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APEX ENVIROTECH, INC.

11244 Pyrites Way • Gold River, CA 95670
Phone 916.851.0174 • Fax 916.851.0177 • Toll Free 1.800.242.4259

December 19, 2002

Ms. Eva Chu
Alameda County Health Care Services Agency
Environmental Health Division
1311 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Sensitive Survey Results and Site Conceptual Model**
Bernard's Gas
1051 Airway Blvd
Livermore, California
Apex Project No. NWP01.001

Dear Ms. Chu:

Apex Envirotech, Inc. (Apex), has been authorized by New West Petroleum Inc. (New West) to provide this sensitive receptor survey results and site conceptual model and for the subject site (Figure 1). This report was prepared in response to the Alameda County Health Care Services Agency (County) dated August 30, 2002 (Appendix A).

This report is based, in part, on information obtained by Apex from New West and Grayland Environmental (Grayland) and is subject to modification as newly acquired information may warrant.

BACKGROUND

In June of 2001, Walton Engineering, Inc. of West Sacramento, California, removed six fuel dispensers and associated product lines. Soil samples were collected beneath of the former dispensers and product lines (Figure2). Laboratory analytical results indicated detectable concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg), Total Petroleum Hydrocarbons as diesel (TPHd), benzene, toluene, ethyl benzene, and total xylenes (BTEX) and Methyl Tertiary Butyl Ether (MTBE).

On January 18, 2002, Grayland submitted *Site Contamination Work Plan* to evaluate the spatial extent of soil contamination beneath the site and to determine if groundwater had been impacted by residual hydrocarbons.

On June 12, 2002, Apex personnel supervised the installation of four soil borings at the subject site. Results from the boring activities can be found in Apex report titled, *Soil Boring and Groundwater Sample Collection Results Report,* dated August 6, 2002.

SITE CONDITIONS

Site Geology

On June 12, 2002, Apex personnel supervised the installation of four soil borings at the subject site. (Figure 2). Borings were logged according to the Unified Soil Classification System using manual and visual methods. Boring logs for soil borings GP-1 and GP-2 are located in Appendix B. Due to adverse drilling conditions soil was not logged in borings GP-3 and GP-4. Boring logs for GP-1 and GP-2 show alternating units of clay and silty and clayey sands. A well-sorted sand unit atop gravel was encountered at approximately 16 to 19 feet below ground surface (bgs). This unit was approximately 3 feet thick in boring GP-2, but was less than 1 foot thick in boring GP-1.

Site Hydrology

Based on drilling activities groundwater was encountered at approximately 27-feet bgs in a tight clay unit. A poorly sorted sand unit with appreciable fines was indentified underlying the clay unit from 30 to 32 feet bgs. Due to the absence of monitoring wells in the vicinity of the site groundwater flow and gradient have not yet been determined. However, based on topography, shallow groundwater most likely flows south under the site.

Distribution of Residual Hydrocarbons in Soil

Laboratory analyses of all soil samples collected during well installations are summarized in Table 1. Isoconcentration maps showing concentrations of residual hydrocarbons in soil underlying the site at various depths are presented as Figures 3 through 6.

Distribution of Residual Hydrocarbons in Groundwater

Laboratory analyses of all groundwater samples collected during soil boring activities are summarized in Table 2. Groundwater samples from all four borings (GP-1, GP-2, GP-3 and GP-4) contained detectable levels of MTBE. An isoconcentration map showing MTBE concentrations in groundwater is presented as Figure 7.

Distribution of Separate-Phase Hydrocarbons in Groundwater.

No free product was observed in any of the soil or groundwater samples

SENSITIVE RECEPTOR SURVEY

Wells

A well search with the Department of Water Resources showed no wells within a ½ mile radius of the subject site.

Surface Waters

A review of aerial maps show two bodies of water within a ½ mile radius of the subject site. The first is the Cottonwood Creek located approximately 0.30 miles west of the site. The second body of water is the Arroyo Las Positas Reservoir located approximately 0.45 miles south of the site.

Potential Conduits

On December 9, 2002 Apex personnel conducted a utility search to determine the presence of preferential pathways of migration. Figure 8 shows the approximate locations of the surrounding utilities. Aside from a water line on the western edge of the property, the majority of utilities run along North Canyon Parkway on the north edge of the site. A review of storm drain maps with the City of Livermore (City) showed that the storm drains on site connect into the City storm drains on the northwest corner of the site. Runoff into the storm drain system runs west, along North Canyon Parkway, then south to Collier Canyon Road. A fallout pipe connects into Collier Canyon Road pipe and runs south under the I-580, emptying into the Arroyo Las Positas Reservoir. With depth to groundwater at approximately 27 feet bgs none, of the utility trenches identified pose a problem as preferential pathways of migration.

CONCLUSIONS

Because of the absence of monitoring wells in the vicinity of the site, groundwater flow and gradient have not been determined. Based on laboratory analytical results from the initial limited subsurface investigation no constituents were detected above laboratory detection limits in any of the soil samples. Groundwater samples GP-1, GP-2, GP-3and GP-4 contained detectable levels of MTBE. No dectectable levels of TPHg, TPHd and BTEX were reported, in any samples

REPORT DISTRIBUTION

A copy of this report was submitted to:

Mr. Gil Moore
New West Stations, Inc.
1831 16th Street
Sacramento, California 95814

REMARKS/SIGNATURES

The information contained within this report reflects our professional opinions and was developed in accordance with currently available information, and accepted hydrogeologic and engineering practices. This report was prepared solely for the use of New West Petroleum. Any reliance on this report by other parties is at their own risk.

The work described above was performed under the direct supervision of the professional geologists, registered with the State of California, whose signatures appear below.

We appreciate the opportunity to provide you geologic, engineering and environmental consulting services, and trust this report meets your needs. If you have any questions or comments, please call us at (916) 851-0174.

Sincerely,

APEX ENVIROTECH, INC.

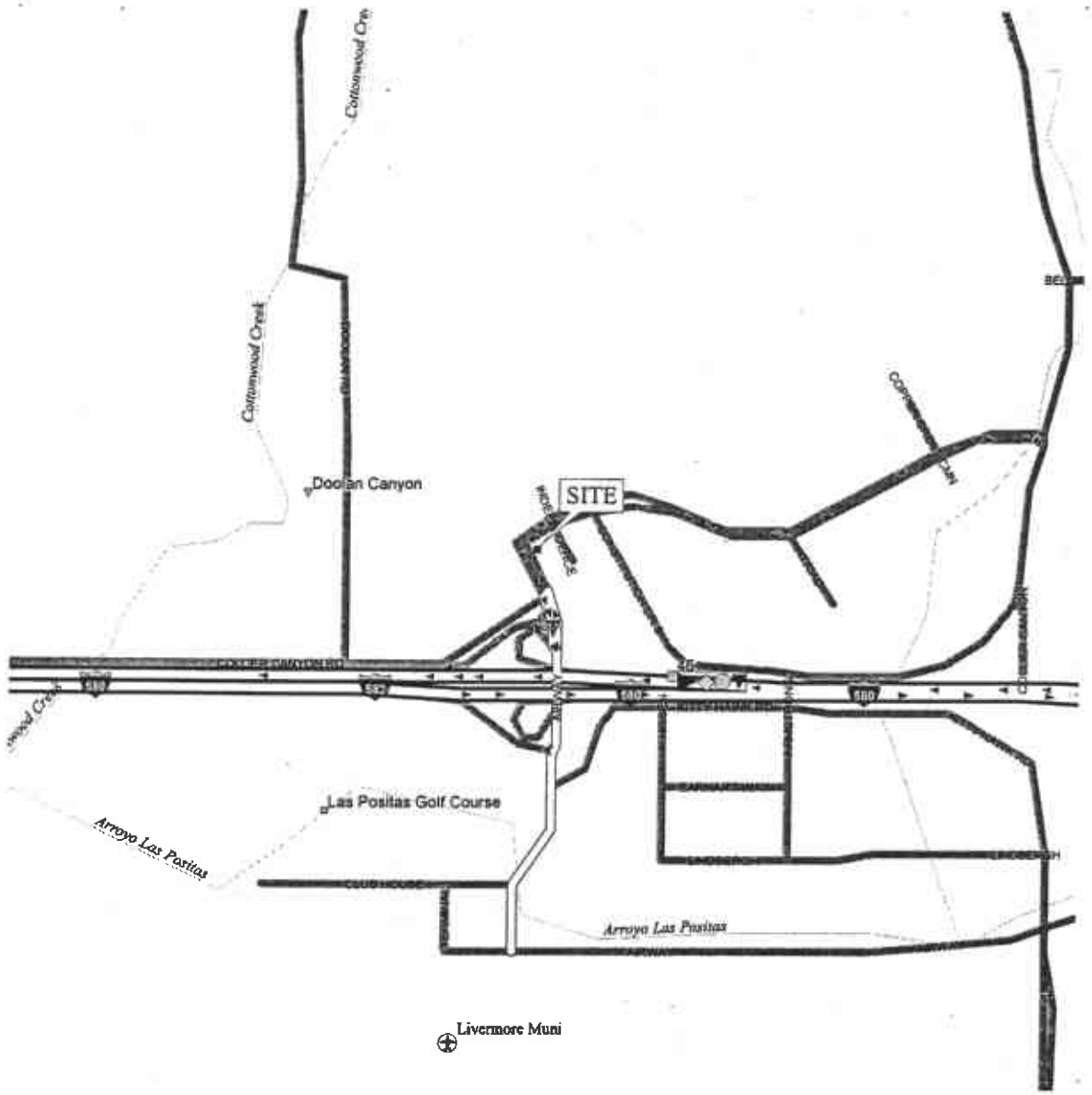
Kasey L. Jones
Environmental Project Manager

