

# 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 THROUGH NOVEMBER 1992

020501659

12/15/92

December 15, 1992

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

92 DEC 17 09:11:20

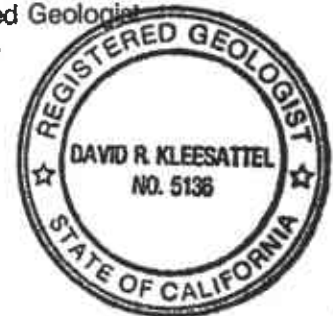
Groundwater Technology, Inc.  
Written/Submitted by

Deborah H. Horner  
Staff Geologist

Michael J. Wray  
Project Manager

Groundwater Technology, Inc.  
Reviewed/Approved by

David R. Kleesattel  
Registered Geologist  
No. 5136



R1659A6.DH

**CONTENTS**

	<b>PAGE</b>
1.0 INTRODUCTION .....	1
2.0 SITE BACKGROUND .....	1
3.0 SCOPE OF WORK .....	2
3.1 Groundwater Monitoring .....	2
3.2 Groundwater Sampling .....	2
4.0 FUTURE ACTIVITIES .....	3
5.0 CLOSURE .....	4

**FIGURES**

FIGURE 1	SITE LOCATION MAP
FIGURE 2	POTENTIOMETRIC SURFACE MAP (10/19/92)
FIGURE 3	DISTRIBUTION OF DISSOLVED TCE CONCENTRATIONS
FIGURE 4	DISTRIBUTION OF DISSOLVED CHLOROBENZENE CONCENTRATIONS
FIGURE 5	DISTRIBUTION OF DISSOLVED CHLOROFORM CONCENTRATIONS
FIGURE 6	DISTRIBUTION OF DISSOLVED 1,2-DICHLOROETHANE CONCENTRATIONS

**TABLES**

TABLE 1	GROUNDWATER MONITORING DATA
TABLE 2	ANALYTICAL RESULTS OF GROUNDWATER SAMPLES

**APPENDICES**

APPENDIX A	LABORATORY REPORTS
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December 15, 1992

Project No. 020501659

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

92 DEC 17 11:28

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 through November 1992.

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) 831-3903.

Sincerely,

Anne Lunt  
Senior Project Manager - Remediation  
Safety-Kleen Corporation

cc: Ms. Janie Spetalnick, Safety-Kleen Corporation  
Mr. Gary Long, Safety-Kleen Corporation  
Mr. Ed Hoople, Safety-Kleen Corporation  
Mr. Alfred Wong, State of California Department of Health Services  
Ms. Jennifer Eberle, Alameda County Department of Environmental Services  
Mr. Mike Wray, Groundwater Technology, Inc.

Enclosure

**QUARTERLY GROUNDWATER MONITORING REPORT  
SAFETY-KLEEN OAKLAND SERVICE CENTER  
OAKLAND, CALIFORNIA  
SEPTEMBER THROUGH NOVEMBER 1992**

**DECEMBER 15, 1992**

## **1.0 INTRODUCTION**

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This report discusses 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 report discusses activities from September 1 through November 30, 1992. Previous activities were addressed in the Quarterly Report of Groundwater Monitoring, Safety-Kleen Oakland Service Center, June through August 1992.

## **2.0 SITE BACKGROUND**

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The Safety-Kleen Oakland Service Center is 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 USTs were used to store spent mineral spirits before shipment to Safety-Kleen's recycling center in Reedley, California. One 10,000-gallon UST was used to store clean mineral spirits.

The three 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.

### 3.0 SCOPE OF WORK

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#### 3.1 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. The previous quarterly sampling event was conducted on July 9, 1992. This report presents the results of the ~~October 19, 1992~~ monitoring and sampling event.

The wellhead elevations have been surveyed relative to mean sea level to determine groundwater elevations relative to a known datum. The wells were monitored for depth to water and depth to product using an INTERFACE PROBE™ Well Monitoring System. Interface probe measurements indicated ~~1.65 feet of separate phase hydrocarbons in well MW-9~~ Table 1 summarizes the October 19, 1992, monitoring data.

Figure 2 illustrates the potentiometric surface of the shallow groundwater as interpreted from the monitoring data presented in Table 1. Because monitoring well MW-13 is completed in a deeper hydrogeologic zone, water level measurements from that well were excluded in preparing the potentiometric surface map (Figure 2). ~~The groundwater flow direction is toward the south~~ with an average gradient of 0.003 foot per foot (ft/ft) near the site.

#### 3.2 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. Groundwater samples were collected using a clean Teflon® sampling bailer. The samples were placed into 40-milliliter glass volatile organic analysis vials, labeled, placed in an ice-chilled cooler, and delivered under chain-of-custody protocol to GTEL Environmental Laboratories, Inc., a California-certified laboratory (CA Cert. No. E675).

The samples were analyzed for total petroleum hydrocarbons-as-mineral spirits (TPH-MS) using modified Environmental Protection Agency (EPA) Method 8015 and for purgeable halocarbons using EPA Method 601. Well MW-9 was not sampled because separate-phase hydrocarbons were present.

Detectable concentrations of TPH-MS were not found in the groundwater samples collected during this sampling period. 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 (DCA) detected in water samples over the past year, including the results from the October 1992 sampling event.

The presence of TCE in the upgradient wells has been interpreted as an off-site plume unrelated to activities at the Safety-Kleen facility. 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). 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). The chloroform concentrations are also associated with the encroaching upgradient TCE plume. Compared with the July results, TCE concentrations have increased in samples from wells MW-1, MW-3, MW-6, MW-10, and MW-11 and decreased in samples from wells MW-4, MW-5, MW-8, and MW-12.

