FINAL SITE INSPECTION PRIORITIZATION REPORT
FOR
EMCO
WILLISTON, VERMONT

CERCLIS No. VTD982748477
TDD No. 98-05-0156

Submitted by:

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9 September 1998

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Work Order No. 11098-031-001-5066-70

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INTRODUCTION

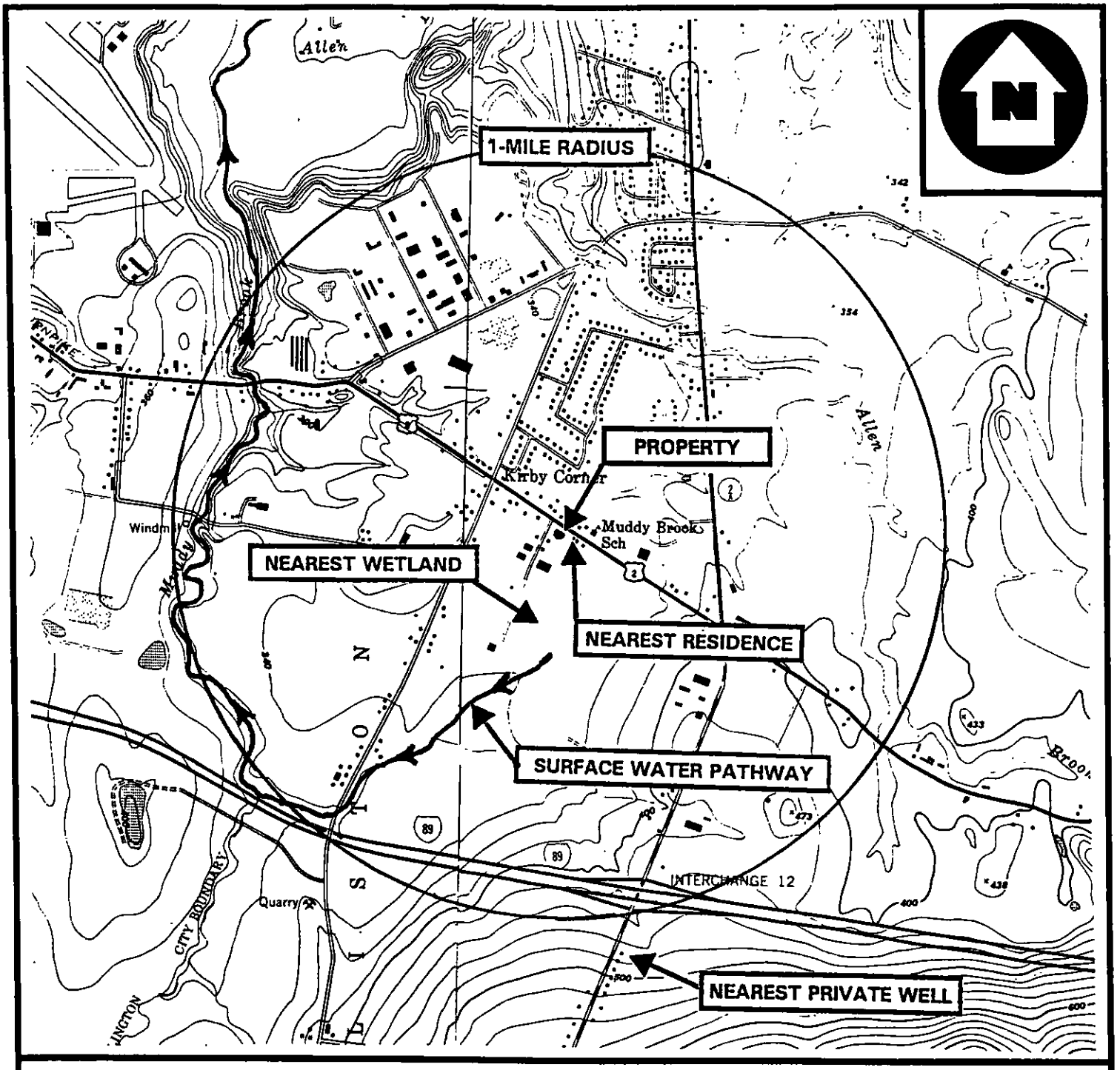
The Roy F. Weston, Inc. (WESTON®) Superfund Technical Assessment and Response Team (START) was requested by the U.S. Environmental Protection Agency Region I (EPA Region I), Office of Site Remediation and Restoration to perform a Site Inspection Prioritization (SIP) of the EMCO property, located on Route 2 (Williston Road), in Williston, Vermont. Tasks were conducted in accordance with the SIP scope of work and technical specifications provided by EPA Region I. A Site Inspection (SI) Report for the EMCO property was prepared by TRC Companies, Inc. (TRCC) in July 1993. Analytical results of groundwater and soil source samples collected during the SI on and near the EMCO property indicated elevated concentrations of trichloroethene (TCE), tetrachloroethene (PCE), cadmium, and chromium. On the basis of the information provided in the SI report, the EMCO SIP was initiated.

Background information used in the generation of this report was obtained through file searches conducted at EPA Region I, the Vermont Agency of Natural Resources (VT ANR), telephone interviews with town officials, conversations with persons knowledgeable of the EMCO property and conversations with other Federal, State, and local agencies.

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA Region I regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. SIPs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

SITE DESCRIPTION

The EMCO property is located on Route 2 (Williston Road), in Williston, Chittenden County, Vermont, latitude 44° 27′ 11.5″ north and longitude 73° 07′ 09.5″ west (Figure 1) [1; 2]. The latitude and longitude were calculated from the center of the property. The 2.8-acre property, which includes a 12,000-square foot (ft^2) building, is recorded by the Williston Tax Assessor's office as Lot 19-2 [3, p. 4; 4, p. 3] (Figure 2). From 1947 to the present, the property has been used for light industrial manufacturing [3, p. 3]. The EMCO property is located in Alling Industrial Park, a commercially zoned area consisting of approximately 20 lots and occupying



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' X 7.5' U.S.G.S. QUADRANGLE:
ESSEX JUNCTION, VT 1948, PHOTOREVISED 1972 BURLINGTON, VT 1948, PHOTOREVISED 1972

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

QUADRANGLE LOCATION

LOCATION MAP
EMCO
ROUTE 2 (WILLISTON ROAD)
WILLISTON, VERMONT

Tetra Tech EM Inc.
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
98-05-0156	T. TRAN	12/22/97

