ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

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

StID 3730

August 25, 1998

Mr. Charles Lemoine
1367 52nd Ave
Oakland, CA 94601

Mr. Arlan Ness
16520 E 14th Street
San Leandro, CA 94506

Re: Fuel Leak Site Case Closure for 6085 Scarlett Court, Dublin, CA 94568

Dear Messrs. Lemoine and Ness:

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

SITE INVESTIGATION AND CLEANUP SUMMARY

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

- up to 1,500ppm TPH as gasoline and 14 ppm benzene exists in soil beneath the site; and,

- the onsite water supply well is not to be used as a source of drinking water unless approved by this Agency.

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

eva chu
Hazardous Materials Specialist

enlosures:

1. Case Closure Letter
2. Case Closure Summary

c: Dennis Carrington, City of Dublin, P.O. Box 2340, Dublin, CA 94568
files (lemoine15)

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REMEDIAL ACTION COMPLETION CERTIFICATION

StID 3730 - 6085 Scarlett Court, Dublin, CA
(3-1K gallon gasoline tanks removed on June 11, 1990)

August 25, 1998

Mr. Charles Lemoine
1367 52nd Ave
Oakland, CA 94601

Mr. Arlan Ness
16520 E 14th Street
San Leandro, CA 94506

Dear Messrs. Lemoine and Ness:

This letter confirms the completion of site investigation and remedial 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, no further action related to the underground tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, Section 2721(e) of the California Code of Regulations.

Please contact our office if you have any questions regarding this matter.

Sincerely,

Mee Ling Tung, Director

cc: Richard Pantages, Chief of Division of Environmental Protection
Chuck Headlee, RWQCB
Dave Deaner, SWRCB
William McCammon, Alameda Co Fire Dept, QIC Code 41401
files-ec (lemoine14)

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: August 7, 1998

Agency name: **Alameda County-HazMat** Address: **1131 Harbor Bay Pkwy**
City/State/Zip: **Alameda, CA 94502** Phone: **(510) 567-6700**
Responsible staff person: **Eva Chu** Title: **Hazardous Materials Spec.**

II. CASE INFORMATION

Site facility name: **Charles Lemoine Property**
Site facility address: **6085 Scarlett Ct, Dublin, CA 94568**
RB LUSTIS Case No: **N/A** Local Case No./LOP Case No.: **3730**
URF filing date: SWEEPS No: **N/A**

Responsible Parties:	Addresses:	Phone Numbers:
1. Charles Lemoine	1367 52nd Ave Oakland, CA 94601	
2. Arlan Ness	16520 E. 14th St. San Leandro, CA 94506	510/276-3395

Tank No:	Size in gal.:	Contents:	Closed in-place or removed?:	Date:
1	1,000	Gasoline	Removed	6/11/90
2	1,000	"	"	"
3	1,000	"	"	"

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Leaking UST**
Site characterization complete? **YES**
Date approved by oversight agency: **3/21/97**
Monitoring Wells installed? **Yes** Number: **2**
Proper screened interval? **Yes, groundwater appears to be under semi-confined conditions**
Highest GW depth below ground surface: **4.30'** Lowest depth: **6.61' in MW-1R**
Flow direction: **SSW, based on data from an contiguous property (at former Scotsman Corp, 6055 Scarlett Ct)**
Most sensitive current use: **Commercial/light industrial**
Are drinking water wells affected? **No, site will use the public water supply for drinking water**
Aquifer name: **Dublin Subbasin**
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(s) filed? **Alameda County, 1131 Harbor Bay Pkwy, Alameda, CA 94502**

Treatment and Disposal of Affected Material:

Material	Amount (include units)	Action (Treatment or Disposal w/destination)	Date
Tank & Piping	**3 USTs**	**Disposed by Erickson, in Richmond**	**6/11/90**
Soil	**~1,150 cy**	**Aerated and reused to fill pit**	
Groundwater	**~150,000 gal.**	**Pumped into sanitary sewer**	**Nov-Dec 1994**

Maximum Documented Contaminant Concentrations - - Before and After Cleanup

Contaminant	Soil (ppm)		Water (ppb)	
	Before[1]	After[2]	Before[3]	After[4]
TPH (Gas)	**290**	**1,500**	**65,000**	**340**
TPH (Diesel)	**NA**	**590[5]**	**10,000[5]**	**ND**
Benzene	**4**	**14**	**6,500**	**35[6]**
Toluene	**20**	**64**	**9,100**	**ND**
Ethylbenzene	**4.6**	**34**	**1,700**	**ND**
Xylenes	**23**	**170**	**5,800**	**ND**
MTBE	**NA**	**NA**	**NA**	**ND[6]**

Other

NOTE: 1 soil sample collected at time of tank removal, 6/90
2 confirmatory sidewall soil samples collected @ 15' bgs after overexcavation, 7/94
3 grab water from excavation pit, 7/94
4 most recent groundwater sample from well MW-1R, 12/96
5 sample from geoprobe GP-2, 1/95
6 most recent sampling event from well MW-1R, 7/98; MTBE analysis with Method 8260

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**
Monitoring wells Decommissioned: **Yes**
Number Decommissioned: **2** Number Retained: **0 (an irrigation well exists and will be used for irrigation and to flush toilets**
List enforcement actions taken:
List enforcement actions rescinded:

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: **Eva Chu** Title: **Haz Mat Specialist**

Signature: [signature] Date: 6/15/98

Reviewed by

Name: **Madhulla Logan** Title: **Haz Mat Specialist**

Signature: Madhulla Logan Date: 6/8/98

Name: **Thomas Peacock** Title: **Supervisor**

Signature: Thomas Peacock Date: 6-15-98

VI. RWQCB NOTIFICATION

Date Submitted to RB: 6/17/98 RB Response: 8/18/98

RWQCB Staff Name: **Chuck Headlee** Title: **AEG**

Signature: Chuck Headlee Date: 8/18/98

VII. ADDITIONAL COMMENTS, DATA, ETC.

The site is located in an industrial/commercial setting and is currently vacant. It is scheduled for the development of a warehouse for motorcycle parts. The site was formerly used for storage of rock, sand, and concrete. The site is bound by Dublin Blvd. to the north, Chabot Canal to the west, a vacant property (formerly Scotsman Corp) to the south, and a fenced storage facility to the east. (See Fig 1)

Three 1,000-gallon gasoline USTs were removed on June 11, 1990. Numerous small holes were noted in all three USTs. A thin layer of product was observed floating on the surface of the water. Soil samples were collected at ~2' below each tank bottom (1A, 2A, 3A, and 3B). A trench was dug in the bottom center of the excavation and water was allowed to collect within the trench. A grab water sample (4A) was then collected. All samples were analyzed for TPHg and BTEX. Elevated hydrocarbons were noted in all samples (see Fig 2, 3, and Table 1). The pit was left open until 1994 when the overexcavation activities commenced and groundwater was pumped from the pit.

A groundwater monitoring well (MW-1) was installed ~10' southwest of the excavation in March 1993. Soil samples were collected at 5' and 10' bgs from the boring. First encountered groundwater was at ~10.5' bgs and stabilized at ~3.5' bgs. The aquifer appears to be under semi-confined conditions. A water sample was collected from the monitoring well and from an onsite water supply well, located ~120' southeast of the tank excavation (See Fig 4, and Boring/Well Log). The soil samples did not identify significant levels of TPHg or BTEX. However, the water sample from well MW-1 contained 64,000 ppb TPHg, 25,000ppb, 8,000ppb, 1,600ppb and 4,900ppb BTEX, respectively. The water sample from the production well was ND for the above constituents. (See Table 2 and 3)

In May to June 1994 soil samples, soil-gas samples and groundwater samples were collected at various locations, to further delineate the extent of soil and groundwater contamination. Soil gas samples were collected from boring SG-1 through SG-8 at ~4'bgs. After the gas samples were collected, each boring was advanced to 7'bgs to collect grab water samples. However, groundwater was only collected from SG-1 and SG-4. Attempts at collecting water from the other locations were not successful. Later, hand-augered borings (HA-1 through HA-5) were advanced and soil samples were collected at 2.5' and 5' bgs. Hand-augered borings were also advanced to ~10' bgs at locations where groundwater samples could not be collected during the soil-gas/groundwater survey. Sufficient water was collected from boring SG-7 and SG-8. BTEX compounds were not detected in the soil-gas samples, the hand-augered soil samples, or the grab water samples. Based on the data collected from this assessment, it appears hydrocarbon impacted soil and groundwater is localized near the tank excavation. (See Figs 5, 6, 7, and 8)

In July 1994 approximately 1,000 cy of impacted soil was excavated. The dimensions of the final excavation measured 60'x45'x20' deep. Excavation activities ceased due to the limitation of the equipment and the proximity of the building to the south and Chabot Canal to the west. The existing well MW-1 was destroyed during the excavation activities. Confirmatory sidewall soil samples were collected from the pit at ~16' bgs, just above the level of groundwater. A grab water sample was also collected from the standing water in the excavation. Laboratory analytical results of soil samples collected from the sidewalls of the final excavation indicated that residual hydrocarbon in soil was left in place, mainly in the capillary smear zone. The grab groundwater sample contained 6,500ppb benzene. (See Fig 9)

During overexcavation activities groundwater was not encountered until at a depth of 16' bgs. The water later stabilized at 8' bgs. As a remedial measure, a total of ~150,000 gallons of water was pumped from the pit into the sanitary sewer from November 11 to December 2, 1994. In January 1995 a direct push Geoprobe sampling system was used to collect soil and groundwater samples (from borings GP-1 through GP-4) to further delineate the extent of contamination. Analytical results indicate residual contamination is limited to a depth of ~15' bgs, at the capillary fringe or below groundwater level, and in the near vicinity of the edge of the excavation pit. At this time a replacement well MW-1R was also installed SSW and downgradient of the excavation. (See Figs 10, 11, 12, and Boring Logs)

