PLANTS UNLIMITED INC.
THE INSIDE/OUT SHOP
C27 LICENSE #393699

August 24, 1994

Juliet Shin
Alameda County Health Care Services
Division of Hazardous Materials
Department of Environmental Health
80 Swan Way, Rm 200
Oakland Ca. 94621

Dear Juliet Shin,

Please find our quarterly report of our wells for the previous quarter. With this report, we feel we have shown beyond a shadow of a doubt that we were able to remove any and all contamination from our gas tank. At this point, I would like to close this night mare once and for all. We appreciate your help in this matter and if you need any other information to expedite this closure, please don't hesitate to call me at 276-2384.

Sincerely,

John R. Goldstein
Vice President

16450 KENT AVENUE SAN LORENZO, CALIFORNIA 94580 (510) 276-2384

TANK PROTECT ENGINEERING
Of Northern California, Inc

TANK PROTECT ENGINEERING
2821 Whipple Road
Union City, CA 94587-1233
(510) 429-8088 • (800) 523-8088
FAX (510) 429-8089

July 29, 1994

Mr. John Goldstein
Plants Unlimited, Inc.
16450 Kent Avenue
San Lorenzo, CA 94580

Re: Report of Gradient Determination and Groundwater Sampling for Second Quarter, 1994, Plants Unlimited, Inc., 16450 Kent Avenue, San Lorenzo, CA 94580

Dear Mr. Goldstein:

Tank Protect Engineering of Northern California, Inc. (TPE) is pleased to submit this quarterly letter report of environmental services conducted at the subject site. Previous work conducted at the site is summarized and work conducted during the subject quarter is presented in detail.

BACKGROUND

TPE understands the following work has been conducted by others:

- July 1990 - Two underground fuel storage tanks, one 280-gallon steel gasoline tank and one 1,500-gallon steel diesel/fuel oil tank, were excavated and removed from the site. Because a small hole was observed in the gasoline tank and analyses of soil samples collected beneath the tank detected total petroleum hydrocarbons as gasoline (TPHG), the Alameda County Health Care Services Agency (ACHCSA) required a groundwater investigation.

- November 11, 1992 - EVAX Technologies, Inc. (EVAX) installed groundwater monitoring wells MW-1 through MW-3.

- December 1, 1992 - EVAX sampled wells MW-1 through MW-3 for chemical analyses for TPHG and benzene, toluene, ethylbenzene, and xylenes (BTEX) and determined groundwater gradient.

- January 20, 1993 - EVAX drilled offset borings to each of the 3 wells and collected a soil sample from each boring for chemical analyses for TPHG and BTEX.

Work conducted by TPE during fourth quarter, 1993:

- December 30, 1993 - Measured depth to stabilized groundwater in each well; calculated direction and gradient of groundwater flow; sampled each well; and analyzed all groundwater samples, including a trip blank sample, for TPHG and BTEX.

Work conducted by TPE during first quarter, 1994:

- January 25, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map.

- February 1, 1994 - Submitted to Mr. Goldstein a Report of Gradient Determination and Groundwater Sampling for Fourth Quarter, 1993, Plants Unlimited, Inc., 16450 Kent Avenue, San Lorenzo, CA 94580 documenting work conducted by TPE and results of gradient determination and groundwater chemical analyses.

- February 25, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map.

- March 30, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map; sampled each well; and analyzed all groundwater samples, including a trip blank sample, for TPHG and BTEX.

WORK CONDUCTED BY TPE DURING SECOND QUARTER, 1994:

- April 15, 1994 - Submitted to Mr. Goldstein a Report of Gradient Determination and Groundwater Sampling for First Quarter, 1994, Plants Unlimited, Inc., 16450 Kent Avenue, San Lorenzo, CA 94580 documenting work conducted by TPE and results of gradient determination and groundwater chemical analyses.

- April 28, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map.

- May 31, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map.

- June 29, 1994 - Measured depth to stabilized groundwater in each well for construction of a groundwater gradient map; sampled each well; and analyzed all groundwater samples, including a trip blank sample, for TPHG and BTEX.

Details of the work performed during the subject quarter are presented below.

Groundwater Gradient

On April 28, May 31, and June 29, 1994, TPE measured depth to stabilized groundwater in wells MW-1, MW-2, and MW-3 from their top-of-casings (TOCs) to the nearest 0.01 foot using an electronic Solinst water level meter. A minimum of 3 repetitive measurements were made for each level determination to ensure accuracy. Depth-to-groundwater was subtracted from the TOC elevation, as determined by EVAX,

to calculate the elevation of the stabilized water level for each well (see attached Table 1).

