

VOLUNTARY CLEANUP PROGRAM INVESTIGATION WORK PLAN

**ROCO, LTD SITE
1746 DALE ROAD
CHEEKTOWAGA, NEW YORK**

Prepared For:

**Jaeckle, Fleischmann & Mugel, LLP
Attorneys at Law
Fleet Bank Building
Twelve Fountain Plaza
Buffalo, New York**

September 20, 2001

REVISED OCTOBER 15, 2001

Prepared By:

**LEADER PROFESSIONAL SERVICES, INC.
2300 Wehrle Drive
Williamsville, New York 14221
716-565-0963**

147.007

Leader Professional Services, Inc.
P.O. Box 296
Clarence, New York 14031

(716) 565-0963
(716) 565-0964 (Fax)
www.Leaderlink.com

October 15, 2001



Mr. David Locey
NYSDEC
270 Michigan Ave.
Buffalo, New York 14203-2999

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NYSDEC - REG. 9
✓ REL FOIL UNREL

RE: Final Investigation Work Plan
RoCo, Ltd. Site, 1746 Dale Road, Cheektowaga, New York

Dear Mr. Locey:

Pursuant to your October 10, 2001 letter, Leader Professional Services, Inc. ("Leader") is pleased to provide you with a copy of the revised Section 2.0 of the Final Investigation Work Plan for the above-referenced site. Additionally attached are tables 4-2, 8-1 and 8-2 of Appendix A: Quality Assurance Quality Control Plan. We trust that these changes will provide for NYSDEC approval of the Work Plan and we understand that NYSDEC is disseminating the project Fact Sheet this week. Thus, we have tentatively scheduled the Geoprobe contractor to begin work on October 22, 2001. If any questions arise, please do not hesitate to contact us at (716) 565-0963.

Very truly yours,

LEADER PROFESSIONAL SERVICES, INC.

Jeffrey A. Wittlinger, P.E., DEE
Principal

c.c.: Michael R. Shannon, Esq.
Dennis Harkawik, Esq.
Cameron O'Connor
Andrew English
G. Anders Carlson
James Charles, Esq.

att.

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1.0 SITE DESCRIPTION

Leader Professional Services, Inc. (“Leader”) was retained by Jaeckle, Fleischmann & Mugel, LLP to prepare an Investigation Work Plan, under Voluntary Cleanup Program (“VCP”) guidelines, for the property at 1746 Dale Road, Cheektowaga, Erie County, New York (hereafter referred to as “the Site”). Figure 1 includes the Site’s location.

The format and content of this Investigation Work Plan conforms to guidance provided by the New York State Department of Environmental Conservation (“NYSDEC”) entitled “Conceptual Contents of the Investigation Work Plan for the Brownfields Program Sites - Instructions for the Preparation of the Investigation Work Plan”.

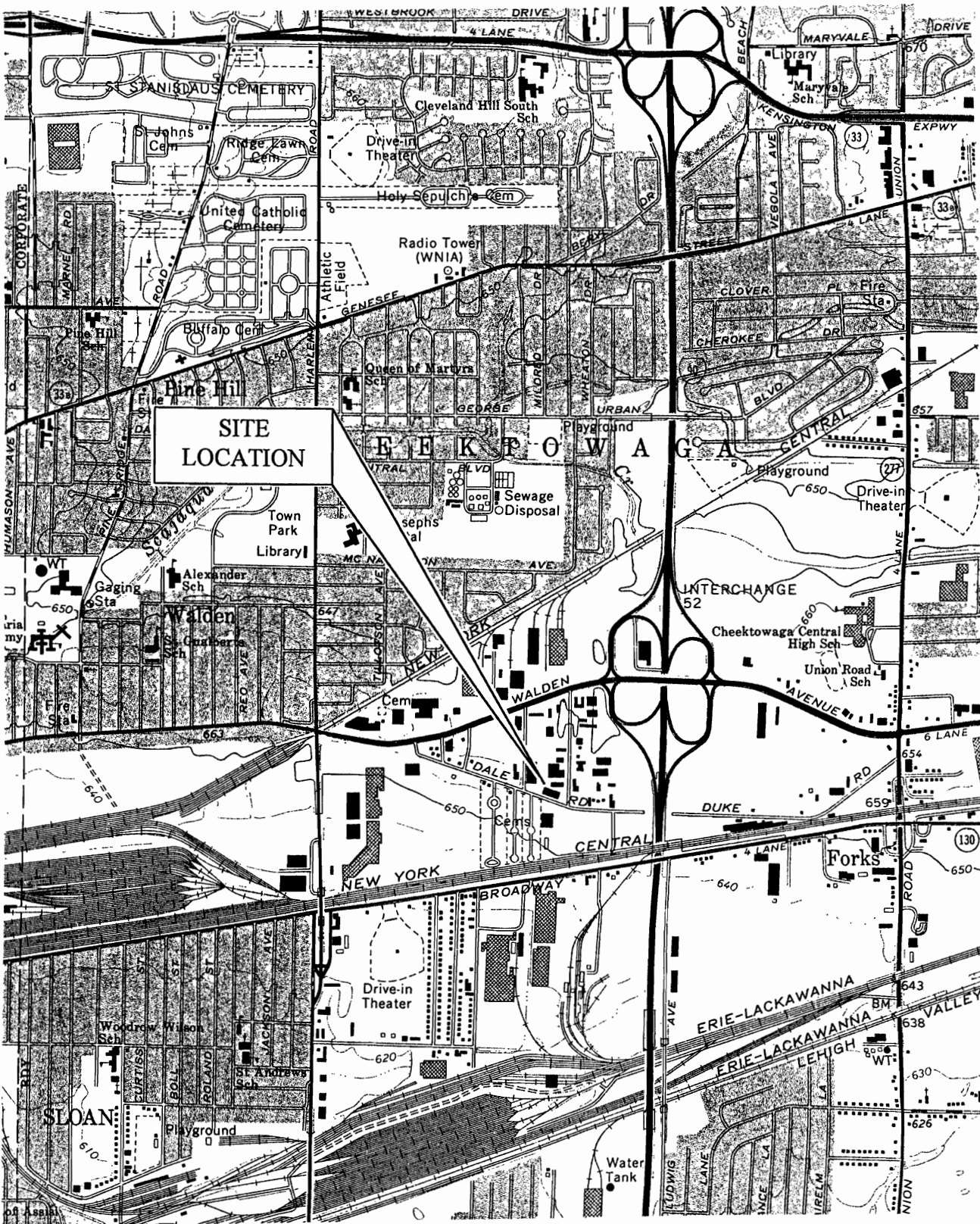
1.1 LOCATION AND LEGAL DESCRIPTION OF THE SITE

The Site is located on the northwest corner of Dale Road and Anderson Road and is part of lot No. 24, Township 11, Range 7 (Section, Lot and Block No. 102.03-2-30) and has the following coordinates: Latitude (North) 42.904900 - 42° 54’ 17.6” and Longitude (West) 78.771851 - 78° 46’ 18.7”.

The Site is owned by RoCo, Ltd. (formerly known as the Rotary Company, Inc.) and is currently comprised of one single-story building structure of approximately 33,000 square-feet. The Rotary Company, Inc. sold certain assets including its name to the Husvar Group in 1994. The Site then changed its name to RoCo, Ltd. The Husvar Group leased the Site from RoCo, Ltd. in 1994 to approximately 1998. In 1999 the Site was leased to Diversified Manufacturing, Inc. The Site has recently been leased to Upstate Farms Cooperative, Inc. for warehouse space.

1.2 SITE AND VICINITY CHARACTERISTICS

The Site is zoned for commercial and light manufacturing. The closest body of water to the Site is Cayuga Creek, which is located approximately 1.5 miles southeast of the Site.



Source: 1965 USGS NE BUFFALO NEW YORK QUADRANGLE

Title: **SITE LOCATION MAP**
1746 Dale Road
Cheektowaga, New York

Prepared For: **Jaeckle, Fleischmann & Mugel, LLP**



Leader Professional
Services, Inc.
2300 Wehrle Drive
Williamsville, New York
14221

Project: **KCC**
Date: **4/2001**
Scale: **1:24,000**

Drawn: **KCC**
Checked: **JAW**
File Name: **147.007**

Figure:

1

The properties in the general vicinity of the Site are light industrial companies. Davis Electrical Supply Company (SBL No.102.03-2-29) is adjacent to the Site to the north and operates as a commercial electrical lighting equipment distributor. Prior to 1949, Kolk Manufacturing operated at this location as a cutlery manufacturer and metal fabricator. Anderson Road forms the eastern boundary of the Site and Dale Road forms the southern boundary. Upstate Farms Cooperative, Inc. (SBL No.102.03-2-20) is the adjacent property to the west. Figure 2 shows the Tax Map for the Site and the neighboring properties.

1.3 Description Of The Site Structures

The Site is irregular in shape with one irregularly shaped building structure. Refer to Figure 3 for a Site Plan that depicts the Site's layout and building locations. The building was built in approximately 1946 and is comprised of cement block, and slab-on-grade construction. The Site has a total street frontage on Dale Road of approximately 365 feet and a total street frontage on Anderson Road of approximately 220 feet. The Upstate Farms Cooperative, Inc. property abuts the Site to the west with Davis Electric Supply Company property to the north. The building encompasses the majority of the Site with an asphalt parking area located in the eastern portion of the Site.

1.4 Site Geology And Subsurface Characteristics

The Site is located on the Lake Erie Plain, which is approximately six to twelve miles wide and extends from the Onondaga Escarpment (northern border) to northern Chautauqua County. This plain was covered by glacial lakes in recent geologic time and is relatively flat near the Site.

The predominate soil in the vicinity of the Site is a lacustrine silty-clay, reportedly deposited when the Lake Erie plain was occupied by a series of glacial lakes from approximately 10,000 to 14,000 years ago. This deposit consists predominantly of a medium to stiff, gray to brown, silty clay to clayey silt and is generally not conducive to

(VARIOUS WIDTHS)

2

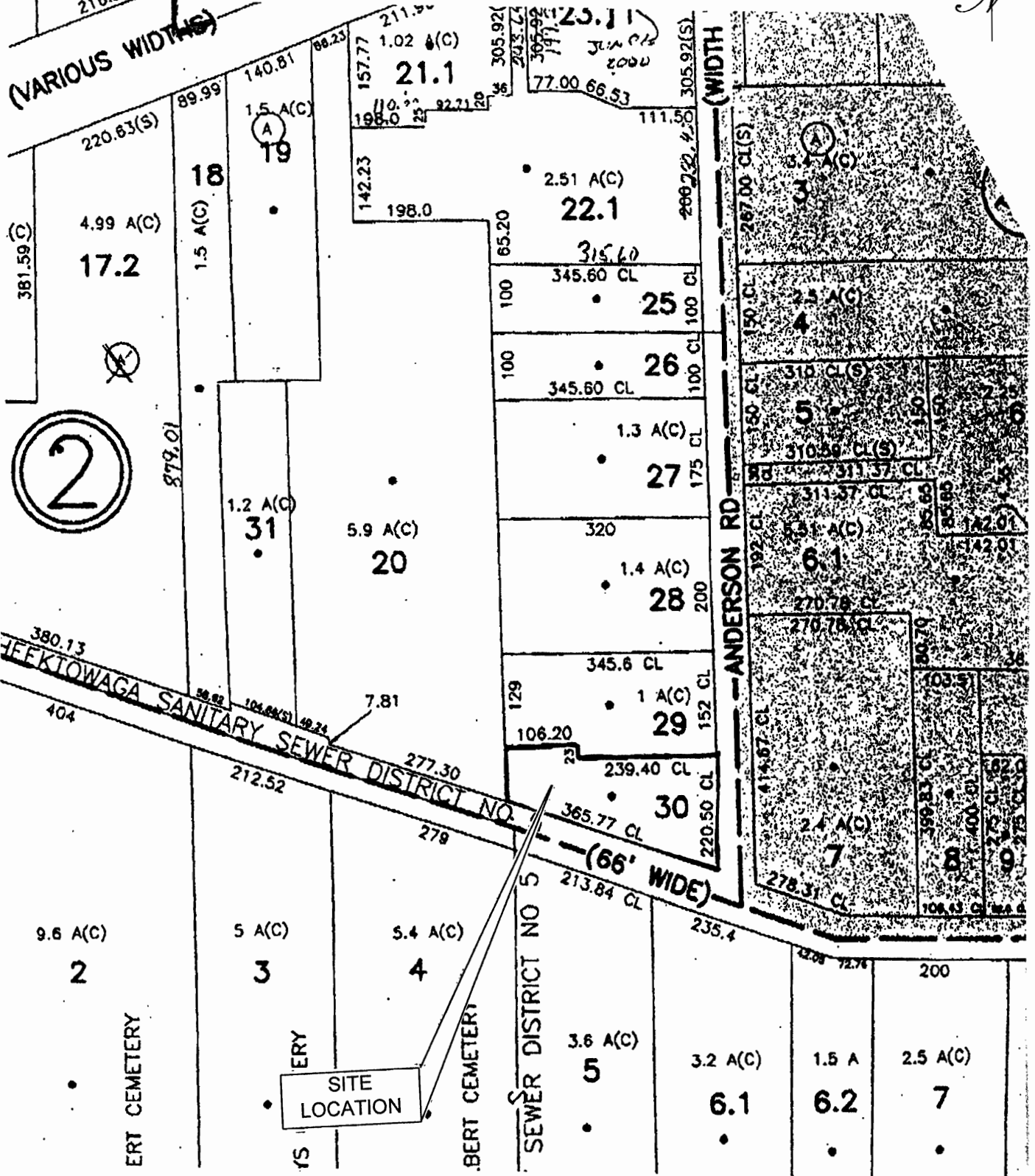
CHEEKTOWAGA SANITARY SEWER DISTRICT NO. 5

SEWER DISTRICT NO. 5

(66' WIDE)

ANDERSON RD

(WIDTH)



