

RB #01-0833

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

ENVIRONMENTAL
PROTECTION
00 NOV 30 PM 3:59

I. AGENCY INFORMATION

Date: September 25, 2000

Agency name: **Alameda County-HazMat**

Address: **1131 Harbor Bay**

Pkwy.

City/State/Zip: **Alameda, CA 94502**

Phone: **(510) 567-6774**

Responsible staff person: **Larry Seto**

Title: **Senior HMS**

II. CASE INFORMATION

Site facility name: **Pacific Cryogenic**

Site facility address: **2311 Magnolia Street, Oakland, CA 94607**

RB LUSTIS Case No:

Local Case No./LOP **1211**

URF filing date: **7-28-98**

SWEEPS No: **N/A**

Responsible Parties:

Addresses:

Phone Numbers:

Estate of Jean Josephian c/o
Mr. Aldo Guidotti

Guidotti & Lee
One Bates Boulevard, Suite 300
Orinda, CA 94563

(925) 254-3450

<u>Tank No</u>	<u>Size in Gallons</u>	<u>Contents:</u>	<u>Closed in-place or Removed?</u>	<u>Date:</u>
1	8,000	Diesel	Removed	6-30-89
2	1,000	Gasoline	Removed	7-12-89
3	550	Waste Oil	Removed	7-12-89

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Holes in the gas and waste oil pipelines

Monitoring Wells installed? yes

Number: 3 monitoring wells & 3 backfill wells
with slotted screens

Site characterization complete? Yes

Date approved by oversight agency:

Proper screened interval? MW-1 okay, drilling log and well construction for MW-2 & MW-3 cannot be located by responsible party or current consultant

Highest GW depth below ground surface: 7.6'

Lowest depth: 8.1'

Flow direction: Easterly/southeasterly

Most sensitive current use:

Are drinking water wells affected? No

Aquifer Name:

Is surface water affected? No

Nearest affected SW name: ---

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

Report(s) on file? Yes

Where is report(s) filed?

**Alameda County
1131 Harbor Bay Pkwy.
Alameda, CA 94502**

**Oakland Fire Department
1603 Martin Luther King
Oakland, CA 94612**

Leaking Underground Fuel Storage Tank Program

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal /destination)</u>	<u>Date</u>
Underground Tank	8,000 gallon	H & H Shipping So. San Francisco, CA	6-30-89
Underground Tank	1,000 gallon	H & H Shipping So. San Francisco, CA	7-12-89
Underground Tank	550 gallon	H & H Shipping So. San Francisco, CA	7-12-89
Impacted Soil	140 Cu Yds.	Vasco Road Landfill Alameda County	12-7-93

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before ¹	After ³	Before ²	After ⁴
TPH(Mineral Spirits)	NA	NA	370 ^a	ND ^a
TPH(gas)	31	1,600	14,000 ^c	1,100
TPH(diesel)	270	20 ^a	5,400 ^b	ND ^b
TPH (Motor Oil)	NA	1,100	ND ^c	340 ^c
Benzene	0.09	2.4	6,200	96 ^c
Toluene	0.75	2.8	60	39 ^c
Ethylbenzene	0.43	3.3	110	18
Total Xylenes	1.4	18.0	740	58 ^c
Oil & Grease	ND	1,400	NA	NA
Volatile Organic Compounds	See 1a	See 1a	NA	NA
MTBE	NA	NA ^a	110 ^c	
HVOC		ND ^b		ND ^d

Leaking Underground Fuel Storage Tank Program

ND - Non-Detect

NA - Not Analyzed

- 1- Sample collected on 7-12-89 during removal of gas & waste oil tank
- 1^a- Sample below waste oil tank contained low levels of VOC's (see Table 6)
- 2- Sample collected on 3-4-92 from MW-3
- 2^a- Sample collected on 1-28-94 from MW-3
- 2^b- Sample collected on 10-26-90 from MW-1
- 2^c- Sample collected on 3-14-95 from MW-3
- 3- Samples collected on 11-18-92 after overexcavation
- 3^a- Sample collected on 6-26-00 from GP-1 @ 10'
- 3^b- Sample collected on 11-12-92 from below pipeline before overexcavation
- 4 - Sample collected on 2-20-97 from MW-3, most recent sampling
- 4^a- Sample collected on 3-14-95 from MW-3
- 4^b- Sample collected on 3-95 from MW-3
- 4^c- Sample collected on 6-26-00 from GP-2
- 4^d- Sample collected on 4-6-92 from MW-1

Comments (Depth of Remediation, etc.): See "Additional Comments" section.

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: None

Should corrective action be reviewed if land use changes? Yes, if site use changes from commercial/industrial

Monitoring wells decommissioned: None

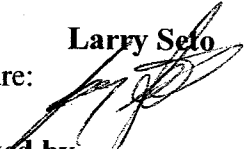
List enforcement actions taken: None

List enforcement actions rescinded: None

Leaking Underground Fuel Storage Tank Program

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Larry Seto**

Signature: 

Title: **Senior HMS**

Date: **9-25-00**

Reviewed by


Name: **Eva Chu**

Signature: 

Title: **Hazardous Materials Specialist**

Date: **9/25/00**

Name: **Thomas Peacock**

Signature: 

Title: **Supervising HMS**

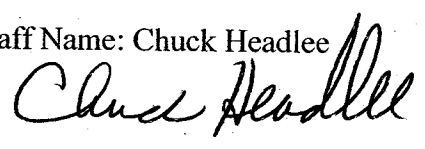
Date: **11-13-00**

VI. RWQCB NOTIFICATION

Date Submitted to RB:

RB Response: **Concur**

RWQCB Staff Name: **Chuck Headlee**

Signature: 

Title: **Engineering Geologist**

Date: **11/28/00**

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site was the location of Pacific Oxygen Company from approximately 1940 to 1984. Portions of the property are being used for oxygen tank repair and storage. The original plant has not been operated since 1982.

On June 30, 1989 an 8,000 gallon diesel tank was removed (Fig. 1A). Three soil samples and a water sample were collected from the excavation. The soil samples contain up to 6.9 ppm TPH(gas), 0.95 ppm toluene, and 1.7 ppm total xylenes. Diesel, benzene and ethylbenzene were non-detect. The water sample contained 6.3 ppb benzene. Diesel, toluene, ethylbenzene, total xylenes and gasoline were non-detect.

On July 12, 1989 a 1,000 gallon gas and a 550 gallon waste oil tank were removed (Fig. 1A). Three soil samples were collected, one under each tank and one between the two tanks. The soil samples contained up to 270 ppm diesel, 31 ppm gasoline, 0.09 ppm benzene, 0.75 ppm toluene, 1.4 ppm xylenes, 0.43 ethylbenzene, 13 ppm pyrene, 9.3 ppm phenanthrene and 3.9 ppm benzo(a)anthracene. Benzene, oil and grease were non-

Leaking Underground Fuel Storage Tank Program

detectable. There was no analysis for halogenated volatile organic compounds (HVOC's). No groundwater was encountered.

In September 1990, monitoring well MW-1 was installed within the tank pit excavation area (Fig. 4). The well is within five feet of the former waste oil storage tank location in the estimated downgradient direction. During the boring of MW-1, three soil samples were collected at three different depths. The analytical results of the soil samples revealed no detectable amounts of either TPH(d) or BTEX. The analytical results of the groundwater sample reported 5,400 ppb TPH(d), 1,200 ppb benzene, 18 ppb toluene, 7.1 ppb ethylbenzene and 37 ppb total xylenes.

Subsequent to the installation of monitoring well MW-1, two additional shallow groundwater monitoring wells (MW-2 and MW-3) were installed on the subject site (Fig.4). As per Hageman-Aguiar Inc., no data regarding the date of installation, boring logs and well construction information for wells MW-2 and MW-3 are available. The monitoring wells were monitored on a quarterly basis.

On November 12, 1992 the underground tank piping connected to the gas and waste oil tank were removed. Holes were visible in both the gas and waste oil pipeline. Initial soil samples (PL-1 & PL-2) were collected at 3' below ground surface along the trench. The samples contained up to 1,400 ppm oil & grease and 1,100 ppm TPH(motor oil). The samples were ND for gas, diesel, kerosene, BTEX and HVOC's. Subsequent to the piping removal, additional excavation was conducted on November 18, 1992. The excavation extended to a depth of approximately 12 feet below ground surface in order to mitigate the apparent subsurface gasoline contamination. Sixteen confirmatory soil samples were taken. Sample #3b collected at a depth of 9' contained 1,600 ppm TPH(g), 2.4 ppm benzene, 2.8 ppm toluene, 3.3 ppm ethylbenzene, 18 ppm total xylenes and 19 ppm oil & grease (Fig. 2 and Table 7). The gasoline contamination appears to coincide with the capillary fringe above the water table.

The pipeline trench and overexcavation was backfilled. Three backfill wells (MW-4, MW-5 and MW-6) were installed using 4 inch PVC casing and slotted screen (0.05") in order to facilitate future in-situ treatment technologies. Backfill well, MW-4 was monitored on a quarter basis (Fig. 6).

To define the extent of the groundwater plume on-site, fifteen "hydropunch" samples were collected in November 1993 (Fig. 5). The chemical concentration contours generated from the groundwater data indicate that the source of dissolved gasoline concentrations are centered somewhere around the area of the previous pipeline excavation, and location of monitoring well MW-3 (Fig. 8 & 9). No detectable concentrations of gasoline, diesel or BTEX are moving off-site from the subject property.

A Health Based Risk Assessment was prepared in June 1998. Since the residual subsurface contamination at the site exists in soil at depths greater than approximately 9 feet below ground surface, the only exposure route considered is due to vapor intrusion. Direct contact with contaminated soil or groundwater is not possible. The Daugherty Model was used to calculate vapor intrusion for indoor exposure to benzene, toluene, ethylbenzene, total xylenes and TPH(gas). It was concluded that there appear to be no health risks associated with occupation of the property for commercial/industrial use.

Leaking Underground Fuel Storage Tank Program

A follow-up risk assessment using the Tier 1 and Tier 2 RBCA Spreadsheet System was done. Based upon the known maximum residual BTEX concentrations in the shallow groundwater, as well as the site-specific hydrogeologic conditions, no risk-based screening levels (RBSL's) are exceeded for shallow groundwater. Based upon the average of the residual BTEX concentrations in the soil located directly beneath the existing building, no RBSL's are exceeded for the soil.

On June 26, 2000 four "geoprobe" borings (GP-1 to GP-4) were advanced to investigate the shallow groundwater quality downgradient of the former locations of the underground tanks and previous pipelines and dispensers. This investigation was initiated because there were no boring logs or well construction information available for monitoring wells MW-2 and MW-3. The groundwater samples from these wells contained ND to 340 ppb TPH(diesel), ND to 560 ppb TPH(gas), ND to 96 ppb benzene, ND to 39 ppb toluene, ND to 14 ppb ethylbenzene, ND to 58 ppb xylenes and ND to 100 ppb MTBE (Fig.7 and Table 1a).

In summary, this office is recommending that this case be closed for the following reasons:

- 1) The leak has been stopped and ongoing sources removed
- 2) The site has been adequately characterized
- 3) Little groundwater impact currently exists
- 4) No water wells, deeper drinking water aquifers, surface water or other sensitive receptors are likely to be impacted
- 5) The site presents no significant risk to human health

ERYVILLE

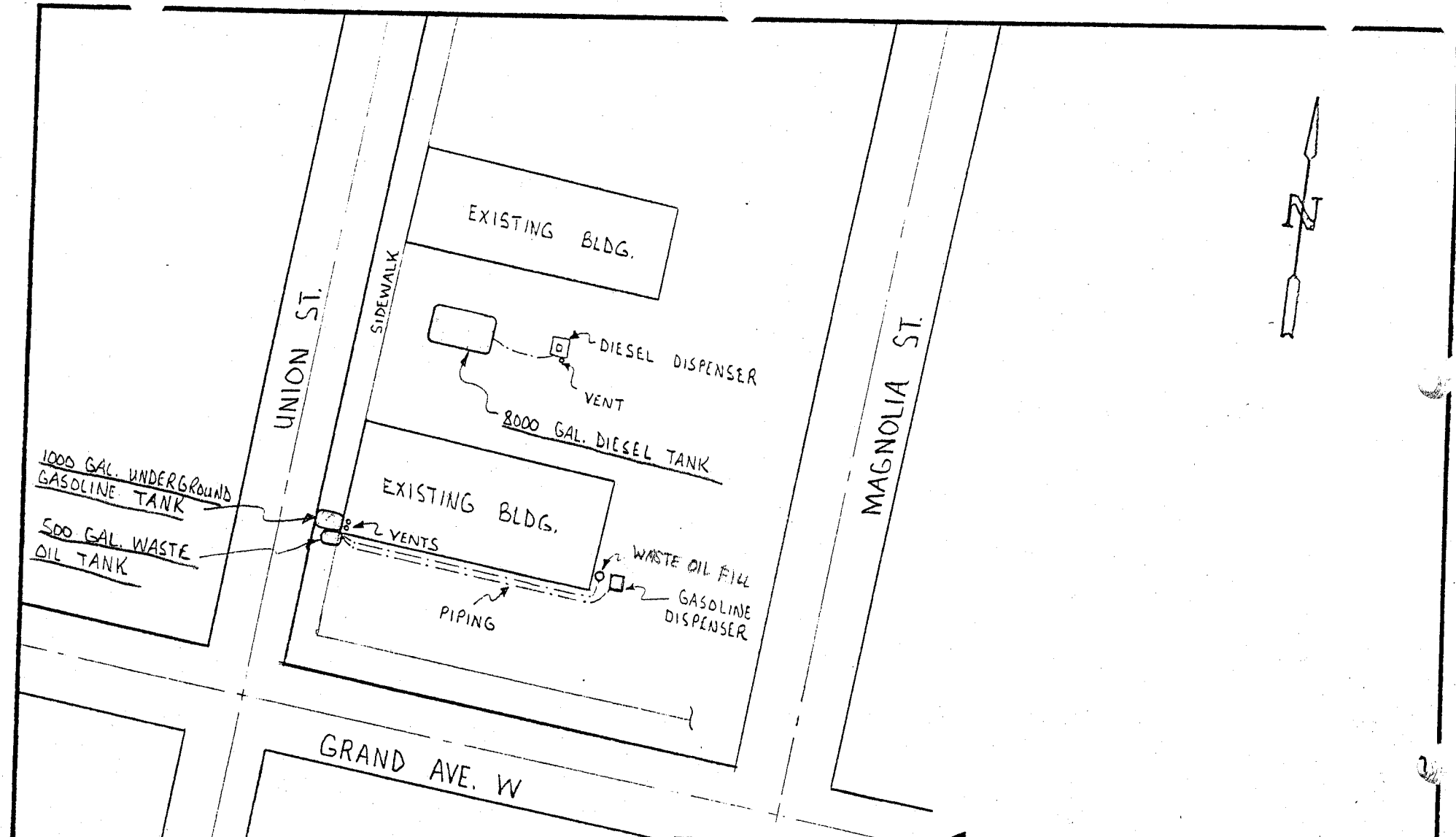
FIGURE 1

Topographic Map.



0 1000 2000 3000 4000 FEET

0 1/2 MILE



Geo-Environmental Technology

SCALE: NONE	PLOT PLAN FOR: ALDO GUIDOTTI	DRAWN BY <i>JM</i>
DATE: 14 JUNE 89		REVISED
260 Cristof Campbell, (PIATE 1
559-1220		

Fig. 1A

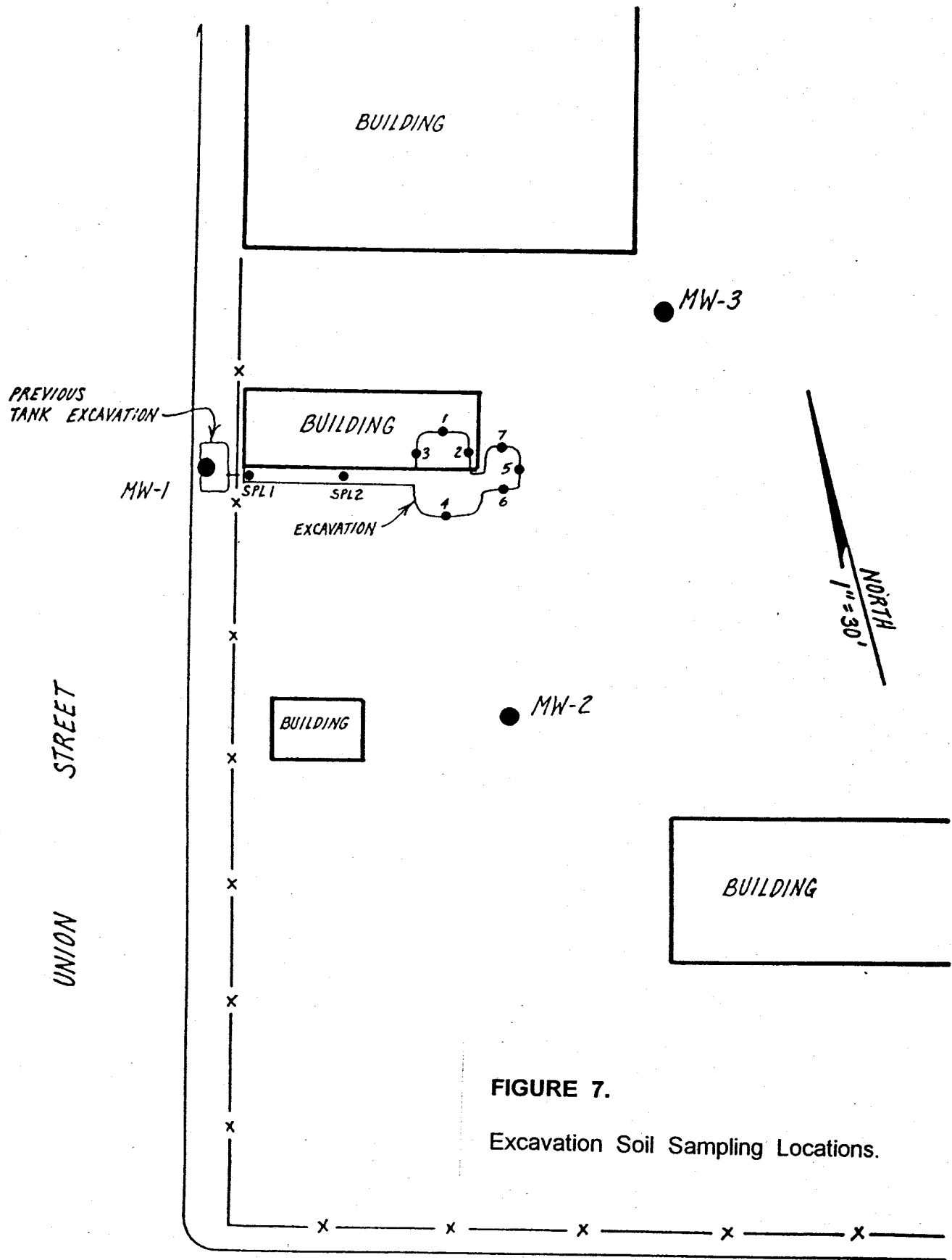


FIGURE 7.

Excavation Soil Sampling Locations.