Attached Figures 1 through 3 are groundwater gradient maps constructed from the data collected on the above dates. Groundwater flow directions were northwesterly with gradients ranging from about .0031 feet per foot to .0036 feet per foot. Attached Table 2 presents cumulative information for average groundwater elevations, changes in average groundwater elevations, groundwater flow directions, and groundwater gradients for the site.

Table 2 suggests that the average groundwater elevation beneath the site fluctuates with the seasons. The average groundwater elevation on June 29, 1994 compared to that on March 30, 1994 indicates that groundwater elevation has declined.

Based on the above groundwater flow directions, well MW-1 is down and crossgradient of the former tank complex, well MW-2 is crossgradient, and well MW-3 is up and crossgradient.

Groundwater Sampling and Analytical Results

On June 29, 1994, groundwater samples were collected from each of the 3 wells for chemical analysis. Before sampling, each well was checked for floating product using a dedicated, disposable, polyethylene bailer. Since dedicated bailers were used, no decontamination was necessary between sampling events. No odor was noted in any of the wells. Each well was purged a minimum of 3 wetted well volumes with a dedicated polyethylene bailer and until the temperature, conductivity, and pH of the water in the well had stabilized. Water samples were collected in laboratory provided, sterilized, 40-milliliter glass vials having Teflon-lined screw caps; measured for turbidity; and labeled with project name, date, time collected, sample number, and sampler name. The water appeared clear, with wells MW-1, MW-2, and MW-3 having turbidity readings of 10.25 NTUs, 7.60 NTUs, and 9.95 NTUs, respectively. The samples were immediately stored in an iced-cooler for transport to California State Department of Health Services (DHS) certified Trace Analysis Laboratory, Inc., located in Hayward, California accompanied by chain-of-custody documentation.

All groundwater samples, and a trip blank sample, were analyzed for TPHG and BTEX by the DHS Method and Modified United States Environmental Protection Agency (EPA) Method 8020, respectively.

All analytical results were nondetectable.

Analytical results are summarized in attached Table 3 and documented in an attached certified analytical report and a chain-of-custody.

Purge water is stored on site in 55-gallon drums labeled to show material stored, known or suspected contaminant, date filled, expected removal date, company name, contact person, and telephone number.

See attached protocols for TPE's sample handling, groundwater monitoring well sampling, and quality assurance and quality control procedures.

RECOMMENDATIONS

In a February 28, 1994 letter to Mr. Goldstein, the ACHCSA had required a minimum of 2 additional groundwater monitoring events and continued gradient determinations since reviewing TPE's Fourth Quarter Report, 1993. Based on satisfying this recommendation, the absence of detectable concentrations of TPHG and BTEX during the last 2 sampling events (March 30 and June 29, 1994), and the consistency of monthly gradient determinations, TPE recommends that Mr. Goldstein request site closure from the ACHCSA.

An additional copy of this report has been included for your delivery to:

Alameda County Health Care Services Agency
Division of Hazardous Materials
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

TPE recommends that this quarterly report be submitted with a cover letter from Plants Unlimited, Inc.

If you have any questions, please call TPE at (510) 429-8088.

Sincerely,

John Mrakovich, Ph.D.
Registered Geologist

Jeff Farhoomand, M.S.
Civil Engineer

Expiration Date 4/30/96

TABLE 1
GROUNDWATER ELEVATION[1]

Well Name	Date	Elevation (TOC[2]) (Feet)	Depth-to-Water From TOC	Groundwater Elevation (Feet)
MW-1	12/30/93	100.0	12.86	87.14
	01/25/94		12.83	87.17
	02/25/94		11.15	88.65
	03/30/94		11.32	88.68
	04/28/94		11.44	88.56
	05/31/94		11.38	88.62
	06/29/94		12.04	87.96
MW-2	12/30/93	100.4	13.22	87.18
	01/25/94		13.08	87.32
	02/25/94		11.43	88.97
	03/30/94		11.63	88.77
	04/28/94		11.77	88.63
	05/31/94		11.71	88.69
	06/29/94		12.36	88.04
MW-3	12/30/93	99.6	12.26	87.34
	01/25/94		12.17	87.43
	02/25/94		10.44	89.16
	03/30/94		10.67	88.93
	04/28/94		10.80	88.80
	05/31/94		10.75	88.85
	06/29/94		11.38	88.22

[1] EVAX TECHNOLOGIES, INC. HAS REPORTED THAT UNITED CIVIL & STRUCTURAL ENGINEERS CO. OF CAMPBELL, CALIFORNIA SURVEYED TOC RELATIVE TO MEAN SEA LEVEL (MSL). HOWEVER, AN EXAMINATION OF THE HAYWARD, CALIFORNIA 7.5 MINUTE SERIES QUADRANGLE MAP INDICATES TOPOGRAPHIC ELEVATION AT THE SITE IS ABOUT 45 FEET MSL. THEREFORE, TPE CONCLUDES THE ELEVATION IS BASED ON AN ARBITRARY SITE DATUM OF 100 FEET FOR TOC OF WELL MW-1.

