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*Environmental Solutions through Technology*

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September 23, 1992

Mr. Chuck Schwer  
Sites Management Section  
Hazardous Materials Management Division  
Department of Environmental Conservation  
Vermont Agency of Natural Resources  
103 South Main Street, West Building  
Waterbury, VT 05671-0404

Subject: Final PA Plus  
Safety Kleen Corp.  
Barre, VT  
W.A. No. 10-1JZZ  
Ref. No. 1-636-011-0-1J06  
TDD No. 9108-15-ATE  
CERCLIS No. VTD988367470

Dear Mr. Schwer:

A copy of the Final PA Plus Report for Safety Kleen Corporation in Barre, VT is enclosed. This Final Report has been revised in accordance with comments received from the EPA and the State.

If you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script, appearing to read "Paul A. Hughes".

Paul A. Hughes  
ARCS Program Manager

Enclosure

cc: D. Smith (w/o enclosure)  
S. Hayes (w/o enclosure)  
E. Waterman (w/o enclosure)

ch523bl

# ARCS

Remedial Planning Activities  
at Selected Uncontrolled  
Hazardous Substance Disposal  
Sites in Region I



Environmental Protection Agency  
Region I

ARCS Work Assignment No. 10-1JZZ

Safety-Kleen Corporation  
Barre, VT  
VTD988367470  
TDD# 9108-15-ATE

Preliminary Assessment-Plus  
Final Report

September 1992

**TRC**  
**Companies, Inc.**

TAMS Consultants, Inc.  
PEI Associates, Inc.  
Jordan Communications, Inc.

PRELIMINARY ASSESSMENT - PLUS  
SAFETY-KLEEN CORP.  
BARRE, VERMONT

VTD988367470

FINAL REPORT

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY  
Region I  
90 Canal Street  
Boston, Massachusetts 02203-2211

Work Assignment No.:	10-1JZZ
EPA Region:	I
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## INTRODUCTION

The TRC Companies, Inc. (TRCC) Alternative Remedial Contract Strategy (ARCS/Region I) team was requested by the Region I U.S. Environmental Protection Agency (EPA) Waste Management Division to perform a Preliminary Assessment Plus (PA-PLUS) of the Safety-Kleen Corporation in Barre, Vermont. Tasks were conducted in accordance with the ARCS contract, the PA-PLUS Scope of Work and Technical Specification provided by the EPA under Work Assignment No. 10-1JZZ which was issued to ARCS/Region I on 27 August 1991. This PA-PLUS report was completed as part of EPA's Environmental Priorities Initiative (EPI), a joint project overseen by the Resource Conservation and Recovery Act (RCRA) program and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) program, more commonly known as Superfund.

Background information used in the generation of this report was obtained through file searches conducted at the State of Vermont Department of Environmental Conservation (VTDEC) and the EPA, telephone interviews with town officials and individuals knowledgeable of the property history and characteristics, and conversations with other Federal, State and local agencies. Information was also collected during the ARCS/Region I on-site reconnaissance which was conducted on May 12, 1992.

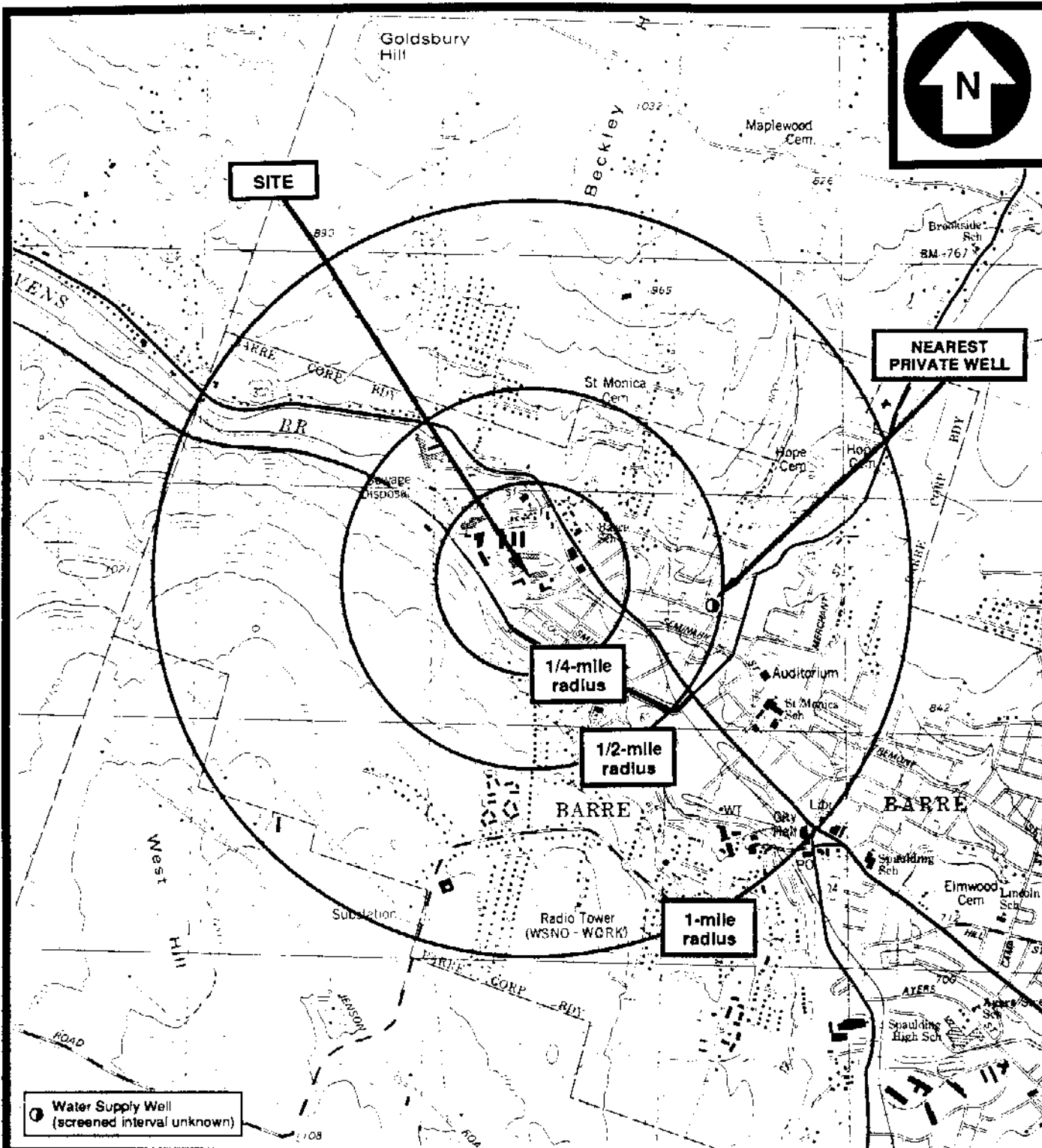
This package follows the guidelines developed under Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations such as those under RCRA or other Federal, State or local regulations. The PA-PLUS provides a preliminary screening of facility operations. The EPI represents an integrated RCRA/CERCLA approach to assessing RCRA facilities utilizing procedures that combine elements of the Superfund Preliminary Assessment (PA) and the RCRA Facility Assessment (RFA). Under the EPI, current and former hazardous waste treatment, storage and disposal facilities regulated by the RCRA program are being evaluated to determine whether corrective action may be warranted. The PA-PLUS is a limited effort and is not intended to supersede more detailed investigations.

## SITE DESCRIPTION

Safety-Kleen Corporation (Safety-Kleen) is located at 23 West Second St. in Barre (City), Washington County, Vermont. The property is located at approximately 44° 12' 23" north latitude and 72° 30' 55" west longitude (+/- 0.500 seconds) (see Figure 1). The location was determined from the interpretation of U.S. Geological Survey Quadrangle maps (USGS, 1978).

Safety-Kleen operates a regional service center which supplies parts cleaning solvent and equipment to customers. Safety-Kleen is considered a "closed-loop" process; they supply customers with clean solvent and equipment, collect the spent solvent, and send the spent solvent to one of their recycling centers to be recycled for future supply (USEPA, 1981). The Barre location is used for storage of clean and spent solvent and equipment prior to delivery to customers or the recycling center. Safety-Kleen has operated at this location since October 1980 (VTDEC, 1986).

The entire property is approximately 1.7 acres; Safety-Kleen uses a fenced-in area approximately 200' at its widest point and 340' long (1.6 acres). The property not fenced in is undeveloped. The area used by Safety-Kleen is surrounded by an 8-foot high fence with barbed wire on top. The only access to the site is through an electronic gate controlled by the people in the main office. There are three buildings and a tank farm located on the property (see Figure 2). The main building houses the offices, sales area, lunch area, RCRA drum storage area, equipment room, allied products room, flammables storage room and the return/fill station for solvent (TRCC, 1992). The main building is approximately 65' by 142' 8" and is located on the northeastern side of the property (Safety-Kleen, 1992a). The other two buildings on the property are a storage shed which is used for storage of old, unused drums, and a permitted Class 1B storage shed which, at the time of the site reconnaissance, contained containers of clean paint thinner and immersion cleaner equipment (TRCC, 1992). The storage shed is approximately 20' by 36' and the Class 1B storage shed is approximately 15' by 22'; these buildings are spread out on the property (Safety-Kleen, 1992a). The tank farm contains three 15,000-gallon above ground storage tanks. The tank farm is built on a



**BASE MAP IS A PORTION OF THE FOLLOWING U.S.G.S. 7.5' SERIES QUADRANGLES:**  
**BARRE EAST, VERMONT, 1981; BARRE WEST, VT, 1978, PHOTOREVISED, 1988**

0 1000 2000 3000 feet

VT.

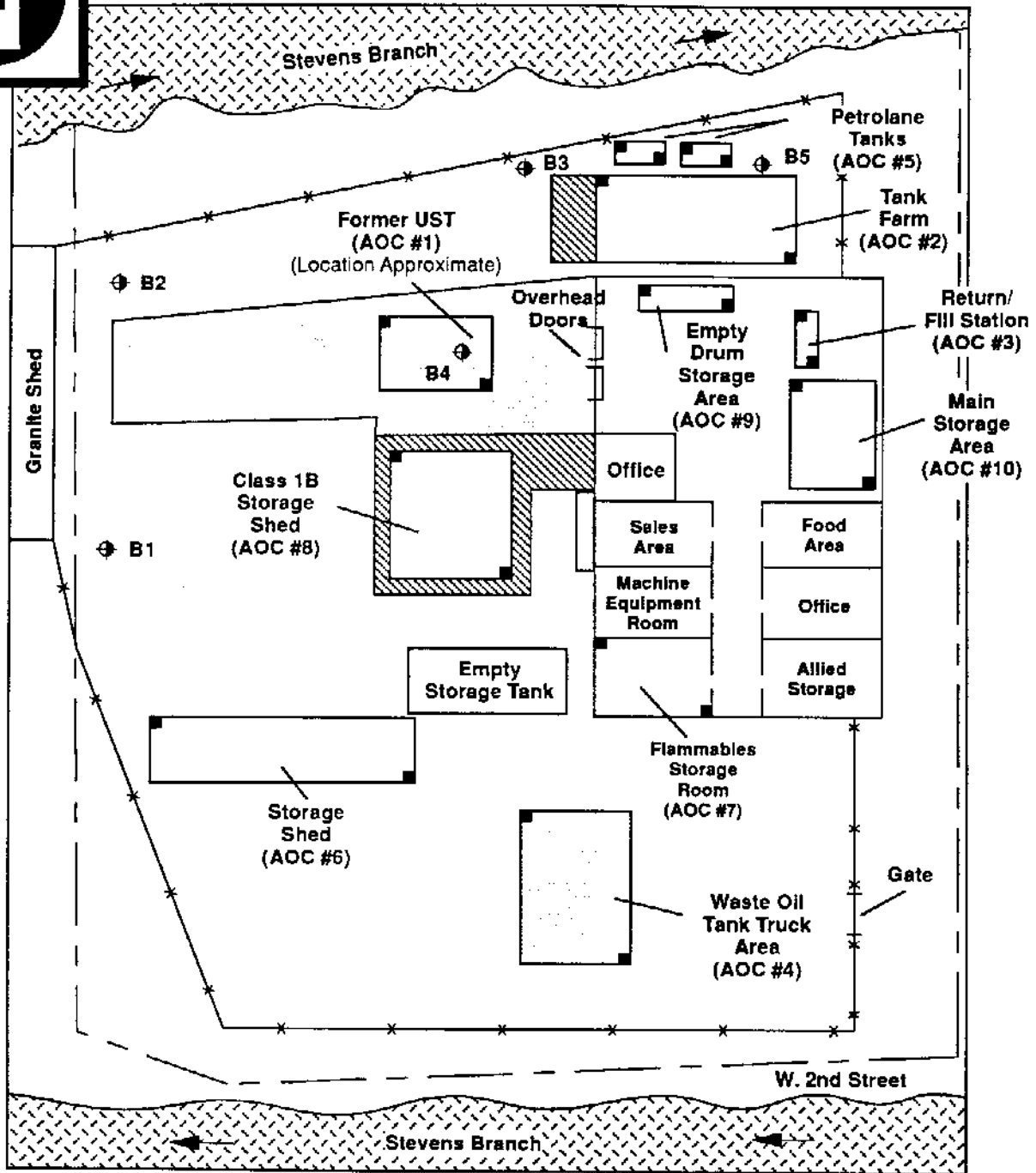
QUADRANGLE LOCATION

**LOCATION MAP**

**SAFETY-KLEEN CORPORATION**  
**BARRE (CITY), VERMONT**

**TRC** Companies, Inc.  
**Figure 1.**





Not to Scale

- |                   |                                 |       |                  |
|-------------------|---------------------------------|-------|------------------|
| Concrete Pavement | Monitoring Well (unknown depth) | Fence | Approx. AOC Area |
| Asphalt Pavement  | Approx. Property Line           | Water |                  |

**SITE SKETCH**

**SAFETY-KLEEN  
BARRE CITY, VERMONT**

**TRC** Companies, Inc.

Figure 2.

concrete pad 20' by 35' and is covered with a tent (dimensions of 27' by 20' by 50'); the tank farm is adjacent to the northern side of the main building (Barre, 1992a). Two of the tanks are currently used for the mineral spirits solvent, the third is being prepared to hold filtered, spent antifreeze. There is also a tank truck parked on an asphalt pad located to the east of the main building. The tank truck is used to store waste oil products (TRCC, 1992).