Michael S. Sgourakis, R.G.
Senior Geologist
CRG No. 7194

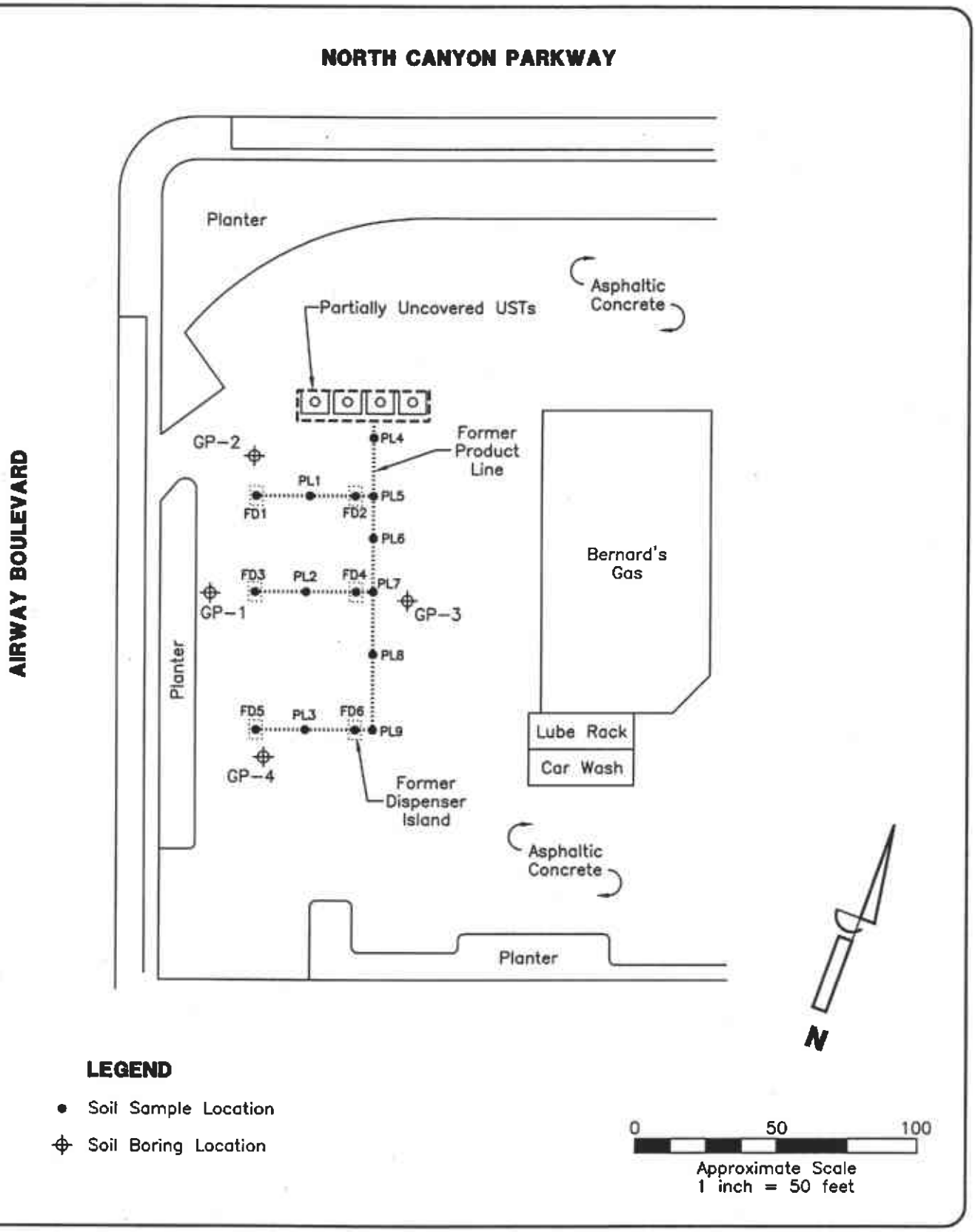
FIGURES:

TABLES:

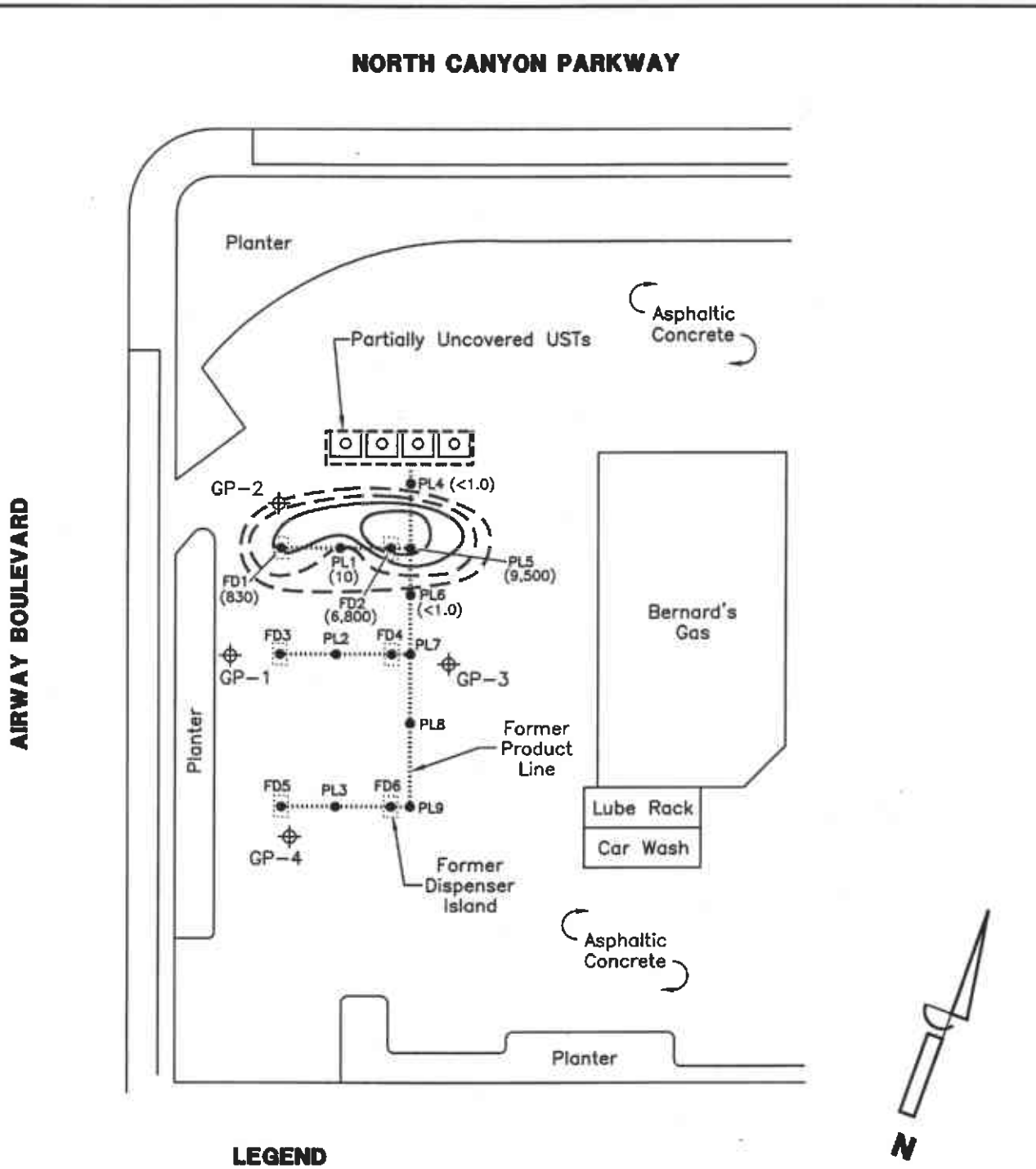
APPENDICES:



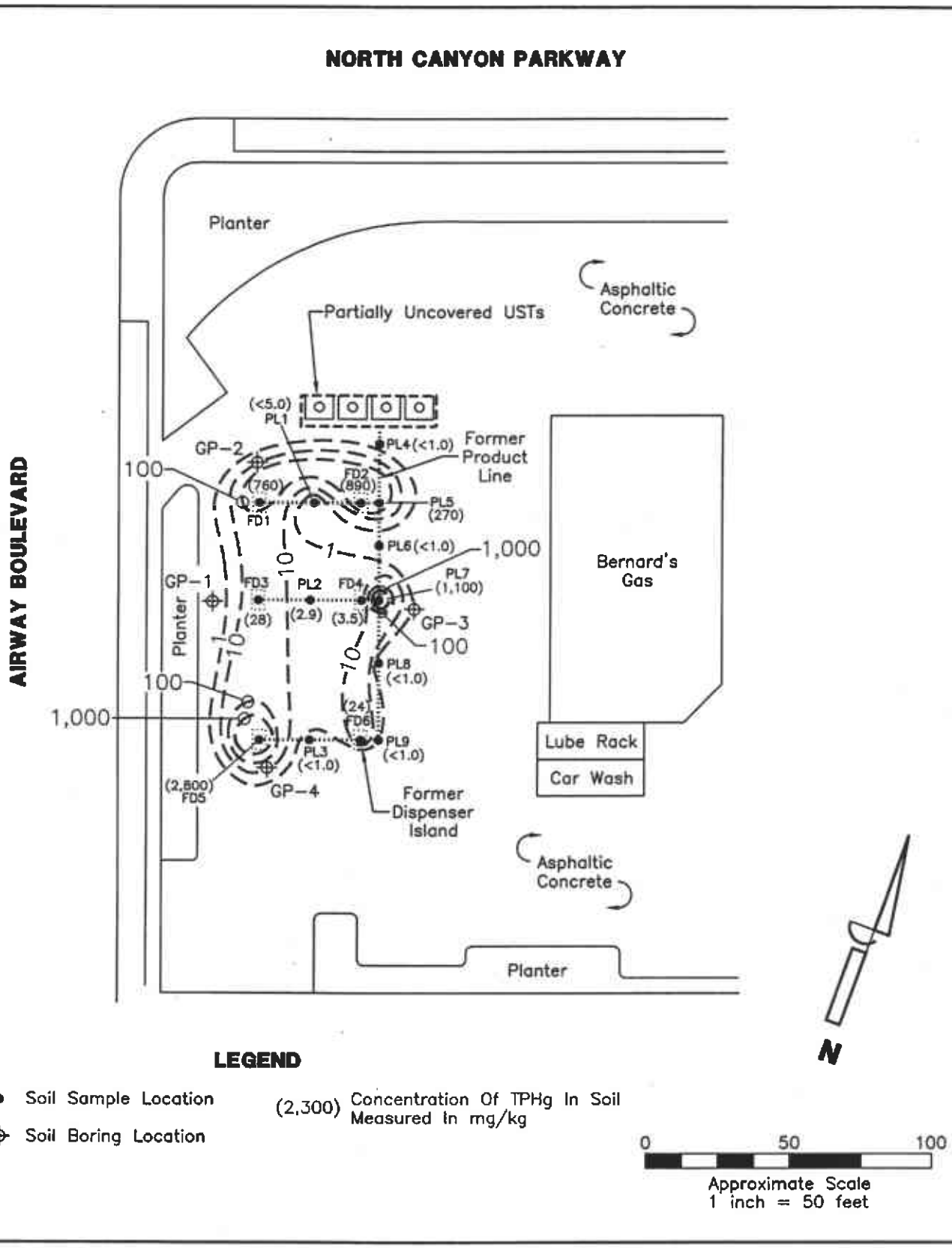
APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 07/17/02 REVISIONS	**SITE VICINITY MAP**	FIGURE **1**
		Bernard's Gas 1051 Airway Boulevard Livermore, California	PROJECT NUMBER: NWP01.001