[2] TOP-OF-CASING

TABLE 2
GROUNDWATER GRADIENT, FLOW DIRECTION,
AND ELEVATION DATA

Date	Average Groundwater Elevation (Feet)	Change in Average Groundwater Elevation	Groundwater Gradient	Groundwater Flow Direction
12/01/92[1]	84.32	-	.0025	NW
12/30/93	87.22	+2.90	.0024	NW
01/25/94	87.31	+.09	.0051	NW
02/25/94	88.99	+1.68	.0048	NW
03/30/94	88.79	-0.20	.0035	NW
04/28/94	88.66	-0.13	.0032	NW
05/31/94	88.72	+0.06	.0032	NW
06/29/94	88.07	-0.65	.0036	NW

[1] DATA FOR THIS DATE OBTAINED FROM EVAX FEBRUARY 17, 1993 REPORT.

TABLE 3

SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS

(ppb[1])

Sample ID Name	Date	TPHG	Benzene	Toluene	Ethyl-Benzene	Xylenes
MW-1	12/01/92[2]	<50	<0.50	<0.50	<0.50	<0.50
	12/30/93	<50	<0.50	<0.50	<0.50	<1.5
	03/30/94	<50	<0.50	<0.50	<0.50	<1.5
	06/29/94	<50	<0.50	<0.50	<0.50	<1.5
MW-2	12/01/92[2]	<50	<0.50	<0.50	<0.50	<0.50
	12/30/93	<50	<0.50	<0.50	<0.50	<1.5
	03/30/94	<50	<0.50	<0.50	<0.50	<1.5
	06/29/94	<50	<0.50	<0.50	<0.50	<1.5
MW-3	12/01/92[2]	<50	<0.50	<0.50	<0.50	<0.50
	12/30/93	<50	<0.50	<0.50	<0.50	<1.5
	03/30/94	<50	<0.50	<0.50	<0.50	<1.5
	06/29/94	<50	<0.50	<0.50	<0.50	<1.5
MW-4[3]	12/30/93	<50	<0.50	<0.50	<0.50	<1.5
	03/30/94	<50	<0.50	<0.50	<0.50	<1.5
	06/29/94	<50	<0.50	<0.50	<0.50	<1.5

[1] PARTS PER BILLION

[2] DATA FOR THIS DATE OBTAINED FROM EVAX FEBRUARY 17, 1993 REPORT.

[3] TRIP BLANK

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

July 21, 1994

Mr. Jeff Farhoomand
Tank Protect Engineering
2821 Whipple Road
Union City, California 94587

Dear Mr. Farhoomand:

Trace Analysis Laboratory received four water samples on June 29, 1994 for your Project No. 297-062994, Plants Unlimited (our custody log number 4556).

These samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethylbenzene, and Xylenes. Our analytical report and the completed chain of custody form are enclosed for your review.

Trace Analysis Laboratory is certified under the California Environmental Laboratory Accreditation Program. Our certification number is 1199.

If you should have any questions or require additional information, please call me.

Sincerely yours,

Scott T. Ferriman

Scott T. Ferriman
Project Specialist

Enclosures

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545
Telephone (510) 783-6960
Facsimile (510) 783-1512

TAL

LOG NUMBER: 4556
DATE SAMPLED: 06/29/94
DATE RECEIVED: 06/29/94
DATE ANALYZED: 07/11/94 and 07/12/94
DATE REPORTED: 07/21/94

CUSTOMER: Tank Protect Engineering

REQUESTER: Jeff Farhoomand

PROJECT: No. 297-062994, Plants Unlimited

Sample Type: Water

Method and Constituent:	Units	MW-1 Concentration	MW-1 Reporting Limit	MW-2 Concentration	MW-2 Reporting Limit	MW-3 Concentration	MW-3 Reporting Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/l	ND	50	ND	50	ND	50
Modified EPA Method 8020 for:							
Benzene	ug/l	ND	0.50	ND	0.50	ND	0.50
Toluene	ug/l	ND	0.50	ND	0.50	ND	0.50
Ethylbenzene	ug/l	ND	0.50	ND	0.50	ND	0.50
Xylenes	ug/l	ND	1.5	ND	1.5	ND	1.5

Concentrations reported as ND were not detected at or above the reporting limit.

TAL Trace Analysis Laboratory, Inc.