GRAND AVENUE WEST

Fig. 2

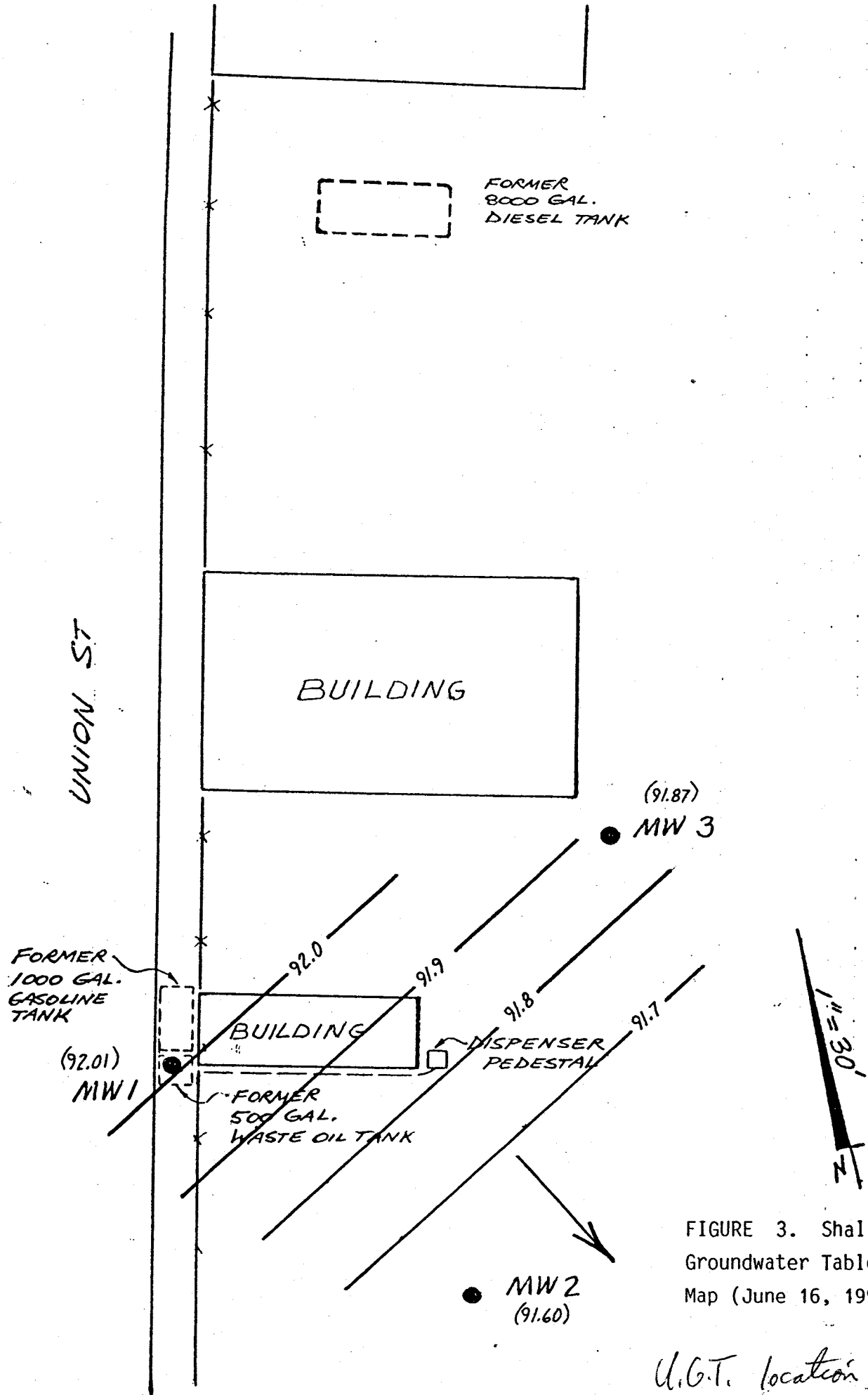


FIGURE 3. Shallow Groundwater Table Contour Map (June 16, 1992)

U.G.T. location and pipeline

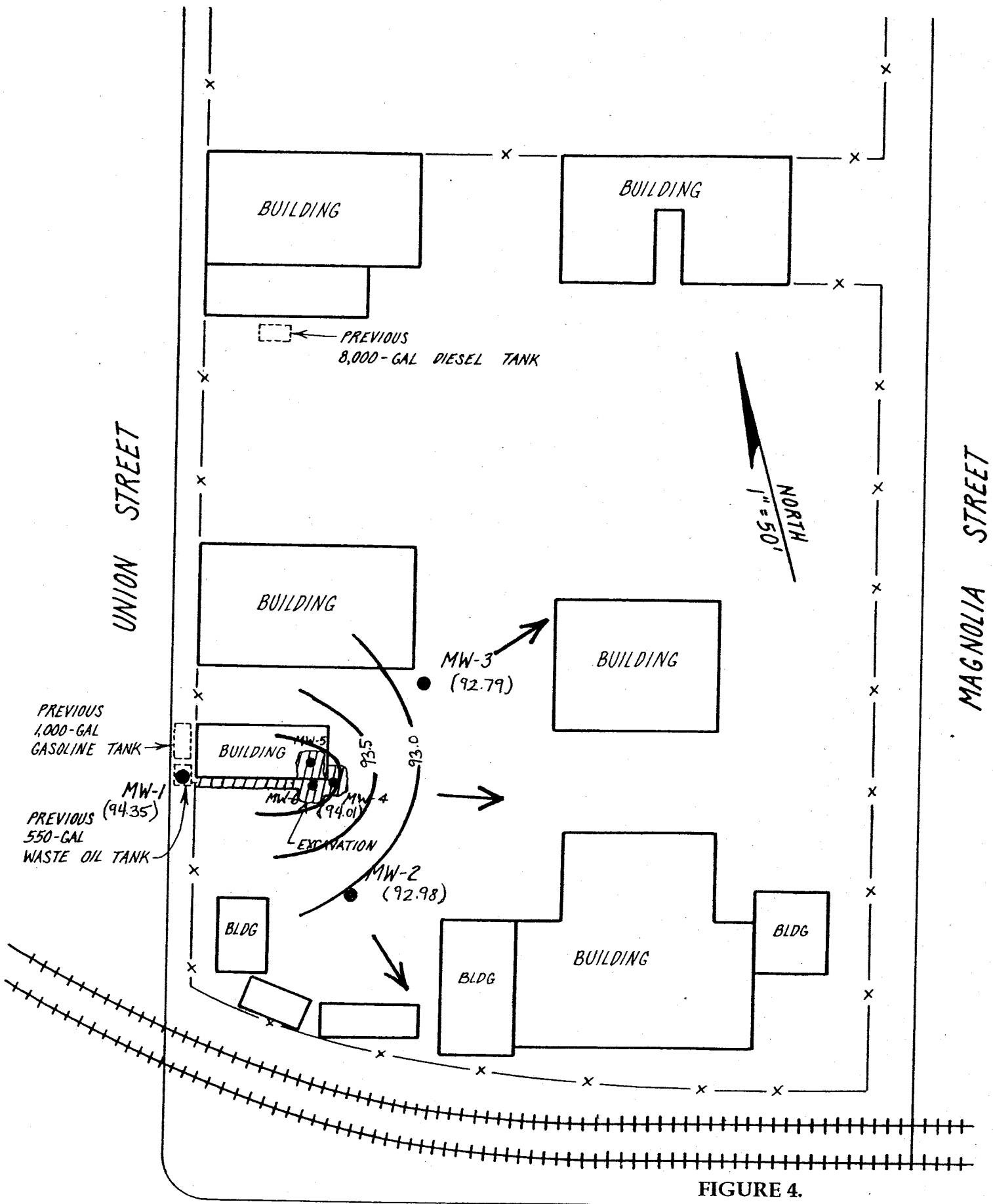


FIGURE 4.

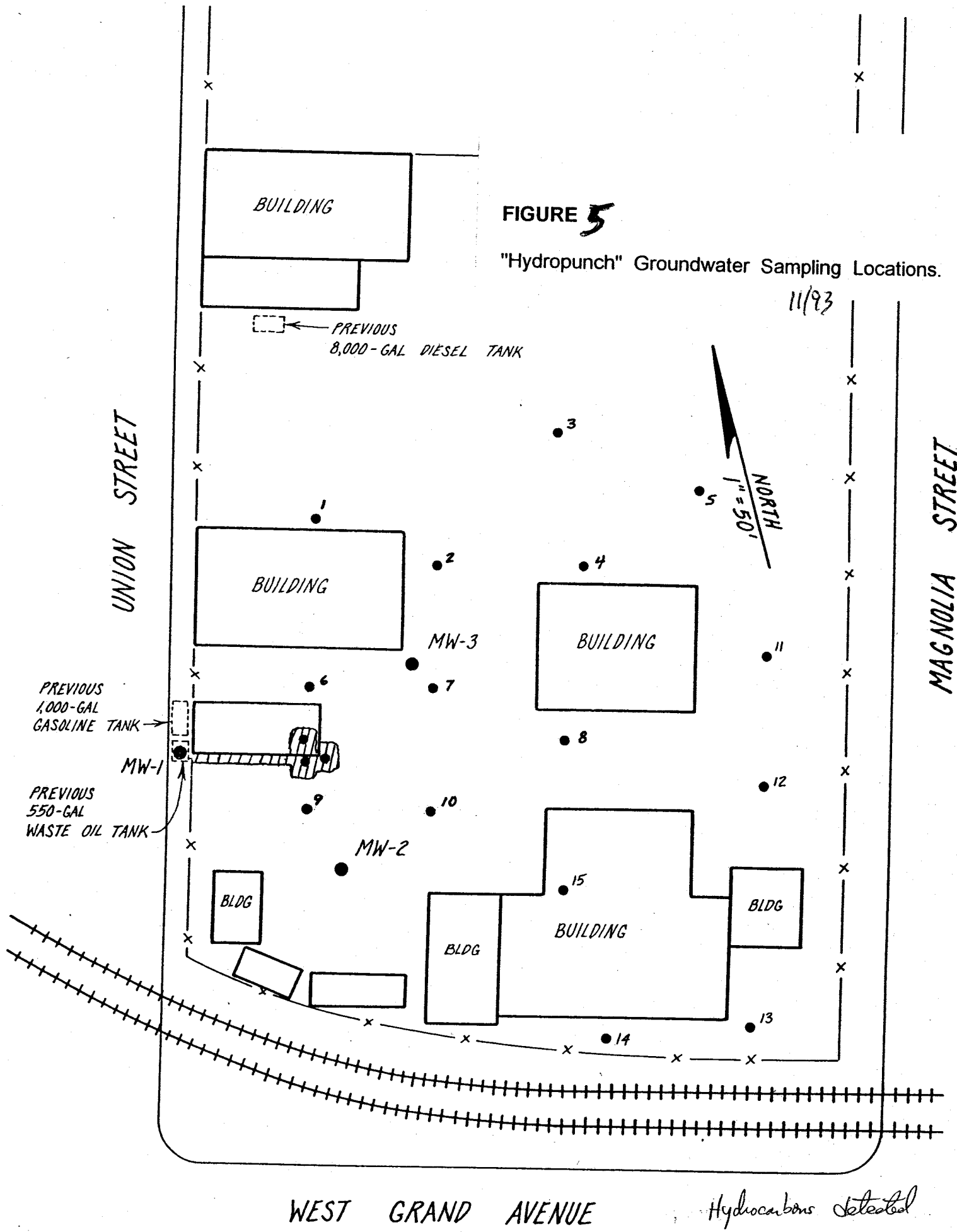
Shallow Groundwater Table
 Contour Map,
 measured on February 20, 1997.

WEST GRAND AVENUE

FIGURE 5

"Hydropunch" Groundwater Sampling Locations.

11/93



WEST GRAND AVENUE

Hydrocarbons detected

MW-3

FIGURE 6

Extent of Soil Excavation.

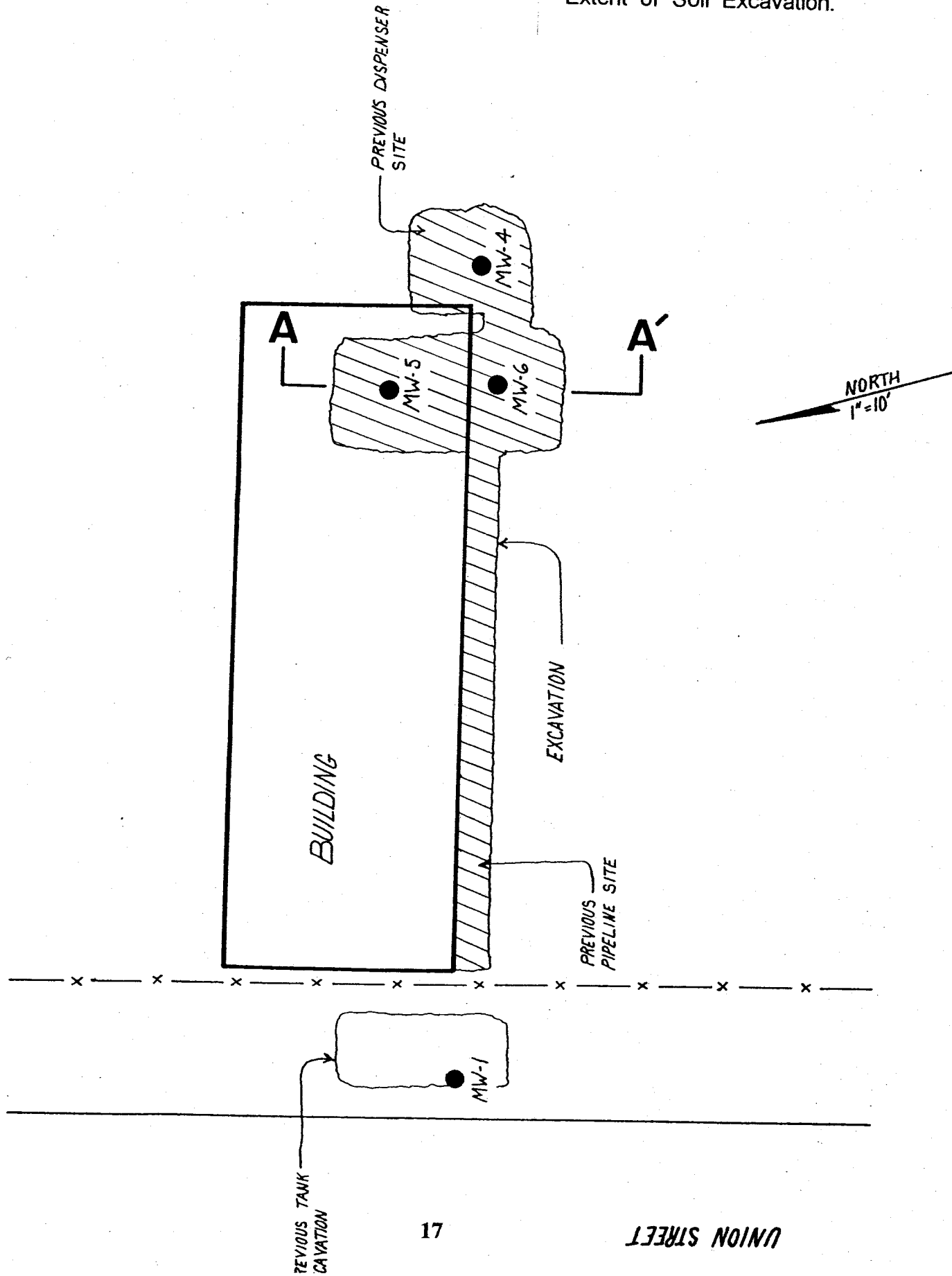
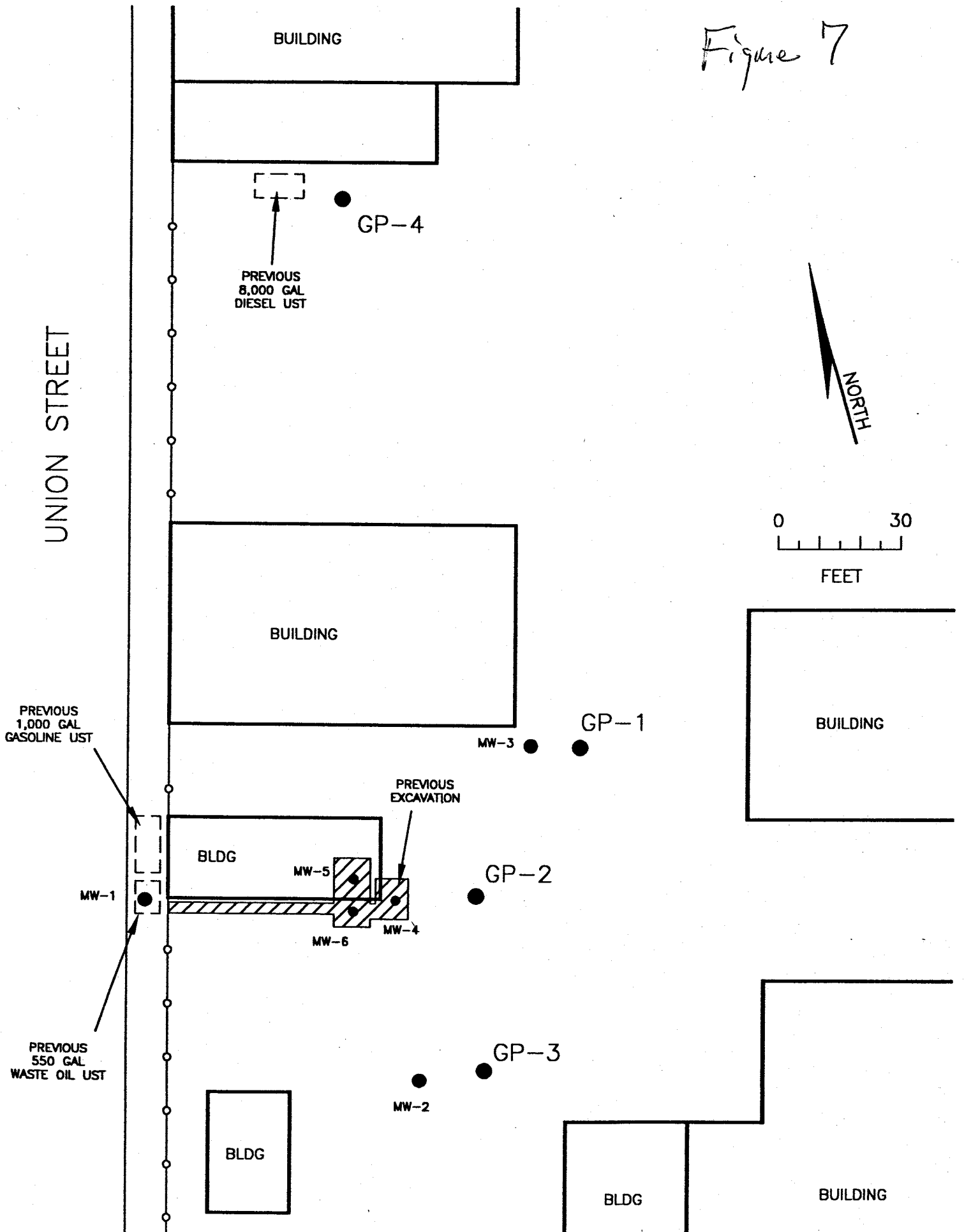


Figure 7



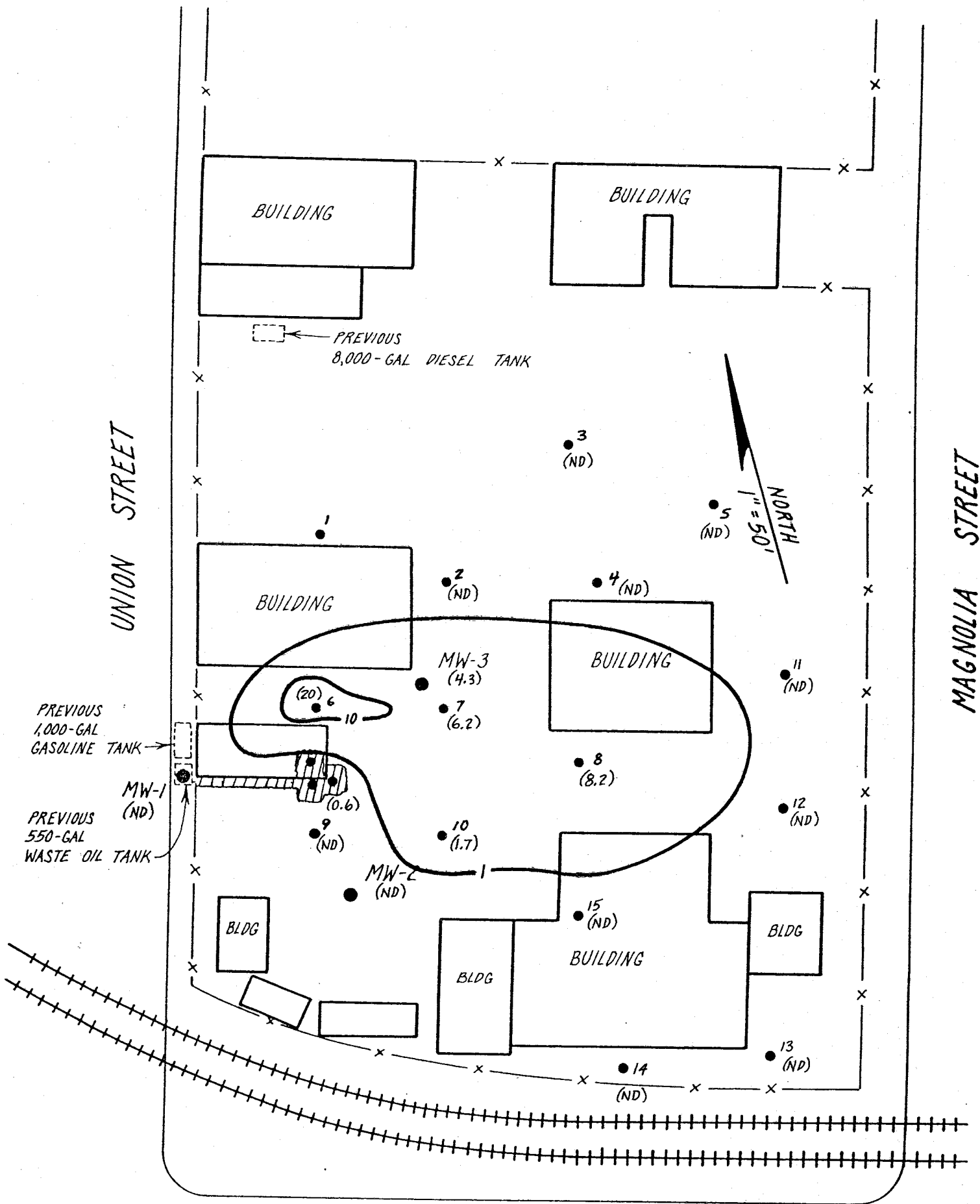


FIGURE 8. Lines of Equal Concentration of Benzene in ug/L (ppb) in the Shallow Groundwater.