Source: Town of Cheektowaga Assessors Office

Title: TAX MAP
1746 Dale Road
Cheektowaga, New York

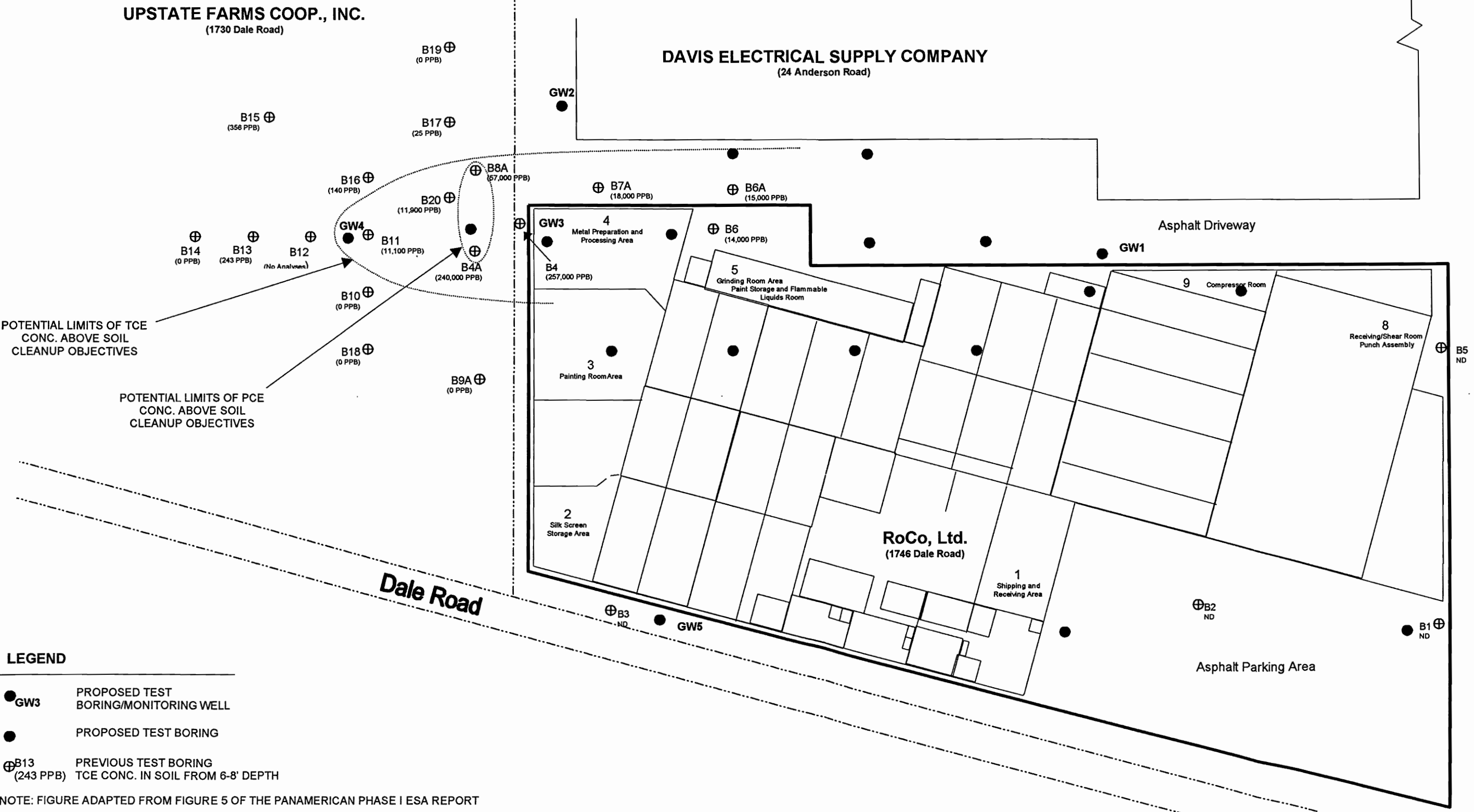
Prepared For: Jaeckle, Fleischmann & Mugal, LLP



Project: KCC
Date: 4/2001
Scale: 1:24,000

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Checked: JAW
File Name: 147.007

Figure: 2



- LEGEND**
- GW3 PROPOSED TEST BORING/MONITORING WELL
 - PROPOSED TEST BORING
 - ⊕ B13 PREVIOUS TEST BORING
(243 PPB) TCE CONC. IN SOIL FROM 6-8' DEPTH

NOTE: FIGURE ADAPTED FROM FIGURE 5 OF THE PANAMERICAN PHASE I ESA REPORT

Title: SAMPLING LOCATION PLAN RoCo, Ltd. Site Cheektowada, New York		 Leader Professional Services, Inc. 2300 Wehrle Drive Williamsville, New York (716) 565-0963 (716) 565-0964 (fax)	Project: KCC	Drawn: KCC	Figure: 3
Prepared For: Jaeckle, Fleischmann & Mugal, LLP			Date: 4/2001	Checked: JAW	
			Scale: N.T.S.	File Name: 147.007	

groundwater flow. These soils are thought to overlie shales and limestones of the Middle Devonian Skaneateles Formation. Depth to bedrock at the Site is unknown; however, bedrock was encountered at depths ranging from 44 to 54 feet below ground surface at the Niagara Transformer Site, which is located south of the Site, across Dale Road.

The on-Site borings performed during the Phase II Environmental Site Assessment (“ESA”) by Frontier Technical Associates, Inc. encountered no groundwater to a maximum depth of 20-feet. The underlying soils were reportedly fine sand to silty clays with some gravel. The TriTech Environmental Health and Safety, Inc. (“TriTech”) Phase II ESA reported groundwater at 8 to 9 feet from ground surface, immediately west of the Site.

Based upon the topography near the Site and the relative location of nearby surface water bodies, the probable groundwater flow direction is from the north to the south. Local variations in groundwater flow may occur near the Site due to the presence of underground utilities, storm sewers, heterogeneous subsurface conditions, and other urban conditions.

1.5 Nearby Public Areas Of Concern

The Niagara Transformer Corporation is located south of the Site across Dale Road. A Remedial Investigation/Feasibility Study (“RI/FS”) and remedial design activities have been conducted at this facility to access and remediate a release of PCB contamination. Based on the investigations done at this facility and the fact that groundwater and surface flow directions appear to be in a southerly direction, it is unlikely that the Site has been impacted due to migration of contamination from Niagara Transformer.

Public areas of concern located in close proximity to the Site are: 1) St. Joseph’s Hospital, located northwest of the Site; and 2) Cheektowaga Central High School and Union Road School, both located northeast of the Site. The Walden Galleria Mall is located to the northeast and the Thruway mall is located west of the Site. The Upstate

Farms Cooperative, Inc. facility is located adjacent to the Site to the west and the St. Adelbert cemetery is located across Dale Road, southwest of the Site.

1.6 Site History

Below is a summary of available historical information for the previous 50 years.

1.6.1 History Of The Site Transactions

Below is a summary of the property transactions associated with the Site.

	<u>Approximate Year of Purchase</u>
Careo Oxygen Corporation	1924
General American Transportation Corp. (Formerly General American Tank Car Corp.)	pre-1946
Walden Properties	1946
W. Weiss and others	1949
The Rotary Company, Inc.	1954
RoCo, Ltd.	1994

1.6.2 Previous Site Uses

In approximately 1924, the Careo-Oxygen Co. Air Reduction Plant operated on-Site. Two railroad lines, branching to four lines, traversed the eastern portion of the Site. The buildings associated with this air reduction plant were removed and the Site was vacant up to the construction of the current building structure in approximately 1946. The manufacturing operations in the current structure are summarized in Sections 1.6.3.

1.6.3 Type Of Operations And Chemical Substances Used Or Manufactured

The on-Site operations since the building's initial construction were reportedly precision sheet metal fabrication, metal weldments, and assemblies. In addition to these activities, there was subcontract manufacturing, shearing, punching, forming, stamping, machining, painting and silk screening, metal preparation and finishing. The materials involved in the manufacturing process included stainless steel, aluminum, brass, copper, exotic metals, specialty metals, extrusions, and plastics.

Mr. William M. Weiss, the current president of RoCo, worked at the Site on Saturdays and summers from the early 1950s through 1956. Mr. Weiss also visited the Site many times each year from 1956 through 1979. From 1980 through 1994, Mr. Weis was president of the company. Based on his recollection over the period spanning the early 1950s through 1994, the only process chemicals used, except for the paint and paint-related materials, occurred in the Metal Prep Room. The Metal Prep Room is located in the northwest corner of the facility and metal cleaning in preparation for painting and aluminum iriditing were the only processes conducted in this area.

The information presented below regarding on-Site chemical usage was obtained from the 1998 Phase I ESA performed by Panamerican Environmental, Inc. The chemicals observed and their locations (see Figure 3) were reported as follows:

1. Shipping and Receiving Area

- pH Buffer Solutions
- Glypure EG Crystal Clear
- Antifreeze Extender

2. Silk Screen Storage Area

- Flammable Storage Cabinet for Inks & Resins

- Floor Drain

3. Painting Room Area

- Paint Spray Booths (2)
- 55-gallon container for empty containers and rags (solvent odor noted)
- Flammable Storage Cabinets (three) for solvents (i.e., toluene) and spray cans
- Hazardous waste accumulation area containing a 55-gallon drum (grounded) labeled “Waste Paint Loose Pack” – Waste Code D001, F003)

4. Metal Preparation/Processing Area

This area contained 10 approximately 600-gallon dip tanks that were labeled as follows:

- Iron Phosphate
- Phosphoric Acid
- Chromic Cyanide
- Sulfuric Acid
- Hot Water
- Caustic Soda
- Cold Water
- Alkaline Cleaner
- Nitric Acid

- Water Rinse

An L-shaped cement trough was located behind the tanks. The trough reportedly drains to the sanitary sewer line. Air vents, open to the exterior environment are located at the base of the trough. Drainpipes for overflow were also observed within this area as well as a manhole sewer drain and a floor drain beneath a hand-washing sink. A 55-gallon drum storage area was also located in this room containing the following chemicals:

- Acid Deoxidizer 2213
- Chem Cote 3057 Iron Phosphate
- Chem Clean 1220 Alkaline Cleaner
- Chem Etch 7100
- Mineral Spirits

A green-colored liquid was observed spilled on the floor and an old white-colored stain was observed in the area of the dip tanks.

5. Grinding Room Area – contained a Paint Storage Room and a Flammable Liquids Room

Paint Storage Room

- Three 55-gallon containers without labels – marked full
- 30 to 40 paint cans on shelves
- Polyurethane enamel
- Mill Special paint
- A 1-gallon container of Toluene

- 5-gallon container of a Curing Agent

Flammable Liquids Room

- Three 55-gallon drums
- Containers of thinner, catalyst and finisher

6. Compressor and Boiler Room

Numerous 5-gallon containers of oil and grease (some were observed to be opened) were present. Spills and leaks on the floor were observed within this area as well as a floor drain that reportedly connects to the sewer. A cabinet located just outside of the doorway to this room contained containers of enamel, spray paint, lubricants, and brake cleaner.

7. Electrical Room

- Numerous transformers were reportedly observed (No labeling pertaining to PCB oils)

8. Receiving/Shear and Punch/Assembly Area

- A dehumidifier with a 5-gallon container of oily water mixture was observed.

9. Compressor Room

This area was designated as a Hazardous Waste Storage Area. Seventeen (17) 55-gallon drums were observed, filled with the following chemicals:

- Phosphate (3) 55-gallon drums
- Chem Seal 3601 (5) 55-gallon drums
- Chemcid 2213 (2) 55-gallon drums

- Etch Caustic Soda (3) 55-gallon drums
- Chemcid 2213 (4) 55-gallon drums
- Glycerin (2) 1-gallon containers

10. Scrap Drum Area

A scrap drum area was located on the north side of the building. Fourteen (14) empty drums were observed in this area. The area was enclosed with a fence and also contained scrap metal and miscellaneous discarded materials.

1.6.4 Information Regarding Spills Or Other Releases Of Chemical Substances On The Site

As previously mentioned, a green-colored liquid was observed spilled on the concrete floor and a white-colored stain was observed in the area of the dip tanks within the Metal Preparation/Processing Area. Spills and leaks on the floor were observed within the Compressor and Boiler Room area. There have been no reported releases outside the building.

1.6.5 Review Of Existing Aerial Or Other Photographs Of The Site

The 1924 Sanborn map indicated that the Site operated as the Careo-Oxygen Company Air Reduction Plant. The plant was located primarily in the southwestern portion of the Site; however, there was a small structure located in the northeast corner of the Site. The Buffalo Steel Car Co., Inc. was located east of the Site. Two railroad lines entered the Site from the southeast and then branched into four-five different lines before exiting the Site to the north.

The 1939 Sanborn Map indicated that no building structures were located on-Site at this time; however, the railroad lines were still present. The small building was no longer

present and the structure previously noted as the Buffalo Steel Car Co., Inc. was listed as vacant.

The 1949 Sanborn Map indicated that a building structure was located in the southwest portion of the Site. A small portion of a larger building structure abutted the Site along the northern border. The previous location of the Buffalo Steel Car Co., Inc. included some building additions and was labeled as Road Machinery Sales & Service.

The 1959 Sanborn Map indicated that the Rotary Co., Inc. operated on-Site. The building footprint showed the building slightly smaller than it exists today. The building additions to the east and west were not included at this time. The neighboring property to the north was the Kolk Manufacturing Company, manufacturers of cutlery and metal stampings. The building structure was primarily located in the eastern portion of the property and had the same footprint as the current building structures used by Davis Electrical Supply Company. There were no building structures visible on the adjoining property to the west.

1.7 Regulatory History

The Site historically operated under both air and wastewater permits and completed SARA and NYS Hazardous Material Reporting. The Site's air permits were registered with the NYSDEC Division of Air. An odor complaint to the NYSDEC in January 1998 resulted in a change in elevation of the Site's stack height.

The Site discharged wastewater from the facility to the Town of Cheektowaga and the Buffalo Municipal Sewer System under a permit by the Buffalo Sewer Authority (TC/BPDES Permit No. 98-01-CH001). Semi-annual monitoring reports were submitted for monitoring the wastewater discharged from the metal preparation line, which released wastewater to the floor drain and subsequently discharged to the municipal sewer system. No exceedences were noted in the Town of Cheektowaga records.

The October 18, 1998 Panamerican Environmental, Inc. Phase I noted that a number of 55-gallon drums and containers were observed during the Site reconnaissance. The Site was designated as a small quantity generator of hazardous waste under RCRA. Heritage Environmental Services, Inc. of Indianapolis, Indiana, transported and disposed of the Site's hazardous waste. The Phase I ESA reported that records were reviewed indicating that the Site had completed US EPA and NYSDEC hazardous waste and hazardous material reports, had records of waste analysis, and had satisfied RCRA and SARA reporting requirements. The US EPA completed a hazardous waste compliance inspection at the Site in 1992 with no reported violations; however, a 1996 NYSDEC hazardous waste compliance inspection reported some violations requiring corrective action. According to the database search performed on the Site by Environmental Data Resources, Inc., the Site was listed in the following environmental databases:

1) RCRA Small Quantity Generator database ("RCRIS-SQG")

This database is associated with waste storage operations. Two violations were noted associated with generator land band requirements and other generator requirements.

2) The Facility Index System ("FINDS") list.

The Site description as reported under the CERCLIS-NFRAP section states that approximately 92 kg of spent plating bath solutions is generated on a weekly basis from electroplating operations. Of this 92 kg, 0.2 kg contains chromium-bearing salts, which are used as an inorganic paint pigment.

3) The Comprehensive Environmental Response Compensation, and Liability Information System ("CERCLIS") and No Further Remedial Action Planned ("NFRAP") database.

No details were available on this listing; however, this database contains sites that have been removed from the CERCLIS database.

4) Hazardous Waste Disposal Inventory (HSWDS”) database.

This database includes known, suspected, or de-listed hazardous substance waste disposal sites. The Phase I ESA notes that the Site may have been in this database due to a Preliminary Assessment (“PA”) having been completed on the facility in 1986 by the US EPA. No further action was required. The NY HSWDS section indicates that the Site is a commercial paint facility. In addition, the Site reportedly operated as an electroplater.

1.8 Previous Studies

Several studies have been completed for the Site. Additionally, a Phase II ESA was conducted immediately west of the Site on Upstate Farms Cooperative, Inc. property. An October 19, 1998 Phase I ESA was performed by Panamerican Environmental, Inc. for Mr. Charles Husvar, the President of The Rotary Company, Inc. (formerly known as the Husvar Group). The Rotary Company was leasing the Site from the current owner, RoCo, Ltd. The ESA identified some issues of environmental concern such as: 1) flammable storage areas; 2) three separate waste storage areas (no secondary containment was noted for one of these areas); 3) floor stains and minor spills were observed in some areas; 4) staining and discoloration was observed surrounding various dip tanks and around a waste drum within a waste storage area adjacent to the press break room; and 5) stains and signs of spillage were observed surrounding a number of opened 5-gallon containers of oil and grease in the compressor/boiler room.