LOG NUMBER: 4556
DATE SAMPLED: 06/29/94
DATE RECEIVED: 06/29/94
DATE ANALYZED: 07/09/94
DATE REPORTED: 07/21/94
PAGE: Two

Sample Type: Water

Method and Constituent:	Units	MW-4 Concentration	MW-4 Reporting Limit	Method Blank Concentration	Method Blank Reporting Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/l	ND	50	ND	50
Modified EPA Method 8020 for:					
Benzene	ug/l	ND	0.50	ND	0.50
Toluene	ug/l	ND	0.50	ND	0.50
Ethylbenzene	ug/l	ND	0.50	ND	0.50
Xylenes	ug/l	ND	1.5	ND	1.5

QC Summary:

% Recovery: 114 and 72
% RPD: 20 and 24

Concentrations reported as ND were not detected at or above the reporting limit.

Louis W. DuPuis
Quality Assurance/Quality Control Manager

4556

TANK PROTECT ENGINEERING

2821 WHIPPLE ROAD
UNION CITY, CA 94587
(415)429-8088
(800)523-8088
FAX(415)429-8089

LAB: Trace

TURNAROUND: 15 day

P.O. #: 871

CHAIN OF CUSTODY

PAGE 1 OF 1

PROJECT NO.: 2970629.94

SITE NAME & ADDRESS: Plants Unlimited 16450

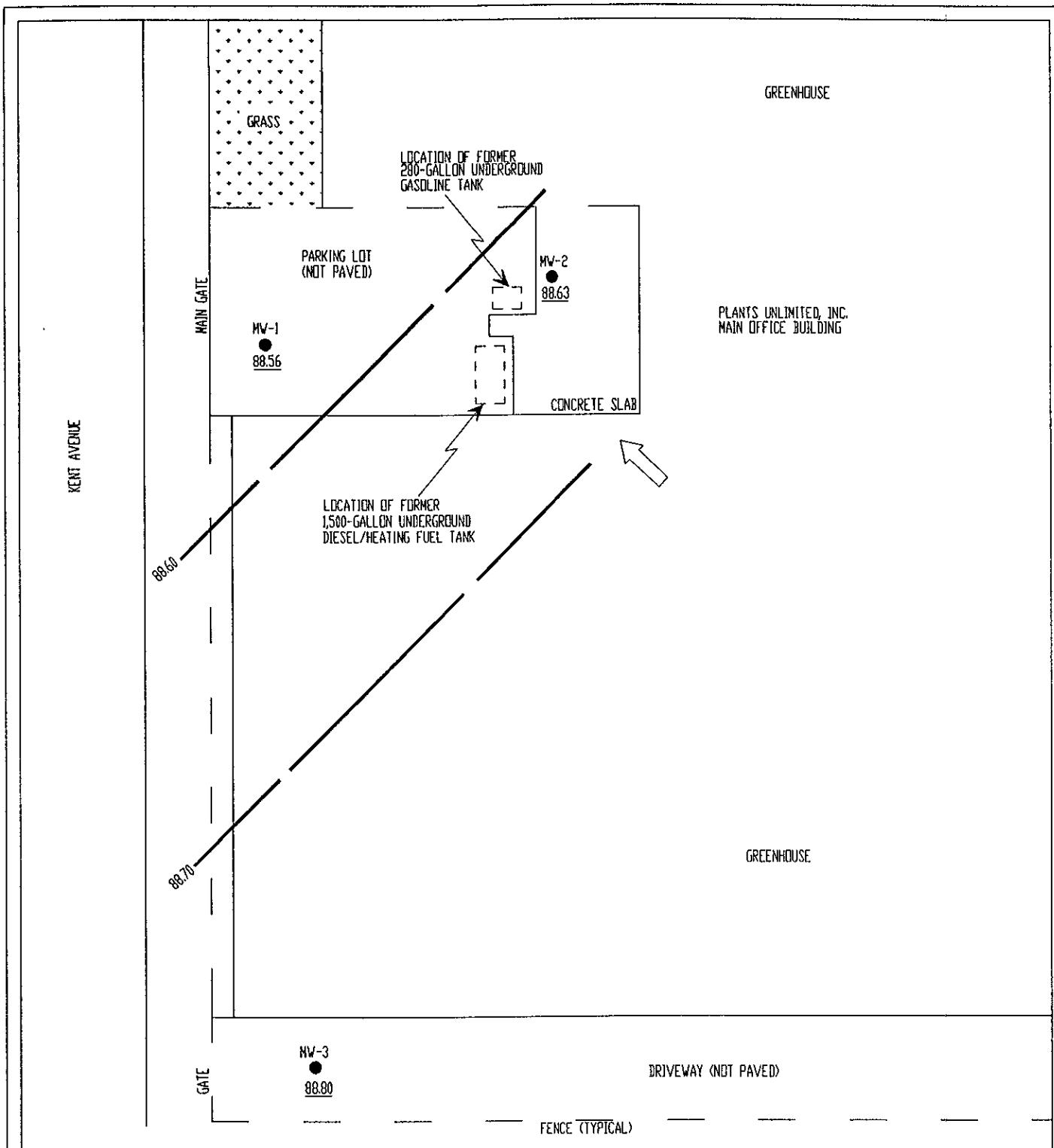
SAMPLER NAME, ADDRESS AND TELEPHONE NUMBER: Lee Huckins, 2821 WHIPPLE ROAD, UNION CITY, CA 94587 (415) 429-8088

