WORK PLAN
FOR ADDITIONAL SUBSURFACE INVESTIGATION
FORMER TEXACO SERVICE STATION
3940 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA
DECEMBER 4, 1989

GROUNDWATER TECHNOLOGY, INC.
CONCORD, CALIFORNIA

GROUNDWATER TECHNOLOGY, INC.
4080-D Pike Lane, Concord, CA 94520
(415) 671-2387

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3940 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA
DECEMBER 4, 1989

Prepared for:

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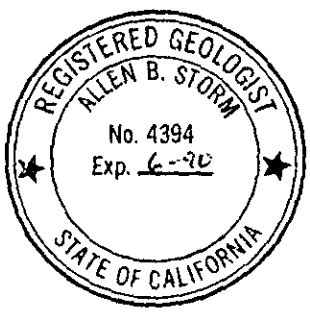
Allen B. Storm
Registered Geologist
No. 4394



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FOR ADDITIONAL SUBSURFACE INVESTIGATION
FORMER TEXACO SERVICE STATION
3940 CASTRO VALLEY BOULEVARD
CASTRO VALLEY, CALIFORNIA
DECEMBER 4, 1989

INTRODUCTION

This work plan describes the proposed additional subsurface investigation 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 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 Site Safety Plan is also included with this work plan as Appendix C.

BACKGROUND

SITE SETTING

The site is situated in Alameda County, along the eastern edge of the San Francisco Bay, in a mixed residential and light commercial area within the City of Castro Valley. An operating service station is located approximately 400-feet west of site.

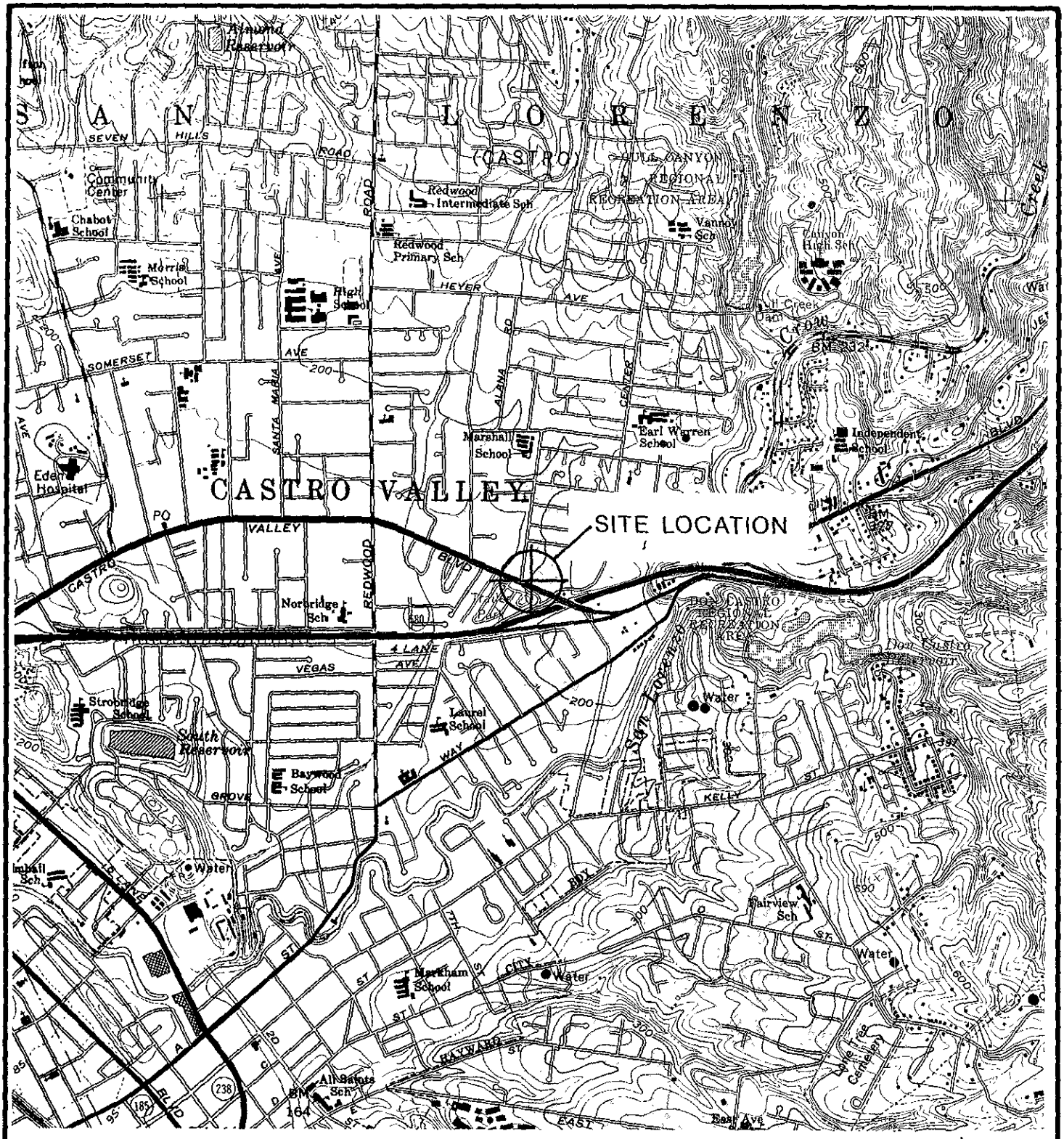

FIGURE 1. SITE LOCATION MAP

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CASTRO VALLEY, CALIFORNIA

ML 12/89

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Geographically, the site is located in Castro Valley Basin, approximately 2-miles south of the San Leandro Hills and one-mile west of Walpert Ridge. A nameless creek and San Lorenzo Creek flow approximately a quarter mile to the west and a quarter mile to the east of the site, respectively. The site elevation is approximately 195-feet above sea level and the surface topography slopes to the northwest.

WELL SURVEY

A well survey of the area surrounding the station was conducted to assess the sensitivity of the site. Using records from the California Department of Water Resources in Sacramento, no registered water wells were recorded within a 1/4-mile radius of the site.

The pre-existing monitoring well (TX) at the Texaco Service Station was recorded to be 25-feet deep. The well was constructed with 10 feet of 0.010-inch, slot-size, two-inch-diameter PVC screen, and 15 feet of blank PVC casing. The annular space around the well screen was packed with pea gravel.