Figures 4, 5, and 6 present the distribution of chlorobenzene, chloroform, and 1,2-DCA detected in water samples over the past year. Chlorobenzene was detected at 4.5 ppb in the sample from well MW-8 and 2.0 ppb in the sample from well MW-12. Chloroform was detected at 1.8 ppb in the sample from well MW-4 and at 1.1 ppb in the sample from well MW-10. The halocarbon 1,2-DCA was found in the samples from well MW-3 at 1.8 ppb, well MW-8 at 3.3 ppb, and well MW-12 at 1.5 ppb.

*As it's perhaps coming from U-G.*

#### 4.0 FUTURE ACTIVITIES

The next quarterly sampling and monitoring event will be conducted during January 1993. Separate-phase product recovery from wells MW-9 and RW will be conducted on a weekly basis until an automated system can be installed in RW.

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## 5.0 CLOSURE

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This concludes the Quarterly Groundwater Monitoring Report for the Oakland Service Center facility for September through November 1992. If you have any questions, or require additional information, please contact our Concord office at (510) 671-2387.

## FIGURES

- FIGURE 1      SITE LOCATION MAP
- FIGURE 2      POTENTIOMETRIC SURFACE MAP (10/19/92)
- FIGURE 3      DISTRIBUTION OF DISSOLVED TCE CONCENTRATIONS
- FIGURE 4      DISTRIBUTION OF DISSOLVED CHLOROBENZENE CONCENTRATIONS
- FIGURE 5      DISTRIBUTION OF DISSOLVED CHLOROFORM CONCENTRATIONS
- FIGURE 6      DISTRIBUTION OF DISSOLVED 1,2-DICHLOROETHANE CONCENTRATIONS





**GROUNDWATER  
TECHNOLOGY**

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



SCALE:

0 FEET 2000

**SITE LOCATION MAP**

CLIENT:

**SAFETY-KLEEN  
CORPORATION**

DATE:

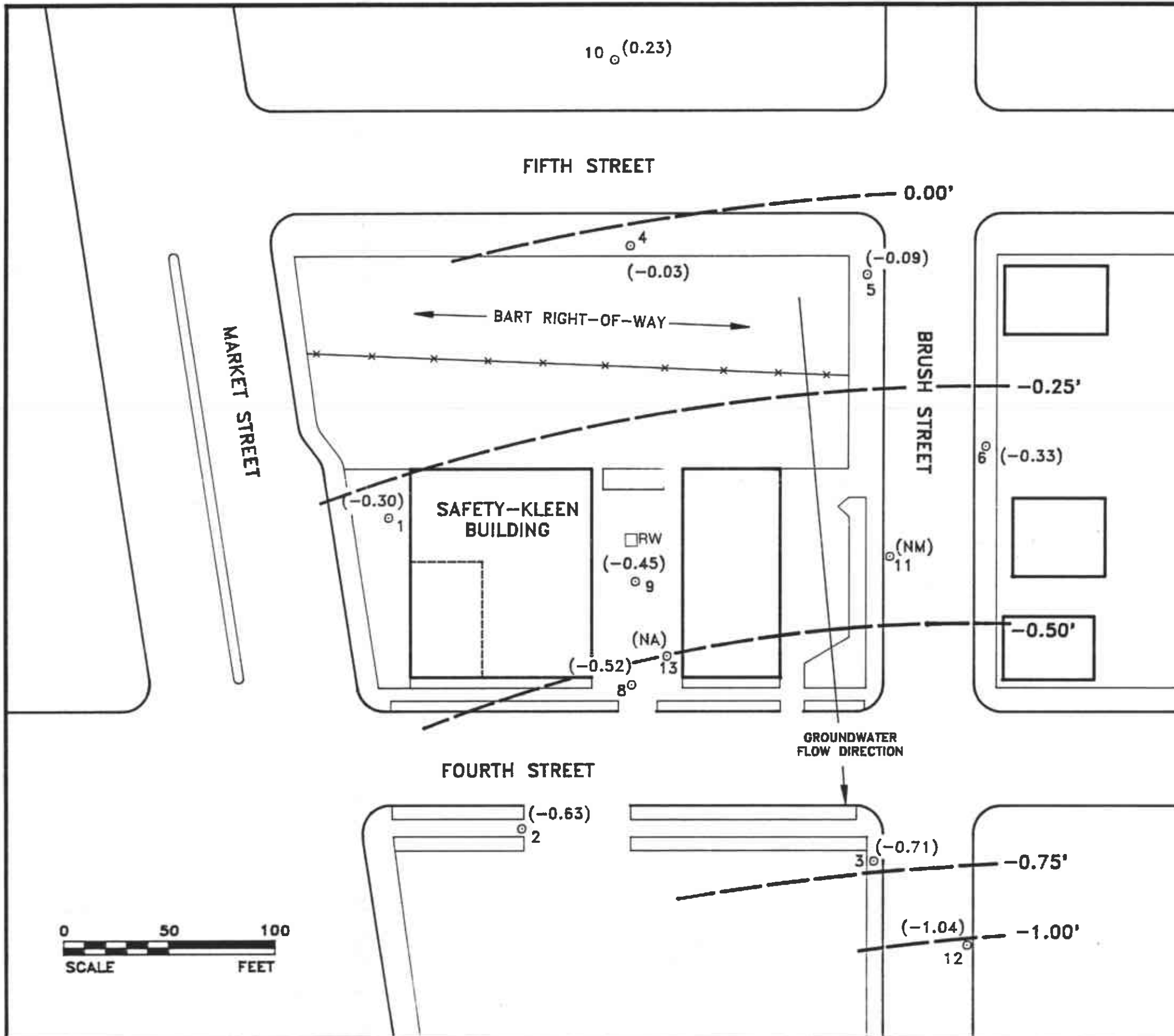
**3/3/92**

LOCATION:

**404 MARKET STREET  
OAKLAND, CALIFORNIA**

FIGURE:

**1**

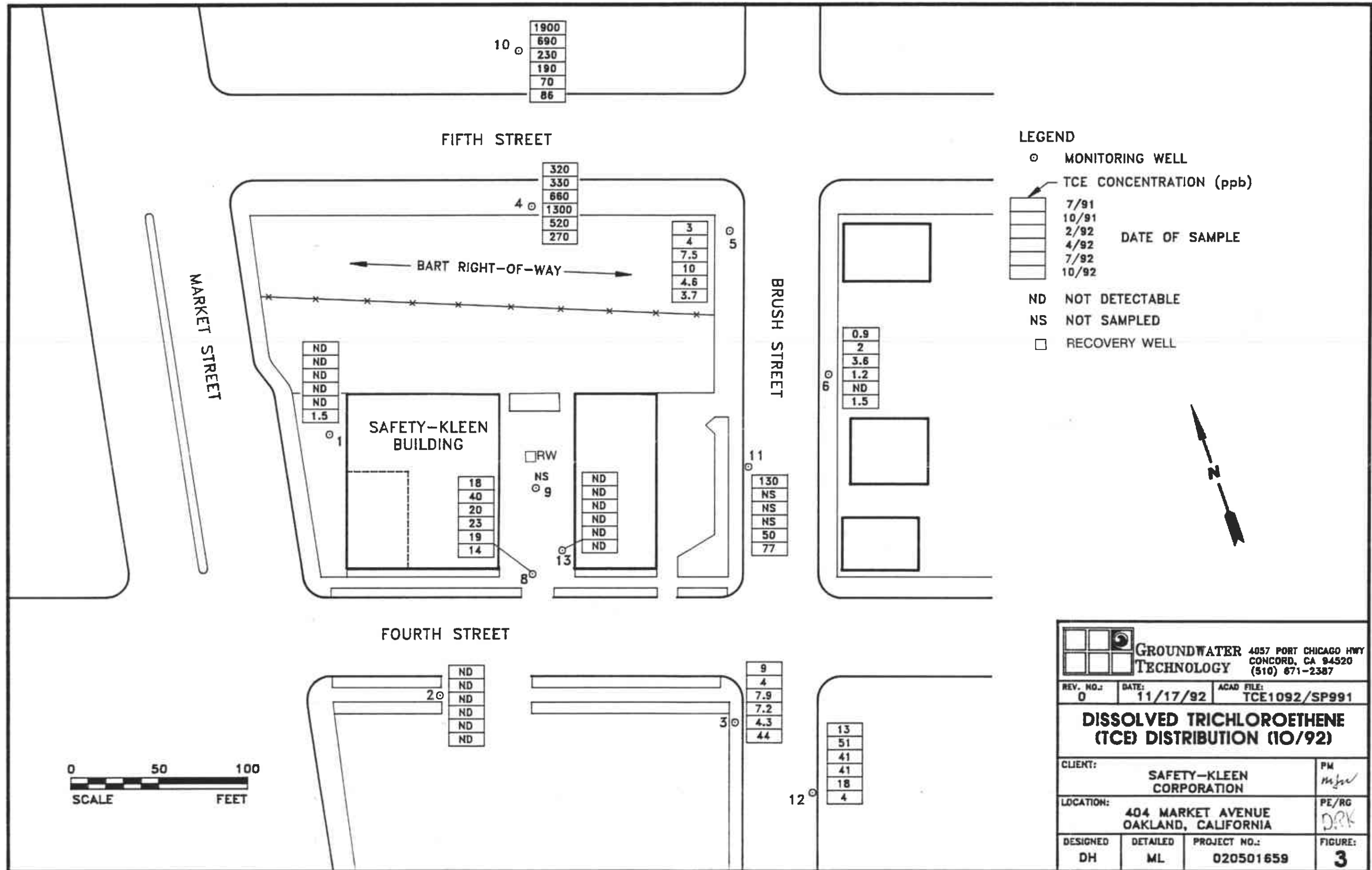


**LEGEND**

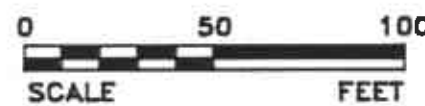
- MONITORING WELL
- ( ) POTENTIOMETRIC SURFACE ELEVATION (RELATIVE TO MEAN SEA LEVEL)
- POTENTIOMETRIC SURFACE CONTOUR
- (NA) NOT APPLICABLE
- (NM) NOT MONITORED
- RECOVERY WELL