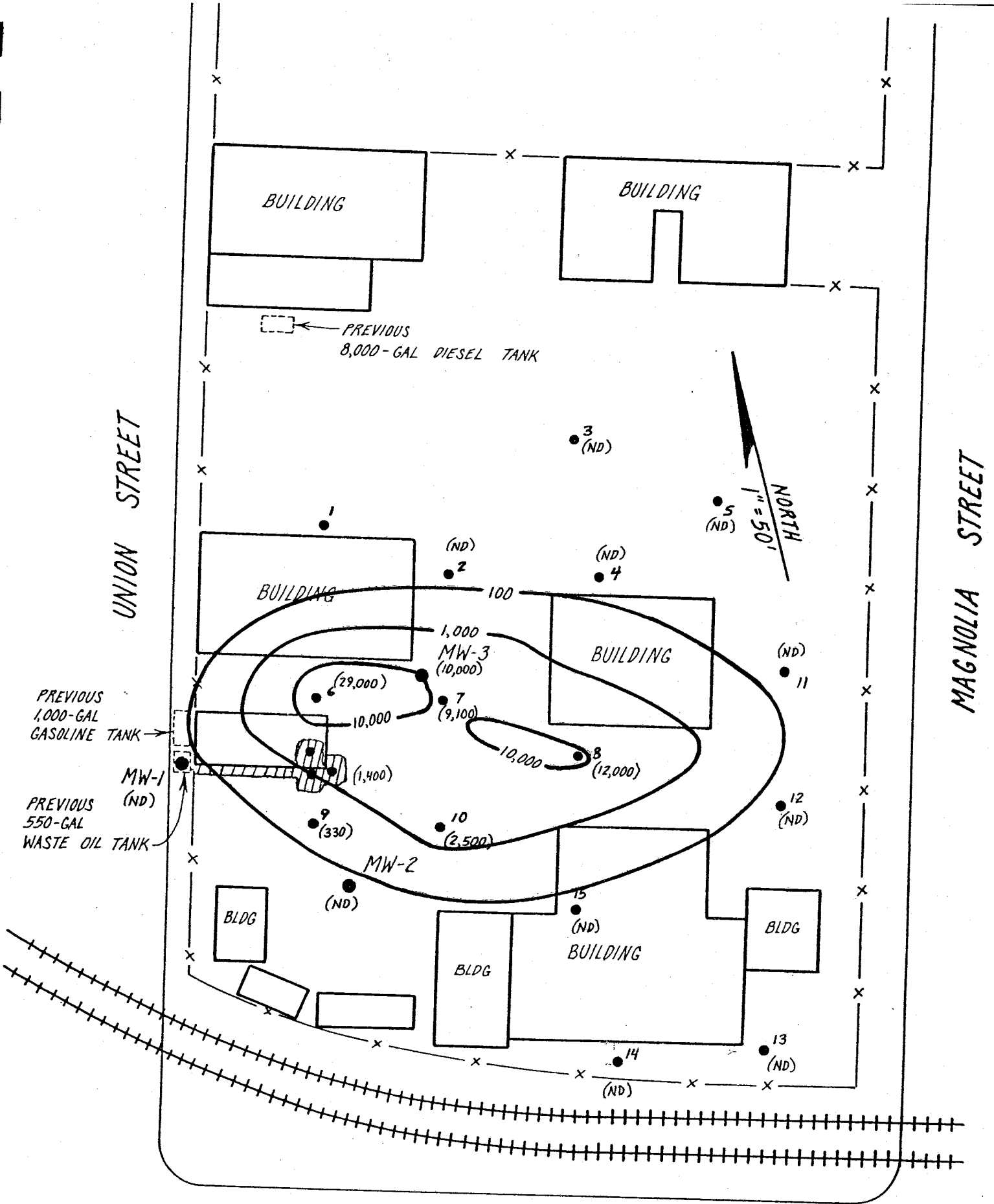


FIGURE 9. Lines of Equal Concentration of Gasoline in ug/L (ppb) in the Shallow Groundwater.

TABLE 1.
Soil Sampling Results

Boring	Depth (feet)	TPH as Diesel (mg/kg)	TPH as Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
GP-1	10	20	100	ND	ND	ND	0.90	ND
	15	1.1	ND	ND	ND	ND	ND	ND
GP-2	10	5.9	56	ND	ND	0.85	2.8	ND
GP-3	10	1.3	ND	ND	ND	ND	ND	ND
GP-4	5	ND	ND	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND	ND	ND
Detection Limit		1.0	1.0	0.0050	0.0050	0.0050	0.0050	0.0050

ND = not detected

samples collected on 06-26-2000

TABLE 4a

"Grab" Groundwater Sampling Results

Boring	Date	TPH as Diesel (ug/L)	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)
GP-1	06-26-00	ND	200	13	ND	1.2	2.0	ND
GP-2	06-26-00	340	560	96	39	14	58	110
GP-3	06-26-00	ND	ND	ND	ND	ND	ND	17
GP-4	06-26-00	190	150	0.56	2.5	1.8	11	ND
Detection Limit		63	50	0.50	0.50	0.50	0.50	5.0

ND = not detected

TABLE 2.
Excavation Soil Sampling Results

Sample	Date	Depth (feet)	TPH as Gasoline (mg/Kg)	TPH as Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl-benzene (ug/Kg)	Total Xylenes (ug/Kg)	Oil & Grease (mg/Kg)	Motor Oil (mg/Kg)	VOCs (ug/Kg)
PL 1	11-12-92	7	ND	ND	ND	ND	ND	ND	1,400	1,100	ND
PL 2	11-12-92	7	ND	ND	ND	ND	ND	ND	16	13	ND
1 A	11-18-92	6	28	ND	22	19	33	86	ND	ND	ND
1 B	11-18-92	9	670	2.3	870	1,400	1,800	6,600	22	24	ND
2 A	11-18-92	6	310	ND	480	760	1,100	3,500	20	18	ND
2 B	11-18-92	9	400	ND	550	940	1,300	4,000	11	ND	ND
3 A	11-18-92	6	29	ND	25	21	34	92	ND	ND	ND
3 B	11-18-92	9	1,600	ND	2,400	2,800	3,300	18,000	19	ND	ND
4 A	11-18-92	6	28	ND	26	20	31	89	ND	ND	ND
4 B	11-18-92	9	420	ND	520	1,400	1,600	5,300	64	38	ND
5 A	11-18-92	6	26	ND	23	18	35	83	ND	ND	ND
5 B	11-18-92	9	1,100	10	2,000	2,500	3,000	16,000	29	22	ND
6 A	11-18-92	6	8.7	ND	11	8	27	29	ND	ND	ND
6 B	11-18-92	9	4.7	ND	18	40	21	54	ND	ND	ND
7 A	11-18-92	6	27	ND	28	24	38	85	14	ND	ND
7 B	11-18-92	9	350	1.2	580	950	1,800	4,200	30	25	ND
Detection Limit			1.0	1.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0

ND = not detected

TABLE 3.
Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-1	10-26-90	---	1200	18	7.1	37	---
	03-04-92	460	120	9.0	16	44	---
	04-03-92	300	21	6.0	15	36	---
	06-16-92	220	54	17	29	73	---
	10-09-92	ND	ND	ND	ND	ND	---
	01-07-93	210	0.7	3.7	4.4	9.6	---
	04-23-93	280	0.9	1.3	2.9	6.2	---
	07-16-93	110	ND	ND	0.5	1.1	---
	11-08-93	ND	ND	ND	ND	ND	---
	01-28-94	190	5.7	4.9	6.7	21	---
	05-02-94	ND	ND	ND	ND	ND	---
	08-03-94	ND	ND	ND	ND	ND	---
	11-04-94	ND	ND	ND	ND	ND	---
	03-14-95	ND	ND	ND	ND	ND	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	110	1.0	ND	ND	2.8	---
	08-12-96	---	---	---	---	---	---
	11-15-96	---	---	---	---	---	---
02-20-97	---	---	---	---	---	---	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

**TABLE 3. (continued)
Shallow Groundwater Sampling Results**

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-2	03-04-92	ND	ND	ND	ND	ND	---
	04-03-92	ND	ND	ND	ND	ND	---
	06-16-92	ND	ND	ND	ND	ND	---
	10-09-92	ND	ND	ND	ND	ND	---
	01-07-93	ND	ND	ND	ND	ND	---
	04-23-93	ND	ND	ND	ND	ND	---
	07-16-93	ND	ND	ND	ND	ND	---
	11-08-93	ND	ND	ND	ND	ND	---
	01-28-94	ND	ND	ND	ND	ND	---
	05-02-94	ND	ND	ND	ND	ND	---
	08-03-94	ND	ND	ND	ND	ND	---
	11-04-94	ND	ND	ND	ND	ND	---
	03-14-95	ND	ND	ND	ND	ND	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	ND	ND	ND	ND	ND	---
	08-12-96	---	---	---	---	---	---
	11-15-96	---	---	---	---	---	---
02-20-97	---	---	---	---	---	---	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

**TABLE 3. (continued)
Shallow Groundwater Sampling Results**

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-3	03-04-92	14,000	6,200	60	110	740	---
	04-03-92	5,200	120	32	57	180	---
	06-16-92	6,000	180	45	82	190	---
	10-09-92	11,000	87	49	94	200	---
	01-07-93	4,200	3.3	13	44	92	---
	04-23-93	21,000	23	43	49	130	---
	07-16-93	16,000	19	21	25	78	---
	11-08-93	10,000	4.3	5.7	7.9	35	---
	01-28-94	7,500	8.5	10	50	95	---
	05-02-94	22,000	69	39	60	110	---
	08-03-94	2,500	35	12	27	25	---
	11-04-94	2,900	4.0	8.1	18	27	---
	03-14-95	2,500	9.5	3.0	4.6	8.3	---
	08-23-95	12,000	35	8.2	14	20	---
	05-08-96	19,000	57	17	32	56	---
	08-12-96	8,900	47	7.6	14	16	---
	11-15-96	4,900	66	13	33	41	ND
02-20-97	1,100	68	21	18	23	ND	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

**TABLE 3. (continued)
Shallow Groundwater Sampling Results**

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-4 <i>Backgill well</i>	01-07-93	4,800	6.4	25	60	110	---
	04-23-93	2,700	8.3	11	31	59	---
	07-16-93	3,000	3.7	4.2	4.9	15	---
	11-08-93	1,400	0.6	0.8	1.1	4.8	---
	01-28-94	830	8.5	10	12	27	---
	05-02-94	900	7.3	3.2	0.5	14	---
	08-03-94	1,000	22	0.7	8.0	7.4	---
	11-04-94	160	0.6	ND	1.9	2.9	---
	03-14-95	120	3.6	ND	ND	3.7	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	ND	ND	ND	ND	ND	---
	08-12-96	ND	ND	ND	ND	ND	ND
	11-15-96	320	19	3.2	5.6	15	ND
	02-20-97	ND	ND	ND	ND	ND	ND
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 4.

Shallow "Grab" Groundwater Sampling Results

Sampling Location	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	TPH as Diesel (ug/L)
#1	ND	ND	ND	ND	ND	---
#2	ND	ND	ND	ND	ND	---
#3	ND	ND	ND	ND	ND	---
#4	ND	ND	ND	ND	ND	---
#5	ND	ND	ND	ND	ND	ND
#6	29,000	20	28	36	110	---
#7	9,100	6.2	8.7	11	34	---
#8	12,000	8.2	11	15	45	---
#9	330	ND	0.7	0.9	3.2	---
#10	2,500	1.7	2.4	3.1	9.4	ND
#11	ND	ND	ND	ND	ND	---
#12	ND	ND	ND	ND	ND	ND
#13	ND	ND	ND	ND	ND	ND
#14	ND	ND	ND	ND	ND	ND
#15	ND	ND	ND	ND	ND	ND
Detection Limit	50	0.5	0.5	0.5	0.5	50

ND = not detected

TABLE 5.

HP, 11/93

Shallow "Grab" Groundwater Sampling Results

Sampling Location	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	TPH as Diesel (ug/L)
#1	ND	ND	ND	ND	ND	---
#2	ND	ND	ND	ND	ND	---
#3	ND	ND	ND	ND	ND	---
#4	ND	ND	ND	ND	ND	---
#5	ND	ND	ND	ND	ND	ND
#6	29,000	20	28	36	110	---
#7	9,100	6.2	8.7	11	34	---
#8	12,000	8.2	11	15	45	---
#9	330	ND	0.7	0.9	3.2	---
#10	2,500	1.7	2.4	3.1	9.4	ND
#11	ND	ND	ND	ND	ND	---
#12	ND	ND	ND	ND	ND	ND
#13	ND	ND	ND	ND	ND	ND
#14	ND	ND	ND	ND	ND	ND
#15	ND	ND	ND	ND	ND	ND
Detection Limit	50	0.5	0.5	0.5	0.5	50

ND = not detected

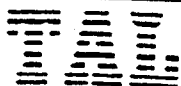


Table 6

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89

*Soil sample results
 from Waste Oil tank*

CUSTOMER: GeoEnvironmental Technology
 REQUESTER: Stuart Solomon
 PROJECT: Aldo Guidotti, 2311 Magnolia Street, Oakland, CA

Method and Constituent	Units	Sample Type: Soil					
		<i>gas tank</i> GG-1		<i>Det. gas + w.o.</i> GTP-3 tanks		<i>W.O. tank</i> GWO-1	
		Concentration	Detection Limit	Concentration	Detection Limit	Concentration	Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Diesel	ug/kg					270,000	3,000
Total Petroleum Hydrocarbons as Gasoline	ug/kg	< 500	500	460	400	31,000	500
Modified EPA Method 8020:							
Benzene	ug/kg	< 10	10	92	8	< 50	50
Toluene	ug/kg	< 10	10	< 8	8	750	10
Xylenes	ug/kg	< 50	50	< 40	40	1,400	50
Ethyl Benzene	ug/kg	< 20	20	< 10	10	430	20
Standard Method 503E, Hydrocarbons:							
Oil and Grease	ug/kg			< 10,000	10,000	< 10,000	10,000

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89
 PAGE: Two

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270:			
N-Nitrosodimethylamine	ug/kg	< 330	330
Phenol	ug/kg	< 330	330
bis(-2-Chloroethyl) Ether	ug/kg	< 330	330
2-Chlorophenol	ug/kg	< 330	330
1,3-Dichlorobenzene	ug/kg	< 330	330
1,4-Dichlorobenzene	ug/kg	< 330	330
1,2-Dichlorobenzene	ug/kg	< 330	330
N-Nitroso-Di-n- Propylamine	ug/kg	< 330	330
Hexachloroethane	ug/kg	< 330	330
Nitrobenzene	ug/kg	< 330	330
Isophorone	ug/kg	< 330	330
2-Nitrophenol	ug/kg	< 1,650	1,650
2,4-Dimethylphenol	ug/kg	< 330	330
bis(-2-Chloroethoxy) Methane	ug/kg	< 330	330
2,4-Dichlorophenol	ug/kg	< 330	330
1,2,4-Trichlorobenzene	ug/kg	< 330	330
Naphthalene	ug/kg	340	330
Hexachlorobutadiene	ug/kg	< 330	330
4-Chloro-3-Methyl- phenol	ug/kg	< 330	330
Hexachlorocyclo- pentadiene	ug/kg	< 330	330
2,4,6-Trichlorophenol	ug/kg	< 330	330
2-Chloronaphthalene	ug/kg	< 330	330
Dimethyl Phthalate	ug/kg	< 330	330

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89
 PAGE: Three

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270, Continued:			
Acenaphthylene	ug/kg	< 330	330
Acenaphthene	ug/kg	1,800	330
2,4-Dinitrophenol	ug/kg	< 1,650	1,650
4-Nitrophenol	ug/kg	< 1,650	1,650
2,4-Dinitrotoluene	ug/kg	< 330	330
2,6-Dinitrotoluene	ug/kg	< 330	330
Diethylphthalate	ug/kg	< 330	330
4-Chlorophenyl- phenylether	ug/kg	< 330	330
Fluorene	ug/kg	1,500	330
N-Nitrosodiphenylamine	ug/kg	< 330	330
4-Bromophenyl- phenylether	ug/kg	< 330	330
Hexachlorobenzene	ug/kg	< 330	330
Pentachlorophenol	ug/kg	< 1,650	1,650
Phenanthrene	ug/kg	9,300	330
Anthracene	ug/kg	1,700	330
Di-n-Butylphthalate	ug/kg	< 330	330
Fluoranthene	ug/kg	7,900	330
Benzidine	ug/kg	< 1,650	1,650
Pyrene	ug/kg	13,000	330
Butylbenzylphthalate	ug/kg	< 330	330
3,3'-Dichlorobenzidine	ug/kg	< 1,650	1,650
Benzo(a)Anthracene	ug/kg	3,900	330
bis(2-Ethylhexyl) Phthalate	ug/kg	< 330	330
Chrysene	ug/kg	2,000	330
Di-n-Octyl Phthalate	ug/kg	< 330	330

DATE: 7/27/89
LOG NO.: 7613
DATE SAMPLED: 7/12/89
DATE RECEIVED: 7/13/89
PAGE: Four

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270, Continued:			
Benzo(b)Fluoranthene	ug/kg	3,400	330
Benzo(k)Fluoranthene	ug/kg	2,100	330
Benzo(a)Pyrene	ug/kg	2,500	330
Indeno(1,2,3-cd)Pyrene	ug/kg	910	330
Dibenzo(a,h)Anthracene	ug/kg	380	330
Benzo(g,h,i)Perylene	ug/kg	1,500	330

Other Constituents Identified:

Dibenzofuran	ug/kg	910	330
--------------	-------	-----	-----

Dan Farah

Dan Farah, Ph.D.
Supervisory Chemist

DF:vs



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

November 21, 1992

PEL # 9211047

HAGEMAN - AGUIAR, INC.

Table 7

Attn: Jeffrey Roth

Re: Eighteen soil samples for Gasoline/BTEX, TEPH, and Oil & Grease analyses.

Project name: Pacific Oxygen

Project location: Union St., -Oakland, CA.

Date sampled: Nov 18, 1992

Date submitted: Nov 21, 1992

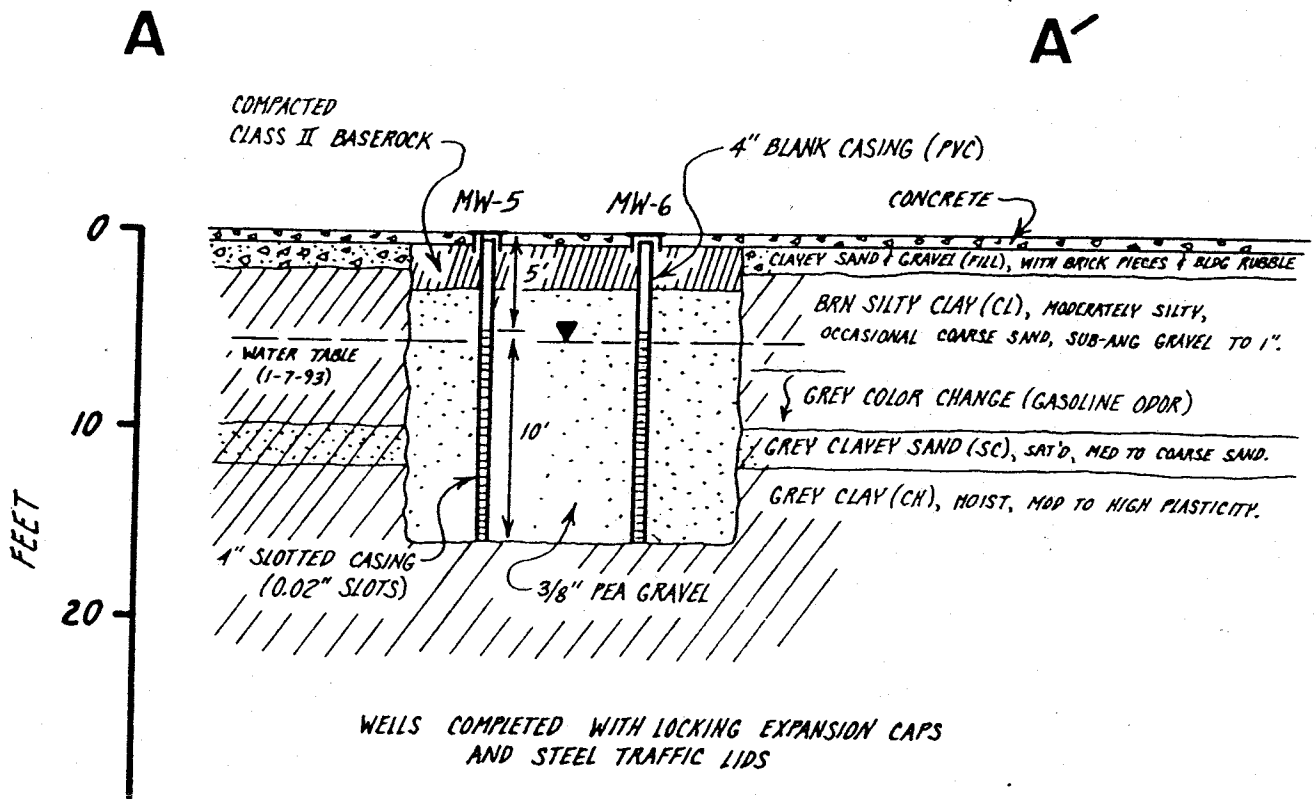
Date extracted: Nov 19-21, 1992

Date analyzed: Nov 19-21, 1992

RESULTS:

SAMPLE I.D.	Kerosene (mg/Kg)	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)	Oil & Grease (mg/Kg)	Motor Oil (mg/Kg)
SSP1-SSP4	N.D.	820	35	1300	1800	2000	7500	170	160
SSP5-SSP8	N.D.	530	N.D.	750	1300	1600	6200	28	30
SPL 1	N.D.	1.4	N.D.	5.7	6.8	6.6	13	150	240
SPL 2	N.D.	1.0	N.D.	5.0	5.2	5.4	9.0	N.D.	N.D.
1 A	N.D.	28	N.D.	22	19	33	86	N.D.	N.D.
1 B	N.D.	670	2.3	870	1400	1800	6600	22	24
2 A	N.D.	310	N.D.	480	760	1100	3500	20	18
2 B	N.D.	400	N.D.	550	940	1300	4000	11	N.D.
3 A	N.D.	29	N.D.	25	21	34	92	N.D.	N.D.
3 B <i>9' depth</i>	N.D.	1600	N.D.	2400	2800	3300	18000	19	N.D.
4 A	N.D.	28	N.D.	26	20	31	89	N.D.	N.D.
4 B	N.D.	420	N.D.	520	1400	1600	5300	64	30
5 A	N.D.	26	N.D.	23	18	35	83	N.D.	N.D.
5 B	N.D.	1100	10	2000	2500	3000	16000	29	22
6 A	N.D.	8.7	N.D.	11	8.0	27	54	N.D.	N.D.
6 B	N.D.	15	N.D.	18	12	21	70	N.D.	N.D.
7 A	N.D.	27	N.D.	28	24	38	85	14	N.D.
7 B	N.D.	350	1.2	580	950	1800	4200	30	25
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked Recovery	89.3%	92.4%	103.1%	97.2%	95.3%	104.6%	92.0%	---	---
Duplicate Spiked Recovery	---	87.8%	100.5%	88.4%	90.2%	98.6%	86.1%	---	---
Detection limit	1.0	1.0	1.0	5.0	5.0	5.0	5.0	10	10
Method of Analysis	3550 / 8015	5030 / 8015	3550 / 8015	8020	8020	8020	8020	5520 D & F	3550 / 8015

David Duong
Laboratory Director

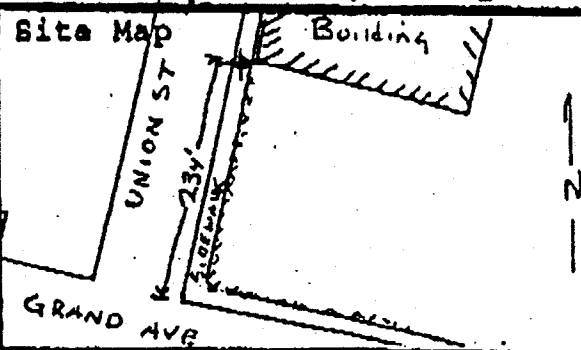


SCALE
 HORIZ: 1"=10'
 VERT: 1"=10'

Section A - A'
 Backfill Monitoring Wells
 MW-4, MW-5 and MW-6

2311 Magnolia Street
 Oakland, California

Client **Guidotti** Date **9.27.90**

Location **2210 Union St** Site Map 

Oakland Ca.