Most of the property lies between 585 feet and 590 feet above mean sea level, with a topographic high of 590 feet above sea level (FEMA, 1974). The ground surface over most of the property is sand and pebbles. The areas around the buildings are paved, and there are grassy areas located along the fencing and building. Primary surface water drainage is to the Stevens Branch which is located to the north and south of the site (TRCC, 1992). The site is located in the 100-year flood plain as defined by Flood Insurance Rate Maps (FEMA, 1974).

Land use in the area of the Safety-Kleen property is commercial, industrial and residential (Barre, 1992a; TRCC, 1992). Granite sheds (where granite is finished) abut the property on the west side, and are also located to the north of the Stevens Branch. A residential area is located on the southern side of the Stevens Branch (TRCC, 1992; Barre, 1992). There are one CERCLA site and twelve RCRA notifiers, in addition to Safety-Kleen, located in Barre (USEPA, 1992 and USEPA, 1991a).

Ten Areas of Concern (AOCs) were identified at the site. The AOCs are summarized in Table 1. Descriptions of each AOC (outline form) detailing RCRA-specific information are located in Appendix A.

## **SITE ACTIVITY/HISTORY**

Safety-Kleen has operated a regional service center at 23 West Second Street since 1980. From 1980 until approximately 1988, it shared the main building with Maple Supplies Co., Inc. At some point prior to Safety-Kleen, the building was occupied by a smeltery (Shapiro, 1992a). No other information regarding the smeltery was available. It is not known when the building was erected, but the original use of the building was as a granite shed (Shapiro,

TABLE 1. AREA OF CONCERN (AOC) STATUS SUMMARY

Area of Concern (AOC)	AOC Description	Start-up Date/ Closure Date	Release Status	References
#1 Former Underground Storage Tanks	Two 10,000-gallon tanks located to the west of the main building used for the storage of clean and spent mineral spirits solvent.	1980/1985	Evidence of release	Safety-Kleen, 1985; Shapiro, 1992a; TRCC, 1992; VTDEC, 1986
#2 Tank Farm	Three above-ground 15,000-gallon tanks. Two of the tanks are used for the storage of clean and spent mineral spirits solvent; the third is being prepared to hold filtered, spent antifreeze.	1985/present	Low potential for release	TRCC, 1992; Safety-Kleen, 1985
#3 Return/Fill Station	Located in the northeast corner of main storage area. Spent mineral spirits emptied into dumpster; solids separated out and liquid pumped to aboveground tank. Clean solvent transferred from aboveground storage tank to tank truck for transport to customer.	1980/present	Low potential for release	TRCC, 1992; Shapiro, 1992b
#4 Waste Oil Tank Truck Area	Tank truck located on asphalt pad to the south of the main building. Contains spent oil.	1992/present	Low potential for release	TRCC, 1992; Shapiro, 1992b
#5 Petrolane Tanks	Two 400-gallon aboveground storage tanks used to store gas for heating the building.	1986/present	Low potential for release	Shapiro, 1992b; TRCC, 1992

TABLE 1 (CONTINUED)

Area of Concern (AOC)	AOC Description	Start-up Date/ Closure Date	Release Status	References
#6 Storage Shed	Shed used for storage of empty dry cleaner containers.	1984/present	Low potential for release	Shapiro, 1992h; TRCC, 1992
#7 Flammables Storage Room	Room located in southwestern portion of main building; used for storage of flammable products.	1986/present	Low potential for release	Shapiro, 1992h; TRCC, 1992
#8 Class 1B Storage Shed	Shed located on the western side of the main building. Permitted flammable storage area.	1986/present	Low potential for release	Shapiro, 1992h; TRCC, 1992
#9 Empty Drum Storage Area	Located on northern side of main storage area. Nonuseable (mineral spirits) containers and containers prior to shipment to customers are stored at this location.	1980/present	Low potential for release	Shapiro, 1992h; TRCC, 1992
#10 Main Storage Area	Containers of clean and spent nonflammable product are stored in the main storage area in the main building.	1980/present	Low potential for release	Shapiro, 1992h; TRCC, 1992

1992a). The property and the buildings are leased from John LaGue. Safety-Kleen is currently exercising an extended lease option; there is no formal expiration date (Shapiro, 1992a). John LaGue has owned the property since 1973. Prior to that the land was owned by Irio, Rildo, and Elda Bianchi (TRCC, 1992; Barre, 1992). According to the Safety-Kleen representative, the site was a swamp that was filled in with granite (TRCC, 1992). It is unknown when the swamp was filled in (TRCC, 1992).

The Barre property is used as a storage facility for the spent and clean solvents and equipment that Safety-Kleen supplies to its customers. They supply a mineral spirits solvent, an immersion cleaner, paint thinner and perchloroethylene (used by the dry cleaning industry). They also collect waste oil and waste oil filters. Waste oil filters are stored (uncrushed) in 55 gallon drums. The mineral spirits are stored in the above ground tanks; the rest of the products on-site are stored in 5-, 16- or 30-gallon containers. The location of the containers depends on their content. Non-flammable products (clean and spent) are stored in the main storage area. Flammables (clean and spent) are stored in either the Flammables Storage Room or the Class 1B Storage Shed (TRCC, 1992). The mineral spirits solvents are transported to customers and to the recycling center by tank trucks. A tank truck is filled up with clean mineral spirits solvent at the return/fill station located in the main storage area of the main building. From there the supply is delivered to the customer. Safety-Kleen retrieves spent solvent from customers in 16- or 30-gallon containers and brings it back to the service center, where it is emptied into a dumpster located at the return/fill station in the main building. The dumpster filters out any solids and pumps the liquid into the proper above ground tank. Both clean solvent delivered to the service center and spent solvent picked up from the service center are transferred to storage tanks at a pumping station located in the southeastern corner of the tank farm. The dumpster mud and any sludge that settles out in the above ground tanks are the only wastes produced on site. The dumpster mud is stored in 16- or 30-gallon containers in the flammables room (TRCC, 1992a). Safety-Kleen vacuums out the sludge from the above-ground storage tank for spent mineral spirits solvent once every two years (CTDEP, 1992). The dumpster mud and sludge are sent to one of the six larger regeneration facilities, located nationwide, for disposal (CTDEP, 1992). Other solvents supplied by Safety-Kleen are delivered and picked up in 16- or 30-gallon containers. Except

for the containers of spent mineral spirits solvent, the containers remain closed until they are delivered to the recycling center (Shapiro, 1992a).

The chemical composition of immersion cleaner used by Safety-Kleen was changed in 1990. Previously it was composed of Cresylic Acid, o-Dichlorobenzene, Methylene Chloride, and water with a surfactant. In 1990, the composition was changed to Monoethanolamine (MEA), Dipropylene Glycol Methyl Ether (DPM), N-Methyl-2-Pyrrolidone (NMP), Aromatic 150, water, Oleic Acid, BHT and dye (Safety-Kleen, 1990). None of these wastes are currently or were previously generated on-site. They are stored at the service center until they are shipped off for recycling. The service center is still in the process of phasing out the Cresylic Acid mixture; as the spent Cresylic Acid mixture is retrieved, it is replaced with immersion cleaner with the new composition. The spent cresylic acid mixture is shipped off site to one of the regeneration centers and subsequently disposed of (CTDEP, 1992).

Safety-Kleen also handles waste oil and waste oil filters. Waste oil filters are collected uncrushed and stored in 55-gallon drums in the main storage area until shipped off site for recycling. Waste oil is picked up in a tank truck and remains in the truck on a bermed, asphalt pavement area on the southern side of the building (TRCC, 1992). Table 2 summarizes wastes stored or produced on-site by Safety-Kleen.

Safety-Kleen filed a RCRA Part A Permit application in 1980 while still at its previous location in Middlesex, Vermont in order to operate as an interim status facility; they then moved to the Barre property. In 1985, Safety-Kleen submitted a RCRA Part B Application to operate a hazardous waste storage facility at their Barre location. In 1985 Safety-Kleen filed another Part A Permit Application to operate as an interim facility at the Barre location (VTDEC, 1986).

In November of 1984, the VTDEC found Safety-Kleen in violation of the Vermont Hazardous Waste Management Regulations for the following reasons: storage of hazardous waste without certification; operation of a hazardous waste storage facility without obtaining interim

TABLE 2. HAZARDOUS WASTE QUANTITY				
Substance	Quantity or Volume Area	Years of Use/ Storage	Years of Disposal	Source Area (AOC)
Immersion Cleaner (old composition)	Approximately 18,000 gallons/year	1980/present	N/A	N/A
Immersion Cleaner (new composition)	Approximately 18,000 gallons/year	1990/present	N/A	N/A
Mineral Spirits Solvent	1,400,000 gallons/year	1985/present (1980-1985, two 10,000-gallon USTs)	N/A	N/A
Perchloroethylene	Approximately 263,000 gallons/year	1984/present	N/A	N/A
Paint Related Materials	Approximately 36,000 gallons/year	1986/present	N/A	N/A
Waste Oil	Approximately 100,000 gallons/year	1992/present	N/A	N/A
Heating Fuel	Two 400-gallon aboveground tanks	1986/present	N/A	N/A
Mineral Spirits Dumpster Mud and Sludge	Approximately 26,000 gallons/year	1980/present	N/A	N/A

N/A: Materials not disposed of on-site.

Source: Safety-Kleen, 1992b; Shapiro, 1992a; Shapiro, 1992h; TRCC, 1992.

status; and accepting unmanifested hazardous wastes. They had also failed to distribute copies of shipment manifests to the VTDEC (VTDEC, 1985).

Notification of a release was documented in a letter from Safety-Kleen to the USEPA dated October 30, 1986. According to the letter, the line from the dumpster to the UST froze and broke in February, 1985. No product was reportedly lost due to the fact that the ground and the line were both frozen. However, the line had to be thawed and drained in order to repair it. During this process approximately three to four gallons of the mineral spirits solvent was spilled. The contaminated soil was removed and disposed of off-site (Safety-Kleen, 1986b).

In November of 1985, two 10,000-gallon underground storage tanks were removed and cleaned (VTDEC, 1992). These tanks were previously used for the storage of clean and spent mineral spirits solvent. According to a site inspection performed by the state in 1985, there was evidence of contamination in the soil beneath the former underground storage tanks. During tank removal, soil samples were collected from beneath the tanks (VTDEC, 1986a; VTDEC, 1986b). The samples were analyzed for mineral spirits (1992d). Mineral spirits were detected at a concentration of 2500 ppm. According to the report, there was no evidence of spilled material from either the aboveground tanks or the building (VTDEC, 1986b). Safety-Kleen agreed to investigate the site and agreed with the VTDEC on the sampling program. The program consisted of five soil borings, with samples taken at the depth of the former UST and at the water table. Monitoring wells were installed at the boring locations (Safety-Kleen, 1986a). Ground water samples are collected twice a year (VTDEC, 1992). The location of the borings and wells are shown in Figure 2.

Ground water monitoring will continue at the site on a semi-annual basis until the contaminant levels do not exceed Vermont Ground Water Enforcement Standards for two successive sampling events (VTDEC, 1992b). The analytical results from ground water sampling performed from January, 1991 through June, 1992 are located in Tables 3 through 5. Complete lab results are included in Appendix B.



TABLE 3A. ANALYTICAL RESULTS FROM HYDROCARBON SCREEN IN WATER FROM SAFETY-KLEEN, BARRE, BY GC FID, JUNE 1991

	Sample Sample Date	B-1 6/05/91	B-2 6/05/91	B-5 6/05/91
Analyte	Detection Limit, µg/L	Concentrations, µg/L		
Gasoline	-	-	-	-
Mineral Spirits	50	BDL	BDL	BDL
Kerosine	-	-	-	-
Diesel/Fuel Oil #2	-	-	-	-
Fuel Oil #6	-	-	-	-
Lubricating Oil	-	-	-	-

BDL - Below detection limits  
Source: GTEL, 1991b.