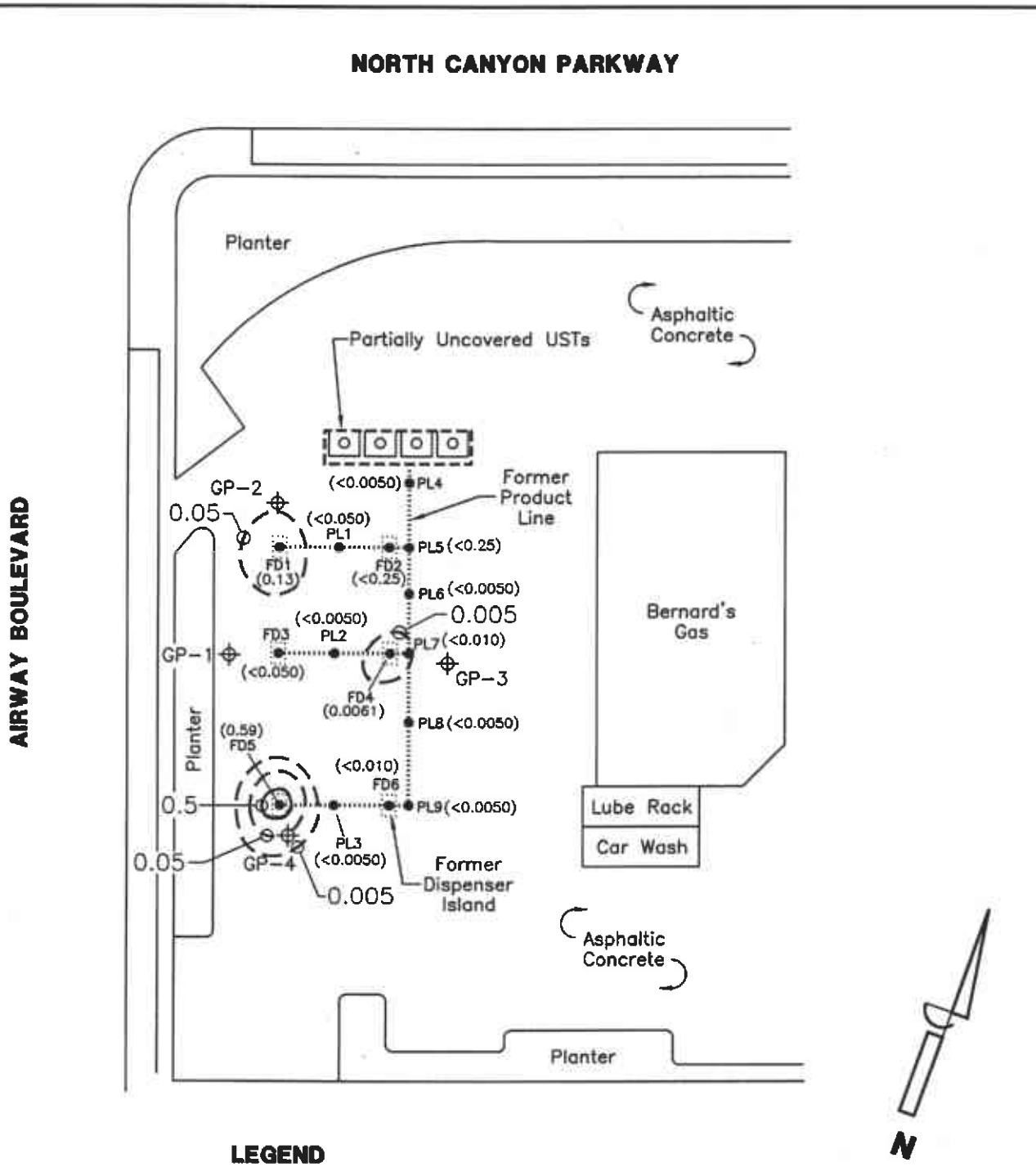
APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/19/02 REVISIONS	**SITE PLAN MAP** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **2** PROJECT NUMBER: NWP01.001



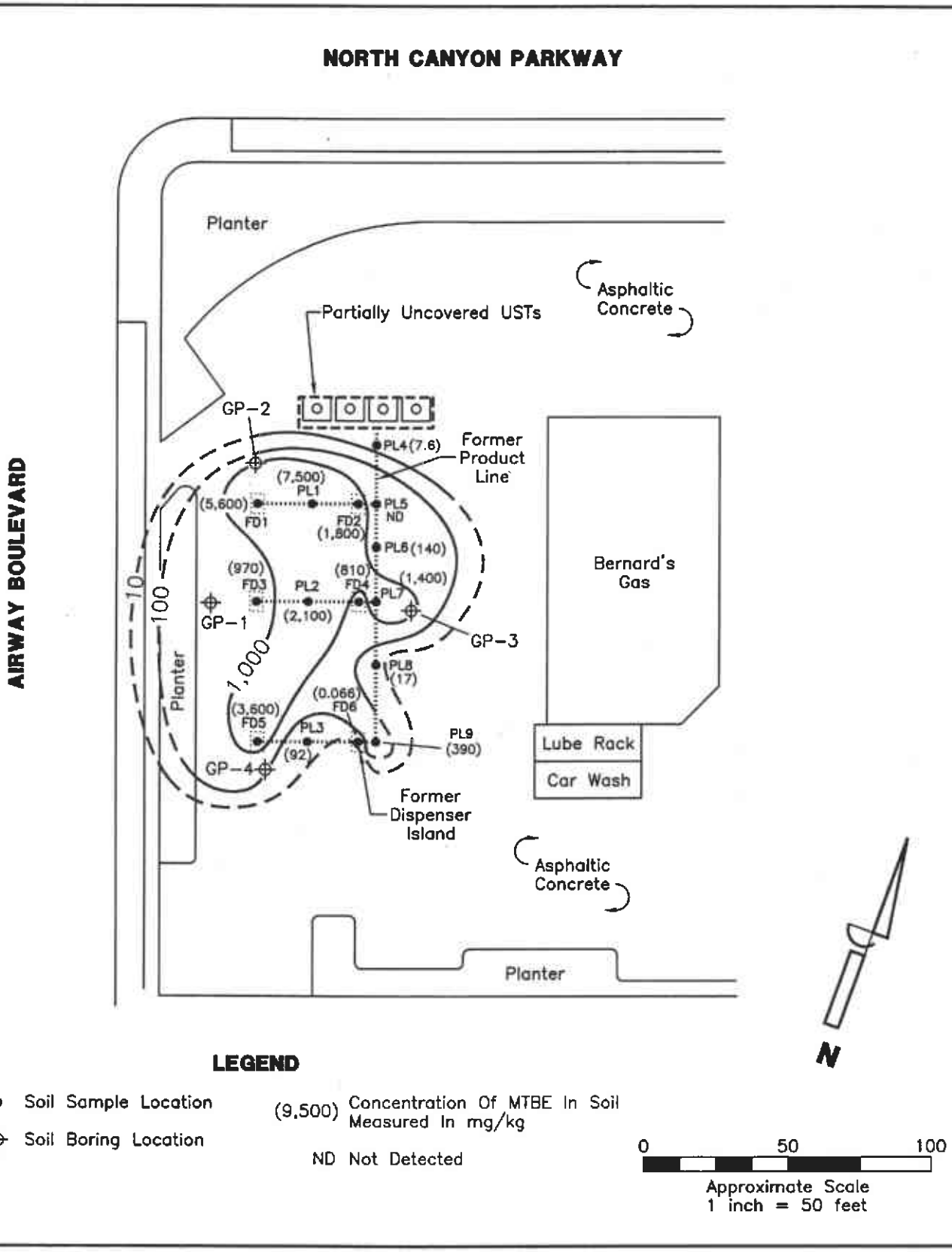
APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/19/02 REVISIONS	**TPHd IN SOIL ISOCONCENTRATION MAP - 3.5 FEET BGS** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **3** PROJECT NUMBER: NWP01.001