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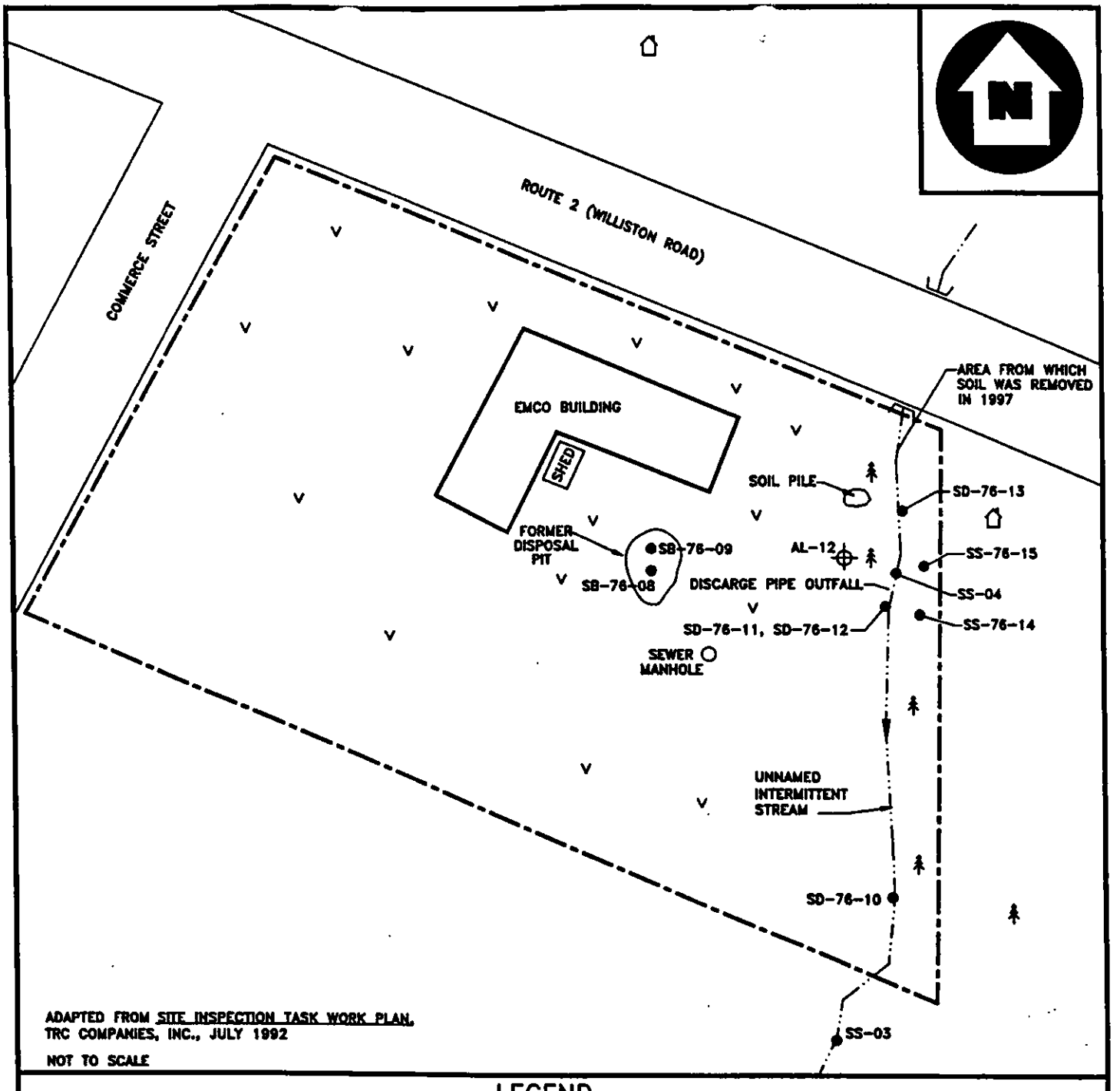
FIGURE 1



LEGEND

- INTERMITTENT STREAM
- PROPERTY BOUNDARY
- MONITORING WELL (SCREENED IN OVERBURDEN)
- GRASS
- TREES/WOODED
- CULVERT
- SS-76-13 SOIL SAMPLE (TRCC 1993)
- SS-04 SOIL SAMPLE (START 1997)
- RESIDENCE

SITE SKETCH
EMCO
ROUTE 2 (WILLISTON ROAD)
WILLISTON, VERMONT

Tetra Tech EM Inc.

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
98-05-0156	T. TRAN	9/9/97

FILE NAME: C:\START\EMCO\EMCO2.DWG

FIGURE 2

approximately 34 acres (Figure 3). The EMCO property is bound by Route 2 to the north, Commerce Street to the west, commercial property to the south, and residential property to the east. Access to the property is unrestricted [5, p. 6].

In 1945, Mr. George D. Alling purchased the undeveloped Alling Industrial Park property from Helen and Eugene Bernhardt. The land was first developed into an industrial park in 1946. From 1947 to 1958, Alling Enterprises manufactured cup hooks and caster cups at what is now the EMCO facility. From 1958 to 1961, the Shelbourne Corporation manufactured athletic goods at the facility. No information is available regarding the use of hazardous materials by Alling Enterprises or the Shelbourne Corporation. Bruce Chemical Distributors occupied the facility from 1961 to 1964; from 1964 to 1966, the facility was occupied by L.C.L. Manufacturing, a developer of gas carburetors. From 1966 to 1974, the facility was occupied by the Alling Realty Corporation. In 1975, the ownership of the EMCO property was transferred to Ms. Beatrice Alling. Currently, the EMCO property is owned by the Alling Realty Corporation [3, pp. 6 - 8; 4, pp. 3 - 7].

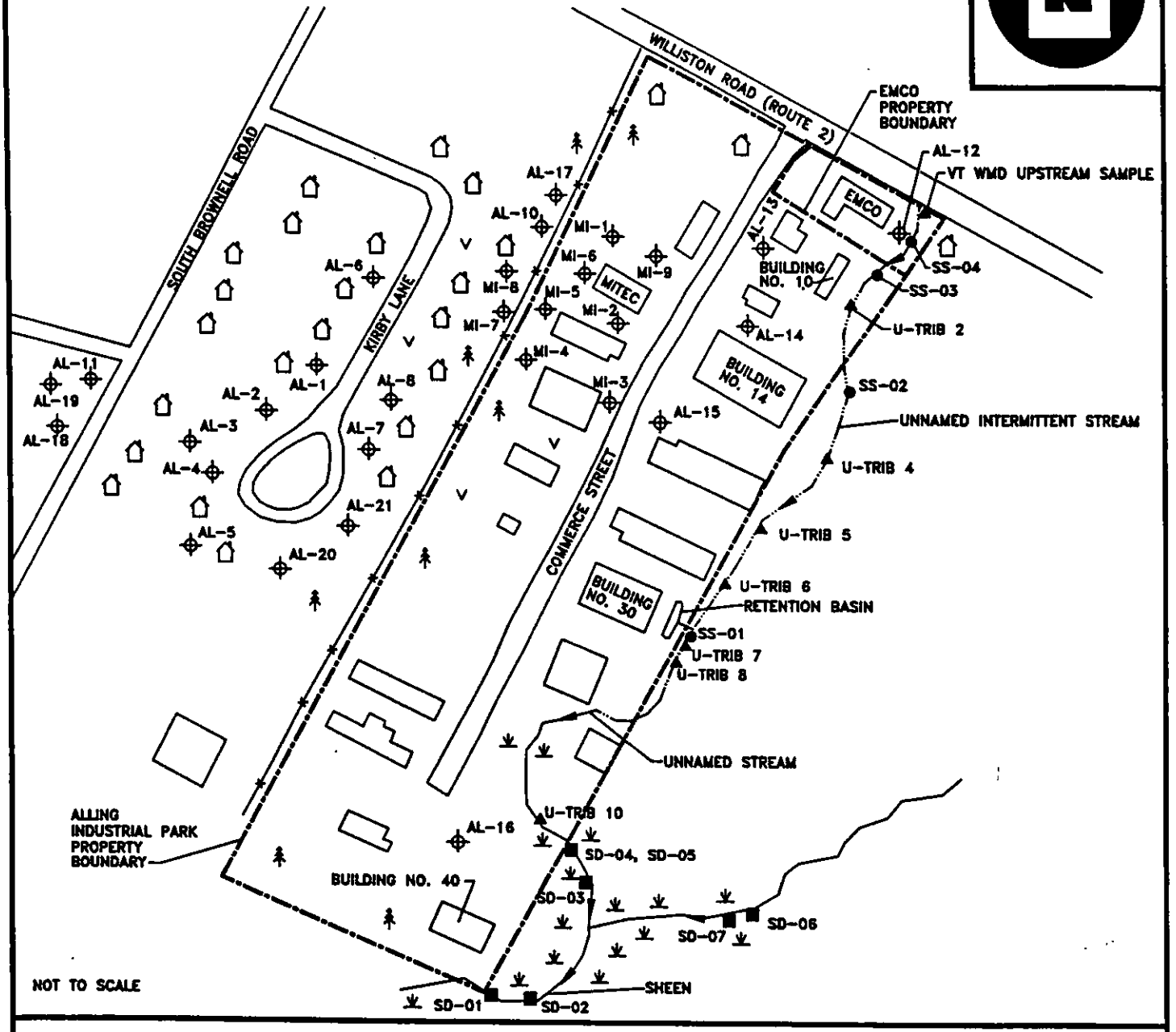
From 1974 to the present, EMCO has manufactured industrial filters and textiles by extruding monofilaments from polypropylene and nylon-6 pellets. From 1974 to 1988, an estimated 1-gallon per hour of cooling water used at EMCO to cool filaments was reportedly discharged to a disposal pit on the south side of the EMCO building. Previous occupants of the EMCO building are also known to have discharged waste to the disposal pit. The characteristics and quantities of the waste are not known. Other wastes generated at the EMCO property include greasy, oily rags, which are disposed at the Burlington Landfill; and silicon oil containers, which are hauled off site by private companies [3, pp. 6 - 8; 4, pp. 5 - 7; 5; 6, pp. 2, 3].

