Texaco Refining
and Marketing Inc

108 Cutting Boulevard
Richmond CA 94804

May 20, 1991

Mr. Scott O. Seery
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94612

RE: Former Texaco Service Station
3940 Castro Valley Boulevard
Castro Valley, California

Dear Mr. Seery:

Enclosed please find the Workplan for Additional Subsurface Investigation for the above referenced site. Upon receiving approval of the workplan, the field work will be sent out for bid. I apologize for not delivering the workplan to you by April 5, 1991 as I mentioned in my letter of March 14, 1991.

If you have any questions, please contact me at (415) 236-3541.

Sincerely,
Texaco Environmental Services

Karel Detterman

Karel Detterman
Environmental Geologist

Enclosures

cc: Mr. Tom Callaghan
Regional Water Quality Control Board
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Dan Dineen
Lake Shore Financial
21060 Redwood Road
Castro Valley, CA 94596

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WORK PLAN
FOR ADDITIONAL SUBSURFACE INVESTIGATION
FORMER TEXACO SERVICE STATION
3940 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA

APRIL 9, 1991

GROUNDWATER TECHNOLOGY, INC.
CONCORD, CALIFORNIA

GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387
FAX: (415) 685-9148

WORK PLAN

FOR ADDITIONAL SUBSURFACE INVESTIGATION

FORMER TEXACO SERVICE STATION

3940 CASTRO VALLEY BOULEVARD

CASTRO VALLEY, CALIFORNIA

APRIL 9, 1991

Prepared for:

Mr. R. R. Zielinski
Texaco Environmental Services
100 Cutting Blvd.
Richmond, CA 94804

Prepared by:

GROUNDWATER TECHNOLOGY, INC.
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R4080L2.GAM

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FOR ADDITIONAL SUBSURFACE INVESTIGATION
FORMER TEXACO SERVICE STATION
3940 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA
APRIL 8, 1991

INTRODUCTION

This Work Plan describes proposed additional subsurface investigations for the former Texaco Service Station site located at 3940 Castro Valley Boulevard, Castro Valley, California (Figure 1). The Work Plan was developed in accordance with the California Regional Water Quality Control Board "Tri-regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks", dated June 2, 1988 (revised May 18, 1989). This Work Plan includes an outline of prior uses and prior investigations at the site and a description of the proposed work steps to be performed at the site. A summary of the Site Safety Plan is also included with this Work Plan as Appendix A. An unabridged Site Safety Plan will be available on site during all phases of field work.

BACKGROUND

SITE SETTING

The site is situated in Alameda County, along the eastern edge of the San Francisco Bay Basin in a mixed residential and light commercial area within the City of Castro Valley. The site was an operating service station until 1984. In 1985 the underground fuel-storage tanks were removed, and in 1988 the station was demolished for construction of a Speedee Oil Change and Tune-Up facility.

Geographically, the site is located in the Castro Valley Basin, approximately two miles south of the San Leandro Hills and one-mile west of Walpert Ridge. A nameless creek and San Lorenzo Creek flow southward approximately a quarter-of-a-mile to the west and a quarter-of-a-mile to the east of the site, respectively. The site elevation is approximately 195-feet above mean sea level and the surface topography slopes to the northwest.

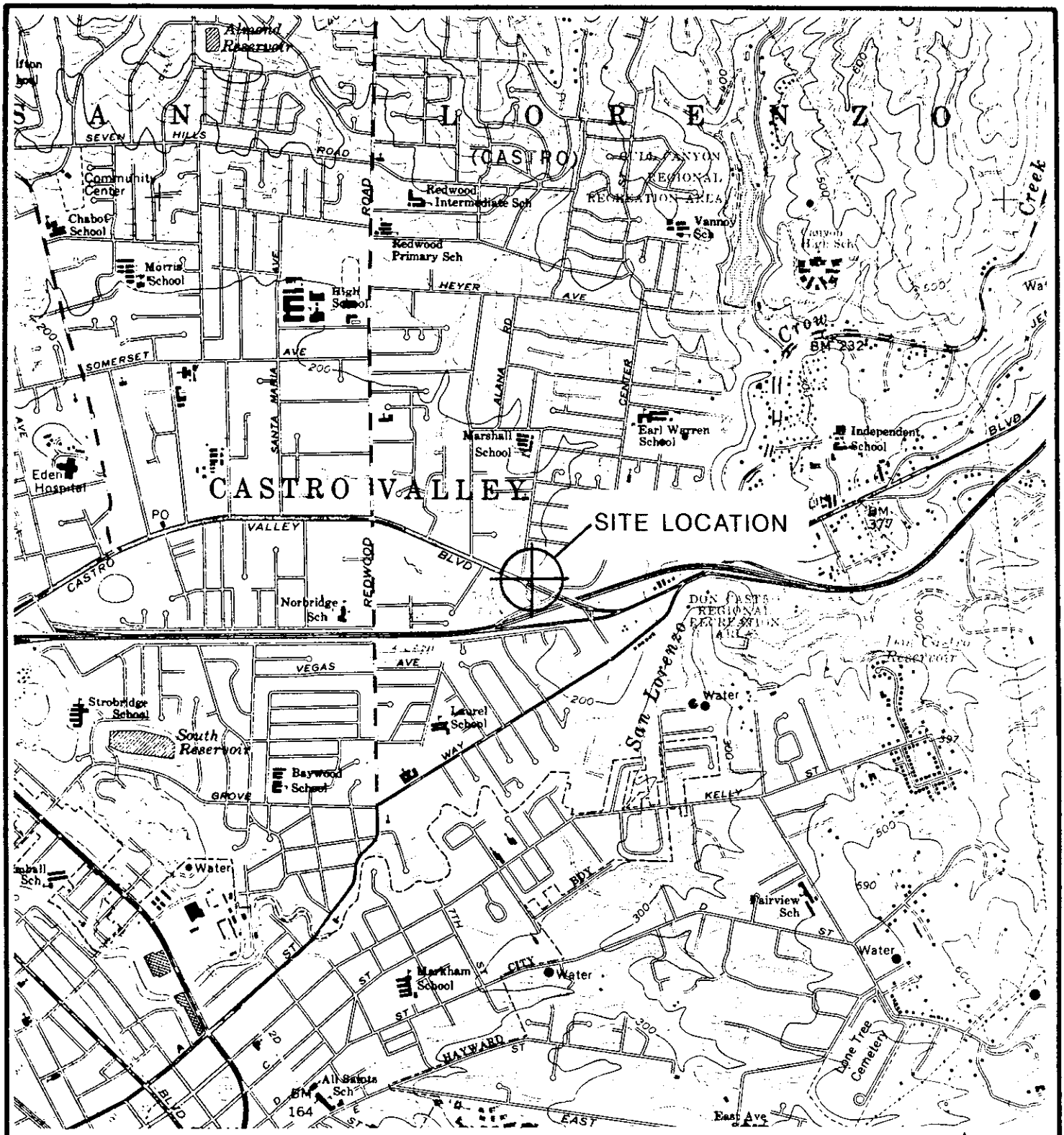

FIGURE 1. SITE LOCATION MAP

TEXACO REFINING
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CASTRO VALLEY, CALIFORNIA

ML 12/89

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WELL SURVEY

A well survey of the area surrounding the station was conducted to assess the utilization of groundwater in the vicinity of the site. Using records from the California Department of Water Resources in Sacramento, no registered water wells were on file within a one-quarter-mile radius of the site.

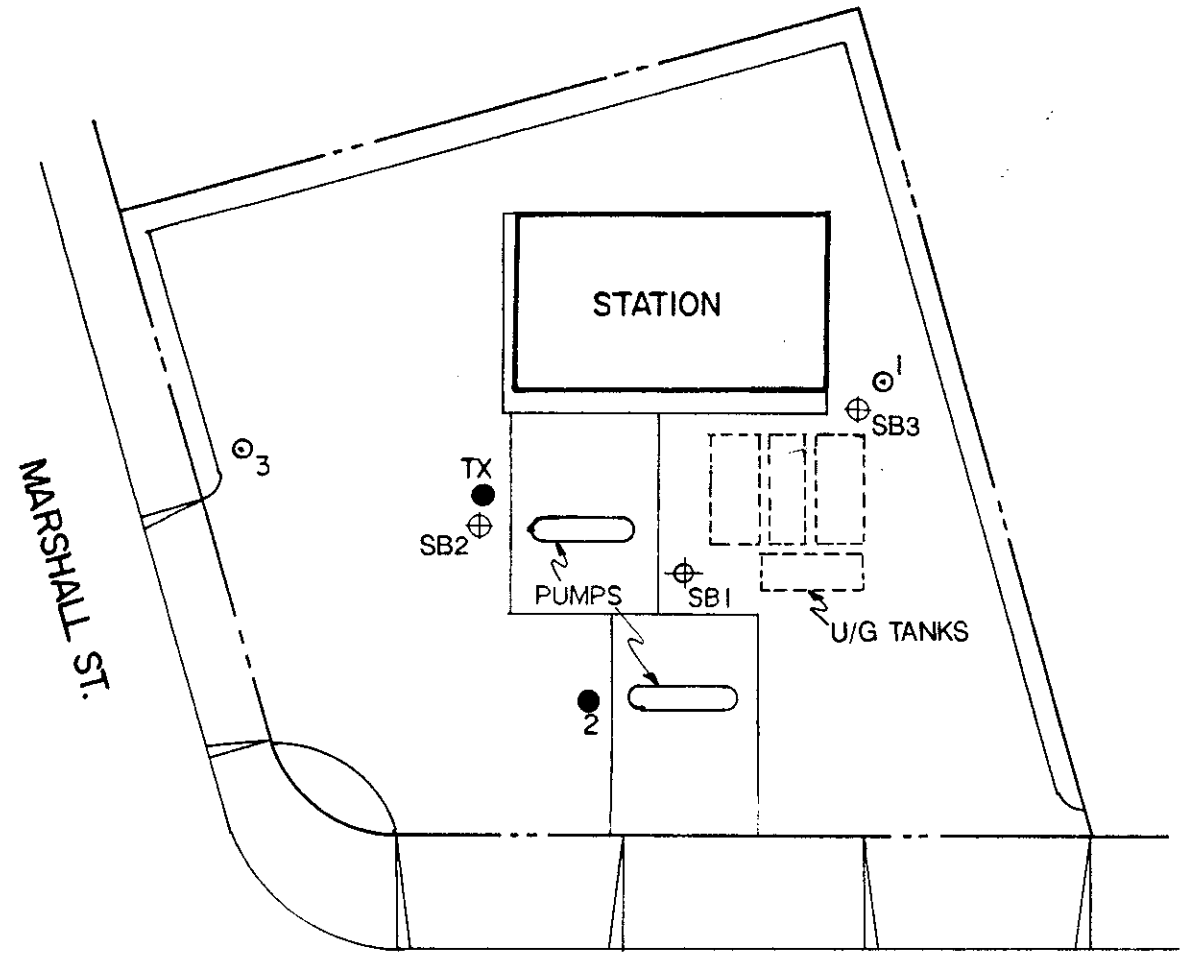
SITE HISTORY

A Petro-Tite® test was performed in September 1984 on the four underground fuel-storage tanks that were present on the site. The test results indicated that all tanks were tight. The two 6,000-gallon and two 4,000-gallon underground fuel-storage tanks were removed from the site in June 1985.

Soil samples that were collected in June 1985 from the tank pit excavation, approximately 13-feet below grade, were analyzed in July 1985. The results of the analyses reported the presence of total petroleum hydrocarbons (TPH)-as-gasoline at concentrations up to 6,500-parts per million (ppm). This prompted further excavation of the soils around the tank area. The analyses of additional soil samples collected from the tank pit (exact location of these samples is unknown) in October 1985 detected the presence of 15 ppm and 7,900 ppm of volatile hydrocarbons. A monitoring well (TX) was installed in December 1985 to a depth of 25 feet in the vicinity of the pump islands northwest of the tank-pit area (Figure 2). The analyses of the soil samples collected during the drilling detected 6 ppm and 38 ppm of TPH-as-gasoline at 20- and 25-feet below surface, respectively.

In November and December 1987, six soil borings were drilled at the site and three of the borings were converted to groundwater monitoring wells (Figure 2). Analytical results of soil samples collected from the borings reported only minor concentrations of petroleum hydrocarbons. A maximum concentration of 40 ppm TPH-as-gasoline was detected in the soil sample from a depth of 24.5 feet in the boring for monitoring well MW-4.