An October 1999 Phase II ESA was completed by Panamerican Environmental, Inc. for Upstate Farms Cooperative, Inc. and Harter, Secrest & Emery. This Phase II ESA was performed at the Site to assess the potential for subsurface contamination. The results of this subsurface investigation indicated that organic solvent contamination was detected above the NYSDEC TAGM 4046 guidelines. A number of analytes were detected; however, two compounds (trichloroethene and vinyl chloride) were above the NYSDEC TAGM 4046 guidance values (see Table 1-1). Some RCRA metals were detected below

Table 1 Previous Studies - Soil Analysis
RoCo, Ltd 1746 Dale Road, Cheektowaga, New York

VOC Compounds Detected in Soil Samples (ppb)	Tetrachloroethane (PCE)		Trichloroethane (TCE)		Cis-1,2-Dichloroethane		Vinyl Chloride		1,1-Dichloroethane		1,2-Dichloroethane		1,1-Dichloroethene	
	TAGM 4046 Soil Cleanup Objectives (ppb)													
	1,400		700		No Value		200		200		100		400	

Panamerican Phase II ESA

Boring 4 (NW corner of RoCo Site)

1'-7'		257,000	0	0			
Boring 6 (NW corner of RoCo Site)							
1'-7'		14,000	0	0			

FTA Phase II ESA

Boring 5A (Davis Electric Driveway)

2'-4'		260	0	0	0	0	0
4'-6'		43	14	0	0	0	0
6'-8'		2,100	160	24	2,100	150	330
8'-10'		17	8	0	2,100	110	0
10'-12'		45*	22*	0*	5,600*	293*	0*

Boring 6A (Davis Electric Driveway)

2'-4'		18	0				
4'-6'		2,800	1,400				
6'-8'		15,000	6,200				
8'-10'		160,000	5,300				
10'-12'		68,692*	2,242*				

Boring 7A (Davis Electric Driveway)

2'-4'		14	0				
4'-6'		15,000	0				
6'-8'		18,000	0				
8'-10'		34,000	3,000				
10'-12'		4,782*	421*				

Boring 8A (Davis Electric Driveway)

2'-4'	3,500	5,600	0	0			
4'-6'	0	25,000	2,200	0			
6'-8'	0	57,000	6,100	0			
8'-10'	0	14	18	39			
10'-12'	0*	1.2*	1.5*	3.3*			

Boring 4A (Davis Electric Driveway)

2'-4'	32	75	6				
4'-6'	130,000	33,000	0				
6'-8'	73,000	240,000	8,100				
8'-10'	4,900	48,000	4,100				
10'-12'	4,456*	43,636*	3,727*				

Boring 9A (Davis Electric Driveway)

2'-4'	0	6	0				
4'-6'	22	1,200	14				
6'-8'	0	0	6				
8'-10'	0	0	0				
10'-12'	0*	0*	0*				

Phase II ESA Upstate Farms Cooperative, Inc.

BH-10

7.5'-8'	ND<9.34	ND<9.34	ND<9.34
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BH-11

6'-8'	4,000	11,100	218
9'-10'	69	150	56
10'-12'	593	2,170	ND<20.1
13'-14.5'	165	2,000	117

BH-13

6'-8'	ND<25	243	1,110
8'-10'	ND<8.07	ND<8.07	490
10'-12'	ND<22.2	ND<22.2	977
12'-15'	ND<8.96	28	18

BH-14

8'-10'	ND<7.48	ND<7.48	ND<7.48
10'-12'	ND<10.4	ND<10.4	ND<10.4

BH-15

6'-8'	ND<10.3	356	61
8'-10'	ND<10.7	143	76

BH-16

6'-8'	10	140	ND<9.21
8'-10'	ND<6.24	36	ND<6.24

BH-17

8'-10'	ND<7.77	25	ND<7.77
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BH-18

8'-10'	ND<7.13	ND<7.13	ND<7.13
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BH-19

8'-11'	ND<5.53	ND<5.53	ND<5.53
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BH-20

4'-6'	11,800	7,610	254
6'-8'	9,400	11,900	366
8'-10'	1,340	473	99
10'-12'	867	361	149
12'-14'	377	225	85
18'-20'	38	856	346

- NOTES:
- 1) Concentrations are in µg/kg, or ppb.
 - 2) ND (Non-Detect)
 - 3) Shaded areas indicate an exceedence of applicable standards.
- * Based on ratio of the photoionization detector measurements

NYSDEC TAGM 4046 guidance values; however, B5 results indicated RCRA metals; cadmium, chromium and mercury were detected slightly above TAGM 4046 guidance values. B5 is located at the base of the driveway of Davis Electrical Supply Company along Anderson Avenue.

A March 3, 2000 Analytical Data/Soil Investigation Report was prepared by Frontier Technical Associates, Inc for RoCo, Ltd. This report was prepared to assess the possible presence of volatile organic compounds ("VOCs") at the Site. The results of the investigation indicated that VOCs were detected above the NYSDEC TAAGM 4046 guidelines. Table 1 lists the seven VOCs detected and their concentrations. According to the report, Trichlorethene and Tetrachloroethene were the most commonly found compounds. The other compounds detected could potentially have resulted from the breakdown of the Trichloroethene and the Tetrachloroethene through chemical and microbial decomposition of chlorinated solvents or trace constituents present in other reagents. No groundwater was encountered during this investigation. The presence of VOCs appears to be primarily located in the northwest portion of the Site at depths ranging between 2–12 feet.

A July 2000 Phase II Environmental Site Assessment was prepared by TriTech Environmental Health and Safety, Inc. for Upstate Farms Cooperative, Inc. and Harter, Secrest & Emery. The Phase II ESA was performed at the neighboring property, west of the Site. The investigation was completed to assess the potential for subsurface contamination adjacent to the RoCo, Ltd. Site. This study detected VOC contamination in the southeast portion of Upstate's property at depths ranging between 4-12 feet. The highest VOC contamination encountered was bordering the RoCo, Ltd. Site.

1.9 Description Of Intended Site Use

The Site is currently leased to Upstate Farms Cooperative, Inc., which uses the facility as a warehouse. The future intended use of the Site is commercial and industrial.

Further communications relative to the project will be carried-out according to an agreement between Upstate Farms Cooperative, Inc. and RoCo, Ltd. Site access issues and agreements will be discussed to ensure that Leader and its subcontractors have access to the Site, Upstate Farms Cooperative, Inc. property and Davis Electrical Supply Company property.

Task 3: Subsurface Exploration and Analytical Testing Program

Figure 3 is the proposed sampling location plan; however, actual locations of subsurface explorations will be refined based on the findings of Task 1 and photo ionization detector ("PID") measurements obtained in the field. Approximately 19 boreholes will be advanced to a depth of 16-feet (approximately 11 exterior boreholes and 8 interior boreholes). Approximately 4 samples will be collected in each boring at depths of 0-4 feet, 4-8 feet, 8-12 feet, and 12-16 feet. The four-foot soil samples will be divided into two, 2-foot long soil samples that will be screened in the field using a PID. Approximately 24 soil samples will be selected for TCL volatiles analysis (i.e., US EPA Method 8260). Of these 24 soil samples, six samples will also be analyzed for Semi-volatiles (USEPA Method 8270D), PCBs (USEPA Method 8082A), Pesticides (USEPA Method 8081B) and Priority Pollutant Metals. The data will be used to supplement previously collected data, to delineate the extent of contamination and to provide a volume estimate of the contaminated soil area.

Based on Task 1, the results of previous studies and the PID concentrations measured during the soil-sampling program, four (4) of the geoprobe borings will be converted into overburden monitoring wells. These four test boring/monitoring wells will be terminated at a depth of 32 feet below ground surface (or at a more shallow depth if sufficient groundwater is encountered at a higher elevation). If water is present in these wells, they will be developed and sampled; and the groundwater samples will be tested for TCL volatiles. These results will be compared to applicable groundwater standards.

Test boring/monitoring wells GW-1 through GW-4 will be installed using a Geoprobe unit. The monitoring wells will be constructed of 1-1/2 inch diameter PVC casings and

- If the well screen has filled with water, a bailer will be used to lower the water depth in the well to help develop the well screen and settle the filter pack sand. Following the bailing procedure, the level of the filter pack will be re-measured and additional sand added if needed.
- On the top of the filter pack, a minimum 2-foot thick layer of bentonite chips or pellets will be placed to form a well seal. The bentonite will be placed by slowly pouring the chips from the top of the augers. The top of the bentonite will be compacted using a tremie pipe, steel rod or weighted tape to ensure that some degree of compaction is achieved. If the contractor is having difficulty placing the bentonite, a tremie pipe will be used to place the chips. The bentonite will be given approximately one hour to hydrate. If the level of groundwater is below the sand pack, a hydrated bentonite mud will be mixed using manufacturer's mixing directions. The top of the well seal will be measured using a weighted tape after placement.
- At the top of the well seal, a 6-inch layer of sand will be placed to assist in limiting the penetration of the cement grout into the bentonite well seal. The level of the sand will be measured after placement using a weighted tape.
- A cement-bentonite grout will be mixed using 1 pound of bentonite per 94-pound sack of cement. The dry mixture will be hydrated using approximately 7.5-gallons of potable water. Once the mixture has been evenly mixed, it will be poured or tremie piped into the annulus. The annulus will be filled to a point where the level of the grout is approximately 1.5-feet below the ground surface.
- Once the grout has hardened, a flush-mounted road box will be fitted over the well casing. The interior of the road box will be filled with sand from a point approximately 1.5-feet below ground surface to a point approximately 2-inches below the top of the monitoring well. The exterior of the road box will be sealed to the ground level using concrete.
- The monitoring well will be fitted with a watertight locking well cap.
- Following completion of the monitoring well and no less than 24-hours after grouting the monitoring well, the monitoring well will be developed using bailing, pumping and surging techniques to free the well screen of sediment and to enhance the communication between the screen and the groundwater zone.

- Development will continue until the purged groundwater has an Nephelometric Turbidity Unit (NTU) of less than 50, or a consistent pH, temperature, and conductivity reading for three well borehole volumes.

Soil waste produced during the drilling and the collection of soil samples will be screened using an OVA. If soil staining or VOCs are present in the soil, the soil will be containerized for off-Site disposal in an appropriate disposal or treatment facility. Uncontaminated soil will be left on the Site in a location to be determined by RoCo.

Groundwater, if present, will be sampled and tested for TCL volatiles from each monitoring well in accordance with the Site-specific QA/QC Plan. Of these potential 5 water samples, one sample will also be analyzed for Semi-volatiles (USEPA Method 8270D), PCBs (USEPA Method 8082A), Pesticides (USEPA Method 8081B) and Priority Pollutant Metals.

Task 4: Monitoring Well Survey and Groundwater Elevation Measurements

Following installation of the monitoring wells, the location and elevation of the monitoring points at each well (i.e., top of PVC casing) will be surveyed relative to a fixed on-Site benchmark. The depth to groundwater will then be measured in each well and the direction of groundwater flow will be estimated based on these data. In accordance with NYSDEC requirements, a licensed land surveyor will locate and elevate the four monitoring wells.

Task 5: Volume Estimate

Leader will review the data and prepare a figure showing the chlorinated VOC concentration data. These data will be compared to applicable cleanup objectives. The figure will be used to evaluate the volume of impacted soil and groundwater. An estimate of the soil and groundwater requiring remediation will be prepared.

3.0 SCHEDULE OF WORK

Below are the anticipated sequence, schedule and projected completion dates for the key project milestones. Note that these dates may change based on internal and NYSDEC review periods and weather conditions beyond Leader's control.

Task Description	Duration	Projected Completion Date
Review and Approval of Work Plan	4 Weeks	September 30, 2001
Implementation of Field Investigation	4 Weeks	October 1, 2001
Laboratory Analysis and QA/QC Review	4 Weeks	November 1, 2001
Report Preparation, Revision and Approval	8 Weeks	January 1, 2002

4.0 *REPORTING REQUIREMENTS*

4.1 *Progress Reports*

Due to the short duration of the field investigation portion of this project, no intermediate progress reports are planned. Leader or a representative of RoCo, Ltd. will contact NYSDEC and inform it of the progress of the report outlined in the following section.

4.2 *Final Site Investigation/Remedial Alternatives Report*

4.2.1 *Report Contents*

A written report will be prepared relating the findings of the study. This report will include the following:

- Introduction
- Purpose and Scope of Work
- Description of Investigation Activities
- Investigation Findings
- Development and Evaluation of Remedial Alternatives (See Section 4.2.2)
- Remedial Cost Estimates
- Conclusions and Recommendations

Appendices to the report will include: 1) summaries of analytical results compared to applicable guidance values; 2) figures showing sampling locations and the extent of contamination; 3) test boring/monitoring well logs; and 4) analytical laboratory reports.

4.2.2 Evaluation of Remedial Alternatives

Based on the fact that the contaminants of concern are chlorinated VOCs and that there is extensive information on the remediation of these compounds in soil and groundwater, a full Feasibility Study in accordance with NYSDEC TAGM 4030 does not appear cost-effective. Overall remedial costs (i.e., capital plus long-term operation and maintenance/monitoring) will likely be the primary driving force in the selection process. Thus, the alternative evaluation phase will be stream-lined and the Site Investigation/Remedial Alternatives report will provide an estimate of remedial costs for a short list of remedial alternatives. Through an engineering analysis, it will be demonstrated that the selected remedy can achieve the cleanup goals for the Site. The remedy will be evaluated against the factors given in 6NYCRR 375.1.10 (c).

4.2.3 Qualitative Human Health Exposure Assessment

A Qualitative Human Health Exposure Assessment will be completed characterizing the exposure setting (including the physical environment and potentially exposed human populations), identifying exposure pathways, and evaluating contaminant fate and transport. The exposure pathways will be identified and will describe the means by which an individual may be exposed to contaminants originating from the Site. The following five elements of each pathway will be summarized: (1) contaminant source; (2) contaminant release and transport mechanisms; (3) point of exposure; (4) route of exposure; and (5) receptor population.

An exposure pathway will be considered complete when all five elements of that pathway are documented. Exposure pathways will be eliminated from further evaluation when any one of the five elements comprising an exposure pathway has not existed in the past, does not exist in the present, and will never exist in the future.

Site conditions will be characterized to evaluate whether the Site poses an existing or potential hazard to the exposed or potentially exposed population. Site characterization

will involve a review of sampling data for environmental media, both on-site and off-site, and an evaluation of the physical conditions of the contaminant source of physical hazards near the Site that may pose an additional health risk to the community.

Site contaminants will be reviewed, and those selected for further evaluation will be identified based upon consideration of the following factors:

1. Concentrations of contaminants in environmental media both on-Site and off-Site;
2. Field data quality, laboratory data quality and sampling design; and
3. Comparison of on-Site and off-Site contaminant concentrations in environmental media with typical background levels.

4.3 Citizen Participation Plan

The components of the Citizen Participation Plan (“CPP”) will be outlined by NYSDEC during the course of this project. At present, it is anticipated that a “Fact Sheet” for the project will be prepared and that RoCo will be responsible for any newspaper notices and mailing the Fact Sheet to potentially interested parties on a mailing list, provided by NYSDEC.