ID NO.	DATE	TIME	SOIL	WATER	SAMPLING LOCATION	(1) TYPE OF CONTAINER	ANALYTES REQUESTED: TOTAL LIGHT HC	AROMATIC HC (BTX)	TOTAL HEAVY HC	OIL & GREASE	VOC SCAN (624's)	OTHER	REMARKS
MW-1	6/29	1430		X		2-40ml	X	X					
MW-2	6/29	1400		X		2-40ml	X	X					
MW-3	6/29	1510		X		2-40ml	X	X					
MW-4	6/29	1515		X		2-40ml	X	X					

Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Lee Huckins	6-29-94 4:30 PM				
Relinquished by : (Signature)	Date / Time	Received by : (Signature)	Relinquished by : (Signature)	Date / Time	Received by : (Signature)
Relinquished by : (Signature)	Date / Time	Received for Laboratory by: [Signature]	Date / Time	Remarks	

TTP, H2O, 8 pres VOAs, White, Reg, ~

DATE: _____



LEGEND

MW-1 NAME AND LOCATION OF GROUNDWATER MONITORING WELL

88.63 POTENTIOMETRIC ELEVATION (FEET)

88.70 POTENTIOMETRIC CONTOUR

GROUNDWATER FLOW DIRECTION

-N-

0 20

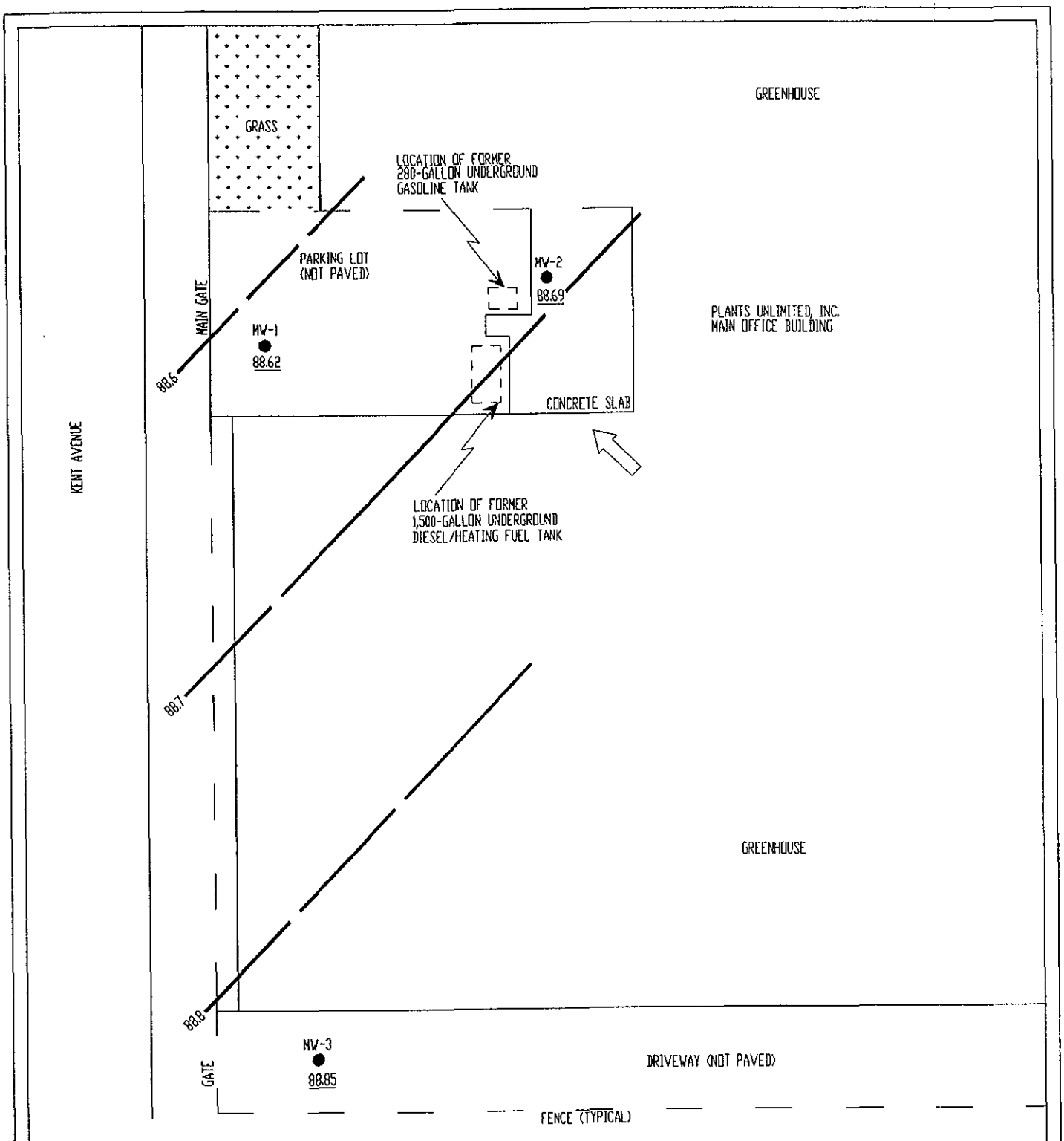
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (4/28/94)