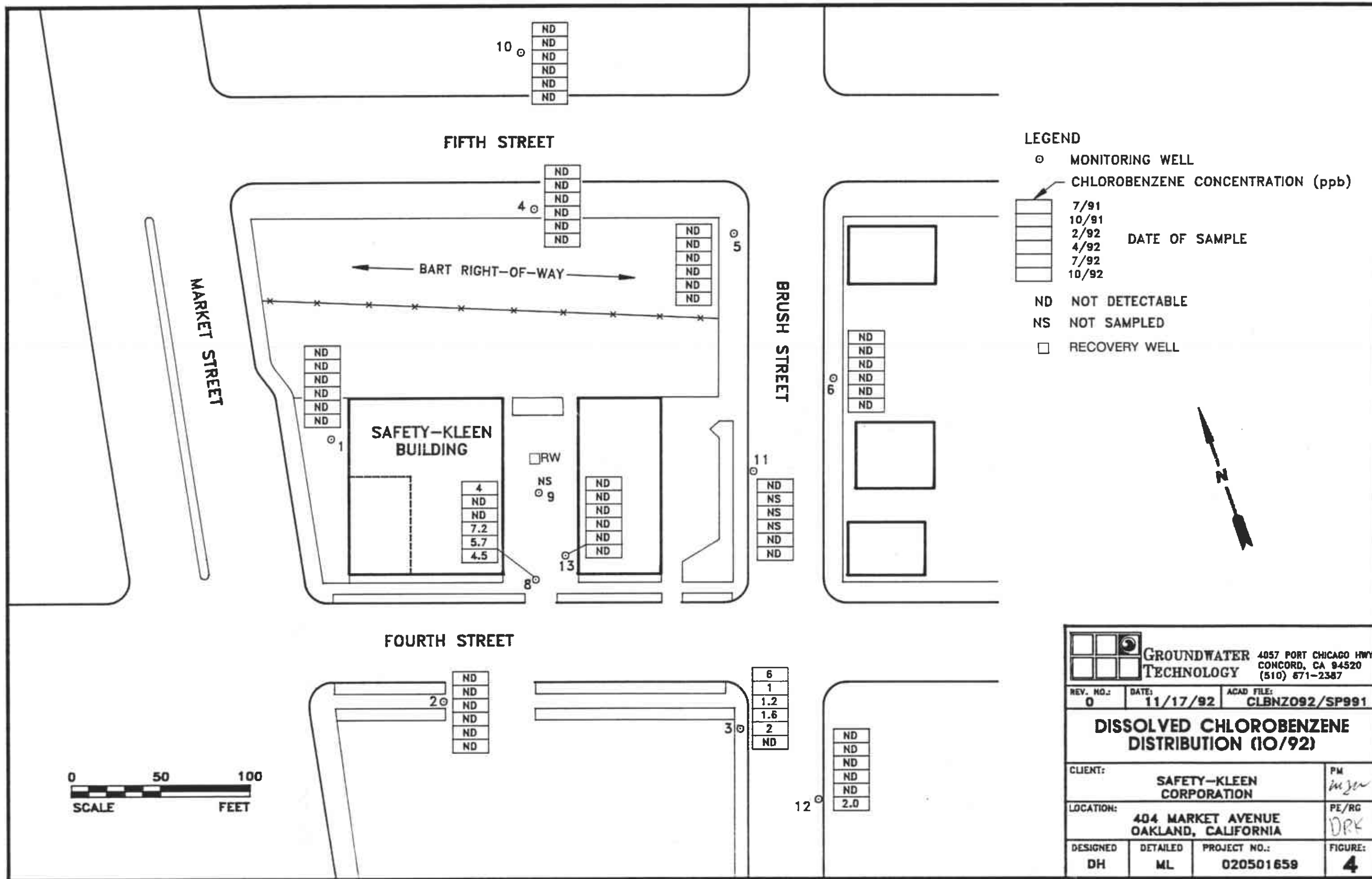


		<b>GROUNDWATER TECHNOLOGY</b> 4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 871-2387	
REV. NO.:	DATE:	ACAD FILE:	
0	11/17/92	PSM01992/SP991	
<b>POTENTIOMETRIC SURFACE MAP</b> <b>(10/19/92)</b>			
CLIENT:	SAFETY-KLEEN CORPORATION		PM <i>mjn</i>
LOCATION:	404 MARKET STREET OAKLAND, CALIFORNIA		PE/RG <i>DRK</i>
DESIGNED DH	DETAILED ML	PROJECT NO.:	FIGURE:
		020501659	<b>2</b>