APPENDIX A
QUALITY ASSURANCE/QUALITY CONTROL PLAN

VOLUNTARY CLEANUP PROGRAM
INVESTIGATION WORK PLAN

ROCO, LTD SITE
1746 DALE ROAD
CHEEKTOWAGA, NEW YORK

Prepared For:
Jaeckle, Fleischmann & Mugel, LLP
Attorneys at Law
Fleet Bank Building
Twelve Fountain Plaza
Buffalo, New York

Prepared By:
LEADER PROFESSIONAL SERVICES, INC.
2300 Wehrle Drive
Williamsville, New York 14221
716-565-0963

147.007

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ATTACHMENTS

Attachment A	Paradigm Environmental Services, Inc. Statement of Qualifications & Practical Quantitation Limits for EPA Method 8260
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1.0 INTRODUCTION

This document contains the Quality Assurance/Quality Control (“QA/QC”) requirements and procedures for conducting environmental sampling and analysis at the RoCo, Ltd. site located at 1746 Dale Road in Cheektowaga, New York (“the Site”). The quality of the environmental sample data, and subsequent decision-making processes based on the data, are directly related to the quality of the sampling and analysis.

In order to generate analytical data of known and defensible quality, adherence to established quality assurance requirements and procedures is necessary. This adherence will ensure that samples obtained in the field are representative of the particular environment and are of satisfactory quality and quantity to satisfy the project’s objectives. To achieve this goal, this QA/QC Plan has been developed to document procedures to maintain consistency in sample collection, handling, and analysis during the Site’s remedial investigation and alternative evaluation activities.

2.0 PROJECT DESCRIPTION

This QA/QC Plan was prepared to support the Investigation Work Plan and Alternative Evaluation for the Site by providing: 1) procedures for the sampling, handling, analysis, and data review activities; 2) the development of documentation standards for Site activities; and 3) development of a project management structure. This investigation is being conducted to address the release of chlorinated organic compounds at the Site under the Voluntary Cleanup Program ("VCP"). The Investigation Work Plan will be completed to address the extent of contamination, the risk to human health and the environment, and to design, implement, and monitor an appropriate remedial response (if necessary). The scope of work will include: 1) test boring/monitoring well installation; 2) field screening of soil samples; 3) soil and groundwater sampling and testing; and 4) surveying and water level measurements to estimate groundwater flow conditions.

3.0 PROJECT ORGANIZATION AND RESPONSIBILITY

The management of this project and their individual responsibilities is presented below.

NYSDEC Project Manager – David P. Locey. Mr. Locey's responsibility is to manage the project and the NYSDEC personnel who are assigned to the project for technical review and oversight, and to ensure that all aspects of the Work Plan are completed. Mr. Locey will be notified prior to deviations from the protocols presented herein, if there has been a problem with the procedures or analyses because of Site-specific conditions.

Leader Professional Services, Inc. Project Manager - Mr. Jeffrey A. Wittlinger, P.E., 2300 Wehrle Drive, Williamsville, New York 14221 (716-565-0963). Mr. Wittlinger's responsibility is to manage the investigation and to ensure that aspects of the project are completed in accordance with the Work Plan. Mr. Wittlinger will be the point of contact for all technical issues regarding the project. Mr. Wittlinger will be notified by Leader's Site Manager or the analytical laboratory prior to deviations from the protocols presented herein, if there has been a problem with implementing the procedures or analyses because of Site-specific conditions.

Leader Project Quality Assurance Officer – Mary Ellen Holvey's responsibility is to ensure that the QA/QC Plan is adhered to and to enforce any corrective actions needed.

Leader's Investigation Site Manager – Karen Carlson's responsibility is to manage the Investigation field activities and to ensure that the field activities are conducted in accordance with the Investigation Work Plan and the QA/QC Plan.

4.0 DATA QUALITY OBJECTIVES

The objective of this project is to identify the presence, extent and nature of contamination on and in the vicinity of the Site and to collect sufficient information and data to design and implement a remedy (if necessary). This evaluation will be accomplished by the sampling and analysis of soil and groundwater; the installation of monitoring wells; and the measurement of water levels. The overall data quality objectives for this project are to:

- Collect the soil and groundwater samples as described in the Work Plan;
- Ensure samples are representative through the use of accepted sampling methods, as described in Section 5.0 and the Work Plan;
- Ensure data comparability through the use of standard methods;
- Provide analytical results of known and acceptable precision and accuracy; and
- Provide an acceptable percentage of valid project data (completeness).

These goals will be accomplished through a regimen of QA practiced both by Leader and by Paradigm Environmental Services, Inc. of Rochester, New York (“Paradigm”). Data precision and accuracy will be controlled by use of QC programs, which involve the collection, and analysis of prescribed QC samples and the use of corrective actions, if needed.

4.1 Data Quality Objectives

In formulating project-specific QA/QC strategies, Leader has established specific objectives for measuring data quality for each measured parameter. These objectives provide the framework for designing an effective QA/QC system, which is responsive to the needs of the project. Meeting these objectives will result in defensible data, for use in evaluating the nature and extent of contamination on the Site.

TABLE 4-1
Precision Objectives for Field Instruments

Instrument	Precision
pH	0.5 S.U.
Conductivity	10 mhos
PID	0.5 Divisions
Well Depth	0.01 foot

Notes:

S.U. = Standard Units
mhos = 1/milliohms

Accuracy and precision objectives of the sample analysis program are shown in the Paradigm Statement of Qualifications (Attachment A). Accuracy and precision objectives for field instrument measurement are presented in Table 4-1. These values are not intended to represent data validation criteria; rather these values represent estimates of the magnitude of uncertainty, which might be associated with the measurement data due to measurement error. Accuracy objectives reflect recovery of target analytes spiked into actual field samples, expressed as a percentage of the amount spiked. Precision objectives reflect differences between measurements of duplicate aliquots of spiked or unspiked field samples, expressed as the Relative Percent Difference (“RPD”), a percentage of the mean measured value. Precision objectives in this table do not include variability due to sampling. Matrix interference is also not reflected in these values. Matrix interference and sample non-homogeneity may be estimated from QC samples but are not amenable to control by the analyst. Table 4-1 presents the precision requirements for measurements collected using field instrumentation, such as water level indicators and pH meters. Required QC samples for soil and groundwater samples are summarized in Table 4-2.

4.1.1 Accuracy

Accuracy is a measure of the closeness of an individual measurement to a known value. Analytical accuracy can be measured by the analysis of calibration checks, system blanks, quality control samples, surrogate spikes, matrix spikes, and other checks as required by USEPA Method 8260. These quality control samples will be further described in Section 9. Accuracy is assessed ^{from} for the quality control standards and spikes by calculating the recovery of the known concentration in the quality control sample.

Equipment field blanks and trip blanks will be collected and analyzed, in addition to the system blanks, to detect sources of contamination outside the laboratory which may affect the accuracy of the field data. Similarly, if water is used during well installation, a sample will be collected for analysis to ensure that this water has no impact on groundwater results.

Table 4-2
Quality Control Sample Requirements

Sample Type	Frequency	Est. Total Needed	Analysis
Soil			
Laboratory Matrix Spike	10%	2 (pairs)	TCL VOAs
		1(pair)	SVOCs, PCBs, Pesticides, PP Metals
Laboratory Matrix Spike Duplicate	10%	2 (pairs)	TCL VOAs
		1(pair)	SVOCs, PCBs, Pesticides, PP Metals
Groundwater			
Matrix Spike	10%	1 (pair)	TCL VOAs, SVOCs, PCBs, Pesticides, PP Metals
Matrix Spike Duplicate	10%	1 (pair)	TCL VOAs, SVOCs, PCBs, Pesticides, PP Metals
Trip Blank	1 per shipment	2	TCL VOAs
Field Equipment			
Field Blank	10%	2	TCL VOAs

To determine analytical accuracy, percent recoveries will be calculated for control standards by the following equation:

where: A = spiked sample concentration,

B = unspiked sample concentration and

C = concentration of the spike added.

R = percent of spike recovered

$$\% R = [(A-B)/C] \times 100$$

Spike accuracy information will be provided in laboratory reports. Tables summarizing spike percent recovery data and blank results will be provided in the RI Report.

4.1.2 Precision

Precision is a measure of the reproducibility of repetitive measurements. Two types of precision may be considered: 1) analytical precision; and 2) total precision. Analytical precision will measure the relative percent difference (“RPD”) between laboratory duplicates and/or matrix spike duplicates. Total precision includes the effects of analytical, sample, and sampling variability, and is assessed through the analysis of field duplicate samples. Matrix spike duplicates will be discussed further in Section 9.1.

The *RPD* between duplicate results may be calculated by:

$$RPD = [(D1 - D2) / ((D1 - D2) / 2)] \times 100$$

where $D1$ and $D2$ are the sample result and its duplicate result.

4.1.3 Completeness

The completeness goal for this project is 95 percent. In other words, all attempts will be made to ensure that 95% or more of project analyses result in valid data. Invalid data will include data lost due to laboratory or sampling error, and data for analyses that exceeded the sample hold time.

$$\text{Completeness (\%)} = \text{valid data obtained} / \text{total data planned} \times 100$$

4.2 Detection Limits

Detection limits are the levels above which there is a 99% chance that a detected compound is actually present. Clean-matrix detection limits for this project will meet the Practical Quantitation Limits (“PQLs”) set forth in the USEPA Method 8260 (volatile organic compounds only) for the analysis of volatile organic compounds (“VOCs”). PQLs for these analyses, as provided by the Laboratory, are provided in Attachment A. The achievable limits may be higher than the levels listed in Attachment A, depending on sampling dilution and/or sample matrix.

5.0 PROCEDURES FOR THE COLLECTION OF ENVIRONMENTAL SAMPLES

As much as possible, the procedures in this document have been standardized to make them applicable to the Site's field conditions. It must be recognized that under certain conditions the procedures discussed herein may not be appropriate to the Site conditions at the time of sample collection. In such cases, it will be necessary to adapt the procedures given to the specific conditions of the Site and the sampling objective.

5.1 Groundwater Sampling

5.1.1 Sampling Preparation

All groundwater samples obtained from monitoring wells will be collected in an order from least contaminated to highly contaminated. Information pertinent to the sampling procedures used, and observations of the environmental conditions at the time of sampling will be entered into a field logbook with an indelible ink marker. The depth to water will be measured with an electronic water level indicator to the nearest 0.01-foot. A point on the well's riser will be marked with permanent mark to signify where all measurements should originate during the project. This depth will be recorded in the field logbook and used in the field to calculate the volume of water within the well. Observations concerning the presence or absence of light non-aqueous phase liquid ("LNAPL") and dense non-aqueous phase liquids ("DNAPL") will also be recorded.

5.1.2 Well Evacuation

Stagnant water within the wells will be evacuated by siphoning using the dedicated tubing (with a check valve) prior to sampling. Prior to sampling at least three volumes of water contained within the well will be removed to ensure the collection of a representative groundwater sample, which is not influenced by stagnant water remaining in the well casing. The monitoring well's casing diameter will be used in all calculations to determine

the volume to be purged. If the well goes dry during evacuation, the groundwater will be allowed to recover and will be re-evacuated until at least one and one-half volumes are removed. The time, when purging began and ended, and the volume of purged groundwater will be recorded in the field logbook. The physical appearance of the water (color, odor, turbidity, etc.) will also be recorded in field logbook as it is removed from the well.

An attempt will be made to develop all wells until a clear water sample can be obtained. The goal of development is to obtain a sample with a turbidity that is less than 50 Nephelometric Turbidity Units (“NTUs”). The clarity of a given water sample from the existing monitoring well is a function of the well’s construction and the content of silt and clay in the matrix of the groundwater zone.

Groundwater conductivity and pH will be monitored during development and purging prior to sampling. Conductivity and pH will be monitored and ideally, these parameters should stabilize, for three consecutive measurements, when the last well volume is removed prior to sampling.

5.1.3 *Sample Collection*

Dedicated, polypropylene tubing with a check valve will be used to collect the groundwater samples after the wells have been evacuated and allowed to recharge to within 90-percent of the original static water level.

The tubing used for collecting the sample will be handled in such a manner that the tubing only contacts the water in the well, the well itself and the sampler's dedicated latex gloves. The tubing will never be placed on the ground or any other potentially contaminated surface. When sampling, the tubing will be gently lowered into the water column to collect a sample of groundwater that is not at equilibrium with the atmosphere.

The sample will be transferred into a dedicated pre-sterilized laboratory grade (ICHEM 300 or equivalent) sample container. When transferring the sample from the tubing to the sample container, care will be taken to avoid agitating the sample that would promote the

loss of volatile constituents, stratification of floating product, and chemical oxidation. Filters (either field or laboratory) will not be used to remove any potentially suspended sediment from the sample.

Generally, groundwater samples are not in equilibrium with atmospheric conditions and can undergo significant changes in water chemistry upon extraction from the well. Therefore, the samples will be stored at 4 degrees Centigrade (“C”) immediately after collection and delivered to the laboratory within 48 hours from the time of collection.

5.2 Soil Sampling

Soil samples collected for this investigation will be collected using a Geoprobe® unit, and potentially a split-spoon sampling device if standard drilling equipment is needed to install a top-of-rock well. Typically, 2 samples for analytical laboratory testing will be collected at each boring location. There are 19 proposed boring locations; thus, all borings may not be sampled based on photoionization detector (“PID”) readings. As soon as possible after sampling, the sample will be transferred from the sampling tool into a dedicated pre-sterilized laboratory grade (ICHEM 300 or equivalent) sample container. Once the sample has been containerized the sample will be stored and chilled to approximately 4 degrees C. All samples will be delivered to the laboratory within 48 hours from the date of collection. Care will be taken during sample collection, but also in documenting the location and depth of the soil sample. The time, date, depth, location, and physical description of each sample will be recorded in the project field logbook.

5.2.1 Sample Collection Equipment

A Geoprobe® unit will be used to advance borings to an average depth of 16 feet below ground surface using direct push technology. Continuous soil sampling will be performed using Macro Core soil samplers measuring 48 inches in length and 1½ inches in diameter with acetate liners. Soil from each boring will be visually described and screened using a

PID with a 11.6 eV Lamp. Stratification of material in the borings and observations will be noted on the boring logs.

5.3 Soil Screening

Field screening of all soil core samples for volatile organic compounds (“VOCs”) will be performed using the PID. Soil cores from boreholes will be transported to a staging area. The acetate liners will be cut and the PID will be used to screen the length of the core. Results will be documented in the boring logs.

5.4 Field Equipment Cleaning

All non-disposable equipment used for the collection, preparation, and preservation of the environmental samples must be cleaned prior to their use and after each subsequent use. Unless the equipment and materials being used are disposable, or of sufficient number so as not to be reused during any one sample period, cleaning will have to be conducted in the field. Field cleaning can be inefficient and lead to cross contamination problems compared to cleaning in a controlled environment. If possible, attempts will be made to minimize field cleaning because of the potential problems with cross contamination. To avoid cross contamination between sampling points dedicated disposable sampling equipment will be used when possible. Otherwise, a sufficient number of field blanks will be collected and analyzed to assess the efficiency of field equipment decontamination procedures.

The materials needed for sample equipment cleaning are dependent upon the nature of the equipment. The following is a very generalized list of materials to be used during cleaning:

- Cleaning solutions. Non-phosphate detergents, nitric acid solution and methanol will be used to clean re-usable sampling equipment.
- Water. In some cases, tap water may be adequate for initial or intermediate rinses. The final rinses, however, will be with deionized/distilled water.

- Buckets and washbasins brushes. For use in the washing and rinsing of equipment.
- A drying rack. All materials and equipment must be dried prior to additional use. Paper towels will be used when necessary for drying equipment.

When sampling for organic parameters, the following cleaning sequence is recommended:

- Wash with a nonphosphate detergent (or hot water from a pressure washer).
- Rinse with tap water.
- Rinse with a dilute solution (5%) of nitric acid.
- Rinse with deionized water.
- Rinse with pesticide grade methanol.
- Paper towel off excess moisture and air dry.
- Triple rinse with deionized water
- Air dry.