PLANTS UNLIMITED, INC.
16450 KENT AVENUE
SAN LORENZO, CA 94580

DATE	5/10/94
FIGURE	1
FILE #	297-5
DRAWN BY	AK
CHECKED BY	JVM



LEGEND

- MW-1 ● — NAME AND LOCATION OF GROUNDWATER MONITORING WELL
- 88.62 — POTENTIOMETRIC ELEVATION (FEET)
- 88.6 — POTENTIOMETRIC CONTOUR
- GROUNDWATER FLOW DIRECTION

-N-

0 20

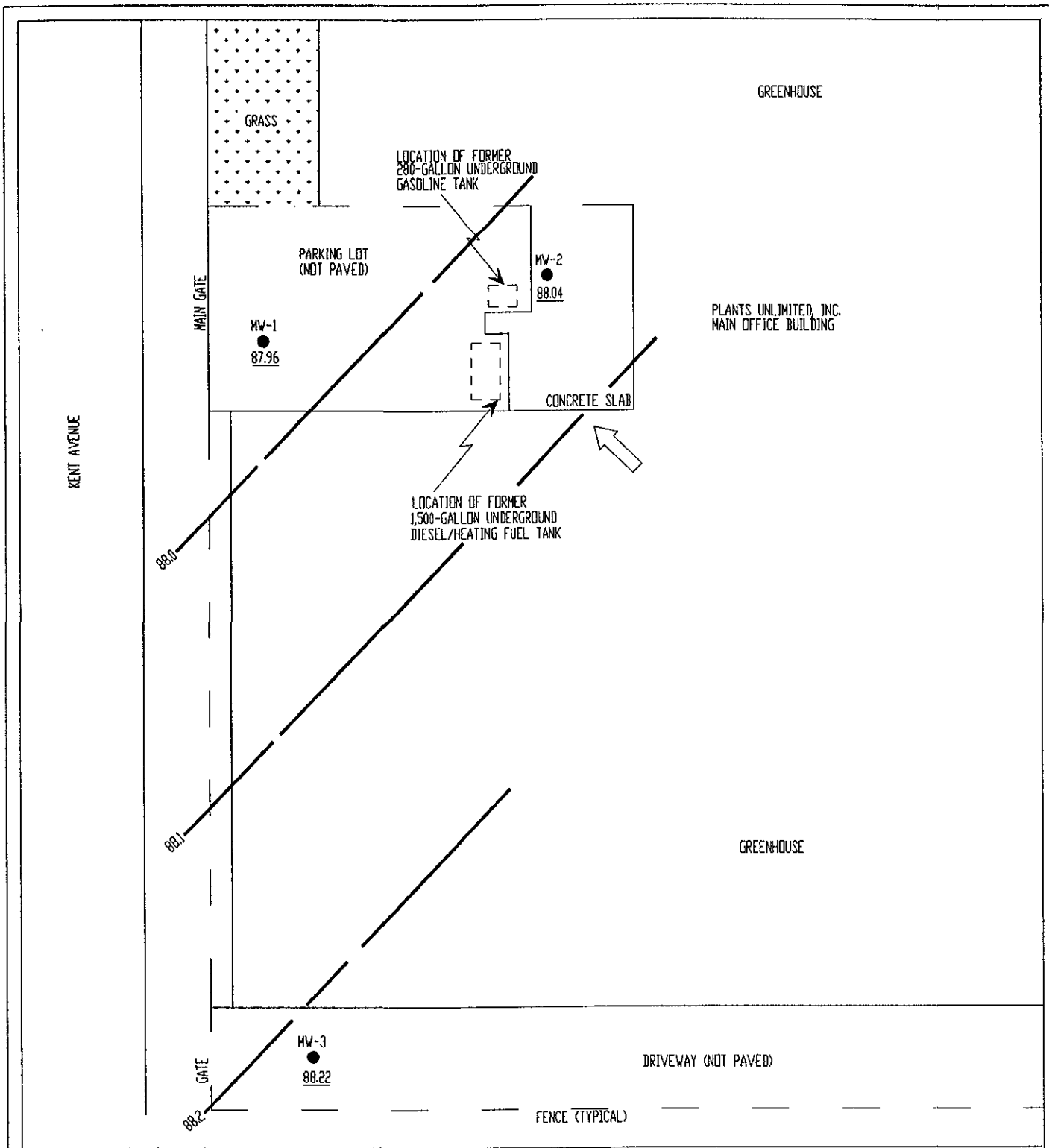
SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (5/31/94)