Driller **Aqua Science #487000**

Method **8" Hollow Stem Auger Mobile Drill Bit**

Sampler **Cal. F. 2" 140# w/ 30" Fall**

Logger **B. Halsted** Inspector

Sample Number	Depth	Blows/ft	Moisture	USCS	Description of Subsurface Materials	Completion Data
					Concrete	
					Backfill; Import soil	PORTLAND CEMENT SANITARY SEAL
	5				BAY MUD No ODR	3/4 BENTONITE
	6.5				WATER LEVEL	
SB-1	8 1/2-10		WET	OH	BAY MUD No ODR	#3 AMIC LONG STAR LAPIS LUSTRI SAND PACK
SB-2	13 1/2-15		WET	OH		TRINOC 2" 1020 SLUG PVC 15'
SB-3	19 1/2-21		WET	QC	GRAVEL/SAND/MUD	3/4 IP LAP
					BOH @ 21'	

Total Depth **19.5'** Water Level **6.5'** Sanitary Seal **PORTLAND CEMENT 3.5'**

Permit # **90577** Agency **Alameda Co. Flood Control/WATER CONSERVATION D.**



HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

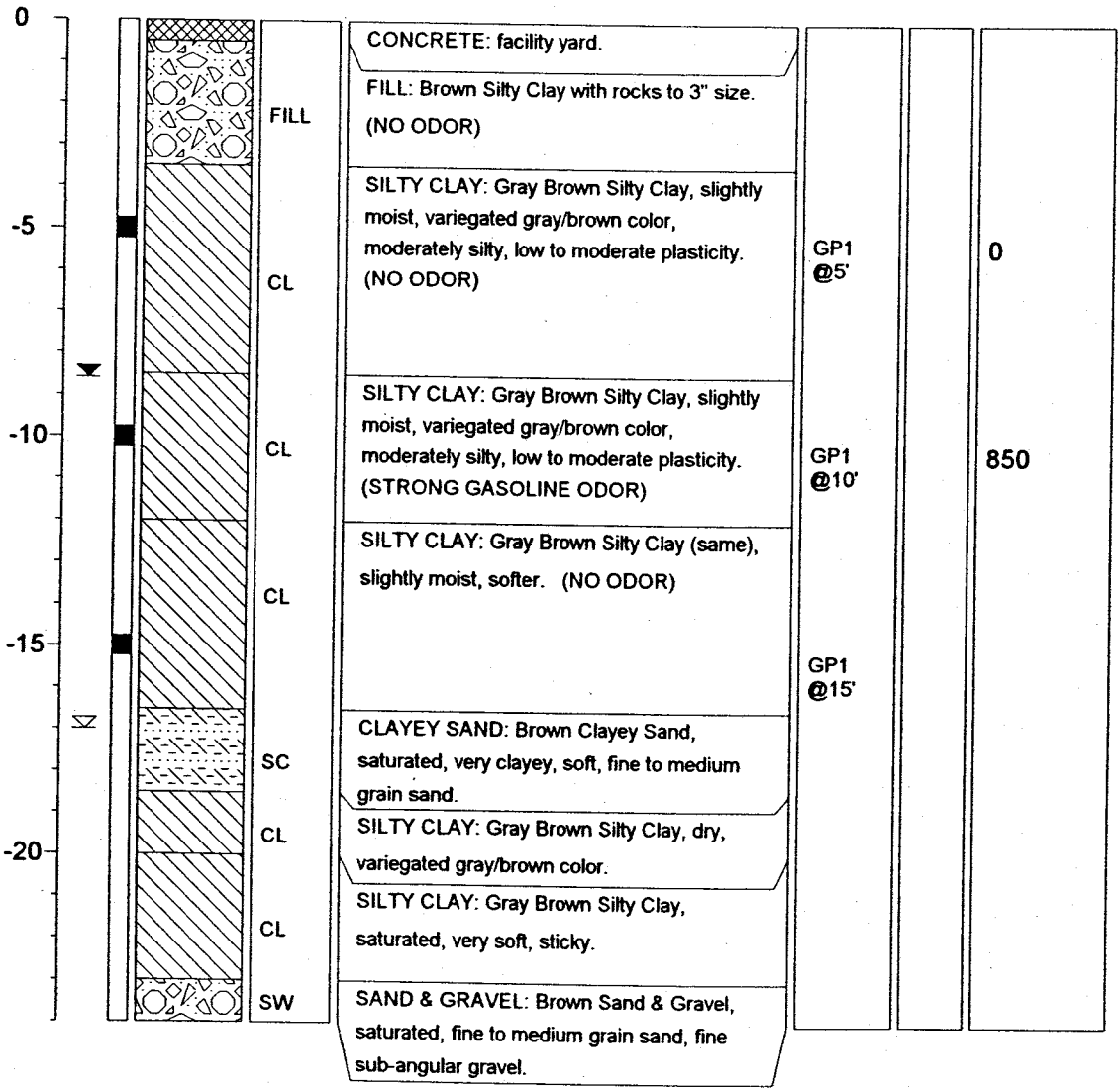
BOREHOLE NO.: **GP-1**
 TOTAL DEPTH: **24'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
		HAMMER WT./DROP:	

NOTES: Page 1 of 1

Water level during drilling
 Stabilized water level in borehole

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-2**
 TOTAL DEPTH: **24'**

PROJECT INFORMATION

PROJECT: **Pacific Cryogenic**
 JOB NO.: **0096**
 SITE LOCATION: **2311 Magnolia Street**
Oakland, CA
 LOGGED BY: **Gary Aguilar**
 DATE DRILLED: **06-26-00**

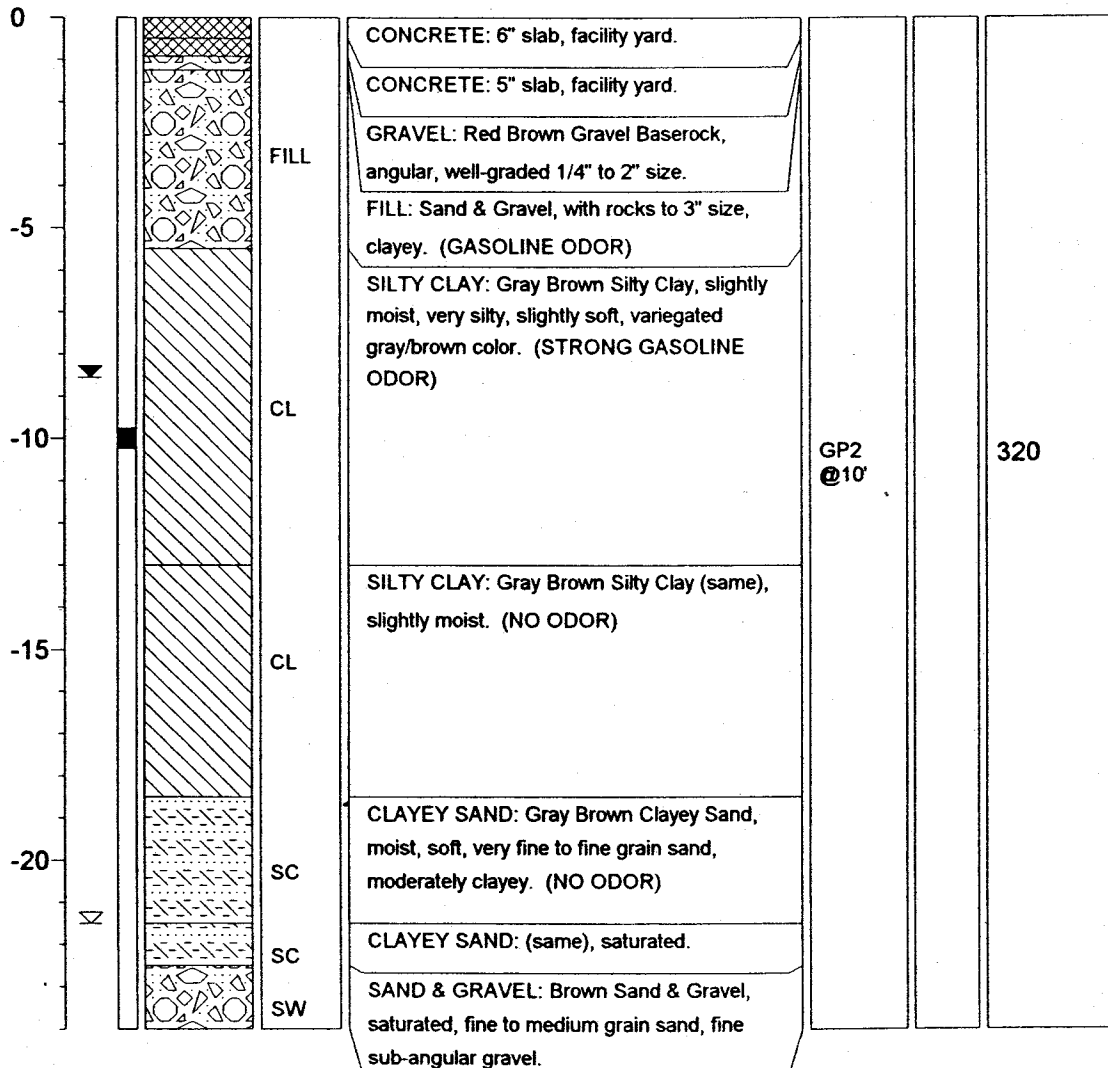
DRILLING INFORMATION

DRILLING CO.: **Gregg Drilling**
Martinez, CA
 RIG TYPE: **Geoprobe**
 METHOD OF DRILLING: **Direct Push**
 SAMPLING METHOD: **Macrocore Barrel**
 HAMMER WT./DROP:

NOTES:

- ☒ Water level during drilling
- ☒ Stabilized water level in borehole

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

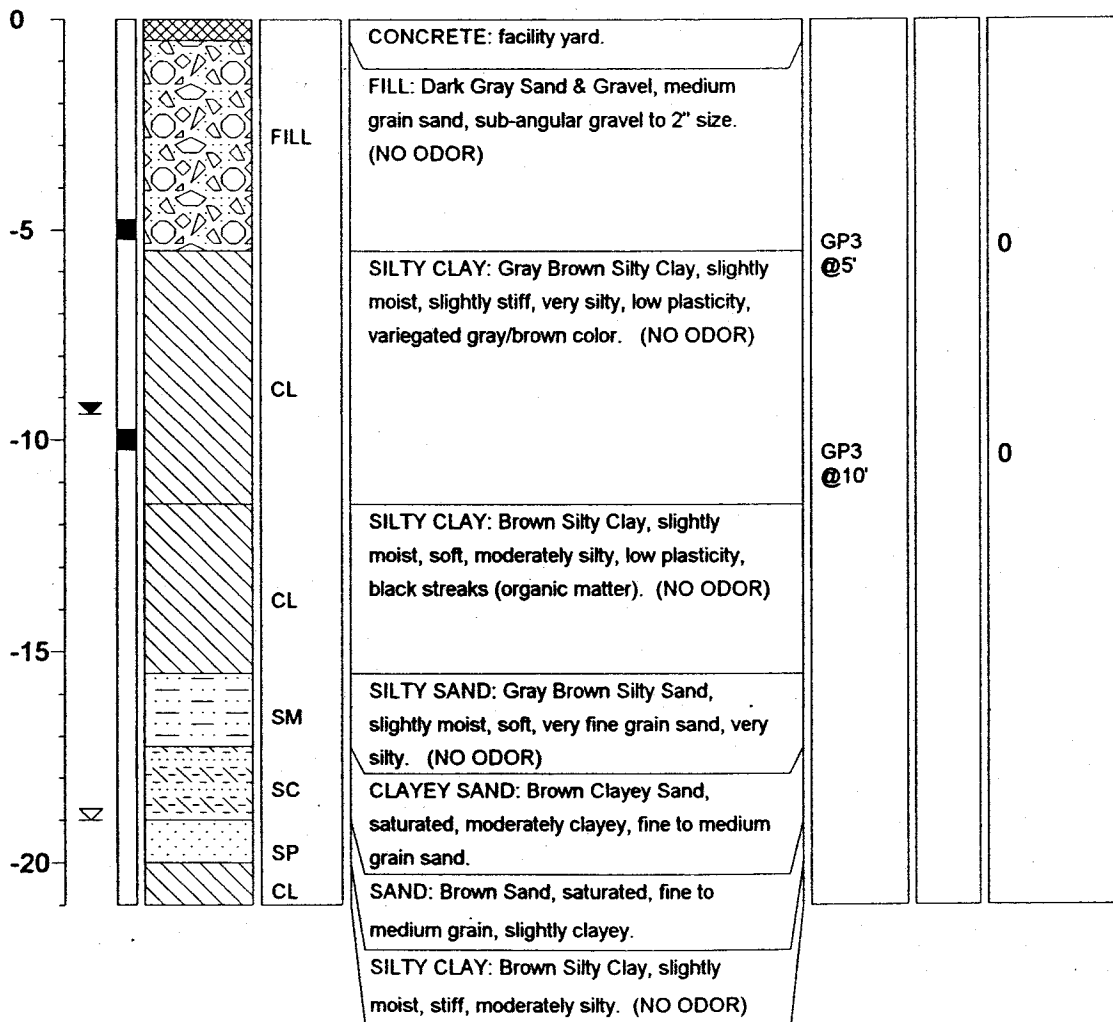
11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-3**
 TOTAL DEPTH: **21'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
NOTES:		HAMMER WT./DROP:	
		☒ Water level during drilling ▼ Stabilized water level in borehole	Page 1 of 1

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
El Cerrito, CA 94530

(510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-4**

TOTAL DEPTH: **16'**

PROJECT INFORMATION

PROJECT: **Pacific Cryogenic**
 JOB NO.: **0096**
 SITE LOCATION: **2311 Magnolia Street**
Oakland, CA
 LOGGED BY: **Gary Aguiar**
 DATE DRILLED: **06-26-00**

DRILLING INFORMATION

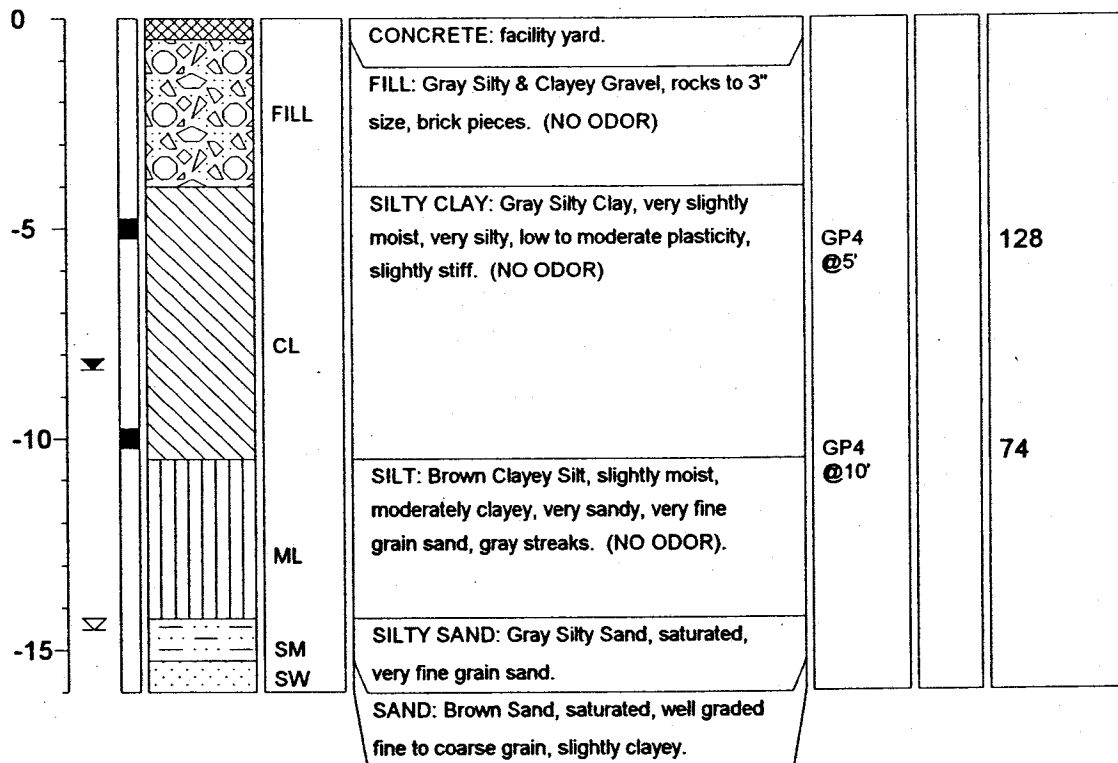
DRILLING CO.: **Gregg Drilling**
Martinez, CA
 RIG TYPE: **Geoprobe**
 METHOD OF DRILLING: **Direct Push**
 SAMPLING METHOD: **Macrocore Barrel**
 HAMMER WT./DROP:

NOTES:

- ☒ Water level during drilling
- ☒ Stabilized water level in borehole

Page 1 of 1

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------



CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: September 25, 2000

Agency name: **Alameda County-HazMat**

Address: **1131 Harbor Bay**

Pkwy.

City/State/Zip: **Alameda, CA 94502**

Phone: **(510) 567-6774**

Responsible staff person: **Larry Seto**

Title: **Senior HMS**

II. CASE INFORMATION

Site facility name: **Pacific Cryogenic**

Site facility address: **2311 Magnolia Street, Oakland, CA 94607**

RB LUSTIS Case No:

Local Case No./LOP **1211**

URF filing date: **7-28-98**

SWEEPS No: **N/A**

Responsible Parties:

Addresses:

Phone Numbers:

Estate of Jean Josephian c/o
Mr. Aldo Guidotti

Guidotti & Lee
One Bates Boulevard, Suite 300
Orinda, CA 94563

(925) 254-3450

<u>Tank No</u>	<u>Size in Gallons</u>	<u>Contents:</u>	<u>Closed in-place or Removed?</u>	<u>Date:</u>
1	8,000	Diesel	Removed	6-30-89
2	1,000	Gasoline	Removed	7-12-89
3	550	Waste Oil	Removed	7-12-89

Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: Holes in the gas and waste oil pipelines

Monitoring Wells installed? yes

Number: 3 monitoring wells & 3 backfill wells
with slotted screens

Site characterization complete? Yes

Date approved by oversight agency:

Proper screened interval? MW-1 okay, drilling log and well construction for MW-2 & MW-3 cannot be located by responsible party or current consultant

Highest GW depth below ground surface: 7.6'

Lowest depth: 8.1'

Flow direction: Easterly/southeasterly

Most sensitive current use:

Are drinking water wells affected? No

Aquifer Name:

Is surface water affected? No

Nearest affected SW name: ---

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

Report(s) on file? Yes

Where is report(s) filed?

