GROUNDWATER TECHNOLOGY, INC.

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

QUARTERLY GROUNDWATER MONITORING REPORT
SAFETY-KLEEN OAKLAND SERVICE CENTER
OAKLAND, CALIFORNIA
SEPTEMBER 1991 THROUGH NOVEMBER 1991

12-16-91

DECEMBER 16, 1991

Prepared for:

Ms. Anne Lunt
Safety-Kleen Corporation
P.O. Box 1429
San Pedro, CA 90733-1429

RP

R1659A2.DH
(62)

safety-kleen ®

91 DEC 18 7:12:19

December 16, 1991

Project No. 020501025

Mr. Alfred Wong
State of California Department of Health Services
2151 Berkeley Way
Annex 7
Berkeley, CA 94704

RE: SUBMITTAL OF THE QUARTERLY REPORT OF GROUNDWATER MONITORING AND RELATED ACTIVITIES CONDUCTED AT THE SAFETY-KLEEN OAKLAND SERVICE CENTER, OAKLAND, CALIFORNIA

Dear Mr. Wong:

Safety-Kleen Corporation is pleased to present this report which summarizes the activities conducted at the Safety-Kleen Oakland Service Center from September 1991 to November 1991.

We hope this report meets your needs at this time. If you have any questions or comments, please call either Mr. Mike Wray of Groundwater Technology, Inc., at (510) 671-2387, or me at (310) 831-3993.

it's Maryland!

Sincerely,

Mike Wray for

Anne Lunt
Senior Project Manager - Remediation
Safety-Kleen Corporation

cc: Ms. Jane Maier, Safety-Kleen Corporation
Mr. Gary Long, Safety-Kleen Corporation
Mr. Steven Ritchie, RWQCB-San Francisco Bay Region
Mr. Mike Wray, Groundwater Technology, Inc.
Mr. Dennis Byrnes, Alameda County Dept. of Environmental Services

AL:ca

Enclosure

R1659A2.DH
(62)

777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123 PHONE 708/697-8460 FAX 708/697-4295

safety-kleen®

December 16, 1991

Project No. 020501025

Mr. Steven Ritchie
Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

RE: SUBMITTAL OF THE QUARTERLY REPORT OF GROUNDWATER MONITORING AND RELATED ACTIVITIES CONDUCTED AT THE SAFETY-KLEEN OAKLAND SERVICE CENTER, OAKLAND, CALIFORNIA.

Dear Mr. Ritchie:

Safety-Kleen Corporation is pleased to present this report which summarizes the activities conducted at the Safety-Kleen Oakland Service Center during the period from September 1991 through November 1991.

Future remedial activities will be related to the design and construction of a soil vapor extraction/ treatment system using the existing soil-vent system piping. We also plan to evaluate separate-phase hydrocarbon recovery options. The Work Plan for Soil-Vent System and Recovery Well Installation, dated June 15, 1990, was submitted to the Department of Health and Safety (DOHS) and the California Regional Water Quality Control Board (RWQCB) for review before the tank replacement activities in July and August 1990. A description of the installation was provided in the Report of Underground Storage Tank Replacement Activities, dated September 1990. Any groundwater extraction program on the Safety-Kleen site should be limited, due to the upgradient source of dissolved-phase organics in groundwater. Before beginning any remedial efforts, this issue should be addressed with the Alameda County Department of Environmental Services.

777 BIG TIMBER ROAD ELGIN, ILLINOIS 60123 PHONE 708/697-8460 FAX 708/697-4295

We hope this report meets your needs at this time. If you have any questions or comments, please call either Mr. Mike Wray of Groundwater Technology, Inc., at (510) 871-2387, or me at (310) 831-3903.

Sincerely,

Mike Wray for

Anne Lunt
Senior Project Manager - Remediation
Safety-Kleen Corporation

cc: Ms. Jane Maier, Safety-Kleen Corporation
Mr. Gary Long, Safety-Kleen Corporation
Mr. Alfred Wong, State of California Department of Health Services
Mr. [redacted], Alameda County Department of Environmental Services
Mr. Mike Wray, Groundwater Technology, Inc.

AL:ca

Enclosure

R1659A2.DH
(62)

GROUNDWATER TECHNOLOGY, INC.

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

QUARTERLY GROUNDWATER MONITORING REPORT
SAFETY-KLEEN OAKLAND SERVICE CENTER
OAKLAND, CALIFORNIA
SEPTEMBER 1991 THROUGH NOVEMBER 1991

DECEMBER 16, 1991

Prepared for:

Ms. Anne Lunt
Safety-Kleen Corporation
P.O. Box 1429
San Pedro, CA 90733-1429

Prepared by:

GROUNDWATER TECHNOLOGY, INC.
4057 Port Chicago Highway
Concord, CA 94520

Deborah H. Horner
Geologist

Michael J. Wray
Project Manager

Kevin Sullivan
Professional Engineer
No. C46253

REGISTERED PROFESSIONAL ENGINEER
KEVIN M. SULLIVAN
No. 46253
CIVIL
STATE OF CALIFORNIA

R1659A2.DH
(62)

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QUARTERLY GROUNDWATER MONITORING REPORT
SAFETY-KLEEN OAKLAND SERVICE CENTER
OAKLAND, CALIFORNIA
SEPTEMBER 1991 THROUGH NOVEMBER 1991

DECEMBER 16, 1991

INTRODUCTION

This report discusses the groundwater monitoring and related environmental assessment activities conducted by Groundwater Technology, Inc. at the Safety-Kleen facility located at 404 Market Street in Oakland, California (Figure 1). The period discussed in this report is September 1991 through November 1991. Activities performed previously were addressed in the Quarterly Report of Groundwater Monitoring, Safety-Kleen Oakland Service Center, for June 1991 through August 1991.