PLANTS UNLIMITED, INC.
16450 KENT AVENUE
SAN LORENZO, CA 94580

DATE	7/24/94
FIGURE	2
FILE #	297-6
DRAWN BY	AK
CHECKED BY	JVM



LEGEND

- MW-1 — NAME AND LOCATION OF GROUNDWATER MONITORING WELL
- 87.96 — POTENTIOMETRIC ELEVATION (FEET)
- 88.0 — POTENTIOMETRIC CONTOUR
- GROUNDWATER FLOW DIRECTION

N

0 20

SCALE IN FEET

TANK PROTECT ENGINEERING

GROUNDWATER GRADIENT MAP (6/29/94)

PLANTS UNLIMITED, INC.
16450 KENT AVENUE
SAN LORENZO, CA 94580

DATE	7/24/94
FIGURE	3
FILE #	297-7
DRAWN BY	AK
CHECKED BY	JVM

SAMPLE HANDLING PROCEDURES

Soil and groundwater samples will be packaged carefully to avoid breakage or contamination, and will be delivered to the laboratory in an iced-cooler. The following sample packaging requirements will be followed.

- Sample bottle/sleeve lids will not be mixed. All sample lids will stay with the original containers and have custody seals affixed to them.

- Samples will be secured in coolers to maintain custody, control temperature, and prevent breakage during transportation to the laboratory.

- A chain-of-custody form will be completed for all samples and accompany the sample cooler to the laboratory.

- Ice, blue ice, or dry ice (dry ice will be used for preserving soil samples collected for the Alameda County Water District) will be used to cool samples during transport to the laboratory.

- Each sample will be identified by affixing a pressure sensitive, gummed label, or standardized tag on the container(s). This label will contain the site identification, sample identification number, date and time of sample collection, and the collector's initials.

- Soil samples collected in brass tubes will be preserved by covering the ends with Teflon tape and capped with plastic end-caps. The tubes will be labeled, sealed in quart size bags, and placed in an iced-cooler for transport to the laboratory.

All groundwater sample containers will be precleaned and will be obtained from a State Department of Health Services certified analytical laboratory.

Sample Control/Chain-of-Custody: All field personnel will refer to this workplan to verify the methods to be employed during sample collection. All sample gathering activities will be recorded in the site file; all sample transfers will be documented in the chain-of-custody; samples are to be identified with labels and all sample bottles are to be custody-sealed. All information is to be recorded in waterproof ink. All TPE field personnel are personally responsible for sample collection and the care and custody of collected samples until the samples are transferred or properly dispatched.

The custody record will be completed by the field technician or professional who has been designated by the TPE project manager as being responsible for sample shipment to the appropriate laboratory. The custody record will include, among other things, the following information: site identification, name of person collecting the samples, date and time samples were collected, type of sampling conducted (composite/grab), location of sampling station, number and type of containers used, and signature of the TPE person relinquishing samples to a non-TPE person with the date and time of transfer noted. The relinquishing individual will also put all the specific shipping data on the custody record.

Records will be maintained by a designated TPE field employee for each sample, site identification, sampling locations, station numbers, dates, times, sampler's name, designation of the samples as a grab or composite, notation of the type of sample (e.g. groundwater, soil boring, etc.), preservatives used, on-site measurement data, and other observations or remarks.