6.0 *DOCUMENTATION AND CHAIN OF CUSTODY*

6.1 *Packaging and Shipping Procedures*

Once the samples have been collected, prepared, and preserved, they will be packaged for shipment and/or delivery to the laboratory as soon as possible. In addition, from the time of sample collection to receipt by the analytical laboratory, chain-of-custody procedures will be followed to ensure the proper handling and possession of the samples. This section outlines procedures for the packing and shipping of environmental samples, and general chain-of-custody procedures.

All individual sample containers will be placed in a durable shipping container. It is recommended that for this purpose, an insulated plastic cooler be used. The following is an outline of the packing and shipping procedures to be followed:

- The drain plug at the bottom of the cooler will be sealed to ensure that water from sample container breakage or ice melting does not leak from the outside container.
- Line the bottom of the cooler with a layer of absorbent material such as vermiculite.
- Check screw caps for tightness and mark the sample volume level on the outside of large containers.
- For large glass containers, packing peanuts may be used to keep containers in place and to prevent breakage.
- Small containers, such as forty-milliliter vials, will be placed in small plastic sandwich bags. When shipping these with large containers, steps will be taken to prevent any shifting of the large containers, which might break the smaller ones.

- When samples must be kept at 4 degrees C, ice sealed in plastic bags or cool packs will be placed in the cooler.
- Documents accompanying the samples will be sealed in a ziplock plastic bag attached to the inside of the cooler lid.
- The lid of the cooler will be closed and fastened.
- Duct tape or reinforced shipping tape will be wrapped around the cooler several times to ensure that the lid will not open if the latch becomes unfastened.
- The following information will be attached to the outside of the cooler: name and address of receiving laboratory, return address of the sampling team, arrows indicating "This End Up" on all four sides, and a "This End Up" label on the top of the lid.
- Additional labels such as "Liquid in Glass" are optional. Since the bottles will have been carefully packaged, this additional warning should not be needed.
- A custody seal will be affixed and signed across the lid of the cooler.

Samples packaged in this way will be shipped by ground transportation. Personnel will be prepared to open and reseal the cooler for inspection if the courier requires it.

6.2 Chain-of-Custody Procedures

The primary objective of these procedures is to create an accurate written record which can be used to trace the possession and handling of the sample from the moment of its collection, through analysis and to its introduction as evidence.

The number of persons involved in collecting and handling samples should be kept to a minimum. Detailed field records will be kept in the project field logbook and will contain the following information:

- Sample identification and source (including sampler's name, sample location, and sample media).
- Dates and times of sample procurement, preparation, and shipping.
- Preservative used.
- Analyses required.
- Pertinent field data (pH, specific conductance, etc.).

To help eliminate possible problems in the chain-of-custody procedures, one person will be appointed Field Custodian for each task. For tasks where sampling teams are used, all samples are to be turned over to the Field Custodian by the team members who collected the samples. The Field Custodian will then document each sampling event and the sample will remain in his/her custody until it is shipped to the laboratory. The Field Custodian is responsible for properly packaging and dispatching samples to the laboratory. The responsibility includes filling out, dating and signing the appropriate portion of the chain-of-custody record.

Labels will be firmly affixed to each sample container. The labels on each sample bottle will be filled out with waterproof ink prior to sample collection. Sample reference numbers identical to that recorded on the labels will be recorded on the chain-of-custody.

When transferring the samples, the individual relinquishing the samples will sign and record the date and time on the chain-of-custody record. Every person who takes custody will fill in the appropriate section of the chain-of-custody record form, and their affiliated company. To minimize custody records, the number of custodians in the chain-of-possession should be minimized.

7.0 CALIBRATION

Both field instrumentation and laboratory analytical instrumentation are to be used to provide project data. Both systems will require regular calibration in order to provide comparable and accurate information. Calibration procedures for on-site field instrumentation are provided below; procedures for analytical systems are discussed in Section 11.0.

On-site field data concerning VOCs will be obtained using a MicroTip PID monitoring instrument. The PID provides total organic vapor concentrations except for methane, using a photoionization detector. Calibration procedures for the PID are listed in Section 7.1. This is followed by calibration procedures for the field conductivity and probes.

7.1 PID MicroTip Calibration

The PID has a calibrated range of 0 to 2000 parts per million volume (“ppm”) total hydrocarbons. It is typically calibrated using isobutylene. A list of organic compounds and their relative sensitivities is provided in Table 7-1. A 11.6-eV lamp will be used, which ionizes many of the common air contaminants. The PID is highly sensitive to aromatic compounds such as benzene or toluene.

Calibration will be performed prior to taking the instrument into the field. Certified isobutylene-in-air (100 ppm) and zero-air standard gases are used for calibration, according to the manufacturer's specifications. Calibration checks will be made daily (at a minimum) using the isobutylene calibration gas. If needed, the instrument will be re-calibrated when the calibration check falls below 10-percent of the isobutylene concentration of the calibration gas.

Table 7-1**Photoionization Sensitivities Relative to Benzene for Common Gases
(11.6-Electrovolt Lamp)**

Species	Relative Response (Percent)
p-xylene	114
m-xylene	112
benzene	100
toluene	100
diethyl sulfide	100
diethyl amine	99
styrene	97
trichloroethylene	89
carbon disulfide	71
isobutylene	70
acetone	63
tetrahydrofuran	60
methyl ethyl ketone	57
methyl isobutyl ketone	57
cyclohexane	51
naphtha (86% aromatics)	50
vinyl chloride	50
methyl isocyanate	45
iodine	45
methyl mercaptan	43
dimethyl sulfide	43
allyl alcohol	42
propylene	40
mineral spirits	40
2,3-dichloropropene	40
cyclohexane	34
crotonaldehyde	31

7.2 *Conductivity and pH Meter Calibration*

The conductivity meter will be calibrated daily during groundwater sampling using the manufacturers standard procedures. The instrument will be calibrated prior to fieldwork using standards provided by the manufacturer and rechecked between each sample location using one of the manufacturer's reference standards.

The pH meter will be calibrated daily during groundwater sampling activities. Calibration will include setting the range and span using pH 4.0, 7.0, and 10.0 standard laboratory buffer solutions provided by the manufacturer. In order to ensure proper calibration, a pH 7.0 buffer will be used as a single-point check between each sampling location. Calibration of the instrument will follow the manufacturer's standard operating procedures.

8.0 *SAMPLE ANALYTICAL PROCEDURES*

8.1 *Sample Analytical Procedures*

The overall number of samples to be collected, including anticipated QA/QC samples, is presented in Table 8-1. The samples will be analyzed using USEPA protocols as shown on Table 8-1. Table 8-2 includes items (e.g., holding times, preservation requirements, etc.) that pertain to sample preparation. Attachment A includes a list of the practical quantitation levels ("PQL") for the proposed analysis.

Samples analyzed using USEPA Method 8260 for VOCs and the deliverable data package for VOC analyses will include:

Gas Chromatographic/Mass Spectroscopic Methods:

- Method 8260 GC/MS for Volatile Organics
Packed Column Technique

The following information is to be provided:

- Initial calibration
- Continuing calibration
- Daily tune (BFB or DFTPP)
- Instrument blanks
- Method blanks
- Method of sample preparation
- Method of cleanup (if used)
- Surrogate recovery
- Matrix spike/matrix spike duplicate
- Mass spectral matches
- Corrective actions taken

TABLE 8-1

PLANNED NUMBER OF SAMPLES TO BE COLLECTED

TASK	MEDIA SAMPLES	ANALYSES	DUPLICATE	MATRIX SPIKE	MATRIX SPIKE DUPLICATE	FIELD BLANK	TOTALS
Soil Borings	24	TCL VOAs	0	2	2	1	29
Soil Borings	6	SVOCs, PCBs, Pesticides, PP Metals	0	1	1	0	8
Groundwater from Monitoring Wells	5	VOCs	0	1	1	1	8
Groundwater from Monitoring Wells	1	SVOCs, PCBs, Pesticides, PP Metals	0	1	1	0	3
Trip Blanks	2	USEPA Method 8260 VOCs	0	0	0	0	2

NOTES

1. VOCs - Volatile Organic Compounds
2. Paradigm Environmental Services, Inc. will provide analytical results of QA/QC samples as part of its normal quality assurance testing

TABLE 8-2

SAMPLING PROTOCOLS

PARAMETER	SOIL SAMPLES	SOIL CONTAINERS	WATER SAMPLES	WATER CONTAINERS	PRESERVATIVES FOR WATER
TCL VOAs - USEPA Method 8260	14 days	4 oz. Glass	14 Days	2x40 ml vial	pH<2
SVOCs - USEPA Method 8270D	14 days	4 oz. Glass	7 Days	2x1 liter bottle	NA
PCBs - USEPA Method 8082A	14 days	4 oz. Glass	7 Days	2x1 liter bottle	NA
Pesticides - USEPA Method 8081B	14 days	4 oz. Glass	7 Days	2x1 liter bottle	NA
Priority Pollutant Metals	6 months	4 oz. Glass	6 Months	1x500ml bottle	pH<2

Notes:

1. Water and soil samples will be chilled to 4 degrees C
2. No preservatives will be added to the soil samples
3. Sample may be held for 7 days prior to extraction and 40 days after extraction before being invalid due to holding time restrictions.
4. The analytical laboratory within will receive samples 48-hours of sampling.

8.2 *Standards*

All solid and liquid chemicals used by the Laboratory will be reagent grade or better, and all gases will be high purity or better. All analytical standards will be obtained from the USEPA, from NIST, or from reliable commercial sources. According to the analytical laboratory's corporate QA/QC Plan, the above mentioned materials have been logged in upon receipt: material name, lot number, purity, concentration, supplier, receipt/preparation date, preparer's name (if applicable), and expiration date. Each new solvent lot is analyzed to confirm that no contaminants are present.

8.3 *Dilution*

Analytes which exceed the calibration range will be flagged "E" to indicate the concentration is greater than the highest calibration standard. Samples will not be diluted or re-analyzed to bring an analyte within calibration. Results flagged "E" should be considered estimated values.

9.0 DATA REDUCTION AND REPORTING

9.1 Laboratory Data Reduction and Reporting

The initial data reduction from raw data materials (chromatograms, spectra, etc.) will be performed by the Laboratory as part of its reporting protocol. Soil sample results will be reported on a dry-weight basis (milligrams or micrograms per kilogram). Groundwater sample results will be reported on a weight volume basis (milligrams or micrograms per liter).

In addition to reporting the field sample results, the Laboratory will provide results for the trip blanks, matrix spike duplicates, and field blanks. Laboratory reports will also include the following QC data:

- Internal standard recoveries;
- Surrogate spike recoveries;
- Matrix spike recoveries, with identification of the spiked field sample and the recovery limits;
- Matrix spike duplicate recoveries;
- Laboratory duplicate recoveries (where applicable); and
- Laboratory control standard recoveries (where applicable) with the corresponding control limits.

The laboratory organization structure and responsibilities for responding to an out-of-control event are outlined as follows:

1. The bench analyst reports the situation to the laboratory supervisor and the quality assurance officer.
2. The supervisor and analyst determine and implement the appropriate corrective action.
3. If routine corrective actions rectify the situation, analytical work is resumed. The event is documented and the laboratory QA officer is advised. Leader's QA officer will be notified of the corrective action.
4. If the situation cannot be corrected immediately, the supervisor will notify Leader's QA officer who will in turn notify the Project Manager.

Corrections or additions to data reports (or raw data) will be made with indelible ink, with a single line. The correction will be dated and initialed. Review of the data occurs at all levels of the laboratory, from the analyst to the supervisors, managers, laboratory directors, and laboratory QA personnel. Project data will be filed with the Laboratory's project file and will be archived for no less than five years.

9.2 Data Reduction and Reporting by Leader

Laboratory reports will be sent to Leader for preparation of the Data Usability Summary. Data collected during the sampling event (including field logs, chain-of-custody forms, laboratory reports, field data forms, and all associated QC data) will be reviewed by Leader's QA/QC Officer. This review will include checking for thorough completion of data forms, proper correction techniques, analysis hold times, and an assessment of the overall data precision and accuracy. Results of this review, along with tables summarizing results for blank, duplicate, and spiked samples, will be included in the RI report. In the summary tables, RPD values will be summarized by Leader for all MS/MSD, laboratory duplicate, and field duplicate data. Corrective actions will be initiated if the data review indicates a need to do so (see Section 16.0).

10.0 FIELD NOTES

Field notes will be maintained during all investigation field activities. The overall chronology of field activities as well as sampling details will be recorded in a bound fieldbook with an indelible ink marker. Each page will be consecutively numbered and signed by the Site Manager at the end of the workday. The following information, as appropriate, will be documented in the field notes:

- Date
- Weather conditions
- Personnel on or visiting site
- Subcontractors on-site
- Worked performed
- Changes to planned work as discussed with NYSDEC
- Time at which work, sampling or analysis was performed
- Equipment calibration methods and time
- Problems with personnel or machinery
- Identification of borings and wells
- Geologic, stratigraphic and lithologic characteristics of samples
- Boring and well depths
- Static water level depths and measurement techniques
- Presence of immiscible layers and detection method
- Well yields - high or low
- Purge volume
- Sample identification numbers
- Well evacuation procedure/equipment

- Sample withdrawal procedure/equipment
- Sampling sequence
- Types of sample containers used
- Parameters requested
- Field analysis methods and data
- Field observations during the sampling event
- Name of sampler

11.0 SAMPLING FOR QUALITY ASSURANCE & QUALITY CONTROL

QA/QC samples are used to assess the quality of the analytical data by identifying and quantifying any external sources of contamination to which the sample may have been exposed. The types of QA/QC samples that will be taken are described below.

11.1 Trip Blanks

Trip blanks consist of laboratory grade water that is brought into the field in sealed volatile organics vials. The vials are left sealed and returned to the laboratory. Analysis of trip blanks identifies any sources of contamination resulting from preparation and transport of the sample bottles. Potential sources of contamination include:

- passage of airborne contaminants through container vials;
- use of improperly cleaned sample bottles; and
- use of contaminated laboratory water.

Trip blanks will be shipped with the empty sample bottles and received in the field within one day of preparation in the lab. The blanks may be held on-Site for a maximum of two days. They must be shipped back to the lab at the end of the second day with the same sample bottles they accompanied to the field. The temperature of the trip blanks must be maintained at four degrees C while on-Site and during shipment. Trip blanks will be analyzed for volatile organics.

11.2 Field Blanks

Field blanks consist of laboratory grade water that is brought into the field and exposed to decontaminated non-dedicated sampling equipment. The purpose of the field blank is to identify any contamination resulting from sampling procedures.

A field blank is collected using two identical sets of laboratory cleaned sample containers, one of which contains laboratory clean water. At a contaminated area of the Site, the water is passed through clean sample equipment and placed in the empty sample container for analysis. Samples are taken from the most contaminated area of the Site in an attempt to simulate a worst-case scenario regarding artificial contributions to sample contamination.

Field blanks will be shipped with the regular sample bottles and will be received in the field within one day of preparation at the lab. The temperature of the field blanks will be maintained at four degrees C while on-Site and during shipment. Field blanks will accompany samples at a rate of one blank for each type of sampling tool used, and will be analyzed for the same parameters as the samples collected by that sampling tool.

11.3 Spiked Samples

The analysis of spiked samples consists of the addition of a known amount of analyte to a sample and subsequent analysis of the sample spiked and unspiked. Recovery of the analyte added to the sample is then calculated, permitting a measure of the accuracy of the analysis. At a minimum, one spiked sample analysis will be performed for each type of sample matrix (aqueous and non-aqueous) for each group of twenty samples.