TABLE 3B. ANALYTICAL RESULTS FROM HYDROCARBON SCREEN IN WATER FROM SAFETY-KLEEN, BARRE, BY GC FID, DECEMBER 1991

	Sample Sample Date	B-1 12/20/91	B-2* 12/20/91	B-3 12/20/91	B-5 12/20/91
Analyte	Detection Limit, µg/L	Concentrations, µg/L			
Gasoline	50	50	BDL	BDL	BDL
Mineral Spirits	50	50	BDL	BDL	BDL
Kerosine	50	50	BDL	BDL	BDL
Diesel/Fuel Oil #2	50	50	BDL	BDL	BDL
Fuel Oil #6	50	50	BDL	BDL	BDL
Lubricating Oil	50	50	BDL†	BDL	460†

BDL - Below detection limits

\*Detection limit multiplied by 2.5

†The sample chromatogram shows the presence of a few hydrocarbon peaks in the boiling point range of C<sub>17</sub> to C<sub>30</sub> that do not match instrument standards. Identification of these compounds is beyond the scope of this analysis.

Source: GTEL, 1992a.

TABLE 3C. ANALYTICAL RESULTS FROM HYDROCARBON SCREEN IN WATER FROM SAFETY-KLEEN, BARRE, BY GC FID, JUNE 1992

	Sample Sample Date	B-1 06/09/92	B-3 06/09/92	B-5 06/09/91	Trip 06/09/92	Blind 06/09/92
Analyte	Detection Limit, µg/L	Concentrations, µg/L				
Gasoline	50	BDL	BDL	BDL	BDL	BDL
Mineral Spirits	50	BDL	BDL	BDL	BDL	BDL
Kerosine	50	BDL	BDL	BDL	BDL	BDL
Diesel/Fuel Oil #2	50	BDL	BDL	BDL	BDL	BDL
Fuel Oil #6	50	BDL†	BDL†	BDL†	BDL	BDL†
Lubricating Oil	50	BDL†	BDL†	BDL†	BDL	BDL†

BDL- Below detection limits

†The sample chromatogram shows the presence of a few hydrocarbon peaks in the boiling point range of C<sub>17</sub> to C<sub>30</sub> that do not match instrument standards. Identification of these compounds is beyond the scope of this analysis.

Source: GTEL, 1992b.

TABLE 4A. ANALYTICAL RESULTS FOR PURGEABLE AROMATICS IN WATER FROM SAFETY-KLEEN, BARRE, USING MODIFIED EPA METHOD 602, JANUARY 1991

	Sample Sample Date	B-1 1/11/91	B-2 1/11/91	B-3 1/11/91	B-5 1/11/91	TRP BLK 1/11/91	FLD BLK 1/11/91	B-3 DUP 1/11/91
Analyte	Detection Limit, µg/L	Concentration, µg/L						
Benzene	0.2	BDL	BDL	0.3	BDL	0.4	0.4	0.3
Toluene	0.5	BDL	BDL	0.9	BDL	1.7	1.6	BDL
Ethyl Benzene	0.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (total)	1.7	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BTEX (total)	-	-	-	1.2	-	2.1	2.0	0.3
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	BDL	BDL	BDL	BDL	33	31	BDL
Misc. Aromatics (C <sub>3</sub> -C <sub>10</sub> )	10	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Total Hydrocarbons	-	-	-	1.2	-	35	33	0.3

BDL - Below detection limits  
Source: GTEL, 1991a.

TABLE 4B. ANALYTICAL RESULTS FOR PURGEABLE AROMATICS IN WATER FROM SAFETY-KLEEN, BARRE, USING MODIFIED EPA METHOD 602, JUNE 1991

	Sample Sample Date	B-1 06/05/91	B-2 06/05/91	B-3 06/05/91	B-5 06/05/91	TRP BLK 06/05/91	FLD BLK 06/05/91
Analyte	Detection Limit, µg/L	Concentration, µg/L					
Benzene	0.2	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	0.5	BDL	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	0.8	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (total)	1.7	BDL	BDL	BDL	BDL	BDL	BDL
BTEX (total)	-	-	-	-	-	-	-
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	BDL	BDL	BDL	BDL	BDL	BDL
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	BDL	BDL	BDL	BDL	BDL	BDL
Total Hydrocarbons	-	-	-	-	-	-	-

BDL - Below detection limits  
Source: GTEL, 1991b.

TABLE 4C. ANALYTICAL RESULTS FOR PURGEABLE AROMATICS IN WATER FROM SAFETY-KLEEN, BARRE, USING MODIFIED EPA METHOD 602, DECEMBER 1991

	Sample Sample Date	B-1 12/20/91	B-2 12/20/91	B-3 12/20/91	B-5 12/20/91	TRP BLK 12/20/91	FLD BLK 12/20/91
Analyte	Detection Limit, µg/L	Concentration, µg/L					
Benzene	0.2	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	0.5	BDL	BDL	BDL	BDL	0.7	0.8
Ethyl Benzene	0.8	BDL	BDL	BDL	BDL	BDL	BDL
Xylenes (total)	1.7	BDL	BDL	BDL	BDL	BDL	BDL
BTEX (total)	-	-	-	-	-	0.7	0.8
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	BDL	BDL	BDL	BDL	BDL	BDL
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	38	81	82	92	57	57
Total Hydrocarbons	-	38	81	82	92	58	58

BDL - Below detection limits  
Source: GTEL, 1992a.

TABLE 4D. ANALYTICAL RESULTS FOR PURGEABLE AROMATICS IN WATER FROM SAFETY-KLEEN, BARRE, USING MODIFIED EPA METHOD 602, JUNE 1992

	Sample Sample Date	B-1 06/09/92	B-3 06/09/92	B-5 06/09/92	TRP BLK 06/09/92	BLIND 06/09/92
Analyte	Detection Limit, µg/L	Concentration, µg/L				
Benzene	0.2	BDL	BDL	BDL	BDL	BDL
Toluene	0.5	BDL	BDL	BDL	BDL	BDL
Ethyl Benzene	0.8	BDL	BDL	BDL	BDL	BDL
Xylenes (total)	1.7	BDL	BDL	BDL	BDL	BDL
BTEX (total)	-	-	-	-	-	-
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	BDL	BDL	BDL	BDL	BDL
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	BDL	BDL	BDL	BDL	BDL
Total Hydrocarbons	-	-	-	-	-	-

BDL - Below detection limits  
Source: GTEL, 1992b.

TABLE 5A. ANALYTICAL RESULTS FOR PURGEABLE HALOCARBONS IN WATER FROM SAFETY-KLEEN, BARRE, USING EPA METHOD 601, JANUARY 1991

	Sample Sample Date	B-1 1/11/91	B-2 1/11/91	B-3 1/11/91	B-5 1/11/91	TRP BLK 1/11/91	FLD BLK 1/11/91	B-3 DUP 1/11/91
Analyte	Detection Limit, µg/L	Concentration, µg/L						
Chloromethane	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromomethane	1.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	0.13	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chloroethane	0.09	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	0.49	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	0.45	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	0.20	BDL	BDL	7.5	BDL	BDL	19	BDL
trans-1,2-Dichloroethene	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethene (total)*	-	-	-	-	-	-	-	-
Chloroform	0.63	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	0.25	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	0.34	BDL	BDL	9.6	BDL	BDL	14	BDL
Carbon Tetrachloride	0.31	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	0.57	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	0.56	BDL	BDL	5.3	BDL	BDL	14	BDL
Dichlorodifluoromethane	0.12	BDL	BDL	BDL	BDL	BDL	BDL	BDL

(Continued)



TABLE 5A. (CONTINUED)

	Sample Sample Date	B-1 1/11/91	B-2 1/11/91	B-3 1/11/91	B-5 1/11/91	TRP BLK 1/11/91	FLD BLK 1/11/91	B-3 DUP 1/11/91
Analyte	Detection Limit, µg/L	Concentration, µg/L						
Dibromochloromethane	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
2-Chloroethylvinyl Ether	0.13	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Bromoform	0.20	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.24	BDL	BDL	15	BDL	BDL	31	BDL
1,1,2,2-Tetrachloroethane	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	0.27	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Trichlorofluoromethane	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL

BDL - Below Detection Limit

\*1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

Source: GTEL, 1991a.

TABLE 5B. ANALYTICAL RESULTS FOR PURGEABLE HALOCARBONS IN WATER FROM SAFETY-KLEEN, BARRE, USING EPA METHOD 601, JUNE 1991

	Sample Sample Date	B-1 06/05/91	B-2 06/05/91	B-3 06/05/91	B-5 06/05/91	TRP BLK 06/05/91	FLD BLK 06/05/91
Analyte	Detection Limit, µg/L	Concentration, µg/L					
		Chloromethane	0.52	0.98	BDL	BDL	BDL
Bromomethane	1.2	BDL	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	0.13	BDL	BDL	BDL	BDL	BDL	BDL
Chloroethane	0.09	BDL	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	0.49	BDL	BDL	BDL	BDL	0.80	0.60
1,1-Dichloroethene	0.45	BDL	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	0.20	BDL	BDL	BDL	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.21	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethene (total)*	-	-	-	-	-	-	-
Chloroform	0.63	BDL	1.1	BDL	1.3	BDL	BDL
1,2-Dichloroethane	0.25	BDL	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	0.34	BDL	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	0.31	BDL	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	0.57	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	0.21	BDL	BDL	BDL	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.21	BDL	BDL	BDL	BDL	BDL	BDL
Trichloroethene	0.56	BDL	BDL	BDL	BDL	BDL	BDL
Dichlorodifluoromethane	0.12	BDL	BDL	BDL	BDL	BDL	BDL

(Continued)

TABLE 5B. (CONTINUED)

	Sample Sample Date	B-1 06/05/91	B-2 06/05/91	B-3 06/05/91	B-5 06/05/91	TRP BLK 06/05/91	FLD BLK 06/05/91
Analyte	Detection Limit, µg/L	Concentration, µg/L					
Dibromochloromethane	0.34	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	0.34	BDL	BDL	BDL	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.34	BDL	BDL	BDL	BDL	BDL	BDL
2-Chloroethylvinyl Ether	0.13	BDL	BDL	BDL	BDL	BDL	BDL
Bromoform	0.20	BDL	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.24	BDL	BDL	BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.24	BDL	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	0.27	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	0.24	BDL	BDL	BDL	BDL	BDL	BDL
Trichlorofluoromethane	0.35	BDL	BDL	BDL	BDL	BDL	BDL

BDL - Below Detection Limits

\*1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

Source: GTEL, 1991b.

TABLE 5C. ANALYTICAL RESULTS FOR PURGEABLE HALOCARBONS IN WATER FROM SAFETY-KLEEN, BARRE, USING EPA METHOD 601, DECEMBER 1991

	Sample Sample Date	B-1 12/20/91	B-2 12/20/91	B-3 12/20/91	B-5 12/20/91
Analyte	Detection Limit, µg/L	Concentration, µg/L			
Chloromethane	0.52	BDL	BDL	BDL	BDL
Bromomethane	1.2	BDL	BDL	BDL	BDL
Vinyl Chloride	0.13	BDL	BDL	BDL	BDL
Chloroethane	0.09	BDL	BDL	BDL	BDL
Methylene Chloride	0.49	BDL	BDL	BDL	BDL
1,1-Dichloroethene	0.45	BDL	BDL	BDL	BDL
1,1-Dichloroethane	0.20	BDL	BDL	2.9	BDL
trans-1,2-Dichloroethene	-	-	-	-	-
1,2-Dichloroethene (total)*	0.21	BDL	BDL	0.47	BDL
Chloroform	0.63	BDL	BDL	BDL	BDL
1,2-Dichloroethane	0.25	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	0.34	BDL	BDL	11	BDL
Carbon Tetrachloride	0.31	BDL	BDL	BDL	BDL
Bromodichloromethane	0.57	BDL	BDL	BDL	BDL
1,2-Dichloropropane	0.21	BDL	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.21	BDL	BDL	BDL	BDL
Trichloroethene	0.56	BDL	BDL	2.8	BDL
Dichlorodifluoromethane	0.12	BDL	BDL	BDL	BDL

(Continued)

TABLE 5C. (CONTINUED)

	Sample Sample Date	B-1 12/20/91	B-2 12/20/91	B-3 12/20/91	B-5 12/20/91
Analyte	Detection Limit, µg/L	Concentration, µg/L			
Dibromochloromethane	0.34	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	0.34	BDL	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.34	BDL	BDL	BDL	BDL
2-Chloroethylvinyl Ether	0.13	BDL	BDL	BDL	BDL
Bromoform	0.20	BDL	BDL	BDL	BDL
Tetrachloroethene	0.24	BDL	BDL	15	BDL
1,1,2,2-Tetrachloroethane	0.24	BDL	BDL	BDL	BDL
Chlorobenzene	0.27	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	0.41	BDL	BDL	0.97	BDL
1,3-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	0.24	BDL	BDL	BDL	BDL
Trichlorofluoromethane	0.35	BDL	BDL	BDL	BDL

BDL - Below detection Limits

\*1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

Source: GTEL, 1992a.