SITE BACKGROUND

The Safety-Kleen Oakland Service Center serves as a local distribution center for Safety-Kleen products. The clean and spent mineral spirits were previously stored in three underground storage tanks (USTs). Two 6,000-gallon steel underground storage tanks (USTs) were used to store spent mineral spirits before shipment to Safety-Kleen's recycling center in Reedley, California. A third, 10,000-gallon UST was used to store clean mineral spirits.

The three existing USTs were replaced with two new double-walled tanks in June and July 1990. All appropriate permits were obtained before the tank removal operation. The Report of Underground Storage Tank Replacement Activities, dated September 1990, was submitted to the Department of Health Services and the California Regional Water Quality Control Board.

SCOPE OF WORK

GROUNDWATER MONITORING

Monthly groundwater monitoring and sampling was performed at the Safety-Kleen Oakland Service Center for 20 months, ending August 1990, at which time a quarterly monitoring and sampling program began. Quarterly sampling events have been conducted on November 28, 1990, February 27, 1991, April 30, 1991, and July 22, 1991. This report presents the results of an October 16, 1991 monitoring and sampling event.

Wellhead elevations have been surveyed to mean sea level to allow determination of groundwater elevations relative to a known datum. The wells were monitored for depth-to-water and depth-to-separate-phase hydrocarbons (product) using an ORS Interface Probe^{R}. Well MW-11 was dry and was not monitored. Interface probe measurements in well MW-9 showed 1.97 feet of separate-phase hydrocarbons. Table 1 summarizes the October 16, 1991, monitoring data.

Figure 2 illustrates the potentiometric surface as interpreted from the data in Table 1. Data from monitoring well MW-13, a deep well, was excluded in preparing the potentiometric surface map. The groundwater flow direction is toward the south-southwest with an average gradient of 0.003 ft/ft in the site vicinity.

GROUNDWATER SAMPLING

Groundwater sampling was conducted by initially purging each well until the extracted water indicated that the temperature, pH, and conductivity had stabilized. Water levels were then allowed to recover to at least 80 percent of their original static level. Between 7 and 50 gallons of water were purged from each well. Representative groundwater samples were then collected using a clean Teflon^{TM} sampling bailer. The samples were placed into 40-milliliter glass vials, labeled, placed in an ice-chilled cooler and delivered under chain-of-custody protocol to GTEL Environmental Laboratories, Inc., a California-certified laboratory.

The samples were analyzed for total petroleum hydrocarbons (TPH)-as-mineral spirits using modified Environmental Protection Agency (EPA) Method 8015 and for purgeable halocarbons using EPA

Method 601. Well MW-11 was dry and was not sampled. Well MW-9 was not sampled because separate-phase hydrocarbons were present.

Detectable concentrations of TPH-as-mineral spirits were not found in the groundwater samples collected on October 16, 1991. Table 2 summarizes the results of purgeable halocarbon analyses by EPA Method 601. Figures 3 through 6 present the distribution of trichloroethene (TCE), chlorobenzene, chloroform, and 1,2-dichloroethane detected in water samples over the past year, including the results from the October 1991 sampling event.

The highest TCE concentrations were detected in the samples from monitoring wells MW-4 and MW-10, upgradient (north) of the Safety-Kleen facility (Figure 3). High concentrations of TCE have been consistently detected in these wells since installation of the wells in 1988 and 1989 (Groundwater Technology Update Report Additional Assessment, June 1990). Since April 1991, TCE concentrations have decreased in MW-10, and have remained relatively unchanged in MW-4. Chloroform (Figure 5) has consistently been detected only in the upgradient wells MW-4 and MW-10. The presence of TCE and chloroform in the upgradient wells has been interpreted as an additional off-site plume, unrelated to activities at the Safety-Kleen facility.

Figures 4 and 6 present the distribution of chlorobenzene and 1,2-dichloroethane (1,2-DCA) detected in water samples over the past year. The chlorobenzene plume appears to be related to activities at the Safety-Kleen facility because it is typically detected in samples from well MW-8, near the tank pit, and in samples from downgradient well MW-3. The halocarbon 1,2-DCA is typically found in samples from wells MW-8 (near the USTs), downgradient wells MW-3 and MW-12, and upgradient well MW-4.

FUTURE ACTIVITIES

The next quarterly sampling and monitoring event will be conducted during the month of January, 1992.

CLOSURE

Groundwater Technology, Inc. has prepared this report on behalf of Safety-Kleen Corporation. If you have any questions, or require additional information, please contact our Concord office at (510) 671-2387.