The station building was removed and the site was cleared in preparation for new construction in 1988. During the construction phase of the project in 1989, two groundwater-monitoring wells, MW-2 and TX, were abandoned in accordance with Alameda County guidelines (Figure 2). Additional excavation of soil



LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ● ABANDONED MONITORING WELL

FIGURE 2
OLD SITE PLAN
(12/87)

N

0 FEET 30

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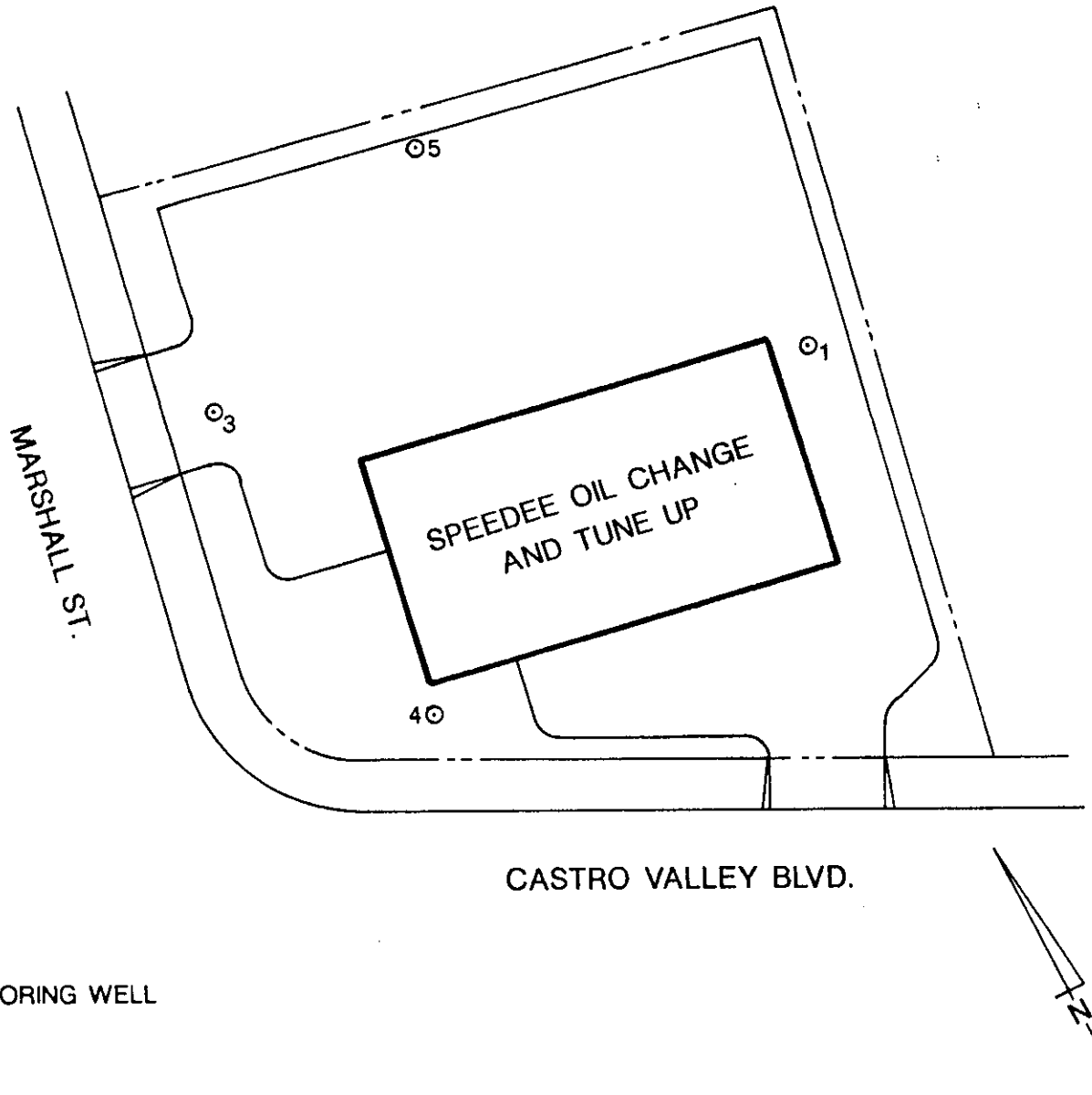
CASTRO VALLEY, CALIFORNIA

GROUNDWATER
TECHNOLOGY, INC.

was also performed to a depth of 5-feet in the old tank pit. The removal of this soil was necessary to comply with compaction standards for the new construction. The soil was placed into a low-level aeration pile and turned over several times. Subsequent to aeration, the soil was returned to the excavation and properly compacted.

In April 1990, two, four-inch-diameter groundwater-monitoring wells, MW-4 and MW-5, were installed to a depth of 45 feet on the site to replace MW-2 and TX (Figure 3). Analytical results reported a concentration of 40 ppm TPH-as-gasoline in the soil sample collected at a depth of 25 feet in the boring for MW-4. Table 1 presents a historical review of the dissolved gasoline-hydrocarbon concentrations detected in soil samples from the soil borings at the site. The laboratory reports for the analyses of the soil samples collected in April 1990 are presented in Appendix B.

Table 2 presents a historical review of dissolved gasoline-hydrocarbon concentrations in parts per billion (ppb) detected in water samples collected at the site from December 1987 through November 1990. As indicated in Table 2, concentrations of TPH-as-gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX) hydrocarbons have significantly decreased in the replacement monitoring well, MW-4, and seem to have stabilized at approximately 50 to 100 ppb. Concentrations of TPH-as-gasoline and (BTEX) have shown a decrease in the samples from monitoring well MW-1 since the monitoring well was constructed in December 1987. Analytical results for the samples from monitoring wells MW-3 and MW-5 have reported no detectable TPH-as-gasoline or BTEX at method detection limits (MDL) since the monitoring wells were constructed in December 1987 and April 1990, respectively. Analytical laboratory reports for groundwater samples collected at the site from April to November 1990 are included in Appendix C.



LEGEND
⊙ MONITORING WELL

FIGURE 3
SITE PLAN, APRIL 1990

0 FEET 30

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TABLE 1
HISTORICAL REVIEW OF DISSOLVED GASOLINE HYDROCARBON CONCENTRATIONS IN SOIL
in parts per million

December 1985 - April 1990

DATE	SAMPLE	DEPTH (FEET)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	LEAD	TOG	METHYLENE CHLORIDE	CHLOROFORM	TPH-AS-GASOLINE
12/10/85	164-20(TX)	20	--	--	--	--	--	--	--	--	6
12/10/85	164-20(TX)	25	--	--	--	--	--	--	--	--	38
11/21/87	SB 1 C	(14-14.5)	ND	ND	ND	ND	--	--	--	--	ND
11/21/87	SB 1 F	(29-29.5)	ND	ND	ND	ND	--	ND	1.9	0.025	ND
11/21/87	SB 2 B	(9- 9.5)	ND	ND	ND	ND	--	--	--	--	ND
11/21/87	SB 2 F	(29-29.5)	ND	ND	ND	ND	--	--	--	--	ND
11/21/87	SB 3 C	(14-14.5)	ND	ND	ND	ND	--	--	--	--	ND
11/21/87	SB 3 F	(29-29.5)	ND	ND	ND	ND	--	--	--	--	ND
12/15/87	MW 1 E	(24-24.5)	ND	ND	0.24	2.0	--	--	ND	ND	--
12/17/87	MW 2 E	(24-24.5)	ND	ND	ND	ND	--	--	--	--	14.0
12/17/87	MW 3 E	(24-24.5)	ND	ND	ND	ND	--	--	--	--	ND
04/13/90	MW-4 B	(9.5-10)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL
04/13/90	MW-4 C	(14.5-15)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL
04/13/90	MW-4 D	(19.5-20)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL
04/13/90	MW-4 E	(24.5-25)	<PQL	<PQL	<PQL	<PQL	<PQL	--	--	--	40
04/13/90	MW-5 B	(9.5-10)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL
04/13/90	MW-5 D	(19.5-20)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL
04/13/90	MW-5 F	(29.5-30)	<PQL	<PQL	<PQL	<PQL	--	--	--	--	<PQL

MW = Monitoring Well
ND = Non Detectable
<PQL = Less than Practical Quantitation levels, per Federal Register, November 13, 1985, P. 46906
SB = Soil Boring
TOG = Total Oil-and-Grease
TPH = Total Petroleum Hydrocarbons

TABLE 2

**HISTORICAL REVIEW OF DISSOLVED
GASOLINE HYDROCARBON CONCENTRATIONS IN WATER
DECEMBER 1987 - AUGUST 1990**

parts per billion

DATE	CONSTITUENT	MW-1	MW-2	MW-3	MW-4	MW-5	TX
12/30/87	BTEX TPH-G	220 2,100	389 2,400	<MDL <MDL			DRY
06/07/88	BTEX TPH-G	54 290	266 1,200	<PQL <PQL			DRY
12/13/88	BTEX TPH-G	30 370	893 4,000	<PQL <PQL			DRY
08/29/89	BTEX TPH-G	6 160	ABANDONED	<PQL <PQL			ABANDONED
02/27/90	BTEX TPH-G	<PQL <PQL		<PQL <PQL			
04/12/90	BTEX TPH-G	NS		NS	229 1,500	<MDL <MDL	
06/11/90	BTEX TPH-G	18 190		<MDL <MDL	19 110	<MDL <MDL	
08/22/90	BTEX TPH-G	0.3 19		<MDL <MDL	5 50	<MDL <MDL	
9/12/90	BTEX TPH-G	12 92		<MDL <MDL	8 49	<MDL <MDL	
10/10/90	BTEX TPH-G	4 40		<MDL <MDL	4 77	<MDL <MDL	
11/15/90	BTEX TPH-G	0.8 18		<MDL <MDL	2 49	<MDL <MDL	

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
<MDL = Less the Method Detection Limits
NS = Not Sampled
<PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, P. 46906
TPH-G = Total Petroleum Hydrocarbons-as-gasoline

SITE DESCRIPTION

HYDROGEOLOGY

The site is located within the Castro Valley groundwater basin. The unconsolidated Quaternary Age sediments beneath the site overlie the Chico Formation. The Chico Formation is considered to be non-water-bearing due to poor water yield in this area. The younger Quaternary Age sediments present beneath the site consist of unconsolidated sands, silts and clays and are the major water-bearing units in the area. Groundwater in these unconsolidated sediments is mainly unconfined. The eastern and northern slopes of Castro Valley are the principal recharge areas, with low rates of recharge. Regional groundwater flow is generally to the southwest.

Groundwater was encountered at depths between 30-and 35-feet below grade in the soil borings drilled on April 3, 1990. The static water levels of groundwater-monitoring wells at the site on April 12, 1990, ranged from 21.70 to 23.65-feet below grade. The interpreted groundwater-flow direction, as determined from the April 12, 1990, monitoring data, is towards the northwest. A historical review of groundwater levels is presented as Table 3. Gradient maps derived from the monitoring data historically depict a westerly to northwesterly trend (Figures 4, 5, 6, 7, 8, 9).

PROPOSED WORK PLAN

SOIL BORINGS

Three additional soil borings (which will be converted into monitoring wells) will be used to provide additional information on the areal and vertical extent of adsorbed and dissolved hydrocarbon concentrations off site. The borings for two of the monitoring wells will be located downgradient in the probable groundwater-flow direction. The boring for the third monitoring well will be located on site, cross-gradient from monitoring well MW-1 (Figure 10). The borings will be performed by a licensed C-57 drilling contractor using a truck-mounted drill rig with a 10.5-inch, outside-diameter, hollow-stem augers.