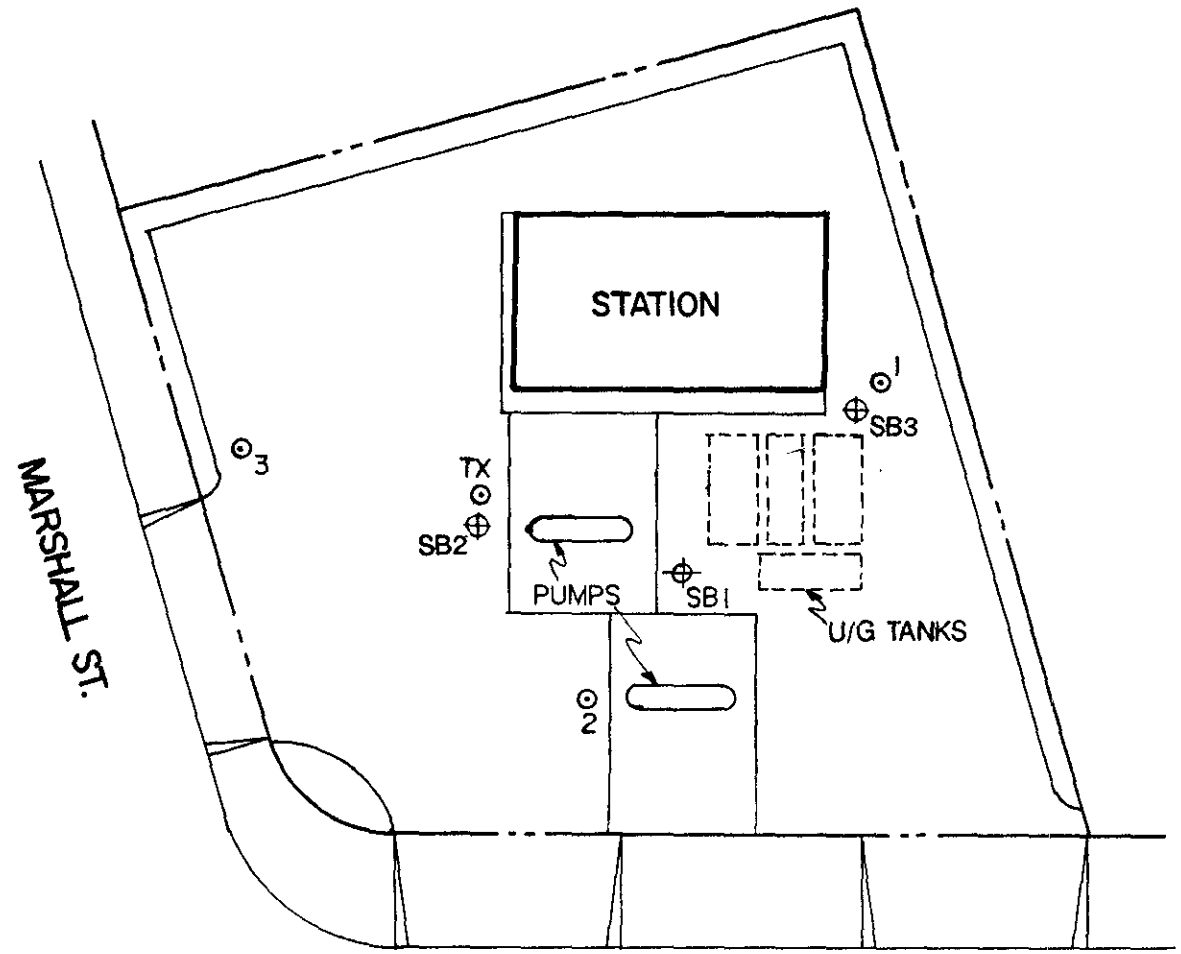
SITE HISTORY

A Petro Tite^{R} test was performed on the site's underground tanks in September 1984. At that time, the test results indicated that all tanks were tight. Two 6,000-gallon and two 4,000-gallon gasoline tanks were removed from the site in June, 1985. This work was done concurrent with the demolition of the former Texaco Service Station.

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

In November and December 1987, six soil borings were drilled and three of the borings were converted to groundwater monitoring wells (Figure 2). Analytical results of soil samples collected from the borings detected only minor concentrations of petroleum hydrocarbons. The maximum detected concentration of TPH-as-gasoline in the soil samples was 14 ppm in the soil sample from the boring for monitoring well MW-2 at a depth of 24 to 24.5 feet.

Analytical results from water samples collected from monitoring wells (MW) MW-1, MW-2 and MW-3 during the period from December 1987 to August 1989 showed a decreasing trend in the concentrations of TPH-as-gasoline in well MW-1 from 2,100 parts per billion (ppb) in December 1987 to 160 ppb in August 1989. Results from water samples collected and analyzed from MW-2 on December 1987 revealed 2,400 ppb TPH-as-gasoline while analyses of water samples collected from the same well in June 1988 showed 1,200 ppb TPH-as-gasoline. Concentrations of TPH-as-gasoline in



LEGEND

⊙ MONITORING WELL

⊕ SOIL BORING

FIGURE 2
SITE PLAN

N

0 FEET 30

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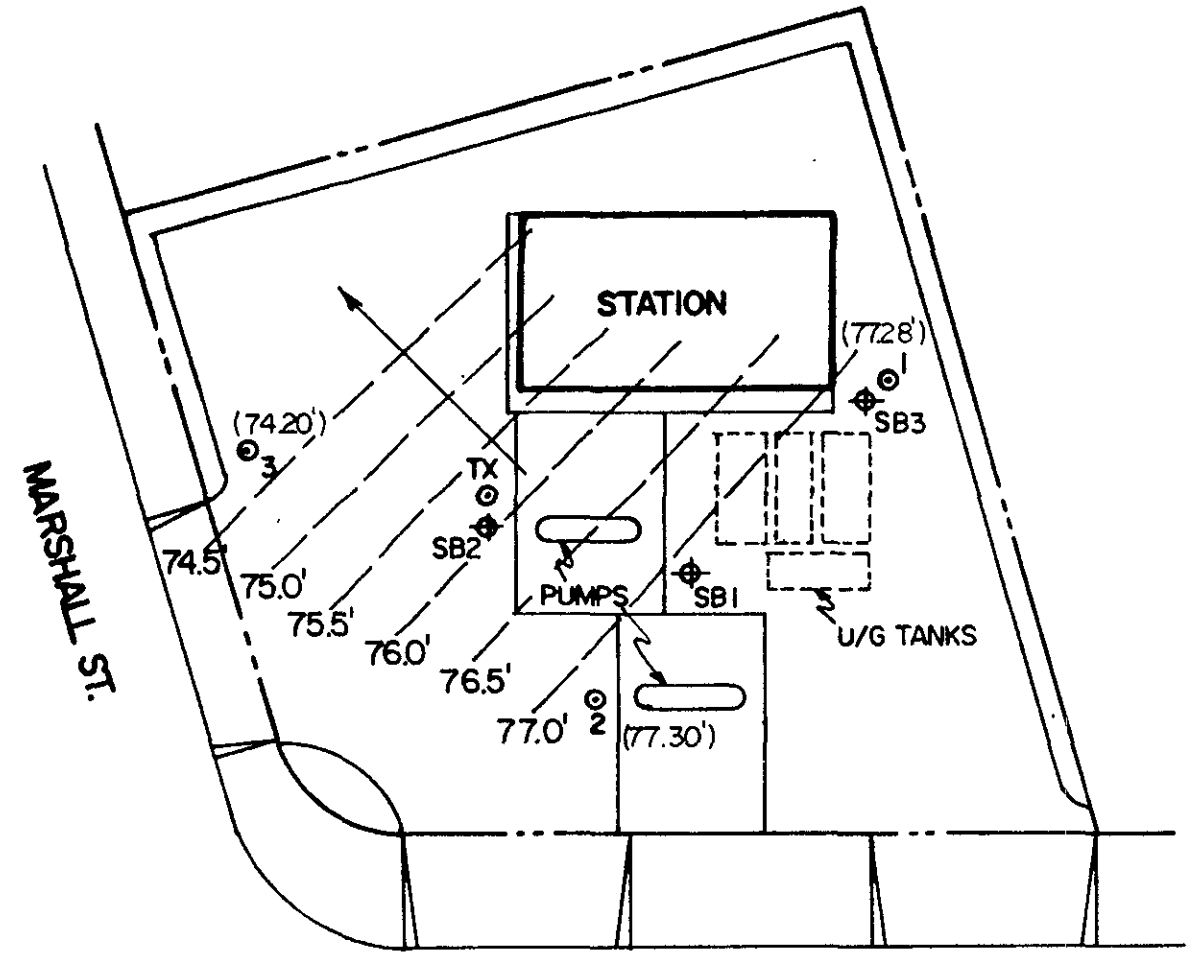
the water sample from MW-2, collected six months later in December 1988 revealed an increase to 4,000 ppb. Water samples from the downgradient monitoring well, MW-3, did not show the presence of dissolved hydrocarbons at Practical Quantitation Levels (PQL) during the period from December 1987 to August 1989.

