieve = 89%	black / dark brown	very stiff	CL-CH	2		38			
				3	1*	35	26	93	2.5
SANDY CLAY 2* - Passing #200 Sieve = 74%	brown	very stiff	CL	4					
				5	2*	29	18		2.7
SILTY SAND, clayey, fine-grained 3* - Passing #200 Sieve = 49% (gravelly below 10 feet)	gray brown mottled rust	medium dense	SM-SC	6					
				7					
				8					
				9	3*	10	25		
				10					
				11			ATD and 6½ hrs. AD		
				12					
				13					
4* - Passing #200 Sieve = 19%				14	4*	13	18		
				15					
				16					
SILTY CLAY	gray	firm	CH	17					
				18					
				19		8	(no recovery)		
				20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-1

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	14 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	11.4 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
SILTY CLAY, with wood fragments	gray	firm	CH	21	x		49		
				22					
SILTY CLAY	gray-green	stiff	CL-CH	23					
				24		19	23		1.4
Bottom of Boring = 24.5 feet				25					
				26					
Note: "x" indicates location of disturbed auger sample				27					
				28					
				29					
				30					
				31					
				32					
				33					
				34					
				35					
				36					
				37					
				38					
				39					
				40					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-1 (contd.)

DRILL RIG: Continuous Flight Auger	SURFACE ELEVATION: 15 feet ±	LOGGED BY: GC
DEPTH TO GROUNDWATER: 12.0 feet	BORING DIAMETER: 6 inches	DATE DRILLED: 7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
3 inches of Asphaltic Concrete									
CLAYEY SAND, with gravel-sized rock fragments 1* - Passing #200 Sieve = 38% FILL	yellow brown & green	medium dense	SC	1	1*	29	14		
SILTY CLAY	black	very stiff	CL-CH	2 3		16	25		
	dark brown			4		22	19	101	3.1
SANDY CLAY	brown	very stiff	CL	5 6					
CLAYEY SAND	brown	medium dense	SC	7 8					
CLAYEY SAND, with seashell fragments 2* - Passing #200 Sieve = 29%	dark brown	medium dense	SC	9 10	2*	11	26 18		
CLAYEY SAND	yellow brown	medium dense	SC	11					
SILTY CLAY	gray with brown and green	stiff-very stiff	CL-CH	12 13 14			▽ 6 hrs. AD		
Bottom of Boring = 15.0 feet				15		17	22		2.1
				16 17 18 19 20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING
370-3A	August 1986	EB-2

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	14 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	10.8 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
2½ inches of Asphaltic Concrete									
CLAYEY SAND, very clayey FILL 1* - Passing #200 Sieve = 47%	orange brown & green	medium dense	SC (CL)	1	1*	24	16		
SILTY CLAY	black	very stiff	CL-CH	2					
	brown			3		25	23		
				4					
				5		26	23		2.2
SILTY CLAY, with fine sand	light brown	very stiff	CL	6					
				7					
				8					
CLAYEY SAND, with seashells	brown and dk. brn.	medium dense	SC	9		13	22	103	
CLAYEY SAND - SANDY CLAY	brown with gray	medium dense-stiff	SC-CL	10					1.5
				11			▽ 5½ hrs. AD		
				12					
SILTY CLAY, with fine sand	dark gray to gray	very stiff	CL	13					
				14		18	▽ ATD 21		2.1
				15					
				16					
SILTY CLAY, with very fine sand	gray-green with brown	stiff to very stiff	CL	17					
				18					
				19		18	23		2.0
Bottom of Boring = 20.0 feet				20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-3

DRILL RIG Continuous Flight Auger	SURFACE ELEVATION 10 feet ±	LOGGED BY GC
DEPTH TO GROUNDWATER 8.2 feet	BORING DIAMETER 6 inches	DATE DRILLED 7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
2½ inches of Asphaltic Concrete									
CLAYEY SAND, with rock fragments FILL	yellow-brown / gray	dense	SC	1		37	11		
SILTY CLAY, sandy	black	very stiff	CL-CH	2 3 4		34	27	88	
CLAYEY SAND, gravelly 1* - Passing #200 Sieve = 19%	brown	medium dense	SC	5	1*	17	10		
CLAYEY SAND, fine-grained 2* - Passing #200 Sieve = 42% (gasoline/diesel odor) (saturated)	green / dark brown	loose	SC	6 7 8 9	2*		▽ 5 hrs. AD 24		
SANDY CLAY	brown	stiff	CL	10		7	31		
SILTY CLAY, with sand	dark gray to gray	stiff	CL-CH	11 12 13 14		22	22		1.5
Bottom of Boring = 15.0 feet				15 16 17 18 19 20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-4

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	10 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	7.5 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
2½ inches of Asphaltic Concrete									
SANDY CLAY, with rock fragments FILL 1* - Passing #200 Sieve = 70%	orange brown and gray	very stiff	CL	1 2	1*	28	16 16		
SILTY CLAY	black	very stiff	CL-CH	3		13			3.0
SANDY CLAY, silty	gray	stiff	CL	4 5		32	23	100	2.0
	gray with brown			6 7 8			▽ 5 hrs. AD		
2* - Passing #200 Sieve = 84%				9 10	2*	9	29		1.5
CLAYEY SAND	brown	medium dense	SC	11 12					
SILTY CLAY	dark gray to gray	stiff	CL-CH	13 14		24	25		2.1
				15 16 17					
SILTY CLAY	light gray with brown	firm	CL-CH	18 19		16	31		1.5
Bottom of Boring = 20.0 feet				20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-5