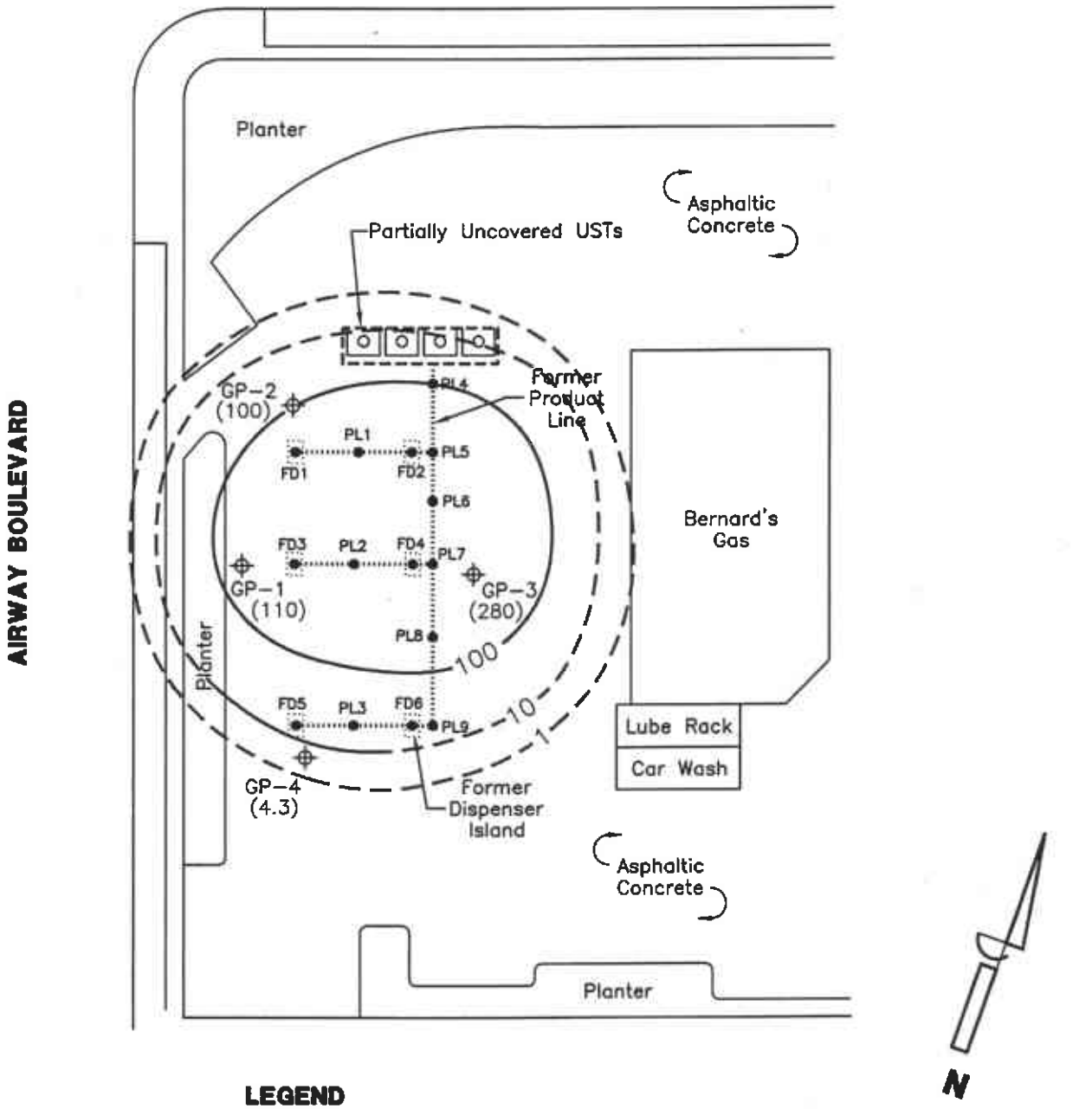
APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/19/02 REVISIONS	**TPHg IN SOIL ISOCONCENTRATION MAP - 3.5 FEET BGS** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **4** PROJECT NUMBER: NWP01.001



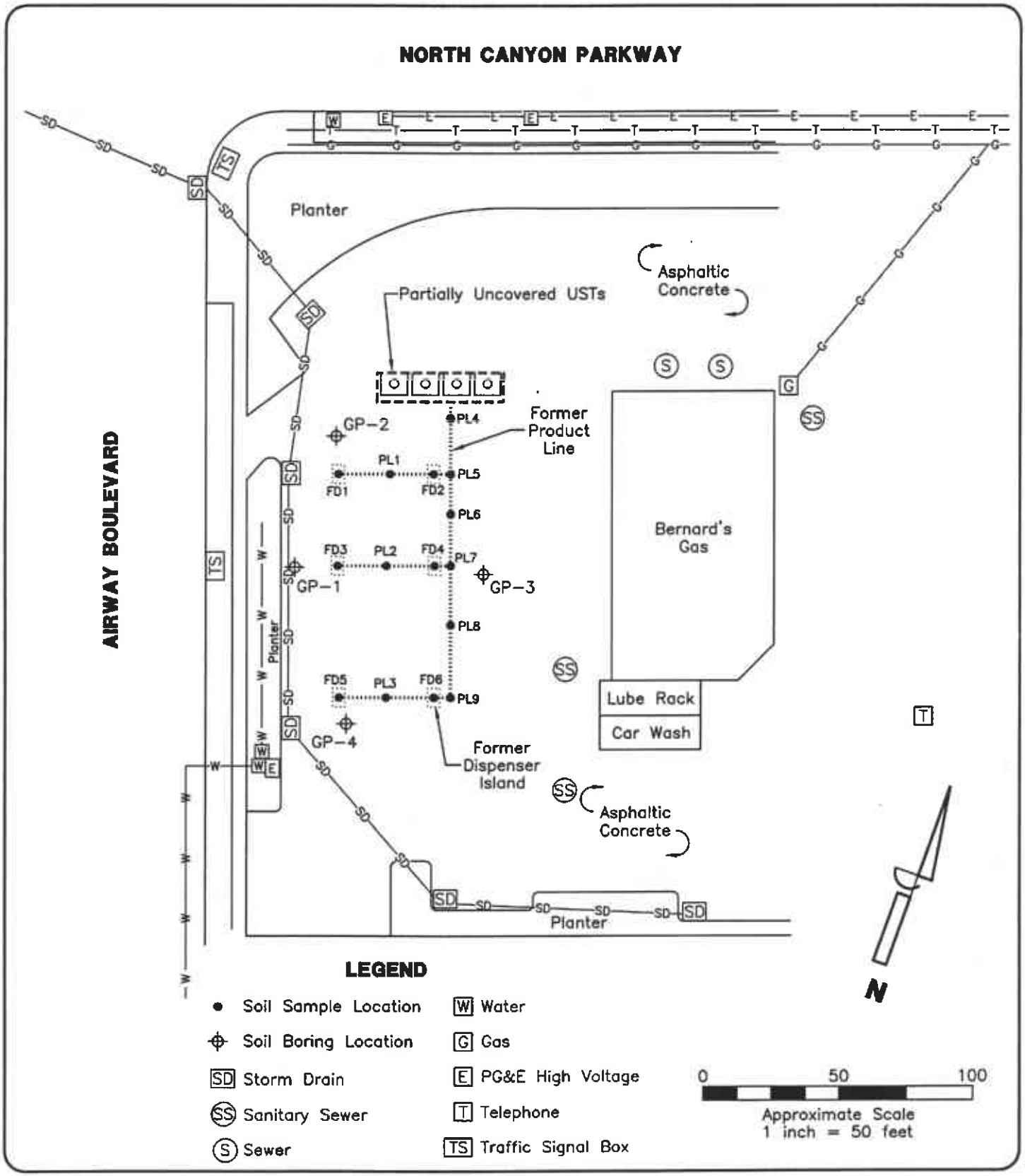
APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/20/02 REVISIONS	**BENZENE IN SOIL ISOCONCENTRATION MAP - 3.5 FEET BGS** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **5** PROJECT NUMBER: NWP01.001



APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/20/02 REVISIONS	**MTBE IN SOIL ISOCONCENTRATION MAP - 3.5 FEET BGS** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **6** PROJECT NUMBER: NWP01.001



APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/20/02 REVISIONS	**MTBE IN GROUNDWATER ISOCONCENTRATION MAP: JUNE 12, 2002** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **7** PROJECT NUMBER: NWP01.001



APEX ENVIROTECH, INC.	DRAWN BY: D. Alston DATE: 12/20/02 REVISIONS	**UNDERGROUND UTILITIES MAP** Bernard's Gas 1051 Airway Boulevard Livermore, California	FIGURE **8** PROJECT NUMBER: NWP01.001

TABLE 1
SOIL ANALYTICAL DATA
New West Petroleum
1051 Airway Blvd
Livermore, California