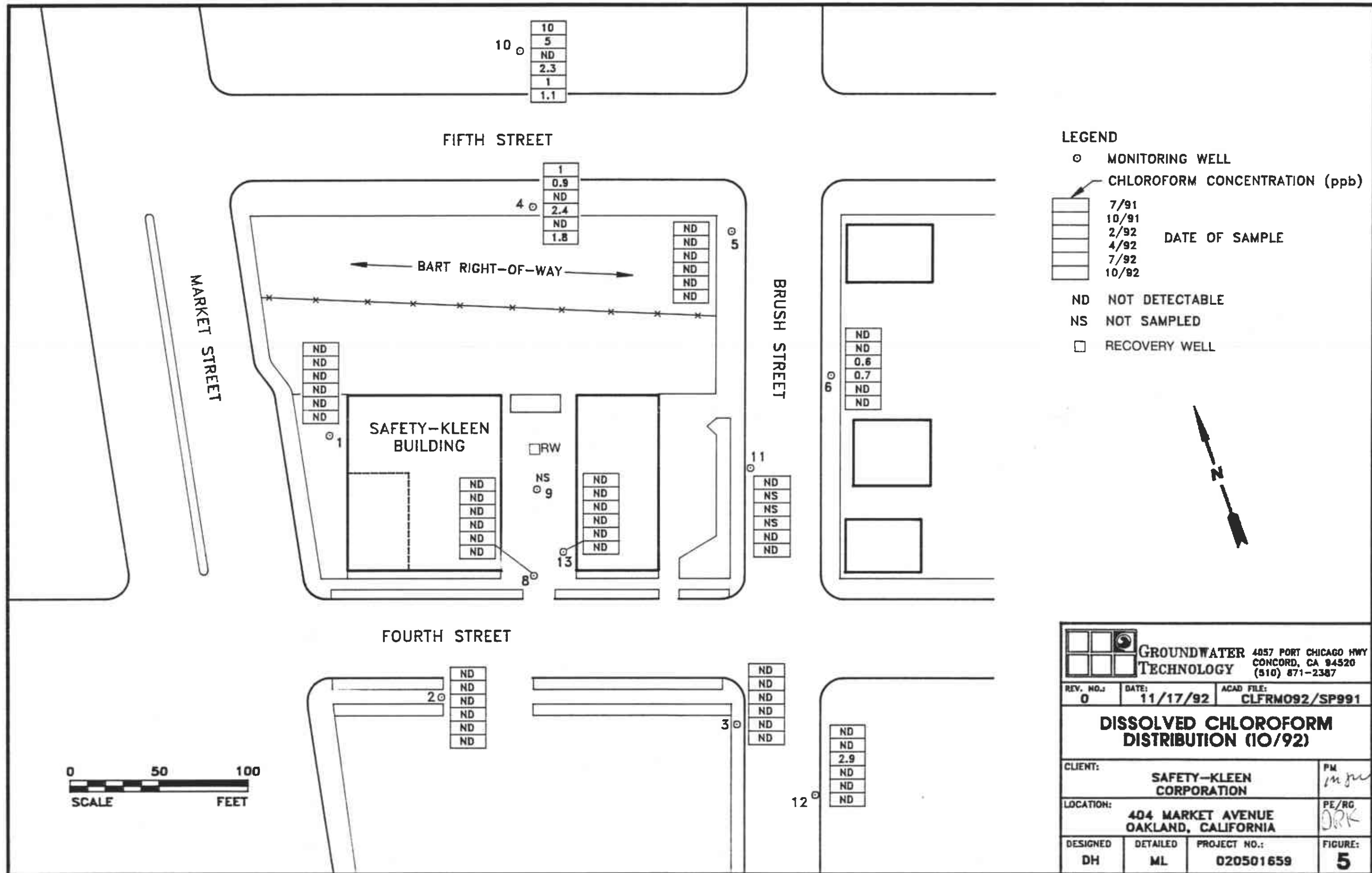


		<b>GROUNDWATER TECHNOLOGY</b> 4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387	
REV. NO.:	DATE:	ACAD FILE:	
0	11/17/92	TCE1092/SP991	
<b>DISSOLVED TRICHLOROETHENE (TCE) DISTRIBUTION (10/92)</b>			
CLIENT:		PM	
SAFETY-KLEEN CORPORATION		<i>mjw</i>	
LOCATION:		PE/RG	
404 MARKET AVENUE OAKLAND, CALIFORNIA		<i>DRK</i>	
DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	<b>3</b>



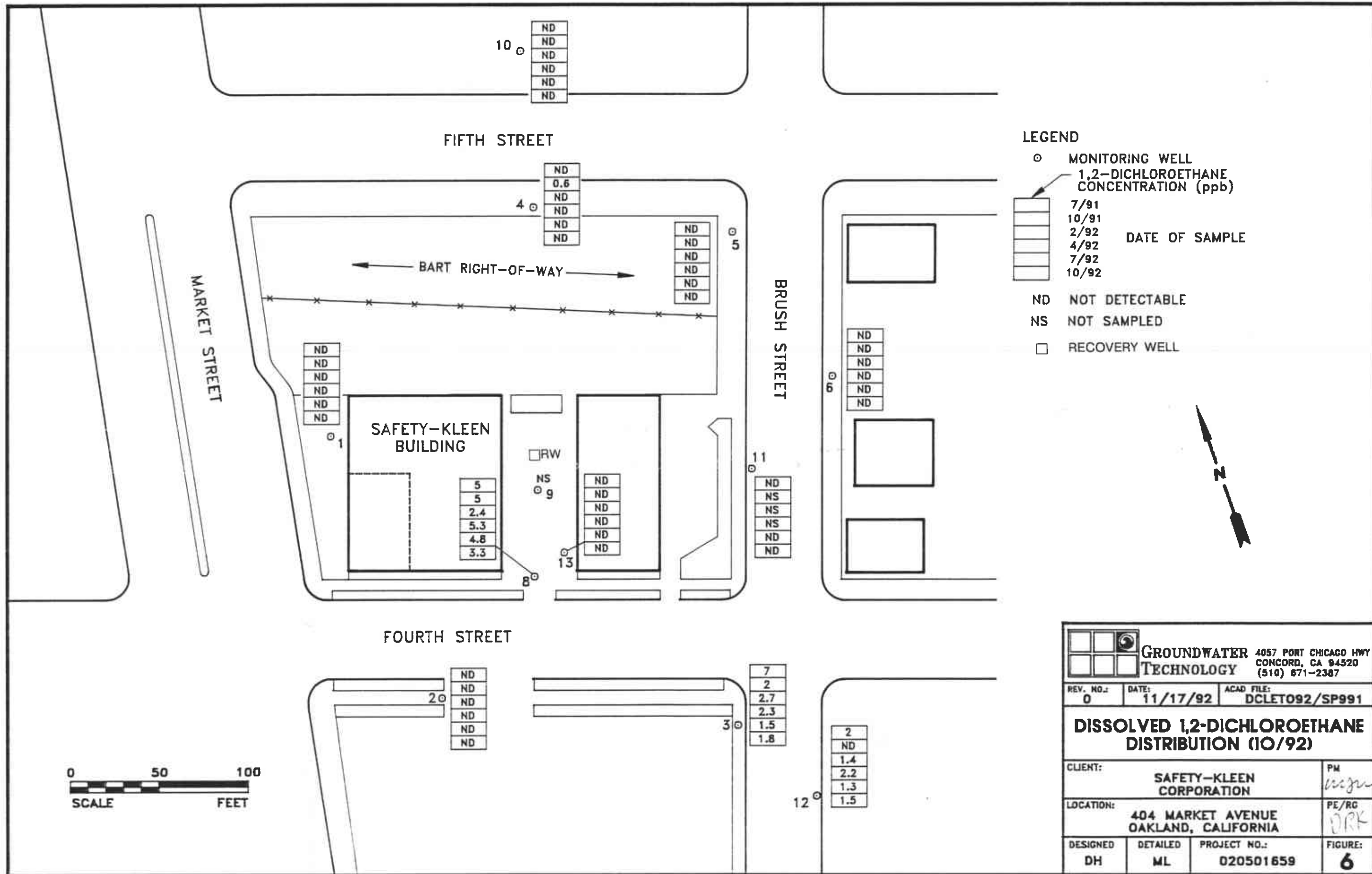


		4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387	
REV. NO.:	DATE:	ACAD FILE:	
0	11/17/92	CLBNZ092/SP991	
<b>DISSOLVED CHLOROBENZENE DISTRIBUTION (10/92)</b>			
CLIENT:		PM	
SAFETY-KLEEN CORPORATION		<i>m. j.</i>	
LOCATION:		PE/RG	
404 MARKET AVENUE OAKLAND, CALIFORNIA		DRK	
DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	4