TABLE 5D. ANALYTICAL RESULTS FOR PURGEABLE HALOCARBONS IN WATER FROM SAFETY-KLEEN, BARRE, USING EPA METHOD 601, JUNE 1992

	Sample Sample Date	B-1 06/09/92	B-3 06/09/92	B-5 06/09/92	TRP BLK 06/09/92	BLIND 06/09/92
Analyte	Detection Limit, µg/L	Concentration, µg/L				
Chloromethane	0.52	BDL	BDL	BDL	BDL	BDL
Bromomethane	1.2	BDL	BDL	BDL	BDL	BDL
Vinyl Chloride	0.13	BDL	BDL	BDL	BDL	BDL
Chloroethane	0.09	BDL	BDL	BDL	BDL	BDL
Methylene Chloride	0.49	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	0.45	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethane	0.20	BDL	3.5	BDL	BDL	BDL
trans-1,2-Dichloroethene	-	-	-	-	-	-
1,2-Dichloroethene (total)*	0.21	BDL	BDL	BDL	BDL	BDL
Chloroform	0.63	10	BDL	BDL	55	BDL
1,2-Dichloroethane	0.25	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	0.34	BDL	15	BDL	BDL	BDL
Carbon Tetrachloride	0.31	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	0.57	BDL	BDL	BDL	0.75	BDL
1,2-Dichloropropane	0.21	BDL	BDL	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.21	BDL	BDL	BDL	BDL	BDL
Trichloroethene	0.56	BDL	3.9	BDL	BDL	BDL
Dichlorodifluoromethane	0.12	BDL	BDL	BDL	BDL	BDL

(Continued)

TABLE 5D. (CONTINUED)

	Sample Sample Date	B-1 06/09/92	B-3 06/09/92	B-5 06/09/92	TRP BLK 06/09/92	BLIND 06/09/92
Analyte	Detection Limit, µg/L	Concentration, µg/L				
Dibromochloromethane	0.34	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	0.34	BDL	BDL	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.34	BDL	BDL	BDL	BDL	BDL
2-Chloroethylvinyl Ether	0.13	BDL	BDL	BDL	BDL	BDL
Bromoform	0.20	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.24	BDL	32	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.24	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	0.27	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	0.41	BDL	3.9	BDL	BDL	BDL
1,3-Dichlorobenzene	0.41	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	0.24	BDL	BDL	BDL	BDL	BDL
Trichlorofluoromethane	0.35	BDL	BDL	BDL	BDL	BDL

BDL - Below detection limits

\*1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

Source: GTEL, 1992b.

In September of 1989, the VTDEC found Safety-Kleen in violation of its Hazardous Waste Storage Facility Certification because units used for the storage of brake cleaning material are not approved for use in the certification.

In 1990, the Massachusetts Department of Environmental Protection (MADEP) found that Safety-Kleen's Bridgewater, Massachusetts facility was in violation of Land Disposal Restrictions (LDR). They were late in determining that their wastes were subject to LDR and associated notification requirements. The MADEP notified the USEPA of the violations. Safety-Kleen notified the USEPA that other facilities, including the Barre facility, were also in violation of the LDR for similar reasons. Safety-Kleen and the USEPA entered into a Consent Agreement and Final Order in June 1991 (USEPA, 19921b).

Table 6 summarizes regulatory information regarding Safety-Kleen.

## **ENVIRONMENTAL SETTING**

Information regarding environmental characteristics of the area are on order from the State and will be incorporated into the final report.

According to a site inspection report by the VTDEC, the topsoil at the site is a highly variable fill composed of sand, gravel, granite chips, coal clinkers and general soils. The subsurface soils (in descending order) are: a layer of brownish, tan silty sand; a thin layer of gravel; a deep layer of gray or brown/gray clayey silt. The surface fill is a result of the granite industry and filling in the site for the construction of granite sheds (VTDEC, 1986a).

Ground water at the site is controlled by the level of the Stevens Branch (VTDEC, 1986a). Ground water lies approximately 6 to 10 feet below the surface (VTDEC, 1986a).

Barre (City) residents are served by a municipal water system for water supply and sewage. The drinking water is supplied by the Dix Reservoir which is not located along the 15-mile downstream pathway from the site (VTDEC, 1992; Shapiro, 1992b). The remaining towns



TABLE 6. REGULATORY ACTIVITIES AT SAFETY-KLEEN CORPORATION

Date	Activity
August 14, 1980	Safety-Kleen submitted a Part A Application to operate as an interim status facility in Middlesex, Vermont (VTDEC, 1986b).
April 7, 1981	Letter from VTDEC to Eric Bailey (Safety-Kleen) regarding Vermont Hazardous Waste Regulation Applicability (VTDEC, 1981).
August 28, 1981	EPA/VTDEC Annual Inspection (VTDEC, 1986b).
February 8, 1982	Safety-Kleen filed request with VTDEC for clarification of and variance from Vermont Hazardous Waste Management Regulations (VTDEC, 1986b).
February 19, 1982	VTDEC denied Safety-Kleen's request for variance from Vermont Hazardous Waste Management Regulations (VTDEC, 1986b).
March 3, 1982	VTDEC Annual RCRA Inspection. Deficiencies in the use of the Hazardous Waste Manifest were found; informal action taken (VTDEC, 1986b). They were informed that they should obtain certification for being a Hazardous Waste transporter in Vermont (VTDEC, 1992f).
March 29, 1982	Safety-Kleen filed for reconsideration of variance from Vermont Hazardous Waste Management Regulations (VTDEC, 1986b).
May 21, 1982	Safety-Kleen's motion for reconsideration for variance from Vermont Hazardous Waste Management Regulations denied by VTDEC (VTDEC, 1986b).
January 31, 1983	Notification of Hazardous Waste Manifest Discrepancies by VTDEC (VTDEC, 1986b).
March 2, 1983	Vermont Notification of Hazardous Waste Activity filed by Safety-Kleen (VTDEC, 1983).
March 3, 1983	VTDEC Annual RCRA inspection (VTDEC, 1986b).
April 14, 1983	Safety-Kleen RCRA Part A Permit (Middlesex facility) returned by VTDEC (VTDEC, 1986b).
August 1, 1983	Notification of Hazardous Waste Manifest discrepancies by VTDEC (VTDEC, 1986b).

TABLE 6 (CONTINUED)

Date	Activity
August 2, 1984	Notification of Hazardous Waste Manifest discrepancies (VTDEC, 1986b).
November 5, 1984	<p>VTDEC Annual RCRA inspection found in violation of Vermont Hazardous Waste Regulations (VTDEC, 1984).</p> <ul style="list-style-type: none"> <li>• Safety-Kleen had not obtained certification to operate as a hazardous waste storage facility for its Barre facility.</li> <li>• Safety-Kleen had not submitted an application for interim certification by the specified date and was in violation of some of the best control technology (BCT) requirements.</li> <li>• Many of Safety-Kleen's customers, who generated more than 220 pounds of hazardous waste per month, had never submitted a hazardous waste notification form. Safety-Kleen was accepting waste from these customers without using hazardous waste manifest forms, in violation of Regulation Section 6-610(3).</li> <li>• Safety-Kleen was not distributing its hazardous waste manifest forms for transport of wastes to Safety-Kleen regeneration facilities in accordance with Regulation Section 6-610.</li> </ul>
December 17, 1984	Notification of Hazardous Waste Manifest discrepancies (VTDEC, 1986b).
January 3, 1985	Notification of Violations of Vermont Hazardous Waste Regulations found November 5, 1984 (VTDEC, 1985a).
January 11, 1985	Notification of extension of deadline for Compliance Order from VTDEC (VTDEC, 1985b).
February 15, 1985	Request filed by Safety-Kleen for recycle/reuse exemption for all Safety-Kleen activities (VTDEC, 1986b).
July 2, 1985	Safety-Kleen submitted a RCRA Part A Permit Application (Barre facility) (VTDEC, 1986b).

TABLE 6 (CONTINUED)

Date	Activity
November 12, 1985	<p>Safety-Kleen was issued a notice of deficiency by VTDEC (VTDEC, 1986b). Safety-Kleen's Part B application was found deficient in the following areas (VTDEC, 1992c)</p> <ul style="list-style-type: none"> <li>• Security</li> <li>• General Inspection Schedule and Procedures</li> <li>• Preparedness and Prevention Documentation</li> <li>• Traffic Documentation</li> <li>• Facility Location Documentation</li> <li>• Personnel Training Program</li> <li>• Closure Plan</li> <li>• Topo Map</li> <li>• Containers</li> <li>• Tanks</li> </ul>
November 13, 1985	<p>Notification of Hazardous Waste Manifest discrepancy by VTDEC (VTDEC, 1986b). Safety-Kleen did not send the proper copies of the manifest to the VTDEC (VTDEC, 1992d).</p>
December 2, 1985	<p>VTDEC Annual RCRA inspection (VTDEC, 1985c). The following violations of the Vermont Hazardous Waste Management Regulations were found:</p> <ul style="list-style-type: none"> <li>• lack of proper aisle space</li> <li>• drums piled two-high in an unstable manner</li> <li>• hazardous waste labels on drums were not dated</li> <li>• improper manifesting procedures</li> </ul>
December 3, 1985	<p>Safety-Kleen filed an addendum to the UST closure plan (VTDEC, 1986b).</p>
December 17, 1985	<p>Notice of Violation of Vermont Hazardous Waste Regulations found during December 2, 1985 inspection (VTDEC, 1985d).</p>
December 18, 1985	<p>Removal of two 10,000-gallon USTs (used for mineral spirits solvent) (VTDEC, 1986b). Soil contamination was detected.</p>

TABLE 6 (CONTINUED)

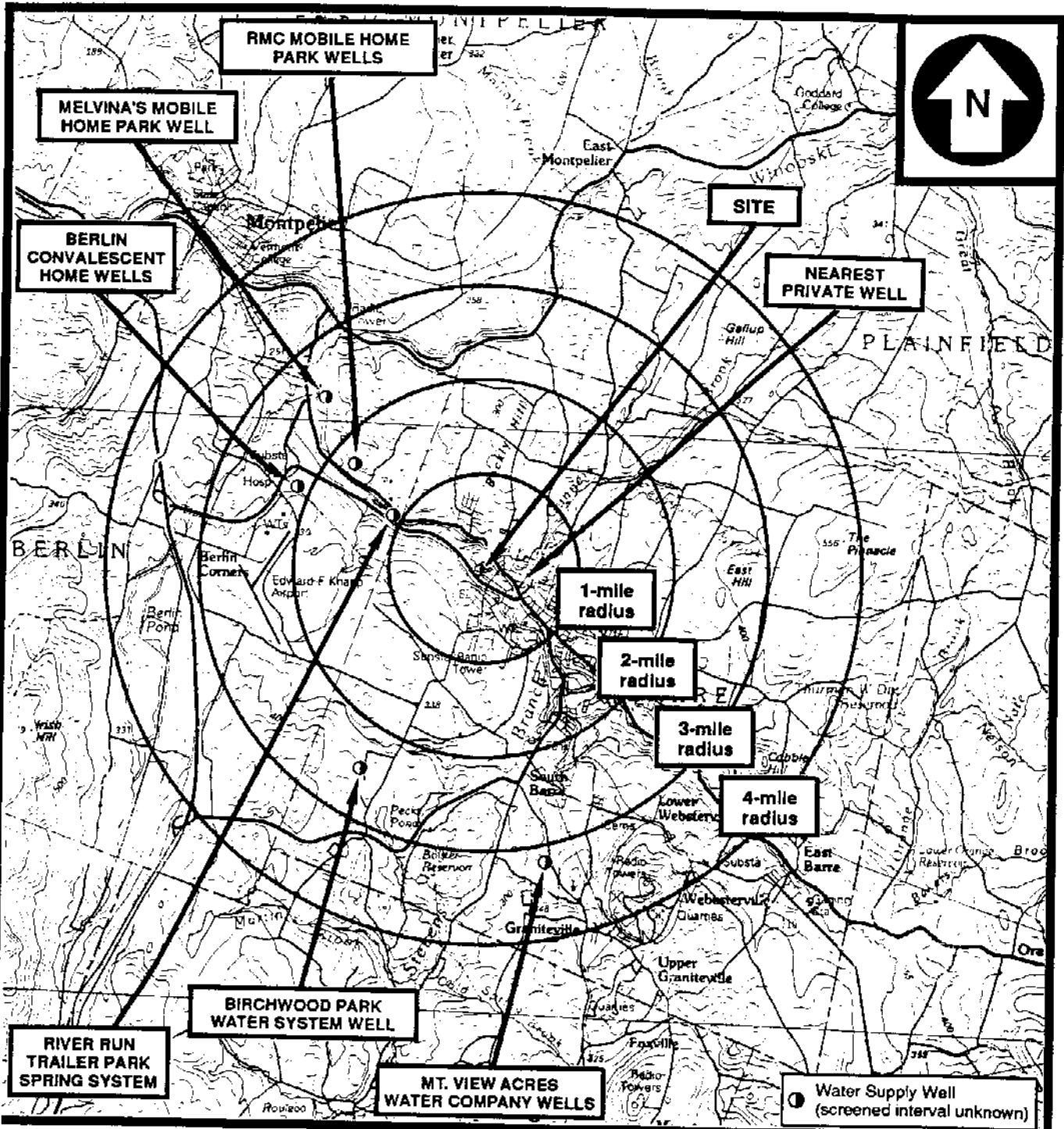
Date	Activity
January 6, 1986	Safety-Kleen notified VTDEC that they will operate as a transfer station for dry cleaning hazardous wastes under VT Hazardous Waste Management (VTDEC, 1986b).
January 13, 1986	Safety-Kleen RCRA Part A Permit Application (for Barre) completed (VTDEC, 1986b).
March 5, 1986	Notification of Hazardous Waste Manifest discrepancy by VTDEC (VTDEC, 1986b). Safety-Kleen failed to send "Copy 7" of the Hazardous Waste Manifest to the VTDEC (VTDEC, 1992e).
June 16, 1986	Safety-Kleen filed Petition to VTDEC to Exempt Hazardous Waste that is recycled (VTDEC, 1986b).
September 19, 1989	Inspection performed by VTDEC found Safety-Kleen in violation of its Hazardous Waste Storage Facility Certification. Specifically, units used for storage of brake cleaning material are not approved for use in the certification (VTDEC, 1989).
November 2, 1989	Notification of violations found during September, 1989 inspection (VTDEC, 1989).
February 28, 1990	Massachusetts DEP (MADEP) conducted an inspection at the Bridgewater, MA Safety-Kleen facility and found them in violation of Land Disposal Restrictions (LDR). They were late in determining that their wastes were subject to LDR and the notification requirements. MADEP notified the USEPA of the violations on March 10, 1990. Safety-Kleen informed the USEPA that other facilities, including the Barre facility, were also in violation of the LDR for similar reasons (USEPA, 1991)