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

The EMCO property is located approximately 500 feet northeast of the Mitec property [Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) No. VTD098352545]. In 1982, during a routine compliance visit to Mitec, the Vermont Hazardous Material Management Section (VT HMMS) discovered an illegal discharge of hazardous waste into a lagoon on the Mitec property. In 1984, Mitec began a groundwater investigation under the direction of the Vermont Agency of Environmental Conservation (VT AEC). In 1984, Adams Engineering, Inc. (Adams Engineering), a contractor for Mitec, installed 20 groundwater monitoring wells in Alling Industrial Park, on and near the Mitec and EMCO properties. Analysis of groundwater beneath and in the vicinity of Mitec and EMCO indicated the presence of TCE, PCE, chromium, and cadmium [4, p. 8; 7, p. 4].

In 1986, under the direction of VT AEC, Adams Engineering installed 10 additional monitoring wells throughout Alling Industrial Park. Groundwater from well AL-12, located east of the EMCO building on the EMCO property, was collected and analyzed for volatile organic

ADAPTED FROM SITE INSPECTION FINAL REPORT, TRCC, JULY 1993; AND SITE INVESTIGATION, BINKERD ENVIRONMENTAL, OCTOBER 1996



LEGEND

- FENCE
- PROPERTY BOUNDARY
- PAVED ROAD
- MONITORING WELL (SCREENED IN OVERBURDEN)
- STREAM
- INTERMITTENT STREAM
- TREES/WOODED
- GRASSY AREA
- RESIDENCE
- WETLAND
- SURFACE WATER SAMPLE (VT WMD, 1996)
- START SOIL SAMPLE
- START SEDIMENT SAMPLE

SAMPLE LOCATION SKETCH

EMCO
ROUTE 2 (WILLISTON ROAD)
WILLISTON, VERMONT

Tetra Tech EM Inc.
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
98-05-0156	T. TRAN	12/22/97

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FIGURE 3

compounds (VOCs) in January and March 1986 [7, Table 3, Appendices B and C]. Results from this sampling are discussed in the Groundwater Pathway section of this report. From 1974 to 1988, an estimated 1 gallon per hour of cooling water used at EMCO to cool filaments was reportedly discharged to a disposal pit on the south side of the EMCO building. According to Mr. Frank Alling, representing Alling Realty Company, EMCO ceased the discharge of cooling water to the disposal pit in 1989. After 1989, cooling water from EMCO was discharged to a municipal sewer under a State permit. EMCO operates 24 hours per day, and an estimated 350 days per year [3, p. 8; 5, p. 2].

During a visit to the EMCO property in March 1987, the VT ANR observed a polyvinyl chloride (PVC) pipe terminating into an unnamed intermittent stream southeast of the EMCO building. In a 1993 reconnaissance, TRC Companies, Inc. (TRCC) also observed two pipes protruding horizontally from the bank of the unnamed intermittent stream [3, p. 10]. TRCC reported that the discharge pipes had been used by EMCO and previous tenants to discharge septic waste [3, pp. 9, 10]. In 1993, analytical results of four sediment samples collected by TRCC upstream and downstream of EMCO's two discharge pipes indicated elevated concentrations of mercury (SD-76-11, 410 μg/kg; SD-76-12, 130 μg/kg) in the unnamed intermittent stream.

In 1989, VT HMMS completed a Preliminary Assessment (PA) of the Alling Industrial Park property. VT HMMS summarized information regarding groundwater contaminated with TCE, PCE, chromium, and cadmium migrating from the Mitec property. VT HMMS also identified a previously undiscovered plume of groundwater contamination possibly originating from another source, and recommended that both the EMCO facility and the additional groundwater contamination be investigated [4, p. 9].

In 1993, TRCC prepared an SI report for Alling Industrial Park that focused on the EMCO property. As part of the SI, TRCC collected four unfiltered groundwater samples, four soil samples, four sediment samples, two rinsate blanks, and one trip blank in October 1992. Groundwater samples were collected from well MI-6, located in a former lagoon on the nearby Mitec property, to determine if groundwater near EMCO was contaminated from Mitec sources. Results from these groundwater, sediment, and soil sampling activities are discussed in the Groundwater, Surface Water, and Soil Exposure Pathway sections of this report.

In December 1994, Griffin International, Inc. performed a subsurface investigation of the property that abuts EMCO to the south; the property was occupied by Bove/Fagan Ice Distributor, Inc. (Bove). Results of this investigation are discussed in the Groundwater Pathway section of this report [4, p. 10].

In 1995, Mr. Frank Alling removed 1-inch of soil from an area of unspecified size in the unnamed intermittent stream; the soil was shipped off site by Pollution Solutions, Inc. Based on observations made during a Superfund Technical Assessment and Response Team (START) on-site reconnaissance conducted in July 1997, and conversations with Mr. Alling, START estimated that the volume of excavated soil was 2 cubic yards (yd^3). Mr. Alling also excavated approximately 25 yd^3 of soil from the former cooling water disposal pit on the EMCO property. The soil was

transported as unregulated waste to the Burlington Landfill [5, pp. 2, 3, 6].

From May to September 1996, the Vermont Department of Environmental Conservation Waste Management Division (VT DEC WMD) collected 13 surface water samples from the unnamed intermittent stream and the unnamed stream east and southeast of the EMCO property. Also, in May 1996, VT DEC WMD conducted a subsurface investigation of properties located in Alling Industrial Park. Using a Geoprobe®, a total of six borings were advanced on several properties. All samples in these sampling activities were analyzed for VOCs only. Results from these groundwater, surface water, and soil sampling activities are discussed in the Groundwater, Surface Water, and Soil Exposure Pathway sections of this report.

In 1997, Mr. Alling removed an approximately 2-foot deep layer of soil from a 200-foot long segment of the unnamed intermittent stream, starting from the culvert under Route 2 and continuing south. It is estimated that the width of the area of excavation is 2 feet. An undetermined portion of the excavated soil was stockpiled on the property [5, pp. 3, 4, 6]. The location of the remaining portion of excavated soil could not be determined from available information.

In July 1997, WESTON/START conducted an on-site reconnaissance of the EMCO property. START observed a shed located on the southeast side of the property containing seven 5-gallon containers. Many of the containers were partially full. Labeled containers were filled or partially filled with mineral distillates, cement sealants, and sheetrock compounds (lime). A pile of excavated soil was observed on the east side of the property, west of the unnamed stream. The soil was excavated from the unnamed stream by Mr. Alling in 1997. The pile contained approximately 1 yd^3 of soil. A 55-gallon drum of an oily product labeled Dacospin was located inside the EMCO building. There was a puddle of the product on top of the drum, but no release to the floor was evident [5, pp. 3 - 6].