		4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 871-2387	
REV. NO.:	DATE:	ACAD FILE:	
0	11/17/92	CLFRM092/SP991	
<b>DISSOLVED CHLOROFORM DISTRIBUTION (10/92)</b>			
CLIENT:			PM
SAFETY-KLEEN CORPORATION			<i>mjr</i>
LOCATION:			PE/RG
404 MARKET AVENUE OAKLAND, CALIFORNIA			<i>DRK</i>
DESIGNED	DETAILED	PROJECT NO.:	FIGURE:
DH	ML	020501659	5





		<b>GROUNDWATER TECHNOLOGY</b> 4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387	
REV. NO.:	DATE:	ACAD FILE:	
0	11/17/92	DCLETO92/SP991	
<b>DISSOLVED 1,2-DICHLOROETHANE DISTRIBUTION (10/92)</b>			
CLIENT:	SAFETY-KLEEN CORPORATION		PM <i>[Signature]</i>
LOCATION:	404 MARKET AVENUE OAKLAND, CALIFORNIA		PE/RC <i>[Signature]</i>
DESIGNED DH	DETAILED ML	PROJECT NO.:	FIGURE:
		020501659	6

**TABLES**

TABLE 1      GROUNDWATER MONITORING DATA

TABLE 2      ANALYTICAL RESULTS OF GROUNDWATER SAMPLES

**TABLE 1  
GROUNDWATER MONITORING DATA  
OCTOBER 19, 1992**

WELL ID	TOC ELEVATION (ft msl)	DTW (ft)	DTP (ft)	PT (ft)	ADJ ELEVATION (ft msl)
MW-1	7.99	8.29	-	-	-0.30
MW-2	8.20	8.83	-	-	- 0.63
MW-3	6.66	7.37	-	-	- 0.71
MW-4	10.32	10.35	-	-	- 0.03
MW-5	10.28	10.37	-	-	- 0.09
MW-6	8.97	9.30	-	-	- 0.33
MW-8	7.80	8.32	-	-	- 0.52
MW-9	8.21	9.98	8.33	1.65	- 0.45
MW-10	10.43	10.20	-	-	0.23
MW-11	7.91	NM	-	-	NM
MW-12	6.74	7.78	-	-	- 1.04
MW-13	8.08	8.76	-	-	- 0.68

- 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.
- NM = Not Monitored
- ft msl = Measurement in feet (ft) relative to mean seal level (msl)



**TABLE 2**  
**ANALYTICAL RESULTS OF GROUNDWATER SAMPLES**  
**EPA METHOD 601**  
**OCTOBER, 1992**  
**(Results in parts per billion)**

WELL ID	1,1-DCA	1,2-DCA	1,2-DCE	CHLR-FORM	1,1,1-TCA	TCE	CHLR-BENZ	1,2-DCB	VC	PCE	1,4-DCB	1,1-DCE
MW-1	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3	2.7	1.8	ND	ND	ND	44	ND	ND	ND	ND	ND	ND
MW-4	ND	ND	ND	1.8	ND	270	ND	ND	ND	ND	ND	ND
MW-5	ND	ND	ND	ND	ND	3.7	ND	ND	ND	ND	ND	ND
MW-6	ND	ND	ND	ND	ND	1.5	ND	ND	ND	ND	ND	ND
MW-8	0.7	3.3	ND	ND	ND	14	4.5	1.9	ND	ND	ND	ND
MW-10	ND	ND	ND	1.1	ND	86	ND	ND	ND	ND	ND	1.4
MW-11	ND	ND	14	ND	1.2	77	ND	ND	ND	ND	ND	1.9
MW-12	2.9	1.5	ND	ND	ND	4	2.0	ND	ND	ND	ND	ND
MW-13	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.

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

**Abbreviations:**

- |         |                       |           |                         |
|---------|-----------------------|-----------|-------------------------|
| 1,1-DCA | = 1,1-Dichloroethane  | 1,1,1-TCA | = 1,1,1-Trichloroethane |
| 1,2-DCA | = 1,2-Dichloroethane  | TCE       | = Trichloroethene       |
| 1,1-DCE | = 1,1-Dichloroethene  | CHLRBENZ  | = Chlorobenzene         |
| 1,2-DCE | = 1,2-Dichloroethene  | CHLRFORM  | = Chloroform            |
| 1,2-DCB | = 1,2-Dichlorobenzene | 1,4-DCB   | = 1,4-Dichlorobenzene   |
| PCE     | = Tetrachloroethene   |           |                         |
| VC      | = Vinyl chloride      |           |                         |

**APPENDIX A**  
**LABORATORY REPORTS**

R1659A6.DH



ENVIRONMENTAL  
LABORATORIES, INC.

**Southwest Region**  
20000 / 300 Mariner Drive  
Torrance, CA 90503  
(310) 371-1044  
(800) 727-GTEL  
Fax (310) 371-8720

GTEL Client Number: 020501659  
Project I.D.: Safety Kleen  
404 Market St.  
Work Order Number: T210202

November 3, 1992

Mr. Mike Wray  
Groundwater Technology, Inc.  
4057 Port Chicago, Highway  
Concord, CA 94520

Dear Mr. Wray,

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 10-22-92 under chain-of-custody record 23602.

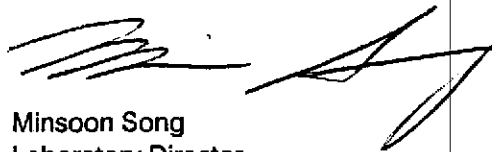
A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria unless otherwise stated in the footnotes.

GTEL is certified by the state of California under Certification #E723.

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.