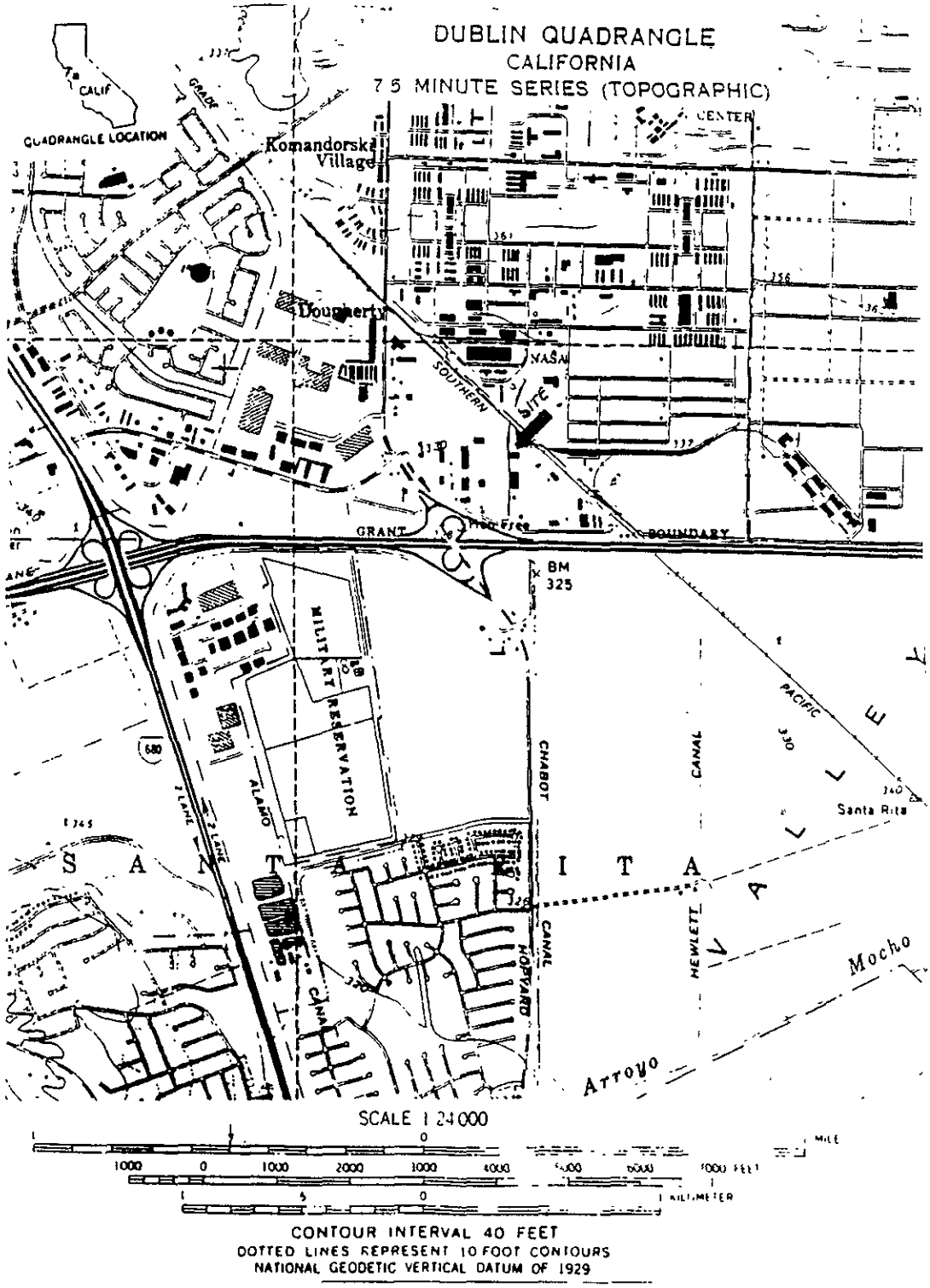
Computer modeling was conducted to evaluate the potential threat to the Chabot Canal from residual contamination in groundwater. A cleanup goal of 10ppb benzene was set for shallow groundwater for the site. Model AT123D was used for this evaluation. Benzene was used as the indicator chemical. A concentration of 0.022ppb benzene was calculated 25' downgradient of the source at a depth of 3' below the water table at simulated year 5 (see Table 4). This data indicate that the petroleum impacted groundwater left in place will not likely result in a significant impact to Chabot Canal. A risk analysis was also performed for the volatilization of benzene in soil to ambient air. Potential increase in cancer risk did not exceed $1x10^{-8}$. Volatilization of contaminants from soil to indoor air was not calculated. However, based on non-detect levels of BTEX in the soil-gas samples collected in 1994, it appears that volatilization of benzene from soil to indoor air would not pose a risk to human health either.

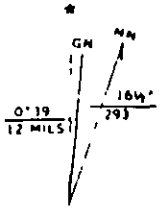
Groundwater from well MW-1R has been sampled thrice. In the last sampling event, July 1998, groundwater contained 35ppb benzene and did not contain TEX or MtBE (see Table 5). Source removal (USTs, 1,000cy of soil and 150,000 gallons of groundwater) was effective in removing contamination. The contaminant plume is localized and should naturally bioattenuate. Its potential impact to human health and the environment appears insignificant. The construction of a new building at the site will include a vapor barrier under a concrete slab to further reduce the potential for vapors to migrate into the building. Continued groundwater monitoring is not warranted.

The onsite water supply well was also sampled in July 1998. Up to 1.1ppb benzene and non-detect levels of TEX and MTBE were identified. The trace benzene concentration should not pose a risk to human health, provided that the well water is only used for irrigation and toilet flushing (which is proposed), and not used for ingestion. The building will be connected to a public water supply. The domestic well appears to be ~300 feet deep and is perforated at 285' to 292'bgs.

In summary, case closure is recommended because:

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





(not to scale)

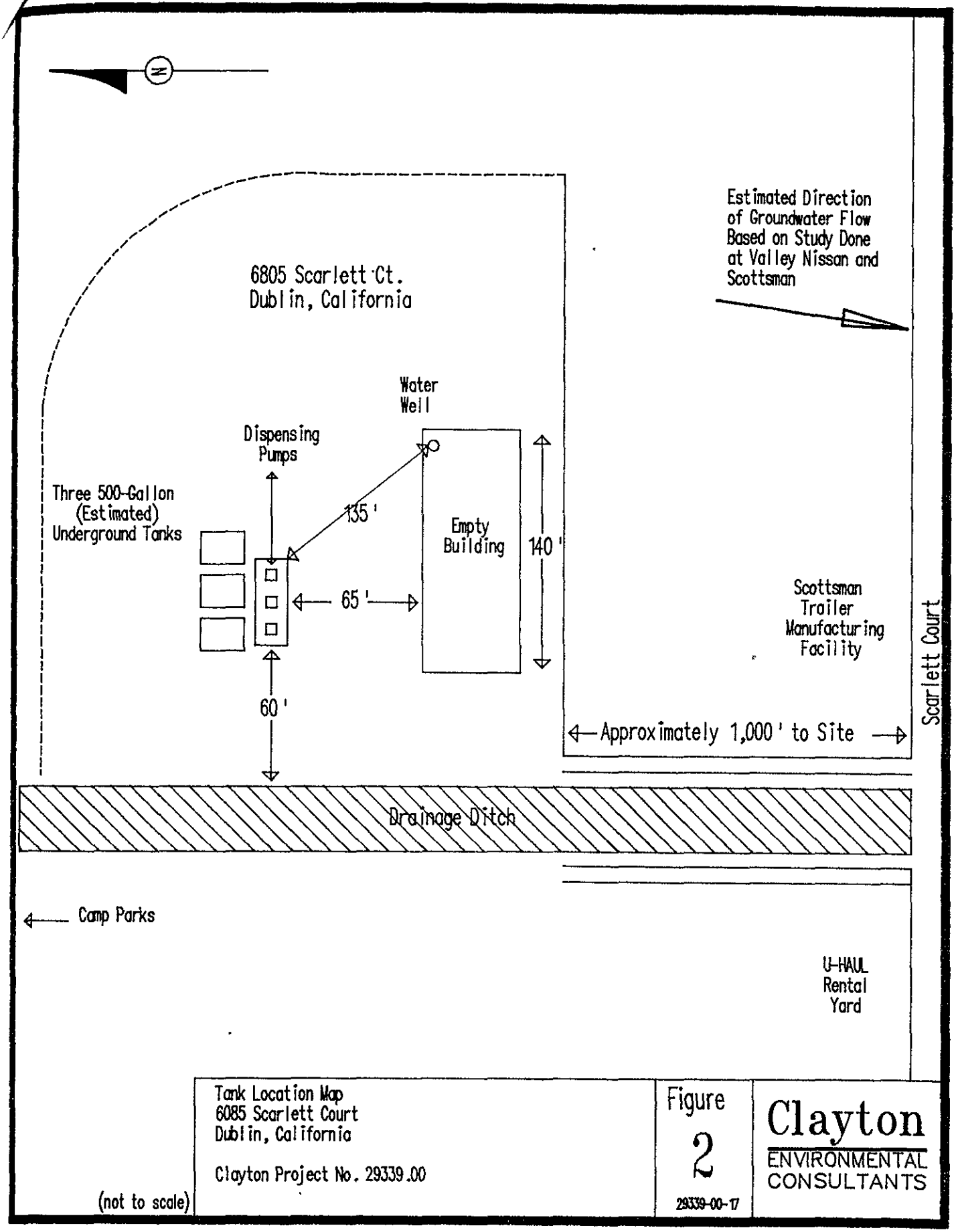
Site Location Map
6085 Scarlett Court
Dublin, California

Clayton Project No. 29339.00

Figure 1

29339-00-16

Clayton
ENVIRONMENTAL CONSULTANTS



Tank Location Map
6085 Scarlett Court
Dublin, California

Clayton Project No. 29339.00

(not to scale)