11.4 Cleanup Procedures

If sample matrix interference is encountered during sample analysis a mandatory analytical cleanup is warranted.

12.0 SAMPLE PRESERVATION REQUIREMENTS

Certain analytical methodologies require chemical additives (i.e., preservatives) in order to stabilize and maintain sample integrity. The samples requiring preservation are indicated in Table 8-2. Generally, two preservation methods may be used:

- Preservatives are added to the sample bottles at the laboratory prior to shipment into the field.
- Preservatives are added to the media in the field immediately after the samples have been collected.

The analytical laboratory will provide pre-preserved bottles as a matter of convenience and to help ensure that samples will be preserved immediately upon collection. A problem associated with this method arises if not enough sample was able to be collected, resulting in too much preservative in the sample. A more common problem with this method is the possibility that insufficient preservative is provided to achieve the desired pH caused by the addition of sample liquids to pre-preserved bottles. Although laboratory pre-preserved bottles will be utilized, field-sampling teams will always be prepared to add additional preservatives to samples if the aforementioned should occur.

When samples are preserved after collection, special care will be taken during the transportation and handling of the concentrated acids. All preservation acids used in the field will be trace metal or higher grade.

13.0 PERFORMANCE AND SYSTEM AUDITS

A performance audit tests the reliability and comparability of data from an individual measurement system, or instrument. This quantitative audit is usually accomplished through submittal and analysis of a reference standard or sample supplied by a source independent of the laboratory. A system audit is a qualitative assessment of all activities related to the collection of samples and/or their analyses. Systems audits are an element of the Laboratory's certification by several agencies, including USEPA and NYSDEC.

Leader will also perform a system audit in conjunction with field sampling, but since this project will have a relatively short time in the field the audit will be completed during the first day of the project. These audits will assess compliance with the field data collection protocol (i.e. proper sample collection, handling, and shipping procedures). The project QA officer or their designee will perform the audit.

14.0 PREVENTIVE MAINTENANCE

The Laboratory performs routine preventive maintenance of analytical instrumentation. Maintenance is based on manufacturers' recommendations and performed on a regular schedule. All aspects of routine and non-routine instrument maintenance are recorded in bound logbooks, specific to each instrument and analysis. Leader maintains field equipment according to manufacturers' specifications and will maintain records for this equipment.

15.0 DATA ASSESSMENT PROCEDURES

Assessment of the analytical data will be done in accordance with “Data Usability Summary Reporting” for evaluating analytical data.

Data assessment procedures for field data (e.g., water level and PID measurements) will be a simple arithmetic average of three measurements. In accordance with our field procedures, each measurement will be collected in triplicate to verify the instrument response and the measurement. The value used in future calculations will be the arithmetic average of the three observations.

16.0 CORRECTIVE ACTIONS

16.1 Analytical Corrective Actions

When an out-of-control condition is detected, efforts are undertaken by the analysts, the supervisor, and if necessary, the Laboratory's QA Officer, to determine and correct the cause. Major analytical discrepancies determined by the Laboratory (due to instrument malfunction, calculation errors, and missed hold times, etc.) will be reported to Leader's QA/QC officer as soon as possible. The QA/QC Officer will analyze the impact on sample integrity and the available options with laboratory personnel prior to contacting the NYSDEC Project Manager.

16.2 Field and Data Review Corrective Actions

During the course of the field activities it will be the responsibility of the Project Manager, QA/QC Officer, and other project team members to see that all measurement procedures are followed as specified, and that measurement data meets the prescribed acceptance criteria. Should a problem arise in the field, prompt action must be taken to correct it. The NYSDEC Project Manager will be advised of the problems encountered in the field by Leader's Project Manager. All problems or situations of concern will be recorded in the field logbook.

Corrective action may also be initiated upon review of the field and analytical data by the Project QA/QC Officer. Should data errors require re-issued data reports, or if errors are found which compromise data quality, a Memorandum of Corrective Action will be prepared. The memorandum provides the mechanism for documentation of errors and corrective actions to be taken.

17.0 QUALITY ASSURANCE REPORTS TO MANAGEMENT

Quality assurance review and documentation of non-compliance is an important part any quality assurance program; however, the communication of the non-compliance is equally important. As result, variances to the QA/QC Plan will be reported and addressed to limit non-conformance.

ATTACHMENT A

PARADIGM ENVIRONMENTAL SERVICES, INC.

LABORATORY CERTIFICATIONS

&

PQLs for EPA METHOD 8260

LABORATORY CERTIFICATIONS

Paradigm Environmental Services maintains the following Environmental Laboratory certifications.

Paradigm Environmental Services, Inc.

New York State Department of Labor
Asbestos Handling License #AC-94-0221

New York State Department of Health
Asbestos Safety Program #22

Laboratory: Asbestos/Microbiology/Inorganic/Organic

New York State Department of Health
Environmental Analyses/Air and Emissions #10958

New York State Department of Health
Environmental Analyses/Non-Potable Water #10958

New York State Department of Health
Environmental Analyses/Potable Water #10958

New York State Department of Health
Environmental Analyses/Solid and Hazardous Waste #10958

5

Volatile Laboratory Analysis Report For Non-Potable Water

Client: Leader Professional Services

Client Job Site:

Lab Project No.: 01-2209

Lab Sample No.: 8301

Client Job No.:

Sample Type: Water

Field Location:

Date Sampled: 08/31/01

Date Received: 09/02/01

Field ID No.: N/A

Date Analyzed: 09/08/01

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 2.00	Benzene	ND< 2.00
Bromomethane	ND< 2.00	Chlorobenzene	ND< 2.00
Bromoform	ND< 2.00	Ethylbenzene	ND< 2.00
Carbon tetrachloride	ND< 2.00	Toluene	ND< 2.00
Chloroethane	ND< 2.00	m,p - Xylene	ND< 2.00
Chloromethane	ND< 2.00	o - Xylene	ND< 2.00
2-Chloroethyl vinyl ether	ND< 2.00	Styrene	ND< 2.00
Chloroform	ND< 2.00		
Dibromochloromethane	ND< 2.00		
1,1-Dichloroethane	ND< 2.00		
1,2-Dichloroethane	ND< 2.00		
1,1-Dichloroethene	ND< 2.00		
cis-1,2-Dichloroethene	ND< 2.00	Ketones & Misc.	
trans-1,2-Dichloroethene	ND< 2.00	Acetone	ND< 10.0
1,2-Dichloropropane	ND< 2.00	Vinyl acetate	ND< 5.00
cis-1,3-Dichloropropene	ND< 2.00	2-Butanone	ND< 5.00
trans-1,3-Dichloropropen	ND< 2.00	4-Methyl-2-pentanone	ND< 5.00
Methylene chloride	ND< 5.00	2-Hexanone	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00	Carbon disulfide	ND< 5.00
Tetrachloroethene	ND< 2.00		
1,1,1-Trichloroethane	ND< 2.00		
1,1,2-Trichloroethane	ND< 2.00		
Trichloroethene	ND< 2.00		
Vinyl Chloride	ND< 2.00		

Analytical Method: EPA 8260

ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By

Laboratory Director

APPENDIX B HEALTH AND SAFETY PLAN

VOLUNTARY CLEANUP PROGRAM INVESTIGATION WORK PLAN

ROCO, LTD SITE
1746 DALE ROAD
CHEEKTOWAGA, NEW YORK

Prepared For:

Jaeckle, Fleischmann & Mugal, LLP
Attorneys at Law
Fleet Bank Building
Twelve Fountain Plaza
Buffalo, New York

Prepared By:

LEADER PROFESSIONAL SERVICES, INC.
2300 Wehrle Drive
Williamsville, New York 14221
716-565-0963

147.007

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1.0 PROJECT PERSONNEL RESPONSIBILITIES

Below is a summary of the safety-related responsibilities of the project personnel.

1.1 Project Manager

The Project Manager will be Mr. Jeffery Wittlinger, P.E. Mr. Wittlinger will act in a supervisory capacity over Leader Professional Services, Inc. (“Leader”) employees and its subcontractors and the planned Site activities. Mr. Wittlinger has the authority to direct site operations including the implementation of this health and safety plan. The project manager will have the required 29 CFR 1910.120 - 40-Hour Training and have an updated 8-Hour Refresher Training Certificate.

1.2 Project Supervisor

The Project Supervisor will be Karen Carlson of Leader. If a substitute is required, the Project Supervisor will be an employee of Leader. The project supervisor oversees field and related activities specific to the project when the project manager is not on the Site. The project supervisor will have the required 29 CFR 1910.120 - 40-Hour Training and have an updated 8-Hour Refresher Training Certificate.

1.3 Health and Safety Officer

Ms. Mary Ellen Holvey, CIH, is the project health and safety officer (“HSO”). Ms. Holvey has the authority to stop work if operations threaten the health and safety of workers or the public. The HSO may designate a member of the work party for Site health and safety responsibilities when the HSO cannot be on Site. The HSO will have the required 29 CFR 1910.120 40-Hour Training and have an updated 8-Hour Refresher Training Certificate.

1.4 Project Team

Personnel and subcontractors on the project team will be responsible for the completion of the work plan's required tasks. Personnel on the project team will comply with the Site safety plan and ensure the Site HSO or Supervisor is notified of unsafe conditions. It is anticipated that the project team will consist of one to three individuals. This may vary due to changes that occur during the actual Site work. Personnel on the project team will have the required 29 CFR 1910.120 40-Hour Training and participate in daily tailgate health and safety meetings. Below is a summary of the project team.

Project Manager: Jeffrey Wittlinger, PE, Leader Professional Services, Inc.

Site Supervisor: Karen Carlson, Leader Professional Services, Inc.

Health and Safety Officer: Mary-Ellen Holvey, Leader Professional Services, Inc.

New York State
Department of Environmental Conservation
("NYSDEC") Project Manager: David P. Locey

Geoprobe Subcontractor: Zebra Environmental, Inc.

Analytical Laboratory: Paradigm Environmental Services, Inc.

2.0 SITE STANDARD OPERATING SAFETY PROCEDURES

Standard operating and safety procedures include safety precautions and operating practices that on-Site personnel will follow.

2.1 Personal Precautions

- Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any area designated as contaminated.
- Hands and face must be thoroughly washed upon leaving the work area.
- Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after the protective garment is removed.
- No facial hair, which interferes with a satisfactory fit of the mask-to-face seal, is allowed on personnel required to wear respirators. Personnel will use the negative pressure fit test prior to each use of the equipment.
- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible, do not walk through puddles, leachate, discolored surfaces, kneel on ground, lean, sit or place equipment on drums, containers, or the ground.
- Medicine and alcohol can enhance or mask the effects from exposure to toxic chemicals. Prescribed drugs should not be taken by field personnel where the potential for absorption, inhalation, or ingestion of toxic substances exists unless specifically approved by a qualified physician. Alcoholic beverages should be avoided, in the off-duty hours, during the project.

2.2 *Operations*

- All personnel going on-site must be adequately trained and thoroughly briefed on anticipated hazards, equipment to be worn, safety practices to be followed, emergency procedures, and communications.
- All personnel going into areas designated for wearing protective equipment must wear any required respiratory protection and chemical protective clothing.
- Personnel on-site must use the buddy system when wearing respiratory protection. As a minimum, one person, suitably equipped, is required as safety backup during initial entry.
- Visual contact must be maintained between pairs on-Site and safety personnel. Entry team members should remain together to assist each other during emergencies.
- During continual operations, on-Site workers act as safety backup to each other. Off-site personnel provide emergency assistance.
- Communications using radios, hand signals, signs, or other means must be maintained between team members at all times.
- Personnel and equipment in the contaminated area should be minimized to reduce the potential for cross-contamination and the generation of decontamination waste.
- The project manager, or his designee, and the HSO will establish work areas for various operational activities.
- Procedures for leaving a contaminated area must be planned and implemented prior to going on-site. Work areas and decontamination procedures have been

established based on expected Site conditions and are described in the project Work Plan.

3.0 HEALTH AND SAFETY HAZARDS

The potential hazards that may be experienced during implementation of the Work Plan include: 1) chemical exposures from contact with contaminated soil and groundwater; 2) hazards inherent to working with geoprobe equipment; 3) slip, trip and fall hazards; and 4) heat stress from performing heavy work while wearing protective clothing. Since the extent of contamination is not completely defined, work areas will be monitored for the presence of organic vapors. To prevent unnecessary exposures to vapors, and to limit the potential for cross-contamination, work areas will be designated. To reduce accidents from occurring that involve slip, trip and fall hazards, and heat stress fatigue, work will be monitored by the Site HSO and workers will be encouraged to use the “buddy-system” while lifting heavy tools or items to reduce early fatigue while wearing protective clothing.

Table 1 lists potential health and safety hazards that may be encountered based on general site tasks. This list has been compiled based on the scheduled activities and potential Site conditions.

4.0 PERSONAL PROTECTIVE EQUIPMENT

4.1 Protective Equipment

All personnel will be provided with appropriate personal safety equipment and protective clothing. Each individual will be properly trained in the use of this safety equipment before the start of field activities. Safety equipment and protective clothing shall be used as directed by the Project Manager and/or Site HSO. Such equipment and clothing will be cleaned and maintained in proper condition by the personnel. The Site HSO will monitor the maintenance of personnel protective equipment to ensure proper procedures are followed.

Personal protective equipment will be worn at all times designated by this Health and Safety Plan. Levels of protective clothing and equipment are not expected to exceed Level C. Results from the previous groundwater samplings and on-site readings will be used to set action levels and levels of personal protection.

The personal protective equipment levels designated below are in conformance with EPA criteria for Level C and D protection. Respiratory protective equipment used will be approved by National Institute for Occupational Safety and Health (NIOSH) and Mine Safety and Health Administration (MSHA). If unanticipated conditions requiring level A or B protection are encountered, the project will be suspended until conditions are evaluated and the scope of this HASP is expanded.

4.2 Level C Protection

A. Personal Protective Equipment

- Half-face, air-purifying, canister-equipped respirator (MSHA/NIOSH-approved) for acid/gas/organic vapor with particulate filter.

- Chemical resistant clothing (overalls and long sleeved jacket; coveralls or hooded, one piece or two-piece chemical-splash suit; disposable chemical resistant one-piece suits).
- Work Clothes (long sleeve shirt and pants)
- Gloves (outer and inner), chemical resistant
- Boots (inner), leather work shoe with steel toe and shank
- Boots (outer), chemical resistant (disposable is optional)
- Hard Hat (face shield is optional)
- Safety Glasses or goggles
- Taping between suit and gloves, and suit and boots

B. Criteria for Selection

Meeting all of these criteria permits use of Level C Protection.

- Measured air concentration of identified substances will be reduced by the respirator to, at, or below the substance's Threshold Limit Value (TLV)/Permissible Exposure Limits (PEL) and the concentration is within the service limit of the canister.
- Atmospheric contaminant concentrations do not exceed IDLH levels.
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect the small area of skin left unprotected by chemical resistant clothing.

4.3 *Level D Protection*

A. Personal Protective Equipment

- Work Clothes (long sleeve shirt and pants)
- Leather, steel-toed boots
- As required:
 - Hard hat
 - Safety glasses/goggles
 - Hearing protection
 - Gloves

B. Criteria for Selection

Meeting all of these criteria permits the use of Level D Protection.

- Measured air concentrations of identified substances are below the substances Permissible Exposure Limit (PEL) or TLV.
- Oxygen content is > 19.5%.
- No unknown substances are present.

5.0 DECONTAMINATION

It is expected that the usual level of protection will be Level D. Level C will be used when potential exposures to contaminants justify increased protection. Based on the level of expected exposure to contaminants, the following decontamination protocol will be used.