**Alameda County
1131 Harbor Bay Pkwy.
Alameda, CA 94502**

**Oakland Fire Department
1603 Martin Luther King
Oakland, CA 94612**

Leaking Underground Fuel Storage Tank Program

Treatment and Disposal of Affected Material:

<u>Material</u>	<u>Amount (include units)</u>	<u>Action (Treatment or Disposal /destination)</u>	<u>Date</u>
Underground Tank	8,000 gallon	H & H Shipping So. San Francisco, CA	6-30-89
Underground Tank	1,000 gallon	H & H Shipping So. San Francisco, CA	7-12-89
Underground Tank	550 gallon	H & H Shipping So. San Francisco, CA	7-12-89
Impacted Soil	140 Cu Yds.	Vasco Road Landfill Alameda County	12-7-93

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Maximum Documented Contaminant Concentrations -- Before and After Cleanup

<u>Contaminant</u>	<u>Soil (ppm)</u>		<u>Water (ppb)</u>	
	<u>Before¹</u>	<u>After³</u>	<u>Before²</u>	<u>After⁴</u>
TPH(Mineral Spirits)	NA	NA	370 ^a	ND ^a
TPH(gas)	31	1,600	14,000 ^c	1,100
TPH(diesel)	270	20 ^a	5,400 ^b	ND ^b
TPH (Motor Oil)	NA	1,100	ND ^c	340 ^c
Benzene	0.09	2.4	6,200	96 ^c
Toluene	0.75	2.8	60	39 ^c
Ethylbenzene	0.43	3.3	110	18
Total Xylenes	1.4	18.0	740	58 ^c
Oil & Grease	ND	1,400	NA	NA
Volatile Organic Compounds	See 1a	See 1a	NA	NA
MTBE	NA	NA ^a	110 ^c	
HVOC		ND ^b		ND ^d

Leaking Underground Fuel Storage Tank Program

ND - Non-Detect

NA - Not Analyzed

1- Sample collected on 7-12-89 during removal of gas & waste oil tank

1^a- Sample below waste oil tank contained low levels of VOC's (see Table 6)

2- Sample collected on 3-4-92 from MW-3

2^a- Sample collected on 1-28-94 from MW-3

2^b- Sample collected on 10-26-90 from MW-1

2^c- Sample collected on 3-14-95 from MW-3

3- Samples collected on 11-18-92 after overexcavation

3a- Sample collected on 6-26-00 from GP-1 @ 10'

3^b- Sample collected on 11-12-92 from below pipeline before overexcavation

4 - Sample collected on 2-20-97 from MW-3, most recent sampling

4^a- Sample collected on 3-14-95 from MW-3

4^b- Sample collected on 3-95 from MW-3

4^c- Sample collected on 6-26-00 from GP-2

4^d- Sample collected on 4-6-92 from MW-1

Comments (Depth of Remediation, etc.): See "Additional Comments" section.

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: None

Should corrective action be reviewed if land use changes? Yes, if site use changes from commercial/industrial

Monitoring wells decommissioned: None


List enforcement actions taken: None


List enforcement actions rescinded: None

Leaking Underground Fuel Storage Tank Program

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Larry Seto** Title: **Senior HMS**
Signature:  Date: **9-25-00**

Reviewed by
Name: **Eva Chu** Title: **Hazardous Materials Specialist**
Signature:  Date: **9/25/00**

Name: **Thomas Peacock** Title: **Supervising HMS**
Signature:  Date: **11-13-00**

VI. RWQCB NOTIFICATION

Date Submitted to RB: RB Response:
RWQCB Staff Name: **Chuck Headlee** Title: **Engineering Geologist**
Signature: Date:

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site was the location of Pacific Oxygen Company from approximately 1940 to 1984. Portions of the property are being used for oxygen tank repair and storage. The original plant has not been operated since 1982.

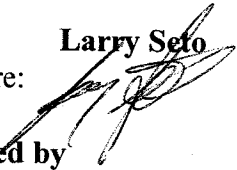
On June 30, 1989 an 8,000 gallon diesel tank was removed (Fig. 1A). Three soil samples and a water sample were collected from the excavation. The soil samples contain up to 6.9 ppm TPH(gas), 0.95 ppm toluene, and 1.7 ppm total xylenes. Diesel, benzene and ethylbenzene were non-detect. The water sample contained 6.3 ppb benzene. Diesel, toluene, ethylbenzene, total xylenes and gasoline were non-detect.

On July 12, 1989 a 1,000 gallon gas and a 550 gallon waste oil tank were removed (Fig. 1A). Three soil samples were collected, one under each tank and one between the two tanks. The soil samples contained up to 270 ppm diesel, 31 ppm gasoline, 0.09 ppm benzene, 0.75 ppm toluene, 1.4 ppm xylenes, 0.43 ethylbenzene, 13 ppm pyrene, 9.3 ppm phenanthrene and 3.9 ppm benzo(a)anthracene. Benzene, oil and grease were non-

Leaking Underground Fuel Storage Tank Program

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Larry Seto**


Signature: 

Title: **Senior HMS**

Date: **9-25-00**

Reviewed by


Name: **Eva Chu**

Signature: 

Title: **Hazardous Materials Specialist**

Date: **9/25/00**

Name: **Thomas Peacock**

Signature: 

Title: **Supervising HMS**

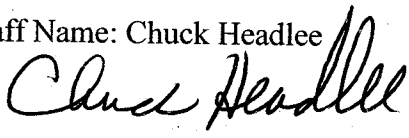
Date: **11-13-00**

VI. RWQCB NOTIFICATION

Date Submitted to RB:

RB Response: **Concur**

RWQCB Staff Name: **Chuck Headlee**

Signature: 

Title: **Engineering Geologist**

Date: **11/28/00**

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site was the location of Pacific Oxygen Company from approximately 1940 to 1984. Portions of the property are being used for oxygen tank repair and storage. The original plant has not been operated since 1982.

On June 30, 1989 an 8,000 gallon diesel tank was removed (Fig. 1A). Three soil samples and a water sample were collected from the excavation. The soil samples contain up to 6.9 ppm TPH(gas), 0.95 ppm toluene, and 1.7 ppm total xylenes. Diesel, benzene and ethylbenzene were non-detect. The water sample contained 6.3 ppb benzene. Diesel, toluene, ethylbenzene, total xylenes and gasoline were non-detect.

On July 12, 1989 a 1,000 gallon gas and a 550 gallon waste oil tank were removed (Fig. 1A). Three soil samples were collected, one under each tank and one between the two tanks. The soil samples contained up to 270 ppm diesel, 31 ppm gasoline, 0.09 ppm benzene, 0.75 ppm toluene, 1.4 ppm xylenes, 0.43 ethylbenzene, 13 ppm pyrene, 9.3 ppm phenanthrene and 3.9 ppm benzo(a)anthracene. Benzene, oil and grease were non-

Leaking Underground Fuel Storage Tank Program

detectable. There was no analysis for halogenated volatile organic compounds (HVOC's). No groundwater was encountered.

In September 1990, monitoring well MW-1 was installed within the tank pit excavation area (Fig. 4). The well is within five feet of the former waste oil storage tank location in the estimated downgradient direction. During the boring of MW-1, three soil samples were collected at three different depths. The analytical results of the soil samples revealed no detectable amounts of either TPH(d) or BTEX. The analytical results of the groundwater sample reported 5,400 ppb TPH(d), 1,200 ppb benzene, 18 ppb toluene, 7.1 ppb ethylbenzene and 37 ppb total xylenes.

Subsequent to the installation of monitoring well MW-1, two additional shallow groundwater monitoring wells (MW-2 and MW-3) were installed on the subject site (Fig.4). As per Hageman-Aguilar Inc., no data regarding the date of installation, boring logs and well construction information for wells MW-2 and MW-3 are available. The monitoring wells were monitored on a quarterly basis.

On November 12, 1992 the underground tank piping connected to the gas and waste oil tank were removed. Holes were visible in both the gas and waste oil pipeline. Initial soil samples (PL-1 & PL-2) were collected at 3' below ground surface along the trench. The samples contained up to 1,400 ppm oil & grease and 1,100 ppm TPH(motor oil). The samples were ND for gas, diesel, kerosene, BTEX and HVOC's. Subsequent to the piping removal, additional excavation was conducted on November 18, 1992. The excavation extended to a depth of approximately 12 feet below ground surface in order to mitigate the apparent subsurface gasoline contamination. Sixteen confirmatory soil samples were taken. Sample #3b collected at a depth of 9' contained 1,600 ppm TPH(g), 2.4 ppm benzene, 2.8 ppm toluene, 3.3 ppm ethylbenzene, 18 ppm total xylenes and 19 ppm oil & grease (Fig. 2 and Table 7). The gasoline contamination appears to coincide with the capillary fringe above the water table.

The pipeline trench and overexcavation was backfilled. Three backfill wells (MW-4, MW-5 and MW-6) were installed using 4 inch PVC casing and slotted screen (0.05") in order to facilitate future in-situ treatment technologies. Backfill well, MW-4 was monitored on a quarter basis (Fig. 6).

To define the extent of the groundwater plume on-site, fifteen "hydropunch" samples were collected in November 1993 (Fig. 5). The chemical concentration contours generated from the groundwater data indicate that the source of dissolved gasoline concentrations are centered somewhere around the area of the previous pipeline excavation, and location of monitoring well MW-3 (Fig. 8 & 9). No detectable concentrations of gasoline, diesel or BTEX are moving off-site from the subject property.

A Health Based Risk Assessment was prepared in June 1998. Since the residual subsurface contamination at the site exists in soil at depths greater than approximately 9 feet below ground surface, the only exposure route considered is due to vapor intrusion. Direct contact with contaminated soil or groundwater is not possible. The Daugherty Model was used to calculate vapor intrusion for indoor exposure to benzene, toluene, ethylbenzene, total xylenes and TPH(gas). It was concluded that there appear to be no health risks associated with occupation of the property for commercial/industrial use.

Leaking Underground Fuel Storage Tank Program

A follow-up risk assessment using the Tier 1 and Tier 2 RBCA Spreadsheet System was done. Based upon the known maximum residual BTEX concentrations in the shallow groundwater, as well as the site-specific hydrogeologic conditions, no risk-based screening levels (RBSL's) are exceeded for shallow groundwater. Based upon the average of the residual BTEX concentrations in the soil located directly beneath the existing building, no RBSL's are exceeded for the soil.

On June 26, 2000 four "geoprobe" borings (GP-1 to GP-4) were advanced to investigate the shallow groundwater quality downgradient of the former locations of the underground tanks and previous pipelines and dispensers. This investigation was initiated because there were no boring logs or well construction information available for monitoring wells MW-2 and MW-3. The groundwater samples from these wells contained ND to 340 ppb TPH(diesel), ND to 560 ppb TPH(gas), ND to 96 ppb benzene, ND to 39 ppb toluene, ND to 14 ppb ethylbenzene, ND to 58 ppb xylenes and ND to 100 ppb MTBE (Fig.7 and Table 1a).

In summary, this office is recommending that this case be closed for the following reasons:

- 1) The leak has been stopped and ongoing sources removed
- 2) The site has been adequately characterized
- 3) Little groundwater impact currently exists
- 4) No water wells, deeper drinking water aquifers, surface water or other sensitive receptors are likely to be impacted
- 5) The site presents no significant risk to human health

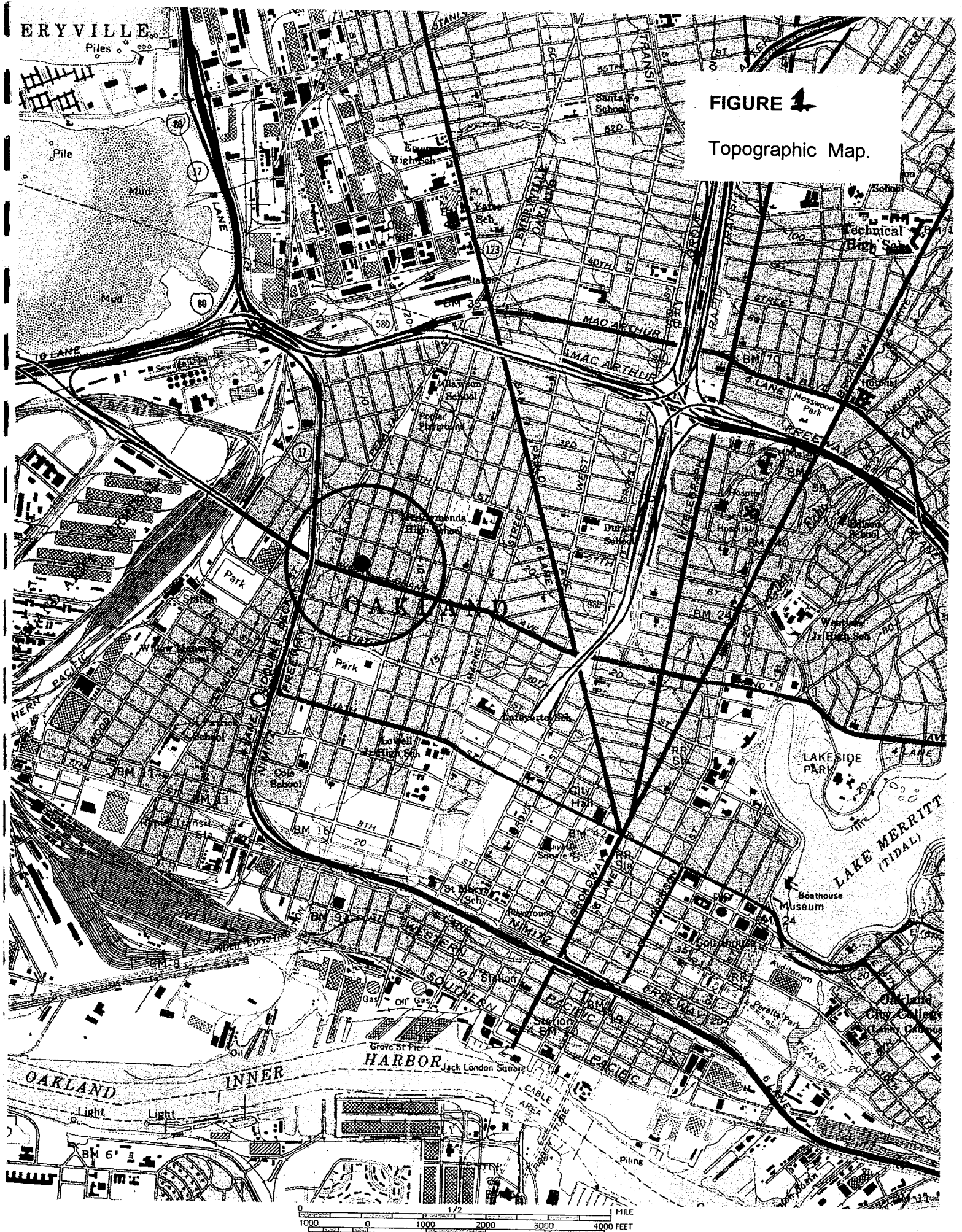
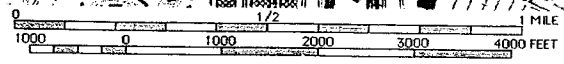
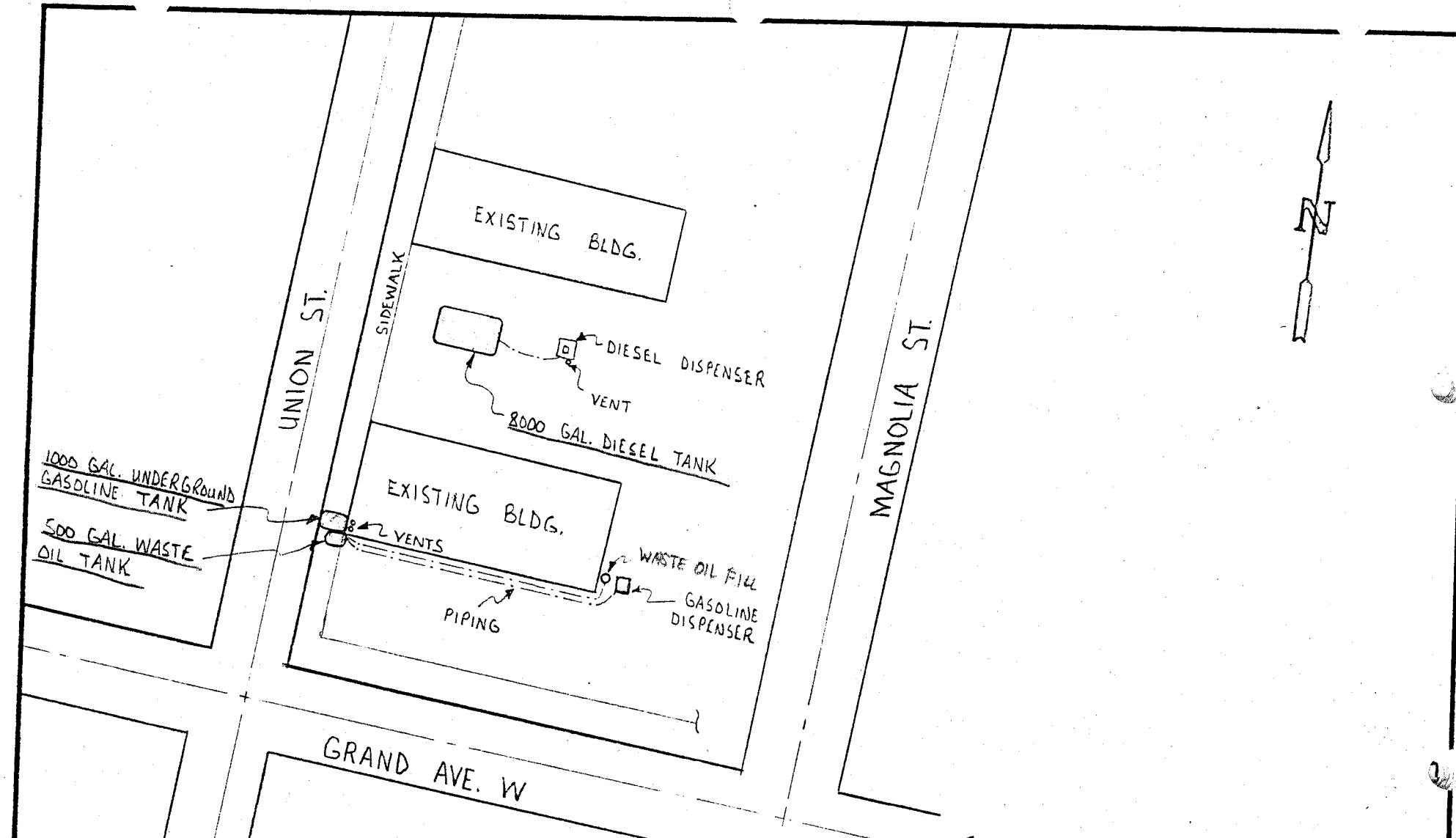


FIGURE 1

Topographic Map.





SCALE: NONE	PLOT PLAN FOR: ALDO GUIDOTTI	DRAWN BY <i>SM</i>
DATE: 14 JUNE 89		REVISED
2311 MAGNOLIA ST. OAKLAND, CA 94607		
260 Cristof Campbell, CA	559-1220	PLATE 1

Fig. 2A

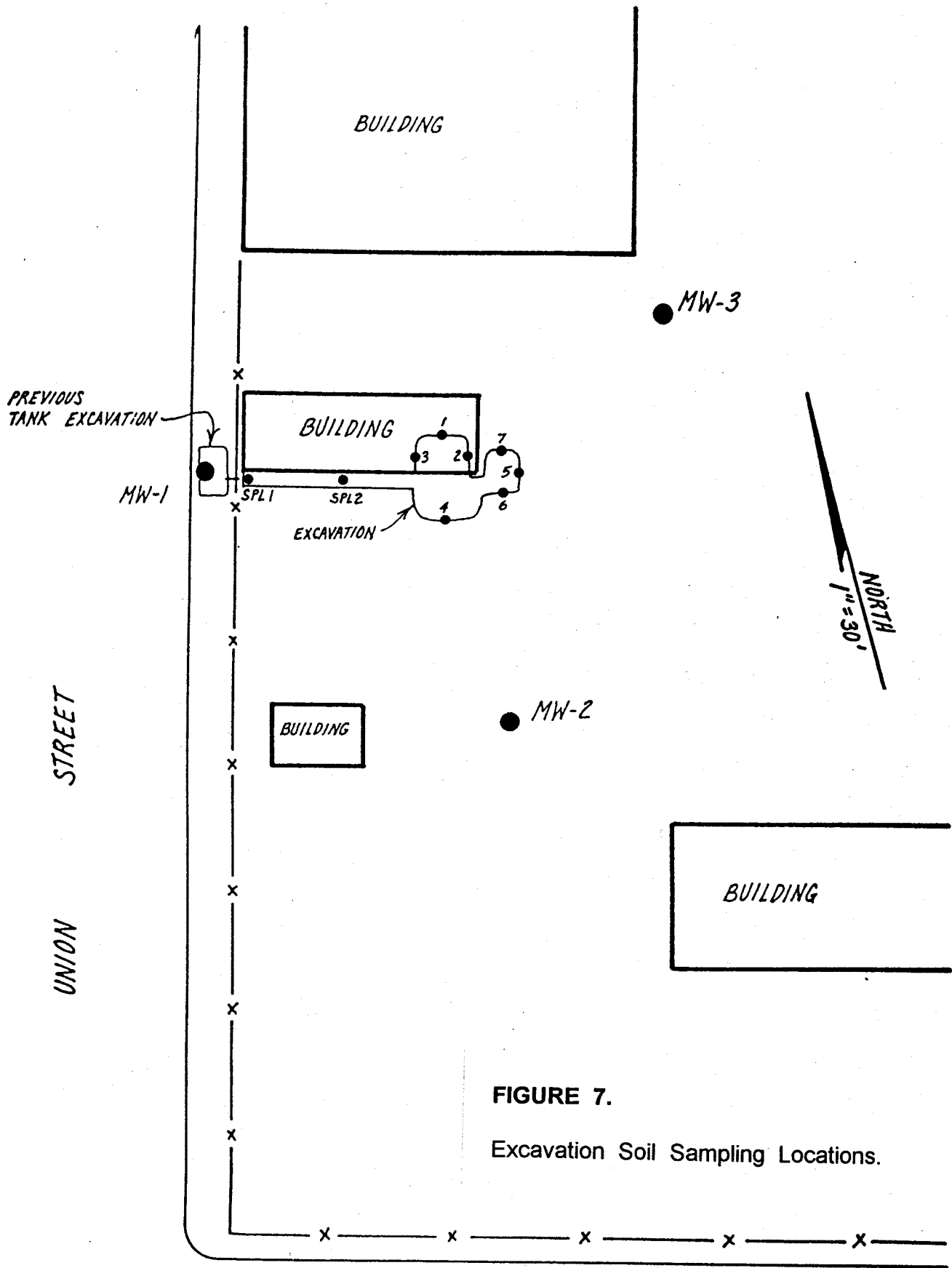


FIGURE 7.