Figure
2
29339-00-17

Clayton
ENVIRONMENTAL
CONSULTANTS

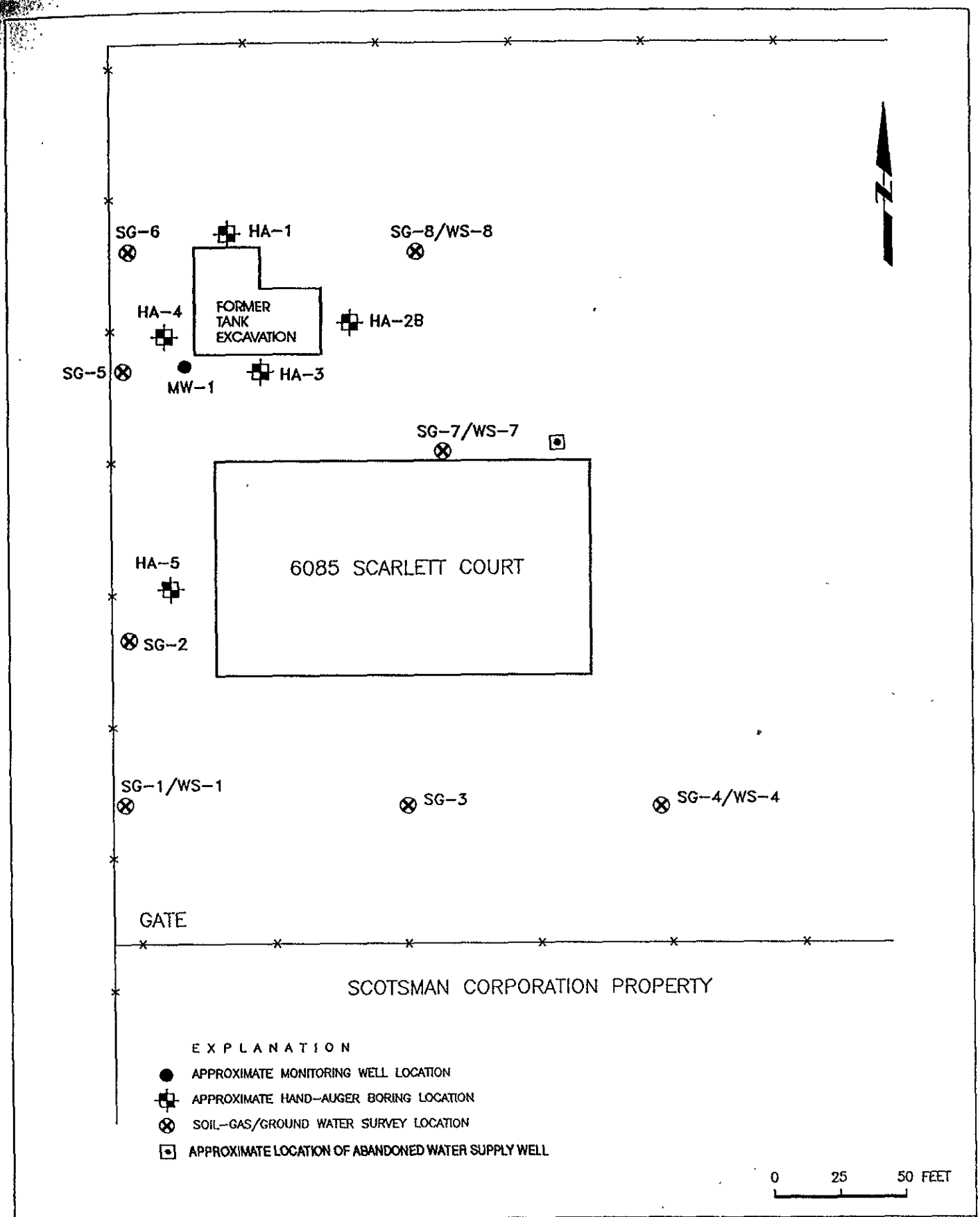


Figure 3 : SITE PLAN SHOWING INITIAL EXCAVATION BOUNDARIES, SOIL-GAS/GROUND-WATER, AND SOIL SAMPLING LOCATIONS

Project No. 3186
6085 Scarlett Court, Dublin, California

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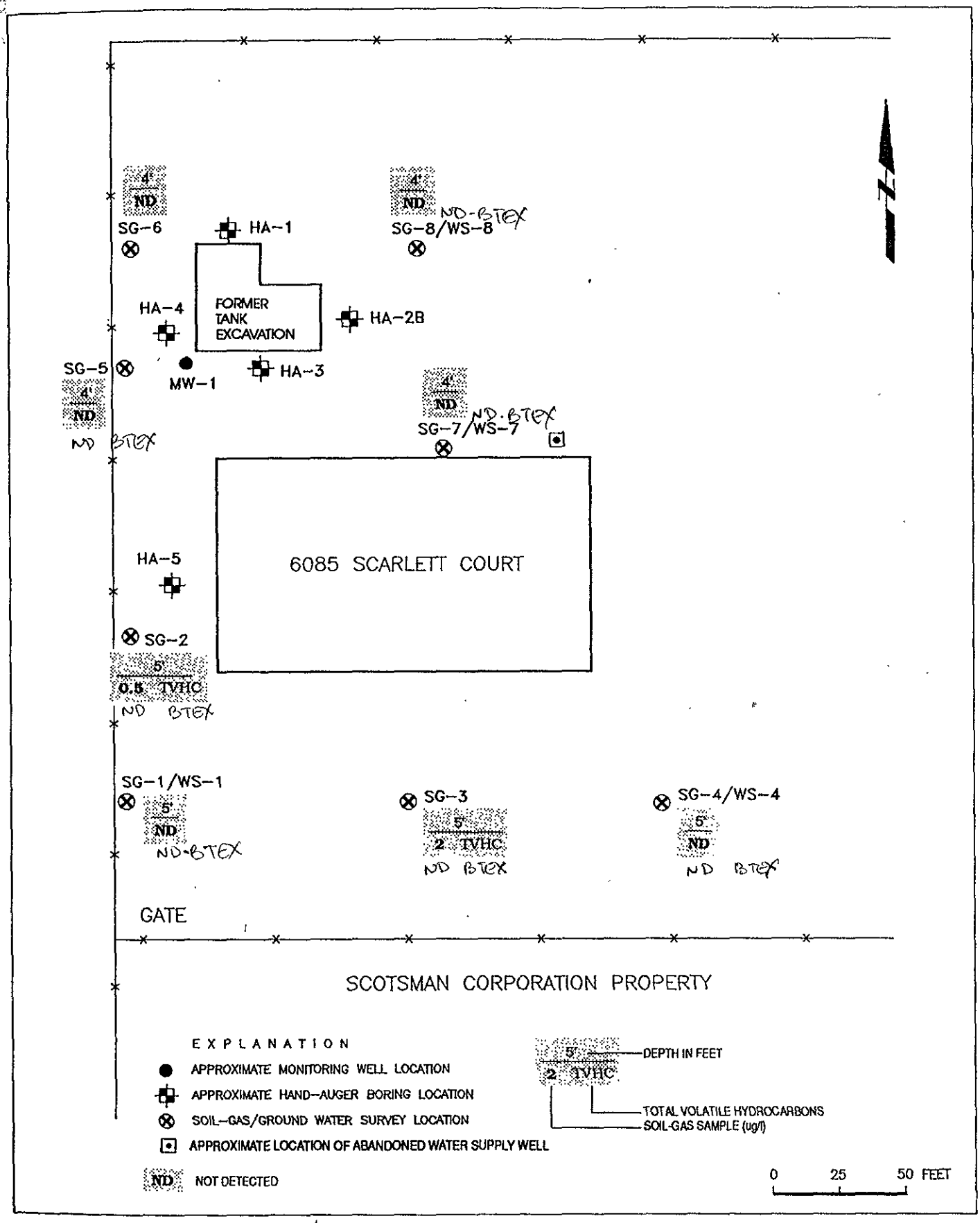

Figure 6: RESULTS OF SOIL-GAS ANALYSES, MAY 1994

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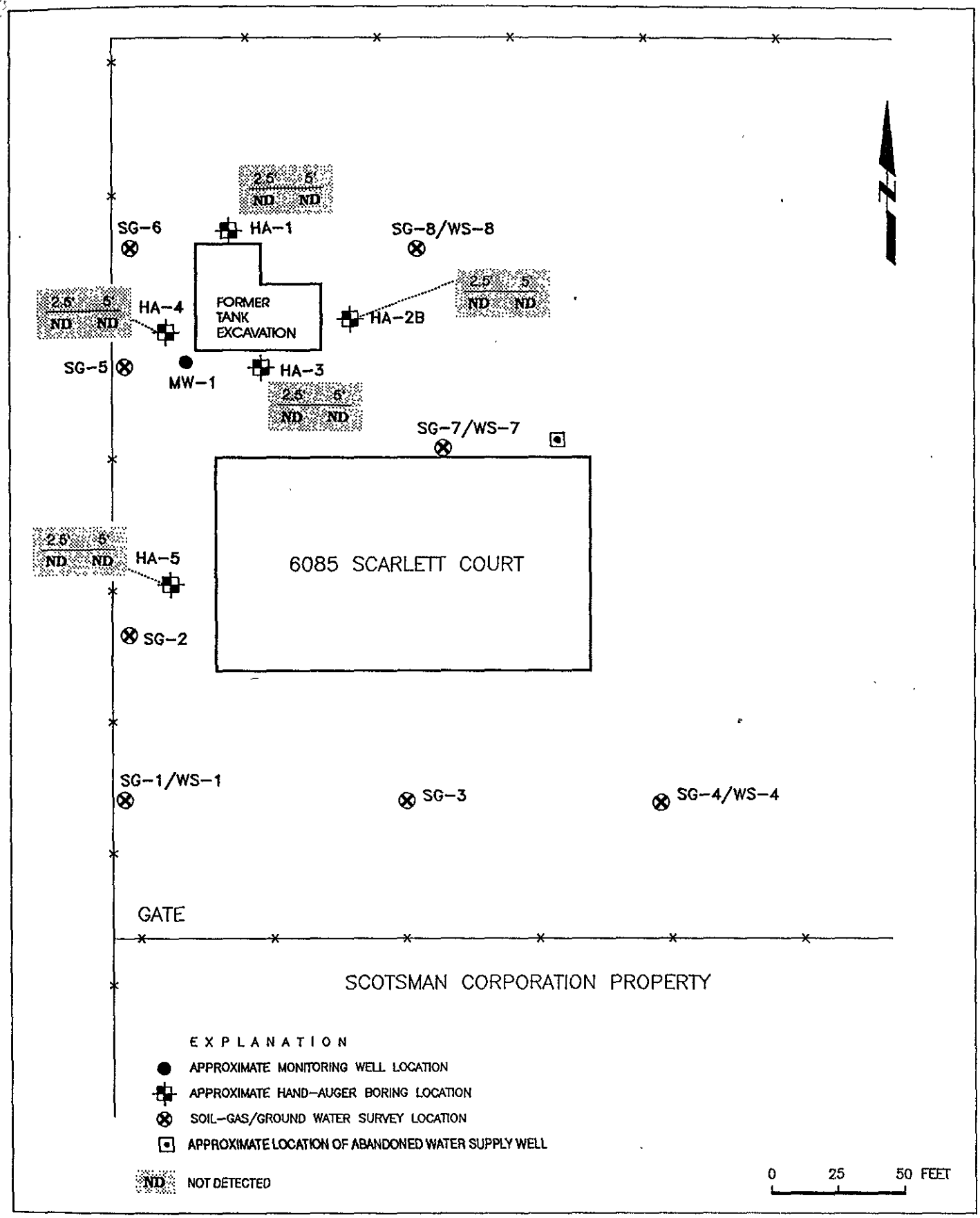

Figure 7: RESULTS OF ANALYSES FOR HAND-AUGER SOIL SAMPLES, MAY 1994

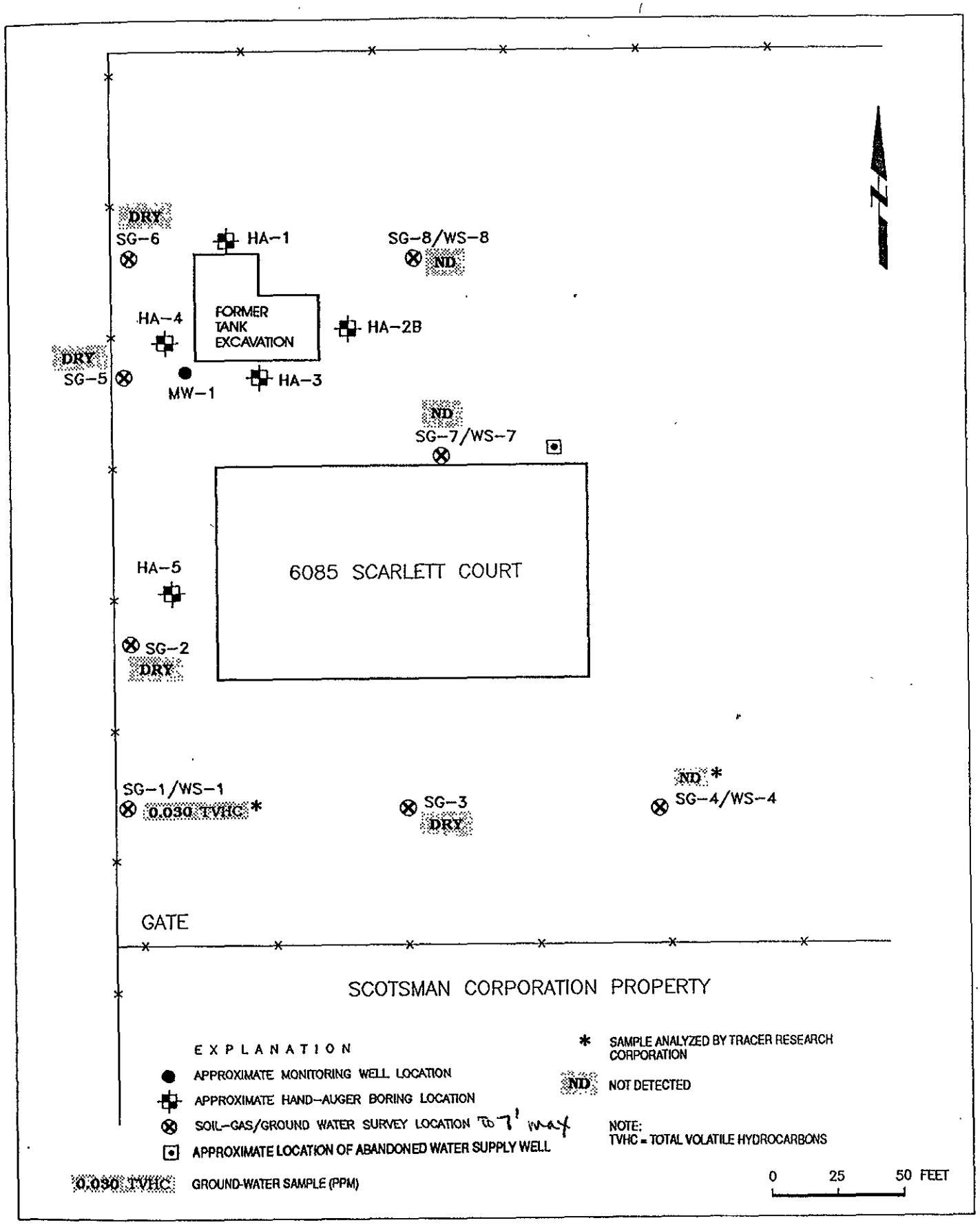

Figure 8: RESULTS OF GROUND-WATER ANALYSES, MAY 1994

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6085 Scarlett Court, Dublin, California
3186S001.MJB:JSC 062794