On 17 December 1997, WESTON/START conducted source sampling in the unnamed intermittent stream east of the EMCO property and sediment sampling in the unnamed stream located southeast of the EMCO property [8]. The purpose of the sampling was to document a potential source area and to evaluate whether a release has occurred to the surface water pathway. Four source samples (SS-01 through SS-04) and seven sediment samples (SD-01 through SD-07) were collected and analyzed for VOCs, semivolatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and inorganic elements. Analytical results from these sampling activities are discussed in the Waste/Source Sampling and Surface Water Pathway sections of this report.

Table 1 presents identified structures or areas on the EMCO property that are documented or potential sources of contamination, the containment factors associated with each source, and the relative location of each source.

Table 1

Source Evaluation for EMCO

Source Area	Containment Factors	Spatial Location
Disposal Pit (Surface Impoundment)	None	South of the EMCO building
Excavated Soil 1997 (Pile)	Removed and disposed off-site	Near unnamed intermittent stream east of the EMCO building
Discharge Pipe Outfall (Other)	None	On the west side of unnamed intermittent stream, south of well AL-12
Unnamed Intermittent Stream (Contaminated Soil)	None	East of the EMCO building
Seven 5-Gallon Containers (Non-Drum Containers)	Inside of EMCO shed; sealed and in good condition	Inside shed on west side of EMCO property
55-Gallon Drum (Drum)	Inside of EMCO building	Inside EMCO building

[3; 4; 5]

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used, or stored on the EMCO property.

Table 2

Hazardous Waste Quantity for EMCO

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Cooling water	69,720 lbs	14 years	14 years	Disposal pit
Septic Waste	unknown	unknown	unknown	Unnamed intermittent stream

lbs = pounds

[3; 4; 5]

Other potential sources of contamination located within 1-radial mile of EMCO and listed in the CERCLIS or the Resource Conservation and Recovery Information System (RCRIS) are shown in Table 3.

Table 3

CERCLIS and RCRIS Facilities Located within 1-Radial Mile of EMCO

Facility Name	RCRIS or CERCLIS Number
Mitec	CERCLIS No. VTD098352545
Judge Development	CERCLIS No. VTD108680034
Rossignol Ski	CERCLIS No. VTD059018945
Carons East End Auto Body Inc.	RCRIS No. VTD001381060
Carpenters Motor Transport Inc.	RCRIS No. VTD5000000828
Champlain Valley Cleaners	RCRIS No. VTD982762361
Federal Express Corporation	RCRIS No. VTD988366977
Johnson Filaments Inc.	RCRIS No. VTD079947180
Haselton Kaulback Corporation	RCRIS No. VTD981884927
United Parcel Service	RCRIS No. VTD5000000729
GCA Corporation	RCRIS No. VTD982543704
Villanti & Sons Printers Inc.	RCRIS No. VTD058171869

No. = Number
RCRIS = Resource Conservation and Recovery Information System
CERCLIS = Comprehensive Environmental Response, Compensation, and Liability Information System

[27]

WASTE/SOURCE SAMPLING

In March 1987, VT ANR observed a 4-inch PVC pipe terminating into the unnamed intermittent stream on the southeast boundary of the EMCO property. In a 1993 visit to the EMCO property, TRCC observed this and one other pipe which protruded horizontally from the bank of the unnamed intermittent stream [3, p. 10]. TRCC reported that the discharge pipes were used by EMCO and previous tenants to discharge septic waste [3, pp. 9, 10]. In a 1993 SI which focused on the EMCO facility and Alling Industrial Park, TRCC collected four sediment samples from the unnamed stream, upstream and downstream of EMCO's two discharge pipes. Validated analytical results of the TRCC sediment sampling indicated elevated concentrations of mercury (SD-76-11 at 410 J μg/kg; SD-76-12 at 130 J μg/kg) in the unnamed intermittent stream at 6.8 and 2.2 times the reference concentrations [3, pp. 14 - 18]. According to TRCC, mercury was likely used by a previous tenant at the EMCO property [3, p. 20].

In the 1993 SI, TRCC also collected two soil samples at depths greater than 2 feet below ground

surface (bgs) from the location of the former EMCO disposal pit. Analytical results of soil samples collected at depths of 2 to 4 feet bgs from the former EMCO disposal pit contained elevated concentrations of cadmium, copper, lead, zinc, mercury and toluene [3, p. 19].

On 17 December 1997, START conducted source sampling in the unnamed intermittent stream located east of the EMCO property to document a potential source area [8]. Four source samples (SS-01 through SS-04) were collected in the unnamed intermittent stream and were analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganic elements. Trip blanks and equipment rinsate blanks were collected and Tier II data evaluation was performed [23; 24; 25]. Table 4 provides the locations and descriptions of source samples collected by START on 17 December 1997.

Table 4

Sample Summary: EMCO
Source Samples Collected by START on 17 December 1997

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth (bgs)	Sample Source
MATRIX: Soil					
SS-01	DAFJ77	1145	Grab	0 to 8 inches	Soil sample from unnamed intermittent stream; 84 feet at N 60° W of southeast corner of Building No. 30, near the retention basin, less than 1 foot from sample location U-Trib 7; red-rusty surface, gray clay with sand, white 1-inch gravel, and organic debris; FID reading (OVA) = 0 units above background.
SS-02	DAFJ78	1210	Grab	0 to 6 inches	Soil sample from unnamed intermittent stream; 104 feet at N 52° W of northeast corner of Building No. 14; light brown sand with trace silt; FID reading (OVA) = 80 units above background.
SS-03	DAFJ79	1225	Grab	0 to 6 inches	Soil sample from unnamed intermittent stream; 94 feet at N 37° W of northeast corner of Building No. 10; light brown sand with trace silt; FID reading (OVA) = 0 units above background.

Table 4 (Concluded)

Sample Summary: EMCO
Source Samples Collected by START on 17 December 1997

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth (bgs)	Sample Source
SS-04	DAFJ80	1245	Grab	0 to 6 inches	Soil sample from unnamed intermittent stream; 47 feet at N 40° W of monitoring well AL-12; light brown sand and gray clay; FID reading (OVA) = 0 units above background.

bgs = Below ground surface
NA = Not applicable
OVA = Organic vapor analyzer
FID = Flame ionization detector
hrs = Hours
N = North
W = West
No. = Number

[23; 24; 25]

Table 5 is a summary of organic compounds and inorganic elements detected through Contract Laboratory Program (CLP) analyses of START source samples. For each sample location, a compound or element is listed if it is detected at a value equal to or greater than three times the reference sample concentration (SS-03). Sample SS-03 was chosen as a reference because it contained the lowest concentrations of inorganic and organic substances. If the compound or element is not detected in the reference sample, the reference sample's sample quantitation limit (SQL) (for organic analyses) or sample detection limit (SDL) (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values.