Sample ID	Date	Sample Depth (feet bgs)	TPH as Gasoline (mg/kg)	TPH as Diesel (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Total Xylenes (mg/kg)	EPA Method 8260					Total Lead (mg/kg)
									DIPE (ug/kg)	ETBE (ug/kg)	MTBE (ug/kg)	TAME (ug/kg)	TBA (ug/kg)	
S-3-FD1	6/19/2001	3	760	830	0.13	<0.10	3.9	28	---	---	5,600	---	---	
S-4-FD2	6/19/2001	4	890	6,800	<0.25	<0.25	2.9	4.0	---	---	1,800	---	---	
S-3-FD3	6/19/2001	3	28	---	<0.050	0.36	0.24	2.7	---	---	970	---	---	
S-3-FD4	6/19/2001	3	3.5	---	0.0061	<0.0050	0.032	0.11	---	---	810	---	---	
S-1-FD5	6/19/2001	1	2,800	---	0.59	29	32	190	---	---	3,600	---	---	
S-2-FD6	6/19/2001	2	29	---	<0.010	<0.010	0.11	0.021	---	---	0.066	---	---	
S-4-PL1	6/19/2001	4	<5.0	10	<0.050	<0.050	<0.050	<0.10	---	---	7,500	---	---	
S-3-PL2	6/19/2001	3	2.9	---	<0.0050	0.052	0.036	0.40	---	---	2,700	---	---	
S-3-PL3	6/19/2001	3	<1.0	---	<0.0050	0.016	0.014	0.10	---	---	92	---	---	
S-5-PL4	6/19/2001	5	<1.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	---	---	7.6	---	---	
S-5-PL5	6/19/2001	5	270	9,500	<0.25	0.31	0.80	4.1	---	---	<250	---	---	
S-4-PL6	6/19/2001	4	<1.0	---	<0.0050	<0.0050	<0.0050	0.024	---	---	140	---	---	
S-3-PL7	6/19/2001	3	1,100	---	<0.10	<0.10	7.8	44	---	---	1,400	---	---	
S-3-PL8	6/19/2001	3	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	17	---	---	
S-3-PL9	6/19/2001	3	<1.0	---	<0.0050	<0.0050	<0.0050	0.0083	---	---	390	---	---	
GP-1	6/12/2002	24	<1.0	<1.0	<0.005	<0.005	<0.005	<0.01	<5.0	<5.0	<5.0	<5.0	<50	---
GP-2	6/12/2002	24	<1.0	<1.0	<0.005	<0.005	<0.005	<0.01	<5.0	<5.0	<5.0	<5.0	<50	---
GP-3	6/12/2002	24	<1.0	<1.0	<0.005	<0.005	<0.005	<0.01	<5.0	<5.0	<5.0	<5.0	<50	---
GP-4	6/12/2002	24	<1.0	<1.0	<0.005	<0.005	<0.005	<0.01	<5.0	<5.0	<5.0	<5.0	<50	---

NOTES:

TPH - Total Petroleum Hydrocarbons
DIPE - Di-isopropyl ether
ETBE - Ethyl Tertiary Butyl Ether
MTBE - Methyl Tertiary Butyl Ether
TAME - Tertiary Amyl Methyl Ether
TBA - Tertiary Butyl Alcohol
ug/kg - micrograms per kilogram
--- - Not Analyzed

TABLE 2
GROUNDWATER ANALYTICAL DATA
New West Petroleum
1051 Airway Blvd
Livermore, California

Sample ID	Date	TPH as Gasoline (ug/L)	TPH as Diesel (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl benzene (ug/L)	Total Xylenes (ug/L)	EPA Method 8260					
								DIPE (ug/L)	ETBE (ug/L)	MTBE (ug/L)	TAME (ug/L)	TBA (ug/L)	1,2 DCA (ug/L)
GP-1	6/12/2002	<50	<50	<0.50	<0.50	<0.50	<1.0	<5.0	<5.0	110	<5.0	<50	<5.0
GP-2	6/12/2002	<50	<50	<0.50	<0.50	<0.50	<1.0	<5.0	<5.0	100	<5.0	<50	<5.0
GP-3	6/12/2002	<50	NA	<0.50	<0.50	<0.50	<1.0	<5.0	<5.0	280	6.5	<50	<5.0
GP-4	6/12/2002	<50	NA	<0.50	<0.50	<0.50	<1.0	<2.0	<2.0	4.3	<2.0	<30	<2.0

NOTES:

TPH - Total Petroleum Hydrocarbons
DIPE - Di-isopropyl ether
ETBE - Ethyl Tertiary Butyl Ether
MTBE - Methyl Tertiary Butyl Ether
TAME - Tertiary Amyl Methyl Ether
TBA - Tertiary Butyl Alcohol
1,2 DCA 1,2 -Dichloroethane
ug/L - micrograms per kilogram

APPENDIX A

ALAMEDA COUNTY LETTER
DATED AUGUST 30, 2002

NWP01.001

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

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

RO0002440

COPY

August 30, 2002

Mr. Gil Moore
New West Stations, Inc.
1831 16th Street
Sacramento, CA 95814

RECEIVED
SEP - 5 2002

RE: Site Conceptual Model for 1051 Airway Blvd, Livermore, CA

Dear Mr. Moore:

I have completed review of Apex Envirotech, Inc.'s August 2002 *Soil-Boring and Groundwater Sample Collection Results Report* prepared for the above referenced site. Four soil borings were advanced around the fuel dispenser islands in June 2002. Soil and groundwater samples were collected from each borehole. Soil samples collected at the capillary fringe (approximately 24 feet below ground surface) did not contain contaminants sought. Groundwater samples contained MTBE ranging from 4.3 to 280 parts per billion.

Groundwater at the Livermore Basin is a source of drinking water for the city of Livermore. Since MTBE was detected in the groundwater samples, additional investigations are required to determine if the fuel release at the sight will impact potential drinking water wells. At this time, a detail site conceptual model should be prepared for the site to identify any and all potential sensitive receptors. Please include information on wells (monitoring, irrigation, industrial, and drinking water wells), potential conduits (sewer, storm drain, underground channels, etc), and groundwater elevation and flow direction in the vicinity (within ½ mile radius). Based on the findings, the need for and location of groundwater monitoring wells can be assessed.

The required site conceptual model is due within 90 days of the date of this letter, **or by December 2, 2002.** If you have any questions, I can be reached at (510) 567-6762.