LIST OF FIGURES

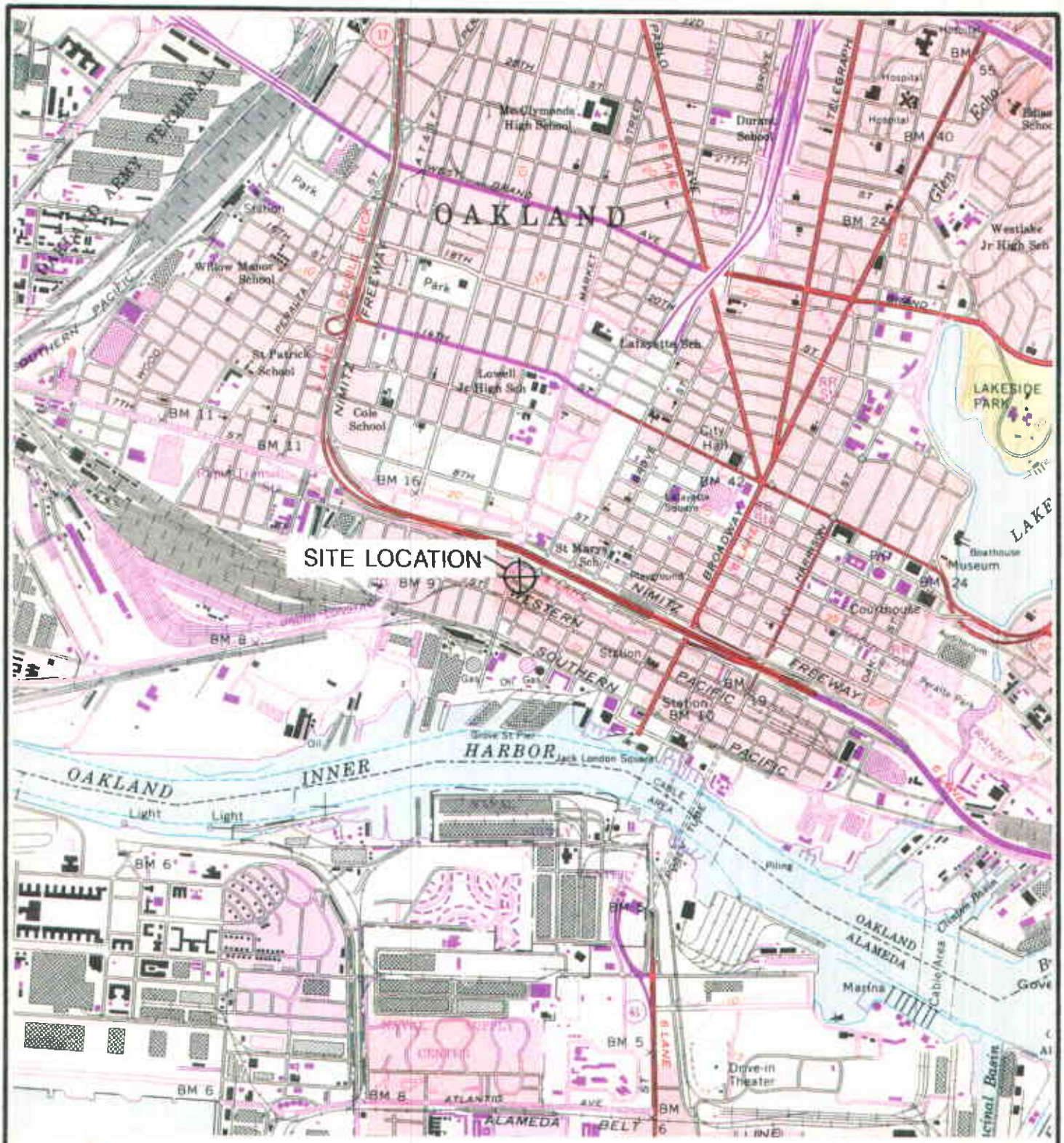
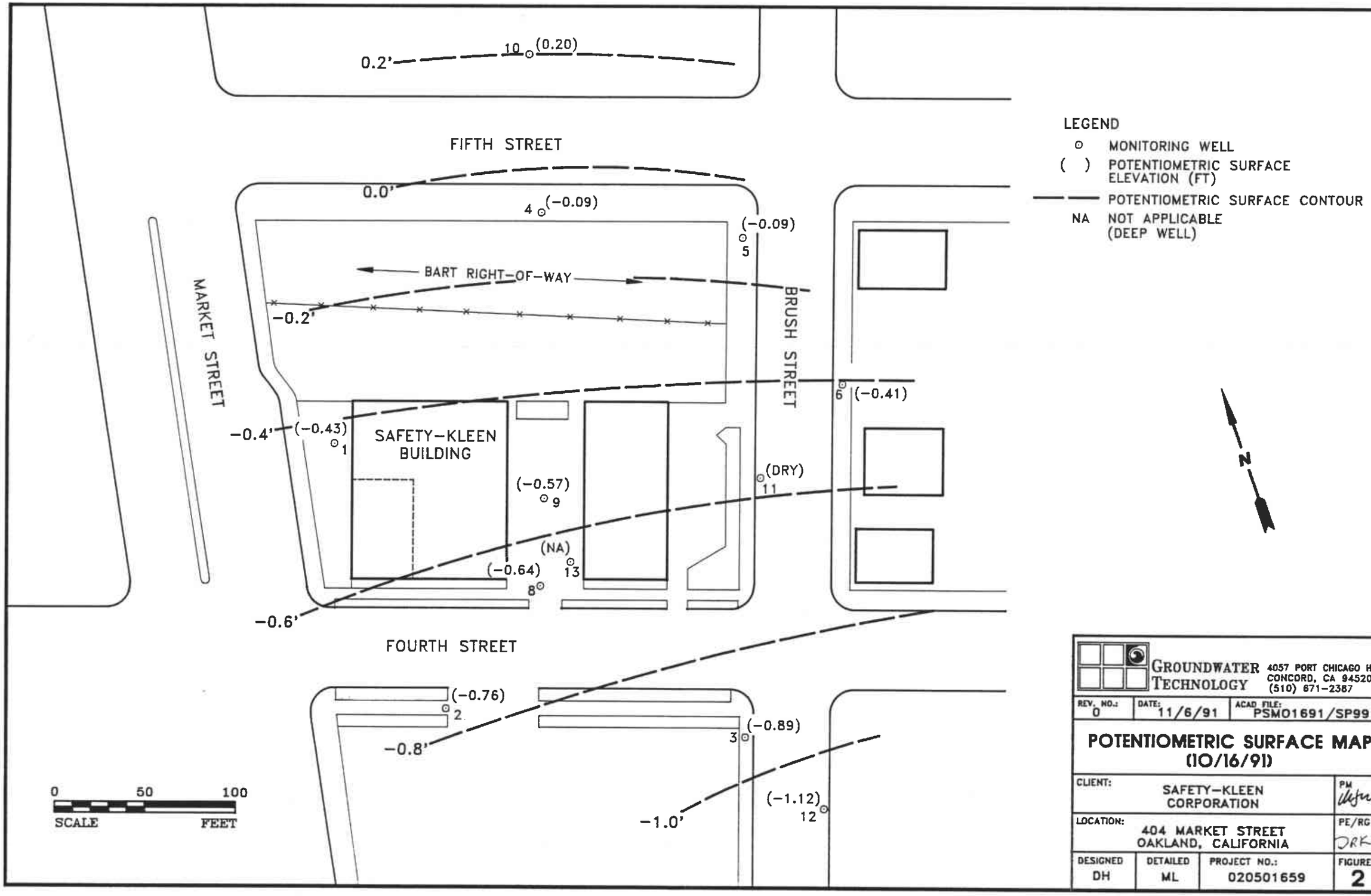


FIGURE 1
SITE LOCATION MAP

SAFETY-KLEEN
404 MARKET ST.
OAKLAND, CALIFORNIA

ML 5/90

GROUNDWATER TECHNOLOGY, INC.