Complete analytical results of START source samples including quantitation and detection limits are presented in Attachment A. Sample results quantified with a "J" on analytical tables are considered approximate because of limitations identified during CLP data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 5

Summary of Analytical Results
Source Sample Analysis for EMCO

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments
SS-01 (DAFJ77)	**VOCs**			
	1,2-Dichloroethene	130 J µg/kg	10 U µg/kg	13 × SQL
	INORGANICS			
	Calcium	10,800 mg/kg	1,540 mg/kg	7.0 × Ref
	Zinc	47 mg/kg	15 mg/kg	3.1 × Ref
SS-04 (DAFJ80)	**VOCs**			
	Acetone	23 J µg/kg	10 UJ µg/kg	2.3 × SQL
	INORGANICS			
	Barium	48.7 mg/kg	7.4 mg/kg	6.6 × Ref
	Copper	35 mg/kg	8.4 mg/kg	4.2 × Ref
	Cyanide	0.95 J mg/kg	0.62 UJ mg/kg	1.5 × SDL

Ref = Reference value
J = Quantitation is approximate due to limitations identified during the quality control review
U = Indicates the compound was analyzed for but not detected and reports the detection value
UJ = The reported quantitation limits are qualified estimated
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
VOCs = Volatile organic compounds
SQL = Sample Quantitation Limit
SDL = Sample Detection Limit

[23; 24; 25]

Analytical results of source samples collected in the unnamed intermittent stream (SS-01 through SS-04) on 17 December 1997 indicated maximum concentrations of 1,2-dichloroethene (1,2-DCE) [130 J micrograms per kilogram (µg/kg)], calcium [10,800 milligrams per kilogram (mg/kg)], barium (48.7 mg/kg), copper (35 mg/kg), and zinc (47 mg/kg) in samples SS-01 and SS-04 [23; 25]. There was a major impact on data usability due to poor performance evaluation (PE) sample action. Non-detected results for heptachlor, aldrin, bromodichloromethane, TCE, 2,4-dinitrotoluene, 2-chloronaphthalene, and hexachlorocyclopentadiene were rejected (R) due to PE sample actions [23].

Substances detected in source samples, including copper, zinc, and VOCs, are consistent with

previous sampling results and may be attributable to past industrial use and disposal practices on the EMCO property. However, based on historical use of the nearby Mitec property, as well as previous sampling results from Alling Industrial Park and Mitec, it is possible that 1,2-DCE migrated via groundwater from sources not associated with the EMCO property, possibly affecting source samples SS-01 and SS-04.

GROUNDWATER PATHWAY

Bedrock underlying the property is Cutting Dolomite, described as massive, gray weathered, nondescript dolomite limestone, massive gray dolomite. Depth to bedrock is greater than 50 feet bgs. Overburden predominately consists of pebbly marine sands, lake bottom deposits of silt, silt-clay, clay, delta sands, and till. Soil boring and well logs for investigations conducted near the property indicate the presence of silt and silty-clay at 30 to 50 feet bgs overlain by a surficial layer of medium to fine sands [4, pp. 11, 13]. Shallow groundwater is located at 5 feet bgs and flows southwest [3, p. 10]. However, according to VT ANR, it is possible that undissolved TCE flows to the east above the surface of bedrock [28]. It has been reported that normal annual precipitation for Chittenden County, Vermont, is 33.69 inches [6, p. 4].

All or parts of the following Vermont towns are located within 4-radial miles of the property: Burlington, Essex, Essex Junction, Shelburne, South Burlington, St. George, Williston, and Winooski. Towns located within 4-radial miles of the property obtain public drinking water from surface water intakes located in Lake Champlain [8]. The nearest drinking water well is a private residential well located approximately 1.1 miles southeast of the property [22]. The Williston Fire District Well is the only public drinking water supply well located within 4-radial miles of the EMCO property. The Williston Fire District Well is an overburden well located 2.5 miles southeast of the property; the well serves an estimated 288 people [22].

According to Frost Associates of Essex, Connecticut, an estimated 1,587 people obtain drinking water from private drinking water wells located within 4-radial miles of the property. Private groundwater supplies within 4-radial miles of the property were estimated using equal distribution calculations of U.S. Census CENTRACTS data that identify population, households, and private water wells for "Block Groups" which lie within or partially within individual radial distance rings of the property [9]. Estimated drinking water populations for the property are summarized in Table 6.

Table 6

Estimated Drinking Water Populations Served by Groundwater Sources Within 4-Radial Miles of EMCO

Radial Distance from EMCO (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
≥ 0.00 to 0.25	0	0	0
> 0.25 to 0.50	0	0	0
> 0.50 to 1.00	0	0	0
> 1.00 to 2.00	334	0	334
> 2.00 to 3.00	467	288	755
> 3.00 to 4.00	786	0	786
TOTAL	1,587	288	1,875

[9; 21; 22]

In 1986, Adams Engineering, a contractor for the Mitec property, installed 10 additional monitoring wells throughout the Alling Industrial Park property. Groundwater samples were analyzed for VOCs in January and March 1986. Analytical results of monitoring well AL-12, located on the EMCO property east of the EMCO building, indicated TCE at 17 micrograms per liter (μg/L) [7, Table 3, Appendices B and C]. Data validation and quality control procedures were not documented in available information.

In 1993, TRCC prepared an SI report for Alling Industrial Park that focused on the EMCO facility. As part of the SI, TRCC collected four unfiltered groundwater samples from well MI-6, located in a former lagoon on the nearby Mitec property, to determine if groundwater near EMCO was contaminated from Mitec sources. Validated analytical results of the TRCC sampling indicated elevated concentrations of PCE (GW-76-05 at 130 μg/L; GW-76-06 at 140 μg/L) in groundwater collected from below the Mitec lagoon [3, pp. 14 - 18].

In December 1994, Griffin International, Inc. performed a subsurface investigation of the Bove property, located south of EMCO. In response to a report of a petroleum release from an underground storage tank (UST), four monitoring wells were installed on the Bove property near the UST. Groundwater collected from these wells contained elevated concentrations of benzene, ethylbenzene, and xylenes [4, p. 10].

In May 1996, VT WMD conducted a subsurface investigation of properties located in the Alling

Industrial Park. Using a Geoprobe, a total of six borings were advanced on several properties. Well GP-5 was installed south of the EMCO building on the EMCO property. Groundwater was collected from well GP-5 at 8 feet bgs and analyzed for VOCs. Analytical results of groundwater collected from well GP-5 indicated TCE at 3 μg/L [4, pp. 27 - 30]. Data validation and quality control procedures were not documented in available information.

Previous investigations of EMCO, the Alling Industrial Park area, and the nearby Mitec property have indicated that groundwater beneath the EMCO property has been impacted by a release of TCE, PCE, cadmium, and chromium. To date, no documentation exists indicating that TCE and PCE were used or disposed on the EMCO property. According to VT ANR in 1995, undissolved TCE flows from the Mitec property to the east at 30 to 40 feet bgs, possibly impacting groundwater beneath the EMCO property [29, p. 2]. Previous sampling events indicated that eight private residential wells have been impacted by a release from the Alling Industrial Park area. In 1985, VT DEP sealed existing water supply wells at six affected residences and subsequently connected eight residences to the municipal water supply [29]. To date, no other actions have been taken to address the release to groundwater.

SURFACE WATER PATHWAY

Surface water runoff from the EMCO property migrates overland to the southeast and enters an unnamed intermittent stream located on the east side of the property. The most upstream probable point of entry (PPE) for the property is located roughly 1,500 feet south of the EMCO property, where the unnamed intermittent stream becomes an unnamed stream. The unnamed stream flows to the southwest at an estimated rate of 1.8 cubic feet per second (cfs) for an estimated 1.25 miles, where the unnamed stream joins Muddy Brook [10]. Muddy Brook flows to the north at 36.5 cfs and joins Winooski River approximately 2.5 miles downstream of the PPE [2; 3, p. 13; 11]. The flow rate of Winooski River is estimated to be 2,204 cfs [12]. The 15-mile downstream pathway terminates in Winooski River, approximately 3 miles upstream of Lake Champlain [3, p. 13; 13]. Information regarding surface water bodies located along the 15-mile downstream pathway is provided in Table 7.