5.1 Personnel Decontamination

It is expected that a minimum of Level D decontamination will be continually in effect at the Site. On these occasions when higher levels of protection are required, appropriate decontamination procedures will be used. The extent of the decontamination procedures will be at the discretion of the Site Health and Safety Officer.

In general, decontamination involves removing potentially contaminated soil from gloves and clothing, followed by scrubbing with a non-phosphate soap/water solution and clean water rinses. As a general rule, protective clothing will be removed in the reverse order as it was put on; gloves and boots off first, followed by protective suits and then breathing apparatus. As the different types of waste are generated, the team members will segregate the waste into different drums. Potentially contaminated soil will be placed into one drum and decontamination water into a second drum. All disposable items will be placed into a dry goods drum.

Certain parts of contaminated respirators, harness assemblies and leather or cloth components, are difficult to decontaminate. If grossly contaminated, they may have to be discarded. Rubber components can be soaked in soap and water and scrubbed with a brush. In addition to being decontaminated, all respirators, non-disposable protective clothing, and other personal articles must be sanitized before they can be used again unless they are assigned to individuals. The manufacturer's instruction should be followed in sanitizing the respirator masks. The Site HSO will oversee the proper

decontamination methods for the protective equipment. Decontamination wastewaters will be collected and disposed of according to applicable regulations.

5.2 *Equipment Decontamination*

Decontamination will be applicable to on-Site activities and be completed in the contamination reduction zone (CRZ) section of the exclusion zone. Equipment (i.e., tools, monitoring equipment, etc.) will receive initial decontamination. Equipment, which has been in contact with contaminants, shall be stored in an area within the limits of the existing exclusion zone or shall be thoroughly decontaminated prior to leaving the area. Decontamination will consist of cleaning of the entire piece of equipment to the satisfaction of the Site Supervisor or the HSO. Decontamination will be a multi-process task, first all loose dirt or other foreign materials will be removed from equipment surface. Scrubbing with a synthetic wire brush may be required to remove materials that adhere to the surfaces. After the loose dirt is removed, the equipment will be washed using a detergent and water solution and a wire brush followed by successive rinses with clean water. Washing with hot water from a power washer may be substituted for a synthetic wire brush.

Dirty equipment will be stored on plastic sheeting in such a manner that decontamination waters can be collected and disposed of in accordance with applicable regulations. Clean equipment not in use will be covered with plastic and stored at a designated storage area.

Air monitoring equipment will be protected with an outer coating (i.e. plastic), if there is a potential for the equipment to come into contact with potentially contaminated materials prior to the initial entry into the exclusion zone. Decontamination will then consist of removal of the protective coating in a manner that will not contaminate the air monitoring equipment.

6.0 SITE AIR MONITORING

Field activities associated with the work tasks at the Site may pose hazardous conditions, such as the release of hazardous substances into the worker's breathing zone. These substances may be in the form of vapors, dusts, or mists that can enter the body through ingestion, inhalation, or direct skin or eye contact. If the HSO, relying on instrument observations and odor, determines that a condition exists in which workers may be exposed to airborne hazardous materials, the HSO will upgrade the team's level of respiratory protection and complete chemical specific monitoring.

The following paragraphs describe the monitoring parameters to be evaluated during the start of the project. As the project continues, other site specific monitoring may be required based on Site conditions. All instruments to be used during site activities will meet the established requirements set forth by OSHA, MSHA, NIOSH, and state agencies where applicable.

Air quality observations will be made during work progress with the aid of a direct reading organic vapor meter. Prior to the beginning of field work, a wind sock or wind direction indicator will be hung from a pole or a fixed object so the field team can easily determine the direction of the wind during the project. A flag hung from an easily observable pole may substitute for the windsock. Monitoring will take place in the work zone and workers breathing zone, up and down-wind (as indicated from the wind sock) from the work zone and at the Site perimeter. Monitoring within the work zone will be taken at least every 15 to 30 minutes. Monitoring up and down-wind of the work zone will be completed at least every 30 to 60-minutes and monitoring at the Site perimeter will be completed at least every 60-minutes. If elevated readings are obtained (elevated compared to up-wind readings or compared to Site specific action levels), then the frequency of taking measurements will be increased at the monitoring stations.

Based on previous sampling data at the Site, it is anticipated that organic vapors will be well below 1 ppm. Organic vapor concentrations will be the primary measure for

upgrading or downgrading worker respiratory protective equipment and implementing additional precautions or procedures (See Table 2, Action Levels).

Site monitoring will be conducted by or under the direction of the Site HSO. Readings obtained will be recorded in a dedicated Site notebook maintained by the Project Supervisor or designate. The Site HSO or Project Supervisor will maintain monitoring instruments throughout the Site investigation to ensure their reliability and proper operation.

7.0 ACTION LEVELS

Action levels have been established for the upgrade and downgrade in the levels of personal protective equipment. Table 2 lists the action levels, airborne concentrations and their respective personal protection for unknown sources of organic vapor concentrations. Section 8.0 discusses the minimal personal protection required for Site activities based on current information.

8.0 SITE ACTIVITIES AND ASSOCIATED PERSONNEL

PROTECTIVE REQUIREMENTS

The levels of protection have been assigned based on anticipated Site activities (below) and represent a best estimate of exposure potential and protective equipment needed for that exposure. The Site HSO will revise those levels of protection, up or down, based on air monitoring results, and on-Site assessments of actual exposures.

- Level D - General site work with limited physical contact with contaminated soil by personnel. If workers must pick-up contaminated tools or a soil samples, protective chemical resistant gloves will be worn. Respiratory protection is not required because contaminant action levels cited on Table 2 are not exceeded.
- Modified Level C - General site work where personnel will be in direct contact with contaminated soil or groundwater, but respiratory protection is not required because contaminant action levels cited on Table 2 are not exceeded.
- Level C - General site work where personnel will be in direct contact with contaminated soil or groundwater, and organic vapor measurements are greater than those action levels cited on Table 2.

9.0 CONTINGENCY PLAN

The Project Supervisor or HSO is responsible for implementing the Contingency Plan whenever there is either a threat to human health or an environmental hazard. Possible Contingency Plan situations include actual or imminent fires, explosions or spills.

The individual discovering the emergency situation is to notify the Project Supervisor or HSO who will then notify the appropriate organizations as described in Table 3.

9.1 Assessment

The Project Supervisor is responsible for ascertaining possible health or environmental hazards and determining the need for evacuation and notification of the proper authorities.

9.2 Control Procedures

The team member or Site employee discovering a fire, explosion, spill or other emergency situation is responsible for notifying the Project Supervisor or Site HSO and as much as possible, provide the information listed in Table 3.0. The Project Supervisor or Emergency Response Coordinator will assess the situation to determine if Site personnel can adequately handle it or if additional assistance is needed.

Before any team member attempts to extinguish a fire, cleanup and contain a spill or take any action, he or she must be aware of the properties of the material involved and its associated hazards. All team members are familiarized with this information during the initial tailgate safety meeting and are instructed on the proper protective clothing to be worn in such a situation.

Table 3 includes a list of the organizations that are available to provide emergency assistance.

9.3 *Fire and/or Explosion*

The most serious emergency situation that could be faced at the Site would be a chemical release or major fire. In the event of a fire or explosion, the Project Supervisor or Site HSO should be notified as described in the preceding section. The Project Supervisor or Emergency Response Coordinator is responsible for assessing the requirements for outside assistance as well as the necessity for site evacuation.

The Fire Department should be notified immediately once a fire is detected. Small fires can be extinguished using a fire extinguisher located at the site. Larger fires will require the assistance of the fire department. The fire department will be informed of the nature of the fire and wastes at the site, and if water can be used to extinguish a fire.

9.4 *Spill and/or Material Releases*

The procedure for notification of the Project Supervisor, and/or Site HSO, is described in Section 9.2. Immediately following the discovery of a spill and beginning the spill cleanup, the NYSDEC and local Fire Department (if required) will be contacted. In addition, the Comprehensive Environmental Response, Compensation, and Liability act of 1980 (CERCLA, or Superfund) requires that the National Response Center be notified of any release in excess of the reportable quantity of a listed material.

Spill clean up poses no danger under normal conditions. The first step is to determine the source of the spill and correct it. This condition may involve patching a leaking drum, closing a valve or turning off a pump. In the event of a small spill, absorbent granules or sorbent pads will be utilized to soak up the spilled material. Absorbent materials are normally kept in designated storage locations in the site's warehouse. The granules would then be swept up and containerized in DOT approved drums. In the event a large spill occurs a qualified hazardous materials clean-up contractor will be called to bring in pumps and vacuum trucks, and transfer spilled material from the collection area into storage tanks or drums.

Contaminated structures and equipment must be properly cleaned before being returned to service. This procedure will include use of pressure washers and sorbent materials. All affected floors and equipment, pumps and hoses, will be cleaned with an appropriate detergent and rinsed with clear clean water.

10.0 WORK AREAS

The Project Supervisor and HSO, and if needed the Contractor, will clearly layout and identify work areas in the field and will limit equipment, operations, and personnel as defined in the following areas:

- Exclusion Zone - This area will include all areas where environmental monitoring has shown or it is suspected that a contamination may exist and be a potential exposure problem to workers. The Site HSO will determine the level of personnel protective equipment required in these areas. The area will be clearly delineated from the decontamination area. As work within the hazardous zone proceeds, the delineating boundary will be relocated as necessary to prevent the accidental contamination of nearby people and equipment.
- Contamination Reduction Zone (CRZ) - This zone will occur at the interface of “Contaminated” and “Clean” areas and will provide for the decontamination of equipment and materials and the transfer of equipment from the Exclusion Zone to the Clean Area. This area will contain all required emergency equipment, etc.
- Support Zone (“Clean” Area) - This area is the remainder of the work Site and project site. The “Clean” area will be clearly delineated and procedures implemented to prevent active or passive contamination from the work Site. The function of the “Clean” area includes:
 - An entry area for personnel, material, and equipment to the Exclusion Zone area of site operations through the CRZ zone.
 - An exit for decontaminated personnel, materials, and equipment from the CRZ; and
 - A clean storage area for safety and work equipment.

There will be a 10 foot perimeter around the Site operations (i.e., the geoprobe unit) that will act as the exclusion zone.

11.0 SAFETY EQUIPMENT AND PROTECTIVE CLOTHING SPECIFICATIONS

Project team members and contractors will have the following safety equipment:

- Air purifying respirator with appropriate cartridges
- Protective clothing including, but not limited to:
 - Gloves
 - Boots
- Safety Glasses
- Hearing Protection
- Hard hats

12.0 AIR EMISSIONS CONTROL

The Project Team and subcontractor shall have on-Site equipment and personnel necessary to monitor and control air emissions. It is not expected that air emissions will pose a significant risk to health and safety or to the environment, due to the nature of the contaminants on this project.

The Project Manager and/or the Site HSO will make the evaluation for requiring monitoring and control of air emissions with the assistance of the following monitoring equipment and the action levels cited on Table 2. It is anticipated that an organic vapor analyzer will be used to measure the concentration of most organic contaminants in the air. Because sampling activities are being conducted in the open air or within well-ventilated areas, oxygen or dust meters are not required.

13.0 ADDITIONAL HEALTH AND SAFETY COMMENTS

- The Site HSO will ensure that safety equipment and protective clothing is kept clean and well maintained.
- Prescription eyeglasses in use on this project will be safety glasses and will be compatible with respirators. No contact lenses shall be allowed on-Site.
- Disposable or reusable gloves worn on the Site will be approved by the HSO.
- During periods of prolonged respirator usage in contaminated areas, respirator filters will be changed upon breakthrough and at a minimum filters will be changed daily.
- Footwear used on-Site will be covered by rubber over-boots when entering or working in the Exclusion Zone area or CRZ. Boots will be washed with water and detergents to remove dirt and contaminated sediment before leaving the CRZ.
- Personnel protective equipment used on-Site will be decontaminated or disposed of at the end of the workday.
- All air purifying respirators will be individually assigned and not interchanged between workers without cleaning and sanitizing.
- Any team member or Contractor unable to pass a fit test as a result of facial hair or facial configuration shall not enter or work in an area that requires respiratory protection.
- The Contractor will ensure that all project team members shall have vision or corrected vision to at least 20/40 in one eye.
- Team members found to be disregarding any provision of this plan will, at the request of the HSO, be barred from the project.

- Used disposable outerwear will be removed upon leaving CRZ and will be placed inside disposable containers labeled for that purpose. These containers will be stored at the site at the designated staging area. The contractor will be responsible for proper disposal of these materials at the completion of the project.
- Tyvek or PVC rain suits, which become torn or badly soiled, will be replaced immediately.
- Eating, drinking, chewing gum or tobacco, smoking, etc., will be prohibited in the exclusion zones and CRZ zones.
- All personnel will thoroughly cleanse their hands, face, forearms, and other exposed areas prior to eating, smoking, or drinking.
- All personnel will wash their hands, face, and forearms before using toilet facilities.
- No alcohol, firearms, or drugs (without prescription) will be allowed on-site at any time.

14.0 MISCELLANEOUS HEALTH AND SAFETY ITEMS

14.1 Retention On-Site

During the course of the project, it is expected that waste materials will be retained on Site until removed by a disposal contractor. All waste containers will be labeled according to DOT and other regulations where appropriate. Waste materials, both drummed and bulk, will be stored in designated areas. All waste drums will be sealed before they are moved from the exclusion zone.

14.2 Equipment and Material Decontamination

All equipment and material used in this project shall be thoroughly decontaminated using procedures described in the project Work Plan before it is removed from the Site. Debris and contaminated clothing and tools which cannot be decontaminated shall be disposed as waste.

14.3 Communications

Telephone communications will be available at all times on the Site. Communication procedures are outlined in the Contingency Plan in Section 9.0 of the Health and Safety Plan. Table 3 contains an emergency call list and will be posted in one of the team member's vehicles.

14.4 On-Site Hygiene Facilities

The RoCo facility office lavatories will be available for decontaminated team members and subcontractors. Water will be available in the CRZ for decontamination.

A first aid kit will be kept in the support zone at the Site at all times.

14.5 Cold or Heat Exposure

The field effort is expected to be completed during the spring months. It is not anticipated that cold or heat exposure will create a significant hazard to project personnel.

15.0 TAILGATE SAFETY MEETINGS

The HSO or the designated representative will conduct daily tailgate safety meetings each workday that will be mandatory for project personnel. The meetings will provide information on the anticipated Site conditions and the work to be completed that day. Appendix 1 contains a form for documenting Safety Meetings. Completed forms will be retained in Leader's project file.

Additional safety meetings will be held on an "as required" basis.

ATTACHMENT 1

TABLES AND FIGURES

TABLE 1
KNOWN AND POTENTIAL HEALTH AND SAFETY HAZARDS
ROCO LTD. SITE
CHEEKTOWAGA, NEW YORK

Known and Potential Site Hazards: Chemical (See Appendix 2 for information sheets and/or MSDSs)

- Contaminants

Perchloroethylene (PCE)

Trichloroethylene (TCE)

- Review of Symptoms

Symptoms of exposure to hazardous wastes and in particular to the contaminants above will be reviewed with Site personnel. Symptoms of both acute and chronic exposures will be covered. In addition, the on-Site coordinators will be advised to watch for outward evidence of changes in workers' health. These outward symptoms may include fatigue, loss of appetite, depression, drowsiness, vertigo, dizziness, nervousness or irritability, skin irritations or discoloration, eye irritation, or muscular soreness.