SITE DESCRIPTION

HYDROGEOLOGY

The site is located within the Castro Valley groundwater basin. The unconsolidated sediments beneath the site overlie the Chico Formation. This formation is considered to be non-water-bearing due to poor water yield in this area. The younger Quaternary Age sediments present beneath the subject 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 the Castro Valley are the principal recharge areas with low rates of recharge. Regional groundwater flow is generally to the southwest with outflow probably to the Santa Clara Valley. The site is not located within a major groundwater basin.

Borings drilled in November and December 1987 encountered groundwater at 23- to 32-feet below grade. The static level of groundwater monitored in wells on site on August 29, 1989 was 21.5- to 24.0-feet below grade. The interpreted groundwater-flow direction, as determined from the December 30, 1989 monitoring data, was to the north-northwest, while the June 7, 1988 monitoring data revealed a northern groundwater-flow direction. The monitoring data collected on December 13, 1988 revealed a northwest groundwater flow across the site (Figures 3, 4, and 5).



LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ( ) RELATIVE GROUNDWATER ELEVATION
- – – – GROUNDWATER CONTOUR

FIGURE 3
POTENTIOMETRIC SURFACE MAP
12/30/87

N

0 FEET 30

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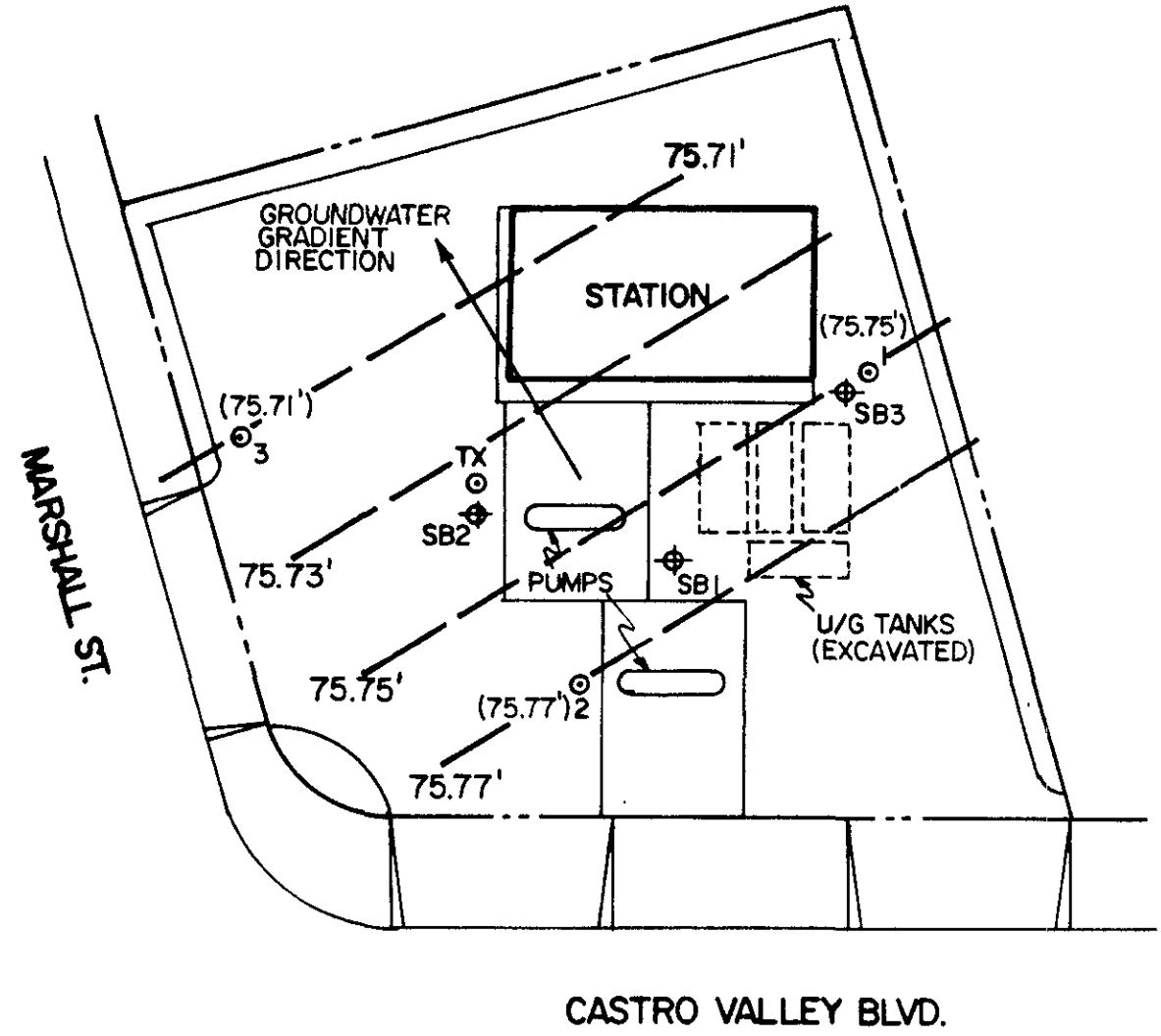

LEGEND

- ⊙ MONITORING WELL
- ⌖ SOIL BORING
- — — GROUNDWATER CONTOUR
- ( ) RELATIVE GROUNDWATER ELEVATION (FT.)