Table 7

Surface Water Bodies Along the 15-Mile Downstream Pathway from EMCO

Surface Water Body	Descriptor[a]	Length of Reach (miles)	Flow Characteristics (cfs)[b]	Length of Wetland Frontage (miles)
Unnamed Stream	Minimal stream	1.25	1.8	2.5
Muddy Brook	Small to moderate stream	2.5	36.5	4.7
Winooski River	Large stream to river	11.25	2,204	2.9

[a] Minimal stream < 10 cfs. Small to moderate stream 10-100 cfs. Moderate to large stream > 100-1,000 cfs. Large stream to river > 1,000-10,000 cfs. Large river > 10,000-100,000 cfs. Very large river > 100,000 cfs. Coastal tidal waters (flow not applicable). Shallow ocean zone or Great Lake (flow not applicable). Moderate depth ocean zone or Great Lake (flow not applicable). Deep ocean zone or Great Lake (flow not applicable). Three-mile mixing zone in quiet flowing river 10 cfs or greater.

[b] Cubic feet per second.

[2; 3, p. 13; 10 - 17]

No surface water drinking water intakes are located along the 15-mile downstream pathway [3, p. 12]. It is assumed that all water bodies along the 15-mile downstream pathway are fisheries. Species found in Muddy Brook include minnows and suckers [6, p. 4]. Winooski River is also known to be used for recreational fishing [3, p. 13]. According to the U.S. Fish and Wildlife Service, 10.1 miles of wetland frontage are located along the 15-mile downstream pathway [14 - 17]. According to the VT ANR Nongame and Natural Heritage Program, habitats used by two State-threatened species are located along the 15-mile downstream pathway [18]. Sensitive environments along the surface water pathway are shown in Table 8.

Table 8

Sensitive Environments Along the 15-Mile Downstream Pathway from EMCO

Sensitive Environment Name	Sensitive Environment Type	Surface Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs)[a]
Unnamed stream	State-designated area for protection and maintenance of aquatic life under the Clean Water Act	Unnamed stream	0 to 1.25	1.8
Unnamed stream	Wetlands, 2.5 frontage miles	Unnamed stream	0 to 1.25	1.8
Unnamed stream	Habitat known to be used by a State-designated threatened species (two occurrences)	Unnamed stream	1.25 to 2	1.8
Muddy Brook	Wetlands, 4.7 frontage miles	Muddy Brook	2 to 2.5	36.5
Winooski River	Wetlands, 2.9 frontage miles	Winooski River	2.5 to 15	2,204

[a] Cubic feet per second

[3, p. 13; 10; 14 - 18]

In March 1987 and 1993, VT ANR and TRCC observed two PVC pipes terminating into the unnamed intermittent stream southeast of the EMCO building. TRCC reported that the discharge pipes were used by EMCO and previous tenants to discharge septic waste [3, pp. 9, 10]. Analytical results of sediment samples collected at the discharge pipe outfall are discussed in the Waste/Source Sampling section of this report.

From May to September 1996, VT DEC WMD collected 13 surface water samples from the unnamed stream and the unnamed intermittent stream located southeast and east of the EMCO property. The samples were analyzed for VOCs; one sample was analyzed using EPA method 8020 for aromatic hydrocarbons. No VOCs were detected in samples collected upstream of the EMCO building, near the culvert under Route 2. Analytical results of sample U-Trib 2, located the furthest distance upstream of the EMCO building, and of the first five sample stations located downstream of the EMCO property, did not indicate the presence of any VOCs [4, p. 23]. The

nearest sample station where VOCs were detected was located 1,000 feet south of EMCO; TCE and 1,2-DCE were detected at maximum concentrations of 1,200 μg/L (Retention Basin Discharge) and 450 μg/L (U-Trib 8), respectively [4, pp. 22 - 24, 61]. Data validation and quality control procedures were not documented in available information. According to VT WMD, based on the distance of the samples from EMCO and the industrial use of nearby properties, it is possible that this VOC contamination originated from sources other than EMCO.

On 17 December 1997, START conducted sediment sampling (SD-01 through SD-07) in the unnamed stream located south of the EMCO property to evaluate whether a release has occurred to surface water [8]. Five sediment samples (SD-01 through SD-05) were collected in the unnamed stream, and two reference samples (SD-06 and SD-07) were collected from a feeder stream that flows west into the unnamed stream. Samples SD-01 through SD-06 were analyzed for VOCs, SVOCs, pesticides, PCBs, and inorganic elements. Sample SD-07 was analyzed for inorganic elements only. Trip blanks, equipment rinsate blanks, and field duplicates were collected and Tier II data evaluation was performed [23; 24; 25]. Table 9 provides the locations and descriptions of sediment samples collected by START on 17 December 1997.

Table 9

Sample Summary: EMCO
Sediment Samples Collected by START on 17 December 1997

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth	Sample Source
MATRIX: Sediment					
SD-01	DAFJ70	0820	Grab	0 to 4 inches	Sediment sample from wetlands in unnamed stream, 210 feet at N 8° W of southwest corner of Building No. 40; brownish gray silty clay with trace organic matter; FID reading (OVA) = 0 units above background.
SD-02	DAFJ71	0835	Grab	0 to 8 inches	Sediment sample from wetlands in unnamed stream, 50 feet at N 61° W and upstream of SD-01; gray silty clay with trace organic matter; FID reading (OVA) = 3 units above background.
SD-03	DAFJ72	1050	Grab	6 to 12 inches	Sediment sample from wetlands in unnamed stream, 195 feet at N 101° W of northeast corner of Building No. 40; dark brown silt with trace sand and trace organic debris; FID reading (OVA) = 0 units above background.

Table 9 (Continued)

Sample Summary: EMCO
Sediment Samples Collected by START on 17 December 1997

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth	Sample Source
SD-04	DAFJ73	1100	Grab	4 to 10 inches	Sediment sample from the PPE in wetlands in unnamed stream, 64 feet at N 177° W and upstream of SD-03; gray sandy clay with trace gravel; FID reading (OVA) = 0 units above background.
SD-05	DAFJ74	1100	Grab	4 to 10 inches	Duplicate of SD-04 collected for quality control (MS/MSD).
SD-06	DAFJ75	0935	Grab	0 to 6 inches	Sediment sample from wetlands east of unnamed stream, taken as a reference, 430 feet at N 79° W of northeast corner of Building No. 40; dark brown to black sandy silt with trace organic debris; FID reading (OVA) = 0 units above background.
SD-07	DAFJ76	0940	Grab	0 to 6 inches	Sediment sample from wetlands east of unnamed stream, taken as a reference, 410 feet at N 77° W of northeast corner of Building No. 40; dark brown to black sandy silt with trace organic matter; FID reading OVA) = 0 units above background.

Table 9 (Concluded)

Sample Summary: EMCO
Sediment Samples Collected by START on 17 December 1997

Sample Location No.	Traffic Report No.	Time (hrs)	Remarks	Sample Depth	Sample Source
MATRIX: Aqueous					
RB-01	DAFJ81	1430	Grab	NA	Sediment sampling equipment rinsate blank sample, collected for quality control.
TB-01	DAFJ82	0700	Grab	NA	Trip blank collected for quality control.

NA = Not applicable
PCB = Polychlorinated biphenyls
MS/MSD = Matrix Spike/ Matrix Spike Duplicate
VOCs = Volatile organic compounds
SVOCs = Semivolatile organic compounds
PPE = Probable point of entry
OVA = Organic vapor analyzer
FID = Flame ionization detector
bgs = Below ground surface
hrs = Hours
N = North
W = West
No. = Number

[23; 24; 25]

Table 10 is a summary of organic compounds and inorganic elements detected through CLP analyses of START sediment samples. For each sample location, a compound or element is listed if it is detected at a value equal to or greater than three times the reference sample concentrations (SD-06 and SD-07). However, if the compound or element is not detected in the reference sample, the reference sample's SQL or SDL is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values.