GROUNDWATER MONITORING WELL SAMPLING PROCEDURES

Groundwater monitoring wells will not be sampled until at least 24 to 72 hours (according to local regulatory guidelines) after well development. Groundwater samples will be obtained using either a bladder pump, clear Teflon bailer, or dedicated polyethylene bailer. Prior to collecting samples, the sampling equipment will be thoroughly decontaminated to prevent introduction of contaminants into the well and to avoid cross-contamination. Monitoring wells will be sampled after 3 to 10 wetted casing volumes of groundwater have been evacuated and pH, electrical conductivity, and temperature have stabilized as measured with a Hydac Digital Tester. If the well is emptied before 3 to 10 well volumes are removed, the sample will be taken when the water level in the well recovers to 80% of its initial water level or more.

When a water sample is collected, turbidity of the water will be measured and recorded with a digital turbidimeter. Degree of turbidity will be measured and recorded in nephelometric turbidity units (NTU).

TPE will also measure the thickness of any floating product in the monitoring wells using an interface or probe clear Teflon or polyethylene bailer. The floating product will be measured after well development but prior to the collection of groundwater samples. If floating product is present in the well, TPE will recommend to the client that product removal be commenced immediately and reported to the appropriate regulatory agency.

Unless specifically waived or changed by the local, prevailing regulatory agency, water samples shall be handled and preserved according to the latest EPA methods as described in the Federal Register (Volume 44, No. 233, Page 69544, Table II) for the type of analysis to be performed.

Development and/or purge water will be stored on site in labeled containers. The disposal of the containers and development and/or purge water is the responsibility of the client.

MEASUREMENTS

Purged Water Parameter: During purging, discharged water will be measured for the following parameters.

Parameter	Units of Measurement
pH	None
Electrical Conductivity	Micromhos
Temperature	Degrees F or C
Depth to Water	Feet/Hundredths
Volume of Water Discharged	Gallons
Turbidity	NTU

Documentation: All parameter measurements shall be documented in writing on TPE development logs.

QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES

The overall objectives of the field sampling program include generation of reliable data that will support development of a remedial action plan. Sample quality will be checked by the use of proper sampling, handling, and testing methods. Additional sample quality control methods may include the use of background samples, equipment rinsate samples, and trip and field blanks. Chain-of-custody forms, use of a qualified laboratory, acceptable detection limits, and proper sample preservation and holding times also provide assurance of accurate analytical data.

TPE will follow a QA/QC program in the field to ensure that all samples collected and field measurements taken are representative of actual field and environmental conditions and that data obtained are accurate and reproducible. These activities and laboratory QA/QC procedures are described below.

Field Samples: Additional samples may be taken in the field to evaluate both sampling and analytical methods. Three basic categories of QA/QC samples that may be collected are trip samples, field blanks, and duplicate samples.

Trip blanks are a check for cross-contamination during sample collection, shipment, and in the laboratory. Analytically confirmed organic-free water shall be used for organic parameters and deionized water for metal parameters. Blanks will be prepared by the laboratory supplying the sample containers. The blank shall be numbered, packaged, and sealed in the same manner as the other samples. One trip blank will be used for each sample set of less than 20 samples. At least 5% blanks will be used for sets greater than 20 samples. The trip blank is a water sample that remains with the collected samples during transportation and is analyzed along with the field samples to check for residual contamination. The trip blank is not to be opened by either the sample collectors or the handlers.

The field blank is a water sample that is taken into the field and is opened and exposed at the sampling point to detect contamination from air exposure. The water

sample is poured into appropriate containers to simulate actual sampling conditions. Contamination for air exposure can vary considerably from site to site.

The laboratory will not be informed about the presence of field and trip blanks and a false identifying number will be put on the label. Full documentation of these collection and decoy procedure will be made in the site log book.

Duplicate samples are identical sample pairs (collected in the same place and at the same time), placed in identical containers. For soils, adjacent sample liners will be analyzed. For the purpose of data reporting, one is arbitrarily designated the sample, and the other is designated as a duplicate sample. Both sets of results are reported to give an indication of the precision of sampling and analytical methods.

The laboratory's precision will be assessed without the laboratory's knowledge by labeling one of the duplicates with false identifying information. Data quality will be evaluated on the basis of the duplicate results.

Laboratory QA/QC: Execution of a strict QA/QC program is an essential ingredient in high-quality analytical results. By using accredited laboratory techniques and analytical procedures, estimates of the experimental values can be very close to the actual value of the environmental sample. The experimental value is monitored for its precision and accuracy by performing QC test designed to measure the amount of random and systematic errors and to signal when correction of these errors is needed.

The QA/QC program describes methods for performing QC tests. These methods involve analyzing method blanks, calibration standards, check standards (both independent and EPA-certified standards), duplicates, replicates, and sample spikes. Internal QC also requires adherence to written methods, procedural documentation, and record keeping, and the observance of good laboratory practices.