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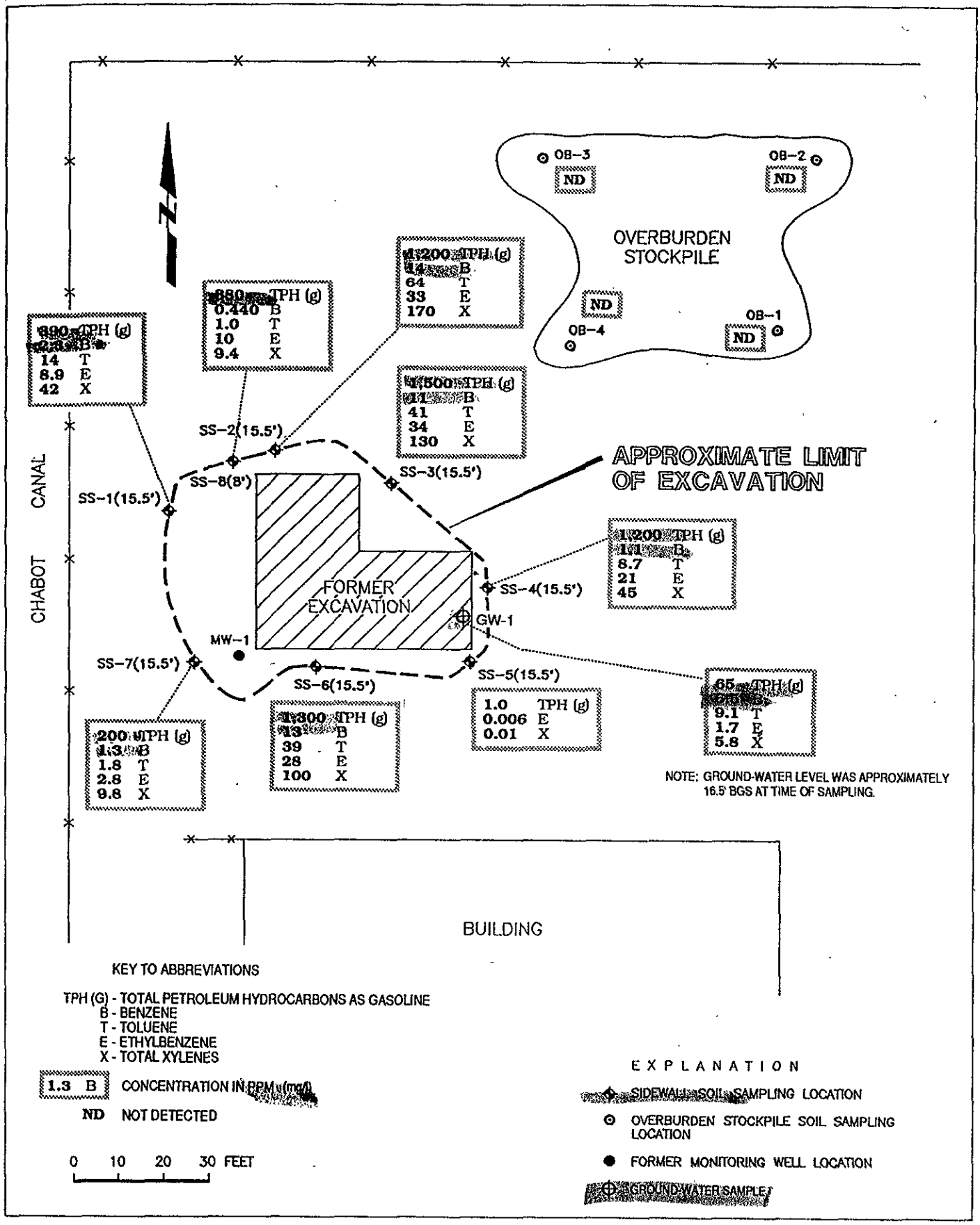

Figure #9: RESULTS OF SOIL AND GROUND-WATER SAMPLE CHEMICAL ANALYSES, JULY 1994

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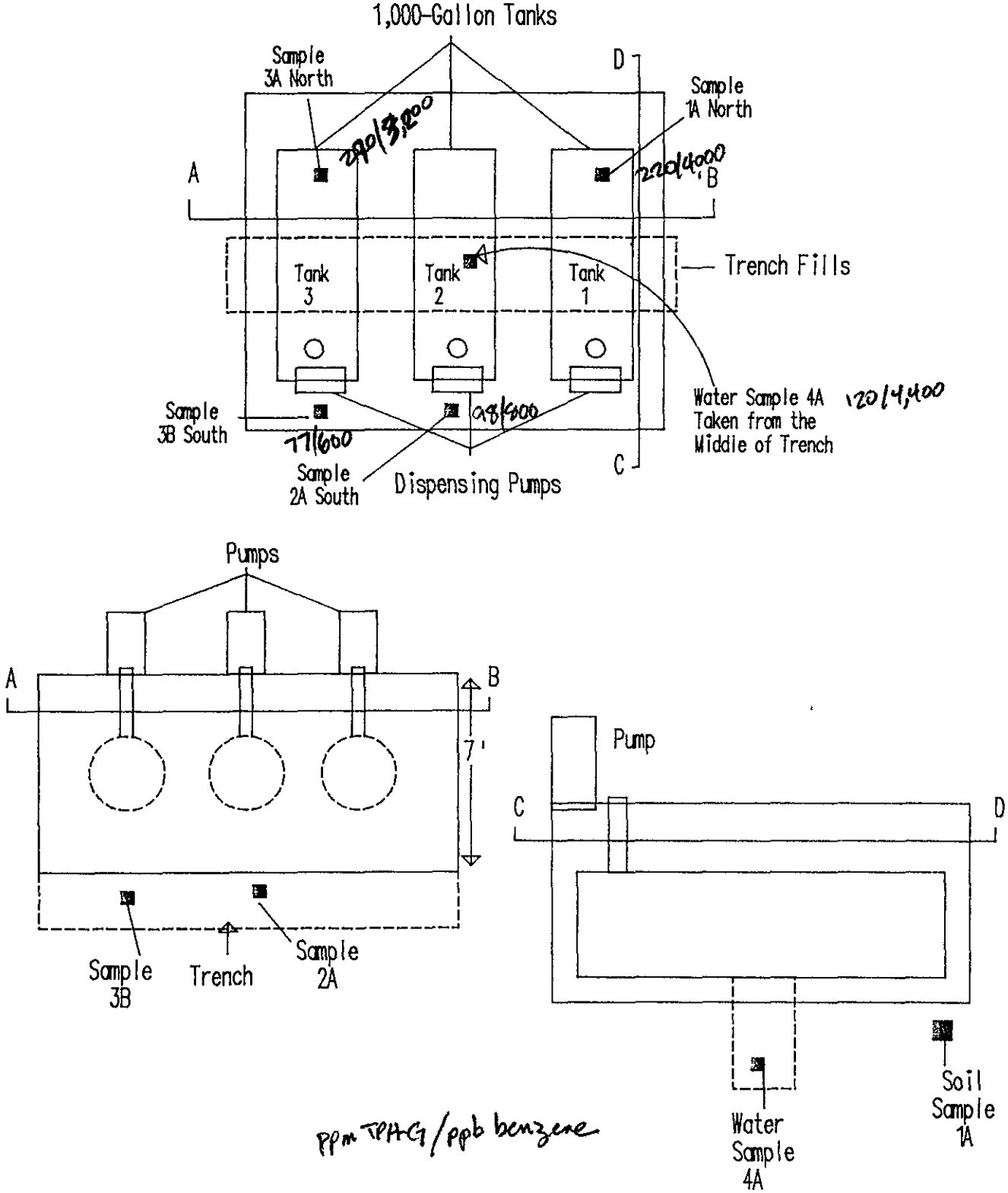
3186.10



Sample Location Map
6085 Scarlett Court
Dublin, California

Clayton Project No. 29339.00

(not to scale)

Figure 3

29339-00-18

Clayton ENVIRONMENTAL CONSULTANTS

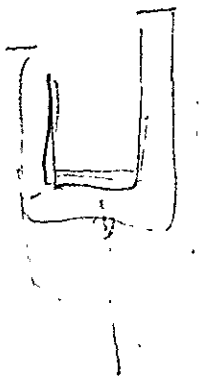
The samples were identified as described in the Clayton chain-of-custody. The samples were returned to Clayton's laboratory in Pleasanton, California, and analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and xylene (BTEX). Sample analyses results and chain-of-custody documentation are included in Attachment 1.

The analyses revealed that significant contamination remains in the excavation. Sample 3A north revealed 290 parts per million (ppm) TPH as gasoline and high levels of aromatic hydrocarbons (BTEX) as shown in Table 1 below.

TABLE 1

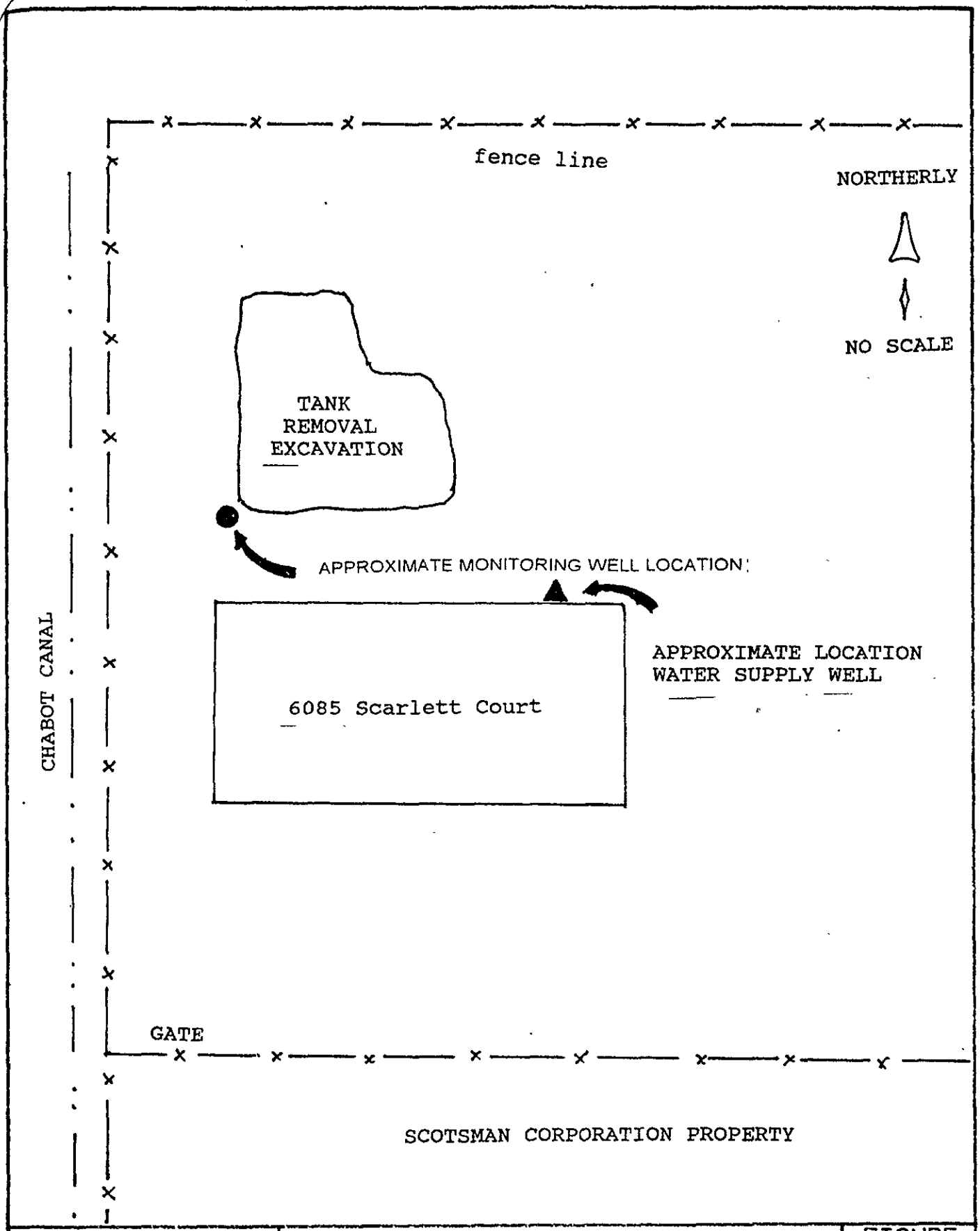
Sample Results

SAMPLE NUMBER	TPH as Gasoline (ppm)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylene (ppb)
1A North East Tank	220	4,000	20,000	3,500	15,000
2A South Middle Tank	98	800	1,800	2,000	11,000
3A North West Tank	290	3,200	11,000	4,600	23,000
3B South West Tank	77	600	ND	1,600	7,500
4A Water Sample	120	4,400	18,000	3,900	20,000



Based on analyses of the samples collected, it appears that additional excavation will be required. The excavated material can be aerated onsite (a permit may be required from the Bay Area Air Quality Management District).