Complete analytical results from START sediment samples including quantitation and detection limits are presented in Attachment A. Sample results quantified with a "J" on analytical tables are considered approximate because of limitations identified during CLP data validation. In addition, organic sample results reported at concentrations below quantitation limits and confirmed by mass spectrometry are also qualified by a "J" and considered approximate.

Table 10

Summary of Analytical Results
Sediment Sample Analysis for EMCO

Sample Location	Compound/ Element	Sample Concentration	Reference Concentration	Comments
SD-02 (DAFJ71)	**VOCs**			
	Acetone	52 J µg/kg	15 UJ µg/kg	3.5 × SQL
	INORGANICS			
	Arsenic	4.4 mg/kg	3.2 U mg/kg	1.4 × SDL
	Cadmium	0.16 mg/kg	0.16 U mg/kg	1 × SDL
SD-03 (DAFJ72)	**VOCs**			
	Acetone	120 J µg/kg	15 UJ µg/kg	8 × SQL
	INORGANICS			
	Arsenic	7.9 mg/kg	3.2 U mg/kg	2.5 × SDL
	Cadmium	0.60 mg/kg	0.16 U mg/kg	3.8 × SDL
SD-04 (DAFJ73)	**INORGANICS**			
	Arsenic	3.6 mg/kg	3.2 U mg/kg	1.1 × SDL
SD-05 (DAFJ74)	**SVOCs**			
	Bis(2-ethylhexyl)phthalate	560 J µg/kg	480 U µg/kg	1.2 × SQL
	INORGANICS			
	Arsenic	3.6 mg/kg	3.2 U mg/kg	1.1 × SDL

J = Quantitation is approximate due to limitations identified during the quality control review
U = Indicates the compound was analyzed for but not detected and reports the detection value
UJ = The reported quantitation limits are qualified estimated
mg/kg = Milligrams per kilogram
µg/kg = Micrograms per kilogram
VOCs = Volatile organic compounds
SQL = Sample Quantitation Limit
SDL = Sample Detection Limit

[23; 24; 25]

Analytical results of sediment samples (SD-01 through SD-07) collected in the unnamed stream on 17 December 1997 indicated elevated concentrations of organic and inorganic substances that were equal to or greater than the SQL and the SDL, respectively. Maximum concentrations of arsenic (7.9 mg/kg), acetone (120 J µg/kg), and cadmium (0.60 mg/kg) were detected in sample SD-03, and elevated concentrations of bis(2-ethylhexyl)phthalate (560 J µg/kg) and arsenic (3.6 mg/kg) were detected in sample SD-05 [23; 25]. Based on available file information, there is no

documentation that bis(2-ethylhexyl)phthalate was used at the property. There was a major impact on data usability due to poor PE sample performance. Non-detected results for bromodichloromethane, TCE, heptachlor, aldrin, 2,4-dinitrotoluene, 2-chloronaphthalene, and hexachlorocyclopentadiene were rejected (R) due to PE sample actions [23]: Acetone is a common laboratory solvent and its use may have impacted the results of sediment sampling. According to TRCC, metals were used by previous tenants of the EMCO building [3, p. 20].

START performed sediment sampling as part of the EMCO SIP. Based on START analytical results, a release of acetone, arsenic, cadmium, and bis(2-ethylhexyl)phthalate to the unnamed stream has been noted. In 1993, soil samples collected by TRCC from the former EMCO disposal pit were found to contain elevated concentrations of cadmium. Based on sediment sampling conducted by TRCC in 1993, a release of mercury to the surface water pathway has been noted. As a result of the releases, a wetlands, Clean Water Act-protected water body, and a fishery have been impacted. No other sensitive environments are known or suspected to have been impacted. In 1995, 2 yd^3 of soil were removed from the unnamed intermittent stream and shipped off site by a licensed waste hauler. In 1997, Mr. Alling excavated additional soil from the unnamed intermittent stream; however, this soil was not hauled off site. No other actions have been taken to address the release to the surface water pathway.

SOIL EXPOSURE PATHWAY

The nearest residence is located 150 feet east of the EMCO property on the south side of Williston Road. There are five full-time workers on the property. The nearest school or day-care facility is the Allen Brook Elementary School, located 2 miles east of the property [5, p. 6]. No terrestrial sensitive environments are located partially or wholly on the property [18]. According to Frost Associates, an estimated 1,376 people reside within 1-radial mile of the EMCO property [9]. According to the U.S. Census Bureau, the average household occupancy in Chittenden County is 2.5 people [26]. Access to the property is unrestricted [5, p. 6].

In 1993, TRCC collected two soil samples from the former EMCO disposal pit and two surficial soil samples from the bed of the unnamed intermittent stream located east of the EMCO building and northeast and southeast of the property. Equipment rinsate blanks and field duplicates were collected. Validated analytical results of soil samples collected from the unnamed stream bed at a depth of less than 6 inches bgs indicated elevated concentrations of copper (SS-76-14; 46.9 mg/kg) and toluene (SS-76-15; 56 μg/kg) [3, pp. 14 - 21]. According to TRCC, toluene is a possible component of the thinner used by EMCO and metals were used by previous tenants of the EMCO building [3, p. 20].

In 1995, Mr. Alling removed approximately 2 yd^3 of soil from the unnamed intermittent stream; the soil was shipped off site by Pollution Solutions, Inc. Mr. Alling also excavated approximately 25 yd^3 of soil from the former cooling water disposal pit on the EMCO property. The soil was transported as unregulated waste disposed at the Burlington Landfill [5, pp. 2, 3, 6].

In May 1996, VT DEC WMD conducted a subsurface investigation of properties located in Alling Industrial Park. Using a Geoprobe, a total of six borings were advanced on several properties. Soil was sampled at 2 foot intervals to a total depth of 24 feet bgs and samples were analyzed for VOCs only. No VOCs were detected in soil samples [4, pp. 27 - 30]. Data validation and quality control procedures were not documented in available information.

In 1997, Mr. Alling removed an approximately 2-foot deep layer of soil from a 200-foot long segment of the unnamed intermittent stream, starting from the culvert under Route 2 and continuing south. It is estimated that the width of the area of excavation was 2 feet. An undetermined portion of the excavated soil was stockpiled on the property [5, pp. 3, 4, 6]. The location of the remaining portion of excavated soil could not be determined from available information.

On 17 December 1997, START conducted surficial soil sampling (SS-01 through SS-04) in the unnamed intermittent stream at depths of less than 2 feet bgs to document a potential source area [8]. Complete analytical results of START surficial soil sampling activities are discussed in the Waste/Source Sampling section of this report. Based on analytical results from previous surficial soil sampling events, a release of hazardous substances to surficial soils has been documented. Based on the distance to the nearest residence (approximately 150 feet) and lack of public use of the property, no impacts to residential populations are known or suspected and potential impacts are limited.

AIR PATHWAY

The nearest residence is located 150 feet east of the property on the south side of Williston Road. There are five full-time workers on the property. Access to the property is unrestricted [5, p. 6]. The nearest school or day-care facility is the Allen Brook School, located 2 miles east of the property [5, p. 6]. Air sampling has not been performed on the property. According to Frost Associates, not including on-site workers, an estimated 31,274 people reside within 4-radial miles of the property [9] The estimated population within 4-radial miles of the EMCO property is summarized in Table 11.