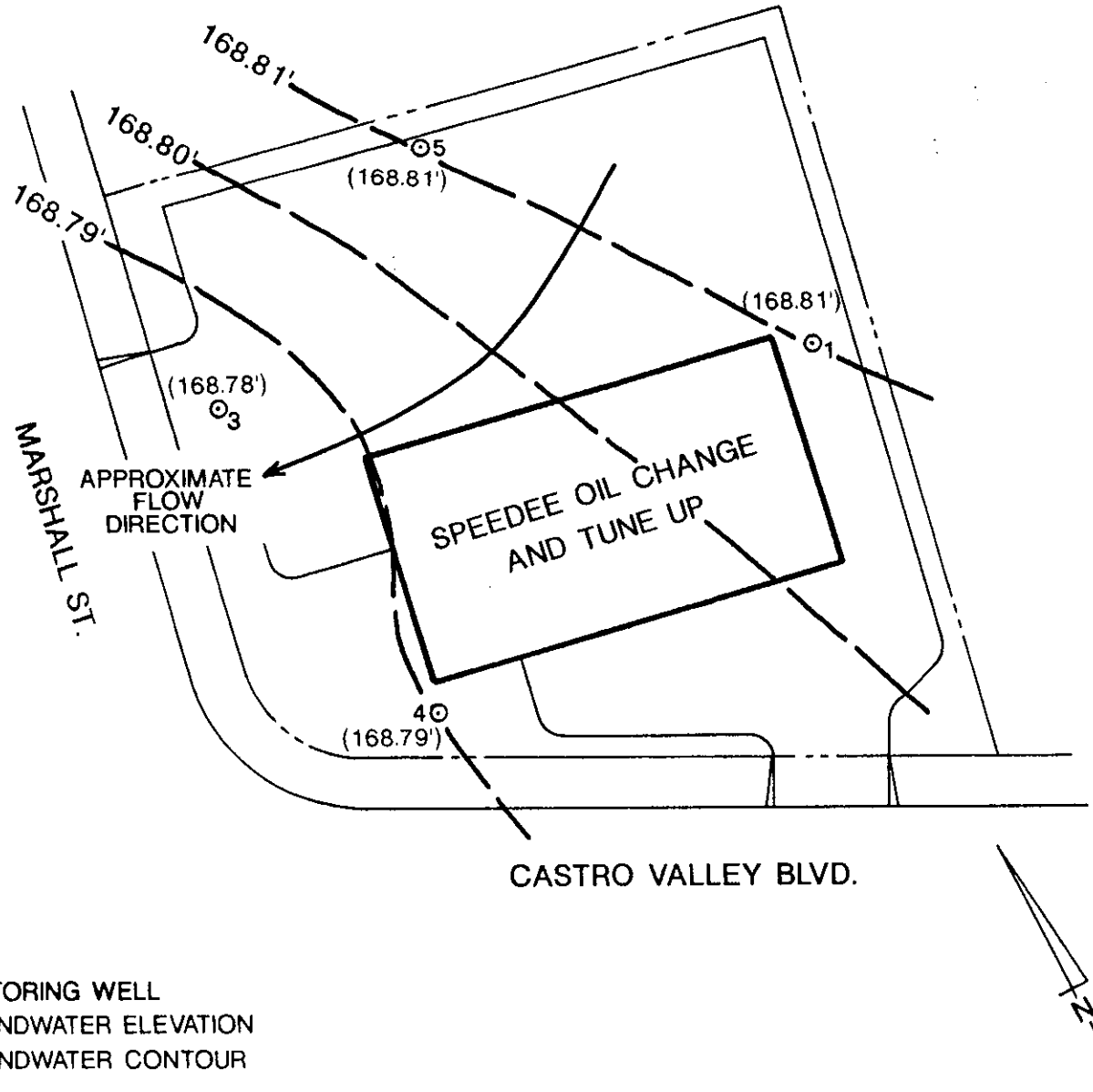
TABLE 3

GROUNDWATER MONITORING DATA
NOVEMBER 1987 - NOVEMBER 1990

WELL ELEV.	TX	MW-1 192.46	MW-2	MW-3 190.48	MW-4 191.63	MW-5 191.55
11/19/87 DTW Water Elev.	20.90	NM	NM	NM		
12/20/87 DTW Water Elev.	NM	21.92 170.54	22.30	22.60 167.88		
06/07/88 DTW Water Elev.	21.51	23.35 169.11	23.83	20.90 169.58		
12/13/88 DTW Water Elev.	NM	23.17 169.29	23.69	20.92 169.56		
08/29/89 DTW Water Elev.	Abandoned	23.70 168.76	Abandoned	21.48 169.00		
02/27/90 DTW Water Elev.		23.25 169.21		21.58 168.90		
04/12/90 DTW Water Elev.		23.65 168.81		21.70 168.78	22.48 168.79	22.74 168.81
06/11/90 DTW Water Elev.		23.74 168.72		21.79 168.69	21.82 169.81	22.83 168.72
07/18/90 DTW Water Elev.		23.90 168.56		21.96 168.52	23.09 168.54	23.01 168.54
08/22/90 DTW Water Elev.		24.07 168.39		22.10 168.38	23.24 168.39	23.15 168.40
09/27/90 DTW Water Elev.		24.21 168.25		22.24 168.24	23.38 168.25	23.29 168.26
10/10/90 DTW Water Elev.		24.25 168.21		22.28 168.20	24.25 167.38	22.33 169.22
11/15/90 DTW Water Elev.		24.45 168.01		22.50 167.98	23.64 167.99	23.54 168.01

DTW = Depth to Water
MW = Monitoring Well
NM = Not Measured

Surveyed to Alameda County Datum on April 23, 1990



LEGEND
- ⊙ MONITORING WELL
- ( ) GROUNDWATER ELEVATION
- — — GROUNDWATER CONTOUR

FIGURE 4
POTENTIOMETRIC SURFACE MAP
(4/12/90)

0 FEET 30

TEXACO REFINING
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CASTRO VALLEY, CALIFORNIA

ML 6/90

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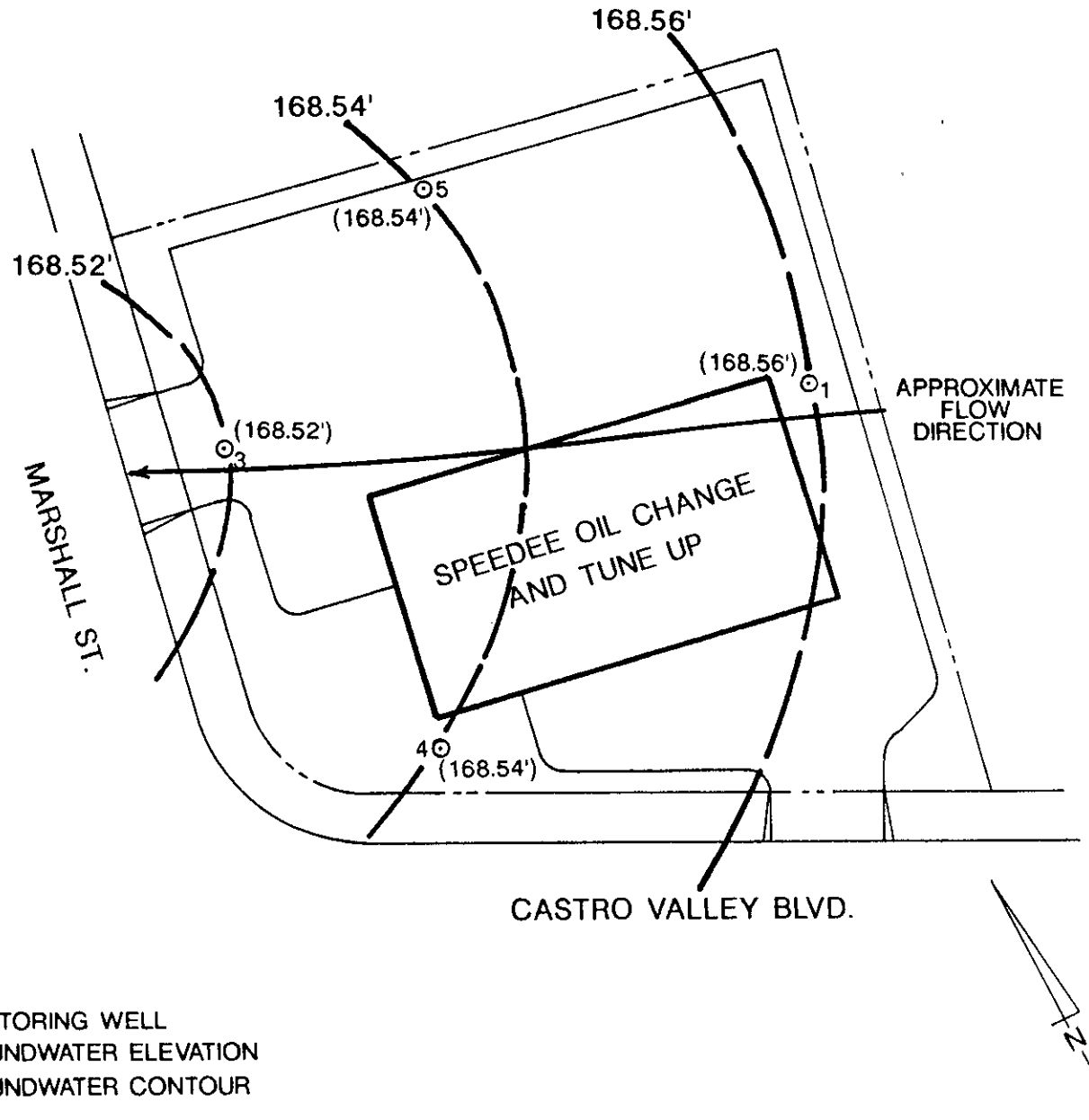


LEGEND

⊙ MONITORING WELL

( ) GROUNDWATER ELEVATION

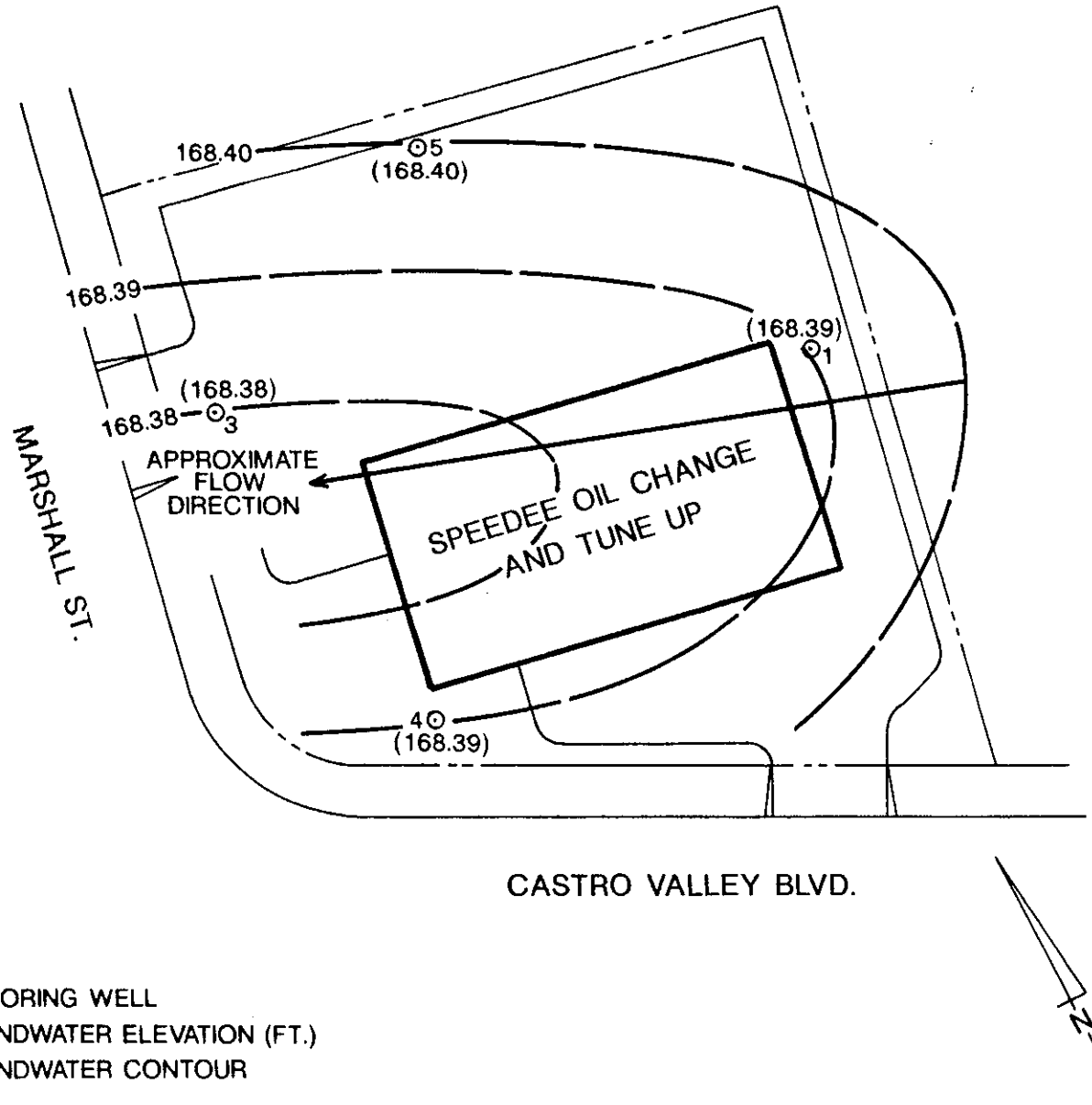
— — GROUNDWATER CONTOUR

FIGURE 5
POTENTIOMETRIC SURFACE MAP
(7/18/90)

0 FEET 30

TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

GROUNDWATER
TECHNOLOGY, INC.