Clayton recommends that contaminated water remaining in the excavation be pumped out and the excavation allowed to recharge until sampling reveals that the water is clean. The contaminated water removed from the hole should be disposed of as required by law. Borings may be required to determine the extent of the migration of the contamination. Borings may be converted to monitoring wells (to collect water samples) if analyses of soil samples from the boreholes reveals the presence of hydrocarbon contamination.



H2OGEOL
A GROUND WATER CONSULTANCY

PROPOSED MONITORING WELL LOCATION

6085 Scarlett Court
Dublin, California

FIGURE 2

ALCO HAZMAT H2OGEOL GROUNDWATER CONSULTANCY

93 DEC -6 PM 1:39

Jw
12/10/93

Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Care Services
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94821

November 30, 1993

RE: 6085 Scarlett Court, Dublin, California. Installation of one monitoring well in the downgradient direction.

Dear Ms. Chu;

This letter report transmits information collected through implementation of the work plan for the installation of one monitoring well at 6085 Scarlett Court, Dublin, California. The work plan was submitted to Alameda County Health Care Services, Hazardous Materials Division on June 25, 1992. Figure 1, taken from the work plan, shows the site location. Figure 2, also taken from the work plan, shows the approximate location of the monitoring well. All field procedures followed the work plan which is incorporated herein by reference.

The monitoring well was drilled under ZONE 7 WATER AGENCY Permit No.93106. Attachment A contains a copy of the drilling permit and the California Department of Water Resources Form 188 (No. 185641) for this well that was submitted to ZONE 7.

The borehole was drilled to a total depth of 21.5 feet. First encountered groundwater was at a depth of 10.5 feet, at a gray clay. Approximately static water was at a depth of 3.5 feet. Thus the aquifer is confined or semi-confined at this location. The borehole log is contained in Attachment B.

Soil samples were collected in the borehole for MW-1 at depths of 5-5.5 and 10-10.5 feet below ground surface. The soil samples were immediately placed in an ice chest at about 4 °C and submitted to ChromaLab, Inc., located in San Ramon, California under chain-of custody documentation. The following concentrations were reported:

Table 2.

	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1					
5-5.5 Feet	<1.0 mg/Kg	<5.0 µg/Kg	7.5 µg/Kg	<5.0 µg/Kg	<5.0 µg/Kg
10-10.5 Feet	17 mg/Kg	37 µg/Kg	<16 µg/Kg	210 µg/Kg	144 µg/Kg

Page 844-5454

P.O.Box 2165 • Livermore, California 94551 • 510-373-9211

The laboratory report and chain-of-custody documentation is contained in Attachment C.

The monitoring well was completed with screen extending from 5.5 feet below ground surface to 19.0 feet. Total well depth is 19.5 feet. A well completion diagram is included in Attachment B.

On March 12, 1993, the well was developed and purged through surging and pumping until a low turbidity water was withdrawn. Pumping continued following well development, periodically emptying the wellbore, until an additional 5.8 gallons total had been withdrawn. There were a total of 2.33 casing volumes purged from the well. The volume purged, specific conductance, temperature, and pH were as follows:

Time	Volume Purged	Specific Conductance	Temperature	pH
06:58	3.5 Gal	2,440 µS/cm	57.1 °F	6.83
07:03	4.0 Gal	2,260 µS/cm	56.0 °F	6.88
07:09	5.0 Gal	2,240 µS/cm	56.3 °F	6.89
07:14	5.3 Gal	2,200 µS/cm	56.1 °F	6.89
07:22	5.8 Gal	2,220 µS/cm	55.9 °F	6.91

The last field measurement sample and the sample for analysis utilized a Teflon™ bailer with a bottom emptying device. The sample was collected in a 40 mL VOA vial.

The water supply well was allowed to run until approximately 200 gallons had been pumped. A 40 mL VOA vial was then filled from the discharge spigot at the well head.

The groundwater samples were immediately placed in an ice chest at about 4 °C and submitted to ChromaLab, Inc., located in San Ramon, California under chain-of custody documentation. Analyses were performed for total petroleum hydrocarbons as gasoline (TPH-G) and the aromatic hydrocarbons benzene (B), toluene (T), ethylbenzene (E), and total xylene isomers (X), collectively known as BTEX.

Table 2

	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes
03/12/93 MW-1	64,000	25,000	8,000	1,600	4,900
Production Well	<50	<0.5	<0.5	<0.5	<0.5

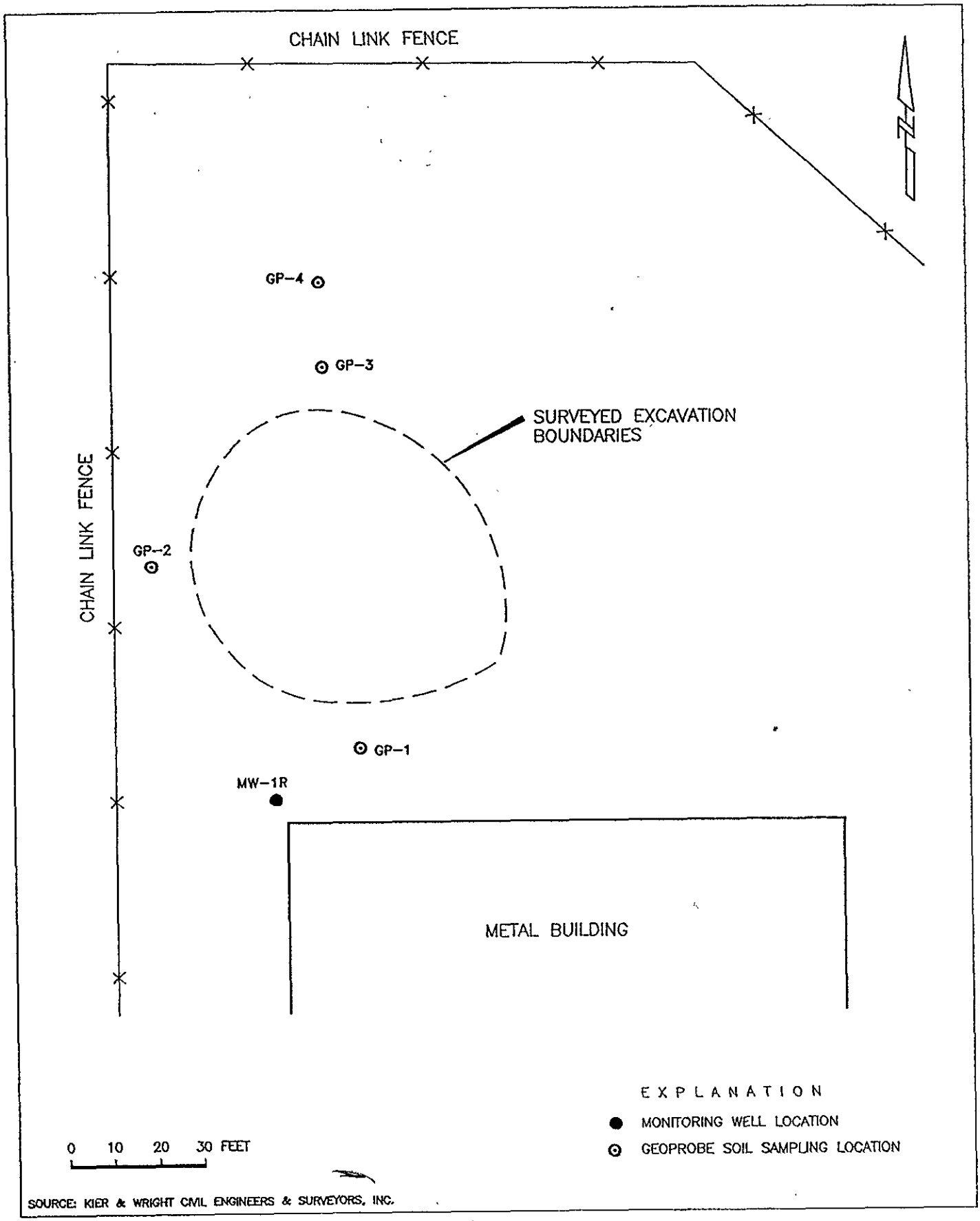


Figure 10: SITE PLAN

Project No. 3186.95
6085 Scarlett Court, Dublin

3186BASE.MJB:JSC 022295

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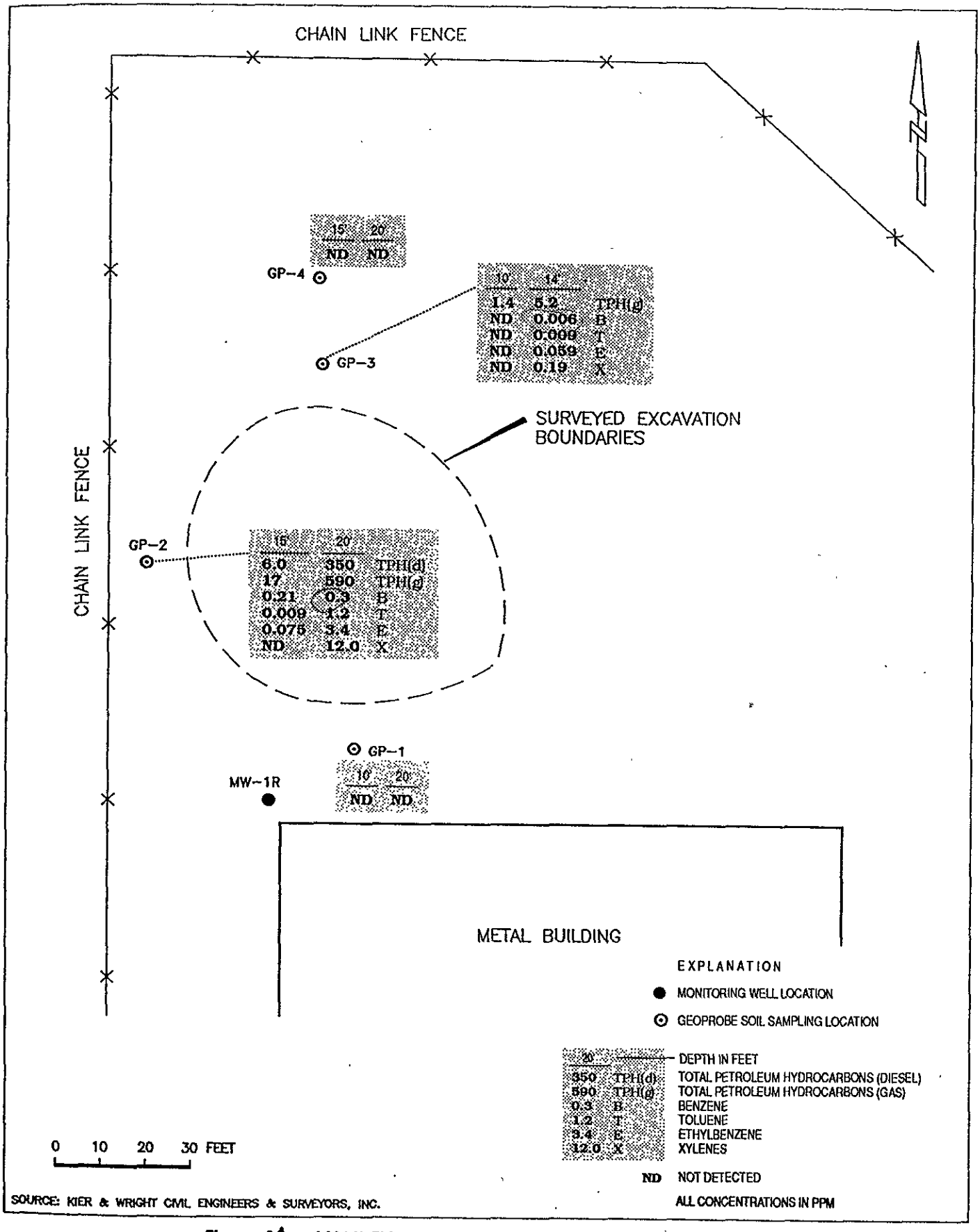