FIGURE 4
POTENTIOMETRIC SURFACE MAP
6/7/88

N

0 FEET 30

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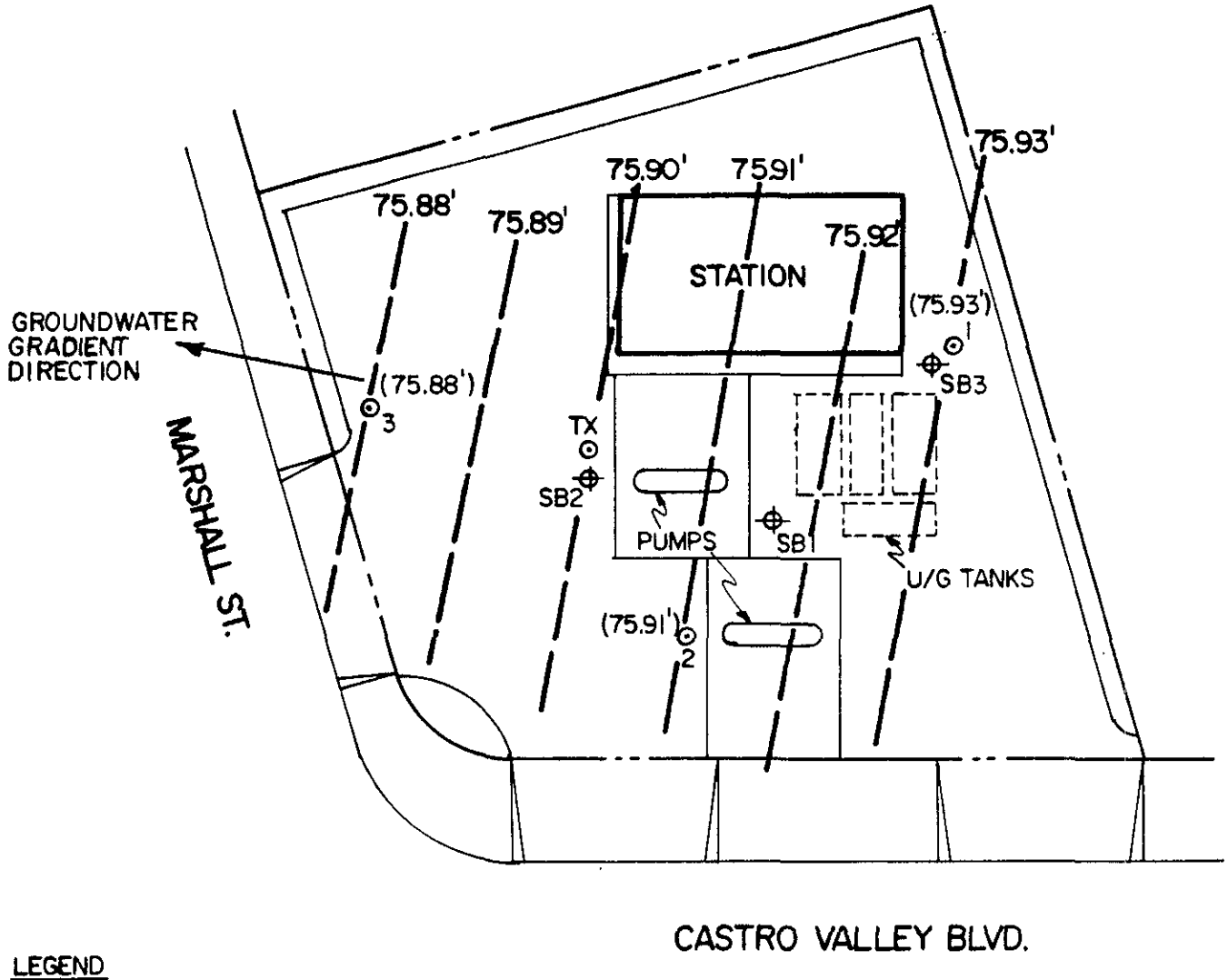
CASTRO VALLEY, CALIFORNIA

GROUNDWATER TECHNOLOGY, INC.



LEGEND

- ⊙ MONITORING WELL
- ⊕ SOIL BORING
- ( ) GROUNDWATER ELEVATION
- — — GROUNDWATER CONTOUR

FIGURE 5
POTENTIOMETRIC SURFACE MAP
12/13/88

N

0 FEET 30

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SITE-SPECIFIC DESCRIPTION

The Site Plan, Figure 2, depicts the site before the recent construction work on the site. The new owner of the property is constructing an Oil Change & Tune Up facility on the site.

The former service station building and two (TX and MW-2) of original four monitoring wells have been destroyed during construction work the on site. The soil in the area of pump islands has been removed to a depth of approximately 10 feet as part of the ongoing construction. A new building has been built south of where the former station building was destroyed (Figure 6, Revised Site Plan).

EXISTING RESULTS OF SOIL AND WATER SAMPLING

Results of the soil sampling conducted prior to November 1987 are described in the section, "Site History". Analytical laboratory results of the soil samples subsequently collected during drilling of the soil borings SB-1, SB-2, SB-3 and the soil borings for construction of the monitoring wells MW-1, MW-2 and MW-3 are summarized in Table 1. The laboratory reports of the soil samples are included in Appendix A. A historical review of TPH-as-gasoline concentrations in groundwater samples is summarized in Table 2 and laboratory reports of the groundwater samples are included in Appendix B.