LEGEND

⊙ MONITORING WELL

( ) GROUNDWATER ELEVATION (FT.)

— — GROUNDWATER CONTOUR

FIGURE 6
POTENTIOMETRIC SURFACE MAP
(8/22/90)

0 FEET 30

TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

GROUNDWATER
TECHNOLOGY, INC.

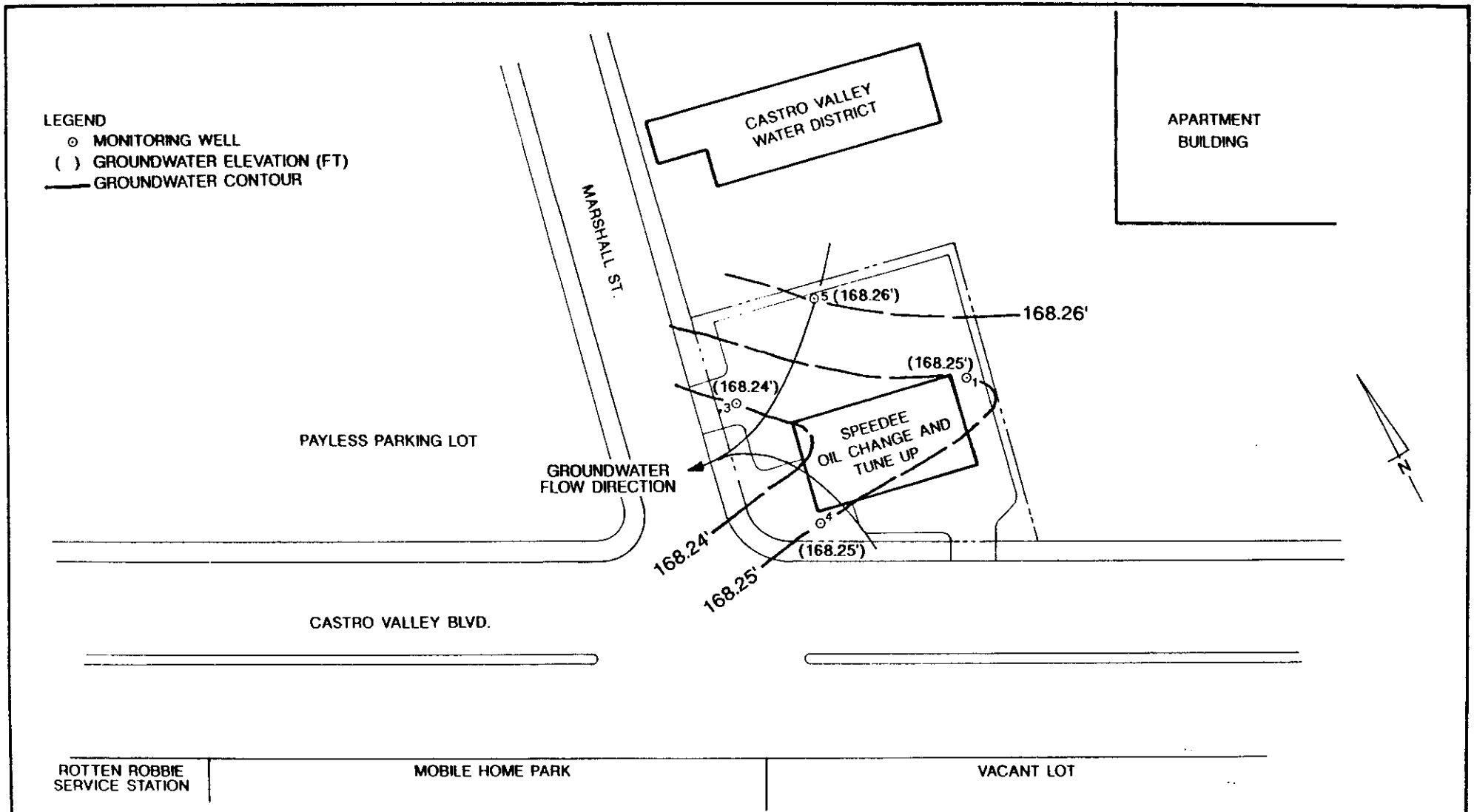


FIGURE 7

POTENTIOMETRIC SURFACE MAP
(9/27/90)

TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

0 FEET 40

ML 10/90

GROUNDWATER TECHNOLOGY, INC.

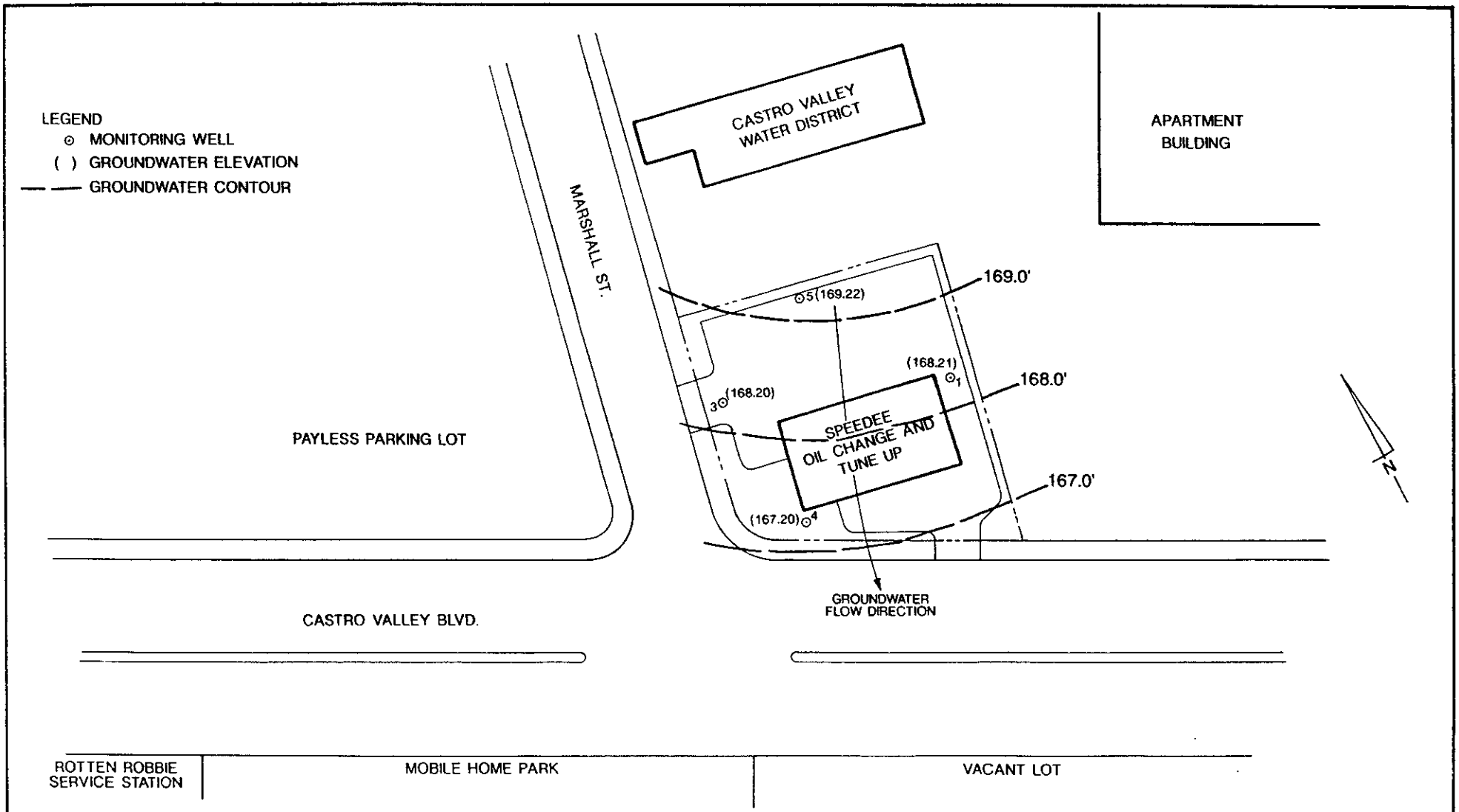


FIGURE 8
POTENTIOMETRIC SURFACE MAP
(10/10/90)

TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

0 FEET 40

ML 12/90

GROUNDWATER TECHNOLOGY, INC.