Figure 1 : ANALYTICAL RESULTS FOR GEOPROBE SOIL SAMPLES JANUARY 25, 1995

Project No. 3186.95
6085 Scarlett Court, Dublin

3186BASE.MJB:JSC 022295

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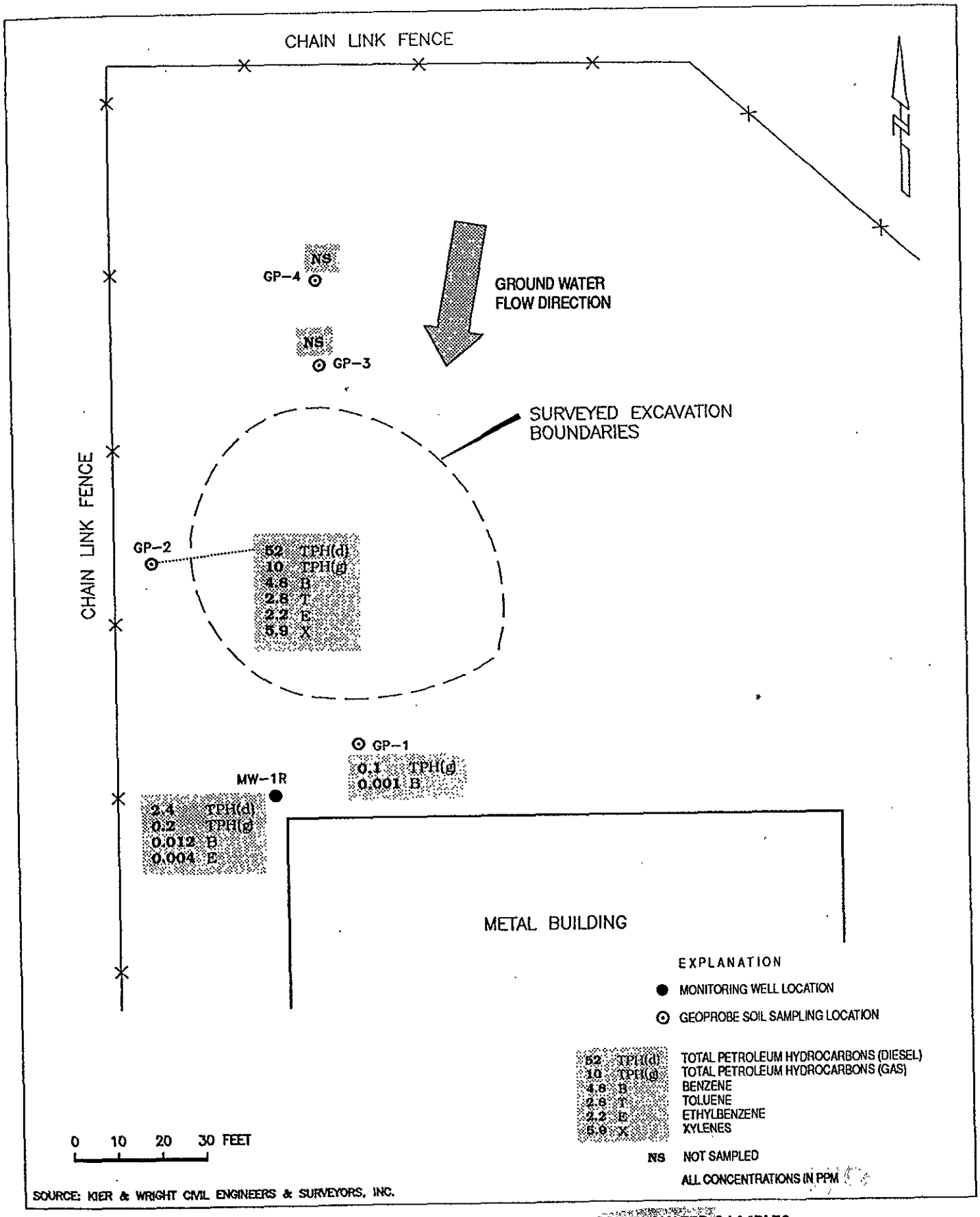

Figure 12 : ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES JANUARY 25 AND FEBRUARY 1, 1995

Project No. 3186.95
6085 Scarlett Court, Dublin

3186BASE.MJB:JSC 022295

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26-foot point was simulated to represent ground-water quality at monitoring well 1R, located approximately 26 feet downgradient from the remedial excavation boundary. At each of these distances, concentrations of benzene were calculated at 3, 10 and 20 feet below the surface of the water table.

Simulated concentrations of benzene over time are summarized in the following table. Output files for the AT123D simulation are included in Appendix A.

TABLE 4: Simulated Concentrations of Benzene in Shallow Ground Water (ppm) (1)

Time (yr.)	Distance Downgradient from Edge of Source Area (ft)			
	0	13	26(2)	40
0.2	3.93	0	0	0
0.5	1.82	0.000043	0	0
1	0.91	0.00275	0	0
2	0.59	0.012	8.9×10^{-6}	0
3	0.13	0.012	8.8×10^{-5}	3.4×10^{-8}
4	0.05	0.008	0.00019	5.4×10^{-7}
5	0.02	0.005	0.00022	1.9×10^{-6}
8	0.002	0.0007	9.1 x 10-5	4.6×10^{-6}

Notes:

(1) These concentrations represent the simulated concentration of benzene at a depth of 3 feet below the surface of the water table.

(2) This distance away from the source area was simulated to represent the location of monitoring well MW-1R.

In general and as expected, simulated concentrations of benzene decreased away from the source area, and decreased with depth below the water table surface. A peak concentration of benzene of 0.22 ppb was calculated 25 feet downgradient from the source area, at a depth of 3 feet below the water table at simulated year 5. These modeling data indicate that the petroleum-affected soil left in place at the Site likely will not result in concentrations of benzene in shallow ground water at MW-1R greater than the regulatory cleanup goal of 10 ppb.

4.0 SUMMARY AND CONCLUSIONS

An HRA was conducted to quantitatively evaluate the risk associated with petroleum-affected soil left at the Site. The HRA consisted of calculating the carcinogenic and non-carcinogenic human heath risk associated with inhalation of vapors in ambient air that could potentially migrate from petroleum-affected soil underlying the Site. Using the methods and procedures provided in ASTM 1994 and EPA 1989, an individual excess

Table 1: Groundwater Elevations, Well MW-1R

Well Number	Date of Water Level Measurement	Top of Casing Elevation*	Depth to Water in Feet	Ground Water Elevation*
MW-1R	9/10/96 12/19/96 7/6/98	330.01	6.61 4.30 4.80	323.40 325.71 325.21

* In feet above mean sea level.

Table 2: 1996 Groundwater Sample Analytical Results (EPA Method 8020)

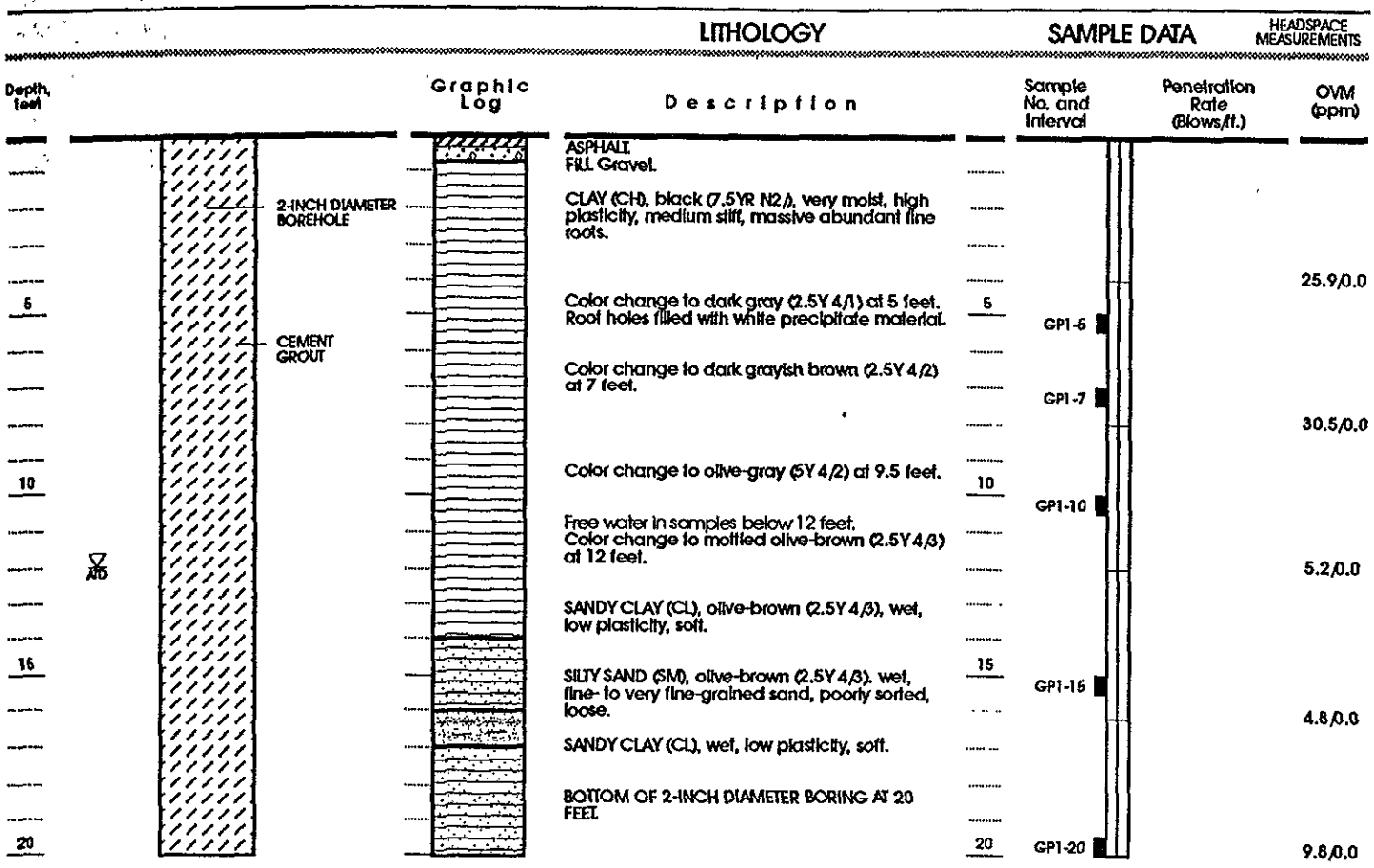
Well	Date	TPH-g	TPH-d	TPH-mo	B	T	E	X	MTBE
		mg/L							
MW-1R	09/10/96 12/19/96	0.081 0.340	ND ND	ND ND	0.0012 ND	ND ND	ND ND	ND ND	---- 0.110

ND = Not Detected.
---- = Not Analyzed.
TPH-d = TPH as diesel
TPH-mo = TPH as motor oil

Table 3: July 1998 Groundwater Sample Analytical Results (EPA Method 8260)

Well	Date	B	T	E	X	MTBE
		mg/L				
MW-1R	7/6/98	0.035	ND	0.00074	ND	ND
Domestic Well		0.0011	ND	ND	ND	ND

ND = Not Detected



EXPLANATION

Clay

Silt

Sand

Gravel

Interval sampled using Geoprobe Sampler

Sample collected for possible analysis

AfD Depth first water was encountered in borehole

OVM 25.9/0.0 = Sample/Ambient

Date boring drilled: January 25, 1995
Drilling Company: Vironex
Driller: Todd
Sampling method: Continuous Core - Geoprobe
Geologist: Michael Bombard