Minsoon Song  
Laboratory Director

GTEL Client Number: 020501659  
 Project I.D.: Safety Kleen  
 404 Market St.  
 Work Order Number: T210202

ANALYTICAL RESULTS  
 Volatile Organics in Water  
 EPA Method 601a

GTEL Sample Number		10202-1A	10202-2A	10202-3A	10202-4A
Client Identification		MW-13	MW-1	MW-2	MW-6
Date Sampled		10-19-92	10-19-92	10-19-92	10-19-92
Date Analyzed		10-22-92	10-22-92	10-22-92	10-22-92
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	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
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	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-Dichloroethene	0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5

Table continued on next page

GTEL Client Number: 020501659  
 Project I.D.: Safety Kleen  
 404 Market St.  
 Work Order Number: T210202

ANALYTICAL RESULTS

Volatile Organics in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		10202-1A	10202-2A	10202-3A	10202-4A
Client Identification		MW-13	MW-1	MW-2	MW-6
Date Sampled		10-19-92	10-19-92	10-19-92	10-19-92
Date Analyzed		10-22-92	10-22-92	10-22-92	10-22-92
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Methylene chloride	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
Tetrachloroethene	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	<0.5	1.5	<0.5	1.5
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	1.0	<1.0	<1.0	<1.0	<1.0
Dilution Multiplier <sup>b</sup>		1	1	1	1

- a Federal Register, Vol. 49, October 26, 1984.
- b Indicates the adjustments made for samples dilution.

GTEL Client Number: 020501659  
 Project I.D.: Safety Kleen  
 404 Market St.  
 Work Order Number: T210202

ANALYTICAL RESULTS

Volatile Organics in Water  
 EPA Method 601a

GTEL Sample Number		10202-5A	10202-6A	10202-7A	10202-8A
Client Identification		MW-5	MW-3	MW-12	MW-8
Date Sampled		10-19-92	10-19-92	10-19-92	10-19-92
Date Analyzed		10-23-92	10-23-92	10-23-92	10-23-92
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Bromodichloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	0.5	<0.5	<0.5	2.0	4.5
Chloroethane	0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethylvinyl ether	1.0	<1.0	<1.0	<1.0	<1.0
Chloroform	0.5	<0.5	<0.5	<0.5	<0.5
Chloromethane	0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	0.5	<0.5	<0.5	<0.5	1.9
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
Dichlorodifluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	0.5	<0.5	2.7	2.9	0.7
1,2-Dichloroethane	0.5	<0.5	1.8	1.5	3.3
1,1-Dichloroethene	0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene	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
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<0.5	<0.5

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GTEL Client Number: 020501659  
 Project I.D.: Safety Kleen  
 404 Market St.  
 Work Order Number: T210202

**ANALYTICAL RESULTS**

Volatle Organics in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		10202-5A	10202-6A	10202-7A	10202-8A
Client Identification		MW-5	MW-3	MW-12	MW-8
Date Sampled		10-19-92	10-19-92	10-19-92	10-19-92
Date Analyzed		10-23-92	10-23-92	10-23-92	10-23-92
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Methylene chloride	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
Tetrachloroethene	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	0.5	3.7	44	4.0	14
Trichlorofluoromethane	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl Chloride	1.0	<1.0	<1.0	<1.0	<1.0
Dilution Multiplier <sup>b</sup>		1	1	1	1

- a Federal Register, Vol. 49, October 26, 1984.
- b Indicates the adjustments made for samples dilution.

GTEL Client Number: 020501659  
 Project I.D.: Safety Kleen  
 404 Market St.  
 Work Order Number: T210202

ANALYTICAL RESULTS

Volatile Organics in Water  
 EPA Method 601a

GTEL Sample Number		10202-9A	10202-10A		
Client Identification		MW-4	MW-10		
Date Sampled		10-19-92	10-19-92		
Date Analyzed		10-23-92	10-23-92		
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Bromodichloromethane	0.5	<0.5	<0.5		
Bromoform	0.5	<0.5	<0.5		
Bromomethane	0.5	<0.5	<0.5		
Carbon tetrachloride	0.5	<0.5	<0.5		
Chlorobenzene	0.5	<0.5	<0.5		
Chloroethane	0.5	<0.5	<0.5		
2-Chloroethylvinyl ether	1.0	<1.0	<1.0		
Chloroform	0.5	1.8	1.1		
Chloromethane	0.5	<0.5	<0.5		
Dibromochloromethane	0.5	<0.5	<0.5		
1,2-Dichlorobenzene	0.5	<0.5	<0.5		
1,3-Dichlorobenzene	0.5	<0.5	<0.5		
1,4-Dichlorobenzene	0.5	<0.5	<0.5		
Dichlorodifluoromethane	0.5	<0.5	<0.5		
1,1-Dichloroethane	0.5	<0.5	<0.5		
1,2-Dichloroethane	0.5	<0.5	<0.5		
1,1-Dichloroethene	0.2	<0.2	1.4		
trans-1,2-Dichloroethene	0.5	<0.5	<0.5		
1,2-Dichloropropane	0.5	<0.5	<0.5		
cis-1,3-Dichloropropene	0.5	<0.5	<0.5		
trans-1,3-Dichloropropene	0.5	<0.5	<0.5		

Table continued on next page



GTEL Client Number: 020501659  
 Project I.D.: Safety Kjeen  
 404 Market St.  
 Work Order Number: T210202

ANALYTICAL RESULTS

Volatile Organics in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		10202-9A	10202-10A		
Client Identification		MW-4	MW-10		
Date Sampled		10-19-92	10-19-92		
Date Analyzed		10-23-92	10-23-92		
Analyte	Reporting Limit, ug/L	Concentration, ug/L			
Methylene chloride	0.5	<0.5	<0.5		
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5		
Tetrachloroethene	0.5	<0.5	<0.5		
1,1,1-Trichloroethane	0.5	<0.5	<0.5		
1,1,2-Trichloroethane	0.5	<0.5	<0.5		
Trichloroethene	0.5	270	86		
Trichlorofluoromethane	0.5	<0.5	<0.5		
Vinyl Chloride	1.0	<1.0	<1.0		
Dilution Multiplier <sup>b</sup>		1	1		

- a Federal Register, Vol. 49, October 26, 1984.
- b Indicates the adjustments made for samples dilution.





# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northwest Region**

4080-C Pike Lane  
Concord, CA 94520  
(510) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California  
(510) 825-0720 (FAX)

Client Number: GT172SFK01  
Consultant Project Number: 02050165961  
Project ID: Oakland, CA  
Work Order Number: C2-11-019

November 13, 1992

Mike Wray/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 11/02/92, under chain of custody record 25949.

A formal Quality Assurance/Quality Control (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.

Eileen F. Bullen  
Laboratory Director

Table 1  
 ANALYTICAL RESULTS  
 Purgeable Halocarbons in Water  
 EPA Method 8010<sup>a</sup>

GTEL Sample Number		01		
Client Identification		MW-11		
Date Sampled		11/02/92		
Date Analyzed		11/08/92		
Analyte	Detection Limit, ug/L	Concentration, ug/L		
Chloromethane	0.5	<0.5		
Bromomethane	0.5	<0.5		
Vinyl chloride	1	<1		
Chloroethane	0.5	<0.5		
Methylene chloride	0.5	<0.5		
1,1-Dichloroethane	0.2	1.9		
1,1-Dichloroethane	0.5	<0.5		
1,2-Dichloroethane	0.5	14		
Chloroform	0.5	<0.5		
1,2-Dichloroethane	0.5	<0.5		
1,1,1-Trichloroethane	0.5	1.2		
Carbon tetrachloride	0.5	<0.5		
Bromodichloromethane	0.5	<0.5		
1,2-Dichloropropane	0.5	<0.5		
cis-1,3-Dichloropropene	0.5	<0.5		
Trichloroethene	0.5	77		
Dichlorodifluoromethane	0.5	<0.5		
Dibromochloromethane	0.5	<0.5		
1,1,2-Trichloroethane	0.5	<0.5		
trans-1,3-Dichloropropene	0.5	<0.5		
2-Chloroethylvinyl ether	1	<1		
Bromoform	0.5	<0.5		
Tetrachloroethene	0.5	<0.5		
1,1,2,2-Tetrachloroethane	0.5	<0.5		
Chlorobenzene	0.5	<0.5		
1,2-Dichlorobenzene	0.5	<0.5		
1,3-Dichlorobenzene	0.5	<0.5		
1,4-Dichlorobenzene	0.5	<0.5		
Trichlorofluoromethane	0.5	<0.5		
Quantitation Limit Multiplier		1		

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



# GTEL

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**Northwest Region**

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(800) 423-7143 from outside California  
(510) 825-0720 (FAX)

Client Number: GT172SFK01  
Consultant Project Number: 02050165961  
Project ID: Oakland, CA  
Work Order Number: C2-11-020

November 13, 1992

Mike Wray/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 11/02/92, under chain of custody record 25949.

A formal Quality Assurance/Quality Control (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.

Eileen F. Bullen  
Laboratory Director

Client Number: GT1725FK01  
Consultant Project Number: 02050165961  
Project ID: Oakland, CA  
Work Order Number: C2-11-020

**Table 1**

**ANALYTICAL RESULTS**

Total Petroleum Hydrocarbons as Mineral Spirits in Water

Modified EPA Method 5030/8015<sup>a</sup>

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

GTEL Sample Number		01			
Client Identification		MW-11			
Date Sampled		11/02/92			
Date Analyzed		11/07/92			
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Mineral spirits	1000	<1000			
Quantitation Limit Multiplier		1			





# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northwest Region**

4080-C Pike Lane  
Concord, CA 94520  
(510) 685-7852  
(800) 544-3422 from inside California  
(800) 423-7143 from outside California  
(510) 825-0720 (FAX)

Client Number: GTI72SFK01  
Consultant Project Number: 020501659  
Project ID: Oakland  
Work Order Number: C2-10-370

October 29, 1992

Mike Wray  
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 10/20/92, under chain of custody records 25569, 25570 and 25571.

A formal Quality Assurance/Quality Control (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.

Eileen F. Bullen  
Laboratory Director



**Table 1**  
**ANALYTICAL RESULTS**

**Total Petroleum Hydrocarbons as Mineral Spirits in Water**  
**Modified EPA Method 5030/8015<sup>a</sup>**

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		TRIP BLANK	RBMW-13	MW-13	MW-1
Date Sampled		10/19/92	10/19/92	10/19/92	10/19/92
Date Analyzed		10/23/92	10/23/92	10/24/92	10/24/92
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1	<1	<1
Detection Limit Multiplier		1	1	1	1

GTEL Sample Number		05	06	07	08
Client Identification		MW-2	MW-6	MW-5	MW-3
Date Sampled		10/19/92	10/19/92	10/19/92	10/19/92
Date Analyzed		10/24/92	10/24/92	10/24/92	10/24/92
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1	<1	<1
Detection Limit Multiplier		1	1	1	1

**Table 1 (Continued)**  
**ANALYTICAL RESULTS**

**Total Petroleum Hydrocarbons as Mineral Spirits in Water**  
**Modified EPA Method 5030/8015a**

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

GTEL Sample Number		09	10	11	12
Client Identification		MW-12	MW-8	MW-4	MW-10
Date Sampled		10/19/92	10/19/92	10/19/92	10/19/92
Date Analyzed		10/26/92	10/24/92	10/24/92	10/24/92
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Mineral spirits	1	<1	<1	<1	<1
Detection Limit Multiplier		1	1	1	1