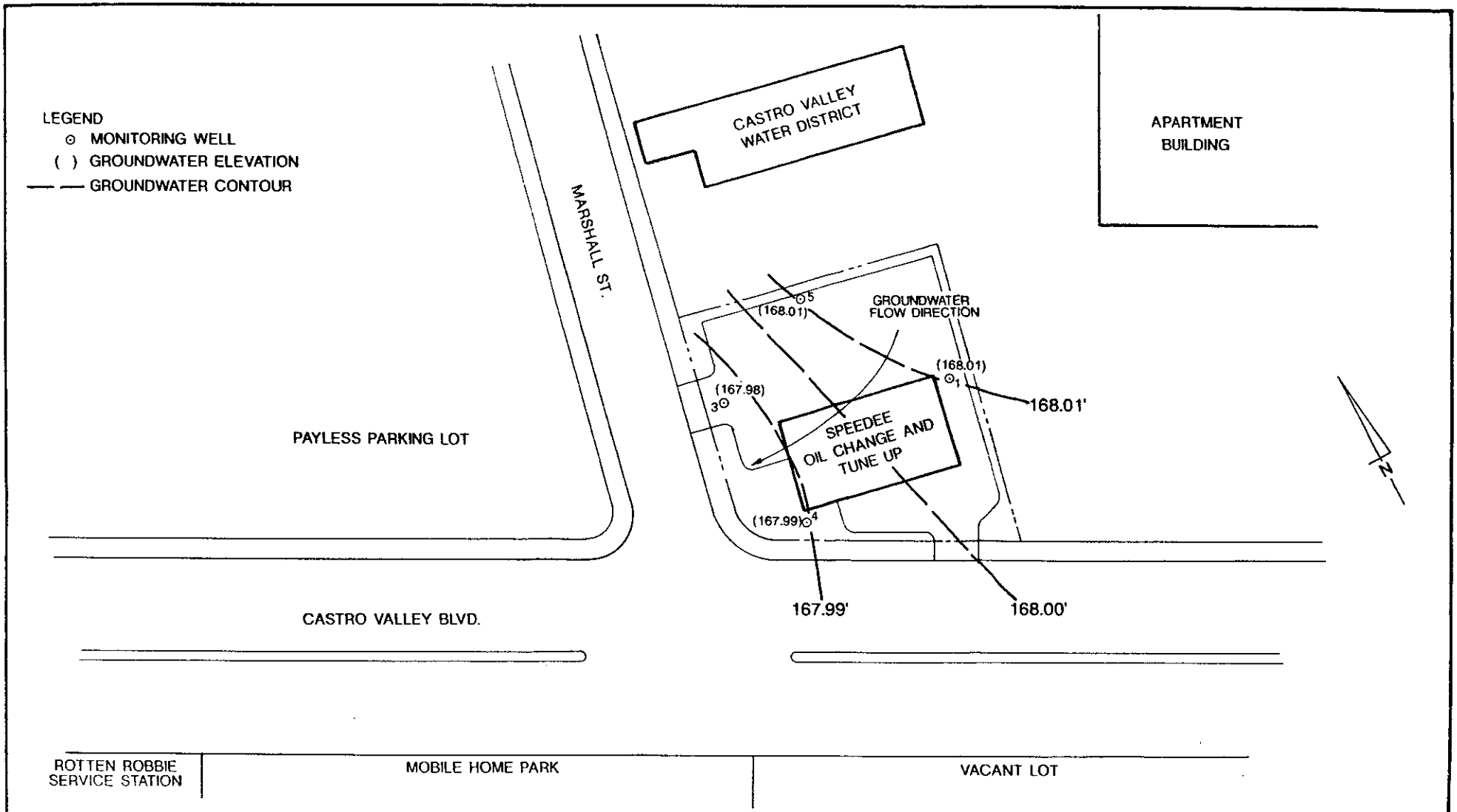


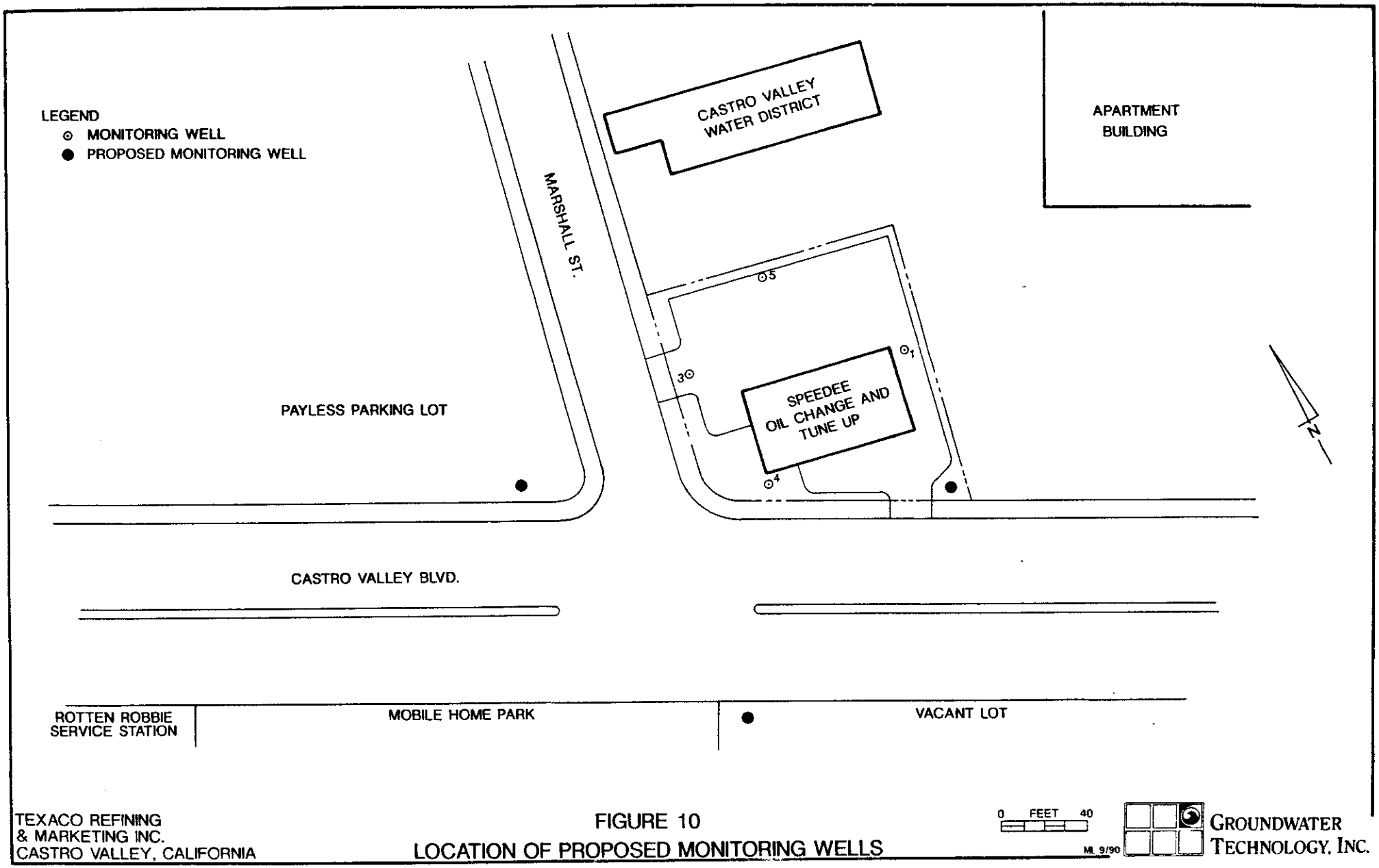
FIGURE 9
POTENTIOMETRIC SURFACE MAP
(11/15/90)

TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

0 FEET 40

ML 12/90

GROUNDWATER TECHNOLOGY, INC.



TEXACO REFINING
& MARKETING INC.
CASTRO VALLEY, CALIFORNIA

FIGURE 10
LOCATION OF PROPOSED MONITORING WELLS

0 FEET 40

ML 9/90

GROUNDWATER TECHNOLOGY, INC.

SOIL SAMPLING PROCEDURES

During drilling, all soil samples will be visually inspected and field screened for the presence of petroleum hydrocarbons using a photo-ionization detector. A 5-foot continuous-core sampling device will be used during drilling for soil sample retrieval and to provide a continuous log of soil types encountered. A field geologist will record the soil types encountered in each boring in accordance with the Unified Soil Classification System. The samples will be contained in 2-inch-diameter by 6-inch-long, thin-walled, brass tube liners that will be pushed into the continuous soil core at approximately 5-foot intervals. Soil samples will be sealed, labeled and placed on ice in an insulated cooler for delivery to a California state-certified laboratory for analyses for the presence of BTEX and for TPH-as-gasoline using U.S. Environmental Protection Agency (EPA) Methods 5030, 8020, and modified Method 8015. A Chain-of-Custody Manifest will accompany the samples at all times.

MONITORING WELL INSTALLATION

The well installation will be supervised by a field geologist and will be performed in accordance with State of California and County of Alameda regulations. Based upon the depth of previous monitoring wells, the monitoring wells will be approximately 30-feet deep. Monitoring wells MW-6, MW-7, and MW-8 will be constructed of 20-feet of 0.020-inch, machine-slotted, 4-inch-diameter polyvinyl chloride (PVC) screen and 10-feet of 4-inch-diameter blank PVC casing. The annular space around the well screen will be packed with No. 2 sand. The sand pack will be installed to 1-foot above the top of the screened interval in each well. The wells will be finished with a 1-foot bentonite seal overlain by cement grout to the surface, with locking caps and water tight, traffic-rated street boxes for protection. A typical well construction diagram is shown on Figure 11.

The drilling rig and augers will be cleaned using a high-pressure, hot-water (steam) cleaner between borings. The rinsate water will be placed in labeled 55-gallon drums for proper disposal. Soil from drill cuttings will be placed in a lined, roll off dumpster. The soil will be left on site pending sample analysis results, then properly disposed of.

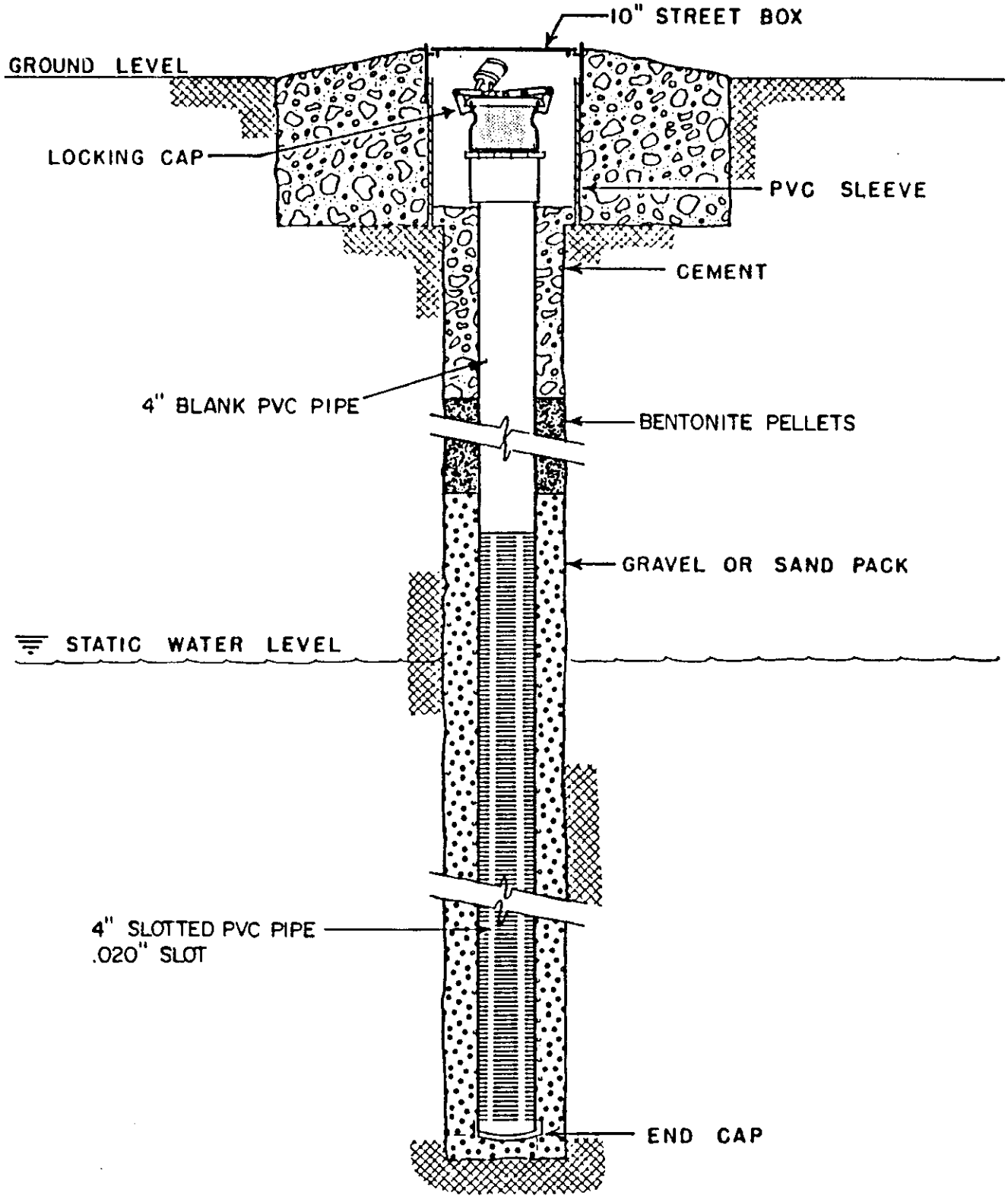


FIGURE 11

TYPICAL MONITORING WELL CONSTRUCTION

GROUNDWATER TECHNOLOGY, INC.

WELL DEVELOPMENT AND GROUNDWATER SAMPLING PROCEDURES

Subsequent to installation, the wells will be developed to remove silts and improve well performance. Well development will be conducted by alternately surging and bailing until the extracted groundwater is free of fines. All development water will be placed in 55-gallon drums, labeled and secured on site for temporary storage pending laboratory analyses to determine a proper disposal method.

Groundwater monitoring of wells at the site will be conducted using a probe that utilizes an optical sensor and electrical conductivity to distinguish between water and separate-phase hydrocarbons. The probe is accurate to approximately 0.01 foot. A surface sampler, consisting of a 12-inch-long, cast acrylic hollow tube with a ball check-valve on the bottom, will be used to collect a sample for physical inspection of the groundwater to note sheens, odors, and turbidity. To reduce the potential for cross contamination between wells, the equipment will be washed with laboratory grade detergent and double rinsed with distilled water before each use.

Prior to sampling, each well will be purged of approximately four well volumes or until the discharge water indicates stabilization of temperature, conductivity, and pH. If the well is evacuated before four well volumes are removed or stabilization is achieved, the samples will be collected after the water level has recovered to 80 percent of the initial level. The samples will be obtained with an EPA Teflon^{R} sampler and placed in 40-milliliter pre-acidified glass vials with Teflon^{R} septum caps applied in such a way that no air becomes trapped inside. Rinsate blanks containing a sample of the final distilled-water rinsate from the cleaned surface sampler will be collected prior to the actual sampling of each well as part of the Quality Assurance/Quality Control (QA/QC) Program. The sealed vials containing the groundwater samples and rinsate blank samples will be immediately labeled and placed on ice in an insulated cooler, along with a Chain-of-Custody Manifest, and delivered to a California state-certified laboratory for analyses for the presence of BTEX and TPH-as-gasoline using EPA Methods 5030, 8020, and modified Method 8015.

The monitoring and sampling of monitoring wells at the site will conform with the formal request by Alameda County Health Care Services (ACHCS) in a letter dated July 6, 1990. The frequency of monitoring events for each well will be monthly for one year. At the end of one year, the monitoring frequency will be reduced to quarterly upon approval from the ACHCS. The new downgradient wells, including MW-4, will be sampled each month for a period of three months. If, after three months, targeted compound concentrations have decreased or stabilized, sampling may be reduced in these wells to quarterly upon the discretion of the ACHCS. All cross- and upgradient wells will be sampled quarterly.

PERSONNEL QUALIFICATIONS

The principal hydrogeologist working on this project is Mr. Kevin Sullivan, Registered California Professional Engineer, No. C46253. Mr. Sullivan's resume is presented in Appendix D.