within four miles of the site (Barre (town), Berlin, Plainfield, E. Montpelier) use ground water for both public and private wells. The nearest private well is approximately 1/2 mile to the east of the site. Within four miles of the sites there are six public wells and many private wells (VTDEC, 1992). Figure 3 shows the public wells within four miles of the site as well as the nearest private well. The total number of residents served by private wells within a four-mile radius of Safety-Kleen is 5,183 (Shapiro, 1992c). Table 7 shows the distribution of public wells and Table 8 shows the distribution of private wells. There are 5,612 people served by ground water drawn within a four-mile radius of the site (Shapiro, 1992c,d; VTDEC, 1992).

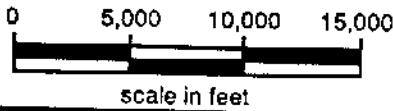
Safety-Kleen normally has only two onsite workers (TRCC, 1992). There are no dwellings, schools or day care facilities on or within 200 feet of the site (TRCC, 1992; Barre, 1992a). The closest residence to Safety-Kleen is across the Stevens Branch approximately 400 feet away (TRCC, 1992). The total population within four miles of the site is approximately 11,819 persons (Shapiro, 1992c,d). Table 9 summarizes the estimated residential population within four miles of the site.

The 15-mile downstream pathway follows the Stevens Branch for approximately 3 miles; it then empties into the Winooski River. The 15-mile downstream point is located just after the Middlesex/Waterbury town line. The estimated mean annual stream flow of the Stevens Branch is 167 cfs and the estimated mean annual flow of the Winooski River is 587 cfs (Shapiro, 1992e,f).

Within a four-mile radius of the site there are two occurrences of threatened or endangered species as classified by the Vermont Endangered Species Law. The two occurrences are: 1) the Common Loon, considered an endangered species in the state, and 2) the Upland Sandpiper, considered a threatened species. The state considers an endangered species one which is in danger of becoming extinct in the state; threatened species are those which have a high possibility of becoming endangered (VTANR, 1992).



BASE MAP IS A PORTION OF THE FOLLOWING 30' x 60' U.S.G.S. QUADRANGLE:  
 MONTPELIER, VT-NH, 1988



**FOUR-MILE RADIUS MAP**

**SAFETY-KLEEN CORPORATION  
 BARRE CITY, VERMONT**

**TRC** Companies, Inc.

Figure 3.

TABLE 7. ESTIMATED PUBLIC WELL DISTRIBUTION WITHIN A FOUR-MILE RADIUS OF SAFETY-KLEEN CORPORATION

Well Name	Distance/ Direction From Safety-Kleen Corp. in Miles	Town Served	Total Served by Well (per town)	Total Served by Well
RMC Mobile Home Park Wells	1.75/NW	Berlin	46	46
River Run Trailer Park Spring System	1.1/NW	Berlin	93	93
Berlin Convalescent Home Wells	2.2/NW	Berlin	154	154
Melvina's Mobile Home Park Well	2.5/NW	Berlin	68	68
Birchwood Park Water System Well	2.5/SW	Barre (Town)	36	36
Mt. View Acres Water Company Wells	3.2/S	Barre (Town)	32	32
<b>TOTAL</b>				<b>429</b>

TABLE 8. ESTIMATED PRIVATE WELL DISTRIBUTION WITHIN A FOUR-MILE RADIUS OF SAFETY-KLEEN CORP.

Distance from Facility (in miles)	Town	Private Wells	Residents Served	Total
0 - 0.25	---	0	0	0
0.25 - 0.5	Barre (city)	2	6	6
0.5 - 1.0	Barre (city)	6	18	393
	Barre (town)	42	375	
1.0 - 2.0	Barre (city)	4	12	1,053
	Barre (town)	84	758	
	Berlin	65	283	
2.0 - 3.0	Barre (town)	154	1,384	2,000
	Berlin	123	542	
	Plainfield	3	6	
	E. Montpelier	15	68	
3.0 - 4.0	Barre (town)	122	1,095	1,731
	Berlin	87	380	
	Plainfield	24	47	
	E. Montpelier	45	209	
<b>TOTAL</b>				<b>5,183</b>

Source: VTDEC, 1992; Shapiro, 1992c,d.



TABLE 9. ESTIMATED RESIDENTIAL POPULATION WITHIN A FOUR-MILE RADIUS OF SAFETY-KLEEN CORP.

Distance from Facility (in miles)	Town	Estimated Population	Total
0 - 0.25	Barre (city)	262	262
0.25 - 0.5	Barre (city)	639	639
0.5 - 1.0	Barre (city)	1,431	1,806
	Barre (town)	375	
1.0 - 2.0	Barre (city)	2,752	3,832
	Barre (town)	758	
	Berlin	322	
2.0 - 3.0	Barre (city)	382	2,748
	Barre (town)	1,420	
	Berlin	764	
	Montpelier	109	
	E. Montpelier	68	
	Plainfield	5	
3.0 - 4.0	Barre (town)	1,095	2,532
	Berlin	380	
	Montpelier	771	
	Williamstown	30	
	E. Montpelier	209	
	Plainfield	47	
<b>TOTAL</b>			<b>11,819</b>

Source: Shapiro, 1992c.

Approximately twelve miles downstream of the site in the Winooski River there is a Riverside Outcrop Community (VTANR, 1992). This is classified as a "significant natural community," but is not designated as a threatened or sensitive environment by the State of Vermont (VTANR, 1992).

There are extensive wetland areas located along the 15-mile downstream pathway from the site. Approximately three miles downstream of the site, at the junction of the Stevens Branch and the Winooski River, there are wetlands classified as palustrines. In addition, both the Stevens Branch and the Winooski River are classified as permanent open water, Upper Perennial Riveriores of unknown bottom. The Stevens Branch, which forms the western boundary of the property, is the closest designated wetland area.

Although there are no established fisheries located in the Stevens Branch or the Winooski River, recreational fishing is a possibility. For this reason both the Winooski River and the Stevens Branch are considered secondary fisheries.

The surface waters of the Stevens Branch are classified as Class C waters by the State of Vermont. The classification of the Winooski River changes along the course of the river. It varies between Class B and Class C waters as defined by VTDEC. Class B waters are used for recreation and support wildlife. Class C means that wastewater is mixed and discharged to the waters (Shapiro, 1992g). Class C water are the lowest grade of waters and are not permitted for use as drinking supplies, even if treated (Shapiro, 1992j).

## **SUMMARY**

Safety-Kleen Corp. currently operates a regional service center at 23 West Second Street in Barre, Washington County, Vermont. The facility has operated at this location since 1980. They shared the leased property from 1980 until 1988 with Maple Supplies Co., Inc. Safety-Kleen supplies cleaning solvent and equipment to customers, and uses the Barre facility to store clean solvent prior to shipment to customers and spent solvent prior to shipment offsite

for recycling. Safety-Kleen is considered a small quantity generator by the State of Vermont because of dumpster mud and sludge that settles out from the mineral spirits solvents.

In February of 1985 there was a three to four gallon spill of mineral spirits solvent during repair to a rupture in a frozen line. The contaminated soils were excavated and disposed of offsite. In November of 1985, two 10,000-gallon underground storage tanks used for the storage of clean and spent mineral spirits solvent were removed. Evidence of soil contamination beneath these tanks were observed by VTDEC representatives. Soil samples from beneath the tanks were taken. The area was filled and monitoring wells were installed in June, 1986. Sampling will continue on a semi-annual basis until analytical results do not exceed Vermont Ground Water Enforcement Standards for two consecutive terms.

In 1990, in response to actions taken against a Safety-Kleen Service Center in Massachusetts, for violations of LDR, Safety-Kleen (headquarters) provided information on similar violations at its Barre facility.

Potential receptors of contamination from the Safety-Kleen property include:

- the Stevens Branch, which borders the property on the north and runs along the south side of West Second Street (in the vicinity of the site) and subsequently the Winooski River into which the Stevens Branch empties;
- wetlands located along the 15-mile downstream pathway and within four miles of the facility;
- approximately 11,819 residents living within a four-mile radius of the site; and
- approximately 5,612 residents served by ground water drawn from within a four-mile radius of the site.

There was no evidence of ongoing releases observed during site reconnaissance conducted by TRCC. At this time EPA recommends that the Safety-Kleen Corporation Facility be deferred to the RCRA Program for further evaluation.

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**APPENDIX A**  
**AREAS OF CONCERN**



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**AOC Number:** 1

**AOC Name:** Former Underground Storage Tanks

**AOC Status:** Release (VTDEC, 1986a; Safety-Kleen, 1986b).

**AOC Description:** Two 10,000-gallon USTs used for the storage of mineral spirits solvent (VTDEC, 1986a). The USTs were located on the western side of the main storage area.

**AOC Start-up Date:** 1980 (Safety-Kleen, 1986b)

**AOC Closure Date:** 1985 (Safety-Kleen, 1986b)

**Waste Managed at AOC:** Spent and clean mineral spirits solvent (VTDEC, 1986a).

**Release Controls:** Quantities in tank were monitored.

**Release History:** In February of 1985, the line from the dumpster to the USTs froze and broke. There was no contamination at this time because the line and the ground were frozen. The line had to be thawed in order to repair it; at this point, approximately three to four gallons of product was lost. The soil was removed and disposed of off-site (Safety-Kleen, 1986b). Contaminated soils beneath the (clean) tank were discovered during removal in December of 1985. The source of the contamination is unknown (VTDEC, 1986a).

---

**AOC Number:** 2

**AOC Name:** Tank Farm

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Three 15,000-gallon aboveground storage tanks located on the north side of the main building. Two of the tanks are currently used for the storage of clean and spent mineral spirits solvent. The third tank is being prepared to store filtered, spent antifreeze (TRCC, 1992).

**AOC Start-up Date:** 1985 (Safety-Kleen, 1985)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Clean and spent mineral spirits solvent (TRCC, 1992).

**Release Controls:** Tanks sit on metal bracing which is built on a concrete floor. An approximately 4-foot high concrete wall surrounds the tanks. The tank farm is covered by a tent; surrounded by a grassy bermed area approximately one to one and a half feet high. Monitoring wells are onsite, although not intentionally installed as a release control (TRCC, 1992).

**Release History:** No records of release from these tanks found during EPA, or State file searches. No visible evidence of release to soils during site reconnaissance (TRCC, 1992).

---

**AOC Number:** 3

**AOC Name:** Return/Fill Station

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Area in main storage area where tank trucks are filled for delivery of mineral spirits to customers. Safety-Kleen returns spent mineral spirits to a "dumpster" which filters out particles and pumps liquid to an above-ground storage tank (TRCC, 1992).

**AOC Start-up Date:** 1980 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Clean and spent mineral spirits solvent; dumpster mud from settlement of particles (TRCC, 1992).

**Release Controls:** Located in a bermed area with a catch basin (TRCC, 1992). Dumpster remains closed when not in use (TRCC, 1992).