Approved by:

Figure : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GP-1

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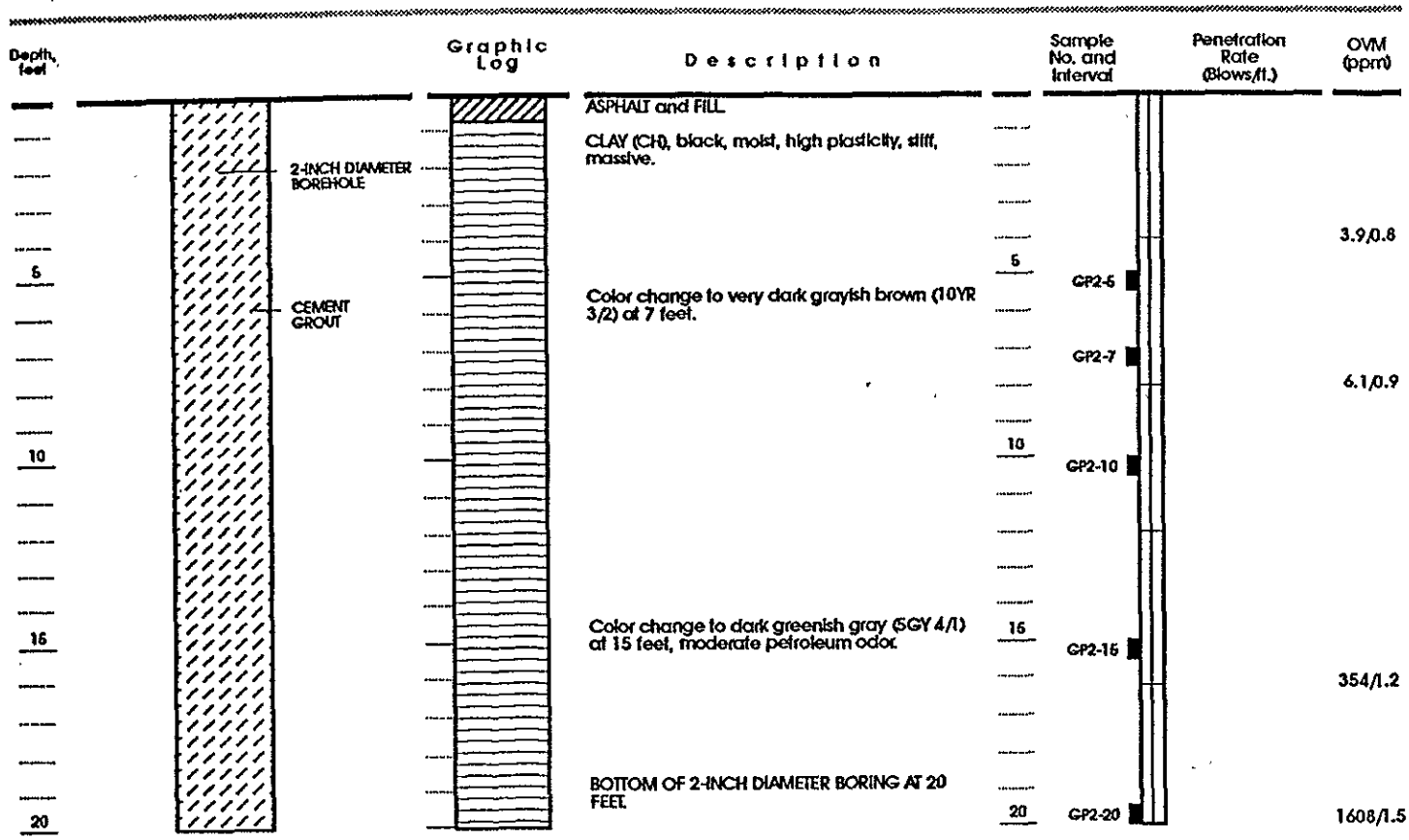

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Geoprobe Sampler

Sample collected for possible analysis

OVM 3.9/0.8 = Sample/Ambient

Date boring drilled: January 25, 1995
Drilling Company: Vironex
Driller: Todd
Sampling method: Continuous Core - Geoprobe
Geologist: Michael Bombard

Approved by:

Figure : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GP-2

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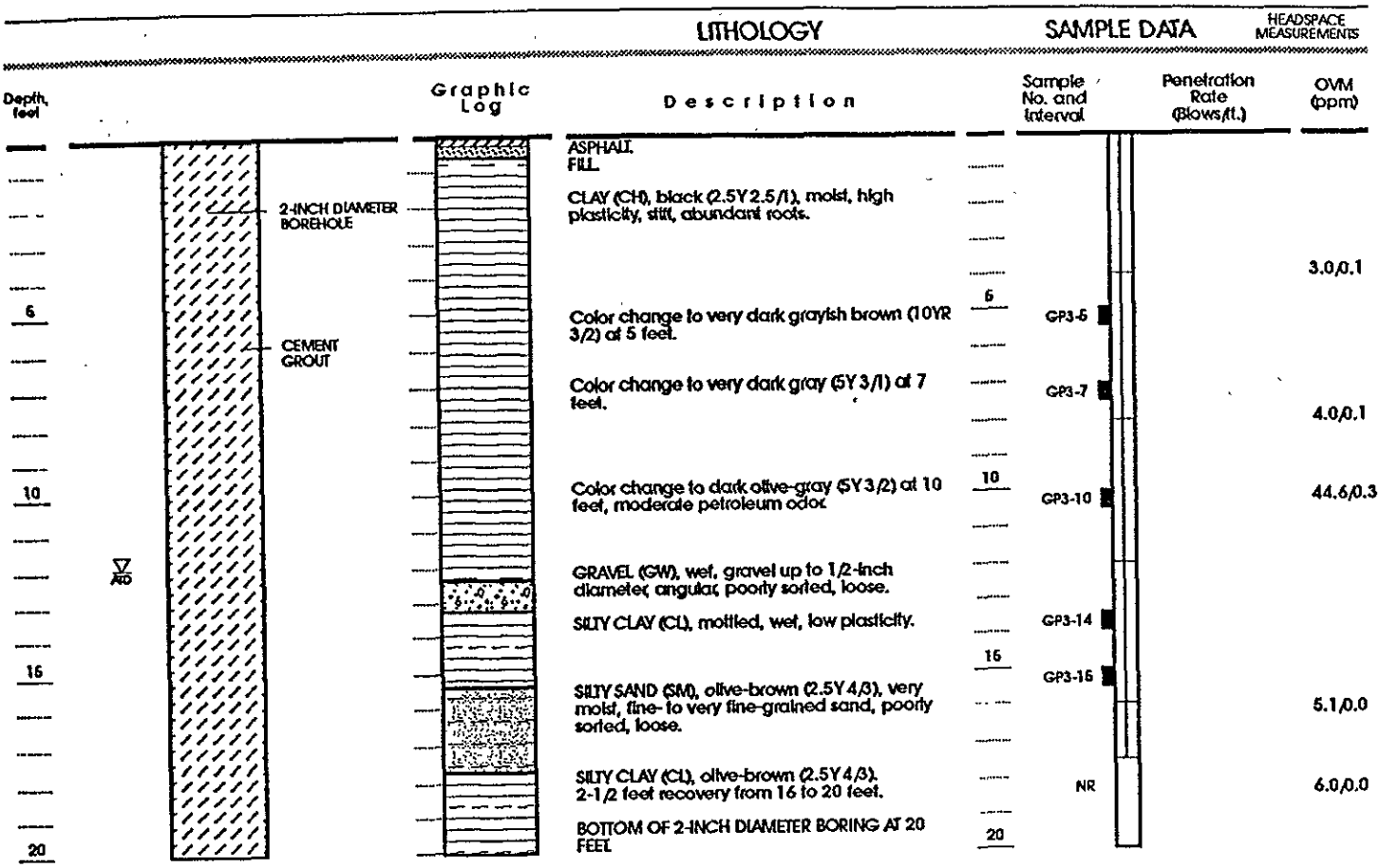
3186.95-10.MJB:JSC 072196 GP-2



Date boring drilled: January 25, 1995
Drilling Company: Vironex
Driller: Todd
Sampling method: Continuous Core - Geoprobe
Geologist: Michael Bombard

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Interval sampled using Geoprobe Sampler
- Sample collected for possible analysis
- AtD — Depth first water was encountered in borehole
- NR — No Recovery
- OVM 3.0/0.1 = Sample/Ambient

Approved by:

Figure : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GP-3

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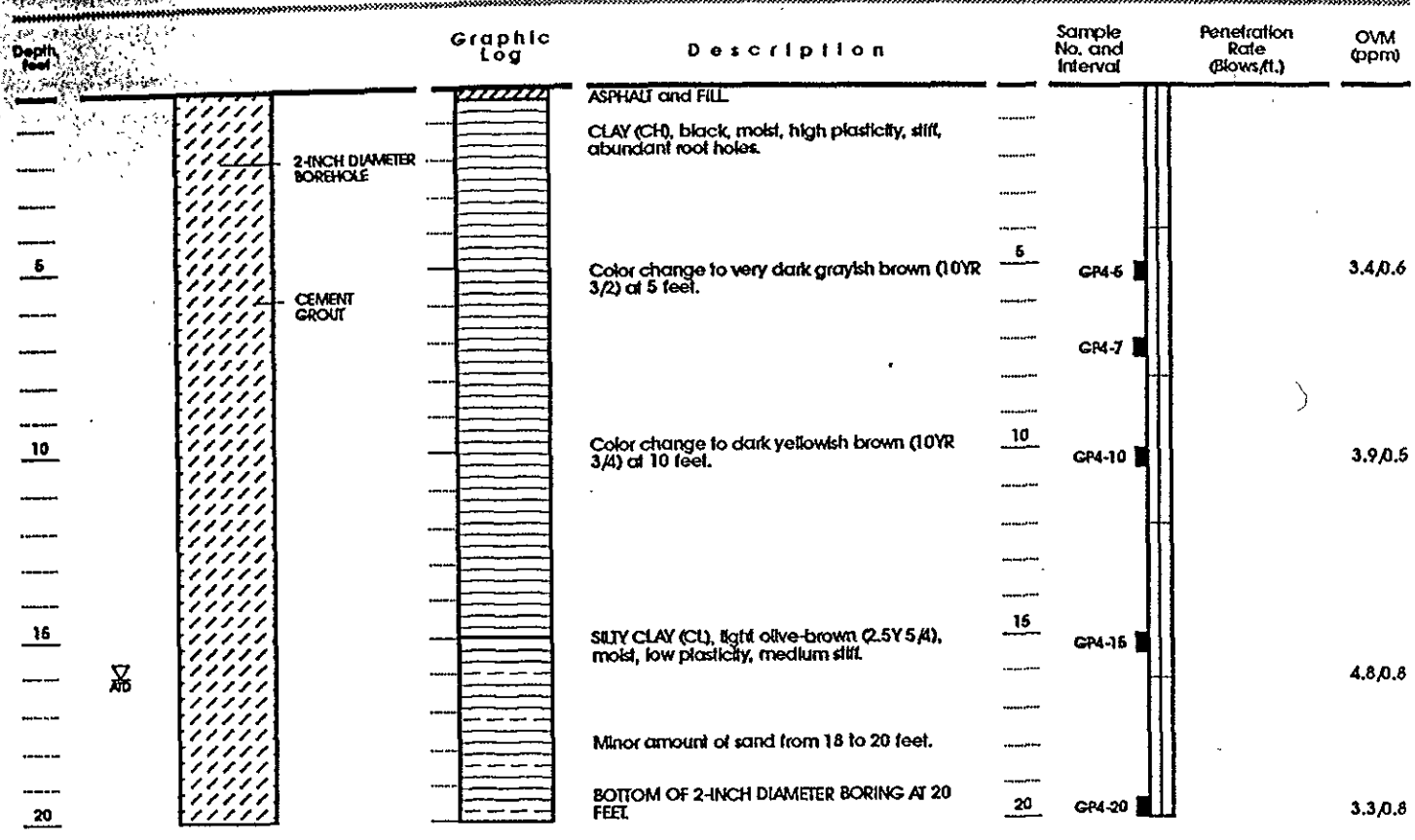
3186.96-10.MJB:JSC 072196 GP-3