APPENDIX A

SITE SAFETY PLAN

SUMMARY OF SITE SAFETY PLAN

Groundwater Technology, Inc. has adopted the following health and safety procedures for working with contaminants encountered during drilling and sampling of subsurface soils and groundwater at the Castro Valley site. The purpose of this program is to provide health and safety precautions for initial and subsequent site visits.

1. The site manager shall coordinate all activities involving equipment and personnel at the project site. The site manager's responsibilities will include, but are not limited to, the following:

   A. Limiting access within the site perimeter to authorized personnel.

   B. Providing a written log of on-site activities.

   C. Containment of all contaminated soils and water prior to disposal at an appropriate waste-disposal site.

   D. Enforcement of site-safety precautions.

2. During drilling, all personnel shall undertake the following precautions:

   A. Skin/Clothes Protection.

      1. Disposable plastic gloves for sampling (changed after each sample).

      2. Hard hats and safety-toe boots will be worn during drilling activities.

      3. Disposable clothing will be properly disposed of at the completion of the job.

   B. Respirator/Eye Protection

      1. During drilling activities, ambient air and soil-vapor concentrations shall be monitored by the use of a photo-ionization detector (PID) with a 10.0 electron volt lamp. This unit shall provide the concentration of total organic vapors (ppm) in air being sampled. The instrument shall be calibrated daily to an isobutylene standard.

      2. Vapor concentration action levels and corresponding responses are described below.

SITE PERSONNEL

If breathing-zone vapor concentrations at the borehole are greater than 50 ppm above background (upwind) concentrations, site personnel must use half-face respirator with organic vapor cartridges and goggles.

If breathing-zone vapor concentrations at the borehole are greater than 100 ppm, site personnel must use full face respirator with organic vapor cartridges, and the site manager should monitor site parameters (concentrating in the downwind direction).

If breathing-zone vapor concentrations at the borehole are greater than 750 ppm, site activities shall be stopped, until concentrations are less than 500 ppm. The site manager should continuously monitor the site perimeter.

Emergency numbers:

1. Alameda County
   Department of Environmental Health
   Scott Seery
   (415) 271-4320

2. California Regional Water Quality
   Control Board, San Francisco Bay Region
   Thomas J. Callaghan
   (415) 464-1255

3. Fire Department
   911 or (415) 581-3636

4. Company Health and Safety Coordinator
   Dan Erwin
   (415) 685-9250

5. Police/Fire Emergency
   911

6. Nearest Emergency Hospital:

   Eden Hospital Medical Center
   20103 Lake Chabot Rd.
   Castro Valley, CA 94546
   (415) 537-1234

APPENDIX B

LABORATORY RESULTS - SOIL SAMPLES

APRIL 3, 1990

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

Project Number: 203-199-4080
Work Order Number: D0-04-172
Location: 3480 Castro Valley Blvd.
Date Sampled: 03-Apr-90

April 18, 1990

Tim Watchers
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 04/06/90, under chain of custody numbers 72-3356 and 72-6604.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any question concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Project Number: 203-199-4080
Work Order Number: D0-04-172
Location: 3480 Castro Valley Blvd.
Date Sampled: 03-Apr-90

Table 1a

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Soil EPA Methods 5030, 8020 and modified 8015[a]

a Results rounded to two significant figures. <PQL = less than practical quantitation levels, per EPA Federal Register, November 13, 1985, p. 46906.

GTEL Sample Number	01	02	03	04
Client Identification	MW5B	MW5D	MW5F	MW4B
Date Extracted	04/13/90	04/13/90	04/13/90	04/13/90
Date Analyzed	04/17/90	04/17/90	04/17/90	04/17/90
Analyte	Concentration, mg/Kg			
Benzene	< PQL	< PQL	< PQL	< PQL
Toluene	< PQL	< PQL	< PQL	< PQL
Ethylbenzene	< PQL	< PQL	< PQL	< PQL
Xylene, total	< PQL	< PQL	< PQL	< PQL
TPH as gasoline	< PQL	< PQL	< PQL	< PQL
Detection limit multiplier	1	1	1	1

GTEL Sample Number	05	06	07	
Client Identification	MW4C	MW4D	MW4E	
Date Extracted	04/13/90	04/13/90	04/13/90	
Date Analyzed	04/17/90	04/17/90	04/17/90	
Analyte	Concentration, mg/Kg			
Benzene	< PQL	< PQL	< PQL	
Toluene	< PQL	< PQL	< PQL	
Ethylbenzene	< PQL	< PQL	< PQL	
Xylene, total	< PQL	< PQL	< PQL	
TPH as gasoline	< PQL	< PQL	40	
Detection limit multiplier	1	1	1	

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

Project Number: 203-199-4080
Work Order Number: D0-04-173
Location: 3480 Castro Valley Blvd.
Castro Valley, CA.
Date Sampled: 03-Apr-90

April 11, 1990

Tim Watchers
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 04/06/90, under chain of custody number 72-6604.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Project Number: 203-199-4080
Work Order Number: D0-04-173
Location: 3480 Castro Valley Blvd.
Castro Valley, CA
Date Sampled: 03-Apr-90

Table 1a

ANALYTICAL RESULTS

Organic Lead in Soil

California DHS Method (LUFT Manual)

GTEL Sample Number		01			
Client Identification		MW4E			
Date Prepared		04/09/90			
Date Analyzed		04/09/90			
Analyte	Detection Limit, mg/Kg	Concentration, mg/Kg			
Lead, organic	0.25	<0.25			
Detection Limit Multiplier		1			

GTEL ENVIRONMENTAL LABORATORIES, INC.

APPENDIX C

LABORATORY RESULTS - WATER SAMPLES

APRIL - NOVEMBER 1990

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

Project Number: 203-199-4080
Work Order Number: D0-04-296
Location: 3940 Castro Valley
Castro Valley, CA
Date Sampled: 12-Apr-90

April 19, 1990

Tim Watchers
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 04/13/90, under chain of custody number 72-4403.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Project Number: 203-199-4080
Work Order Number: D0-04-296
Location: 3940 Castro Valley
Castro Valley, CA
Date Sampled: 12-Apr-90

Table 1a

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water EPA Methods 5030, 8020 and modified 8015[a]

a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL Sample Number		01	02	03	
Client Identification		MW5B	MW5	MW4	
Date Analyzed		04/16/90	04/16/90	04/16/90	
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	<0.5	97	
Toluene	0.5	<0.5	<0.5	1	
Ethylbenzene	0.5	<0.5	<0.5	11	
Xylene, total	0.5	<0.5	<0.5	120	
TPH as gasoline	1	<1	<1	1500	
Detection limit multiplier		1	1	1	

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080- Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72-4403

CUSTODY RECORD

Project Manager: Tim Watchers
Phone #: FAX #: 685-9250

Address: Concord GTI
Site location: 3940 Castro Valley, C.V.

Project Number: 203150 9080
Project Name: Texaco Valley

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Bob Haburchak

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	NONE	OTHER	Sampling: DATE	TIME
trip B			1	X					X			X			4/12	0830
mw5B			1						X							
mw5			2													1230
mw4B			1													
mw4			2													0790

ANALYSIS REQUEST

BTEX 602 ☐ 8020 ☐ with MTBE ☐
BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐
TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel
Product I.D. by GC (SIMDIS) ☐
Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐
Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐
EPA 601 ☐ 8010 ☐ DCA only ☐
EPA 602 ☐ 8020 ☐
EPA 608 ☐ 8080 ☐ PCBs only ☐
EPA 610 ☐ 8310 ☐
EPA 624 ☐ 8240 ☐ NBS +15 ☐
EPA 625 ☐ 8270 ☐ NBS +25 ☐
EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐
TCLP Metals ☐ VOA ☐ Semi VOA ☐
EPA Priority Pollutant Metals ☐ HSL ☐
LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐
CAM Metals ☐ STLC ☐ TTLC
Corrosivity ☐ Flashpoint ☐ Reactivity ☐
Hold

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)
report detection limits not < PQL

SPECIAL REPORTING REQUIREMENTS (Specify) yes

REMARKS: pg 1 of 1
report all three xylene isomers, acidified, normal turnaround

Lab Use Only Storage Location
Lot #: Work Order #:

	Received by:	Date	Time	Relinquished by Sampler:
	Received by:	Date	Time	Relinquished by:
Received by Laboratory: Way bill #		Date 4-13-90	Time	Relinquished by:

GTEL
ENVIRONMENTAL
LABORATORIES, INC.
Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: D0-06-264

June 22, 1990

Tim Watchers
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 06/13/90, under chain of custody number 72-4069.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: D0-06-264

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		MW5	MW1	MW3B	MW3*
Date Sampled		06/11/90	06/11/90	06/11/90	06/11/90
Date Analyzed		06/16/90	06/16/90	06/20/90	06/20/90
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	< 0.3	14	< 0.3	N/A
Toluene	0.3	< 0.3	1	< 0.3	N/A
Ethylbenzene	0.3	< 0.3	1	< 0.3	N/A
Xylene, total	0.6	< 0.6	2	< 0.6	N/A
TPH as Gasoline	1	< 1	190	< 1	N/A
Detection Limit Multiplier		1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. < PQL = less than practical quantitation levels, per EPA Federal Register, November 13, 1985, p. 46906.
* Sample lost due to instrument failure. No backup available for analysis.
NA = Not Applicable

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: D0-06-264

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05			
Client Identification		MW4			
Date Sampled		06/11/90			
Date Analyzed		06/16/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	18			
Toluene	0.3	<0.3			
Ethylbenzene	0.3	<0.3			
Xylene, total	0.6	0.7			
TPH as Gasoline	1	110			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. <PQL = less than practical quantitation levels, per EPA Federal Register, November 13, 1985, p. 46906.

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080- Pike Lane
Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72-4069

Project Manager: Tim Watchers
Phone #: 685-9250
FAX #:

Address: GTI Concord
Site location: 3940 Castro V. Blvd, C.V.

Project Number: 203 199 4080
Project Name: GTI Concord

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Bob Heburchak

ANALYSIS REQUEST (columns): BTEX 602 ☐ 8020 ☐ with MTBE ☐; BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐; TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel; Product I.D. by GC (SIMDIS) ☐; Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐; Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐; EPA 601 ☐ 8010 ☐ DCA only ☐; EPA 602 ☐ 8020 ☐; EPA 608 ☐ 8080 ☐ PCBs only ☐; EPA 610 ☐ 8310 ☐; EPA 624 ☐ 8240 ☐ NBS +15 ☐; EPA 625 ☐ 8270 ☐ NBS +25 ☐; EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐; TCLP Metals ☐ VOA ☐ Semi VOA ☐; EPA Priority Pollutant Metals ☐ HSL ☐; LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐; CAM Metals ☐ STLC ☐ TTLC ☐; Corrosivity ☐ Flashpoint ☐ Reactivity ☐; Hold

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# Containers	Matrix	Method Preserved	Date	Time	BTEX/TPH Gas	Hold
MW6B			1	Water X	HCl X, Ice X	6-11			X
MW5	N	01	2	↓	↓	↓	300	X	
MW1B			1						X
MW1		02	2				310	X	
MW3B		03	1					X	
MW3		04	1				320	X	
MW4B			1						X
MW4		05	2				330	X	
TripB.			1	↓	↓	↓	0900		X

CUSTODY RECORD

	Date	Time
Received by:		
Received by:		
Received by Laboratory: [signature]	6/13/91	9:15
Waybill #:		
Relinquished by Sampler: [signature]		
Relinquished by:		
Relinquished by:		

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER ______(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify): report detection limits not <PQL

SPECIAL REPORTING REQUIREMENTS (Specify): yes

REMARKS: acidified normal turnaround
note: only one sample for MW3

Lab Use Only
Lot #:
Storage location: BOX 1
Work Order #: D006264

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Western Region
4080-C Pike Ln., Concord, CA 94520
(415) 685-7852
In CA: (800) 544-3422
Outside CA: (800) 423-7143

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: D0-06-600

July 2, 1990

Tim Watchers
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 06/22/90, under chain of custody number 72-4494.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: D0-06-600

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01			
Client Identification		MW3			
Date Sampled		06/22/90			
Date Analyzed		06/28/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	< 0.3			
Toluene	0.3	< 0.3			
Ethylbenzene	0.3	< 0.3			
Xylene, total	0.6	< 0.6			
TPH as Gasoline	1	< 1			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision. <PQL = less than practical quantitation levels, per EPA Federal Register, November 13, 1985, p. 46906.