Excavation Soil Sampling Locations.

GRAND AVENUE WEST

Fig. 2

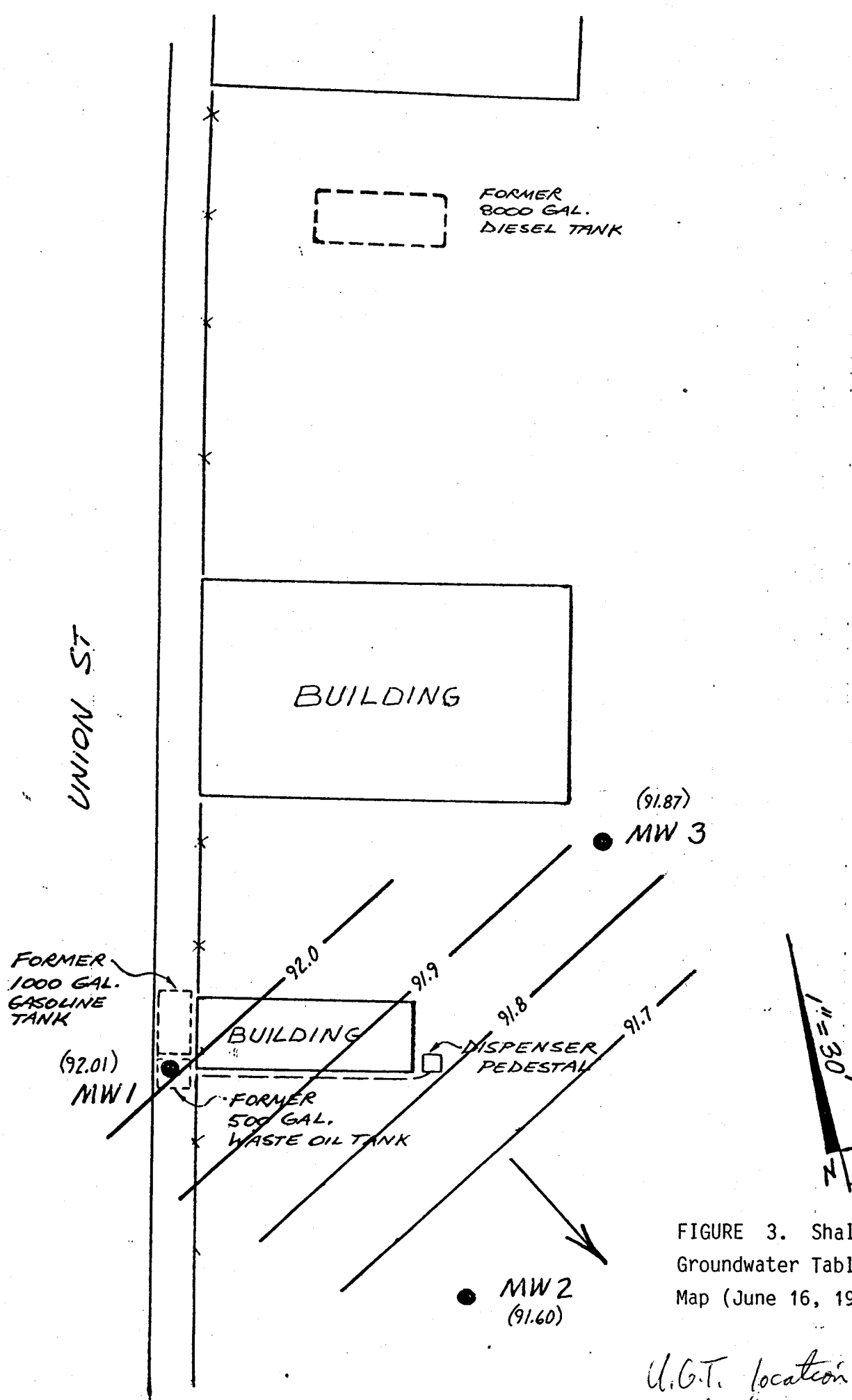


FIGURE 3. Shallow Groundwater Table Contour Map (June 16, 1992)

U.G.T. location and pipeline

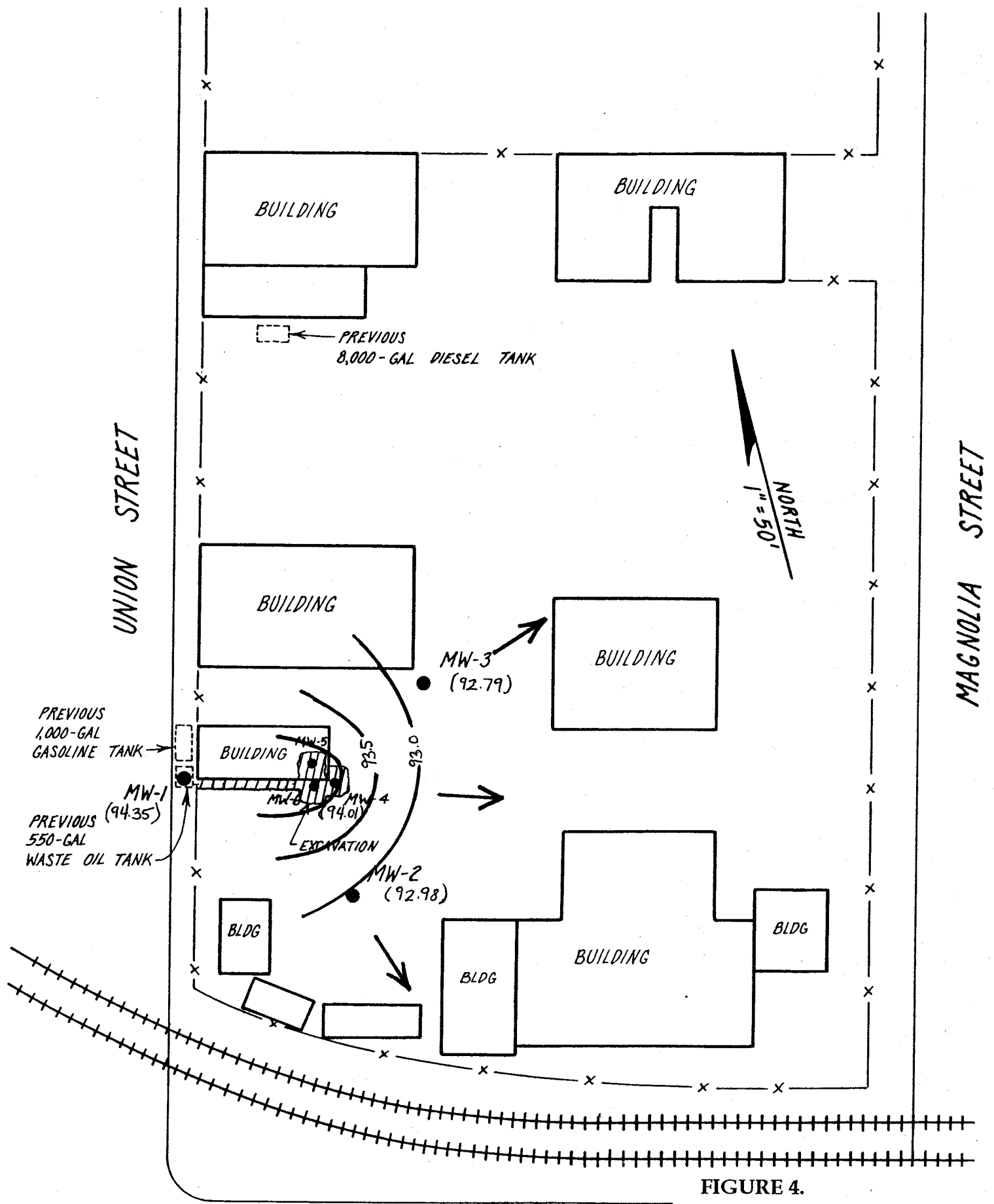


FIGURE 4.

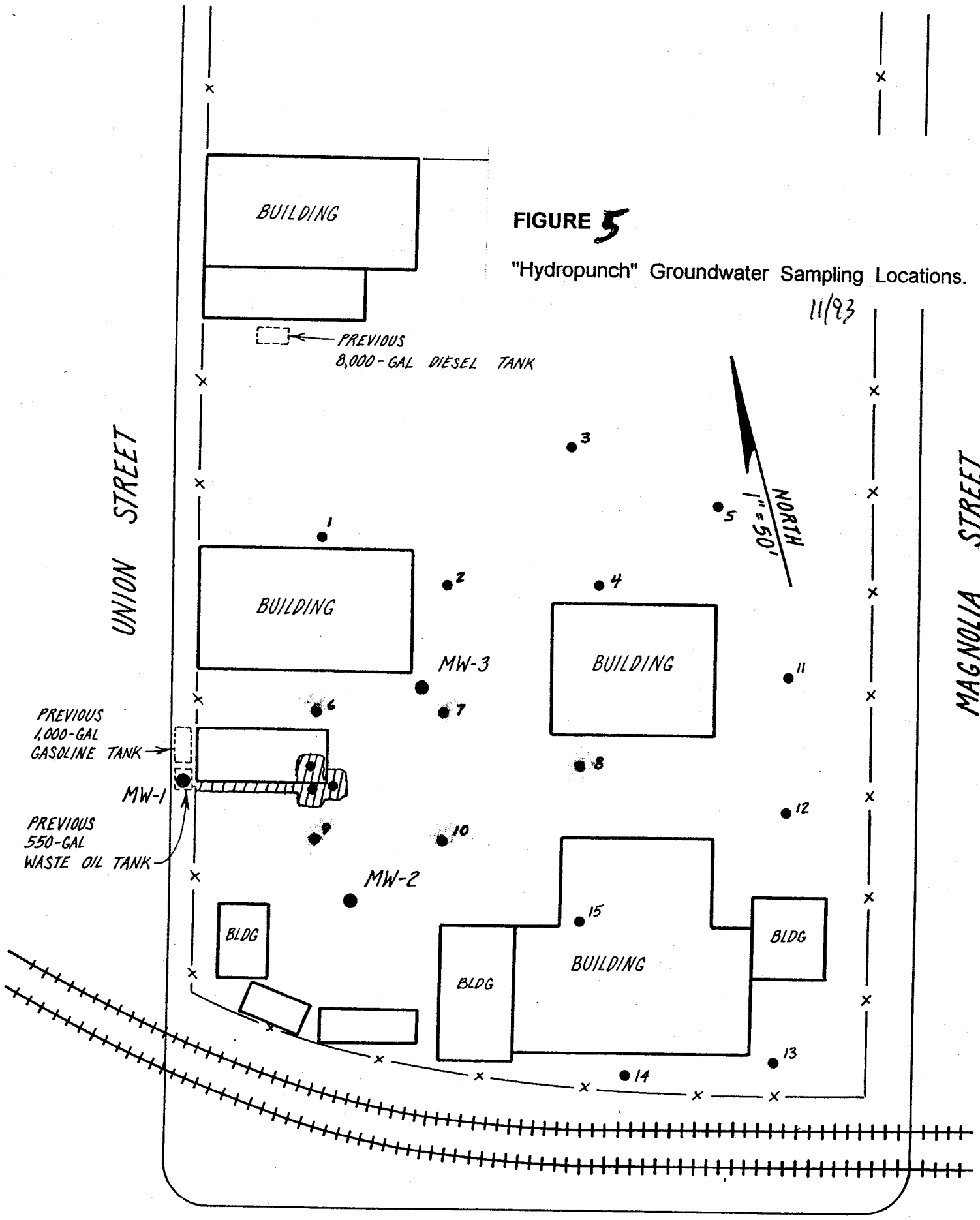
Shallow Groundwater Table Contour Map, measured on February 20, 1997

WEST GRAND AVENUE

FIGURE 5

"Hydropunch" Groundwater Sampling Locations.

11/93



WEST GRAND AVENUE

● Hydrocarbons Detected

MW-3

FIGURE 6

Extent of Soil Excavation.

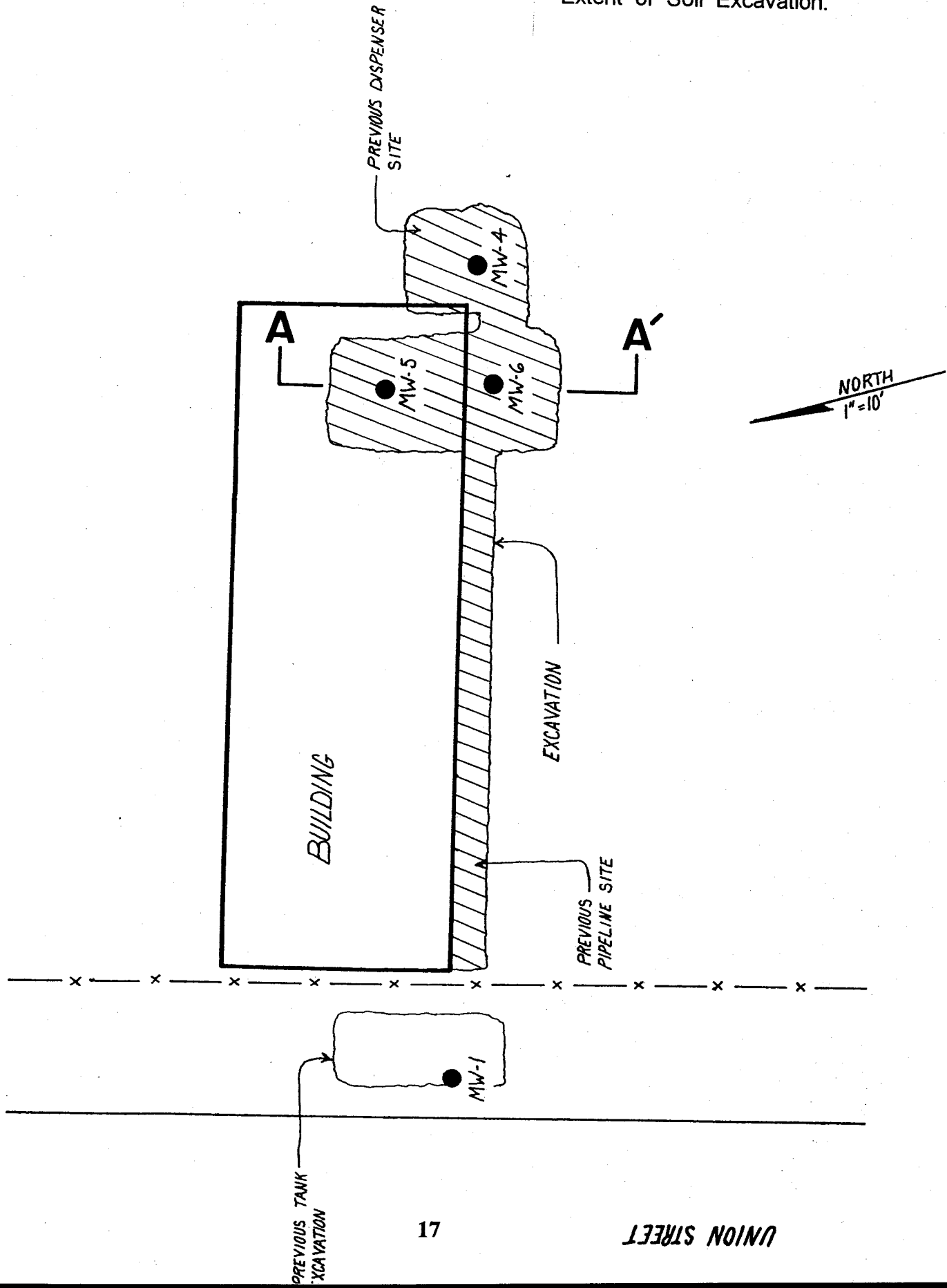
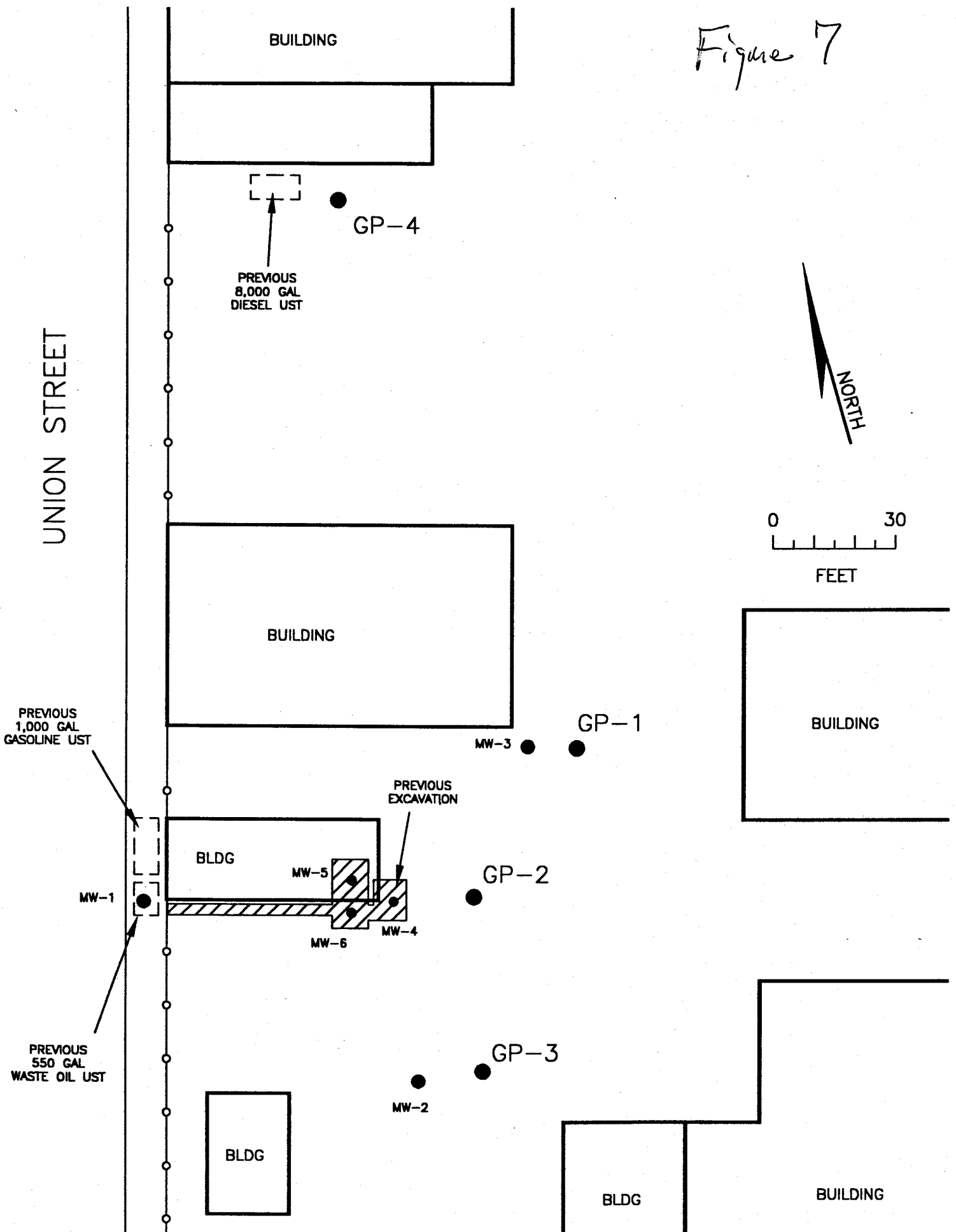