**Release History:** No records of release from this unit on file at EPA or VTDEC. No visible evidence of release to area around unit during site reconnaissance (TRCC, 1992).

---

**AOC Number:** 4

**AOC Name:** Waste Oil Tank Truck Area

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** 6500-gallon tank truck stored on asphalt pad when not in transit. Picks up waste oil for delivery to off-site recycling center (TRCC, 1992).

**AOC Start-up Date:** 1992 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Waste oil (TRCC, 1992)

**Release Controls:** Truck is located on an asphalt pad surrounded by a three inch high berm (TRCC, 1992).

**Release History:** There was no record of release from this unit on file at EPA or VTDEC. There were no visible signs of release during site reconnaissance (TRCC, 1992).

---

**AOC Number:** 5

**AOC Name:** Petrolane Tanks

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Two 400-gallon above-ground storage tanks used to store gas for heating main building (Shapiro, 1992a).

**AOC Start-up Date:** 1986 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Heating fuel (TRCC, 1992).

**Release Controls:** None documented or observed (TRCC, 1992).

**Release History:** There was no record of release from this unit on file at EPA or VTDEC. There was no visible evidence of release during site reconnaissance (TRCC, 1992).

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**AOC Number:** 6

**AOC Name:** Storage Shed

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Shed used for storage of empty dry cleaning (perchloroethylene) drums (Shapiro, 1992h). Drums are stored directly on floor (TRCC, 1992).

**AOC Start-up Date:** 1984 (Shapiro, 1992h).

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Perchloroethylene (TRCC, 1992).

**Release Controls:** None documented or observed (TRCC, 1992).

**Release History:** There was no record of release from this area on file at the EPA or VTDEC. There was no visible evidence of release to air observed during site reconnaissance (TRCC, 1992).

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**AOC Number:** 7

**AOC Name:** Flammables Storage Room

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Room located in the southwest corner of the main building used for storage of flammable products. Containers stored on pallets on concrete floor. The entrance to the room is bermed with a catch basin in the center. The catch basins do not drain anywhere (TRCC, 1992).

**AOC Start-up Date:** 1986 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Flammable products. At time of site reconnaissance containers of paint thinner and mineral spirits dumpster mud were present in Flammables Storage Room (TRCC, 1992).

**Release Controls:** Room is located in the main building. The entrance to the room has a 3-inch high berm with a catch basin in the middle (TRCC, 1992).

**Release History:** There was no record of release from this unit on file at the EPA or VTDEC. There were no visible signs of release during site reconnaissance (TRCC, 1992).

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**AOC Number:** 8

**AOC Name:** Class 1B Storage Shed

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Permitted flammable materials storage area. Shed is approximately 15' by 22' (Safety-Kleen, 1992a). There are steel drip pans below the storage shed; the shed is built on concrete pads (TRCC, 1992). At the time of the site reconnaissance, containers of clean paint thinner as well as immersion cleaner equipment were stored in the shed (TRCC, 1992).

**AOC Start-up Date:** 1986 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Paint related products (TRCC, 1992; Shapiro, 1992h).

**Release Controls:** Steel drip pans on top of concrete pads. The shed is surrounded by concrete pavement (TRCC, 1992).

**Release History:** There was no record of release found on file at the EPA or VTDEC. There was no visible evidence of release during site reconnaissance (TRCC, 1992).

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**AOC Number:** 9

**AOC Name:** Empty Drum Storage Area

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Location in main storage area where empty drums used for mineral spirits solvent are stored. Drums located here are either waiting to be shipped to customer or dented, unusable containers which will be RCRA cleaned and shipped off-site (TRCC, 1992; Shapiro, 1992a).

**AOC Start-up Date:** 1980 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed:** Remnants of spent mineral spirits solvent in containers (TRCC, 1992).

**Release Controls:** The open containers are stored inside the main storage area (TRCC, 1992).

**Release History:** No records of release found during file search at EPA and VTDEC (TRCC, 1992). During site reconnaissance, background level in building using an HNu with an 11.7 eV lamp was 8 ppb; HNu reading in empty container was 15 ppb.

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**AOC Number:** 10

**AOC Name:** Main Storage Area

**AOC Status:** Low potential for release (TRCC, 1992).

**AOC Description:** Area in northern portion of main building used for storage of containers of clean and spent nonflammable products handled by Safety-Kleen (not including mineral spirits solvent) (TRCC, 1992).

**AOC Start-up Date:** 1980 (Shapiro, 1992h)

**AOC Closure Date:** Currently in use (TRCC, 1992).

**Waste Managed at AOC:** Clean and spent perchloroethylene, spent immersion cleaner ("old" composition), clean and spent immersion cleaner ("new" composition) (TRCC, 1992).

**Release Controls:** Containers are not opened on-site and are stored in area surrounded by 3" high berms with catch basins. The catch basins do not drain anywhere. Products are segregated by type when stored (TRCC, 1992).

**Release History:** No records of release were found during file search at USEPA or VTDEC. There was no visible evidence of release observed during site reconnaissance (TRCC, 1992).

**APPENDIX B**  
**ANALYTICAL RESULTS**

MAR 11 1991



**Northeast Region**

Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

January 25, 1991

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Avenue C  
Williston, VT 05495

Dear Mr. Koptiuch:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 1/12/91 under chain-of-custody record 30538.

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.

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

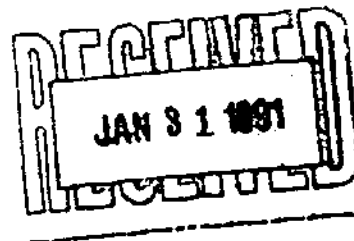
Sincerely,

GTEL Environmental Laboratories, Inc.

A handwritten signature in cursive script, appearing to read "Mark M. Emmons".

Mark M. Emmons  
Volatile Organics Manager

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-01-320





The following analytes, previously detected at very low-levels in B-3, were not detected in this sampling event:

- 1,1-Dichloroethene
- 1,2-Dichlorobenzene
- 1,4-Dichlorobenzene

It is apparent from this and from previous data, that analyte concentrations in B-3 are relatively stable. No discernable trends can be diagnosed from a comparison between the 2 most recent sampling events.

Please contact me at (802) 865-2237 should you have any questions or concerns relative to this information.

Sincerely,

GROUNDWATER TECHNOLOGY, INC.



Kent S. Koptiuch  
Project Coordinator

KSK/aaa  
Enclosure

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

## ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		01320-01	01320-02	01320-03	01320-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		1/11/91	1/11/91	1/11/91	1/11/91
Date Analyzed		1/18/91	1/18/91	1/18/91	1/18/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	0.3	< 0.2
Toluene	0.5	< 0.5	< 0.5	0.9	< 0.5
Ethyl Benzene	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Xylenes (total)	1.7	< 1.7	< 1.7	< 1.7	< 1.7
BTEX (total)	--	--	--	1.2	--
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	< 15	< 15
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	< 10	< 10	< 10
Total Hydrocarbons	--	--	--	1.2	--
Detection Limit Multiplier		1	1	1	1

a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

**ANALYTICAL RESULTS**

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		01320-05	01320-06	01320-07	—
Client Identification		TRP BLK	FLD BLK	B-3 DUP	—
Date Sampled		1/11/91	1/11/91	1/11/91	—
Date Analyzed		1/18/91	1/18/91	1/18/91	—
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	0.4	0.4	0.3	—
Toluene	0.5	1.7	1.6	< 0.5	—
Ethyl Benzene	0.8	< 0.8	< 0.8	< 0.8	—
Xylenes (total)	1.7	< 1.7	< 1.7	< 1.7	—
BTEX (total)	—	2.1	2.0	0.3	—
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	33	31	< 15	—
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	< 10	< 10	—
Total Hydrocarbons	—	35	33	0.3	—
Detection Limit Multiplier		1	1	1	—

a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601a

GTEL Sample Number		01320-01	01320-02	01320-03	01320-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		1/11/91	1/11/91	1/11/91	1/11/91
Date Analyzed		1/22/91	1/22/91	1/22/91	1/22/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.52	< 0.52	< 0.52	< 0.52	< 0.52
Bromomethane	1.2	< 1.2	< 1.2	< 1.2	< 1.2
Vinyl Chloride	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Chloroethane	0.09	< 0.09	< 0.09	< 0.09	< 0.09
Methylene Chloride	0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,1-Dichloroethene	0.45	< 0.45	< 0.45	< 0.45	< 0.45
1,1-Dichloroethane	0.20	< 0.20	< 0.20	7.5	< 0.20
<i>trans</i> -1,2-Dichloroethene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Chloroform	0.63	< 0.63	< 0.63	< 0.63	< 0.63
1,2-Dichloroethane	0.25	< 0.25	< 0.25	< 0.25	< 0.25
1,1,1-Trichloroethane	0.34	< 0.34	< 0.34	9.6	< 0.34
Carbon Tetrachloride	0.31	< 0.31	< 0.31	< 0.31	< 0.31
Bromodichloromethane	0.57	< 0.57	< 0.57	< 0.57	< 0.57
1,2-Dichloropropane	0.21	< 0.21	< 0.21	< 0.21	< 0.21
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Trichloroethene	0.56	< 0.56	< 0.56	5.3	< 0.56
Dichlorodifluoromethane	0.12	< 0.12	< 0.12	< 0.12	< 0.12
Dibromochloromethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	< 0.34	< 0.34
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

**ANALYTICAL RESULTS**

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		01320-01	01320-02	01320-03	01320-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		1/11/91	1/11/91	1/11/91	1/11/91
Date Analyzed		1/22/91	1/22/91	1/22/91	1/22/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Bromoform	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	0.24	< 0.24	< 0.24	15	< 0.24
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	< 0.24	< 0.24
Chlorobenzene	0.27	< 0.27	< 0.27	< 0.27	< 0.27
1,2-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	< 0.24	< 0.24
Trichlorofluoromethane	0.35	< 0.35	< 0.35	< 0.35	< 0.35
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

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

b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		01320-05	01320-06	01320-07	--
Client Identification		TRP BLK	FLD BLK	B-3 DUP	--
Date Sampled		1/11/91	1/11/91	1/11/91	--
Date Analyzed		1/22/91	1/22/91	1/22/91	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.52	< 0.52	< 0.52	< 0.52	--
Bromomethane	1.2	< 1.2	< 1.2	< 1.2	--
Vinyl Chloride	0.13	< 0.13	< 0.13	< 0.13	--
Chloroethane	0.09	< 0.09	< 0.09	< 0.09	--
Methylene Chloride	0.49	< 0.49	< 0.49	< 0.49	--
1,1-Dichloroethene	0.45	< 0.45	< 0.45	< 0.45	--
1,1-Dichloroethane	0.20	< 0.20	< 0.20	19	--
<i>trans</i> -1,2-Dichloroethene	0.21	< 0.21	< 0.21	< 0.21	--
Chloroform	0.63	< 0.63	< 0.63	< 0.63	--
1,2-Dichloroethane	0.25	< 0.25	< 0.25	< 0.25	--
1,1,1-Trichloroethane	0.34	< 0.34	< 0.34	14	--
Carbon Tetrachloride	0.31	< 0.31	< 0.31	< 0.31	--
Bromodichloromethane	0.57	< 0.57	< 0.57	< 0.57	--
1,2-Dichloropropane	0.21	< 0.21	< 0.21	< 0.21	--
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	< 0.21	--
Trichloroethene	0.56	< 0.56	< 0.56	14	--
Dichlorodifluoromethane	0.12	< 0.12	< 0.12	< 0.12	--
Dibromochloromethane	0.34	< 0.34	< 0.34	< 0.34	--
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	--
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	< 0.34	--
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	< 0.13	--
Detection Limit Multiplier <sup>b</sup>		1	1	1	--

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-01-320

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		01320-05	01320-06	01320-07	--
Client Identification		TRP BLK	FLD BLK	B-3 DUP	--
Date Sampled		1/11/91	1/11/91	1/11/91	--
Date Analyzed		1/22/91	1/22/91	1/22/91	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Bromoform	0.20	< 0.20	< 0.20	< 0.20	--
Tetrachloroethene	0.24	< 0.24	< 0.24	31	--
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	< 0.24	--
Chlorobenzene	0.27	< 0.27	< 0.27	< 0.27	--
1,2-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	--
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	--
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	< 0.24	--
Trichlorofluoromethane	0.35	< 0.35	< 0.35	< 0.35	--
Detection Limit Multiplier <sup>b</sup>		1	1	1	--

- a Federal Register, Vol. 49, October 26, 1984.
- b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.



# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

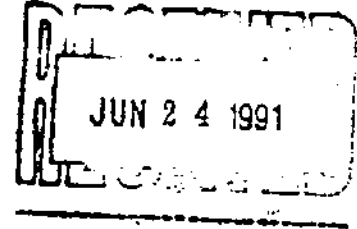
**Northeast Region**

Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-06-119

June 18, 1991

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Avenue C  
Williston, VT 05495



Dear Mr. Koptiuch:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/06/91 under chain-of-custody record 30556.

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.