3006

GTEL ENVIRONMENTAL LABORATORIES, INC.
4080- Pike Lane
Concord, CA 94520
415-685-7852
800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72- 4494

CUSTODY RECORD

Project Manager: Tim Watchers

Phone #: 685-9250

FAX #:

Address: GTI Concord

Site location: 3940, Castro V. Blvd. CV

Project Number: 203 ~~199-150~~ 4080 (99)

Project Name: Texaco Castro Valley

I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler Name (Print): Brennan Fleener

ANALYSIS REQUEST I-BOX

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	H2SO4	ICE	NONE	OTHER	Sampling: DATE	TIME	BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐	TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel	Product I.D. by GC (SIMDIS) ☐	Total Oil & Grease 413.1 ☐ 413.2 ☐ 503A ☐	Total Petroleum Hydrocarbons 418.1 ☐ 503E ☐	EPA 601 ☐ 8010 ☐ DCA only ☐	EPA 602 ☐ 8020 ☐	EPA 608 ☐ 8080 ☐ PCBs only ☐	EPA 610 ☐ 8310 ☐	EPA 624 ☐ 8240 ☐ NBS +15 ☐	EPA 625 ☐ 8270 ☐ NBS +25 ☐	EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi VOA ☐	EPA Priority Pollutant Metals ☐ HSL ☐	LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐	CAM Metals ☐ STLC ☐ TTLC	Corrosivity ☐ Flashpoint ☐ Reactivity ☐	HOLD
TB			1	✓					[illegible]			✓			6/22	9:30																			✓
RBMW3			1	✓					[illegible]			✓			6/22	13:12																			
MW3		01	2	✓					✓			✓			6/22	13:15		✓																	

Relinquished by	Received by	Date	Time
Relinquished by Sampler: [signature]	Received by:	6/22/90	4:46
Relinquished by:	Received by:		
Relinquished by:	Received by Laboratory: [signature]	[illegible]/90	4:45

Way bill #

SPECIAL HANDLING

24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER ______(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)
Report detection levels not < PQL

SPECIAL REPORTING REQUIREMENTS (Specify)
Yes

REMARKS: Acidified
normal turnaround

Lab Use Only
Lot #:

Storage Location
Work Order #:

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080 Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 from inside California
(800) 423-7143 from outside California

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-08-616

August 30, 1990

Pete Fuller
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 08/22/90, under chain of custody number 72-8569.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-08-616

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		MW5	MW1	MW3B	MW3
Date Sampled		08/22/90	08/22/90	08/22/90	08/22/90
Date Analyzed		08/27/90	08/27/90	08/27/90	08/27/90
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	< 0.3	0.3	< 0.3	< 0.3
Toluene	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Ethylbenzene	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Xylene, total	0.6	< 0.6	< 0.6	< 0.6	< 0.6
BTEX, total	--	--	0.3	--	--
TPH as Gasoline	1	< 1	19	6	< 1
Detection Limit Multiplier		1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05			
Client Identification		MW4			
Date Sampled		08/22/90			
Date Analyzed		08/27/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	4			
Toluene	0.3	< 0.3			
Ethylbenzene	0.3	< 0.3			
Xylene, total	0.6	1			
BTEX, total	–	5			
TPH as Gasoline	1	50			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

C008616

GTEL ENVIRONMENTAL LABORATORIES, INC.

4080- Pike Lane
Concord, CA 94520
415-685-7852
800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

72- 8569

I BOX

Project Manager: [illegible]s / Pete Fuller
Phone #: 685-9250
FAX #:

Address: GTI Concord
Site location: 3940 Castro Valley Blvd, CV

Project Number: 203-199-4080
Project Name: GTI Concord

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Randy Ruiz

ANALYSIS REQUEST

- BTEX 602 ☐ 8020 ☐ with MTBE ☐
- BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐
- TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel
- Product I.D. by GC (SIMDIS) ☐
- Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐
- Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐
- EPA 601 ☐ 8010 ☐ DCA only ☐
- EPA 602 ☐ 8020 ☐
- EPA 608 ☐ 8080 ☐ PCBs only ☐
- EPA 610 ☐ 8310 ☐
- EPA 624 ☐ 8240 ☐ NBS +15 ☐
- EPA 625 ☐ 8270 ☐ NBS +25 ☐
- EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐
- TCLP Metals ☐ VOA ☐ Semi VOA ☐
- EPA Priority Pollutant Metals ☐ HSL ☐
- LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐
- CAM Metals ☐ STLC ☐ TTLC
- Corrosivity ☐ Flashpoint ☐ Reactivity ☐
- Hold

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# Containers	Water	Soil	Air	Sludge	Other	HCl	HNO_3	H_2SO_4	Ice	None	Other	Date	Time	BTEX/TPH Gas 602/8015	Hold
MW5B			1	X					X			X			8/22/90	1340		X
MW5		N01	2	(↓)					(↓)			(↓)			(↓)	1345	X	
MW1B			1													1349		X
MW1		N 02	2													1356	X	
MW3B		N 03	1													1402	X	
MW3		N 04	2													1410	X	
MW4B			1													1414		X
MW4		N 05	2													1420	X	
Trip B			1	↓					↓			↓			↓			X

CUSTODY RECORD

	Relinquished by	Date	Time	Received by
Relinquished by Sampler:				Received by:
Relinquished by:				Received by:
Relinquished by:	Randy Ruiz	8/22	3:45	Received by Laboratory: [illegible]

SPECIAL HANDLING

24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER ________(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)
Report detection limits Not <PQL

SPECIAL REPORTING REQUIREMENTS (Specify) yes

REMARKS: acidified
normal turnaround

Lab Use Only
Lot #:

Storage Location
Work Order #:

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080-C Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*
(415) 825-0720 (FAX)

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-09-339

September 21, 1990

Pete Fuller
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 09/13/90, under chain of custody number 72-9662.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-09-339

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		MW5	MW1	MW3B	MW3
Date Sampled		09/12/90	09/12/90	09/12/90	09/12/90
Date Analyzed		09/19/90	09/19/90	09/19/90	09/19/90
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	<0.3	7	<0.3	<0.3
Toluene	0.3	<0.3	<0.3	<0.3	<0.3
Ethylbenzene	0.3	<0.3	2	<0.3	<0.3
Xylene, total	0.6	<0.6	3	<0.6	<0.6
BTEX, total	–	–	12	–	–
TPH as Gasoline	1	<1	92	<1	<1
Detection Limit Multiplier		1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-09-339

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05			
Client Identification		MW4			
Date Sampled		09/12/90			
Date Analyzed		09/19/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	6			
Toluene	0.3	<0.3			
Ethylbenzene	0.3	0.5			
Xylene, total	0.6	1			
BTEX, total	–	8			
TPH as Gasoline	1	49			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

C009339

GTEL ENVIRONMENTAL LABORATORIES, INC.

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Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

72- 9662

CUSTODY RECORD

Project Manager: Pete Fuller
Phone #: 671-2387
FAX #:

Address: 4080 Pike Ln Concord CA
Site location: 3940 Castro Valley Blvd Castro Valley, CA

Project Number: 2031994080
Project Name: GTI

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Bob Haburchak

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	H_2SO_4	ICE	NONE	OTHER	Sampling: DATE	TIME
mw5B			1	X					X			X			9/12	
mw5	N	01	2													12:00
mw1B			1													
mw1	N	02	2													12:10
mw3B	N	03	1													
mw3	N	04	2													12:20
mw13			1													
mw9	N	05	2													12:30
trip B			1													

ANALYSIS REQUEST

BTEX 602 ☐ 8020 ☐ with MTBE ☐	BTEX/TPH Gas 602/8015 ☐ 8020/8015 ☐ MTBE ☐	TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel	Product I.D. by GC (SIMDIS) ☐	Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐	Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐	EPA 601 ☐ 8010 ☐ DCA only ☐	EPA 602 ☐ 8020 ☐	EPA 608 ☐ 8080 ☐ PCBs only ☐	EPA 610 ☐ 8310 ☐	EPA 624 ☐ 8240 ☐ NBS +15 ☐	EPA 625 ☐ 8270 ☐ NBS +25 ☐	EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐	TCLP Metals ☐ VOA ☐ Semi VOA ☐	EPA Priority Pollutant Metals ☐ HSL ☐	LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐	CAM Metals ☐ STLC ☐ TTLC	Corrosivity ☐ Flashpoint ☐ Reactivity ☐	
	X																X
	X																X
	X																
	X																X
	X																
	X																X
																	X

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)
report detection limits not LPL

SPECIAL REPORTING REQUIREMENTS (Specify) yes

REMARKS: acidified, normal turnaround
pg 1 of 1

Lab Use Only Storage Location
Lot #: Work Order #:

Relinquished by Sampler:	Received by:	Received by:	Received by Laboratory:
Date 9/13/90 Time 1020	Date	Date	Date 9/13/90 Time 10:20
Relinquished by:	Received by:	Received by:	Received by Laboratory:
Date Time	Date Time	Date Time	Date Time
Relinquished by:	Received by:	Received by:	Received by Laboratory:
Date Time	Date Time	Date Time	Date Time

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080-C Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*
(415) 825-0720 (FAX)

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-10-304

October 20, 1990

Pete Fuller
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 10/10/90, under chain of custody number 72-4094.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4060.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-10-304

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		MW-3	MW-5	MW-4	MW-1B
Date Sampled		10/10/90	10/10/90	10/10/90	10/10/90
Date Analyzed		10/16/90	10/16/90	10/16/90	10/16/90
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	< 0.3	< 0.3	4	< 0.3
Toluene	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Ethylbenzene	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Xylene, total	0.6	< 0.6	< 0.6	< 0.6	< 0.6
BTEX, total	–	–	–	4	–
TPH as Gasoline	1	< 1	< 1	77	< 1
Detection Limit Multiplier		1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

Client Number: 203-199-4080.
Project ID: 3940 Castro Valley Blvd.
Castro Valley, CA
Work Order Number: C0-10-304

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05			
Client Identification		MW-1			
Date Sampled		10/10/90			
Date Analyzed		10/16/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	2			
Toluene	0.3	<0.3			
Ethylbenzene	0.3	0.6			
Xylene, total	0.6	1			
BTEX, total	–	4			
TPH as Gasoline	1	40			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

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Concord, CA 94520
415-685-7852

800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST 72- 4094

CUSTODY RECORD

Project Manager: Pete Fuller
Phone #: 671-2387
FAX #:

Address: GTI Concord
Site location: 3940 Castro Valley Blvd, Castro V.

Project Number: 203 199 4080
Project Name: GTI Concord

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Hector Merino

Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	H2SO4	ICE	NONE	OTHER	Sampling: DATE	TIME
MW3RB			1	X					X			X			10/7/90	1:10
MW-3	01	N	2													1:10
MW5RD			1													1:15
MW-5	02	N	2													1:15
MW-4RB			1													1:25
MW-4	03	N	2													1:25
MW-1B	04		1													1:30
MW-1	05	N	2													1:30

ANALYSIS REQUEST

- BTEX 602 ☐ 8020 ☐ with MTBE ☐
- BTEX/TPH Gas 602/8015/8020/8015 ☐ MTBE ☐
- TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel
- Product I.D. by GC (SIMDIS) ☐
- Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐ 503E ☐
- Total Petroleum Hydrocarbons: 418.1 ☐
- EPA 601 ☐ 8010 ☐ DCA only ☐
- EPA 602 ☐ 8020 ☐
- EPA 608 ☐ 8080 ☐ PCBs only ☐
- EPA 610 ☐ 8310 ☐
- EPA 624 ☐ 8240 ☐ NBS +15 ☐
- EPA 625 ☐ 8270 ☐ NBS +25 ☐
- EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐
- TCLP Metals ☐ VOA ☐ Semi VOA ☐
- EPA Priority Pollutant Metals ☐ HSL ☐
- LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐
- CAM Metals ☐ STLC ☐ TTLC
- Corrosivity ☐ Flashpoint ☐ Reactivity ☐
- Acid ☐

I-BOX

SPECIAL HANDLING

24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER _____(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS: acidified
normal turnaround
BTEX / TPH-as-gasoline

Lab Use Only
Lot #:
Storage Location
Work Order #:

	Received by:	Relinquished by Sampler:
Date	10-10-90	
Time	3:35	
Date		
Time		
Date	10/10	
Time	3:35	
Way bill		

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080-C Pike Lane
Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*
(415) 825-0720 (FAX)

Client Number: 203-199-4060.
Project ID: 3940 Castro Valley Blvd
Castro Valley, CA
Work Order Number: C0-11-427

November 27, 1990

Pete Fuller
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

Enclosed please find the analytical results report prepared by GTEL for samples received on 11/16/90, under chain of custody number 72-9790.