Figure 7



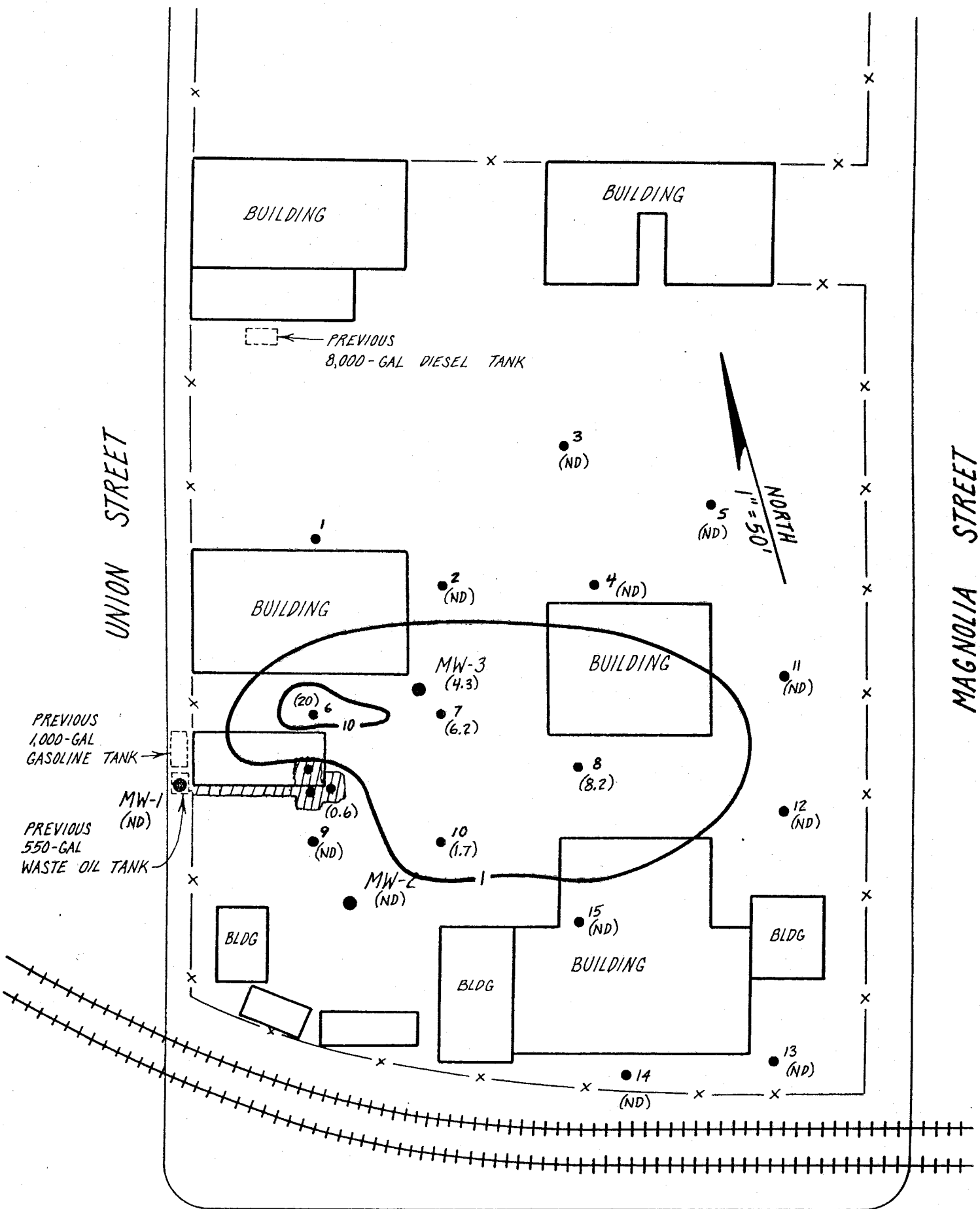


FIGURE 8. Lines of Equal Concentration of Benzene in ug/L (ppb) in the Shallow Groundwater.

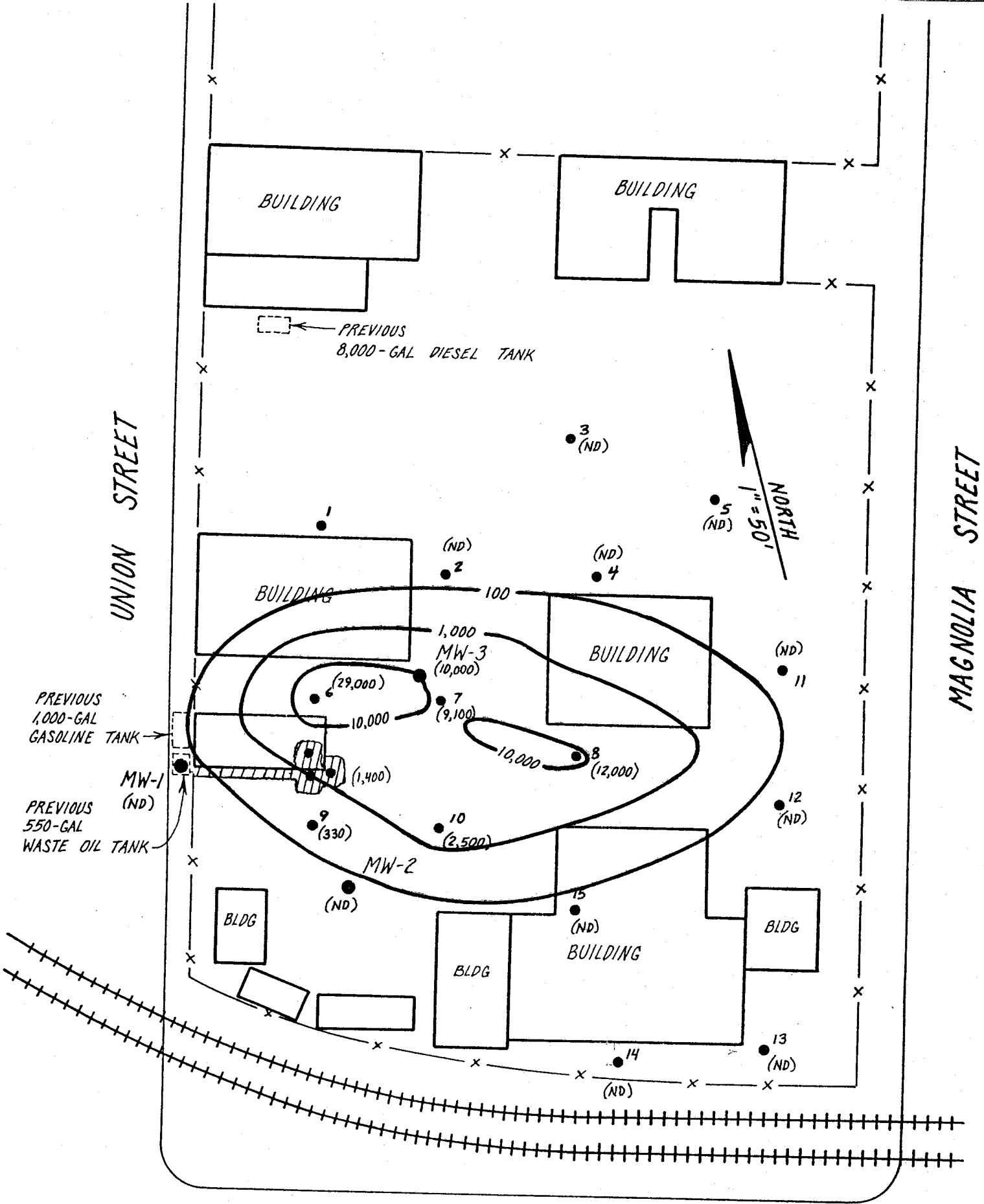


FIGURE 9. Lines of Equal Concentration of Gasoline in ug/L (ppb) in the Shallow Groundwater.

TABLE 1.
Soil Sampling Results

Boring	Depth (feet)	TPH as Diesel (mg/kg)	TPH as Gasoline (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)
GP-1	10	20	100	ND	ND	ND	0.90	ND
	15	1.1	ND	ND	ND	ND	ND	ND
GP-2	10	5.9	56	ND	ND	0.85	2.8	ND
GP-3	10	1.3	ND	ND	ND	ND	ND	ND
GP-4	5	ND	ND	ND	ND	ND	ND	ND
	10	ND	ND	ND	ND	ND	ND	ND
Detection Limit		1.0	1.0	0.0050	0.0050	0.0050	0.0050	0.0050

ND = not detected

samples collected on 06-26-2000

TABLE 1a

"Grab" Groundwater Sampling Results

Boring	Date	TPH as Diesel (ug/L)	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)
GP-1	06-26-00	ND	200	13	ND	1.2	2.0	ND
GP-2	06-26-00	340	560	96	39	14	58	110
GP-3	06-26-00	ND	ND	ND	ND	ND	ND	17
GP-4	06-26-00	190	150	0.56	2.5	1.8	11	ND
Detection Limit		63	50	0.50	0.50	0.50	0.50	5.0

ND = not detected

TABLE 2.
Excavation Soil Sampling Results

Sample	Date	Depth (feet)	TPH as Gasoline (mg/Kg)	TPH as Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl-benzene (ug/Kg)	Total Xylenes (ug/Kg)	Oil & Grease (mg/Kg)	Motor Oil (mg/Kg)	VOCs (ug/Kg)
PL 1	11-12-92	7	ND	ND	ND	ND	ND	ND	1,400	1,100	ND
PL 2	11-12-92	7	ND	ND	ND	ND	ND	ND	16	13	ND
1 A	11-18-92	6	28	ND	22	19	33	86	ND	ND	ND
1 B	11-18-92	9	670	2.3	870	1,400	1,800	6,600	22	24	ND
2 A	11-18-92	6	310	ND	480	760	1,100	3,500	20	18	ND
2 B	11-18-92	9	400	ND	550	940	1,300	4,000	11	ND	ND
3 A	11-18-92	6	29	ND	25	21	34	92	ND	ND	ND
3 B	11-18-92	9	1,600	ND	2,400	2,800	3,300	18,000	19	ND	ND
4 A	11-18-92	6	28	ND	26	20	31	89	ND	ND	ND
4 B	11-18-92	9	420	ND	520	1,400	1,600	5,300	64	38	ND
5 A	11-18-92	6	26	ND	23	18	35	83	ND	ND	ND
5 B	11-18-92	9	1,100	10	2,000	2,500	3,000	16,000	29	22	ND
6 A	11-18-92	6	8.7	ND	11	8	27	29	ND	ND	ND
6 B	11-18-92	9	4.7	ND	18	40	21	54	ND	ND	ND
7 A	11-18-92	6	27	ND	28	24	38	85	14	ND	ND
7 B	11-18-92	9	350	1.2	580	950	1,800	4,200	30	25	ND
Detection Limit			1.0	1.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0

ND = not detected

TABLE 3.
Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-1	10-26-90	---	1200	18	7.1	37	---
	03-04-92	460	120	9.0	16	44	---
	04-03-92	300	21	6.0	15	36	---
	06-16-92	220	54	17	29	73	---
	10-09-92	ND	ND	ND	ND	ND	---
	01-07-93	210	0.7	3.7	4.4	9.6	---
	04-23-93	280	0.9	1.3	2.9	6.2	---
	07-16-93	110	ND	ND	0.5	1.1	---
	11-08-93	ND	ND	ND	ND	ND	---
	01-28-94	190	5.7	4.9	6.7	21	---
	05-02-94	ND	ND	ND	ND	ND	---
	08-03-94	ND	ND	ND	ND	ND	---
	11-04-94	ND	ND	ND	ND	ND	---
	03-14-95	ND	ND	ND	ND	ND	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	110	1.0	ND	ND	2.8	---
	08-12-96	---	---	---	---	---	---
11-15-96	---	---	---	---	---	---	
02-20-97	---	---	---	---	---	---	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 3. (continued)
Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-2	03-04-92	ND	ND	ND	ND	ND	---
	04-03-92	ND	ND	ND	ND	ND	---
	06-16-92	ND	ND	ND	ND	ND	---
	10-09-92	ND	ND	ND	ND	ND	---
	01-07-93	ND	ND	ND	ND	ND	---
	04-23-93	ND	ND	ND	ND	ND	---
	07-16-93	ND	ND	ND	ND	ND	---
	11-08-93	ND	ND	ND	ND	ND	---
	01-28-94	ND	ND	ND	ND	ND	---
	05-02-94	ND	ND	ND	ND	ND	---
	08-03-94	ND	ND	ND	ND	ND	---
	11-04-94	ND	ND	ND	ND	ND	---
	03-14-95	ND	ND	ND	ND	ND	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	ND	ND	ND	ND	ND	---
	08-12-96	---	---	---	---	---	---
	11-15-96	---	---	---	---	---	---
02-20-97	---	---	---	---	---	---	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

**TABLE 3. (continued)
Shallow Groundwater Sampling Results**

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-3	03-04-92	14,000	6,200	60	110	740	---
	04-03-92	5,200	120	32	57	180	---
	06-16-92	6,000	180	45	82	190	---
	10-09-92	11,000	87	49	94	200	---
	01-07-93	4,200	3.3	13	44	92	---
	04-23-93	21,000	23	43	49	130	---
	07-16-93	16,000	19	21	25	78	---
	11-08-93	10,000	4.3	5.7	7.9	35	---
	01-28-94	7,500	8.5	10	50	95	---
	05-02-94	22,000	69	39	60	110	---
	08-03-94	2,500	35	12	27	25	---
	11-04-94	2,900	4.0	8.1	18	27	---
	03-14-95	2,500	9.5	3.0	4.6	8.3	---
	08-23-95	12,000	35	8.2	14	20	---
	05-08-96	19,000	57	17	32	56	---
	08-12-96	8,900	47	7.6	14	16	---
	11-15-96	4,900	66	13	33	41	ND
02-20-97	1,100	68	21	18	23	ND	
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 3. (continued)
Shallow Groundwater Sampling Results

Well	Date	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-4 <i>Backgill well</i>	01-07-93	4,800	6.4	25	60	110	---
	04-23-93	2,700	8.3	11	31	59	---
	07-16-93	3,000	3.7	4.2	4.9	15	---
	11-08-93	1,400	0.6	0.8	1.1	4.8	---
	01-28-94	830	8.5	10	12	27	---
	05-02-94	900	7.3	3.2	0.5	14	---
	08-03-94	1,000	22	0.7	8.0	7.4	---
	11-04-94	160	0.6	ND	1.9	2.9	---
	03-14-95	120	3.6	ND	ND	3.7	---
	08-23-95	ND	ND	ND	ND	ND	---
	05-08-96	ND	ND	ND	ND	ND	---
	08-12-96	ND	ND	ND	ND	ND	ND
	11-15-96	320	19	3.2	5.6	15	ND
	02-20-97	ND	ND	ND	ND	ND	ND
Detection Limit		50	0.5	0.5	0.5	0.5	0.5

ND = Not Detected

TABLE 4.

Shallow "Grab" Groundwater Sampling Results

Sampling Location	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl-benzene (ug/L)	Total Xylenes (ug/L)	TPH as Diesel (ug/L)
#1	ND	ND	ND	ND	ND	---
#2	ND	ND	ND	ND	ND	---
#3	ND	ND	ND	ND	ND	---
#4	ND	ND	ND	ND	ND	---
#5	ND	ND	ND	ND	ND	ND
#6	29,000	20	28	36	110	---
#7	9,100	6.2	8.7	11	34	---
#8	12,000	8.2	11	15	45	---
#9	330	ND	0.7	0.9	3.2	---
#10	2,500	1.7	2.4	3.1	9.4	ND
#11	ND	ND	ND	ND	ND	---
#12	ND	ND	ND	ND	ND	ND
#13	ND	ND	ND	ND	ND	ND
#14	ND	ND	ND	ND	ND	ND
#15	ND	ND	ND	ND	ND	ND
Detection Limit	50	0.5	0.5	0.5	0.5	50

ND = not detected

TABLE 5.

HP, 11/93

Shallow "Grab" Groundwater Sampling Results

Sampling Location	TPH as Gasoline (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	TPH as Diesel (ug/L)
#1	ND	ND	ND	ND	ND	---
#2	ND	ND	ND	ND	ND	---
#3	ND	ND	ND	ND	ND	---
#4	ND	ND	ND	ND	ND	---
#5	ND	ND	ND	ND	ND	ND
#6	29,000	20	28	36	110	---
#7	9,100	6.2	8.7	11	34	---
#8	12,000	8.2	11	15	45	---
#9	330	ND	0.7	0.9	3.2	---
#10	2,500	1.7	2.4	3.1	9.4	ND
#11	ND	ND	ND	ND	ND	---
#12	ND	ND	ND	ND	ND	ND
#13	ND	ND	ND	ND	ND	ND
#14	ND	ND	ND	ND	ND	ND
#15	ND	ND	ND	ND	ND	ND
Detection Limit	50	0.5	0.5	0.5	0.5	50

ND = not detected

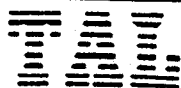


Table 6

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89

CUSTOMER: GeoEnvironmental Technology
 REQUESTER: Stuart Solomon
 PROJECT: Aldo Guidotti, 2311 Magnolia Street, Oakland, CA

*Soil sample results
 from Waste Oil tank*

Method and Constituent	Units	Sample Type: Soil					
		<i>gas tank</i> GG-1		<i>Det. gas + w.o.</i> GTP-3 tanks		<i>w.o. tank</i> GWO-1	
		Concentration	Detection Limit	Concentration	Detection Limit	Concentration	Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Diesel	ug/kg					270,000	3,000
Total Petroleum Hydrocarbons as Gasoline	ug/kg	< 500	500	460	400	31,000	500
Modified EPA Method 8020:							
Benzene	ug/kg	< 10	10	92	8	< 50	50
Toluene	ug/kg	< 10	10	< 8	8	750	10
Xylenes	ug/kg	< 50	50	< 40	40	1,400	50
Ethyl Benzene	ug/kg	< 20	20	< 10	10	430	20
Standard Method 503E, Hydrocarbons:							
Oil and Grease	ug/kg			< 10,000	10,000	< 10,000	10,000

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89
 PAGE: Two

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270:			
N-Nitrosodimethylamine	ug/kg	< 330	330
Phenol	ug/kg	< 330	330
bis(-2-Chloroethyl) Ether	ug/kg	< 330	330
2-Chlorophenol	ug/kg	< 330	330
1,3-Dichlorobenzene	ug/kg	< 330	330
1,4-Dichlorobenzene	ug/kg	< 330	330
1,2-Dichlorobenzene	ug/kg	< 330	330
N-Nitroso-Di-n- Propylamine	ug/kg	< 330	330
Hexachloroethane	ug/kg	< 330	330
Nitrobenzene	ug/kg	< 330	330
Isophorone	ug/kg	< 330	330
2-Nitrophenol	ug/kg	< 1,650	1,650
2,4-Dimethylphenol	ug/kg	< 330	330
bis(-2-Chloroethoxy) Methane	ug/kg	< 330	330
2,4-Dichlorophenol	ug/kg	< 330	330
1,2,4-Trichlorobenzene	ug/kg	< 330	330
Naphthalene	ug/kg	340	330
Hexachlorobutadiene	ug/kg	< 330	330
4-Chloro-3-Methyl- phenol	ug/kg	< 330	330
Hexachlorocyclo- pentadiene	ug/kg	< 330	330
2,4,6-Trichlorophenol	ug/kg	< 330	330
2-Chloronaphthalene	ug/kg	< 330	330
Dimethyl Phthalate	ug/kg	< 330	330

DATE: 7/27/89
 LOG NO.: 7613
 DATE SAMPLED: 7/12/89
 DATE RECEIVED: 7/13/89
 PAGE: Three

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270, Continued:			
Acenaphthylene	ug/kg	< 330	330
Acenaphthene	ug/kg	1,800	330
2,4-Dinitrophenol	ug/kg	< 1,650	1,650
4-Nitrophenol	ug/kg	< 1,650	1,650
2,4-Dinitrotoluene	ug/kg	< 330	330
2,6-Dinitrotoluene	ug/kg	< 330	330
Diethylphthalate	ug/kg	< 330	330
4-Chlorophenyl- phenylether	ug/kg	< 330	330
Fluorene	ug/kg	1,500	330
N-Nitrosodiphenylamine	ug/kg	< 330	330
4-Bromophenyl- phenylether	ug/kg	< 330	330
Hexachlorobenzene	ug/kg	< 330	330
Pentachlorophenol	ug/kg	< 1,650	1,650
Phenanthrene	ug/kg	9,300	330
Anthracene	ug/kg	1,700	330
Di-n-Butylphthalate	ug/kg	< 330	330
Fluoranthene	ug/kg	7,900	330
Benzidine	ug/kg	< 1,650	1,650
Pyrene	ug/kg	13,000	330
Butylbenzylphthalate	ug/kg	< 330	330
3,3'-Dichlorobenzidine	ug/kg	< 1,650	1,650
Benzo(a)Anthracene	ug/kg	3,900	330
bis(2-Ethylhexyl) Phthalate	ug/kg	< 330	330
Chrysene	ug/kg	2,000	330
Di-n-Octyl Phthalate	ug/kg	< 330	330

DATE: 7/27/89
LOG NO.: 7613
DATE SAMPLED: 7/12/89
DATE RECEIVED: 7/13/89
PAGE: Four

Sample Type: Soil

<u>Method and Constituent</u>	<u>Units</u>	<u>GWO-1</u>	
		<u>Concen- tration</u>	<u>Detection Limit</u>
EPA Method 8270, Continued:			
Benzo(b)Fluoranthene	ug/kg	3,400	330
Benzo(k)Fluoranthene	ug/kg	2,100	330
Benzo(a)Pyrene	ug/kg	2,500	330
Indeno(1,2,3-cd)Pyrene	ug/kg	910	330
Dibenzo(a,h)Anthracene	ug/kg	380	330
Benzo(g,h,i)Perylene	ug/kg	1,500	330

Other Constituents Identified:

Dibenzofuran	ug/kg	910	330
--------------	-------	-----	-----

Dan Farah

Dan Farah, Ph.D.
Supervisory Chemist

DF:vs



PRIORITY ENVIRONMENTAL LABS

Precision Environmental Analytical Laboratory

November 21, 1992

PEL # 9211047

HAGEMAN - AGUIAR, INC.