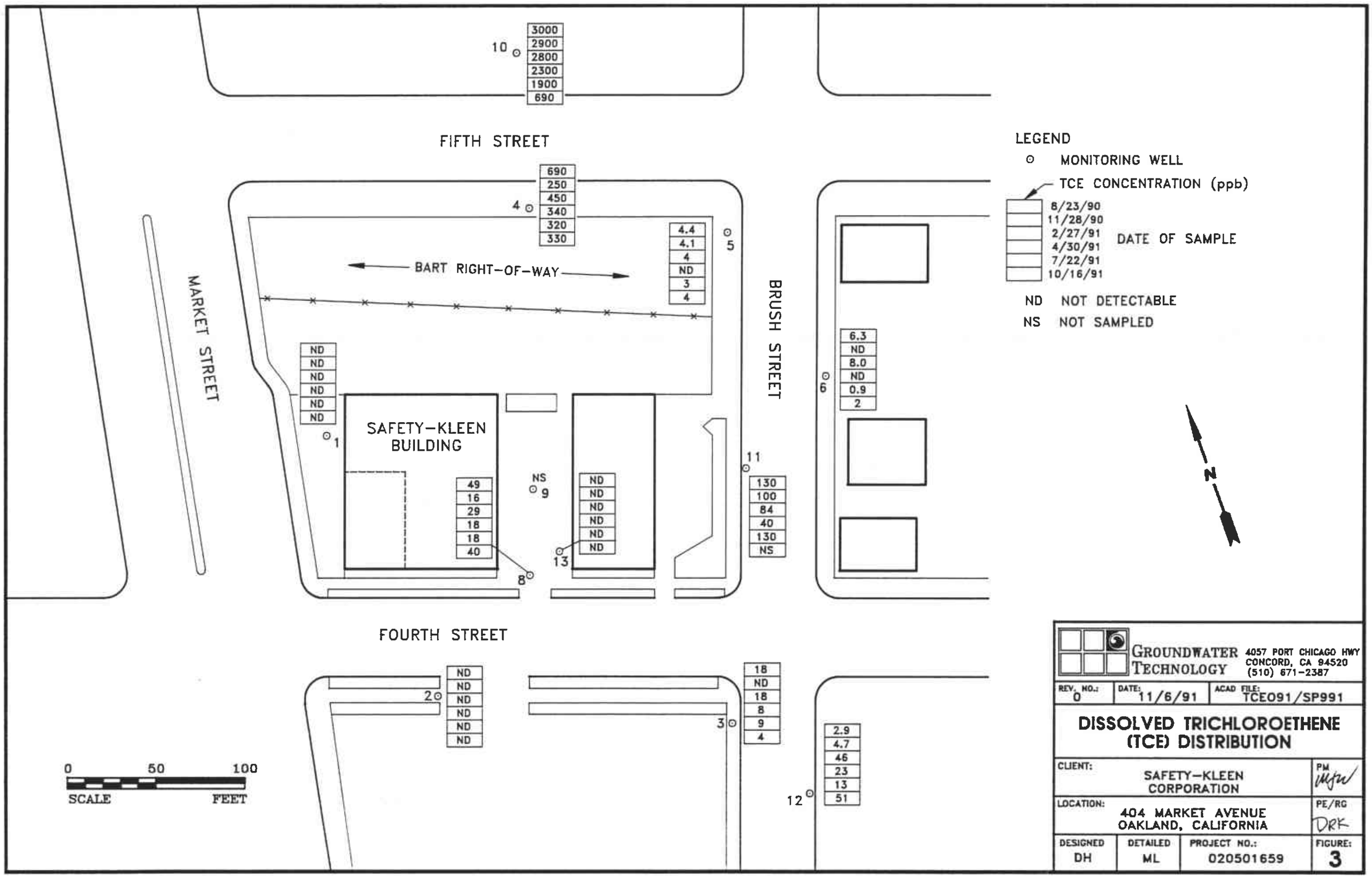
GROUNDWATER TECHNOLOGY
4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387

REV. NO.:	DATE:	ACAD FILE:
0	11/6/91	PSM01691/SP991

POTENTIOMETRIC SURFACE MAP (10/16/91)

CLIENT: SAFETY-KLEEN CORPORATION	PM
LOCATION: 404 MARKET STREET OAKLAND, CALIFORNIA	PE/RG ORK

DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	2



GROUNDWATER TECHNOLOGY
4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387

REV. NO.:	DATE:	ACAD FILE:
0	11/6/91	TCE091/SP991

DISSOLVED TRICHLOROETHENE (TCE) DISTRIBUTION

CLIENT:	PM
SAFETY-KLEEN CORPORATION	MJW
LOCATION: 404 MARKET AVENUE OAKLAND, CALIFORNIA	PE/RG DRF

DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	3

FIFTH STREET

FOURTH STREET

MARKET STREET

BRUSH STREET

BART RIGHT-OF-WAY

SAFETY-KLEEN BUILDING

10	ND	ND	ND	ND	ND	ND							
4	ND	ND	ND	ND	ND	ND							
5	ND	ND	ND	ND	ND	ND							
1	ND	ND	ND	ND	ND	ND							
8	ND	2	0.9	7	4	ND							
9	NS												
13	ND	ND	ND	ND	ND	ND							
11	ND	ND	ND	ND	ND	ND	NS						
6	ND	ND	ND	ND	ND	ND							
2	ND	ND	ND	ND	ND	ND							
3	4.2	5.2	2	3	6	1							
12	ND	ND	ND	ND	ND	ND							