Table 11

Estimated Popoulation Within 4-Radial Miles of EMCO

Radial Distance from EMCO (miles)	Estimated Population
On a source	5
≥ 0.00 to 0.25	102
> 0.25 to 0.50	306

Table 11 (Concluded)

Estimated Popoulation Within 4-Radial Miles of EMCO

Radial Distance from EMCO (miles)	Estimated Population
> 0.50 to 1.00	968
> 1.00 to 2.00	3,151
> 2.00 to 3.00	9,770
> 3.00 to 4.00	16,977
TOTAL	31,279

[5, p. 6; 9]

Sensitive environment targets for the air pathway include wetlands located within 4-radial miles from the property [14; 15; 16; 17]. According to the VT ANR Nongame and Natural Heritage Program, habitats used by 15 State-designated threatened species, one State-designated endangered species, and one Federally-designated threatened species are located within 4-radial miles of the property [18]. Sensitive environments within 4-radial miles of sources are shown in Table 12.

Table 12

Sensitive Environments Located Within 4-Radial Miles of EMCO

Radial Distance from EMCO (miles)	Sensitive Environment/Species (status)
≥ 0.00 to 0.25	Wetlands (5 acres)
	State-designated area for protection and maintenance of aquatic life under the Clean Water Act
> 0.25 to 0.50	Wetlands (1 acres)
> 0.50 to 1.00	Wetlands (35 acres)
> 1.00 to 2.00	Wetlands (120 acres)
> 2.00 to 3.00	Wetlands (195 acres)
	Habitat known to be used by a State-designated threatened species (3 occurrences)

Table 12 (Concluded)

Sensitive Environments Located Within 4-Radial Miles of EMCO

Radial Distance from EMCO (miles)	Sensitive Environment/Species (status)
> 3.00 to 4.00	Wetlands (330 acres)
	Habitat known to be used by a State-designated threatened species (12 occurrences)
	Habitat known to be used by a State-designated endangered species (1 occurrence)
	Habitat known to be used by a Federally-designated threatened species (1 occurrence)

[14 - 18]

No laboratory qualitative ambient air samples are known to have been collected from the EMCO property. Based on the available data, no release of hazardous substances to the ambient air from on-site sources is known or suspected to have occurred and no impacts to nearby residential populations or sensitive environments are known or suspected.

SUMMARY

The EMCO property is located on Route 2 (Williston Road), in Williston, Chittenden County, Vermont, latitude 44° 27′ 11.5″ north and longitude 73° 07′ 09.5″ west. The latitude and longitude were calculated from the center of the property. The 2.8-acre property, which includes a 12,000-square foot (ft^2) building, is recorded by the Williston Tax Assessor's office as Lot 19-2. From 1947 to the present, the property has been used for light industrial manufacturing. The property is located in Alling Industrial Park and is bound by Route 2 to the north, Commerce Street residential property to the west, commercial property to the south, and light industrial property to the east. From 1974 to the present, EMCO manufactured industrial filters and textiles. From 1974 to 1988, an estimated 1 gallon per hour of cooling water used to cool the filaments was reportedly discharged to a disposal pit located south of the EMCO building.

In 1945, Mr. George D. Alling purchased the undeveloped Alling Industrial Park property and developed the land into an industrial park in 1946. From 1947 to 1958, Alling Enterprises manufactured cup hooks and caster cups at what is now the EMCO facility. From 1958 to 1961, the Shelbourne Corporation manufactured athletic goods at the facility. Bruce Chemical Distributors occupied the facility from 1961 to 1964; from 1964 to 1966, the facility was occupied by L.C.L. Manufacturing, a developer of gas carburetors. From 1966 to 1974 the facility was occupied by the Alling Realty Corporation, and in 1975, the ownership of the EMCO property was transferred to Ms. Beatrice Alling. The EMCO property is currently owned by the Alling Realty Corporation.

In 1987 and 1993, the Vermont Agency of Natural Resources (VT ANR) and TRC Companies, Inc. (TRCC) observed two discharge pipes terminating into an unnamed intermittent stream east of the EMCO property. According to TRCC, the pipes were used by EMCO and previous tenants to discharge septic waste. Analytical results of sediment samples collected at the discharge pipe outfall indicated elevated concentrations of mercury.

All or parts of the following Vermont towns are located within 4-radial miles of the property: Burlington, Essex, Essex Junction, Shelburne, South Burlington, St. George, Williston, and Winooski. The nearest drinking water well is a private residential well located approximately 1.1 miles southeast of the property. The Williston Fire District Well, an overburden well located 2.5 miles southeast of the property, serves an estimated 288 people and is the only public drinking water supply well located within 4-radial miles of the property.

In 1986, Mitec contractor Adams Engineering installed several monitoring wells throughout the Alling Industrial Park property, including well AL-12, located on the EMCO property east of the EMCO building. Groundwater from the well was collected and analyzed for VOCs in January and March 1986. In January 1986, groundwater collected from well AL-12 was found to contain 17 micrograms per liter (μg/L) of trichloroethene (TCE).

No surface water drinking water intakes are located along the 15-mile downstream pathway. The most upstream probable point of entry (PPE) for the property is located roughly 1,500 feet south

of the EMCO property, in the unnamed stream. The unnamed stream flows southwest into Muddy Brook, then north for approximately 2.5 miles where it enters the Winooski River; both waterbodies are fisheries, and Winooski River is used chiefly for recreational fishing and boating. According to the U.S. Fish and Wildlife Service, 10.1 miles of wetland frontage are located along the 15-mile downstream pathway. According to the VT ANR Nongame and Natural Heritage Program, two habitats used by State-designated threatened species are located along the 15-mile downstream pathway.

In 1996, the Vermont Department of Environmental Conservation Waste Management Division (VT DEC WMD) collected 13 surface water samples from the unnamed intermittent stream and the unnamed stream east and southeast of the EMCO property. Elevated concentrations of TCE and 1,2-dichloroethene (1,2-DCE) were detected at maximum concentrations of 1,200 μg/L and 450 μg/L, respectively.

On 17 December 1997, the Superfund Technical Assessment and Response Team (START) collected seven sediment samples (SD-01 to SD-07) in the unnamed stream located east of the EMCO property. Analytical results indicated elevated concentrations of arsenic, acetone, cadmium, and bis(2-ethylhexyl)phthalate in sediment samples SD-03 and SD-05.

The nearest residence is located 150 feet east of the EMCO property on the south side of Williston Road. There are five full-time workers on the property. The nearest school or day-care facility is the Allen Brook Elementary School, located 2 miles east of the property. No terrestrial sensitive environments are located partially or wholly on the property. According to Frost Associates, an estimated 1,376 people reside within 1-radial mile of the property.

In 1993, TRCC collected soil samples from the bed of the unnamed intermittent stream. Validated analytical results indicated elevated concentrations of mercury and toluene. In 1995, approximately 2 cubic yards (yd^3) of soil were removed from the unnamed intermittent stream and shipped off site by Pollution Solutions, Inc.

In December 1997, START conducted source sampling (SS-01 through SS-04) in the unnamed intermittent stream on the EMCO property. Analytical results indicated elevated concentrations of organic substances and metals that exceeded three times the reference sample (SS-03) concentration. Elevated concentrations of 1,2-DCE, calcium, barium, copper and zinc were detected in samples SS-01 and SS-04.

Sensitive environment targets for the air pathway include wetlands located within 4-radial miles of the property. According to the VT ANR Nongame and Natural Heritage Program, habitats used by 16 State-designated threatened or endangered species, and one Federally-designated threatened species are located within 4-radial miles of the property. According to Frost Associates, the estimated population within 4-radial miles of the property is 31,274. Ambient air samples have not been collected at the EMCO property.

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ATTACHMENT A

EMCO

SEDIMENT AND SOURCE SAMPLE ANALYTICAL RESULTS

START

Samples collected 17 December 1997