Table 7

Attn: Jeffrey Roth

Re: Eighteen soil samples for Gasoline/BTEX, TEPH, and Oil & Grease analyses.

Project name: Pacific Oxygen

Project location: Union St., -Oakland, CA.

Date sampled: Nov 18, 1992

Date submitted: Nov 21, 1992

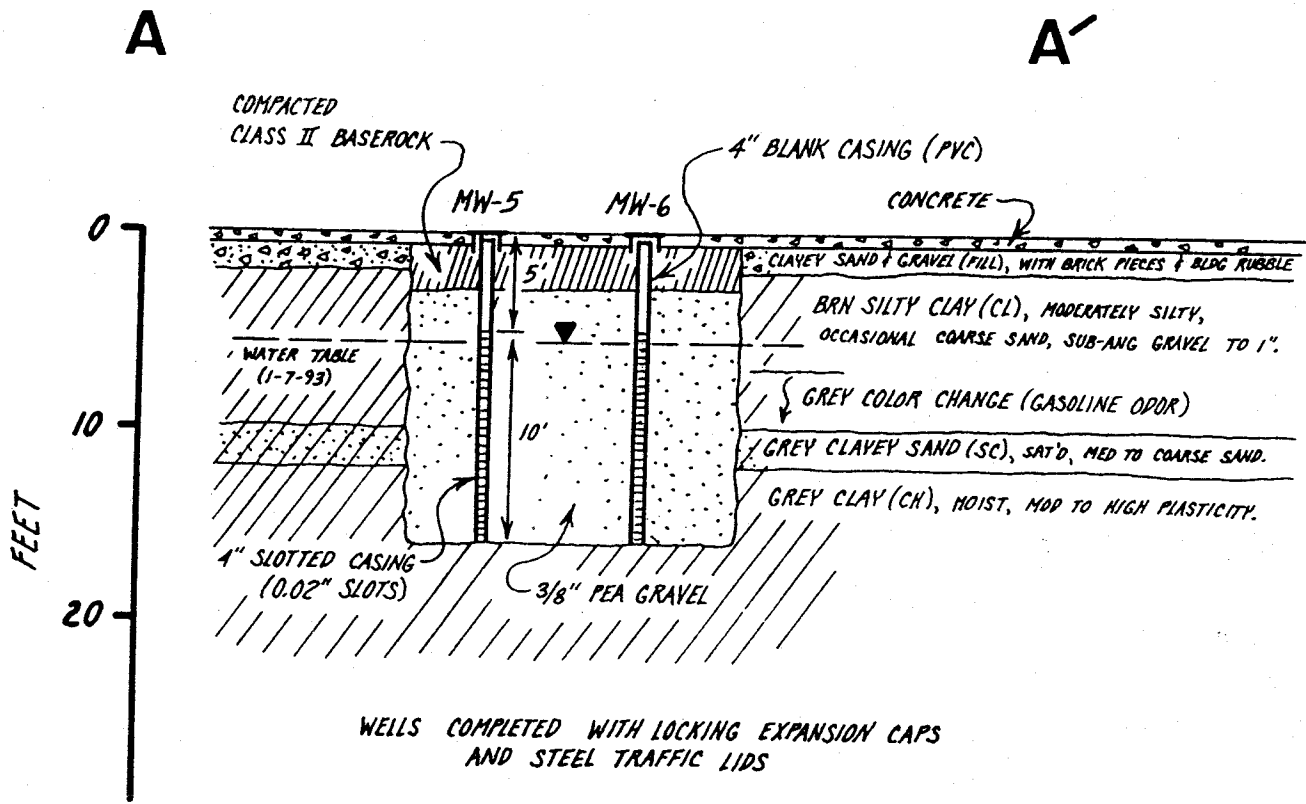
Date extracted: Nov 19-21, 1992

Date analyzed: Nov 19-21, 1992

RESULTS:

SAMPLE I.D.	Kerosene (mg/Kg)	Gasoline (mg/Kg)	Diesel (mg/Kg)	Benzene (ug/Kg)	Toluene (ug/Kg)	Ethyl Benzene (ug/Kg)	Total Xylenes (ug/Kg)	Oil & Grease (mg/Kg)	Motor Oil (mg/Kg)
SSP1-SSP4	N.D.	820	35	1300	1800	2000	7500	170	160
SSP5-SSP8	N.D.	530	N.D.	750	1300	1600	6200	28	30
SPL 1	N.D.	1.4	N.D.	5.7	6.8	6.6	13	150	240
SPL 2	N.D.	1.0	N.D.	5.0	5.2	5.4	9.0	N.D.	N.D.
1 A	N.D.	28	N.D.	22	19	33	86	N.D.	N.D.
1 B	N.D.	670	2.3	870	1400	1800	6600	22	24
2 A	N.D.	310	N.D.	480	760	1100	3500	20	18
2 B	N.D.	400	N.D.	550	940	1300	4000	11	N.D.
3 A	N.D.	29	N.D.	25	21	34	92	N.D.	N.D.
3 B <i>9' depth</i>	N.D.	1600	N.D.	2400	2800	3300	18000	19	N.D.
4 A	N.D.	28	N.D.	26	20	31	89	N.D.	N.D.
4 B	N.D.	420	N.D.	520	1400	1600	5300	64	30
5 A	N.D.	26	N.D.	23	18	35	83	N.D.	N.D.
5 B	N.D.	1100	10	2000	2500	3000	16000	29	22
6 A	N.D.	8.7	N.D.	11	8.0	27	54	N.D.	N.D.
6 B	N.D.	15	N.D.	18	12	21	70	N.D.	N.D.
7 A	N.D.	27	N.D.	28	24	38	85	14	N.D.
7 B	N.D.	350	1.2	580	950	1800	4200	30	25
Blank	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spiked									
Recovery	89.3%	92.4%	103.1%	97.2%	95.3%	104.6%	92.0%	---	---
Duplicate									
Spiked									
Recovery	---	87.8%	100.5%	88.4%	90.2%	98.6%	86.1%	---	---
Detection									
limit	1.0	1.0	1.0	5.0	5.0	5.0	5.0	10	10
Method of	3550 /	5030 /	3550 /					5520	3550 /
Analysis	8015	8015	8015	8020	8020	8020	8020	D & F	8015

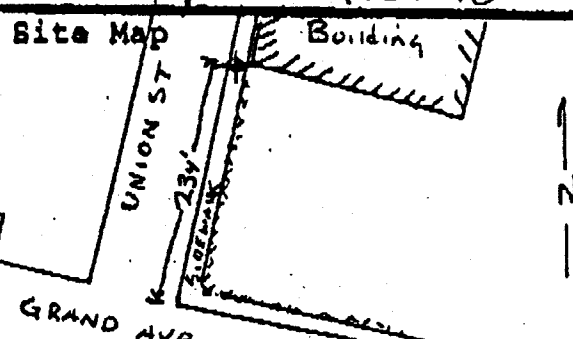
David Duong
Laboratory Director



SCALE
 HORIZ: 1"=10'
 VERT: 1"=10'

Section A - A'
 Backfill Monitoring Wells
 MW-4, MW-5 and MW-6
 2311 Magnolia Street
 Oakland, California

Client Guidotti Date 9.27.90

Location 2210 Union St Site Map 

Oakland Ca.

Driller Aqua Science #487000

Method 8" Hollow Stem Auger mobile Drill B57

Sampler Cal.F. 2" 140# w/ 30" Fall

Logger B. Halsted Inspector _____

Sample Number	Depth	Blows/Ft	Moisture	Depth	USCS	Description of Subsurface Materials	Completion Data
						Concrete	
						Backfill; Import soil	
				5	OH	--- BAY MUD No ODR	
				6.5		WATER LEVEL	
SB-1	8 1/2-10		WET	10	OH	BAY MUD No ODR	PORTLAND CEMENT 2 1/2" SANITARY SEAL
SB-2	13 1/2-15		WET	15	OH		3/4" BENTONITE
SB-3	19 1/2-21		WET	20	9C	GRAVEL/SAND/MUD	#3 AMIC LONG STAR LAPIS LUSTRA SAND PACK
						BOH @ 21'	TRINOC 2" 1020 SEAL PVC 15'
							3/4" LAP BENTONITE

Total Depth 19.5' Water Level 6.5' Sanitary Seal PORTLAND CEMENT 3 1/2"

Permit # 90577 Agency Alameda Co. Flood Control/Water Conservation



HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

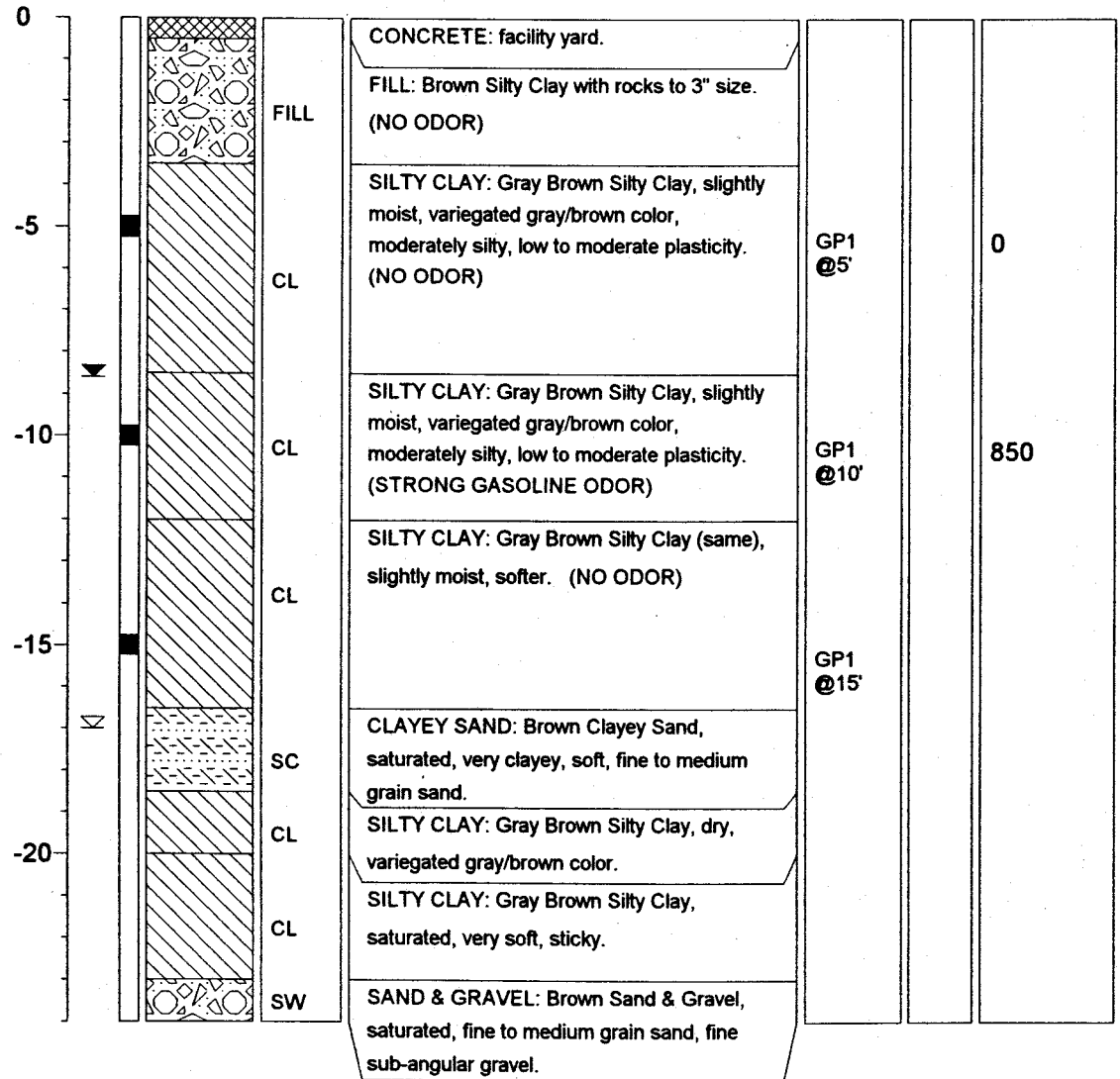
FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-1**
 TOTAL DEPTH: **24'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
NOTES:		HAMMER WT./DROP:	

Water level during drilling
 Stabilized water level in borehole

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

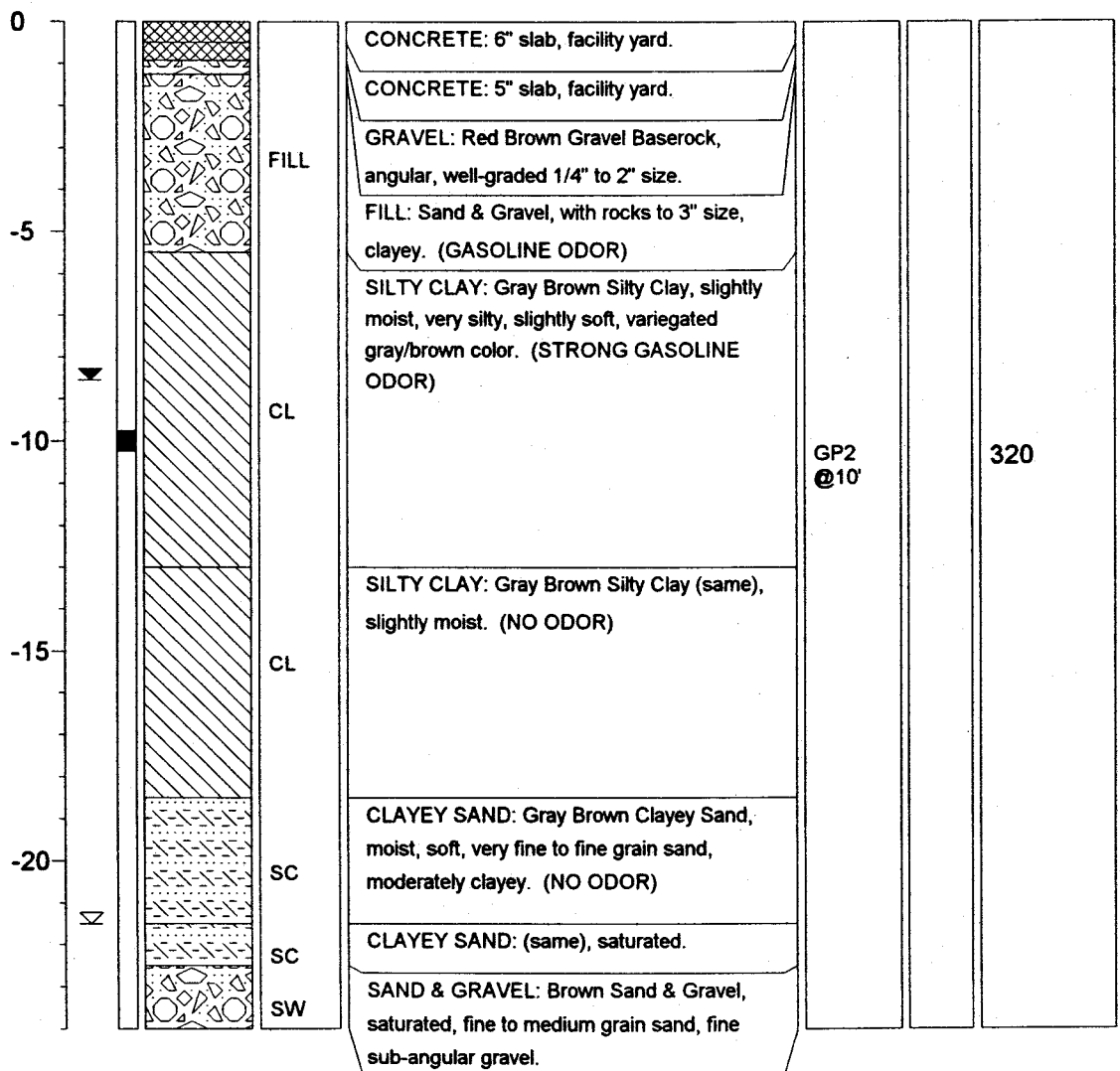
BOREHOLE NO.: **GP-2**
 TOTAL DEPTH: **24'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
		HAMMER WT./DROP:	

NOTES: Page 1 of 1

Water level during drilling
 Stabilized water level in borehole

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

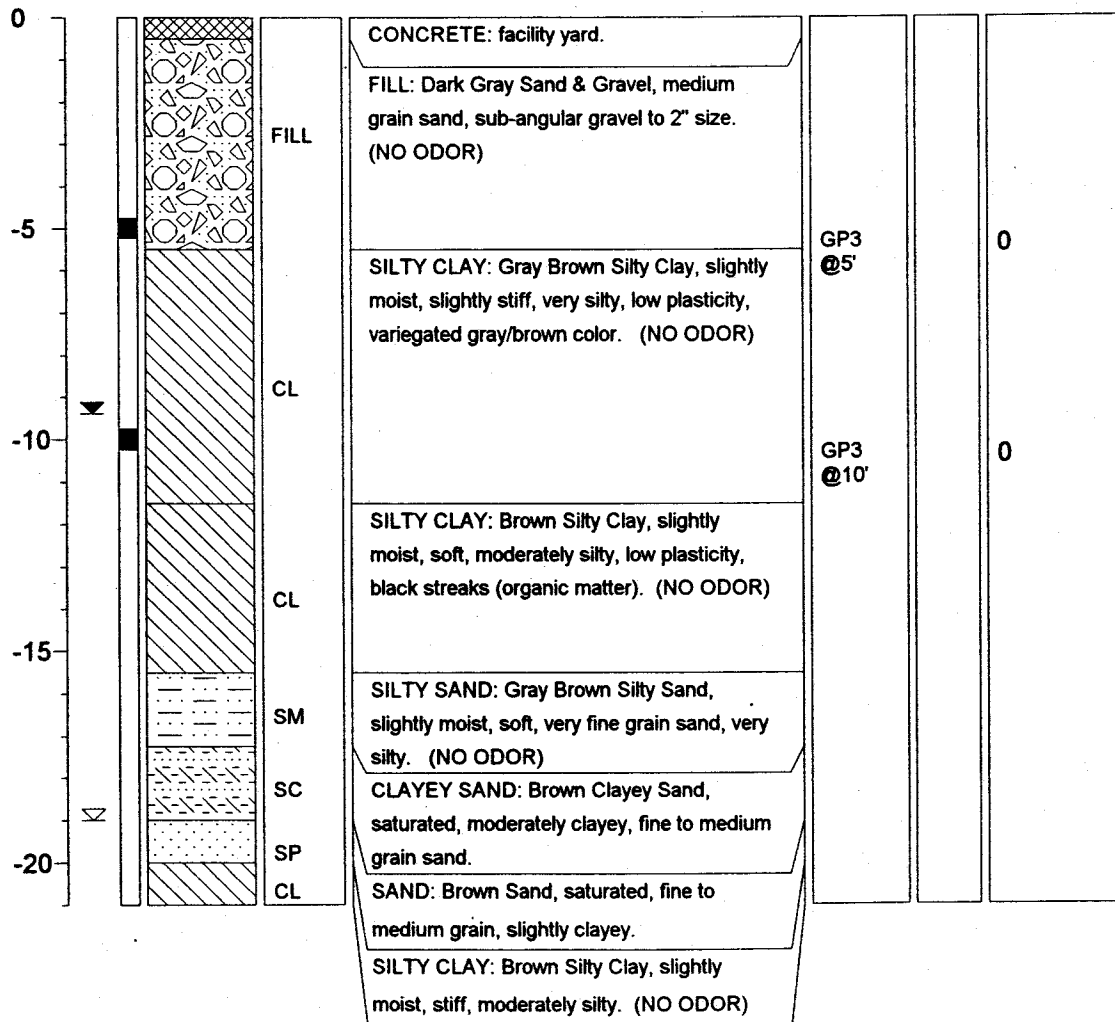
FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-3**

TOTAL DEPTH: **21'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
NOTES:		HAMMER WT./DROP:	
		☒ Water level during drilling ▼ Stabilized water level in borehole	Page 1 of 1

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------





HAGEMAN-AGUIAR, INC.

11100 San Pablo Ave, Suite 200-A
 El Cerrito, CA 94530
 (510)620-0891 (510)620-0894 (fax)

FIELD BOREHOLE LOG

BOREHOLE NO.: **GP-4**
 TOTAL DEPTH: **16'**

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Pacific Cryogenic	DRILLING CO.:	Gregg Drilling
JOB NO.:	0096		Martinez, CA
SITE LOCATION:	2311 Magnolia Street Oakland, CA	RIG TYPE:	Geoprobe
LOGGED BY:	Gary Aguiar	METHOD OF DRILLING:	Direct Push
DATE DRILLED:	06-26-00	SAMPLING METHOD:	Macrocore Barrel
NOTES:		HAMMER WT./DROP:	
		☒ Water level during drilling ☒ Stabilized water level in borehole	Page 1 of 1

DEPTH (feet)	sample	SOIL SYMBOLS	USCS	SOIL DESCRIPTION	SAMPLE NUMBER	PID (ppm)
--------------	--------	--------------	------	------------------	---------------	-----------