LEGEND

⊙ MONITORING WELL

CHLOROBENZENE CONCENTRATION (ppb)

8/23/90
11/28/90
2/27/91
4/30/91
7/22/91
10/16/91

DATE OF SAMPLE

ND NOT DETECTABLE

NS NOT SAMPLED

N

0 50 100

SCALE FEET

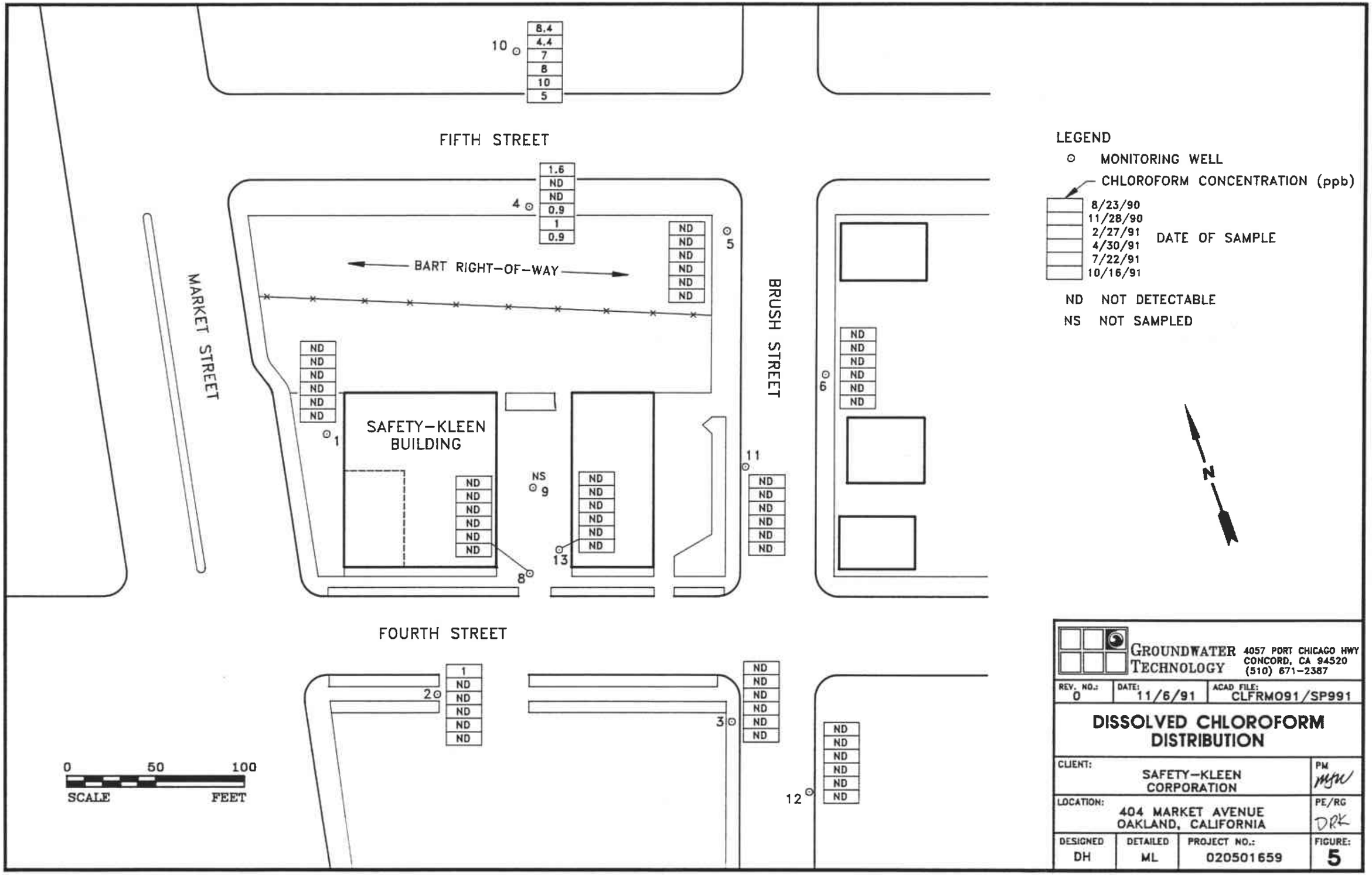
GROUNDWATER TECHNOLOGY
4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387