eva chu
Hazardous Materials Specialist

cc: Rebekah Westrup, Apex Envirotech, 11244 Pyrites Way, Gold River, CA 95670

bernard's-3

337-9335

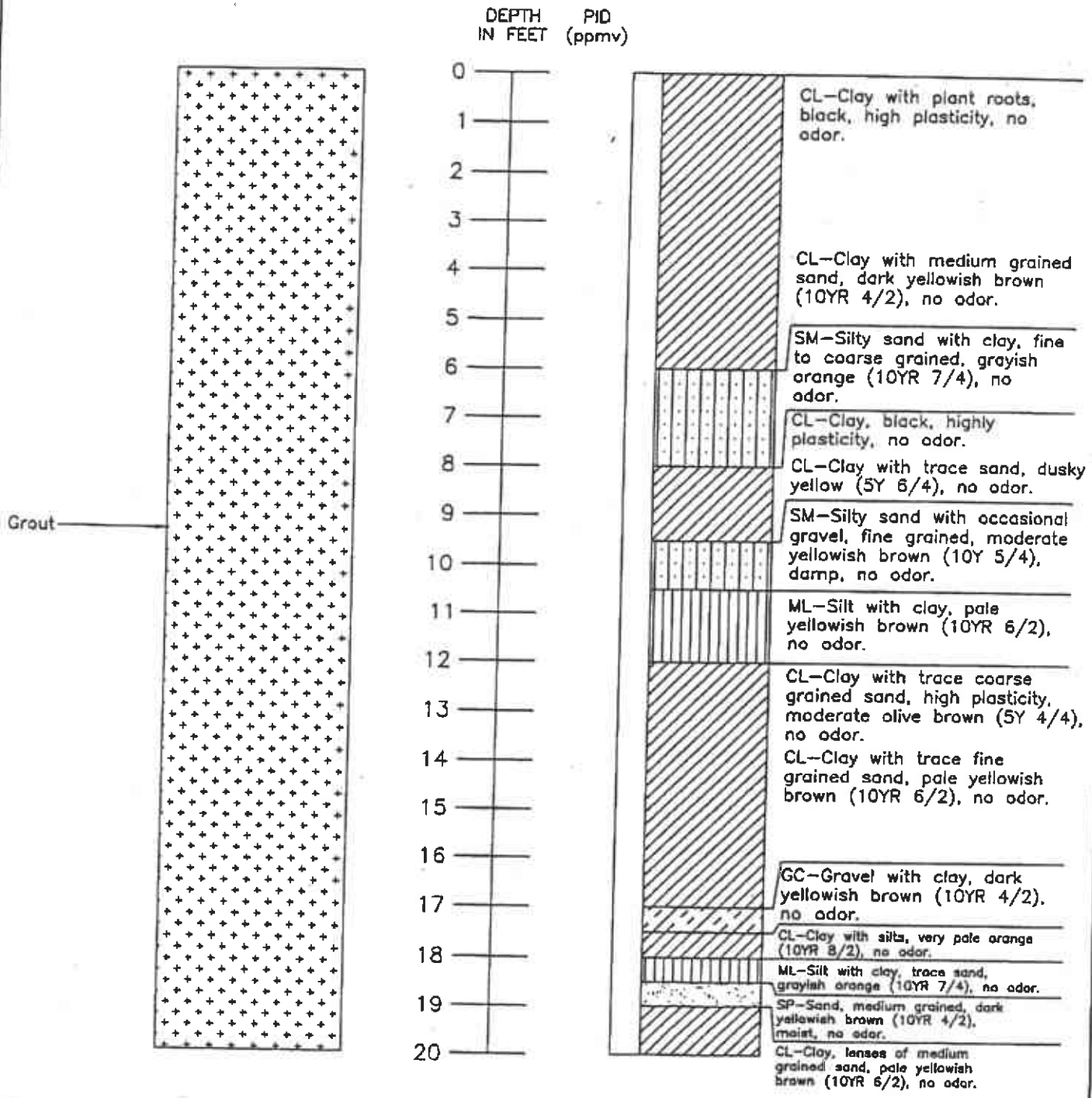
APPENDIX B

BORING LOGS

BORING/WELL CONSTRUCTION DETAIL

GRAPHIC LOG

DESCRIPTION



EXPLANATION:

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- est K — Estimated permeability (hydraulic conductivity) 1K=primary, 2K=secondary
- NR — No recovery

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

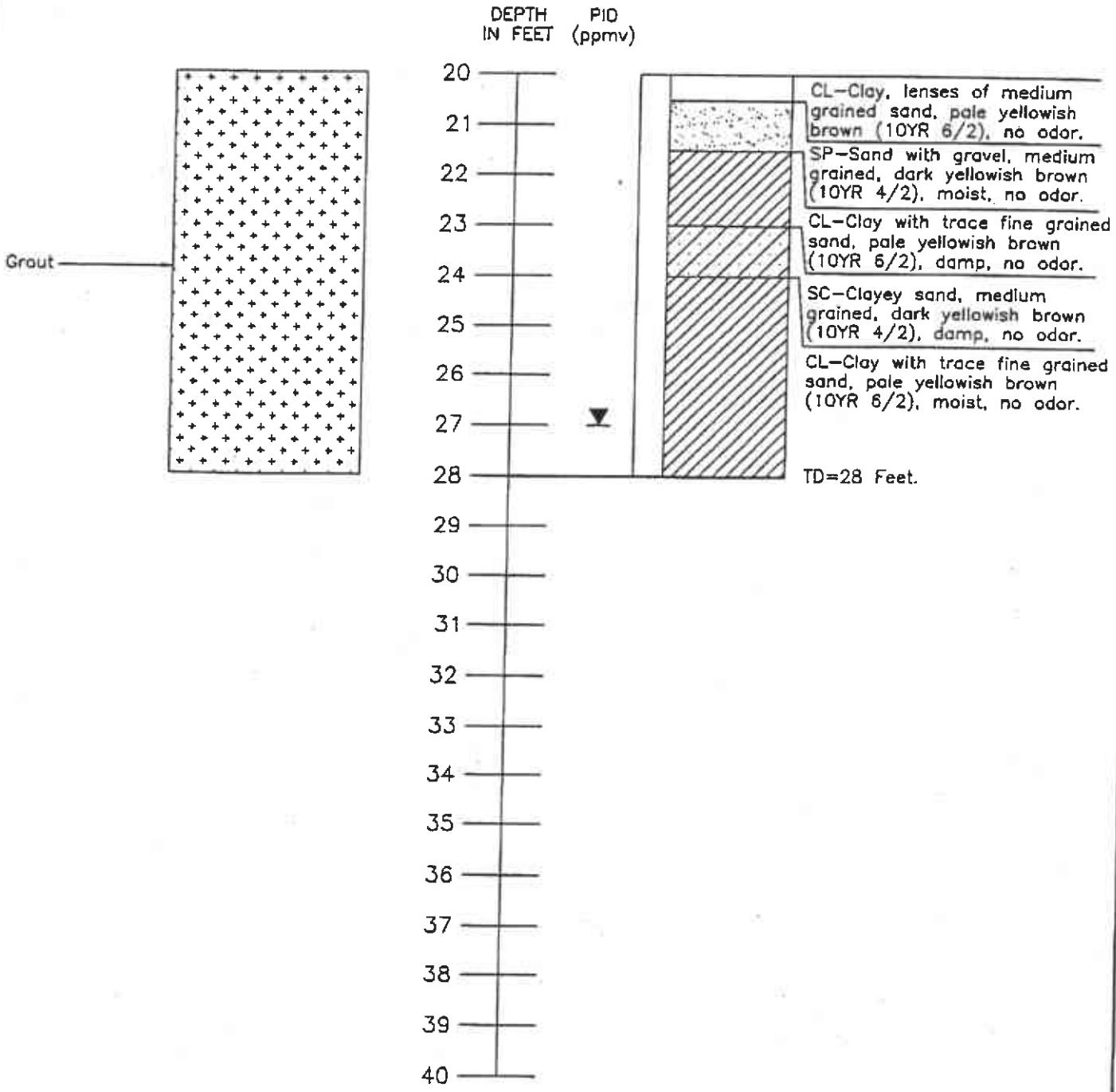
APEX ENVIROTECH, INC.

Boring/Well Log Details GP–1	Job No. NWP01.001
Bernard's Gas 1051 Airway Boulevard Livermore, California 06/12/02	BORING/ WELL **GP-1**