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

Sincerely,

GTEL Environmental Laboratories, Inc.

Mark M. Emmons  
Volatile Organics Manager



Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		06119-01	06119-02	06119-03	06119-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		06/05/91	06/05/91	06/05/91	06/05/91
Date Analyzed		06/14/91	06/14/91	06/14/91	06/14/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Xylenes (total)	1.7	< 1.7	< 1.7	< 1.7	< 1.7
BTEX (total)	-	-	-	-	-
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	< 15	< 15
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	< 10	< 10	< 10
Total Hydrocarbons	-	-	-	-	-
Detection Limit Multiplier		1	1	1	1

a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		06119-05	06119-06	--	--
Client Identification		TRP BLK	FLD BLK	--	--
Date Sampled		06/05/91	06/05/91	--	--
Date Analyzed		06/14/91	06/14/91	--	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	--	--
Toluene	0.5	< 0.5	< 0.5	--	--
Ethyl Benzene	0.8	< 0.8	< 0.8	--	--
Xylenes (total)	1.7	< 1.7	< 1.7	--	--
BTEX (total)	--	--	--	--	--
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	--	--
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	< 10	--	--
Total Hydrocarbons	--	--	--	--	--
Detection Limit Multiplier		1	1	--	--

a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		06119-01	06119-02	06119-03	06119-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		06/05/91	06/05/91	06/05/91	06/05/91
Date Analyzed		06/07/91	06/13/91	06/07/91	06/13/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.52	0.98	< 0.52	< 0.52	< 0.52
Bromomethane	1.2	< 1.2	< 1.2	< 1.2	< 1.2
Vinyl Chloride	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Chloroethane	0.09	< 0.09	< 0.09	< 0.09	< 0.09
Methylene Chloride	0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,1-Dichloroethene	0.45	< 0.45	< 0.45	< 0.45	< 0.45
1,1-Dichloroethane	0.20	< 0.20	< 0.20	< 0.20	< 0.20
<i>trans</i> -1,2-Dichloroethene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Chloroform	0.63	< 0.63	1.1	< 0.63	1.8
1,2-Dichloroethane	0.25	< 0.25	< 0.25	< 0.25	< 0.25
1,1,1-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
Carbon Tetrachloride	0.31	< 0.31	< 0.31	< 0.31	< 0.31
Bromodichloromethane	0.57	< 0.57	< 0.57	< 0.57	< 0.57
1,2-Dichloropropane	0.21	< 0.21	< 0.21	< 0.21	< 0.21
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Trichloroethene	0.56	< 0.56	< 0.56	< 0.56	< 0.56
Dichlorodifluoromethane	0.12	< 0.12	< 0.12	< 0.12	< 0.12
Dibromochloromethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	< 0.34	< 0.34
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601a

GTEL Sample Number		06119-01	06119-02	06119-03	06119-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		06/05/91	06/05/91	06/05/91	06/05/91
Date Analyzed		06/07/91	06/13/91	06/07/91	06/13/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Bromoform	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Tetrachloroethene	0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	< 0.24	< 0.24
Chlorobenzene	0.27	< 0.27	< 0.27	< 0.27	< 0.27
1,2-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	< 0.24	< 0.24
Trichlorofluoromethane	0.35	< 0.35	< 0.35	< 0.35	< 0.35
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

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

b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.



Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		06119-05	06119-06	--	--
Client Identification		TRP BLK	FLD BLK	--	--
Date Sampled		06/05/91	06/05/91	--	--
Date Analyzed		06/13/91	06/13/91	--	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Chloromethane	0.52	< 0.52	< 0.52	--	--
Bromomethane	1.2	< 1.2	< 1.2	--	--
Vinyl Chloride	0.13	< 0.13	< 0.13	--	--
Chloroethane	0.09	< 0.09	< 0.09	--	--
Methylene Chloride	0.49	0.80	0.60	--	--
1,1-Dichloroethene	0.45	< 0.45	< 0.45	--	--
1,1-Dichloroethane	0.20	< 0.20	< 0.20	--	--
<i>trans</i> -1,2-Dichloroethene	0.21	< 0.21	< 0.21	--	--
Chloroform	0.63	< 0.63	< 0.63	--	--
1,2-Dichloroethane	0.25	< 0.25	< 0.25	--	--
1,1,1-Trichloroethane	0.34	< 0.34	< 0.34	--	--
Carbon Tetrachloride	0.31	< 0.31	< 0.31	--	--
Bromodichloromethane	0.57	< 0.57	< 0.57	--	--
1,2-Dichloropropane	0.21	< 0.21	< 0.21	--	--
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	--	--
Trichloroethene	0.56	< 0.56	< 0.56	--	--
Dichlorodifluoromethane	0.12	< 0.12	< 0.12	--	--
Dibromochloromethane	0.34	< 0.34	< 0.34	--	--
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	--	--
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	--	--
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	--	--
Detection Limit Multiplier <sup>b</sup>		1	1	--	--



Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-119

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		06119-05	06119-06	-	-
Client Identification		TRP BLK	FLD BLK	-	-
Date Sampled		06/05/91	06/05/91	-	-
Date Analyzed		06/13/91	06/13/91	-	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Bromoform	0.20	< 0.20	< 0.20	-	-
Tetrachloroethene	0.24	< 0.24	< 0.24	-	-
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	-	-
Chlorobenzene	0.27	< 0.27	< 0.27	-	-
1,2-Dichlorobenzene	0.41	< 0.41	< 0.41	-	-
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	-	-
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	-	-
Trichlorofluoromethane	0.35	< 0.35	< 0.35	-	-
Detection Limit Multiplier <sup>b</sup>		1	1	-	-

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

b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.





# GTEL

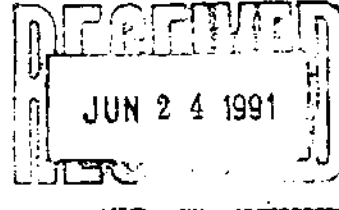
ENVIRONMENTAL  
LABORATORIES, INC.

**Northeast Region**  
Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 677-4835  
(603) 677-8105 (FAX)

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-06-118

June 19, 1991

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Ave C  
Williston, VT 05495



Dear Mr. Koptiuch:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 6/06/91 under chain-of-custody record 30556.

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.

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

Sincerely,

GTEL Environmental Laboratories, Inc.

Mark A. Netsch

Acting Extractable Organics Manager

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-06-118

ANALYTICAL RESULTS

Hydrocarbon Screen in Water  
 by GC FID<sup>a</sup>

GTEL Sample Number		06118-01	06118-02	06118-03	-
Client Identification		B-1	B-2	B-5	-
Date Sampled		6/05/91	6/05/91	6/05/91	-
Date Extracted		6/11/91	6/11/91	6/11/91	-
Date Analyzed		6/12/91	6/13/91	6/13/91	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Mineral Spirits	50	< 50	< 50	< 50	-
Detection Limit Multiplier		1	1	1	-

a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; Methylene chloride extraction by modified EPA Method 3510; modification as per California State Water Resources Control Board LUFT Manual protocols.





# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northeast Region**  
Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

RECEIVED JAN 23 1992

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-12-948

January 17, 1992

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Avenue C  
Williston, VT 05495

Dear Mr. Koptiuch:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/28/91 under chain-of-custody record 37485.

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.

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

Sincerely,

GTEL Environmental Laboratories, Inc.

Diane E. Capen  
Extractable Organics Manager

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-12-948

ANALYTICAL RESULTS

Hydrocarbon Screen in Water  
 by GC FID<sup>a</sup>

GTEL Sample Number		12948-01	--	--	--
Client Identification		B-1	--	--	--
Date Sampled		12/27/91	--	--	--
Date Extracted		01/02/92	--	--	--
Date Analyzed		01/13/92	--	--	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Gasoline	50	< 50	--	--	--
Mineral Spirits	50	< 50	--	--	--
Kerosine	50	< 50	--	--	--
Diesel/Fuel Oil #2	50	< 50	--	--	--
Fuel Oil #6	50	< 50	--	--	--
Lubricating Oil	50	< 50 <sup>b</sup>	--	--	--
Detection Limit Multiplier		1.00	--	--	--

a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; Methylene chloride extraction by modified EPA Method 3510; modification as per California State Water Resources Control Board LUFT Manual protocols.

b The sample chromatogram shows the presence of a hydrocarbon peak in the boiling point range of C<sub>22</sub> to C<sub>24</sub> that does not match instrument standards. Identification of this compound is beyond the scope of this analysis.



# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northeast Region**

Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

RECEIVED JAN 10 1992

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-12-870

January 7, 1992

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Avenue C  
Williston, VT 05495

Dear Mr. Koptiuch:

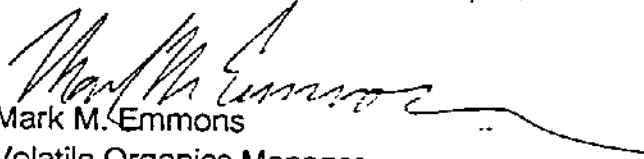
Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/21/91 under chain-of-custody record 37483.

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.

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

Sincerely,

GTEL Environmental Laboratories, Inc.

  
Mark M. Emmons  
Volatile Organics Manager

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-12-870

ANALYTICAL RESULTS

Purgeable Aromatics in Water  
Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		12870-01	12870-02	12870-03	12870-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		12/20/91	12/20/91	12/20/91	12/20/91
Date Analyzed		12/31/91	12/31/91	12/31/91	12/31/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Xylenes (total)	1.7	< 1.7	< 1.7	< 1.7	< 1.7
BTEX (total)	--	--	--	--	--
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	< 15	< 15
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	38	81	82	92
Total Hydrocarbons	--	38	81	82	92
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

- a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.  
b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-12-870

ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		12870-05	12870-06	--	--
Client Identification		TRP BLK	FLD BLK	--	--
Date Sampled		12/20/91	12/20/91	--	--
Date Analyzed		01/01/92	01/01/92	--	--
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	--	--
Toluene	0.5	0.7	0.8	--	--
Ethyl Benzene	0.8	< 0.8	< 0.8	--	--
Xylenes (total)	1.7	< 1.7	< 1.7	--	--
BTEX (total)	--	0.7	0.8	--	--
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	--	--
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	57	57	--	--
Total Hydrocarbons	--	58	58	--	--
Detection Limit Multiplier <sup>b</sup>		1	1	--	--

- a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.
- b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-12-870

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		12870-01	12870-02	12870-03	12870-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		12/20/91	12/20/91	12/20/91	12/20/91
Date Analyzed		12/27/91	12/27/91	12/27/91	12/27/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Dichlorodifluoromethane	0.12	< 0.12	< 0.12	< 0.12	< 0.12
Chloromethane	0.52	< 0.52	< 0.52	< 0.52	< 0.52
Vinyl Chloride	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Bromomethane	1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chloroethane	0.09	< 0.09	< 0.09	< 0.09	< 0.09
Trichlorofluoromethane	0.35	< 0.35	< 0.35	< 0.35	< 0.35
1,1-Dichloroethene	0.45	< 0.45	< 0.45	< 0.45	< 0.45
Methylene Chloride	0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,2-Dichloroethene (total) <sup>c</sup>	0.21	< 0.21	< 0.21	0.47	< 0.21
1,1-Dichloroethane	0.20	< 0.20	< 0.20	2.9	< 0.20
Chloroform	0.63	< 0.63	< 0.63	< 0.63	< 0.63
1,1,1-Trichloroethane	0.34	< 0.34	< 0.34	11	< 0.34
Carbon Tetrachloride	0.31	< 0.31	< 0.31	< 0.31	< 0.31
1,2-Dichloroethane	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Trichloroethene	0.56	< 0.56	< 0.56	2.8	< 0.56
1,2-Dichloropropane	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Bromodichloromethane	0.57	< 0.57	< 0.57	< 0.57	< 0.57
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-12-870

ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		12870-01	12870-02	12870-03	12870-04
Client Identification		B-1	B-2	B-3	B-5
Date Sampled		12/20/91	12/20/91	12/20/91	12/20/91
Date Analyzed		12/27/91	12/27/91	12/27/91	12/27/91
Analyte	Detection Limit, ug/L	Concentration, ug/L			
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
Tetrachloroethene	0.24	< 0.24	< 0.24	15	< 0.24
Dibromochloromethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
Chlorobenzene	0.27	< 0.27	< 0.27	< 0.27	< 0.27
Bromoform	0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,2-Dichlorobenzene	0.41	< 0.41	< 0.41	0.97	< 0.41
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

- a Federal Register, Vol. 49, October 26, 1984.
- b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.
- c 1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

V



# GTEL

ENVIRONMENTAL  
LABORATORIES, INC.

**Northeast Region**

Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

Client Number: 011120089  
Project ID: Not Applicable  
Work Order Number: N1-12-872

RECEIVED JAN 13 1992

January 8, 1992

Kent Koptiuch  
Groundwater Technology, Inc.  
32 Avenue C  
Williston, VT 05403

Dear Mr. Koptiuch:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 12/21/91 under chain-of-custody record 37483.

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.

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

Sincerely,

GTEL Environmental Laboratories, Inc.