Date boring drilled: January 25, 1995
Drilling Company: Vironex
Driller: Todd
Sampling method: Continuous Core - Geoprobe
Geologist: Michael Bombard

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

Interval sampled using Geoprobe Sampler

Sample collected for possible analysis

AD Depth first water was encountered in borehole

OVM 3.4/0.6 = Sample/Ambient

Approved by:

Figure : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GP-4

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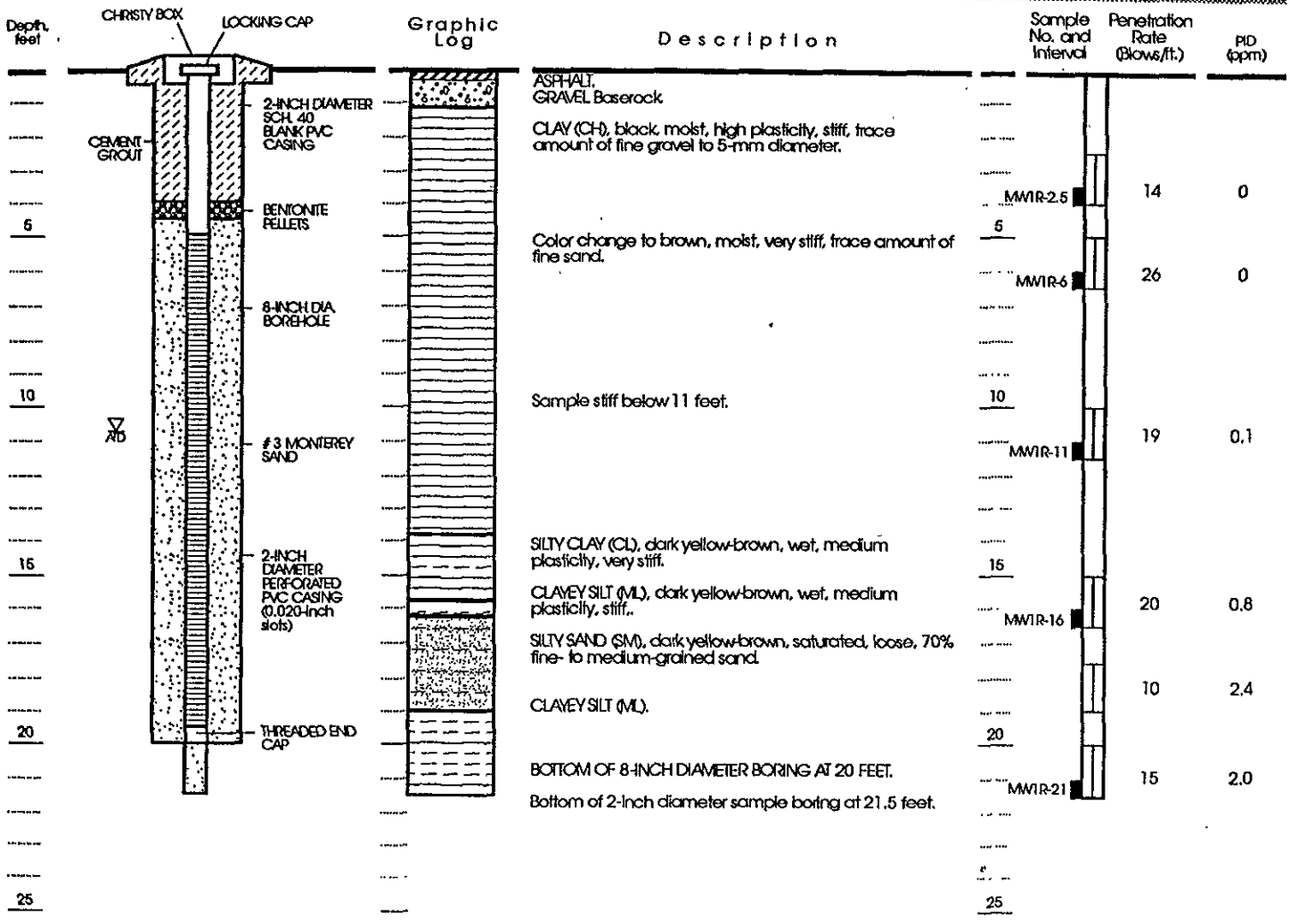
3186.95-10.MJB:JSC 072195 GP-4



Permit No.: 95037
Drilling method: Hollow Stem Auger
Date well drilled: January 30, 1995
Date water level measured: February 1, 1995
Drilling company: Gregg Drilling
LF Geologist: Robin Barber

Approved by:

EXPLANATION

- Clay
- Silt
- Sand
- Gravel
- Modified California Sampler
- Sample retained for chemical analysis
- ATD — Depth first water was encountered in borehole

Figure : WELL CONSTRUCTION AND LITHOLOGY FOR WELL MW-1R

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3086.95-10.MJB:JSC 072195 MW1R

H2OGEOL
A GROUNDWATER CONSULTANCY

BOREHOLE LITHOLOGIC LOG

BOREHOLE No. MW-1 Sheet 1 of 2

Project No. _____ Date 03/10/93
Client Charles Le Maire
Location 6085 Scarlett Ctr, Dublin
Logged by RCV Driller Sam

Drilling Co. Frontier Services Drill Model B-57
Drilling Method Hollow-Stem Borehole Diameter 8 inch
Ground Surface Elevation _____ Datum _____
Borehole _____ completed as monitoring well: Well No. 1

Water Level	10.5' bgs	3.5' bgs	4.10 (PVC casing)
Time	9:[illegible]	11:41	6:47
Date	03/10/93	03/10/93	03/12/93

SAMPLING BLOW COUNTS	PID/FID HNu/OVA Reading	DEPTH feet	SAMPLE	Soil Sample Number	GRAPHIC SOIL SYMBOL	USCS SOIL SYMBOL	Field Soil Description	Time
							0 - 0.25' Asphalt	
		1					0.25' - 1.0' Gravel Base	
std. 4			X				Very dark gray clay (2.5YR N3/), stiff, moist, no odor, No reaction with HCl, roots present	
std. 7		2	X					
std. 9			X					
std. 6		3	X			CL		
std. 6			X					
std 9		4	X					
		5						
mod 8			X				Gray clay (10YR 5/1), stiff, moist, no odor, no reaction w/ HCl.	
mod 8		6	X					
mod. 12			X					
		7				CL	Dark gray clay (10 YR 4/1), stiff, moist, no odor, no reaction w/ HCl	
		8						
		9						
		10						
mod. 4			X					
mod. 8		11	X			CL	Gray clay (10YR 5/1) stiff, moist to wet, slight petroleum odor, no reacts. w/ HCl	
mod. 10			X					
		12				ML	3" layer of yellowish brown sand (10YR 5/4), med to coarse, poorly graded, petroleum odor.	
		13					Dark greyish brown silt (2.5 YR 4/2), moist, very slight petroleum odor, no reaction w/ HCl	
		14						
		15						

H2OGEO A GROUNDWATER CONSULTANCY — BOREHOLE LITHOLOGIC LOG

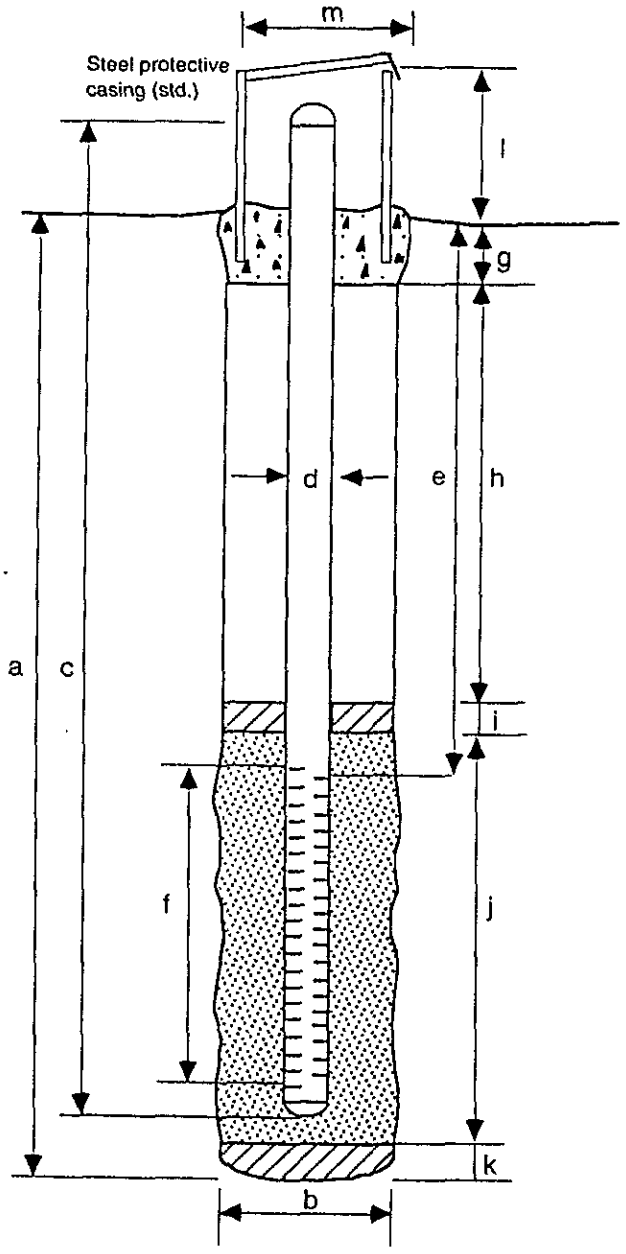
BOREHOLE No. MW-1 Sheet 2 of 2

SAMPLING BLOW COUNTS	PID/FID HNu/OVA reading	DEPTH feet	SAMPLE	Soil Sample Number	GRAPHIC SOIL SYMBOL	USCS SOIL SYMBOL	Field Soil Description	T
3			X				Grey Silty Sand (7.5 YR N4/), predominantly	
3		16	X			SP	fine sands which are subrounded,	
5			X				about 25% silty fines with low dry strength,	
		17					rapid dilatancy, and low toughness	
		18					Grey Clay with sand (7.5 YR N5/),	
							about 15% fine subrounded sands, moist,	
		19					Clay has med. dry strength, slow	
							dilatancy, and med. toughness. Petroleum	
		20					odor until 20'.	
3			X					
9			X				no odor	
12		21	X					
		22						
		23						
		24						
		25						
		26						
		27						
		28						
		29						
		30						
		31						
		32						
		33						

WELL DETAILS

Project Name OWGS
Project Location 6085 Scarlett Ct., Dublin, CA
Local Agency Zone 7 Water Agency
Well Permit No. 93106

Boring/Well No. MW-1
Top of Casing Elev. na
Ground Surface Elev. na
Datum



EXPLORATORY BORING

a. Total Depth 19.5 ft.
b. Diameter 8 in.
Drilling Method hollow-stem auger
Drill-Rig Type Mobile B-57

WELL CONSTRUCTION

c. Casing Length 18.5 ft.
Material PVC
d. Diameter 2 in.
e. Depth to top perforations 5.5 ft.
f. Perforated Length 13.5 ft.
Perforated interval from 5.5 to 19.0 ft.
Perforation type slotted
Perforation size 0.002 in. ?
g. Surface seal 0.5 ft.
Surface material sand mixed w/ cement
h. Backfill 2.0 ft.
Backfill material neat cement
i. Seal 0.5 ft.
Seal material 3/8" bentonite
j. Filter Pack 16.5 ft.
Pack material # 3 sand
k. Bottom seal 0 ft.
Seal material none
l. Protective Casing height 1.5 ft.
m. Protective casing diameter 6 in.