REV. NO.:	DATE:	ACAD FILE:
0	11/6/91	CLBNZ091/SP991

DISSOLVED CHLOROBENZENE DISTRIBUTION

CLIENT:	PM
SAFETY-KLEEN CORPORATION	
LOCATION: 404 MARKET AVENUE OAKLAND, CALIFORNIA	PE/RG DRK

DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	4



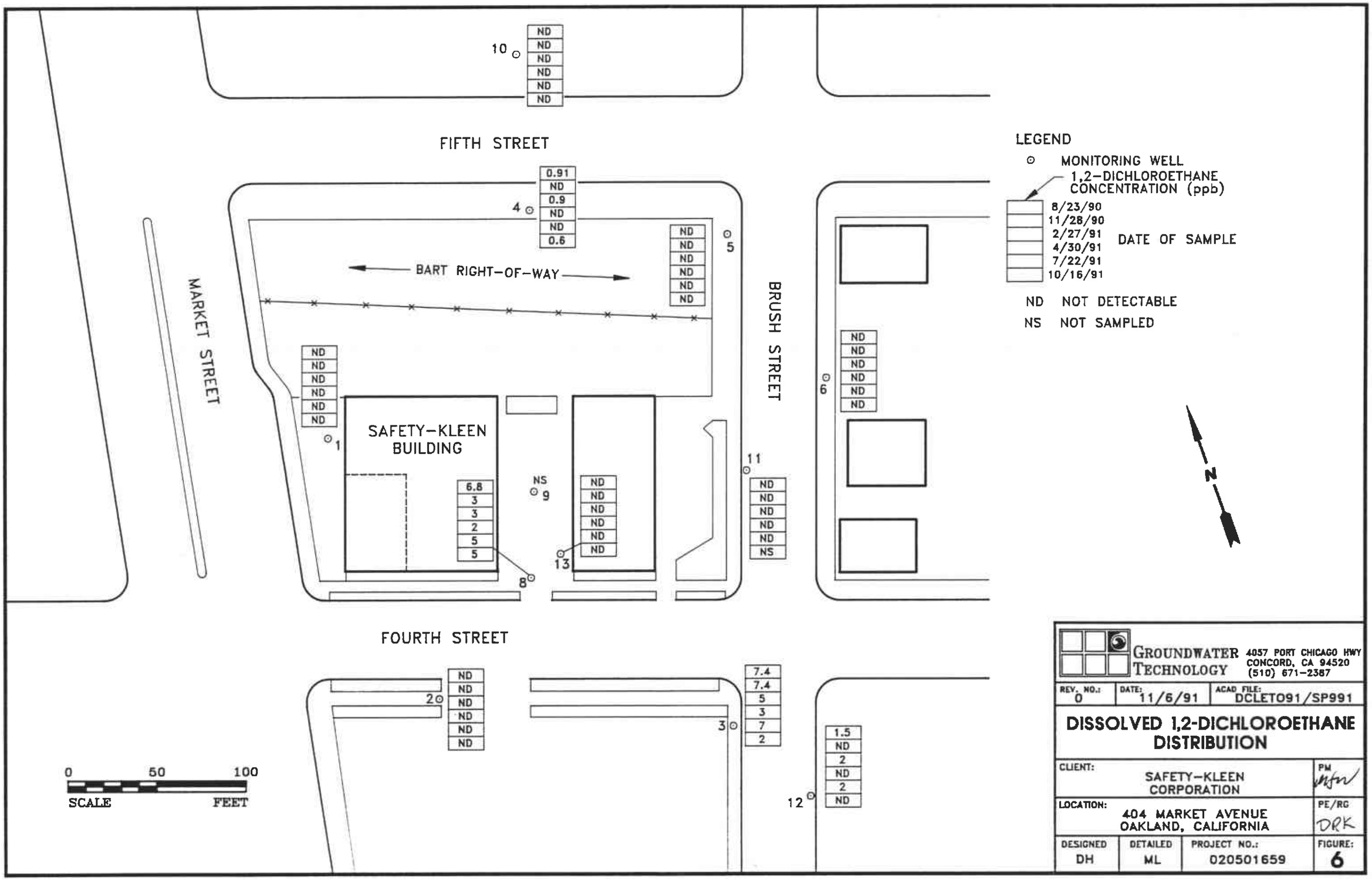
GROUNDWATER TECHNOLOGY
4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387

REV. NO.:	DATE:	ACAD FILE:
0	11/6/91	CLFRM091/SP991

DISSOLVED CHLOROFORM DISTRIBUTION

CLIENT:	PM
SAFETY-KLEEN CORPORATION	mpw
LOCATION: 404 MARKET AVENUE OAKLAND, CALIFORNIA	PE/RG DRK

DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	5



GROUNDWATER TECHNOLOGY
4057 PORT CHICAGO HWY
CONCORD, CA 94520
(510) 671-2387

REV. NO.:	DATE:	ACAD FILE:
0	11/6/91	DCLETO91/SP991

DISSOLVED 1,2-DICHLOROETHANE DISTRIBUTION

CLIENT: SAFETY-KLEEN CORPORATION			PM: MSW
LOCATION: 404 MARKET AVENUE OAKLAND, CALIFORNIA			PE/RG: DRK
DESIGNED: DH	DETAILED: ML	PROJECT NO.: 020501659	FIGURE: 6

LIST OF TABLES

TABLE 1
GROUNDWATER MONITORING DATA
OCTOBER 16, 1991

WELL ID	TOC ELEVATION (ft msl)	DTW (ft)	DTP (ft)	PT (ft)	ADJ ELEVATION (ft msl)
MW-1	7.99	8.42	- -	- -	-0.43
MW-2	8.20	8.96	- -	- -	-0.76
MW-3	6.66	7.55	- -	- -	-0.89
MW-4	10.32	10.41	- -	- -	-0.09
MW-5	10.28	10.37	- -	- -	-0.09
MW-6	8.97	9.38	- -	- -	-0.41
MW-8	7.80	8.44	- -	- -	-0.64
MW-9	8.21	10.36	8.39	1.97	-0.57
MW-10	10.43	10.23	- -	- -	0.20
MW-11	7.91	DRY	- -	- -	- -
MW-12	6.74	7.86	- -	- -	-1.12
MW-13	8.08	9.03	- -	- -	-0.95

$\overline{\text{TOC}}$	=	Top of casing
DTW	=	Depth-to-water
DTP	=	Depth-to-product (separate-phase hydrocarbons)
PT	=	Product thickness
ADJ ELEVATION	=	Adjusted water level elevation. If product is present in the well, the water level elevation is adjusted by adding 0.8 x the product thickness.