GTEL is certified by the California State Department of Health Services to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

A formal quality control/quality assurance program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project was performed in strict adherence to our QA/QC program to ensure sample integrity and to meet quality control criteria.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Emma P. Popek
Laboratory Director

Client Number: 203-199-4060.
Project ID: 3940 Castro Valley Blvd
Castro Valley, CA
Work Order Number: C0-11-427

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		MW 5	MW 3	RB 4	MW 4
Date Sampled		11/15/90	11/15/90	11/15/90	11/15/90
Date Analyzed		11/20/90	11/20/90	11/20/90	11/20/90
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	< 0.3	< 0.3	< 0.3	2
Toluene	0.3	< 0.3	< 0.3	< 0.3	<0.3
Ethylbenzene	0.3	< 0.3	< 0.3	< 0.3	0.4
Xylene, total	0.6	< 0.6	< 0.6	< 0.6	<0.6
BTEX, total	–	–	–	–	2
TPH as Gasoline	1	< 1	< 1	< 1	49
Detection Limit Multiplier		1	1	1	1

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

Client Number: 203-199-4060.
Project ID: 3940 Castro Valley Blvd
Castro Valley, CA
Work Order Number: C0-11-427

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05			
Client Identification		MW 1			
Date Sampled		11/15/90			
Date Analyzed		11/20/90			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.3	0.8			
Toluene	0.3	<0.3			
Ethylbenzene	0.3	<0.3			
Xylene, total	0.6	<0.6			
BTEX, total	–	0.8			
TPH as Gasoline	1	18			
Detection Limit Multiplier		1			

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.
4080- Pike Lane
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800-544-3422 (In CA)
800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

72- 9790

C011427

CUSTODY RECORD

Project Manager: Pete Fuller
Phone #:
FAX #:
Address: GTI Concord
Site location: 3940 Castro Valley Blvd, Castro Valley
Project Number: 203-199-4080
Project Name: GTI Concord

I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Randy Ruiz

ANALYSIS REQUEST

IBox

Analysis columns: BTEX 602 ☐ 8020 ☐ with MTBE ☐ | BTEX/TPH Gas 602/8015 ☒ 8020/8015 ☐ MTBE ☐ | TPH as ☐ Gas ☐ Diesel ☐ Jet Fuel | Product I.D. by GC (SIMDIS) ☐ | Total Oil & Grease: 413.1 ☐ 413.2 ☐ 503A ☐ | Total Petroleum Hydrocarbons: 418.1 ☐ 503E ☐ | EPA 601 ☐ 8010 ☐ DCA only ☐ | EPA 602 ☐ 8020 ☐ | EPA 608 ☐ 8080 ☐ PCBs only ☐ | EPA 610 ☐ 8310 ☐ | EPA 624 ☐ 8240 ☐ NBS +15 ☐ | EPA 625 ☐ 8270 ☐ NBS +25 ☐ | EPTOX: Metals ☐ Pesticides ☐ Herbicides ☐ | TCLP Metals ☐ VOA ☐ Semi VOA ☐ | EPA Priority Pollutant Metals ☐ HSL ☐ | LEAD 7420 ☐ 7421 ☐ 239.2 ☐ 6010 ☐ Org. Lead ☐ | CAM Metals ☐ STLC ☐ TTLC | Corrosivity ☐ Flashpoint ☐ Reactivity ☐ | Hold

Matrix: WATER, SOIL, AIR, SLUDGE, OTHER. Method Preserved: HCl, HNO_3, H_2SO_4, ICE, NONE, OTHER.

	Field Sample ID	Source of Sample	GTEL Lab # (Lab use only)	# CONTAINERS	Matrix: WATER	Preserved: HCl	Preserved: ICE	Sampling DATE	Sampling TIME	BTEX/TPH Gas 602/8015	Hold
	Trip B			1	X	X	X	11/15/90	9:00		X
	RB-5			1	↓	↓	↓		1:48		X
N	MW-5		01	2					1:57	X	
	RB-3			1					2:05		X
N	MW-3		02	2					2:08	X	
	RB-4		03	1					2:15	X	
N	MW-4		04	2					2:18	X	
	RB-1			1					2:20		X
N	MW-1		05	2	↓	↓	↓		2:29	X	

Received by: Leena Kamage Date 11/15/90 Time 5:25
Received by: Date Time
Received by Laboratory: M. Bohannon Date 11/16/90 Time 10:50 Way bill #
Relinquished by Sampler: Randy Ruiz
Relinquished by: Leena Kamage
Relinquished by:

SPECIAL HANDLING
24 HOURS ☐
EXPEDITED 48 Hours ☐
SEVEN DAY ☐
OTHER ________(#) BUSINESS DAYS
QA/QC CLP Level ☐ Blue Level ☐
FAX ☐

SPECIAL DETECTION LIMITS (Specify)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS:

Lab Use Only Storage Location
Lot #: Work Order #:

APPENDIX D

PERSONNEL QUALIFICATIONS

Kevin M. Sullivan, PE
Regional Technical Group Manager, Western Region
Concord

EDUCATION

BS, Civil and Urban Engineering, University of Pennsylvania

PROFESSIONAL PROFILE

Provides technical support for remediation projects, process engineering, training and coordination of regional personnel and project QA/QC functions. Heavily involved in Corporate research and development projects. Manages bioreactor development on a corporate level and at Groundwater Technology's subsidiary ORS Environmental Equipment.

Previously, Vice President at Detox, Inc. (1986-88) in charge of all aspects of business development, personnel matters and technical expertise. Implemented groundwater and hazardous waste treatment facilities at dozens of sites across the country.

During his employment at Hydro Group (1982-85), advanced to the position of marketing manager. Developed some of the first air stripping systems used for municipal water supplies and also headed the research and development efforts in a variety of groundwater treatment processes. Managed detailed process and equipment design. Investigated new markets and processes developed in the Orient.

PROJECT EXPERIENCE

Aboveground biological treatment of groundwater contaminated with petroleum hydrocarbons, California, New Jersey, Michigan, Massachusetts, Ohio.
Engineered and installed several above-ground bioreactors in conjunction with other treatment approaches. These sites included impacted drinking water aquifers from gasoline tank leaks, aviation fuel spills and bulk tank leaks.

Air Stripping Pilot Tests - Over 50 Locations.
Conducted air stripping pilot tests on landfill leachates, Superfund sites, municipal water supplies and industrial waste streams. These sites included aquifers impacted with chlorinated solvents, petroleum products, and other industrial chemicals.

In Situ Removal of Iron and Manganese - New Jersey, New York and Massachusetts.
Conducted several pilot studies of the Vyredox process for in situ microbial removal of iron and manganese from groundwater. Designed and implemented full scale systems.

Air-Stripping System Design - more than 20 sites.
Engineered and installed air stripping systems (some with vapor-phase control) for projects ranging from 1 gpm to 2000 gpm on municipal water supplies, various waste streams and contaminated groundwater.

Wastewater Plant Expansion - Electronics Manufacturer, Silicon Valley, CA.
Designed and installed a biological process to double the capacity of an existing wastewater plant in order to accommodate manufacturing expansion.

High-Temperature Air Stripping: Pilot Testing, Design and Construction - Hicksville, NY.
Developed the first high-temperature air stripper for use on an MEK spill site, under a contract to the U.S. Environmental Protection Agency. Project included field pilot testing, design and construction of a portable, modular, high-temperature air stripping system with steam generation and control equipment.

Waste Minimization Assessment - Chemical Plant, New Jersey.
Performed a source reduction and treatment study for a catalyst production facility in New Jersey. Final measures included process modification and end-of-pipe treatment system.

Industrial Lagoon Closure, North California.
Performed feasibility studies and engineering design of a system for on-site treatment of waste sludges contaminated with carbon tetrachlorides, eliminating the need for off-site incineration.

Engineering Feasibility Study for Sulfide Removal - L.A. Rapid Transit Project, Los Angeles, California.
Performed engineering evaluation of alternatives for treatment of water contaminated with sulfides during tunnel construction.

Engineering Feasibility Study for Groundwater Treatment.
Conducted numerous feasibility studies for a variety of treatment problems, including inorganics (iron, manganese, arsenic, Chromium, lead, mercury, sulfides and nitrates) and organics (chlorinates, pesticides, PAHs and others).

Biological Treatment System for Landfill Leachates - New York.
Designed and installed a bioreactor for leachates from a leaking industrial landfill that contained toluic acids.

Treatment System for Paint and Coatings Manufacturer, California.
Developed an integrated system to treat groundwater, process waste, and hazardous waste from a coatings manufacturer, including a variety of organic solvents.

SPECIAL QUALIFICATIONS

Continuing Education
OSHA 40-Hour Hazardous Waste Operations and Emergency Response Training

Registrations
Registered California Professional Engineer, No. C46253

Professional Affiliations
American Water Works Association
Water Pollution Control Federation
Association of Groundwater Scientists and Engineers

Publications
Groundwater Treatment Technology, Van Nostrand and Reinhold Publishers, 1985, 188 pp. Contributing Author

"Digital Control Systems for the Power Industry" InTech Magazine, February, 1982.

"Remote Sensing of Air Pollution", InTech Magazine, April, 1982.

"Strip Those Organics Away" Water Engineering and Management Magazine, June, 1983.

"Pilot Testing and Design of a Modular High-Temperature Air-Stripping System for Waste Site Clean Up". Proceedings of the Industrial Waste Symposium of the 1984 Annual Conference of the Water Pollution Control Federation, New Orleans, Louisiana, September 30-October 4, 1984.

"Stripping of Chlorinated Hydrocarbons from Groundwater" Proceedings of the 1984 Hazardous Materials Management Conference, Houston, Texas, November 1-2, 1984.

"Pilot Testing and Design of a High-Temperature Air-Stripping System for MEK Removal" Proceedings for the 40th Annual Purdue Industrial Waste Conference, May 14-16, 1985.

"Decay Theory Biological Treatment for Low-Level Organic Contaminated Groundwater and Industrial Waste" Proceedings of the Superfund '87 Conference, Washington, D.C., November 16-18, 1987.

"On-site Biological Treatment of an Industrial Landfill Leachate Containing Toluic Acids" Proceedings of the 1988 Annual Conference of the Water Pollution Control Federation, Dallas, Texas, October 3-6, 1988.

Presentations/Lectures
"Hazardous Materials in Groundwater: Hydrology, Monitoring, and Cleanup." University of California at Berkeley Extension Program in Hazardous Waste Management. Spring, 1990.

"Groundwater Treatment: An Overview of the State-of-the-Art in America", presented to the First Joint U.S.-U.S.S.R. Conference on Hydrogeology, Moscow, U.S.S.R., July, 1989.

Corrective Action for Containing and Controlling Ground Water Contamination
National Water Well Association Course Instructor, 1986-Present.

Groundwater Treatment Technology, National Water Well Association Course Instructor, 1986-Present

"Groundwater Monitoring Protection and Clean Up", UCLA Extension Program in Toxic and Hazardous Materials Control and Management, March 1988, Guest Lecturer.

"Organic Removal Systems -- Operation and Maintenance" A Water Plant Operator's Short Course sponsored by the New York AWWA and the Long Island Water Conference, Instructor

"Removal of Volatile Organic Compounds by Air Stripping" presented to the New York AWWA Meeting, June 13-16, 1983. Also presented to the Ohio ASCE Environmental Engineering Conference, March 26-27, 1984.

"Drinking Water-Protection and Treatment" presented 1st Annual New Jersey Environmental Exposition, Oct. 22-23, 1984.

"Removal of VOCs from Groundwater" presented to the Illinois Section AWWA Conference, March 20-22, 1985.

"Ambient and Elevated Temperature Air-Stripping Design Considerations" presented to Illinois Section AWWA Conference, March 20-22, 1985.

"Ambient and Elevated Temperature Air-Stripping Design Considerations" presented to the HazPro '85 Conference, Baltimore, Maryland, May 15-17, 1985.

"Removal of Phenol from a Brine Aquifer -- Two Years of Operations" presented to the 41st Annual Purdue Industrial Waste Conference, May 13-17, 1985

"Life Cycle Design Analysis for Clean-Up Projects" presented to the 3rd Annual New Jersey Environmental Exposition", October 1986

"Biological Treatment of Organic Compounds using Submerged Fixed-Film Reactors, poster presentation at the Reducing Risks from Environmental Chemicals through Biotechnology Conference, Seattle, Washington, July 1987.