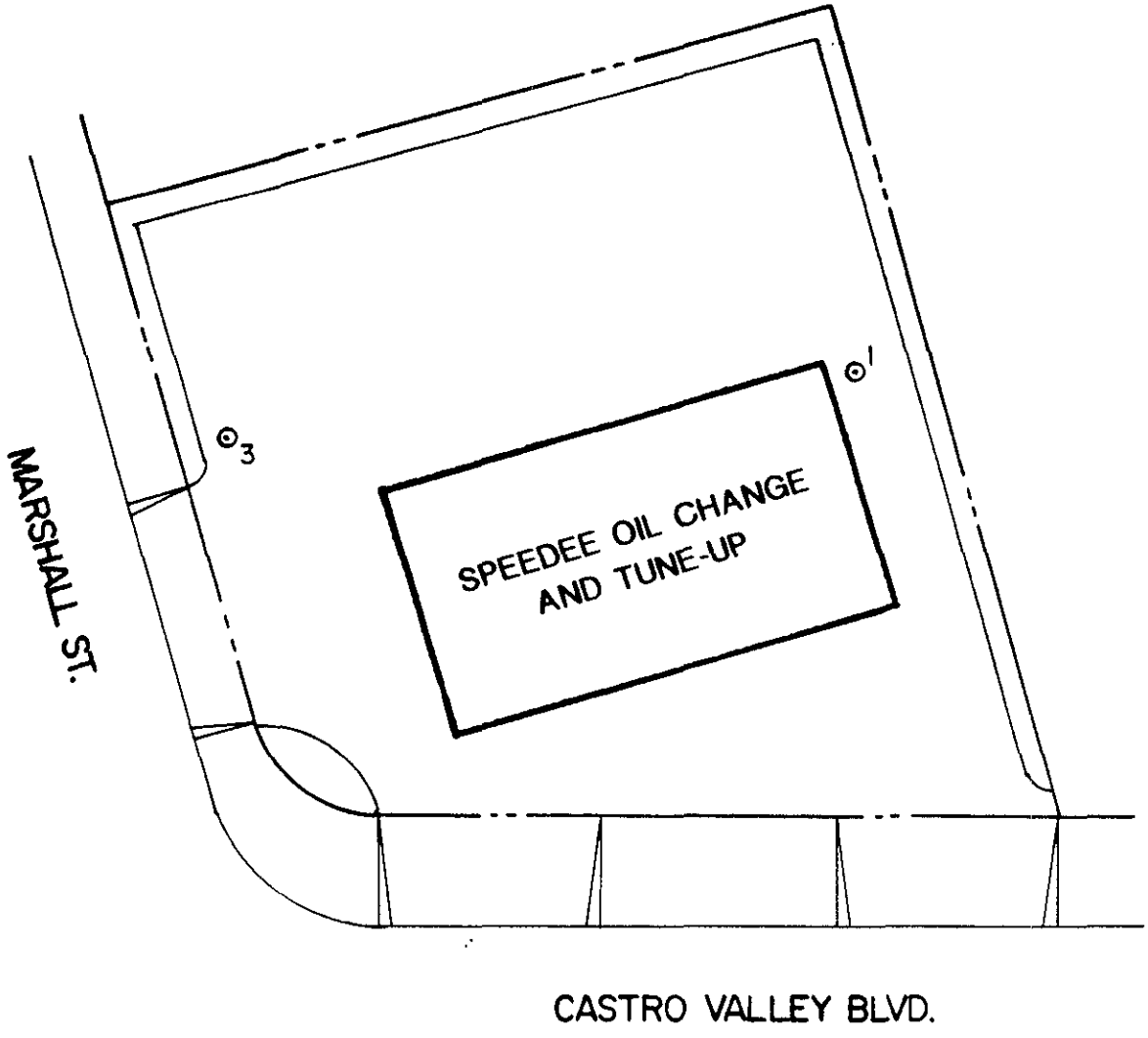

FIGURE 6
REVISED SITE PLAN

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TABLE 1

ANALYTICAL LABORATORY RESULTS - SOIL SAMPLES
[ppm]

SAMPLE	DEPTH (FT.)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	BTEX	TOG	METHYLENE CHLORIDE	CHLOROFORM	MISC. HYDRO-CARBONS (C4-12)	TPH as GASOLIN
SB 1 C	(14-14.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND
SB 1 F	(29-29.5)	ND	0.95	ND	ND	-	ND	1.9	0.025	ND	ND
SB 2 B	(9- 9.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND
SB 2 F	(29-29.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND
SB 3 C	(14-14.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND
SB 3 F	(29-29.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND
MW 1 E	(24-24.5)	ND	ND	0.24	2.0	-	-	ND	ND	-	-
MW 2 E	(24-24.5)	ND	ND	ND	ND	ND	-	-	-	14.0	14.0
MW 3 E	(24-24.5)	ND	ND	ND	ND	ND	-	-	-	ND	ND

T4080C

TABLE 2

HISTORICAL REVIEW OF TPH-AS-GASOLINE CONCENTRATIONS

WATER SAMPLES (ppb)

DATE SAMPLED	MW-1	MW-2	MW-3
12/30/87	2,100	2,400	<PQL
06/07/88	290	1,200	<PQL
12/13/88	370	4,000	<PQL
08/29/89	160	NA	<PQL

MW = Monitoring Well
TPH = Total Petroleum Hydrocarbons
<PQL = Less Than Practical Quantitation Levels
NA = Not Available
ppb = parts per billion

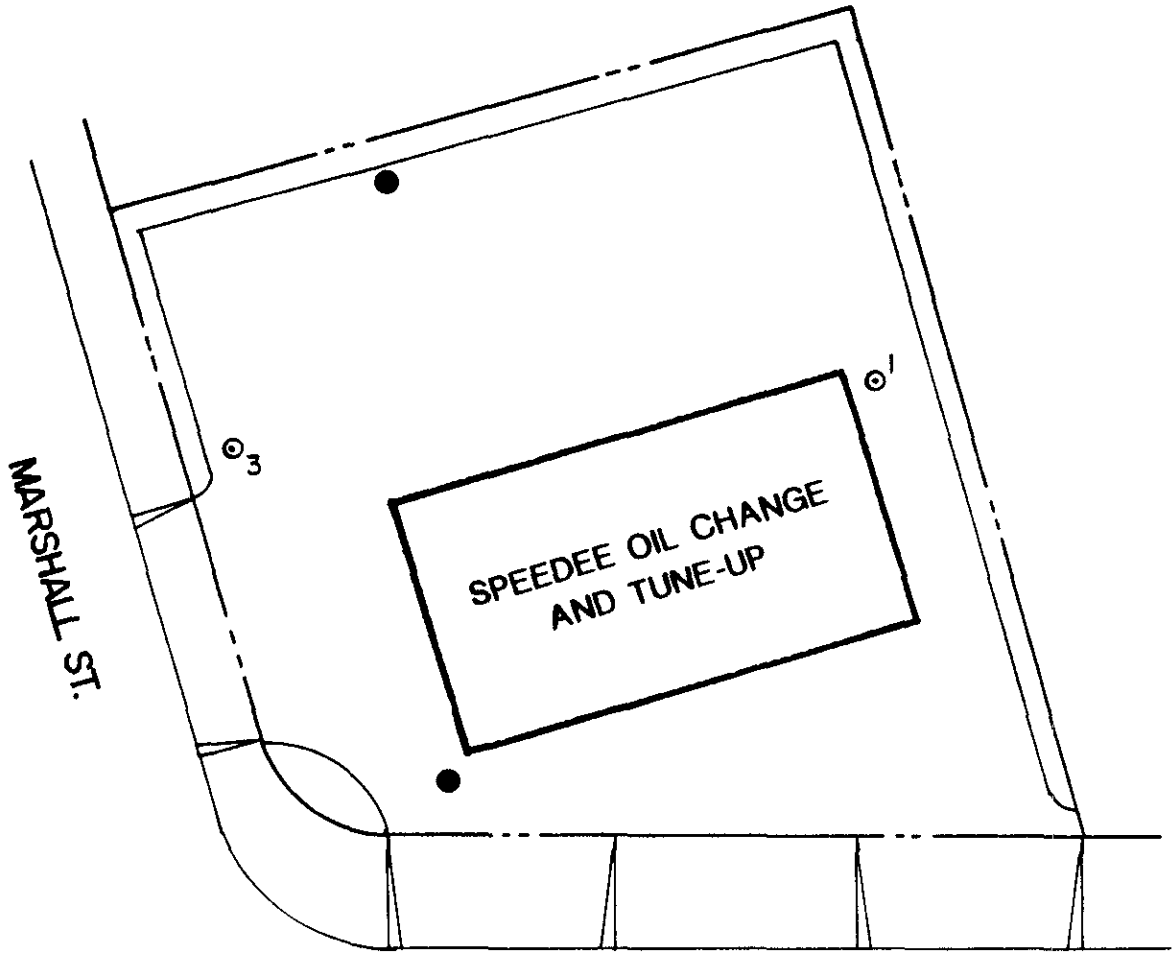
PROPOSED WORK PLAN

SOIL BORINGS

Two soil borings, which will be converted into monitoring wells will be used to provide additional information on the areal and vertical extent of hydrocarbon concentrations beneath the site. The soil boring drilled for the construction of monitoring well MW-4 will be in the approximate vicinity of the former monitoring well MW-2 (now destroyed by construction) and the former pump islands area, upgradient of the former underground tanks area. A second soil boring for construction of monitoring well MW-5 will be drilled on the northern edge of the site in the approximate downgradient direction of the groundwater flow (Figure 7).

SOIL SAMPLING PROCEDURES

During drilling, all soil samples will be visually inspected and field screened using a photo-ionization detector (PID) for the presence of petroleum hydrocarbons. A standard 2-inch-diameter, split-spoon sampler, 18 inches in length will be used to collect the samples at approximate 5-foot intervals. The samples will be contained in 2-inch-diameter by 6-inch-long, thin-walled, brass, tube liners fitted into the split-spoon sampler. Selected 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 benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH)-as-gasoline. A Chain-of-Custody Manifest will accompany the samples at all times.