TABLE 2
ANALYTICAL RESULTS OF GROUNDWATER SAMPLES
EPA METHOD 601
OCTOBER 16, 1991
(Results in parts per billion)

WELL ID	1,1-DCE	1,1-DCA	1,2-DCA	1,2-DCE	CHLR-FORM	1,1,1-TCA	TCE	CHLR-BENZ	PCE	VNYL CHLR	1,2-DCP	1,2-DCB	FREON II
MW-1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	0.6	5	2	1	ND	ND	4	1	0.6	ND	ND	1	ND
MW-4	ND	ND	0.6	22	0.9	ND	330	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	2	4	ND	ND	ND	ND	ND	2
MW-6	ND	ND	ND	ND	ND	ND	2	ND	ND	ND	ND	ND	5.5
MW-8	ND	ND	5	1	ND	ND	40	ND	0.7	ND	ND	ND	ND
MW-10	1	0.8	ND	53	5	ND	690	ND	ND	4	ND	ND	ND
MW-11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
MW-12	ND	3	ND	3	ND	ND	51	ND	ND	ND	0.8	ND	ND
MW-13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Only detected compounds are listed. For a complete list of analytes see Appendix A.

NS = Not sampled.
ND = Not detected. See laboratory reports in Appendix A for detection

Abbreviations:

1,1-DCE = 1,1-dichloroethene
1,1-DCA = 1,1-dichloroethane
1,2-DCA = 1,2-dichloroethane
1,2-DCE = 1,2-dichloroethene
CHLRFORM = chloroform
VNYL CHLR = vinyl chloride
FREON II = trichlorofluoromethane
1,1,1-TCA = 1,1,1-trichloroethane
TCE = trichloroethene
CHLRBENZ = chlorobenzene
PCE = tetrachloroethene
1,2-DCP = 1,2-dichloropropane
1,2-DCB = 1,2-dichlorobenzene

APPENDIX A

LABORATORY REPORTS

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: GTI72SFK01
Consultant Project Number: 02050165961
Project ID: Oakland, CA
Work Order Number: C1-10-602

November 6, 1991

Debbie Horner
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 10/17/91, under chain of custody record 72-8468, and 72-8471 through 72-8473.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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.

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

Emma P. Popek
Laboratory Director

Table 1

ANALYTICAL RESULTS

Purgeable Halocarbons in Water

EPA Method 601[a]

GTEL Sample Number		01	02	03	04
Client Identification		RBMW-13	MW-13	MW-1	MW-2
Date Sampled		10/16/91	10/16/91	10/16/91	10/16/91
Date Analyzed		10/24/91	10/24/91	10/24/91	10/24/91
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	1	<1	<1	<1	<1
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethene	0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1	<1	<1	<1	<1
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Quantitation Limit Multiplier		1	1	1	1

a. Federal Register, Vol. 49, October 26, 1984.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Table 1 (Continued)

ANALYTICAL RESULTS

Purgeable Halocarbons in Water

EPA Method 601[a]

GTEL Sample Number		05	06	07	08
Client Identification		MW-6	MW-5	MW-3	MW-12
Date Sampled		10/16/91	10/16/91	10/16/91	10/16/91
Date Analyzed		10/24/91	10/24/91	10/24/91	10/24/91
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	1	<1	<1	<1	<1
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	0.2	<0.2	<0.2	0.6	<0.2
1,1-Dichloroethane	0.5	<0.5	<0.5	5	3
1,2-Dichloroethene	0.5	<0.5	<0.5	1	3
Chloroform	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	0.5	<0.5	<0.5	2	<0.5
1,1,1-Trichloroethane	0.5	<0.5	2	<0.5	<0.5
Carbon tetrachloride	0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	0.8
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	2	4	4	51
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1	<1	<1	<1	<1
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	0.5	<0.5	<0.5	0.6	<0.5
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	1	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane	0.5	5.5	2	<0.5	<0.5
Quantitation Limit Multiplier		1	1	1	1

a. Federal Register, Vol. 49, October 26, 1984.

Table 1 (Continued)

ANALYTICAL RESULTS

Purgeable Halocarbons in Water

EPA Method 601[a]

GTEL Sample Number		09	10	11	
Client Identification		MW-8	MW-4	MW-10	
Date Sampled		10/16/91	10/16/91	10/16/91	
Date Analyzed		10/24/91	10/24/91	10/24/91	
Analyte	Quantitation Limit, ug/L	Concentration, ug/L			
Chloromethane	0.5	<0.5	<0.5	<0.5	
Bromomethane	0.5	<0.5	<0.5	<0.5	
Vinyl chloride	1	<1	<1	4	
Chloroethane	0.5	<0.5	<0.5	<0.5	
Methylene chloride	0.5	<0.5	<0.5	<0.5	
1,1-Dichloroethene	0.2	<0.2	<0.2	1	
1,1-Dichloroethane	0.5	<0.5	<0.5	0.8	
1,2-Dichloroethene	0.5	1	22	53	
Chloroform	0.5	<0.5	0.9	5	
1,2-Dichloroethane	0.5	5	0.6	<0.5	
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	
Carbon tetrachloride	0.5	<0.5	<0.5	<0.5	
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	
1,2-Dichloropropane	0.5	<0.5	<0.5	<0.5	
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	
Trichloroethene	0.5	40	330	690	
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	
2-Chloroethylvinyl ether	1	<1	<1	<1	
Bromoform	0.5	<0.5	<0.5	<0.5	
Tetrachloroethene	0.5	0.7	<0.5	<0.5	
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<0.5	
Chlorobenzene	0.5	<0.5	<0.5	<0.5	
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	
1,3-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	
1,4-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	
Quantitation Limit Multiplier		1	1	1	

a. Federal Register, Vol. 49, October 26, 1984.

GTEL ENVIRONMENTAL LABORATORIES, INC.

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: GTI72SFK01
Consultant Project Number: 02050165961
Project ID: Oakland, CA
Work Order Number: C1-10-604

November 6, 1991

Debbie Horner
Groundwater Technology, Inc.
4057 Port Chicago Hwy.
Concord, CA 94520

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 10/17/91, under chain of custody record 72-8468 and 72-8471 through 72-8473.