Diane E. Capen  
Extractable Organics Manager



Client Number: 011120089  
 Project ID: Not Applicable  
 Work Order Number: N1-12-872

ANALYTICAL RESULTS

Hydrocarbon Screen in Water  
 by GC FID<sup>a</sup>

GTEL Sample Number		12872-01	12872-02	12872-03	-
Client Identification		B-2	B-3	B-5	-
Date Sampled		12/20/91	12/20/91	12/20/91	-
Date Extracted		12/31/91	12/31/91	12/31/91	-
Date Analyzed		01/05/92	01/05/92	01/05/92	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Gasoline	50	< 120	< 50	< 50	--
Mineral Spirits	50	< 120	< 50	< 50	-
Kerosine	50	< 120	< 50	< 50	-
Diesel	50	< 120	< 50	< 50	-
Fuel Oil #6	50	< 120	< 50	< 50	-
Lubricating Oil	50	< 120	< 50	460 <sup>b</sup>	-
Detection Limit Multiplier		2.50	1.00	1.00	-

a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; Methylene chloride extraction by modified EPA Method 3510; modification as per California State Water Resources Control Board LUFT Manual protocols.

b Estimated Concentration. The sample chromatogram exhibits a profile consistent with instrument standards for lubricating oil. However, the boiling point range of the sample is significantly higher than the instrument standard for lubricating oil (which is a 10W-40 motor oil), resulting in a large portion of the sample eluting outside of the quantitation window for lubricating oil.

2



**Northeast Region**  
Meadowbrook Industrial Park  
Milford, NH 03055  
(603) 672-4835  
(603) 673-8105 (FAX)

June 23, 1992

Joe Basile  
Groundwater Technology, Inc.  
12 Walker Way  
Albany, NY 12205

Dear Mr. Basile:

Enclosed please find the analytical results for the samples received by GTEL Environmental Laboratories, Inc. on 06/10/92 under chain-of-custody record 3675.

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.

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

Sincerely,  
GTEL Environmental Laboratories, Inc.

*Susan C. Uhler*  
Susan C. Uhler  
Laboratory Director

Client Number: 011125303  
Project ID: SK Barre  
Login Number: M2-06-0228

Post-It™ brand fax transmittal memo 7671		# of pages ▶ 9
To Joe Basile	From	GTEL Milford
Co.	Co.	
Dept.	Phone #	
Fax #	Fax #	

Client Number: 011125303  
 Project ID: SK Barra  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 802<sup>a</sup>

GTEL Sample Number		060228-01	060028-02	060028-03	060028-04
Client Identification		B-1	B-3	B-5	TRIP
Date Sampled		06/09/92	06/09/92	06/09/92	06/09/92
Date Analyzed		06/16/92	06/16/92	06/16/92	06/17/92
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	< 0.2	< 0.2	< 0.2
Toluene	0.5	< 0.5	< 0.5	< 0.5	< 0.5
Ethyl Benzene	0.8	< 0.8	< 0.8	< 0.8	< 0.8
Xylenes (total)	1.7	< 1.7	< 1.7	< 1.7	< 1.7
BTEX (total)	-	-	-	-	-
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	< 15	< 15	< 15
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	< 10	< 10	< 10
Total Hydrocarbons	-	-	-	-	-
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

- <sup>a</sup> Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.  
<sup>b</sup> The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Purgeable Aromatics in Water  
 Modified EPA Method 602<sup>a</sup>

GTEL Sample Number		060228-05	-	-	-
Client Identification		BLIND	-	-	-
Date Sampled		06/09/92	-	-	-
Date Analyzed		06/16/92	-	-	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.2	< 0.2	-	-	-
Toluene	0.5	< 0.5	-	-	-
Ethyl Benzene	0.8	< 0.8	-	-	-
Xylenes (total)	1.7	< 1.7	-	-	-
BTEX (total)	-	-	-	-	-
Misc. Aliphatics (C <sub>4</sub> -C <sub>12</sub> )	15	< 15	-	-	-
Misc. Aromatics (C <sub>8</sub> -C <sub>10</sub> )	10	< 10	-	-	-
Total Hydrocarbons	-	-	-	-	-
Detection Limit Multiplier <sup>b</sup>		1	-	-	-

- a Federal Register, Vol. 49, October 26, 1984. Method modified to include additional compounds.  
 b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
EPA Method 601<sup>a</sup>

GTEL Sample Number		060228-01	060228-02	060228-03	060228-04
Client Identification		B-1	B-3	B-5	TRIP
Date Sampled		06/09/92	06/09/92	06/09/92	06/09/92
Date Analyzed		06/16/92	06/16/92	06/16/92	06/16/92
Analyte	Detection Limit, ug/L	Concentration, ug/L			
		Dichlorodifluoromethane	0.12	< 0.12	< 0.12
Chloromethane	0.52	< 0.52	< 0.52	< 0.52	< 0.52
Vinyl Chloride	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Bromomethane	1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chloroethane	0.09	< 0.09	< 0.09	< 0.09	< 0.09
Trichlorofluoromethane	0.35	< 0.35	< 0.35	< 0.35	< 0.35
1,1-Dichloroethene	0.45	< 0.45	< 0.45	< 0.45	< 0.45
Methylene Chloride	0.49	< 0.49	< 0.49	< 0.49	< 0.49
1,2-Dichloroethene (total) <sup>c</sup>	0.21	< 0.21	< 0.21	< 0.21	< 0.21
1,1-Dichloroethane	0.20	< 0.20	3.5	< 0.20	< 0.20
Chloroform	0.63	10	< 0.63	< 0.63	55
1,1,1-Trichloroethane	0.34	< 0.34	15	< 0.34	< 0.34
Carbon Tetrachloride	0.31	< 0.31	< 0.31	< 0.31	< 0.31
1,2-Dichloroethane	0.25	< 0.25	< 0.25	< 0.25	< 0.25
Trichloroethene	0.56	< 0.56	3.9	< 0.56	< 0.56
1,2-Dichloropropane	0.21	< 0.21	< 0.21	< 0.21	< 0.21
Bromodichloromethane	0.57	< 0.57	< 0.57	< 0.57	0.75
2-Chloroethylvinyl Ether	0.13	< 0.13	< 0.13	< 0.13	< 0.13
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		060228-01	060228-02	060228-03	060228-04
Client Identification		B-1	B-3	B-5	TRIP
Date Sampled		06/09/92	06/09/92	06/09/92	06/09/92
Date Analyzed		06/16/92	06/16/92	06/16/92	06/16/92
Analyte	Detection Limit, ug/L	Concentration, ug/L			
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	< 0.21	< 0.21	< 0.21
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	< 0.34	< 0.34	< 0.34
1,1,2-Trichloroethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
Tetrachloroethene	0.24	< 0.24	32	< 0.24	< 0.24
Dibromochloromethane	0.34	< 0.34	< 0.34	< 0.34	< 0.34
Chlorobenzene	0.27	< 0.27	< 0.27	< 0.27	< 0.27
Bromoform	0.20	< 0.20	< 0.20	< 0.20	< 0.20
1,1,2,2-Tetrachloroethane	0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,3-Dichlorobenzene	0.41	< 0.41	< 0.41	< 0.41	< 0.41
1,4-Dichlorobenzene	0.24	< 0.24	< 0.24	< 0.24	< 0.24
1,2-Dichlorobenzene	0.41	< 0.41	3.9	< 0.41	< 0.41
Detection Limit Multiplier <sup>b</sup>		1	1	1	1

- a Federal Register, Vol. 49, October 26, 1984.  
 b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.  
 c 1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Purgeable Halocarbons in Water  
EPA Method 601<sup>a</sup>

GTEL Sample Number		060228-05	-	-	-
Client Identification		BLIND	-	-	-
Date Sampled		06/09/92	-	-	-
Date Analyzed		06/16/92	-	-	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Dichlorodifluoromethane	0.12	< 0.12	-	-	-
Chloromethane	0.52	< 0.52	-	-	-
Vinyl Chloride	0.13	< 0.13	-	-	-
Bromomethane	1.2	< 1.2	-	-	-
Chloroethane	0.09	< 0.09	-	-	-
Trichlorofluoromethane	0.35	< 0.35	-	-	-
1,1-Dichloroethene	0.45	< 0.45	-	-	-
Methylene Chloride	0.49	< 0.49	-	-	-
1,2-Dichloroethene (total) <sup>c</sup>	0.21	< 0.21	-	-	-
1,1-Dichloroethane	0.20	< 0.20	-	-	-
Chloroform	0.63	< 0.63	-	-	-
1,1,1-Trichloroethane	0.34	< 0.34	-	-	-
Carbon Tetrachloride	0.31	< 0.31	-	-	-
1,2-Dichloroethane	0.25	< 0.25	-	-	-
Trichloroethene	0.56	< 0.56	-	-	-
1,2-Dichloropropane	0.21	< 0.21	-	-	-
Bromodichloromethane	0.57	< 0.57	-	-	-
2-Chloroethylvinyl Ether	0.13	< 0.13	-	-	-
Detection Limit Multiplier <sup>b</sup>		1	-	-	-

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-08-0228

## ANALYTICAL RESULTS

Purgeable Halocarbons In Water  
 EPA Method 601<sup>a</sup>

GTEL Sample Number		060228-05	-	--	--
Client Identification		BLIND	-	-	-
Date Sampled		06/09/92	--	--	--
Date Analyzed		06/16/92	-	-	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
<i>cis</i> -1,3-Dichloropropene	0.21	< 0.21	-	-	-
<i>trans</i> -1,3-Dichloropropene	0.34	< 0.34	-	-	-
1,1,2-Trichloroethane	0.34	< 0.34	-	-	-
Tetrachloroethene	0.24	< 0.24	-	-	-
Dibromochloromethane	0.34	< 0.34	-	-	-
Chlorobenzene	0.27	< 0.27	-	-	-
Bromoform	0.20	< 0.20	-	-	-
1,1,2,2-Tetrachloroethane	0.24	< 0.24	-	-	-
1,3-Dichlorobenzene	0.41	< 0.41	-	-	-
1,4-Dichlorobenzene	0.24	< 0.24	-	-	-
1,2-Dichlorobenzene	0.41	< 0.41	-	-	-
Detection Limit Multiplier <sup>b</sup>		1	-	-	-

- a Federal Register, Vol. 49, October 26, 1984.  
 b The detection limit multiplier indicates the adjustments made to the data and detection limits for sample dilutions.  
 c 1,2-Dichloroethene (total) is the sum of both *cis*- and *trans*- isomers.



Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Hydrocarbon Screen in Water  
by GC FID<sup>a</sup>

GTEL Sample Number		060228-01	060228-02	060228-03	060228-04
Client Identification		B-1	B-3	B-5	TRIP
Date Sampled		06/09/92	06/09/92	06/09/92	06/09/92
Date Extracted		06/17/92	06/17/92	06/17/92	06/17/92
Date Analyzed		06/18/92	06/19/92	06/19/92	06/19/92
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Gasoline	50	< 50	< 50	< 50	< 50
Mineral Spirits	50	< 50	< 50	< 50	< 50
Kerosine	50	< 50	< 50	< 50	< 50
Diesel	50	< 50	< 50	< 50	< 50
Fuel Oil #6	50	< 50 <sup>b</sup>	< 50 <sup>b</sup>	< 50 <sup>b</sup>	< 50
Lubricating Oil	50	< 50 <sup>b</sup>	< 50 <sup>b</sup>	< 50 <sup>b</sup>	< 50
Detection Limit Multiplier		1.00	1.00	1.00	1.00

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; Methylene chloride extraction by modified EPA Method 3510; modification as per California State Water Resources Control Board LUFT Manual protocols.
- b The sample chromatogram shows the presence of a few hydrocarbon peaks in the boiling point range of C<sub>17</sub> to C<sub>30</sub> that do not match instrument standards. Identification of these compounds is beyond the scope of this analysis.

Client Number: 011125303  
 Project ID: SK Barre  
 Login Number: M2-06-0228

## ANALYTICAL RESULTS

Hydrocarbon Screen In Water  
by GC FID<sup>a</sup>

GTEL Sample Number		060228-05	-	-	-
Client Identification		BLIND	-	-	-
Date Sampled		06/09/92	-	-	-
Date Extracted		06/17/92	-	-	-
Date Analyzed		06/19/92	-	-	-
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Gasoline	50	< 50	-	-	-
Mineral Spirits	50	< 50	-	-	-
Kerosine	50	< 50	-	-	-
Diesel	50	< 50	-	-	-
Fuel Oil #6	50	< 50 <sup>b</sup>	-	-	-
Lubricating Oil	50	< 50 <sup>b</sup>	-	-	-
Detection Limit Multiplier		1.00	-	-	-

- a Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986; Methylene chloride extraction by modified EPA Method 3510; modification as per California State Water Resources Control Board LUFT Manual protocols.
- b The sample chromatogram shows the presence of a few hydrocarbon peaks in the boiling point range of C<sub>17</sub> to C<sub>30</sub> that do not match instrument standards. Identification of these compounds is beyond the scope of this analysis.