BORING/WELL CONSTRUCTION DETAIL

GRAPHIC LOG

DESCRIPTION



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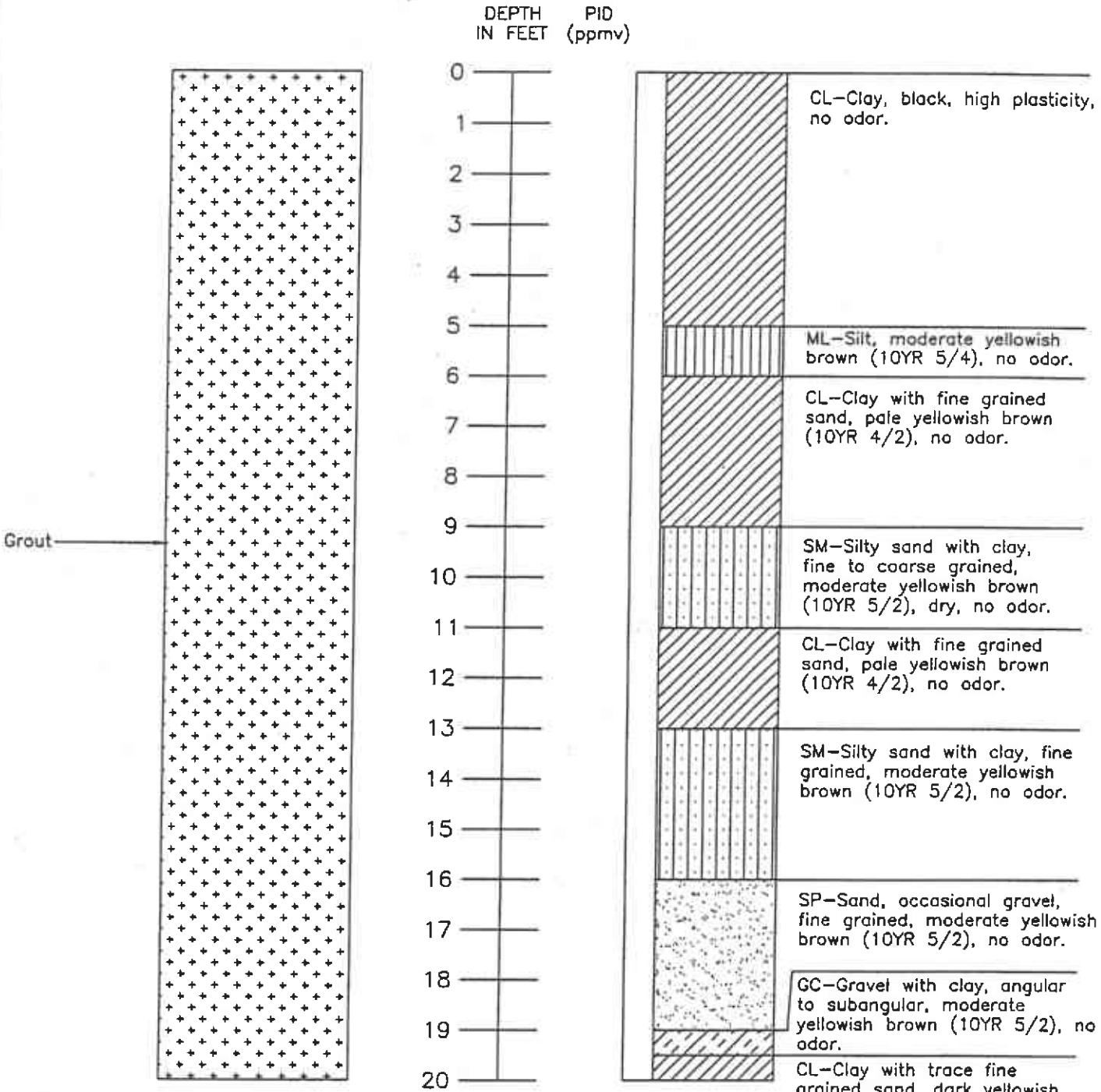
APEX ENVIROTECH, INC.

Boring/Well Log Details GP–1	Job No. NWP01.001
Bernard's Gas 1051 Airway Boulevard Livermore, California 06/12/02	BORING/ WELL **GP-1**

BORING/WELL CONSTRUCTION DETAIL

GRAPHIC LOG

DESCRIPTION



EXPLANATION:

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- est K — Estimated permeability (hydraulic conductivity) 1K=primary, 2K=secondary
- NR — No recovery

CONTACTS:

- Solid where certain
- Dotted where approximate
- Dashed where uncertain
- Hachured where gradational

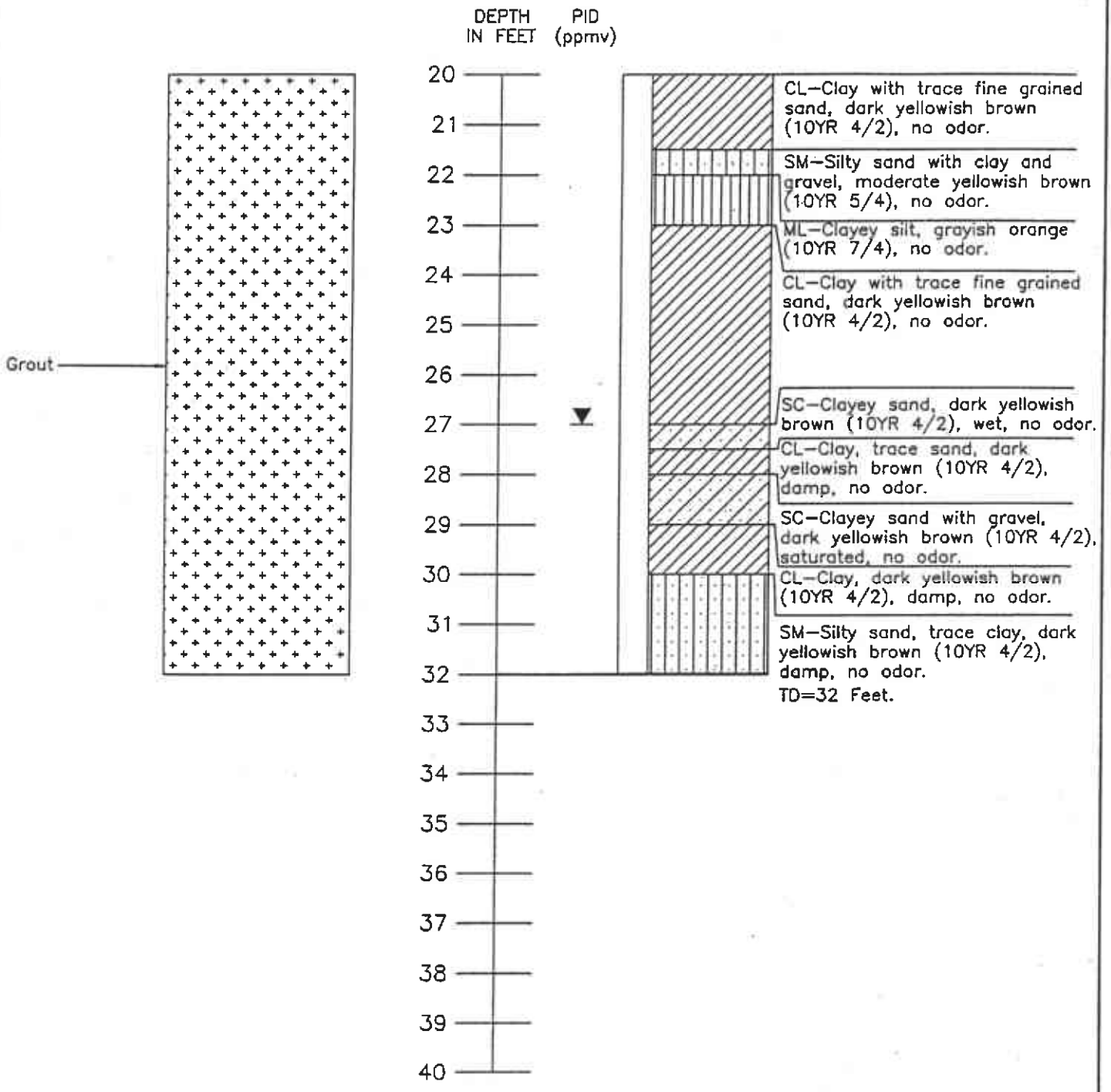
APEX ENVIROTECH, INC.

Boring/Well Log Details GP-2	Job No. NWP01.001
Bernard's Gas 1051 Airway Boulevard Livermore, California 06/12/02	BORING/ WELL **GP-2**

BORING/WELL CONSTRUCTION DETAIL

GRAPHIC LOG

DESCRIPTION



EXPLANATION:

- Water level during drilling
- Water level in completed well
- Location of recovered drill sample
- Location of sample sealed for chemical analysis
- Sieve sample
- Grab sample
- est K — Estimated permeability (hydraulic conductivity) 1K=primary, 2K=secondary
- NR — No recovery

CONTACTS:

- Solid where certain
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- Dashed where uncertain
- Hachured where gradational

APEX ENVIROTECH, INC.

Boring/Well Log Details GP-2	Job No. NWP01.001
Bernard's Gas 1051 Airway Boulevard Livermore, California 06/12/02	BORING/ WELL **GP-2**