LEGEND

⊙ MONITORING WELL

● PROPOSED MONITORING WELL

FIGURE 7
LOCATION OF PROPOSED MONITORING WELLS

N

0 FEET 30

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MONITORING WELL INSTALLATION

The borings and monitoring wells will be installed over a two-day period, using a truck-mounted drill rig, with 10.5-inch, outside diameter (O.D.), hollow-stem augers operated by a licensed drilling contractor. The work will be supervised by a field geologist and will be performed in accordance with State of California and County of Alameda regulations. The monitoring wells will be approximately 40-feet deep and 4-inches in diameter. Wells MW-4 and MW-5 will be constructed of 30 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 Lapis Luster sand. The sand pack will be installed to 1-foot above the top of the screened intervals in each well. 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. A field geologist will make a continuous log of the soils encountered in each boring in accordance with the Unified Soil Classification System. A typical well construction diagram is shown on Figure 8.

The drilling rig and augers will be cleaned using a high pressure hot water (steam) cleaner between wells. The rinsate water will be placed in 50-gallon drums as will the drill cuttings. The drums will be left on site pending sample results, then properly disposed.

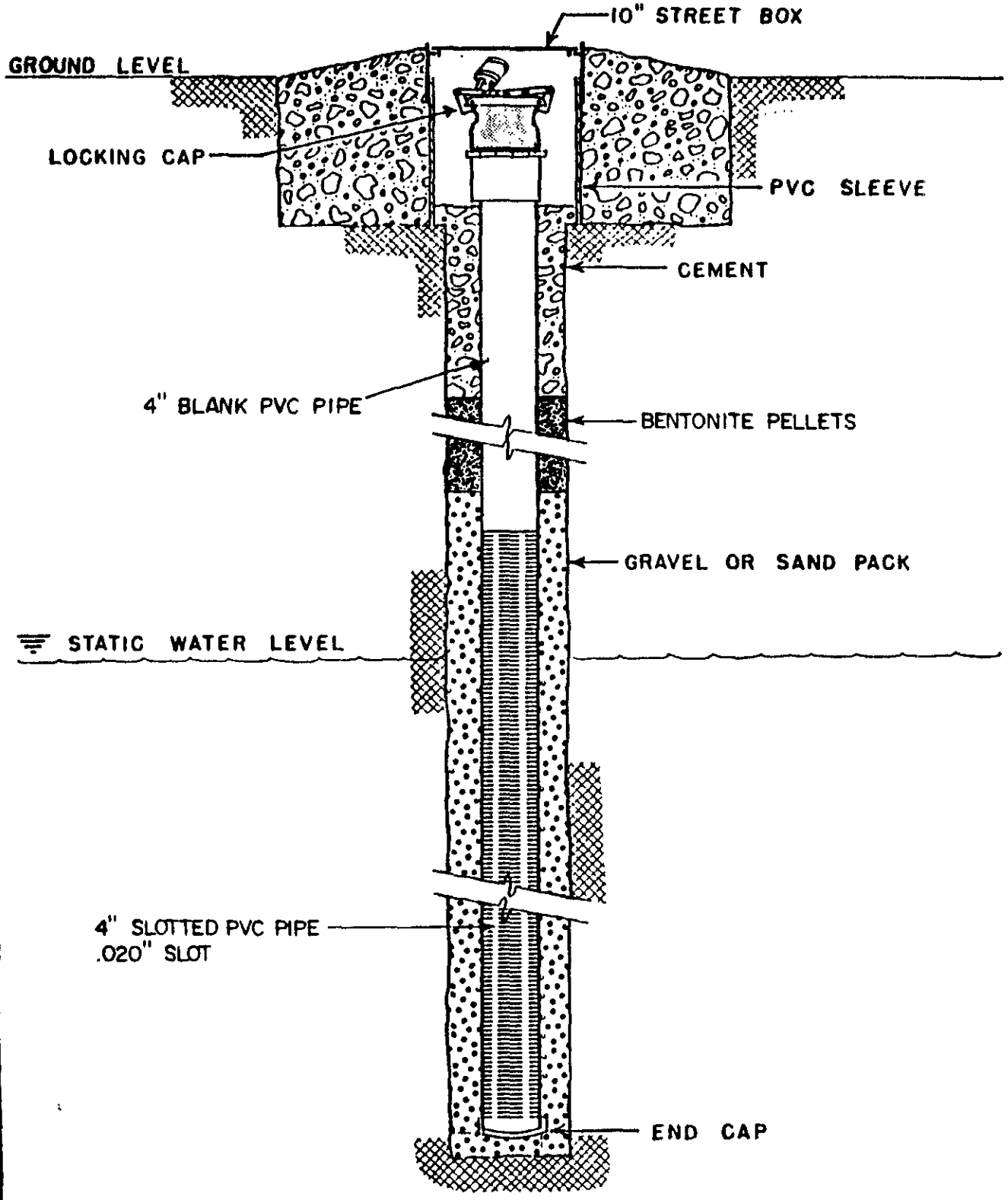

FIGURE 8
TYPICAL MONITORING WELL CONSTRUCTION

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 an 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 an electrical/optical probe and surface sampler. The probe consists of a dual sensing probe which utilizes an optical liquid sensor and electrical conductivity sensor to distinguish between water and petroleum products. The probe is accurate to within 0.01 foot. A surface sampler, consisting of a 12-inch-long, cast acrylic tube with a Delrin ball check-valve on the bottom, will be used to obtain a sample for visual inspection of the groundwater to note sheens, odors, microbial action, etc.

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 taken when the water level recovers to 80 percent of its initial level. The samples will be obtained with a U.S. Environmental Protection Agency (EPA)

Teflon^{R} sampler and placed in 40-milliliter acidified glass vials with Teflon^{R} caps in a such a way that no air is trapped inside. Rinsate blanks containing a sample of the distilled-water rinsate from the cleaned surface sampler will be collected prior to the sampling of each well as part of the Quality Assurance/Quality Control (QA/QC) Program.

The sealed vials with 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 5030/8015/8020.

The frequency of monitoring and sampling will be determined following receipt of initial laboratory analyses results.

APPENDIX A

LABORATORY RESULTS
SOIL SAMPLES

GT Environmental Laboratories
A division of Groundwater Technology, Inc.

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

02-03-88 MH

PROJECT MGR: Jan Prasil
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT #:203-199-4080-1
LOCATION: Castro Valley, CA
SAMPLED: 11-21-87 BY: J. Prasil
RECEIVED: 11-23-87 BY: K. Biava
ANALYZED: 11-30-87 BY: J. Floro
MATRIX: Soil E. Foley

TEST RESULTS (ppm)

COMPOUNDS	LAB # I.D.#	9962 1C	9963A 1F	9964 2B	9965 2F	9966 3C
Benzene		ND	ND	ND	ND	ND
Ethylbenzene		ND	ND	ND	ND	ND
Toluene		ND	ND	ND	ND	ND
Xylenes		ND	ND	ND	ND	ND
Total BTEX		ND	ND	ND	ND	ND
Misc Hydrocarbons (C4-12)		ND	ND	ND	ND	ND
Total Petroleum Hydrocarbons as Gasoline		ND	ND	ND	ND	ND

ND = Less than Practical Quantitation levels as per EPA Federal Register, November 13, 1985, p. 46906. Results rounded to two significant figures.
METHODS: EPA 5030/8015/8020.
This report replaces one of the same dated 12/02/87.