Note the number and nature of potential contaminants mandate that contact of waste materials with the exposed skin must not be allowed to occur under any circumstances.

Known and Potential Site Hazards: Non-*Chemical*

- General Physical Hazards.

Underground and aboveground utilities

Slip, trip, and fall

TABLE 2
ACTION LEVELS
ROCO, LTD SITE
CHEEKTOWAGA, NEW YORK

Unknown Organic Vapor Concentrations (ppm) ¹	Level of Protection
< 1	Level D
≥ 1 < 10	Level C
>10	Suspend work and reassess conditions

Anticipated Chemical Contaminants	Time Weight Average ² (ppm)
Perchloroethylene	25
1,2-Dichloroethylene	200
Trichloroethylene	25
Vinyl Chloride	1

Note:

- 1 Unknown organic vapor action levels are based on the lowest known exposure limits for chlorine (PEL = 1 ppm, IDLH = 30 ppm). The air purifying cartridge limitation for chlorine is 10 ppm.
- 2 Time weighted averages taken from the most conservative values developed by the ACGIH, OSHA (PEL), NIOSH, and DFG MAKs. Source, Guide to Occupational Exposure Values-2000.

**TABLE 3
EMERGENCY CALL LIST
ROCO, LTD SITE
CHEEKTOWAGA, NEW YORK**

Fires - Spills

Town of Cheektowaga Fire Department 911

Public Services

Town of Cheektowaga Police Emergency 911

Emergency Medical Services

St. Joseph Hospital (716) 891-2550

SPILL NOTIFICATION

Agencies

National Response Center (800) 424-8802

Local NYSDEC Office Region 9 (716) 851-7220

Provide the following information to the agencies:

- Name of person making the call
- Company and location
- Nature of fire (fire calls only)
- Name and estimated amount of chemical released to the environment (spills only)
- Time of release
- Remedial action taken to correct the problem

Site Contacts

Dave P. Locey (NYSDEC Project Manager) (716) 891-2550

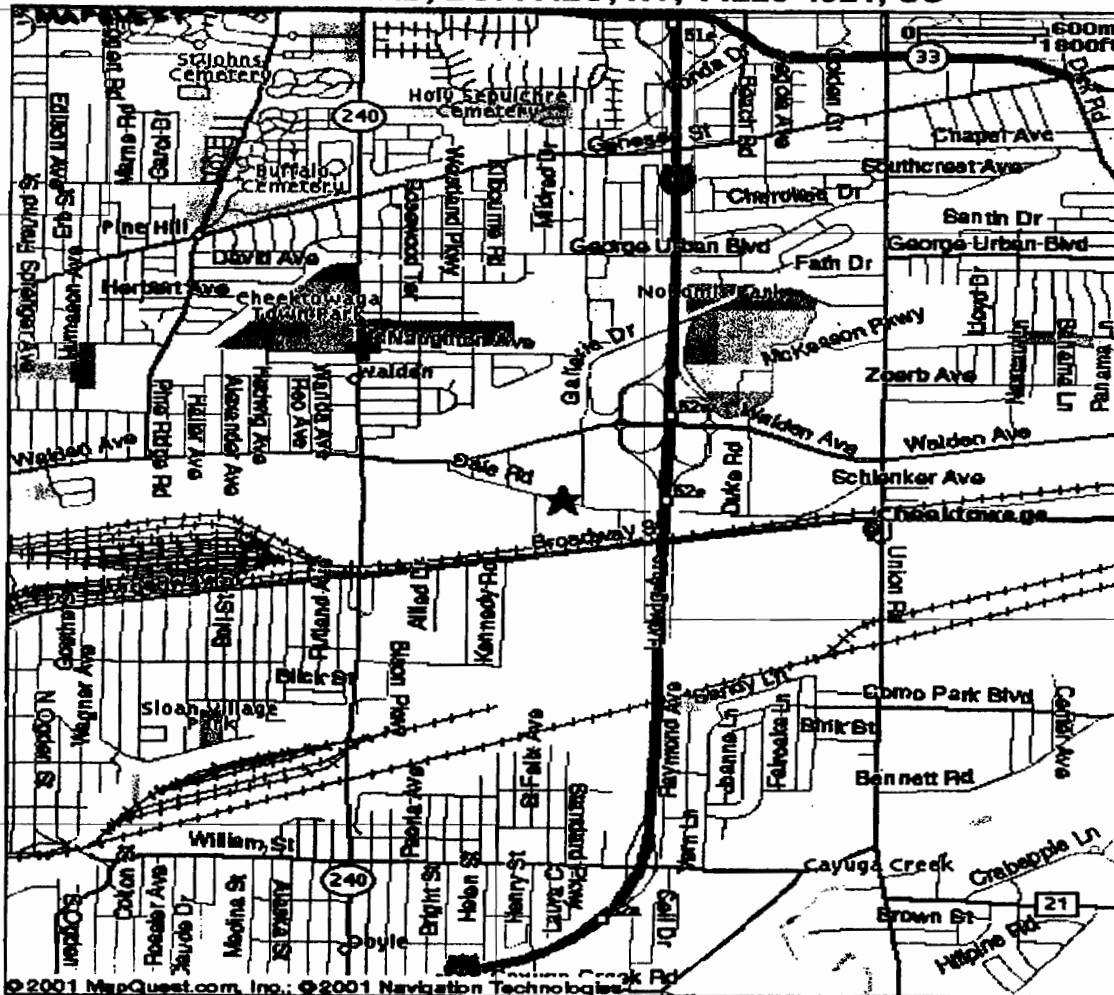
RoCo, Ltd Contact

Jeffrey Wittlinger (Leader - Buffalo) (716) 565-0963

FIGURE 1
ROUTE TO HOSPITAL



1746 DALE RD, BUFFALO, NY, 14225-4921, US



TO:

ST JOSEPH HOSPITAL
2605 HARLEM RD
CHEEKTOWAGA, NY 14225 US

DIRECTIONS

- 1: Start out going West on DALE RD.
- 2: Turn LEFT onto WALDEN AVE.
- 3: Turn RIGHT onto NY-240/HARLEM RD.
- 4: Turn RIGHT onto MCNAUGHTON AVE.

TOTAL ESTIMATED TIME:
3 minutes

DISTANCE

0.4 miles
 (0.6 km)
 0.3 miles
 (0.4 km)
 0.4 miles
 (0.7 km)
 0.0 miles
 (0.0 km)

TOTAL DISTANCE:
1.1 miles (1.7km)

Title

Route to Hospital
 St. Joseph Hospital

Prepared For

Jaackle, Fleischmann & Mugel, LLP
 Twelve Fountain Plaza
 Buffalo, New York 14202-2292



Leader Environmental, Inc
 640 Kreg Road-Suite 300
 Pittsford, New York 14534
 (716) 248-2413
 FAX (716) 248-2834

Project

147.007

Date

03-01

Scale

NTS

Drawn

MEH

Checked

JAW

File Name

Site Map

Figure

1

ATTACHMENT 2
SAFETY MEETING SIGN-OFF SHEETS

SAFETY MEETING ATTENDANCE SIGN-OFF SHEET

[illegible]

ATTACHMENT 3
MSDS

Trichloroethylene, Reagent ACS
ACROS01651

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Trichloroethylene, Reagent ACS

Catalog Numbers:

AC421520000, AC421520040, AC421520200, AC421525000

Synonyms:

Ethylene trichloride, triclene, trichloroethene, benzinol cecolene

Company Identification (Europe): Acros Organics N.V.

Janssen Pharmaceuticaaan 3a

2440 Geel, Belgium

Company Identification (USA): Acros Organics

One Reagent Lane

Fairlawn, NJ 07410

For information in North America, call: 800-ACROS-01

For information in Europe, call: 0032(0) 14575211

For emergencies in the US, call CHEMTREC: 800-424-9300

For emergencies in Europe, call: 0032(0) 14575299

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	EINECS#
79-01-6	Trichloroethylene	ca 100	201-167-4

Hazard Symbols: XN

Risk Phrases: 40 52/53

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Appearance: clear, colorless.

Warning! May cause central nervous system depression. Aspiration hazard. May cause liver damage. May cause reproductive effects based upon animal studies. Causes eye and skin irritation. May cause respiratory and digestive tract irritation. May cause cancer based on animal studies. Potential cancer hazard.

Target Organs: Central nervous system, liver.

Potential Health Effects

Eye:

Causes moderate eye irritation. May result in corneal injury.

Contact produces irritation, tearing, and burning pain.

Skin:

Causes mild skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May cause peripheral nervous system function impairment including persistent neuritis, and temporary loss of touch. Damage to the liver and other organs has been observed in workers who have been overexposed.

Ingestion:

Aspiration hazard. May cause irritation of the digestive tract.

Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

Inhalation:

Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. May cause liver abnormalities. May cause peripheral nervous system effects.

Chronic:

Possible cancer hazard based on tests with laboratory animals. Chronic inhalation may cause effects similar to those of acute inhalation. Prolonged or repeated skin contact may cause defatting and dermatitis. May cause peripheral nervous system function impairment including persistent neuritis, and temporary loss of touch. Damage to the liver and other organs has been observed in workers who have been overexposed.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Possible aspiration hazard. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. DO NOT use mouth-to-mouth respiration.

Notes to Physician:

Treat symptomatically and

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors can travel to a source of ignition and flash back. Combustion generates toxic fumes. Containers may explode in the heat of a fire.

Extinguishing Media:

Use water spray to cool fire-exposed containers. In case of fire use water spray, dry chemical, carbon dioxide, or chemical foam.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Remove all sources of ignition. Provide ventilation.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:

Wash thoroughly after handling. Use only in a well ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Trichloroethylene	50 ppm; 100 ppm STEL	NIOSH Potential Occupational Carcinogen - see Appendix A; see	100 ppm TWA; C 200 ppm; C 200 ppm

Appendix C for sup plementary exposure limits Potential NIOSH carcinogen.

OSHA Vacated PELs:
Trichloroethylene:
50 ppm TWA; 270 mg/m3 TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Liquid
Appearance: clear, colorless
Odor: sweetish odor - chloroform-like
pH: Not available.
Vapor Pressure: 58 mm Hg @20C
Vapor Density: 4.53
Evaporation Rate: 0.69 (CCl4=1)
Viscosity: 0.0055 poise
Boiling Point: 189 deg F
Freezing/Melting Point: -121 deg F
Autoignition Temperature: 778 deg F (414.44 deg C)
Flash Point: Not applicable.
NFPA Rating: (est.) Health: 2; Flammability: 1; Reactivity: 0
Explosion Limits, Lower: 12.5
Upper: 90.0
Decomposition Temperature: Not available.
Solubility: Insoluble in water.
Specific Gravity/Density: 1.47 (water=1)
Molecular Formula: C2HCl3
Molecular Weight: 131.366

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, oxidizers.
Incompatibilities with Other Materials: Alkalies (sodium hydroxide), chemically active metals (aluminum, beryllium, lithium, magnesium), epoxies and oxidants. Can react violently with aluminum, barium, lithium, magnesium, liquid oxygen, ozone, potassium hydroxide, potassium nitrate, sodium, sodium hydroxide, titanium, and nitrogen dioxide. Reacts with water under heat and pressure to form hydrogen chloride gas.
Hazardous Decomposition Products: Hydrogen chloride, carbon dioxide, chloride fumes.
Hazardous Polymerization: Has not been reported.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:

CAS# 79-01-6: KX4550000

LD50/LC50:

CAS# 79-01-6: Inhalation, mouse: LC50 = 8450 ppm/4H; Oral, mouse:

LD50 = 2402 mg/kg; Oral, rat: LD50 = 5650 mg/kg; Skin, rabbit: LD50 = >20 gm/kg.

Carcinogenicity:

Trichloroethylene -

ACGIH: A5 - not suspected as a human carcinogen

California: carcinogen; initial date 4/1/88

NIOSH: occupational carcinogen

OSHA: Possible Select carcinogen

IARC: Group 2A carcinogen

Epidemiology:

Suspected carcinogen with experimental carcinogenic, tumorigenic, and teratogenic data.

Teratogenicity:

No information available.

Reproductive Effects:

Experimental reproductive effects have been observed.

Neurotoxicity:

No information available.

Mutagenicity:

Human mutation data has been reported. IARC and the National Toxicology Program (NTP) stated that variability in the mutagenicity test results with trichloroethylene may be due to the presence of various stabilizers used in TCE which are mutagens (e.g. epoxybutane, epichlorohydrin).

Other Studies:

None.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:

Bluegill sunfish, LD50= 44,700 ug/L/96Hr. Fathead minnow, LC50=40.7 mg/L/96Hr.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Part 261. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: CAS# 79-01-6: waste number U228.

**** SECTION 14 - TRANSPORT INFORMATION ****

US DOT

Shipping Name: TRICHLOROETHYLENE

Hazard Class: 6.1

UN Number: UN1710

Packing Group: III

Canadian TDG

No information available.

**** SECTION 15 - REGULATORY INFORMATION ****

US FEDERAL

TSCA

CAS# 79-01-6 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 79-01-6: final RQ = 100 pounds (45.4 kg)

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 79-01-6: acute, chronic, reactive.

Section 313

This material contains Trichloroethylene (CAS# 79-01-6, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act:

CAS# 79-01-6 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 79-01-6 is listed as a Hazardous Substance under the CWA.

CAS# 79-01-6 is listed as a Priority Pollutant under the Clean Water Act.

CAS# 79-01-6 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Trichloroethylene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Trichloroethylene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level:

CAS# 79-01-6: ingestion: no significant risk level = 50 ug/day;

inhalation: no significant risk level = 80 ug/day

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 40 Possible risks of irreversible effects.

R 52/53 Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 36/37 Wear suitable protective clothing and gloves.

S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)

CAS# 79-01-6: 3

United Kingdom Occupational Exposure Limits

Canada

CAS# 79-01-6 is listed on Canada's DSL/NDSL List.

This product has a WHMIS classification of D2A.

CAS# 79-01-6 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 79-01-6: OEL-AUSTRALIA:TWA 50 ppm (270 mg/m³);STEL 200 ppm (1080 mg/m³)

OEL-BELGIUM:TWA 50 ppm (269 mg/m³);STEL 200 ppm (1070 mg/m³)

OEL-CZECHOSLOVAKIA:TWA 250 mg/m³;STEL 1250 mg/m³

OEL-DENMARK:TWA 30 ppm (160 mg/m³)

OEL-FINLAND:TWA 30 ppm (160 mg/m³);STEL 45 ppm (240 mg/m³);Skin

OEL-FRANCE:TWA 75 ppm (405 mg/m³);STEL 200 ppm (1080 mg/m³)

OEL-GERMANY:TWA 50 ppm (270 mg/m³);Carcinogen

OEL-HUNGARY:TWA 10 mg/m³;STEL 40 mg/m³

OEL-JAPAN:TWA 50 ppm (270 mg/m³)

OEL-THE NETHERLANDS:TWA 35 ppm (190 mg/m³);STEL 100 ppm

OEL-THE PHILIPPINES:TWA 100 ppm (535 mg/m³)

OEL-POLAND:TWA 50 mg/m³

OEL-RUSSIA:TWA 50 ppm;STEL 10 mg/m³

OEL-SWEDEN:TWA 10 ppm (50 mg/m3);STEL 25 ppm (140 mg/m3)
OEL-THAILAND:TWA 100 ppm;STEL 200 ppm
OEL-TURKEY:TWA 100 ppm (535 mg/m3)
OEL-UNITED KINGDOM:TWA 100 ppm (535 mg/m3);STEL 150 ppm;Skin
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 9/02/1997 Revision #4 Date: 8/02/2000

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.