A formal Quality Control/Quality Assurance (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

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.

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: GTI72SFK01
Consultant Project Number: 02050165961
Project ID: Oakland, CA
Work Order Number: C1-10-604

Table 1

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Mineral Spirits in Water

Modified EPA Method 5030/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

GTEL Sample Number		01	02	03	04
Client Identification		MW-13	MW-1	MW-2	MW-6
Date Sampled		10/16/91	10/16/91	10/16/91	10/16/91
Date Analyzed		10/28/91	10/28/91	10/28/91	10/28/91
Analyte	Quantitation Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1	<1	<1
Quantitation Limit Multiplier		1	1	1	1

GTEL Sample Number		05	06	07	08
Client Identification		MW-5	MW-3	MW-12	MW-8
Date Sampled		10/16/91	10/16/91	10/16/91	10/16/91
Date Analyzed		10/28/91	10/28/91	10/28/91	10/28/91
Analyte	Quantitation Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1	<1	<1
Quantitation Limit Multiplier		1	1	1	1

Client Number: GTI72SFK01
Consultant Project Number: 02050165961
Project ID: Oakland, CA
Work Order Number: C1-10-604

Table 1 (Continued)

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons as Mineral Spirits in Water

Modified EPA Method 5030/8015[a]

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986.

GTEL Sample Number		09	10		
Client Identification		MW-4	MW-10		
Date Sampled		10/16/91	10/16/91		
Date Analyzed		10/28/91	10/28/91		
Analyte	Quantitation Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1		
Quantitation Limit Multiplier		1	1		

GTEL ENVIRONMENTAL LABORATORIES, INC.

QGL

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- 8468

Project Manager: Debbie Horner

Phone #:

FAX #:

Address: GTI Concord

Site location: OAKLAND, CA

Project Number: 020501659-61

Project Name: Safe/404 Market

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

Sampler Name (Print): Greg Mason Randy Ruiz

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
Site Blank			1V	X								X			10/	
RBMW-13			1V												16/	
MW-13			2V						X						91	
MW-13			2V													
RBMW-1			1V													
MW-1			2V						X							
MW-1			2V													
RBMW-2			1V													
MW-2			2V						X							
MW-2			2V	X								X				

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 TPH Mineral Spirits
																	X	
						X												X
																	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)

SPECIAL REPORTING REQUIREMENTS (Specify) Final Report due 2 weeks from sample submission

REMARKS: Blue TPH Min. Spirits

pg. 1 of 4

Lab Use Only
Lot #:

Storage Location
Work Order #:

CUSTODY RECORD

Relinquished by Sampler:	Received by:	Date 10/17/91	Time 9:35
Relinquished by:	Received by:	Date	Time
Relinquished by:	Received by Laboratory:	Date 10/17	Time 9:50

Way bill #

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- 8471

CUSTODY RECORD

Project Manager: Debbie Horner
Phone #:
FAX #:
Address: GTI Concord
Site location: OAKLAND, CA
Project Number: 020501/657-61
Project Name: SAFE/404 Market
Sampler Name (Print): Greg MASon Randy Ruiz

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

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
RBMW-6			1V	X								X			10/	
MW-6			2V						X						/16	
MW-6		05	2V												/91	
RBMW-5			1V						X							
MW-5			2V													
MW-5		06	2V													
RBMW-3			1V						X							
MW-3			2V													
MW-3		07	2V													
RBMW-12			1V						X			X				
MW-12			2V	X												

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 - TPH M.O. Shirts
						X											X	X
																	X	X
						X											X	X
																	X	X
						X											X	X
																	X	X
						X											X	X
																	X	X

Relinquished by Sampler: Randy Ruiz
Date: 10/17/91 Time: 9:35
Received by: Randy Ruiz

Relinquished by: Randy Ruiz
Date: 10/17 Time: 9:58
Received by: Jamie Davis

Relinquished by:
Date: Time:
Received by:

Received by Laboratory:
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)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS:

Pg 2 of 4

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

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- 8472

CUSTODY RECORD

Project Manager: Debbie Horner
Phone #:
FAX #:
Address: GTL Concord
Site location: OAKLAND, CA
Project Number: 02050/659-61
Project Name: SITE/404 Market
I attest that the proper field sampling procedures were used during the collection of these samples.
Sampler Name (Print): Greg Mason Randy Ruiz

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
MW-12			2v									X			10/	
RBMW-8			1v												10/	
MW-8			2v						X						10/	
MW-8			2v												91	
RBMW-11			1v													
MW-11			2v						X							
MW-11			2v													
RBMW-4			1v													
MW-4			2v						X							
MW-4			2v									X				

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											HOLD for Mineral Spirits
																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)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS:

Pg. 3 of 4

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

	Received by:	Time	Date
Relinquished by Sampler:			
Relinquished by:	Received by:	Time	Date
Relinquished by:	Received by Laboratory:	Time	Date

Way bill #

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- 8473

Project Manager: Debbie Harvey
Phone #:
FAX #:
Address: GTI Concord
Site location: OAKLAND, CA
Project Number: 020501659-61
Project Name: Safe/404 Maefet
Sampler Name (Print): Greg Mason, Randy Ruiz

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

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
RBMW-10			1V	X								X			10/16/91	
MW-10	(11)		2V	X								X				
MW-10			2V	X					X			X				

#11 Not #11 Root Hole Sample

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	TPH mineral spirits 8015
						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)

SPECIAL REPORTING REQUIREMENTS (Specify)

REMARKS:

Pg 4 of 4

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

CUSTODY RECORD

	Relinquished by Sampler:	Relinquished by:	Relinquished by:
Received by:			
Received by:			
Received by Laboratory:			
Date	10/17/91		10/17
Time	9:35		9:50

Waybill #

James Chan