GT Environmental Laboratories
A division of Groundwater Technology, Inc.

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

PROJECT MGR: Jan Prasil
PROJECT #:203-199-4080-1
LOCATION: 3940 Castro Valley Blvd
Castro Valley, CA

TEST RESULTS (ppm)

COMPOUNDS	LAB #	9967
	I.D.#	3F
Benzene		ND
Ethylbenzene		ND
Toluene		ND
Xylenes		ND
Total BTEX		ND
Misc. Hydrocarbons (C4-C12)		ND
Total Petroleum Hydrocarbons as Gasoline		ND

ND = Less than Practical Quantitation levels as per EPA Federal Register November 13, 1985, p. 46906. Results rounded to two significant figures.
METHODS: Modified EPA 5030/8015/8020.
This report replaces one of the same number dated 12/02/87.

SAFY KHALIFA, Ph.D., Director

GT Environmental Laboratories
A division of Groundwater Technology, Inc.

William Region
4080-C Pike Lane, Concord, CA 94520
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(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

12-29-87 MH Page 1 of 1

PROJECT MGR: Jan Prasil
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520
PROJECT #:203-199-4080-2A
LOCATION: 3940 Castro Valley Blvd
Castro Valley, CA
SAMPLED: 11-21-87 BY: J. Prasil
RECEIVED: 11-23-87 BY: K. Biava
ANALYZED: 11-24-87 BY: V. Craven
MATRIX: Soil R. Craven

V.O.A.
A TEST RESULTS (ppm)

COMPOUNDS	LAB # / I.D.#	9936B / 1F			
Chloromethane		ND			
Bromomethane		ND			
Vinyl Chloride		ND			
Chloroethane		ND			
Methylene Chloride		1.9			
Acetone		ND			
Carbon Disulfide		ND			
1,1-Dichloroethene		ND			
1,1-Dichloroethane		ND			
Trans-1,2-Dichloroethene		ND			
Chloroform		0.825			
1,2-Dichloroethane		ND			
2-Butanone		ND			
1,1,1-Trichloroethane		ND			
Carbon Tetrachloride		ND			
Vinyl Acetate		ND			
Bromodichloromethane		ND			
1,2-Dichloropropane		ND			
cis-1,3-Dichloropropene		ND			
Trichloroethene		ND			
Dibromochloromethane		ND			
1,1,2-Trichloroethane		ND			
Benzene		ND			
Trans-1,3-Dichloropropene		ND			
2-Chloroethylvinylether		ND			
Bromoform		ND			
4-Methyl-2-Pentanone		ND			
2-Hexanone		ND			
Tetrachloroethene		ND			
1,1,2,2-Tetrachloroethane		ND			
Toluene		0.95			
Chlorobenzene		ND			
Ethylbenzene		ND			

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[redacted] Region
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(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

PROJECT MGR: Jan Prasil
PROJECT #:203-199-4080-2A
LOCATION: 3940 Castro Valley Blvd
Castro Valley, CA

B (ppm)

COMPOUNDS	LAB # I.D.#	9936B 1F			
Styrene		ND			
1,2-Dichlorobenzene		ND			
1,3-Dichlorobenzene		ND			
1,4-Dichlorobenzene		ND			
Total Xylenes		ND			
Trichlorofluoromethane		ND			

ND = Less than Practical Quantitation levels as per EPA Federal Register, November 13, 1985, p. 46906.
METHODS: Extracted by EPA 3550. Analyzed by EPA 8240.
This report replaces one of the same number dated 11-24-87.

SAFY KHALIFA, Ph.D., Director

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A division of Groundwater Technology, Inc.

Western Region
4080-C Pike Lane, Concord, CA 94520
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(800) 423-7143 *from outside California*

12-14-87 MH Page 1 of 1

PROJECT MGR: Jan Prasil
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520
PROJECT #:203-199-4080-3A
LOCATION: 3940 Castro Valley Blvd
Castro Valley, CA
SAMPLED: 11-21-87 BY: J. Prasil
RECEIVED: 11-23-87 BY: K. Biava
ANALYZED: 12-12-87 BY: R. Heines
MATRIX: Soil

TEST RESULTS (ppm)

PARAMETER	LAB # / I.D.#			
	9963C / 1F			
Total Oil & Grease	ND			

ND = Not Detected.
METHOD: EPA 413.1.

SAFY KHALIFA, Ph.D., Director

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[redacted]ern Region
4080-C Pike Lane, Concord, CA 94520
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(800) 423-7143 *from outside California*

12-29-87 MH Page 1 of 1

PROJECT MGR: Jan Prasil
Groundwater Technology, Inc.
4080-D Pike Lane
Concord, CA 94520

PROJECT #: 203-199-4080-5
LOCATION: 3940 Castro Valley Rd., Castro Valley, CA
SAMPLED: 12/15/87 BY: B. Mason
RECEIVED: 12/17/87 BY: K. Biava
ANALYZED: 12/19/87 BY: V. Craven
MATRIX: Soil R. Craven

V.O.A.
A TEST RESULTS (ppm)

COMPOUNDS	LAB # 10959			
	I.D.# MW-1E			
Chloromethane	ND			
Bromomethane	ND			
Vinyl Chloride	ND			
Chloroethane	ND			
Methylene Chloride	ND			
Acetone	ND			
Carbon Disulfide	ND			
1,1-Dichloroethene	ND			
1,1-Dichloroethane	ND			
Trans-1,2-Dichloroethene	ND			
Chloroform	ND			
1,2-Dichloroethane	ND			
2-Butanone	ND			
1,1,1-Trichloroethane	ND			
Carbon Tetrachloride	ND			
Vinyl Acetate	ND			
Bromodichloromethane	ND			
1,2-Dichloropropane	ND			
cis-1,3-Dichloropropene	ND			
Trichloroethene	ND			
Dibromochloromethane	ND			
1,1,2-Trichloroethane	ND			
Benzene	ND			
Trans-1,3-Dichloropropene	ND			
2-Chloroethylvinylether	ND			
Bromoform	ND			
4-Methyl-2-Pentanone	ND			
2-Hexanone	ND			
Tetrachloroethene	ND			
1,1,2,2-Tetrachloroethane	ND			
Toluene	ND			
Chlorobenzene	ND			
Ethylbenzene	0.24			

GT Environmental Laboratories
A division of Groundwater Technology, Inc.

[redacted] Region
4080-C Pike Lane, Concord, CA 94520
(415) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

PROJECT MGR: Jan Prasil
PROJECT #:203-199-4000-5
LOCATION: 3940 Castro Valley Rd.
Castro Valley, CA

B (ppm)

COMPOUNDS	LAB # / I.D.#	10959 / MW-1E			
Styrene		ND			
1,2-Dichlorobenzene		ND			
1,3-Dichlorobenzene		ND			
1,4-Dichlorobenzene		ND			
Total Xylenes		2			
Trichlorofluoromethane		ND			

ND = Less than Practical Quantitation levels as per EPA Federal Register, November 13, 1985, p. 46906.
METHODS: Extraction by EPA 3550.
Analysis by EPA 8240.
This report replaces one of the same dated 12-19-87.