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	14 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	11.0 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
3½ inches of Asphaltic Concrete									
CLAYEY SAND - SANDY CLAY, with rock fragments 1* - Passing #200 Sieve = 51% FILL	orange brown and gray	medium dense	SC-CL	1	1*	31	17		
SILTY CLAY	black	very stiff	CL-CH	2 3		28	22	98	3.5
SILTY CLAY, with fine sand	brown	very stiff	CL	4		19	26		
SANDY CLAY	gray	stiff	CL	5 6 7					
SILTY AND CLAYEY SAND, interbedded (strong diesel odor) (hole caved at 11.5 feet)	gray	loose	SM-SC	8 9 10 11		5	18 13 ▽ 3 hrs. AD		
SILTY CLAY	dark gray	stiff	CL-CH	12 13 14		18	21		1.8
Bottom of Boring = 15.0 feet				15 16 17 18 19 20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-6

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	11 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	7.8 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND CLASSIFICATION				DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
6 inches of Asphaltic Concrete									
SANDY CLAY - CLAYEY SAND, with rock fragments FILL	orange brown and gray	medium dense	CL-SC	1		21	12		
				2					
SILTY CLAY, with seashells	black	very stiff	CL-CH	3		24	28		2.0
				4			27	88	
				5		20			
SANDY CLAY	gray and brown	stiff to firm	CL	6					
				7					
				8			▽ 3 hrs. AD		
	brown			9			35		0.6
(with clayey sand lenses)				10		7	23		
	gray			11					
SILTY CLAY	dark gray to gray	stiff to very stiff	CL-CH	12					
				13					
				14					
				15		25	24		2.2
Bottom of Boring = 15.0 feet				16					
				17					
				18					
				19					
				20					

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-7

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	10 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	7.0 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
3½ inches of Asphaltic Concrete									
CLAYEY SAND, with rock fragments — FILL	brown and gray	medium dense	SC	1					
SILTY CLAY 1* - Plasticity Index = 33% Liquid Limit = 49% Passing #200 Sieve = 85%	black	very stiff	CL-CH	2		45	13	114	
				3	1*	23	24		2.2
	gray with brown			4					
				5		14	30		2.2
SANDY CLAY, very fine-grained	brown	firm	CL	6					
				7			▽ 2 hrs. AD		
				8					
SILTY SAND 2* - Passing #200 Sieve = 28%	gray	loose	SM	9		7	31		0.6
				10	2*		20		
SANDY CLAY	gray	firm	CL	11					
SILTY SAND	gray	loose	SM	12					
SILTY CLAY	dark gray	very stiff	CL-CH	13					
				14					
				15		28	26		2.2
SANDY CLAY	light gray	stiff	CL	16					
				17					
				18					
CLAYEY SAND, with gravel 3* - Passing #200 Sieve = 20%	gray	medium dense-dense	SC	19					
					3*	31	17		
Bottom of Boring = 20.0 feet				20					

DESCRIPTION AND CLASSIFICATION

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-8

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	14 ± feet	LOGGED BY	GC
DEPTH TO GROUNDWATER	10.8 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
3 inches of Asphaltic Concrete									
SANDY CLAY 1* - Passing #200 Sieve = 76%	yellow brown	very stiff	CL	1	1*	36	16		
CLAYEY SAND - SANDY CLAY FILL 2* - Passing #200 Sieve = 49%	gray	medium dense	SC-CL	2	2*				
SILTY CLAY, with scattered sea-shells	black	stiff	CL-CH	3		25	12		
				4			23	92	2.0
				5		25			
SANDY CLAY (with clayey sand lenses)	gray	firm	CL	6					
				7					
				8					
				9		8	24		0.8
CLAYEY SAND 3* - Passing #200 Sieve = 26%	gray brown	loose	SC	10			▽ 1 hr. AD		
				11					
				12	x 3*		19		
SILTY CLAY	dark gray	stiff	CL-CH	13					
				14		22	30		1.5
				15					
Bottom of Boring = 15.0 feet Note: "x" indicates location of disturbed auger sample				16					
				17					
				18					
				19					
				20					

DESCRIPTION AND CLASSIFICATION

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-9

DRILL RIG	Continuous Flight Auger	SURFACE ELEVATION	13 feet ±	LOGGED BY	GC
DEPTH TO GROUNDWATER	12.0 feet	BORING DIAMETER	6 inches	DATE DRILLED	7/16/86

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (FEET)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH BY TORVANE (KSF)
4 inches of Asphaltic Concrete									
SANDY CLAY - CLAYEY SAND, with rock fragments FILL	brown and gray	medium dense-very stiff	CL-SC	1					
				2		47	19	110	
SILTY CLAY	black	very stiff	CL-CH	3		26	11		
				4					
				5		19	26		2.2
SILTY CLAY, with very fine sand	gray and brown	stiff to firm	CL	6					
				7					
				8					
1* - Passing #200 Sieve = 91%				9	1*	8	26		1.0
				10					
				11					
CLAYEY SAND - SANDY CLAY	brown	loose-firm	SC-CL	12			▽½hr. AD		
2* - Passing #200 Sieve = 51%				13	x2*		24		
SILTY CLAY	dark gray	stiff	CL-CH	14					
				15		18	26		2.2
Note: "x" indicates location of disturbed auger sample				16					
				17					
				18					
				19					
				20		18	29		2.2
Bottom of Boring = 20.0 feet									

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EXPLORATORY BORING LOG

INDUSTRIAL DEVELOPMENT - 1555 DOOLITTLE DRIVE
San Leandro, California

PROJECT NO.	DATE	BORING NO.
370-3A	August 1986	EB-10