SAFY KHALIFA, Ph.D., Director

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12-31-87 MH Page 1 of 1

PROJECT MGR: Jan Prasil
Groundwater Technology, Inc
4080-D Pike Lane
Concord, CA 94520
PROJECT #:203-199-4080-6A
LOCATION: 3940 Castro Valley Blvd
Castro Valley, CA
SAMPLED: 12-17-87 BY: J. Prasil
RECEIVED: 12-18-87 BY: K. Biava
ANALYZED: 12-28-87 BY: J. Floro
MATRIX: Soil

TEST RESULTS (ppm)

COMPOUNDS	LAB # I.D.#	11039 MW-2E	11040 MW-3E			
Benzene		ND	ND			
Ethylbenzene		ND	ND			
Toluene		ND	ND			
Xylenes		ND	ND			
Total BTEX		ND	ND			
Misc Hydrocarbons (C4-12)		14	ND			
Total Petroleum Hydrocarbons as Gasoline		14	ND			

METHODS: Modified EPA Method 5030/8020/8015.
ND = Less than Practical Quantitation levels as per EPA Federal Register, November 13, 1985, p. 46906.
Results rounded to two significant figures.

SAFY KHALIFA, Ph.D., Director

APPENDIX B

LABORATORY RESULTS
WATER SAMPLES

GT Environmental Laboratories
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(800) 423-7143 *from outside California*

1/16/88 rw
PROJECT MGR: Jan Prasil
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT #:203-199-4080-7
LOCATION: 3940 Castro Valley Blvd. Castro Valley, CA
SAMPLED: 12-30-87 BY: J. Galloway
RECEIVED: 12-30-87 BY: K. Biava
ANALYZED: 1-08-88 BY: P. Sra
MATRIX: Water

TEST RESULTS (ppb = ug/L)

COMPOUNDS	MDL	LAB # I.D.#	13282 MW-1	13283 MW-2	13284 MW-3		
Benzene	0.5		15	220	< 0.5		
Ethylbenzene	0.5		3	3	< 0.5		
Toluene	0.5		12	16	< 0.5		
Xylenes	0.5		190	150	< 0.5		
Total BTEX	0.5		220	390	< 0.5		
Misc. Hydrocarbons (C4-12)	1.0		1900	2000	< 1.0		
Total Petroleum Hydrocarbons as Gasoline	1.0		2100	2400	< 1.0		

MDL = Method Detection Limit; compounds below this level would not be detected.
Results rounded to two significant figures.
METHODS: Modified EPA Methods 5030/8015/8020.

SAFY KHALIFA, Ph.D., Director

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Concord, CA 94520
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06/20/88 mh

CLIENT: Jan Prasil
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT#: 203-199-4080-8
LOCATION: 3940 Castro Valley Road
Castro Valley, CA
SAMPLED: 06/07/88 BY: J. Prasil
RECEIVED: 06/08/88 BY: J. Floro
ANALYZED: 06/15/88 BY: E. Popek
MATRIX: Water
UNITS: ppb

TEST RESULTS

COMPOUNDS	LAB # / I.D. #	24768 MW-1	24769 MW-2	24770 MW-2 B	24771 MW-3
Benzene		37	220	<PQL	<PQL
Toluene		<PQL	<PQL	<PQL	<PQL
Ethylbenzene		<PQL	32	<PQL	<PQL
Xylenes		17	46	<PQL	<PQL
Total BTEX		54	300	<PQL	<PQL
Total Petroleum Hydrocarbons as Gasoline		290	1200	<PQL	<PQL

PQL = Less than Practical Quantitation Levels as per EPA Federal Register, November 13, 1985, p. 46906.
Results rounded to two significant figures.
METHOD:
Modified EPA 5030/8020/8015.

Safy Khalifa 1/8/87

SAFY KHALIFA, Ph.D., Director

GTEL ENVIRONMENTAL LABORATORIES, INC.

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(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*

12/27/88MT

WORK ORD#: 8812178
CLIENT: Jan Prasil
Groundwater Technology, Inc.
4080 Pike Lane
Concord, CA 94520
PROJECT#: 203-199-4080-10
LOCATION: 3940 Castro Valey Blvd.
Castro Valley, CA
SAMPLED: 12/13/88 BY: S. Kranyak
RECEIVED: 12/14/88 BY: K. Biava
ANALYZED: 12/20/88 BY: R. Condit
MATRIX: Water
UNITS: ug/L (ppb)

TEST RESULTS

PARAMETER	SAMPLE # I.D.	01A MW-1	02A MW-2	03A MW-3	04A MW-3B	
Benzene		30	640	<PQL	<PQL	
Toluene		<PQL	23	<PQL	<PQL	
Ethylbenzene		<PQL	120	<PQL	<PQL	
Xylenes		<PQL	110	<PQL	<PQL	
Total BTEX		30	890	<PQL	<PQL	
Total Petroleum Hydrocarbons as Gasoline		370	4000	<PQL	<PQL	

PQL = Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.

METHOD:
Modified EPA Method 5030/8020/8015

Emma Popek/EMP

EMMA P. POPEK, Director

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

WORK ORD#: C908714
CLIENT: JAN PRASIL
GROUNDWATER TECHNOLOGY, INC.
4080 PIKE LN.
CONCORD, CA 94520
PROJECT#: 203-199-4080-1
LOCATION: 3940 CASTRO VALLEY BLVD.
CASTRO VALLEY, CA
SAMPLED: 08/29/89 BY: J. PRASIL
RECEIVED: 08/30/89
ANALYZED: 09/05/89 BY: R. CONDIT

MATRIX: Water
UNITS: ug/L (ppb)

PARAMETER	SAMPLE # I.D.	01 MW1	02 MW3	03 MW3B		
Benzene		6	<PQL	<PQL		
Toluene		<PQL	<PQL	<PQL		
Ethylbenzene		<PQL	<PQL	<PQL		
Xylenes		<PQL	<PQL	<PQL		
Total BTEX		6	<PQL	<PQL		
Total Petroleum Hydrocarbons as Gasoline		160	<PQL	<PQL		

<PQL= Less than Practical Quantitation Levels per EPA Federal Register, November 13, 1985, page 46906.
Results rounded to two significant figures.
METHOD: Modified EPA 5030/8020/8015

Emma P. Popek
EMMA P. POPEK, Laboratory Director

APPENDIX C
SITE SAFETY PLAN

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 heath 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 HNU 101. This unit shall provide the concentration of total organic vapors (ppm) in air being sampled. The instrument shall be calibrated daily to a benzene standard.

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

Site Personnel

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

Breathing-zone vapor concentrations at the borehole greater than 100 ppm, notify site manager to monitor site parameter (concentrating in the downwind direction).

Breathing-zone vapor concentrations at the borehole greater than 500 ppm, site activities shall be stopped, until concentrations are less than 500 ppm. Site manager should continuously monitor 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
   Dick Krentz
   (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